NEW FEATURES IN GSM SERVICE PACK 1

Global System Manager V8.1 Service Pack-1 (GSM-SP1) includes several new features and significant enhancements to Global System Manager V8.1 revision V8.1l:

- A problem in the start-up of newly installed non-PM systems, that results in an immediate termination of GSM after briefly displaying the following error message, has been fixed:

  YOU ARE ATTEMPTING TO RUN A 32-BIT APPLICATION WHICH REQUIRES A VALID 32-BIT SERVICE LICENCE.

  The work-around solution, which involves setting the "..\Nucleus\Enable32Bit" registry setting to "Off", is not required if GSM Service Pack-1 is applied;

- The first release of the $INSTALL utility is included with GSM SP-1. See document **cdreadme.doc** available on the Global Product Set (GPS) CD for further details. Note that $INSTALL logs the details of all the newly installed products. Unlike some pre-release versions, the released version of $INSTALL doesn't attempt to establish itself as a Supervisor Program;

- The first supported release of the 32-bit Menu Handler, $MENU32, is included with GSM SP-1. Although fully compatible with the 16-bit Menu Handler, $MH, the 32-bit Menu Handler allows more unit assignments and databases to be associated with each menu line:

Parameter	16-bit $MH	32-bit $MENU32
Number of unit assignments	8	48
Number of open databases	4 or 8	32

  The 32-bit Menu Handler displays a descriptive warning message if a Speedbase database associated with a menu line, cannot be opened (the 16-bit Menu Handler displays no helpful information under these conditions).

  A problem that caused a spurious STOP 8622 with the pre-release $MENU32 when used on a GX thin-client, has been fixed. In addition, a problem that caused $MENU32 to crash if <ESC> is keyed to the command box, has also been fixed.

The problem that causes a menu line with a password to generate a STOP 25304 has been fixed.

The released version of the 32-bit Menu Handler can run 16-bit Speedbase frames (in addition to 32-bit frame and programs). An "assist program" $MENU16 has been created for this purpose.

$MENU32 recognises the GX Help information and passes the extra information to the Global Application Explorer.

$MENU32 has been enhanced to allow for "internal" type-ahead within menu files (i.e. type-ahead text that is intended for the Menu Handler, itself).

The 32-bit Menu Handler has been enhanced to interface correctly with V2.0 GX.EXE.

All the error messages displayed by the 32-bit Menu Handler appear in information windows when running on GX.

The 32-bit Menu Handler, $MENU32, passes the Menu Version Number to GX.

The released version of the 32-bit Menu Handler, $MENU32, now recognises "CUS", "AMEND" and "UPD" to perform the same functions as the 16-bit Menu Handler. Furthermore, when $MENU32 is operating under Job Management the "GSM menu style" is emulated thus allowing all existing installation jobs to operate;

- The first supported release of the 32-bit Menu Maintenance utility, $MN32, is included with GSM SP-1.

The size of a 32-bit Menu File created by the $MN32 utility is typically considerably larger than the original 16-bit Menu File. The size increase is approximately (2048 + (N * 26440)) bytes, where N is maximum number of possible menus configured in the Menu File.

A problem in the pre-release $MN32 has been fixed. The results in the creation of a corrupt 32-bit Menu File if the 16-bit Menu file contains Access Rights definitions. The corruption is not detected when running $MN32 but only becomes apparent when $MENU32 is used with the 32-bit Menu File. The result is an EXIT 1201 from $MH32.

The released version of the 32-bit $MN32 utility has been enhanced to allow a reply of <CR> to the "Amend Menu" baseline prompt to terminate the menu update. This dialogue is identical to the equivalent 16-bit utility, MN.

A number of further problems in the pre-release version of $MN32, including an EXIT 805, when amending SAA-style menus, have been fixed.

Important Note: For further information on the versions of $MN32 and $MENU32 released with GSM Service Pack-1 please refer to Technical Note IN207;

- The 16-bit Menu Handler, $MH, has been modified to display the following warning message if the menu file is a 32-bit Menu File:

  MENU FILE VERSION IS TOO HIGH - RUN $MENU32   Key <CR>:

  Furthermore, a problem in the 16-bit Menu Handler, $MH, that results in an EXIT 25522 if an attempt to open a Speedbase database fails, has been fixed;

- The Software Node-id that can be customised into $MONITOR by use of the $F PUF command is ignored for all GSM (Windows) configurations. This change has been implemented to prevent the confusion that can arise if the Software Node-id is customised in several places. The unique warning message:

  $57 INITIATION WARNING 463 - SOFTWARE NODE-ID IGNORED

  will appear if the Software Node-id has been customised into $MONITOR.

  The GSM (Windows) Node-id must only be customised in the "NodeID" setting in the registry, or by using the /EN GLOBAL.EXE command line argument;

- The GSM initiation has been enhanced to fully integrate with the GX Login Dialogue Box. Although the internal details of this change are beyond the scope of this document, it should be noted that terminal type 911 is always assumed when GX is running;

- A number of changes to $E have been implemented to interface with the Global Application Explorer, GX. For example, a special "Partition Inactive" command is sent to GX by $E.

  GSM V8.1 SERVICE PACK-1 MUST BE APPLIED IF THE GLOBAL APPLICATION EXPLORER (GX) IS BEING USED;

- The $AUTH Authorisation Utility has been enhanced to fully integrate with the GX Login Dialogue Box.

  Important Note-1: The equivalent changes to $PASSWD have **NOT** been implemented in GSM Service Pack-1.

  Important Note-2: Any authorisation programs that have been developed to replace $AUTH/$PASSWD **MUST** be modified in order to integrate correctly with GX. Please contact Alan Underwood for further details of the minor changes that are required;

- Several of the 32-bit Speedbase DLM's (i.e. BA$xxx) have been modified to interface with the Global Application Explorer (GX);

- The $$GX System Variable can be tested to determine if an application is running on the Global Application Explorer (GX);

- The GSM Start-up overlay, $STARD, has been amended to use P.$TAPSO, rather than P.$TAP, for the name of the TAP library when displaying details of all the available TAP's that have been installed;

- The error message displayed by 32-bit Speedbase PM when a FILE FULL condition is detected has been enhanced to include both the record-id and the database name in the error message;

- The STOP codes produced by the 32-bit Speedbase DLM's (BA$xxx) have been rationalised;

- Both the 16-bit and 32-bit versions of the B$BAD sub-routine have been enhanced to allow a larger index file size increase than can be expressed as a simple percentage. It is now possible to specify a multiplication factor;

- The error message displayed by the loader when an Application DLM Library cannot be loaded, has been corrected to refer to $P, rather than $DP;

- A problem in the 32-bit Screen Formatting DLM that causes a NUMERIC CONVERSION error when an invalid (i.e. non-numeric) reply is supplied to a numeric field, has been fixed.

- A problem in $INSPECT that causes an OVERFLOW when a very large file is inspected, has been fixed;

- A problem in the 32-bit MSORT$ routine that can occur when sort operations are nested with other functions that cause Immediate Pointers to be pushed onto the Parameter Stack, has been fixed;

- A problem in the BA$DSX 32-bit DLM that can result in a STOP 25004 when Pop Menus are nested with other advanced Middleware calls, has been fixed;

- The BELL verb is routed to the Global Application Explorer when a 32-bit Speedbase application is running under GX;

- A number of internal changes to $BADN have been implemented in preparation for the release of a new SPEEDBAS.NLM that will allow 32-bit GSM (Windows) clients in addition to 16-bit GSM (Novell) clients to access a Btrieve format Speedbase database on a Novell file-server;

- A new EXEC'able module, $BARTS, has been released to provide a number of utility routines for use by 32-bit Speedbase PM and the 32-bit Menu Handler, $MENU32. Any attempt to run this module directly will result in a PARAMETER STACK error;

- The 32-bit Speedbase DLM's have been enhanced to display the extended Database lock information returned by the V1.77a, or later, Speedbase Gateway. These extended lock messages are displayed in a separate Dialogue Box when running on GX;

- The 32-bit Speedbase Database Manager has been enhanced to fix a long-standing problem with a $SEQ field in a Maintenance window: Although an Add operation succeeds, the equivalent Insert operation fails with a RECORD ALREADY EXISTS error;

- Several cosmetic changes have been applied to the $AUTHCNV utility. All the error messages displayed by this utility are now meaningful. In addition, $AUTHCNV has been modified to generate a "V8.1l format" $$PASS file;

- A "Record Fetch Intercept" has been implemented in the 32-bit Speedbase Database Manager;

- The 32-bit loader now establishes the library name of the loaded Program, Frame or DLM, for future use by 32-bit Speedbase PM;

- The $LIB "NSD" (remove symbolic debug option) has been extended to remove the symbolic debug information from 32-bit programs and DLM's;

- A new "multiple spooler" utility, $SPM, is now available to allow several spool-unit/printer-device combinations, as defined by "..\Global\Client\Printers\SpoolUnitForPrinter5nn" registry settings, to be controlled by a single partition without the need to run multiple copies of $SP;

- During this implementation the spooler, $SP, has been improved to use the DEVIN$ routine to test directly for the presence of a Print Device instead of attempting to open a work file on the printer. This change prevents the creation of large numbers of empty work files when the "printer" is mapped to a Windows spool directory.

  Furthermore, a problem in $SPS that causes a spurious operator to be displayed on the Spooler Status Screen, has been fixed;

- A problem in $E that leaves the Date/Time Handler (e.g. %.W1D) on the User Stack, thus reducing the 16-bit User Area by 30 bytes, has been fixed;

- A problem in the 32-bit TXEDT$ routine (in the BO$EDI DLM) that results in an ILL OPCODE when using <F3> to copy lines, has been fixed;

- Two new, highly-specialised 32-bit sub-routines (RSRPR$ and RSWPR$, in DLM BO$FI2) have been implemented to allow partial record read/write operations on RSAM files.

NEW FEATURES IN GSM SERVICE PACK 2

Global System Manager V8.1 Service Pack-2 (GSM SP-2) includes several new features and significant enhancements to GSM SP-1 (and Global System Manager V8.1 revision V8.1l):

Important Note: GSM SP-2 can be applied directly to either "vanilla" GSM V8.1l or GSM SP-1 (i.e. there is no need to upgrade V8.1l to GSM SP-1 before applying GSM SP-2).

- A **VERY SERIOUS** PROBLEM in the handling of Speedbase LOCK's has been fixed. **THE PROBLEM ONLY AFFECTS 32-BIT SPEEDBASE APPLICATIONS RUNNING ON GSM V8.1l WHEN THE DATA IS HELD IN A BTRIEVE (OR SQL) FORMAT SPEEDBASE DATABASE.** The problem results in a lock asserted by one user being ignored as soon as the baseline message displaying the extended lock status appears for another user. **ALL SITES RUNNING 32-BIT SPEEDBASE APPLICATIONS ON GSM V8.1l WITH BTRIEVE (OR SQL) FORMAT DATABASES SHOULD APPLY GSM SERVICE PACK-2 IMMEDIATELY;**

- A **SERIOUS** problem in the 32-bit loader has been fixed. The problem causes a spurious STOP 108 to occur when any 32-bit frame or program is loaded from a serialised library. This problem will only occur on end-user serial numbers and does not affect reseller serial numbers;

- The prompt for the Speedbase Presentation Manager licence password now auto-terminates after 1 minute thus allowing an Automatic Bootstrap to continue. If the password prompt is auto-terminated in this way a log is written to the Event Log file (with a unique type code of "Y"). Note that this change was originally included in GSM V8.1d;

- $MN32 now warns that a 16-bit Menu File will be converted to a 32-bit Menu File. **Important Note:** Earlier versions of $MN32 performed the upgrade WITHOUT warning that the Menu File would be converted from 16-bit to 32-bit.

  In addition, $MN32 correctly prompts for the password of a Menu File that has been customised with both Master and Amend passwords.

  Furthermore, a problem in $MN32, that causes an ILLEGAL OPCODE AT pppp367A (where pppp is a page number) if the target menu

file is IN USE, has been fixed. Another problem in the $MN32 dialogue, that eventually results in an EXIT 11301, has also been fixed;

- A problem in $MENU32, that causes an apparent hang when used with GX, has been fixed. The problem only occurs if the target menu of an "M" line is not found.

  In addition, the 32-bit Menu Handler sub-routine, BO$MEN, checks more values to test for an uninitialised 32-bit pointer. Either LOW-VALUES or HIGH-VALUES indicate that a PIC PTR field in the MI-block is uninitialised. Furthermore, the 32-bit Menu Handler now correctly pre-initialises all pointers to LOW-VALUES (rather than #0000FFFF).

  Important Note: For further information on the versions of $MN32 and $MENU32 released with GSM Service Pack-2 please refer to Technical Note IN207;

- $INSTALL now correctly displays the Product Description instead of the Long Volume Description of the original Installation Template Volume (ITV);

- A problem in $LICENCE, that causes too many SVC-61 Close operations to be issued, has been fixed. The problem is not detected under normal circumstances but can produce spurious API Error Messages Boxes if the GSM (Windows) Diagnostics Display option is enabled;

- The NELIS$ routine now produces a unique STOP 24002 if the Extended Find First/Find Next operations are not supported (by SVC-61). A STOP 24002 will result if $LICENCE or $INSTALL are used on an obsolete version of GLOBAL.EXE that does not support these operations;

- The 16-bit Open Direct Access Method (ODAM) has been enhanced to open read-only files in a read-only mode. This allows files on a Windows CD to be accessed by applications using the Open Direct Access Method. This version of the ODAM is used by the $LICENCE utility;

- The 16-bit Debug Overlay, OV, now correctly logs all STOP and EXIT codes to the Event Logging file (if GSM Event Logging is enabled);

- $PASSWD has been enhanced to fully integrate with the GX start-up processing;

- A problem in $BYE (and the $STATUS TER command) that prevents a termination if any other user is running a 32-bit menu has been fixed;

- $S has been enhanced to display the User Class for Reseller (RES) and Internal (INT) systems. No changes will be noticed on End-User systems;

- A new assist routine (DG$001) for the new 32-bit debugger is now included in the system utilities DLM library, P.$GSDLM. Note that the P.$GSDLM library replaces the P.$MNMAP library for GSM SP-2 and, eventually, GSM V8.1m. The GSMSP2 upgrade job performs this replacement automatically and copies a new $$DLM index file to reflect this name change (the system sub-routine DLM library P.$SDLM0 is NOT affected by this change).

  Important Note: The system DLM index file, $$DLM, is subject to further changes and must **NOT** be modified to include application DLM libraries;

- A problem in $BADN that terminates Job Management if a database contains a $$SEQ field, has been fixed;

- A new Speedbase menu file, $BAM32, is now available. This menu is equivalent to $BAM except that the "Return to Main Menu" line returns control to $MENU32, rather than $MH;

- A problem with the 32-bit version of the VIDEO$ routine when used with some terminal types has been fixed. This 32-bit routine now functions correctly on all terminal types;

- A problem with the 32-bit PROG$ routine has been fixed. This subroutine now works correctly;

- A new 32-bit routine, SIZOF$, is available to return the length in bytes of a data item;

- The Autozap tag files (e.g. !BS) has been removed from all program libraries. This change is in preparation for the release of the replacement for Autozaps ($GSP).

NEW FEATURES IN GSM SERVICE PACK 3

Global System Manager V8.1 Service Pack-3 (GSM SP-3) includes several new features and significant enhancements to GSM SP-2 (and GSM SP-1; and Global System Manager V8.1 revision V8.1l):

Important Note: GSM SP-3 can be applied directly to either "vanilla" GSM V8.1l, GSM SP-1 or GSM-SP-2 (i.e. there is no need to upgrade V8.1l to GSM SP-2 before applying GSM SP-3).

● The beta-test version of a new run-time utility, $GSP, that applies Global Product Service Packs is included in this GSM Service Pack. The beta-test version of the Development System utility, $GSPMAKE, that creates Global Product Service Packs is also available for those developers who wish to create their own Service Packs. The application of Global Product Service Packs is recorded in a Installation/Service Pack Log File ($$INSLOG). A new utility, $INSLOG, is available to examine the Install Log File and to automatically email the log records to the Global Service Centre. For bespoke or customised sites, an Exclusion List of non-standard frames/programs will have to be maintained. A new utility, $EXCLUDE, allows the creation and maintenance of the Exclusion List file ($$EXCLUD).

The documentation for $GSP, $GSPMAKE, $INSLOG and $EXCLUDE is included in various Technical Notes (e.g. IN283 and IN284);

Note that all these utilities were formally released in GSM SP-4 (see gsmsp4.doc);

● A new option (Install Installation Logging) has been added to the $CUS System Maintenance, Install Extra Facilities sub-menu. This option creates an empty Installation/Service Pack Log File, $$INSLOG on the unit specified; and assigns the permanent assignment $$L to this unit. If the unit specified already exists there must be at least 10Mb of free space. If the unit specified does not exist it will be created, with a size of 10Mb;

● A new option (Apply E-commerce User password) has been added to the $CUS System Maintenance menu. The "E-commerce User" concept is beyond the scope of this document. $AUTH, $PASSWD and the various GSM start-up overlays have been modified to recognise E-commerce Users. Such users will appear in a $STATUS list with an operator-id of a single "~" character followed by a unique 3

letter code. The Save/Restore Customisation has been modified to restore any E-commerce User customisations.

- The 32-bit Menu Maintenance utility, $MN32, now includes a print option;

- The 32-bit Menu Handler has been modified to recognise the "Run Frame in 32-bit mode" flag in 16-bit Menu Files. This allows the 32-bit Menu Handler to run 16-bit Speedbase frames from 16-bit Menu Files. Earlier versions of the 32-bit Menu Handler produced a STOP WITH 25015 when an attempt was made to run a 16-bit Speedbase frame from a 16-bit Menu File;

- A problem in the 32-bit Menu Handler that caused the incorrect Menu Title to be displayed on GX when returning to higher level menus, has been fixed;

- The 32-bit Menu Handler now correctly opens the 5th, and subsequent, Speedbase databases for type "E" menu lines in 16-bit Menu Files;

- The 32-bit Menu Handler and the 32-bit Speedbase GX-interface DLM (BA$GXM) have been modified to provide a much faster interface to the V2.2 GX;

- A problem in the both the 16-bit Menu Handler, $MH, and the 32-bit Menu Handler, $MENU32, which results in a GUI-format screen being redisplayed in text-mode, has been fixed. The problem occurs if "$" is keyed to obtain the Command Box then <ESC> is keyed to abort the command specification;

- A problem in 32-bit Menu Maintenance that causes a on OVERFLOW in $MN000 when converting a complex 16-bit menu to 32-bit, has been fixed;

- A problem in GSM start-up that left the P.$CMLB2 library open by all un-activated GX partitions, has been fixed;

- A problem with GX sign-on if the $$AUTH file is empty, has been fixed;

- A number of problems in GSM start-up when mixtures of GX and GUI thin-clients are used, have been fixed. In addition, a number of problems that could occur after a GX connection has been aborted, have also been fixed;

- The 32-bit versions of the DS-DT$ and DL-DT$ routines allow a date with a single digit year number (e.g. 6/2/1 is allowed – previous versions of the conversion routines required this date to be entered as 6/2/01);

- A number of new 32-bit subroutines are now available:

DENAX$	Delete native Windows/Unix files
COPYX$	Copy native Window/Unix files
NEOPN$	Extended native Windows/Unix directory Open
EDTTX$	Free-format text comment editor for GX
RECDS$	Record-orientated comment editor for GX
STCON$	String concatenation
STDDE$	Set DDE interface parameters
GTDDE$	Get DDE data
SNDDE$	Send DDE data
PRIFN$	Set name of DOSPrint file (also available in 16-bit)
FMESS$	Format Windows error code to verbose message
SSCRN$	Save screen details
RSCRN$	Restore screen details
MCUS$	Add line to menu file
ALLOC$	Allocate sub-volumes

- The code in GSM start-up that removes any empty P.OVxx files from the $DP (SYSRES) volume has been extended to remove any empty P.OVxx files from the optional $OV volume;

- $VOL performs a TFAM read on every text-file that it encounters in order to determine the possible Program Title. This file access can result in a STOP 8305 if the type TF file is non-standard (e.g. if it has been imported from a Windows file with a line width greater than 255 characters). This default behaviour has been changed to prevent the possibility of a STOP 8305. The original logic (i.e. to read every TFAM file) can be reinstated by using the "T" option;

- A problem in the C-ISAM version of the Speedbase Access Method (SPAM) that results in an OVERFLOW AT EF04, has been fixed. The problem is fixed by the GSM run-time (page $PA050 in P.$PAGES) so there is no need to re-link application code to incorporate this fix;

- An obscure problem in $V that could occasionally result in the removal and corruption of existing sub-volumes when attempting to allocate a new sub-volume, has been fixed. The problem only

occurs when attempting to allocate large sub-volumes on GSM (Windows) configurations using the gsmlrpc protocol on slow disks and/or slow filing systems (e.g. FAT). The problem only occurs if the sub-volume allocation period exceeds the gsmlrpc timeout period (default 5 seconds). $V has been modified to return a NETWORK ERROR if the timeout period expires;

- $E has been slightly modified to display the GSM Service Pack number correctly on the initial sign-on screen;

- The <BACKSPACE> character (0x08) is now allowed in the Function Key strings specified using <SYSREQ K>. This System Request has also been modified to remove the odd characters that appear when <DELETE> is used to delete characters in the string. In addition, the string is refreshed immediately, as each character is keyed, when <SYSREQ> K is used on GUI-1;

- A problem in $STATUS that resulted in an ERROR O when using the LOC command on GSM (Unix) configurations, has been fixed;

- The "N" option of $DEV (i.e. to run $SDL32) has been extended to allow more than 4 32-bit DLM libraries to be specified to the LNK option;

- The spooler ($SP, $SPS and $SPOOL) displays the time of all files that have been printed prior to the current date (previous versions of the spooler only displayed the date of such files);

- The serial number checking in $AUTH (i.e. the logic that checks that the serial number embedded in the $$AUTH file is the same as the run-time serial number) has been relaxed for Reseller systems. This change allows a fat-client running with a Reseller serial number to sign-on to an end-user site that has $AUTH authorisation enabled. This checking has also been relaxed for internal GSM systems;

- If the GSM Language Code is set to "DUT" both the sign-on prompt and $AUTH password prompt are displayed in Dutch;

- A new, highly-specialised System Request, <SYSREQ V> is now available to dynamically change printer unit assignments and printer format letters;

- A new SVC that allows asynchronous SVC-61 compatible operations, has been implemented. This new SVC, SVC 88, is reserved for future use.

NEW FEATURES IN GSM SERVICE PACK 4

Global System Manager V8.1 Service Pack-4 (GSM SP-4) includes several new features and significant enhancements to GSM SP-3 (and GSM SP-2 & GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-4 can be applied directly to any of "vanilla" GSM V8.1l, GSM SP-1, GSM-SP-2 or GSM SP-3 (i.e. **there is no need to upgrade V8.1l to GSM SP-3 before applying GSM SP-4**).

- A problem in the Speedbase Access Method (SPAM) memory page ($PA050) when used with complex C-ISAM format Speedbase databases has been fixed. The problem, which only affects records with many fields, normally results in a spurious "Unix Filing System Error 101";

- The released version of a new run-time utility, $GSP, that applies Global Product Service Packs is included in this GSM Service Pack. The released version of the Development System utility, $GSPMAKE, that creates Global Product Service Packs is also available for those developers who wish to create their own Service Packs. The application of Global Product Service Packs is recorded in a Installation/Service Pack Log File ($$INSLOG). A new utility, $INSLOG, is available to examine the Install Log File and to automatically email the log records to the Global Service Centre. For bespoke or customised sites, an Exclusion List of non-standard frames/programs will have to be maintained. A new utility, $EXCLUDE, allows the creation and maintenance of the Exclusion List file ($$EXCLUD).

    The documentation for $GSP, $GSPMAKE, $INSLOG and $EXCLUDE is included in various Technical Notes (e.g. IN283 and IN284);

- A problem in $STATUS that can result in a NUM CONV error when listing users, has been fixed;

- The Suspend Partition handling in the 16-bit debug system has been improved to prevent the very high CPU usage that can occur when a partition is waiting for a reply to the following prompt:

    Activate debugger, key D for Diagnostics report, H for Help, <ESC> to exit:

- A 32-bit version of the VIEW$ sub-routines is now available. **Important Note:** The 32-bit version of VIEW$ does **NOT** recognise the PRPGM field in the PR interface block;

- The 32-bit Menu Maintenance utility, $MN32, has been modified to use the 32-bit VIEW$ subroutine (q.v.);

- The 32-bit BA$MID DLM has been modified to fix an ILL OPC problem that can occur in complex 32-bit applications that make use of the UFUN Middleware function;

- CFUDATE ($INST1) has been enhanced to relax the checking when extra users are added to a configuration file. The following message has been down-graded from an error message, that prevents the configuration file from being updated, to a milder warning message:

    NUMBER OF SCREENS HIGHER THAN ALLOWED MAXIMUM

- The GX interface (SVC-86) has been significantly enhanced to prevent the STOP 8628 problem that can occur if the GX transmit buffer is too small. Full details of the compatibility between GSM SP-4 and versions of GSM (Windows) GLOBAL.EXE and GLCONS.EXE are beyond the scope of this document;

- Changes have been made to a number of 32-bit DLM's to (further) improve the performance of the GX interface;

- The handling Speedbase GX baseline messages has been improved;

- A problem in the 32-bit Menu Handler when displaying the "Critical Assignment" dialogue box, has been fixed;

- Some changes to the handling of the 32-bit End-Of-Job (EOJ$) routine have been implemented.

    Important Note: 32-bit applications should only use End-Of-Job (EOJ$) routines to protect against abnormal termination of the program either through an I/O error, program error or the user keying <CTRL W>. EOJ$ routines should **NOT** be used to execute routines on the normal termination of the program. The UNLOAD DIVISION should be used for this purpose. **The EOJ$ routine must be detached by calling EOJ$ with no parameters before the program terminates normally.** This is best done in the UNLOAD

DIVISION. Failure to detach the EOJ$ routine before normal termination of the program will result in a fatal error.

Special care must be taken to detach EOJ$ routines when converting 16-bit programs to 32-bit programs. In some 16-bit programs, depending on a number of conditions, the 16-bit EOJ$ routine may be able to complete successfully on normal termination of the program. This is no longer the case for the 32-bit EOJ$ routine in 32-bit programs;

- The EOJ$ processing in BO$MEN has been improved (see above);

- The 32-bit SSCRN$ sub-routine now functions correctly when used with GX.

NEW FEATURES IN GSM SERVICE PACK 5

Global System Manager V8.1 Service Pack-5 (GSM SP-5) includes several new features and significant enhancements to GSM SP-4 (and GSM SP-3, GSM SP-2 & GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-5 can be applied directly to any of "vanilla" GSM V8.1l, GSM SP-1, GSM-SP-2, GSM SP-3 or GSM SP-4 (i.e. **there is no need to upgrade V8.1l to GSM SP-4 before applying GSM SP-5**).

- $AUTH has been enhanced to support GX "Demonstration" users. When a "Demonstration" user signs in to GSM the Authorisation parameters are taken from the entry in the $$AUTH file with the operator-id "DEMO";

- $BADN has been enhanced to allow a client running GSM (Windows) (i.e. GLOBAL.EXE or GLCONS.EXE) to connect to the Speedbase NLM (SPEEDBAS.NLM) running on a Novell server;

- A problem in $BBS that results in an Overflow if the size of a Windows file displayed by the List command is larger than 99,999,999 bytes (i.e. approx. 96Mb), has been fixed. Furthermore, $BBS now contains additional checking to ensure that only those Windows files created by the $BBS Export function are considered valid by the Import function. The error message "ILLEGAL $BBS FILE" or "INVALID FORMAT $BBS FILE" will be displayed if the input file for the Import function is not a valid $BBS file;

- $CUS now ensures there is sufficient free space (10Mb) on the $$L unit before attempting to copy the $$INSLOG file;

- A new 32-bit debugger, $DBUG, has been released with GSM SP-5. All 32-bit developers should already be aware of the capabilities of $DBUG;

- $FORM32 has been enhanced to allow a reply of <ESC> to terminate the Edit Phase when running under Job Management;

- $GSP has been enhanced to consider GSP's that have been superceded by a newly installed Global cabinet File as "applied". Furthermore, $GSP now recognises GSP files with a

lower-case file-name. For example, za50_000001.gsp is now recognised by $GSP as a valid GSP file (earlier versions of $GSP would fail with the error message "Internal/product version does not match"). Several of the error messages displayed by $GSP have been made more precise to aid trouble-shooting. If a GSP fails to apply, a warning message describing the failure is displayed;

- The Service Pack History option of $INSLOG has been enhanced to display a warning message if no Global Product Service Packs have been applied to the selected product. The correct Operator-id from the $$INSLOG log-file is now written to the Email report file;

- $INSTALL now works correctly if the intermediate work unit used during the installation already exists. The "Installed" Y/N flag is now displayed correctly when paging through the list of available products;

- A problem in $MN32 that caused a variety of problems when modifying the colours of SAA-style menus, has been fixed. A problem that results in a corrupt menu when a 16-bit menu is converted to 32-bit, **without any concomitant changes**, has been fixed. A further problem that can result in the changes to a menu being ignored, has also been fixed;

- A new highly-specialised option to automatically retry FILE IN USE errors has been implemented;

- A number of changes to the initial Debug Overlay to support the 32-bit debugger, $DBUG, have been implemented;

- The error dialogue box displayed when an E-commerce user attempts to run a standard frame now only appears once;

- A new utility, $NSD, is available to remove Source Debug information from programs/frames that have been compiled with the SD option. Note that the $LIB NSD option can be used to remove SD information from programs/frames within libraries;

- A problem with $PASSWD that results in a hang until ^W is keyed on partitons-2, and above, on GX screens, has been fixed. Furthermore, $PASSWD has been enhanced to support GX "Demonstration" users. When a "Demonstration" user signs in to GSM the Authorisation parameters are taken from the entry in the $$PASS file with the operator-id "DEMO";

- A problem in $S that causes an OVERFLOW if E-commerce user(s) are added to a 9999 user system, has been fixed. Note that a 32-bit version of $S ($S32) has been created, but has not been released;

- $SCHEMA has been enhanced to support a new Advanced Desktop command line type;

- A new version (V2.40) of the 32-bit compiler, $SDL32, is now available. All developers should already be aware that this version of the compiler has been released via Global Development System Service Pack-5. The number of DLM's specified during a single compilation has been increased from the previous limit of 127. The problem that caused a variety of spurious warning and error messages when sources that contain comments outside FRAME/ENDFRAME keywords are compiled with the SD option, has been fixed. A problem with the OPTION IGNORE clause on ISAM FD's has been fixed. This version of the compiler generates Symbol Table entries for all non-referenced symbols defined in the compilation (this change is required for $DBUG).

  Important note-1: The Source Debug option "SD" is now enabled by default. All 32-bit frames/programs compiled with the default compiler options will generate object files approximately 2 - 5 times larger than the same object files created by earlier versions of $SDL32. Use the "NSD" option to prevent the generation of Source Debug information in the 32-bit object files.

  Important note-2: The version of $DBUG released with GSM SP-5 will only recognise Source Debug (SD) information generated by the V2.40, or later, version of $SDL32;

- A minor problem with $SPS that resulted in missing text from the spooler status screen, has been fixed;

- The $STARD start-up overlay has been enhanced to recognise a "Demonstration User" and to map an operator-id of "DEMO" to "|abc", where abc are unique for all users. Furthermore, $STARD has also been modified to allow the Terminal Type to be supplied directly from the thin-client;

- A new start-up overlay, $STARX, has been released to perform a variety of 32-bit "house-keeping" functions. In particular, $STARX checks if a more recent GSM Service Pack than the GSM Service Pack that is currently installed, is available. The following warning message is displayed if the current version
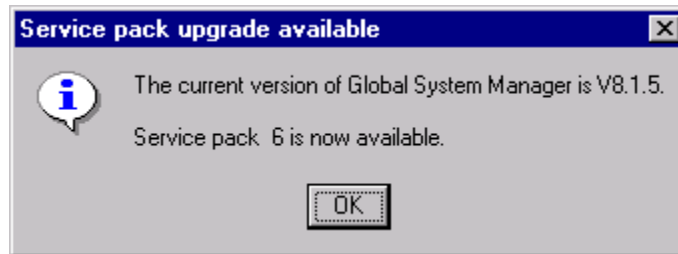
of GSM has been superceded by a new Service Pack (provided a suitable version of GLOBAL.EXE is running):

Important Note: $STARX only operates on a GX screen;

- A number of changes to the Speedbase 32-bit DLM's, within library P.$SDLM0, have been implemented. A new version of BA$DBD has been released which fixes the problem that causes a subsequent ILL OPC in either BA$DBX or BA$EXE. Furthermore, the BA$DSX DLM has been enhanced to operate correctly with 8-bit TAP's (e.g. $.811 and $.814 etc.).

A change to the GX Window Manager, BA$GEX, has been implemented to improve the manner in which it clears fields in ADD and INS modes. In ADD/INS modes, the Window Manager needs to clear (zero or space fill) each acceptable field (i.e. as stored in memory on the data-record etc.), before the field can be displayed or accepted on the screen. Traditionally, the Window Manager has achieved this effect by clearing each field incrementally as it encountered it. The Window Manager maintained a count of the highest field number cleared, and thus cleared each field during the normal field-list processing. This technique was used to avoid having to clear all of the fields before any action took place on the screen. This incremental clearing was necessary on slow processors when the time taken to clear every field introduced a noticeable delay. The Window Manager has been modified to clear all the appropriate fields BEFORE ADD or INS mode commences (i.e. before processing starts for the first field). With this change, it is therefore now permissible to use a default (or V- or B-) routine for a field TO SET UP DEFAULTS or otherwise change the values of ANY OF THE FIELDS declared later in the same window. In ADD/INS modes this was not previously possible, because any default set up by the application would (usually)

be cleared by the Window Manager as, and when, processing moved on. Note that during MNT/EDT modes this technique has always worked, as no fields are cleared during processing. This change makes it much easier to set up a group of default values, or to replace or update a set of values, in one section of code. Currently you have to code individual routines for each field, with code to control when new default values need to be moved. This can now all be done by a single Routines Section routine, and the default/changed value set up is preserved in all modes (ADD/INS/EDT/MNT).

Further changes have been applied to BA$GEX fix the problem in EDT mode windows when the <CLR> key is used; and the problem that results in an ILL OPC in BA$GEX, under some conditions;

The problem that caused a STOP 25061 in BA$GUI has been fixed. In addition, the problem that prevented the <End> key from working with GX has been fixed;

A problem that caused an ILL OPC in BA$EXE on GX screens has been fixed;

A problem with the handling of immediate pointers in BA$MID has been fixed. This problem caused several odd results in 32-bit applications that include nested B$RLK and B$QFUN calls; and mixtures of B$RLK and B$QFUN calls;

The BERR, BWARN and B$HILI calls that were originally implemented for GX are now supported on GUI-1;

The changes to the Speedbase Window Manager (BA$WEX) to preserve the attribute of a field displayed in attribute-8 (A8) in the scrolled area has been extended to support attributes 13 and 14 (A13 and A14);

- The problem in BO$AMS that causes a STOP 8310 when "Open GUI TFAM" is used on some GSM (Unix) configurations, has been fixed;

- A problem in BO$EDI that causes a STOP 25055 in EDTTX when used by $GSP has been fixed;

- The Menu Title is now established correctly for all menus when used with GX. Furthermore, the problem that results in a NO BASE exception when a menu with a mnemonic length of 0 is used on GX, has been fixed;

- The DT-DL$, DT-DS$ and TIME$ routines now call MIDN$ to effect an automatic date/time roll-over at midnight if the "AdvanceTimeAtMidnight" registry option is enabled;

- The LNCONV utility, which is required for some 16-bit $COBOL to 32-bit conversions, has been enhanced to allow a 2-phase source-conversion. The 2-phase conversion is required when the length of the new "short-name" symbols that are unique in the first 6 characters are longer than the original "long-name" symbols;

- The SCHEM$ and SHCMD$ routines have been enhanced to recognise the new Advanced Desktop command line type which allows more control over the action to be followed after the target program has terminated. Furthermore, the SHCMD$ routine has been enhanced to use a different by-pass escape sequence when transmitting the command string to GUI. This change avoids problems when Speedbase attempts to read the screen image within the window that contained the SHCMD$ call;

- A number of new 32-bit sub-routines are now available:

```
    RUN$E$      Run $E, if $E is allowed
    MBOX$       GX-only simple Message Box
    MBOXX$      GX-only advanced Message Box
    CTRLG$      GX-only display button that sends ^G to host when
clicked
    CHK$E$      Test if $E is allowed
    COPYS$      Same as COPY$ but allows shared files to be copied
    RESOL$      Resolve a page-name/symbol-name pair to a 32-bit
    address
    ECOMM$      Return an exception if not an E-commerce user
    GXVER$      GX-only routine to return the version of GX
    FADEL$      GX-only routine to display a File Already Exists
dialogue box
    TXGUX$      GUI-1 formatted text editor (not for general use)
```

- COPYX$ now allows the Windows "open mode" to be specified by a 3rd PIC 9(4) COMP optional parameter. The following modes are allowed:

```
    0    No share. read-only
    1    No share, write-only
    2    No share, read/write
    32   Share for read, read-only
```

```
33    Share for read, write-only
34    Share for read, read/write
48    Share for write, read-only
49    Share for write, write-only
50    Share for write, read/write
64    Full share, read-only
65    Full share, write-only
66    Full share, read/write
```

- The OPDE$ routine has been enhanced to use FADEL$ when used on a GX screen;

- In addition to the standard sub-routines listed above, the following 32-bit sub-routines kindly supplied by Abaca Systems are also available for general-purpose use:

```
SLJ$$         Left justify string
SRJ$$         Right justify string
SCON$$    Concatenate two strings (optional third parameter
          is the number of spaces to leave between them)
SLEN$$    Return Actual Length of String
STRM$$    Terminate string with a given byte
SSUB$$    Return sub-string of a given string
```

NEW FEATURES IN GSM SERVICE PACK 6

1. Introduction and Overview

Global System Manager V8.1 Service Pack-6 (GSM SP-6) includes several new features and many significant enhancements to GSM SP-5 (and GSM SP-4, GSM SP-3, GSM SP-2 & GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-6 can be applied directly to any of "vanilla" GSM V8.1l, GSM SP-1, GSM-SP-2, GSM SP-3, GSM SP-4 or GSM SP-5 (i.e. **there is no need to upgrade V8.1l to GSM SP-5 before applying GSM SP-6**).

VERY IMPORTANT NOTE-1: GSM SP-6 includes the first tranche of changes to the GSM licencing mechanism. These changes are intended to improve and stream-line software (both GSM and applications) installation and upgrade. **FOR GSM (WINDOWS) SP-6, AND LATER, THE GLOBAL $STARH FILE HAS BEEN REPLACED BY THE EXTERNAL global.lic FILE.** The installation of GSM Service Pack-6 (i.e. running the GSMSP6 install program) will automatically export $STARH to global.lic (see below). Once GSM SP-6 has been applied, and the $STARH file exported, it will **NOT** be possible to revert back to an earlier GSM Service Pack unless a back-up copy of SYSRES (and SYSIPL, if necessary) is restored.

VERY IMPORTANT NOTE-2: GSM SP-6 **MUST** be used with GLOBAL.EXE V3.3 (or later) and GX V2.5 (or later). If you attempt to load GSM SP-6 on pre-V3.3 GLOBAL.EXE or use a pre-V2.5 GX.EXE a warning message will be displayed (see below). Note all versions of GLOBAL.EXE with a version of the form "V3.3 Release Candidate xx" are considered **pre** V3.3; and all versions of GX.EXE with a version of the form "V2.5 Release Candidate xx" are considered **pre** V2.5.

2. New features in the GSMSP6 utility

GSM SP-6 is applied using the GSMSP6 utility. Whereas, the GSMSPn utilities for previous GSM Service Packs (e.g. GSMSP5 for GSM SP-5 etc.) were merely "intelligent" job Management initiators, GSMP6 contains several additional "sanity checks" (see below).

Furthermore, GSMSP6 consists of two distinct phases. The first phase applies the new libraries etc. to the SYSRES and SYSIPL

volumes (i.e. generates very much the same Job dialogue as GSMSP5, GSMSP4 etc.). The second phase, which is only invoked on GSM (Windows) configurations, attempts to re-apply the Monitor Customisations from the registry settings to the fresh, un-customised $MONITOR file on SYSIPL or SYSRES. The second phase does not affect the run-time system in any way but has been added to ensure that the GL-IPL.DLV file (i.e. SYSIPL) that is produced as a result of a GSMSP6 upgrade can be used to propagate a GSM (Windows) fat client configuration from one PC to another. See document in238-removingsysiplfromgsmnt.doc for the detailed technical reasons for this change.

If the first phase of GSMSP6 fails for any reason it is quite likely that GSM SP-6 will not load correctly, or will fail in unpredictable ways, so that the SYSRES (and SYSIPL) must be restored from backup.

If the first phase of GSMSP6 succeeds the resultant GSM SP-6 SYSRES (and SYSIPL) can be used to run Global applications. A successful GSMSP6 first phase will be indicated by the appearance of the following prompt:

```
1st phase completed OK, key <CR> to start 2nd phase
```

Any errors that appear after this message should be considered "soft" errors.

If the second phase also succeeds, the GL-IPL.DLV file (if any) can be used to create new GSM (Windows) fat clients. If the second phase fails then you must continue to observe the precautions described in in238-removingsysiplfromgsmnt.doc if a new GSM (Windows) fat client is configured.

The other important changes to GSMSP6 are:

- On GSM (Windows) configurations GSMSP6 converts the $STARH file on SYSRES to the external global.lic licence file. This important issue is described in more detail in the next section;

- GSMSP6 has been improved to avoid over-writing the $$DLM Index File on $$D. Details of any new Utility DLM libraries that are released with a GSM Service Pack will be merged into the existing $$DLM DLM Library Index File;

- GSMSP6 now copies the latest EXIT Code database ($$ERREX) and STOP Code database ($$ERRST) to SYSRES;

- If $CUSUPD is used to upgrade GSM V8.1k to GSM V8.1l the $STARB file will remain in the P.$CMLB0 library (normally a fresh installation of GSM V8.1l will ensure the $STARB file is outside the P.$CMLB0 library). If a GSM Service Pack is subsequently applied to a V8.1l SYSRES that has been upgrade from V8.1k the $STARB file will be inadvertently deleted, which will prevent GSM from loading. To avoid this potential problem GSMSP6 checks for, and will refuse to upgrade, a GSM V8.1l system that does not contain a stand-alone $STARB file (i.e. outside the P.$CMLB0 library) on SYSRES;

- GSMSP6 automatically converts a (strictly invalid) 9999 user system into a system with a valid User Count (of 12 users).

- GSMSP6 has been modified to unconditionally display the job dialogue that applies the service pack;

- GSMSP6 now deletes any copies of $MNDISP that exist as stand-alone files on SYSRES. Note that copies of $MNDISP can reside on SYSRES, outside the P.$CMLB0 library, as a side-effect of a previous special "upgrade" procedure.
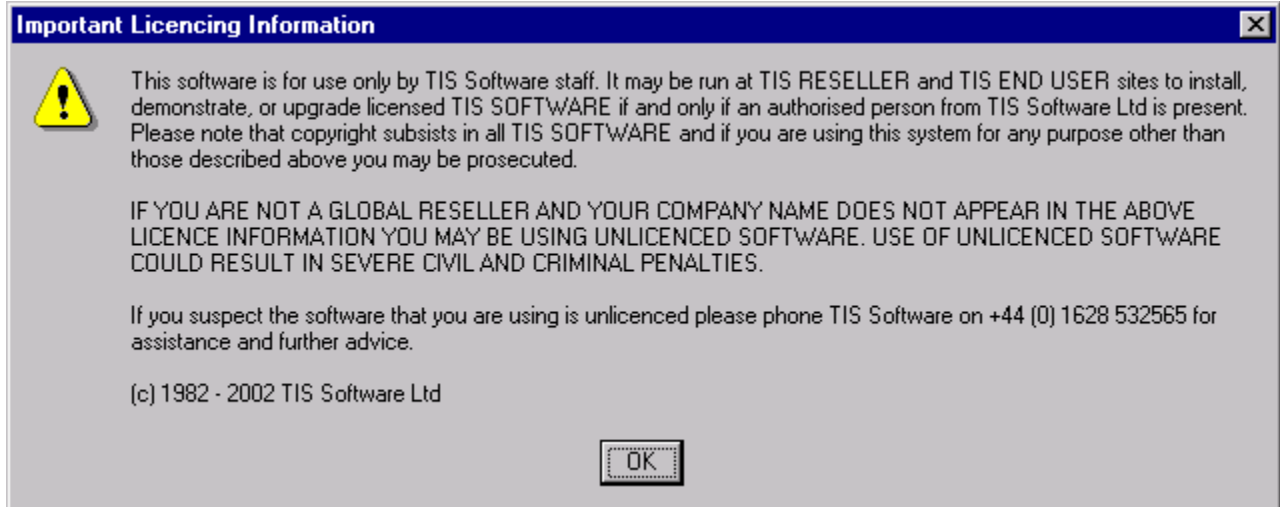
3. Changes to the GSM Licence File

FOR GSM (WINDOWS) SP-6, AND LATER, THE GLOBAL $STARH FILE HAS BEEN REPLACED BY THE EXTERNAL global.lic FILE. The installation of GSM Service Pack-6 (i.e. running the GSMSP6 install program) will automatically export $STARH to global.lic. Once GSM SP-6 has been applied, and the $STARH file exported, it will **NOT** be possible to revert back to an earlier GSM Server Pack unless a back-up copy of SYSRES (and SYSIPL, if necessary) is restored.

The global.lic file is exported to the LicenceFiles directory. Do not rename or delete this file or directory otherwise any attempt to reload GSM will fail with a STOP 5701. **The appearance of a STOP 5701 indicates that global.lic has been deleted or tampered with.**

4. Changes to GSM Start-Up

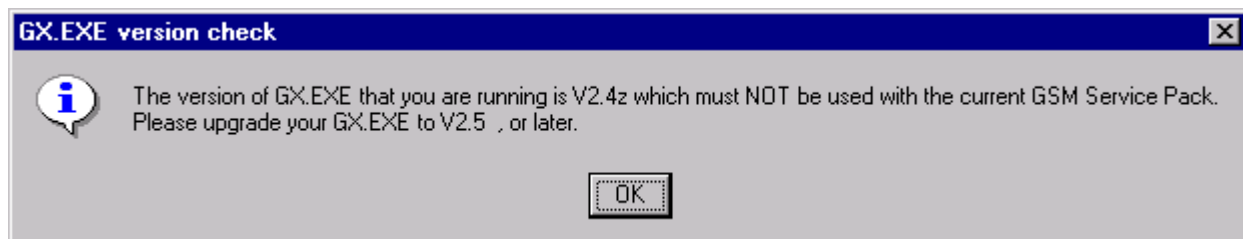- The GSM start-up overlay now displays the Contract Protection Message derived from the global.lic file. For example:

Important Licencing Information

This software is for use only by TIS Software staff. It may be run at TIS RESELLER and TIS END USER sites to install, demonstrate, or upgrade licensed TIS SOFTWARE if and only if an authorised person from TIS Software Ltd is present. Please note that copyright subsists in all TIS SOFTWARE and if you are using this system for any purpose other than those described above you may be prosecuted.

IF YOU ARE NOT A GLOBAL RESELLER AND YOUR COMPANY NAME DOES NOT APPEAR IN THE ABOVE LICENCE INFORMATION YOU MAY BE USING UNLICENCED SOFTWARE. USE OF UNLICENCED SOFTWARE COULD RESULT IN SEVERE CIVIL AND CRIMINAL PENALTIES.

If you suspect the software that you are using is unlicenced please phone TIS Software on +44 (0) 1628 532565 for assistance and further advice.

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[OK]

Obviously, the exact text of the Contract Protection Message will be different for an end-user installation.
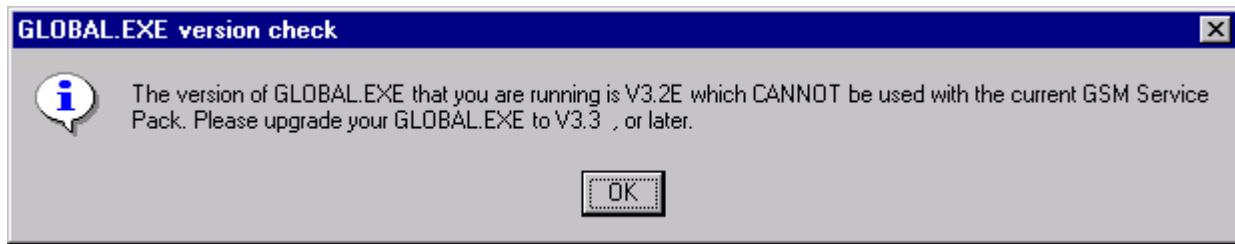
- For GSM (Windows) configurations with a GX thin-client the GSM start up overlay also checks the versions of GLOBAL.EXE and the version of GX.EXE. As described above, these versions must be at least V3.3 and V2.5, respectively. If the version of GX is earlier than V2.4p it will not be possible to run **any** GSM SP-6 functions and the following text message will be displayed:

```
The current GX version is Vx.y
The GX version must be at least V2.4p for use with this GSM Service Pack
Please key <CR> to abort this GX connection
```
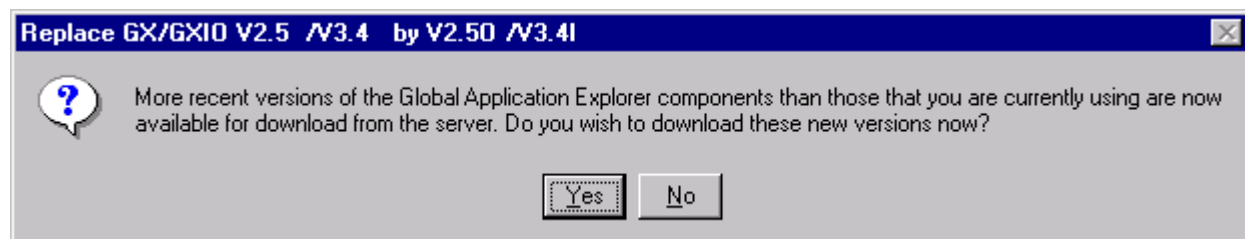
If the GX.EXE version is earlier than V2.5 the following error dialogue box will be displayed:
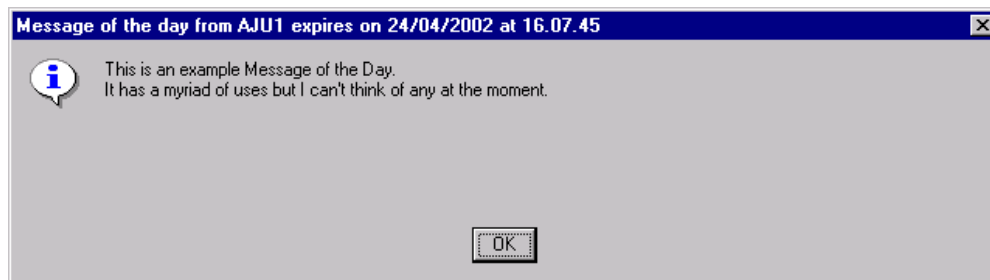
GX.EXE version check

The version of GX.EXE that you are running is V2.4z which must NOT be used with the current GSM Service Pack. Please upgrade your GX.EXE to V2.5 , or later.

[OK]

If the GLOBAL.EXE version is earlier than V3.3 the following error dialogue box will be displayed:

GLOBAL.EXE version check

The version of GLOBAL.EXE that you are running is V3.2E which CANNOT be used with the current GSM Service Pack. Please upgrade your GLOBAL.EXE to V3.3 , or later.

OK

- If the GSM (Windows) server has been suitably configured, the GSM start-up overlay **may** provide an option to automatically update the running version of GX.EXE from a newer version on an "updates" directory on the server. This topic is covered in complete detail in document updatinggxautomatically.doc. The following typical dialogue box is displayed:

Replace GX/GXIO V2.5 /V3.4 by V2.50 /V3.4I

More recent versions of the Global Application Explorer components than those that you are currently using are now available for download from the server. Do you wish to download these new versions now?

Yes   No

If a Message Of The Day has been established (by a supervisor using the $MOTD utility) the following message dialogue box will appear:

Message of the day from AJU1 expires on 24/04/2002 at 16.07.45

This is an example Message of the Day.
It has a myriad of uses but I can't think of any at the moment.

OK

- The GSM start-up overlay has been extended to display the following initiation error if a PM Perpetual Licence is in use on a 32-bit configuration:

      $57 INITIATION WARNING 501 – 32-BIT SPEEDBASE WILL BE DISABLED

- The GSM start-up logic has been modified to validate the User Count. In particular a User Count of 9999 is no longer valid. If such a configuration is encountered the following warning message will be displayed and the User Count will be reduced to 12:

```
$57 INITIATION WARNING 500 - PROCRUSTEAN USER COUNT REDUCTION APPLIED
```

- The GSM start-up overlay has been improved to prevent the GX Terminal Type (i.e. 911) from being offered as the default on non-GX screens;

- The GSM start-up overlay has been improved to display more verbose, and meaningful, error message if a GX login fails because of a problem with the TAP;

- The GSM start-up processing has been enhanced to include the $EXB 32-bit start-up overlay. This overlay is currently used to prevent the last user logging off from a system that has been quiesced;

- The GSM start-up processing has been enhanced to display the supervisor who quiseced the system. The message:

  ```
  $57 SYSTEM IS QUIESCED - PLEASE DO NOT ATTEMPT TO SIGN ON
  ```

  has been replaced by:

  ```
  $57 SYSTEM IS QUIESCED BY xxxx - PLEASE DO NOT ATTEMPT TO SIGN ON
  ```

- The GSM start-up overlay has been enhanced to allow the default GX screen depth of 24 lines to be increased to 40 lines if the WindowZeroDepth or DeeperWindowZero options are enabled in the GX.INI file (see gx25inifile.doc). This modification is required in order to use $SDX (q.v.);

- The GSM start-up overlay has been enhanced to load the Volume Link Map from the Local $$VOL file (on $DP), if it exists, in preference to the Central $$VOL file (on $M);

- The GSM start-up overlay has been extended to support "text-only" users. This option is reserved for future use.

5. Changes to GSM Run Time

- The SYSREQ-A system request has been modified to operate on Global Windows Workstation (GUI-1);

- $AUTH has been modified to automatically close the thin-client remote connection if the Sign-On retry count is exceeded. Furthermore, the retry count is reset on every new connection;

- The $AUTHCNV utility now correctly calculates the space requirements of the $$PASS file based on the number of records in the original $$AUTH file;

- A problem in $BADN that can produce a STOP 25303 under some circumstances, has been fixed;

- $CUS now displays a warning message if an attempt is made to customise a Global Configuration file if the option available in GSM (Windows) to by-pass the configuration file (i.e. UseConfigurationFile = Off) has been enabled;

- The problem in $CUS that prevents the installation of $$INSLOG on an existing unit (with a spurious INSUFFICIENT SPACE error message), has been fixed;

- Problems in DBMAIN and DBRBLD that both result in an OVERFLOW if the number of free records in a DMAM database exceeds 999,999, have been fixed;

- The 32-bit debugger, $DBUG, is distributed with GSM run-time;

- $DBUG has been enhanced to allow the symbolic debugging of programs and frames that are held within extended, $LIBX, program libraries;

- The $DLMMAIN utility has been slightly improved. The first prompt displayed by this utility now emphasises the request for a "DLM library index file". $$DLMMAIN now displays a message if the DLM Index file is corrupt (i.e. rather than simply over-writing the file with an empty Index File);

- The special data files used by $DLMMAIN (i.e. $$DLM, $$DLM0 and $$DLM1) are now considered system files (type SY) rather than a "normal" RS-files. This change is applied automatically by the SP-6 version of $DLMMAIN and no special action is required;

- A GX front-end to $E is now available. The replacement, $STARY, which only operates on GX, chains to $E if the operator chooses to end the current session;

- $F now displays a "!" character instead of the normal "*" to indicate a serialised library containing Global 3000 web frames;

- The $F Copy and Move families of commands (e.g. COP, MOV, CCF, MCF, SAV etc.) display the percentage of the file copied or moved;

- The $JOBMAN component, which was formerly part of the Global Development System, is now part of the GSM run-time system. This is to allow 32-bit JOB$ Initiators to operate correctly without the requirement to install a Global Development System;

- A problem in $LIBX that results in an EXIT 1201 when using the NSD option, has been fixed;

- A problem in $MENUCUS that can result in a PGM CHK 16 when the <F4> function is used, has been fixed;

- A long-standing problem in the Menu Handler, $MH, when used on Global Windows Workstation (GUI-1) has been identified. The problem is that under some conditions, the GUI-1 screen appears completely blank when returning from a Speedbase application to the Menu Handler. The only solution has been to add a new option in both the Menu Handler, $MH, and Menu Maintenance, MN. The (obscure) new option is "Do not force Pop menus for GUI", with a default setting of Y. Set this value to "N" to force Pop menus for GUI-1 to solve the blank-screen problem;

- A problem in $MN32 that could result in a corrupt menu file if a 16-bit menu file is converted to 32-bit without making any additional changes, has been fixed.

- $MN32 has been enhanced to operate correctly on monochrome serial screens;

- $MN32 has been modified to reject a type "E" menu-line (for 32-bit menu files type "E" menu lines are equivalent to type "F" lines). In addition, the default value of the Database Flag is 0 for type "F" menu lines;

- The problem in $MN32 that produced a STOP 116 ERROR "l" with symbol FD2, has been fixed;

- A problem in the 32-bit Menu Handler, $MENU32, that results in some valid menu lines appearing as protected when control returns back to a menu line from an application, has been fixed;

- A problem in the 32-bit Menu Handler, $MENU32, that results in the spurious message "Invalid Return Stack", has been fixed;

- A problem in the 32-bit menu handler, $MENU32, that results in the spurious selection of the last menu line on GX screens (if the menu does not include a Default Line), has been fixed;

- $MNDISP has been enhanced to export the various Monitor customisations to external customisation files on GSM (Unix). This change allows GSM SP-6, and later, to be installed on GSM (Unix) configurations;

- $MNDISP has been enhanced to read the Monitor Customisation settings from the GSM (Windows) registry and apply the same customisations to the $MONITOR file on SYSRES or SYSIPL. This change is required for the second phase of the GSMSP6 upgrade process (q.v.);

- A new utility, $MOTD, is now available to create and maintain the "Message Of The Day" file. This file is accessed when a user signs on to GSM and the Message Of The Day is displayed if it is appropriate to do so;

- The special data file used by $MOTD (i.e. $$MOTD) is now considered a system file (type SY) rather than a "normal" RS-files. This change is applied automatically by the SP-6 version of $MOTD and no action is required;

- The $PASSWD Operator List now includes a flag which indicates that the password must be changed for an operator (this indicates that the user has not changed his/her initial password; or the password has expired and must be replaced);

- $PASSWD has been modified to automatically close the thin-client remote connection if the Sign-On retry count is exceeded. Furthermore, the retry count is reset on every new connection;

- A problem in $PASSWD that caused an EXIT 12402 from $PASSW21 when attempting to change the operator-specific settings in a $$PASS file has been fixed. The problem only occurs if the $$PASS file has been converted from a $$AUTH file;

- A cosmetic problem in $PASSWD when displaying the initial menu entries for partitions P1 to P9 has been fixed;

- $PASSWD has been enhanced to fix the problem that can cause a "lock out" of all other operators while an operator is changing his/her password. Furthermore, another problem in $PASSWD that can result in multiple $$PASS password files, has been fixed;

- $PASSWD has been improved to display a unique error code when a serial number mismatch, or any other type of password file integrity error, is detected;

- $PASSWD has been enhanced to allow the operator to force a password change on GX;

- $PASSWD and $AUTH have been extended to provide the operator-id and password to the GX reconnection logic in the NETWORK controller;

- The various cryptic error messages by $PASSWD are now suffixed by the text (ERROR CODE N) where N is a unique status code, that should be provided to the Hotline, when reporting problems in $PASSWD;

- The various special data files used by $PASSWD (i.e. $$PASS, $$OPASS and $$PLOG) are now considered system files (type SY) rather than "normal" RS-files. This change is applied automatically by the SP-6 version of $PASSWD and no special action is required;

- $S has been enhanced to provide an indication that the arbitrary 32-bit memory limitation has been removed (by removing the MaxMemory32Bit setting from the registry);

- A problem in $SEARCH that can result in a NUM CONV AT 1A60 under some circumstances, has been fixed;

- The $SPOOL spooler has been improved to support the "DF" option. This option allows a SUSPEND 1 to be executed after printing a specified number of lines to prevent the spooler from hogging CPU resources under some conditions;

- The special data file used by $STATUS etc. (i.e. $$CDES) is now considered a system file (type SY) rather than a "normal" RS-files. This change is applied automatically by the SP-6 version of $STATUS etc. and no special action is required;

- The $STATUS List functions now report if an operator is waiting for a GX operation to complete. The new messages are:

  ```
  WAITING FOR GX ACCEPT
  WAITING FOR GX DISPLAY
  ```

- A problem in the $STATUS LOC instruction that results in the display of **all** the outstanding locks on a server even when a single unit has been specified, has been fixed. A further problem in the $STATUS LOC command that results in an EXIT WITH 5 when the reply to the "Next Page?" prompt is N, has also been fixed;

- $STATUS saves the operator-id who issued the QUI command so that the supervisor responsible for quiescing the system can be displayed when the quiesce is in progress;

- A problem in the $STATUS CLR command that can cause $STATUS to hang if the total number of users has been reduced, has been fixed. A less serious problem in the $STATUS RES command that resulted in confusing status messages, has also been fixed;

- $VOL now correctly identifies 32-bit programs in a program library as "32-B PRG";

- A problem in $VOLMAIN that results in incorrect sub-volume linkages (e.g. G98 spuriously linked to h99 rather than the intended G99) has been fixed;

- A problem in the $VOLMAIN Check for Duplicate option that produced a STOP 12202, has been fixed;

- The Linked Volume Files technique and $VOLMAN have been extended to allow both a local ($DP) and a central ($M) $$VOL file. $VOLMAIN now prompts for the location (i.e. Central or Local) of the $$VOL file;

- A number of new TAP's are available for use with GSMWIN32.EXE:

  ```
  $.7110 (and T>7110)      Same as $.711 with "bright colours"
  $.7120 (and T>7120)      Same as $.712 with "bright colours"
  ```

- A new TAP, $.211, for the DataLinx RF terminal is now available;

- The P.$MNMAP DLM library has been renamed to P.$GSDLM;

- The P.$CMLB3 command library, that was reserved for future use, is now used for (32-bit) Global System Manager commands;

- The 32-bit program loader has been enhanced to improve the error messages that appear when a 32-bit DLM cannot be loaded. The error mesage "DLM xxxxxxxx REQUIRED ON uuu:" is very misleading because it is a non-retryable fatal error and the Unit Number displayed is not always accurate (because a "missing" DLM could be anywhere in the DLM library search path). This error message has been replaced by the more accurate message:

  ```
  DLM xxxxxxxx NOT FOUND IN SEARCH PATH
  ```

- A number of System error messages have been improved to appear within an Error Dialogue Box on GX and the Global Windows Workstation (GUI-1).

6. Enhancements to the Debug Overlay Page

The Debug Overlay Page (i.e. the special system code that is executed whenever a Program Check occurs) has been significantly enhanced to provide options to log all "debug events". The Debug Log Files can be automatically emailed to a designated Support Email Address, or inspected immediately.

The naming convention for the Debug Log File (DLF) is:

    GlobalApp_XXXX_NNN.log

where XXXX is the Operator-id and NNN is an incrementing number, up to a maximum defined in the registry (see below). The files are created in the **Debug** directory, under the Global **Log** directory. The incrementing number wraps round to 001 when the limit has been reached.

The Windows creation date/time allows the files to be collated in chronological order. The natural file name will allow the files to be collated in operator order.

These options are only available on GSM (Windows) and are controlled by a number of registry settings all within the new "Debug" section of the registry (i.e. section ..\Global\Client\Debug\):

LogFileMaxCount   This option limits the number of DLF files that are kept **per operator-id.**

LogFilePurgePeriodDays A new feature in GLOBAL.EXE allows regular "house-keeping" events to take place on a scheduled basis. This setting controls the automatic purging of stale copies of the DLF's

EmailLogFile   This option enables the automatic email feature from the initial diagnostics window

EmailToAddress   This option specifies the target email address

ViewLogFile   This option enables the option to view the DLF from the initial diagnostics window

A number of further options are available to developers (see document global33.doc for further details).

In addition to the changes to create, and optionally email or view DLF's, the following changes have also been implemented for GSM SP-6:

- The 32-bit debug overlay now displays details of the last Speedbase record operation (e.g. FETCH NEXT etc.);

- The Speedbase Database Manager has been modified to establish the following debug information:

    The database-id and the record-id
    The number of the requested index
    The extended database operation code

7. New 32-bit GX-only Utilities

The release of GSM SP-6 includes another tranche of 32-bit GX-only utilities.

- A number of 32-bit, GX-only alternatives to some of the GSM utilities are now available. The naming convention for the 32-

bit, GX-only equivalent of the 16-bit GSM utility $xxxxxxxx is $32xxxxx. By default, a 16-bit utility will automatically chain to the 32-bit equivalent **unless** any one of the following conditions are met:

- The screen is not a GX session;

- The Force16BitUtilities registry option is enabled;

- The 16-bit utility is running under Job Management;

- The type-ahead buffer is not empty;

- The reply to the 16-bit program name is terminated by <CTRL C> instead of the usual <CR>;

- The 32-bit utility has been released for evaluation only (see below).

- A 32-bit, GX-only version of $A ($32A) is now available. The dialogue for $32A is considerably different from that of $A (**and is subject to further change**). The unit descriptions of discrete devices and the long volume descriptions of sub-volumes are displayed;

- A 32-bit, GX-only version of the $DLMMAIN utility ($32DLMM) is now available. **This utility has been released for evaluation only**;

- A 32-bit, GX-only version of $S ($32S) is now available. **This utility has been released for evaluation only**;

- A problem that results in $32S failing with a STOP 1002 on non-GX screens has been fixed;

- A 32-bit, GX-only version of $SFMAIN ($32SFMA) is now available. **This utility has been released for evaluation only**;

- A beta-test 32-bit equivalent of $STATUS ($32STAT) is included in GSM SP-6. **This utility has been released for evaluation only**;

- A 32-bit, GX-only version of $SPOOL ($32SPOO) is now available. **This utility has been released for evaluation only**;

- A 32-bit, GX-only version of $U ($32U) is now available;

8. Installing 32-bit Applications ($LICENCE and $INSTALL)

Important Note: $LICENCE and $INSTALL are both fully described in document installing32bitapps.doc.

- $INSTALL has been improved to fix a problem that can result in the omission of some of the initial dialogue under some circumstances (i.e. the dialogue is skipped resulting in "select units" screen with random characters in the unit fields);

- $INSTALL now handles the situation when there is insufficient space for an intermediate unit;

- $INSTALL, and the Global 3000 Product Installation jobs, have been improved to automatically create the required Installation Log Records in the $$INSLOG file (see installing32bitapps.doc for further details);

- A 32-bit version of $LICENCE (i.e. $32LICE) is included in GSM SP-6. **This utility is reserved for future use with an improved Global 3000 V5.0 installation procedure.**

9. Updating 32-bit Applications ($GSP and $INSLOG)

Important Note: $INSLOG and $GSP are both fully described in document updating32bitapps.doc.

- The $INSLOG utility includes a new option that must be used to identify that an installed version of Global 3000 V5.0 has been upgraded from a new GPS CD;

- $INSLOG has been improved to check the Product Version field does not contain any invalid characters (e.g. "." is not allowed so that a version of 5.0 must be specified as "50");

- $INSLOG now includes a button that allows a check to be made to determine if any GSP's need to be applied to the installed software;

- The dialogue of $INSLOG has been improved (see document updating32bitapps.doc for further details);

- The dialogue of $INSLOG has been improved to use the GXMSG$ routine to display the various progress and status messages;

- The $GSP utility that applies Global 3000 V5.0 Product Service Packs has been significantly enhanced (see document updating32bitapps.doc for further details);

- $GSP refuses to apply an unapproved Service Pack. Note that unapproved Service Packs should never be released externally. In addition, a number of cosmetic problems in $GSP have been fixed;

- The $GSP utility now recognises Global Service Pack "groups";

- $GSP has been enhanced to prevent the spurious PLEASE KEY PASSWORD messages that can appear when installing some Global Product Service Packs;

- $GSP has been enhanced to include an option to automatically apply all the unapplied Global Product Service Packs;

- $GSP now calculates the output program sizes correctly;

- The $GSP "Apply All" option ignores all unreleased Global Product Service Packs;

- The warning message displayed for an unreleased GSP now includes the Service Pack number and the short description;

- The error message displayed by $GSP when an attempt is made to run this GX-only utility on a non-GX screen now appears on all types of non-GX screens;

- $GSP now copes with the special type of "information only" GSP that contains no actual files.

10. Updating 16-bit Applications ($UNPACK)

- The $UNPACK utility has been released to allow 16-bit applications to be simply upgraded from Global Cabinet Files without the need to apply vast numbers of Autozaps. See document updating16bitapps.doc for further details;

- The pre-release version of the $UNPACK utility has been enhanced to allow "short" GCF file names to be used on GSM (Windows) configurations;

- The various error messages displayed by the pre-release version of $UNPACK have been rationalised to include a unique error code.

11. Global Development System Enhancements (Sub Routines etc.)

The most significant changes to the Global Development System released with GSM SP-6 are fully documented in <u>gdssp6relnote.doc</u>. This section merely describes the various sub-routines that have been released, or in some cases re-released, with GSM SP-6.

The documentation for these sub-routines is currently "under construction". However, draft documentation for individual routines can be obtained by emailing alan@tissoft.co.uk.

- A new GX-only sub-routine, AOTOP$, is now available to indicate that the next Speedbase Window is to inherit the "Always On Top" property;

- The pre-release version of AOTOP$ routine has been extended to recognise an optional window-id;

- A new sub-routine, AUTHA$, is now available for highly-specialised run-time authorisation validation;

- A number of new Speedbase middleware routines are available:

      B$TT2   As B$TTLS but moves the title up one line
      B$BACK   Equivalent to BACK in P.MIDDLE
      B$BCKF   Equivalent to BACKOFF in P.MIDDLE
      B$BCKO   Equivalent to BACKON in P.MIDDLE

- A new 16-bit sub-routine, BOOST$, is available to change the current Authorisation Level;

- A problem in the BREXEC sub-routine (in DLM BR$EXE) that could result in a GLOBAL.EXE crash, has been fixed;

- The two File Conversion utilities provided with Global Integrator, CFFGSM & CFTGSM, are now available as 32-bit sub-routines, CFFGS$ and CFTGS$, in a new DLM BO$FI3;

- A new sub-routine, CGDES$, is now available to return the Computer Description from the $$CDES file on $M

- A highly specialised new sub-routine, CMPIP$, is now available to compare the results of a GETIP$ and HOSIP$ routines. This routine can be used to test if the thin-client is running on the same PC as the GLOBAL.EXE host;

- The CTRLG$ sub-routine has been enhanced to use the improved GX V2.5 interface;

- A problem in DLMM$ that treated a type-SY DLM Library Index File as invalid, has been fixed;

- The EDTTX$ routine has been enhanced to extend the size of the text block from 4Kb to 8000 bytes;

- The EMAIL$ sub-routine has been enhanced to use the improved GX V2.5 interface;

- The EMAIL$ interface has been extended to support a zero-parameter call that can be used to determine if the MAPI interface is available. Note that this new option is only supported on GX;

- The FADEL$ sub-routine has been enhanced to use the improved GX interface;

- The FMESS$ sub-routine has been enhanced to prevent a STOP CODE when used on GSM (Unix) configurations;

- A group of new sub-routines (GRAPH$, GRINI$, GRXAX$, GRZAX$ and GRPLT$) that allow data to be displayed in a graphical format on GX are now available;

- The pre-release version of GRAPH$ sub-routine has been extended to allow the position and size of the graph to be specified;

- A new sub-routine, GXBMP$, is now available to set the bitmap displayed on GX;

- A new sub-routine, GXBRW$, is now available to display a file/directory browse dialogue on GX;

- A new, GX-only sub-routine, GXDOM$, to allow an application to disable Overstrike mode on a Speedbase Accept field, is now available;

- A new GX-only sub-routine, GXFSH$, is now available to flush the GX type-ahead buffer;

- The GXHLP$ sub-routine has been enhanced to use the improved GX V2.5 interface;

- A new GX-only sub-routine, GXMSG$, is now available to display a message box that does not require any operator intervention. This type of message box is suitable for transient status messages;

- A new GX-only sub-routine, GXNBT$, is now available to switch off all the GX buttons for the current window;

- A new GX-only routine, GXSUS$, is available to inform GX that the application is about to enter a "Suspend Mode" and all characters must be returned directly to the host, to kill the suspend, instead of being stored in the GX type-ahead buffer until the application issues another Accept;

- A new, GX-only routine, GXTBT$, is now available to dynamically update the GX toolbar,

- The GXVER$ sub-routine has been enhanced to use the improved GX V2.5 interface;

- A problem in the GXVER$ sub-routine has been corrected. The date of GX.EXE is now returned correctly;

- A new highly-specialised, GX-only sub-routine, GXVEX$, is now available to return the versions of either GX.EXE or GXIO.EXE;

- A highly-specialised, GX-only sub-routine, GXWHA$, is now available to return the handle of the current GX Speedbase window;

- A new sub-routine, HOSIP$, that returns the IP address of the host computer (i.e. computer that is running GLOBAL.EXE) is now available. Compare the new HOSIP$ with the existing GETIP$ which returns the IP address of the computer that is running the Global Windows Workstation or GX thin-client;

- A new sub-routine, IMAGE$, is now available to display bitmap images on GX;

- A problem in the 32-bit ISUSE$ sub-routine which can result in an ILL OPC exception from 32-bit ISAM, has been fixed;

- The LIBR$ sub-routine has been enhanced to display information in an Application Dialogue Box on GX, rather than within GX Window-Zero;

- The MBOX$ and MBOXX$ sub-routines have been enhanced to use the improved GX V2.5 interface;

- The MENU$ sub-routine has been enhanced to operate under GX;

- The MH$ sub-routine has been enhanced to use the improved GX interface;

- The MH$ routine (and $MENU32) have been improved to fix a problem with type-ahead dialogue that starts with the "$" character;

- A new sub-routine, MIVER$, is now available to return the GSM version and current Service Pack level, information. This routine is available in both 16-bit and 32-bit versions;

- The NELIS$ sub-routine has been modified to emulate NLIST$ when running on GSM (DOS) and GSM (Novell) configurations;

- The NEWEV$ sub-routine has been enhanced to work correctly with the GX V2.5 interface and the GSM SP-6 run-time environment;

- The NEWEV$ sub-routine has been modified to prevent spurious displays under some conditions on GX;

- A new sub-routine, NUSEL$, is now available to return the number of users who are currently logged in to GSM on the **local client**;

- A new sub-routine, NUSER$, is now available to return the **total** number of users who are currently logged in to GSM;

- The OPDE$ sub-routine has been enhanced to function correctly with GX;

- A new routine, PERM$, is available to determine if a unit assignment is a permanent unit assignment;

- The QLOAD$ sub-routine has been enhanced to remove spurious GX Window-Zero displays;

- The RECDS$ sub-routine has been enhanced to use the improved GX V2.5 interface;

- A problem in the RECDS$ routine that fails to set GCFLNO to 0 for non-terminating records, has been fixed;

- The 32-bit SDATA$ routine has been enhanced to initialise the data area allocated to LOW-VALUES;

- The SHCMD$ sub-routine has been enhanced to use the improved GX V2.5 interface;

- The SHCMD$ routine has been modified to return an exception if the command executed by GSMWIN32.EXE failed. This option is only available with GSMWIN32.EXE V3.3n, or later. If used with earlier version of GSMWIN32.EXE then no information regarding the success, or otherwise, of the Windows command will be returned;

- A problem in SHCMD$ that causes an apparent hang when the Advanced Desktop option is enabled, has been fixed. The problem only occurs when the Advanced Desktop option has been enabled but the application does not request to wait for the completion of the Windows application;

- A new GX-only routine, SOUND$, is now available to play a Windows system sound, or .wav file

- The pre-release version of SOUND$ sub-routine has been enhanced to allow the name of a .WAV file to be passed directly to GX;

- The STCON$ sub-routine has been extended to treat LOW-VALUES (as well as HIGH-VALUES) as an uninitialised pointer;

- Two new String Move sub-routines are now available;

  STRM$ Move fixed length string to zero-terminated string
  STRML$ Move zero-terminated string and return length of
string

- A new sub-routine, SUSP$, is available to suspend the user for periods of less than 1 second;

- The VIEW$ sub-routine has been modified to operate correctly with Global Windows Workstation (GUI-1);

- The S.SYS32 copy-library has been extended to amend some existing copy-books and to include some new copy-books:

  MI   Menu Handler (some fields now correctly initialised to LOW-VALUES)
  V$ Control block returned by B$FFUL
  GR   GRAPH$ interface (new)
  ZA   GRAPH$ interface (new)

  Important Note: The contents of this copy-library are still subject to further changes.

- The Error Messages displayed by the various "Open" Access Methods (e.g. HOST FILING SYSTEM ERROR xxxx - RETRY?) now appear in a Dialogue Box when running on GSMWIN32;

- The GUI-TFAM Access Method has been enhanced to operate with GX;

- A new Line-based Text Access Method (LTAM) is now available for GSM (Windows) configurations;

- A new "Read with Limited Rewrite" variation of the DMAM Access Method is now available;

- Several of the Access Methods in the BO$AMS DLM have been enhanced to display error and warning messages in an Application Dialogue Box on GX, rather than in GX Window-Zero;

- The Error Messages displayed by the various "Open" Access Methods when running on GSM (Windows) now include a verbose message, when available, in addition to the Error Code;

- A problem that causes a spurious STOP 25020 in BA$GXM has been fixed. The problem occurs when an application involves a number of frames that chain to each other in a circular fashion and the same set of windows are being redisplayed;

- The code required to support a partially implemented foreign language translation option, that has been since withdrawn, has been removed from the 32-bit BA$PPF DLM.

12. Global Development System Enhancements (Utilities)

- A problem in $SDE that results in an EXIT 8 @ 67D8 when an invalid Window-id is selected, has been fixed;

- $SDE has been extended to recognise field attributes "U01" to "U19"; and "U50" to "U99" in Window Edit mode;

- A problem in $SDE that causes "U0n" options to be replaced by the invalid "U n" option has been fixed. For example "U04" is replaced by "U 4" which is considered invalid by $SDL32;

- A new text-based Speedbase development editor, $SDX, is now available that allows the <F9> Q window edit function to create and maintain larger windows for use with GX. Windows with up to 125 columns and 38 lines can now be created. With the exception of the window editing functions, $SDX is functionally identical to $SDE;

- A long-standing problem in $SDE (and $SDX) that results in an EXIT WITH 8 if the window-id includes a lower-case letter, has been fixed;

- A new version of $SDL32 (internal version V2.52) is included as part of the GDS SP-6. Please refer to document gdssp6relnote.doc for further details;

- A problem in $SDL32 that results in a spurious ILL OPCODE error when processing large numbers of Dynamic Load Modules, has been fixed;

- The PTRANS utility has been enhanced to recognise 32-bit program files;

- A new development utility, $BUILD, is available to create development job streams from "Build Information" within the source file that is being compiled. Further information on $BUILD is available on request;

- A problem in pre-release versions of $BUILD that caused the "VER" option to be added twice to the compilation dialogue, has been fixed;

- A new Stream Editor, $SED, is now available to make bulk, multiple "Search-and-Replace" changes to a number of source files. Although $SED was implemented to allow "bulk editing" during 16-bit to 32-bit conversion projects, it may be of general use;

- The pre-release version of the highly-specialised $SED utility has been enhanced to allow the fixed "delta file" to be supplemented by text strings supplied by the operator;

- The maximum line length handled by $MACRO has been extended from 72 to 127 characters. This allows $MACRO to be used with source files developed using the $SDE editor;

- A problem in $FORM32 that resulted in a hang when creating a new map DLM under some conditions, has been fixed.

NEW FEATURES IN GSM SERVICE PACK 7

1. Introduction and Overview

Global System Manager V8.1 Service Pack-7 (GSM SP-7) includes several new features and many significant enhancements to GSM SP-6 (and GSM SP-5 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-7 can be applied directly to any of "vanilla" GSM V8.1l, GSM SP-1, GSM-SP-2, GSM SP-3, GSM SP-4, GSM SP-5 or GSM SP-6 (i.e. **there is no need to upgrade V8.1l to GSM SP-6 before applying GSM SP-7**).

VERY IMPORTANT NOTE-1: GSM SP-7 includes the same changes to the GSM licencing mechanism that were introduced for GSM SP-6. If you are upgrading to GSM SP-7 from GSM SP-5, or earlier, you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-2: GSM SP-7 is a super-set of GSM SP-6. GSM SP-6 includes several important changes, in addition to the changes to the Licencing Mechanism alluded to, above. If you are upgrading to GSM SP-7 from GSM SP-5, or earlier, you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-3: GSM SP-7 **MUST** be used with GLOBAL.EXE V3.4 (or later) and GX V2.6 (or later). If you attempt to load GSM SP-7 on pre-V3.4 GLOBAL.EXE or use a pre-V2.6 GX.EXE a warning message will be displayed (see gsmsp6.doc).

2. New features in the GSMSP7 utility

In addition to the new features introduced in GSMSP6 (see section 2 of gsmsp6.doc):

• The GSM SP-7 upgrade now contains the following DMAM components: P.DM, DBMAIN, DBRBLD and DBREORG;

3. Changes to the GSM Licence File

FOR GSM (WINDOWS) SP-6, AND LATER, THE GLOBAL $STARH FILE HAS BEEN REPLACED BY THE EXTERNAL global.lic FILE. See section 3 of gsmsp6.doc for further details.

4. Changes to GSM Start-Up

- The GSM start-up code checks the version of GX.EXE is V2.6, or later;

- The GSM start-up code checks the version of GLOBAL.EXE is V3.4, or later;

- The GSM start-up code has been extended to support 192-character wide Window-Zero screens on GX thin-client connections;

- The GSM start-up code has been modified to suppress the warning message "Using automatic operator-id" which just results in unnecessary "clutter" when a GX thin-client is connecting to a GSM (Unix) server;

- The GSM start-up code has been improved to treat all GX alphanumeric GX version numbers as "upper-case". This change fixes a problem that prevented the GX automatic download from working under all conditions;

- The GSM start-up code has also been improved to prevent the spurious message "No Licence Information Available" from appearing on the Global Windows Workstation under some conditions;

- The telephone number that appears in the initial Contract Protection Message has been corrected from the Accounts Dept. in Bourne End to the Emergency Hotline Number;

- The GSM start-up processing now suppresses the display of the Contract Protection Message on the fat-client screen (i.e. on the "GUI" controller) if GLOBAL.EXE is running as a true Windows service (when available) or is running as a pseudo-service (identified by the /S GLOBAL.EXE command line option);

- A reply of "LIS" to the TERMINAL CODE: prompt now lists the available Terminal Codes in 24-line pages;

5. Major Changes to GSM Run Time

- A **major** change to the program loader has been implemented to make it considerably easier to maintain tailored (i.e. bespoke)

programs, frames and reports. Although this description refers to Global 3000 program libraries the technique is completely generic and applies any application suite. Although the technique applies to 16-bit and 32-bit frames, 16-bit and 32-bit programs, reports and jobs, for the sake of readability, the simple term "frame" will be used throughout the rest of this section. With GSM SP-6, and earlier, a tailored frame must be inserted into the same program library that contains the equivalent generic frame, replacing the generic frame. Note that other techniques such as leaving tailored frames on the program unit or placing tailored frames into other program libraries may lead to inconsistent results. A program library, tailored in this way, will be overwritten by the standard library of the same name when the generic product is updated, thus losing the tailored frame(s). Normally, this problem of "lost tailoring" is simply avoided by re-applying the tailored modules into the updated program libraries. However, such a manual procedure is both tedious and error-prone.

For GSM SP-7, and later, the well-known feature of program loader that automatically chains from P.xxxxx0 to P.xxxxx1 etc. through to P.xxxxx9 (e.g. P.CL3000, P.CL3001, P.CL3002) has been extended by inserting library P.xxxxx$ (e.g. P.CL300$) **at the start** of the library chain. The optional "$" program library (e.g. P.CL300$) will never be used by Global 3000 and is reserved for use for tailored frames, programs and reports. **Any such tailored program libraries, and thus the tailored frames within them, are guaranteed to be impervious to re-installations of Global 3000.**

Any installations that currently include tailored frames, programs or reports in standard Global 3000 program libraries should be upgraded as follows:

- Upgrade GSM to Service Pack 7;

- For every tailored product (e.g. CL V5.0) use $LIB to create an empty "$" tailored program library (e.g. P.CL300$) on the Program Unit (e.g. G3PROG);

- Copy all the tailored frames etc. from the various generic program libraries (e.g. P.CL3000, P.CL3001 etc.) into the tailored program library (e.g. P.CL300$);

There is no need to change the name of the program library (e.g. P.CL3000) in either menu lines or in any application

code. The GSM SP-7 program loader will automatically attempt to load a frame from a tailored program library (e.g. P.CL300$) before searching the chain of generic libraries (e.g. P.CL3000, P.CL3001 etc.);

VERY IMPORTANT NOTE: There was a serious error in Issue 1 and 2 of these notes: The trailing character in the program library name was incorrectly documented as "+" instead of the (correct) "$" character.

- A new, GX-only utility, $BALOCK, is available to manipulate the Pervasive/Microsoft SQL Lock Dump file produced by the V2.02, or later, Speedbase Gateway. To use this utility, which only operates on GX thin-clients, a number of registry settings must be set. See Technical Note IN258 (when available) for further details;.

- The 32-bit RSAM (Print File) Access Method has been extended to support the GX Remote Printing option. See Technical Note IN259 (when available) for further details;

6. Minor Changes to GSM Run Time

- A problem in the 32-bit Printer Handler that can cause corruption of the first print line under some conditions when a Printer Control File is used, has been fixed;

- $BASTS has been modified to remove some obsolete code that was only required for pre-release versions of the Speedbase Gateway and NLM;

- $BAST has been modified to remove some obsolete code that was only required for pre-release versions of the Speedbase Gateway and NLM;

- A 32-bit, GX-only version of the $INSTALL utility, $32INST, is now available. This utility is reserved for use with future releases of Global-3000 V5.0;

- A number of problems with the GSM V8.1l $$UPDATE file have been fixed. This file controls the $CUS "Upgrade GSM revision" function that is one of the options available to upgrade from GSM V8.1k to V8.1l. The following problems have been fixed: The TAP library is correctly renamed from (the pre V8.1l) P.$TAP to P.$TAPSO, as required by the GSM V8.1l run-time components. The

P.$BAPGS library on SYSRES is now correctly updated. This prevents a problem that causes a PARAM STACK @F208 with Global 3000 V4.5 and EXIT WITH 1in $BACUS. Although the $$UPDATE file is not required for GSM SP-7 (and is no longer required for any Service Pack update) the GSM "vanilla" V8.1l Production Masters have been upgraded to include the new version of this file;

- Various file utilities (e.g. $F, $DIR etc.) have been upgraded to recognise a new file-type "D2" for Speedbase DBX Data Dictionaries;

- A problem in $BN32 that can produce a STOP 25303 under some circumstances, has been fixed;

- The list of EXIT and STOP codes (in files $$ERREX and $$ERRST) have been revised to include all the new codes generated by the 32-bit utilities and DLM's;

- A problem in $PASSWD that can corrupt the $$PASS Password file when Operator-id's are deleted, has been fixed;

- $LICENCE has been enhanced to recognise those Global 3000 Licence Files that have been formed by merging two, or more, Global 3000 Licence Files supplied by Global Business Systems. See Technical Note IN251 for further information;

- The $STATUS "CAN" Cancel operation is now forbidden on thin-client connections. This operation is meaningless for dynamic thin-client connections;

- A problem with $PASSWD that limits the size of the $$PASS file to 40480 bytes, and thus artificially limits the number of operators in the $$PASS file, has been fixed;

- A problem in the interface to GX that prevents the mouse from working on windows that do not allow Add mode during Enquiry mode, has been fixed;

- A problem in the spooler that results in an overflow when very large files are printed, has been fixed;

- The initial debug report now includes the value of the $$CRES and $$RES System Variables. This debug report also includes the last GX operation and the result from that operation;

- The Speedbase Database Manager has been enhanced to display the extended Lock Message, which includes the Operator-id and Partition Number, when the combination of a Pervasive/Microsoft SQL database and the GX thin-client is used;

- A new customisation option ($CUS, Customise Configuration, Additional Customisations, Inactive message on $E), is available to suppress the "PARTITION INACTIVE" message that normally appears when $E is run in partitions P2 to P9;

- A new utility, $ISOSET, is now available to display the full range of 8-bit characters. This utility is only required when experimenting with ISO-compatible and non-ISO-compatible fonts as described in Technical Note IN252;

- The $BBS utility has been enhanced to allow password protected menu files (e.g. $$MENUS) to be exported to Windows;

- The $BN32 utility has been enhanced to support a Dump Database (to a "Flat File") option. This option can be used to convert large Pervasive SQL (Btrieve) databases to either Microsoft SQL or C-ISAM;

- A new utility, $QADFTP, that uses the GXCOP$, GXBAR$ and GXBRU$ sub-routines (q.v.) is now available to copy files between the server running GLOBAL.EXE and the thin-client PC running GX;

- The $BN32 Delete function has been enhanced to display an extra confirmation window;

- The Initial Debug Overlay has been extended to display details of the last command sent to GX;

- A problem in the GSM (Unix) $BADB Dump Database option that can result in a glintd crash, has been fixed;

- The message displayed by $INSTALL when the serial number of the Global Cabinet File does not match the current run-time serial number has been improved to be less cryptic;

- $LICENCE has been improved to automatically over-write an existing (stale) Global Cabinet File;

- $PASSWD has been modified to suppress the automatic display of the Password Log File when the designated $PASSWD Supervisor signs on to GSM;

- The $MOTD utility has been enhanced to allow the contents of an existing Message Of The Day file ($$MOTD), if present, to be used as the default when the Message Text is updated;

- The problem that resulted in spurious commas appearing on GX when running 32-bit applications, has been fixed;

- A problem in $BAST that causes a spurious Interface Error 90, under some conditions, has been fixed;

- A problem in $BASTS that causes a spurious Interface Error 90, under some conditions, has been fixed;

- $AUTH has been improved to allow the ^B terminator to signal a request for a change of password on GX;

- $PASSWD has been improved to treat a Timeout value as a "No Timeout" condition on GX;

- The Menu Handler has been improved to avoid the SUSPEND on a background partition if there are characters in the type-ahead buffer. This change makes the behaviour of the Menu Handler when there are characters in the type-ahead buffer consistent with the behaviour when Job Management or Record/Playback are running;

- A problem that causes a spurious ILL OPC in BA$GEX has been fixed. The problem only occurs, under a rare set of circumstances, when the mouse is used to select the last field of a window;

- A problem in the $LIB NSD option that results in an EXIT 1201 AT #2836 has been fixed;

- $AUTH and $PASSWD have been improved: If the reply to the PASSWORD: prompt is <ESC> $AUTH and $PASSWD do not display the INVALID PASSWORD error message;

- The Menu Handler now resets the password field so that the last password string keyed is not used as the default for the next password;

- The $UNPACK utility has been improved to fix the problem that causes a spurious ERROR 10 under some conditions on GSM (DOS) and GSM (Novell) configurations;

- An obscure problem in $V that could occasionally result in the removal and corruption of existing sub-volumes when attempting to allocate a new sub-volume, has been fixed. The problem only occurs when attempting to allocate large sub-volumes on GSM (Windows) configurations using the gsmlrpc protocol on slow disks and/or slow filing systems (e.g. FAT). The problem only occurs if the sub-volume allocation period exceeds the gsmlrpc timeout period (default 5 seconds). $V has been modified to return a NETWORK ERROR if the timeout period expires;

- The dialogue for $BS32 has been improved. The additional pop-up that allows SQL database name and size to specified now appears correctly on GX thin-clients;

- The dialogue for $BADGN when accessing a Pervasive or Microsoft SQL database has been **slightly** improved. The problem that results in a spurious Interface Error 90 has been fixed;

- A new TAP, $.168, for the Wyse-50 that excludes the Wide-on/Wide-Off sequences is available for the Wyse-50;

7. Global Development System Enhancements (Sub-routines etc.)

- The ALLOC$ sub-routine has been enhanced to scratch the specified volume if it already exists;

- A new, specialised sub-routine, STUB$, is available to add a stub to program library;

- A new, specialised sub-routine, PERMA$, is available to set a permanent unit assignment;

- A new "Open GX Access Method" which allows direct read/write access to files on the PC running the GX thin-client, is now available. This Access Method has been enhanced to allow a Windows filename longer than 99 characters to be used;

- A number of global symbols that exclude the reserved "$" character have been removed from the BO$AUT, BO$CLR and BO$EXT DLM's;

- The EDTTX$ sub-routine has been improved to provide a text-block limit to GX;

- A new sub-routine, GXDEL$, is now available to provide "DENAT$-like" functionality for files held on the PC running the GX thin-client;

- A new sub-routine, GXDEX$, is now available to provide "DENAX$-like" functionality for files held on the PC running the GX thin-client;

- The JOB32$ routine has been extended to allow the current Job Dialogue Table to be cleared (by calling JOB32$ with zero parameters);

- A new, GX-only subroutine, GXCOP$, is now available to copy files between the server running GLOBAL.EXE and the thin-client PC running GX;

- Two new, GX-only subroutines, GXBAR$ and GXBRU$, are now available to display a Progress Bar dialogue box on GX;

- Two new, GX-only subroutines, GXSHL$ and GXSHX$, are now available to perform an action (normally Execute) on a specified Windows file on the PC running the GX thin-client;

- A new, highly-specialised, GX-only subroutine, GXARC$, is now available to display an Archive File dialogue box on the PC running the GX thin-client;

- The LOG$ routine (both 16-bit and 32-bit versions) has been extended to optionally write the log message to an external Windows file (see Technical Note IN254 (when available) for further details);

- A problem with the 32-bit version of LOG$ that results in the User Number always appearing as 000, has been fixed;

- A new highly-specialised, GX-only sub-routine, GXSSA$, is now available to set the Extended Attribute of the next field displayed in the current window;

- A new highly-specialised, GX-only sub-routine, GXSEA$, is now available to set the Extended Attribute of any field displayed in any window that is currently displayed;

- A problem in the 32-bit RELX$ sub-routine, which appears to corrupt the Unit Assignment table, has been fixed;

- A new internal System Variable, $$GXFN, is available to record, for the purposes of the Debug Log file, the last command sent to GX;

- A new System Variable, $DEBUG, is now available to provide a system-wide debug boolean flag (0 =off; 1 =on);

- The S.SYS32 copy-library has been improved to include more copy-books for 32-bit sub-routines. This copy-library is undergoing further improvements;

- The BO$FI3 DLM is distributed with GSM SP-7;

- A new, GX-only sub-routine, GXEQQ$, is now available to emulate, on a GX thin-client, the behaviour of the language ERROR "" statement on a non-GX thin-client;

- A 16-bit version of the DENAX$ sub-routine is now available;

- A 32-bit version of the highly-specialised, CACND$, sub-routine is now available;

- A new sub-routine, GXSBT$, to change the text of a GX button is now available;

- The GXBMP$ sub-routine now returns a unique STOP code if an attempt is made to use this routine on a non GX terminal;

- A unique STOP code (STOP 25098) will occur if the TYP$ routine is used erroneously to insert a strictly invalid Speedbase terminator into the type-ahead buffer;

- A new System Variable, $SDRA, is available to obtain the line (record) count associated with a GX Scroll Bar exception ($FUNC = 31);

- A new highly-specialised sub-routine, GXSCR$, is now available to scratch a Windows directory on the PC that is running the GX thin-client;

8. Global Development System Enhancements (Utilities)

- The 32-bit compiler, $SDL32, has been enhanced to increase the maximum number of DLM's accessed per compilation to 250;

- The 32-bit compiler, $SDL32, has been enhanced to increase the maximum number of ORGANISATION statements per compilation from 16 to 32;

- A problem in $SDX that causes an Overflow when an attempt is made to automatically create a new scrolled window, under some conditions, has been fixed;

- Both $SDE and $SDX have been modified to change the default of the CREATE NEW file prompt from "Y" to "N". This change prevents the creation of spurious, empty files if an incorrect file name is keyed to the initial $SDE/$SDX prompt;

NEW FEATURES IN GSM SERVICE PACK 8

1. Introduction and Overview

Global System Manager V8.1 Service Pack-8 (GSM SP-8) includes several new features and many significant enhancements to GSM SP-7 (and GSM SP-6 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-8 can be applied directly to any of "vanilla" GSM V8.1l, GSM SP-1, GSM SP-2, GSM SP-3, GSM SP-4, GSM SP-5, GSM SP-6 or GSM SP-7 (i.e. **there is no need to upgrade V8.1l to GSM SP-7 before applying GSM SP-8**).

VERY IMPORTANT NOTE-1: GSM SP-8 includes the same changes to the GSM licencing mechanism that were introduced for GSM SP-6. If you are upgrading to GSM SP-8 from GSM SP-5, or earlier, you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-2: GSM SP-8 is a super-set of GSM SP-6. GSM SP-6 includes several important changes, in addition to the changes to the Licencing Mechanism alluded to, above. If you are upgrading to GSM SP-8 from GSM SP-5, or earlier, you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-3: GSM SP-8 **MUST** be used with GLOBAL.EXE V3.4A (or later) and GX V2.6 (or later). If you attempt to load GSM SP-8 on pre-V3.4 GLOBAL.EXE or use a pre-V2.6 GX.EXE a warning message will be displayed (see gsmsp6.doc).

2. New features in the GSMSP8 utility

In addition to the new features introduced in GSMSP6 (see section 2 of gsmsp6.doc) and GSMSP7 (see section 2 of gsmsp7.doc) the GSMSP8 utility includes the following features:

- The names of the Windows/Unix files that comprise GSM Service Pack 8 are slightly different from previous GSM service packs. The "$" character has been replaced by "_" to make it easier to install GSM SP-8 on GSM (Unix) configurations. The GSMSP8 utility has been coded to assume this change so there is no need to rename any of the .gsm files that comprise the service pack. Note to GSM (Unix) users: A simple Bourne shell script is available to

rename the mixed case .gsm files, that normally result when ftp'ing the GSM Service Pack to a Unix host, to upper case, as expected by the GSMSP8 program;

● GSMSP8 installs a template $$RUNMEN file (see below) to the master SYSRES ($M) unless an existing $$RUNMEN file is already present on $M.

3. Changes to the GSM Licence File

FOR GSM (WINDOWS) SP-6, AND LATER, THE GLOBAL $STARH FILE HAS BEEN REPLACED BY THE EXTERNAL global.lic FILE. See section 3 of gsmsp6.doc for further details.

4. Changes to GSM Start-Up

● A problem in the TAP loader ($DETAP) that results in a hang at GX sign-on when the 192-wide screen option has been enabled, has been fixed. The problem only occurs if 192-wide mode has been enabled in the GXHOSTS.INI file but not enabled in the registry or configuration file;

● The GX start-up overlay ($STARX) has been enhanced to send details of the initial "Run" menu to GX. The $STARX overlay has also been enhanced to improve the download of a new version of GX: The GX download option now occurs before the GX version checking to prevent the spurious "GX version check warning" that may appear even though the correct, new version of GX is available on the server. Furthermore, after the GX download has completed, the operator is no longer given the option of reloading GX (it now occurs automatically). However, a registry setting (ImmediateGXUpdate) is available to alter this default behaviour. See Technical Note IN257 for further details.

5. Major Changes to GSM Run Time

● A new utility, $RUNMAIN, is now available to configure the GX "Run" menu option. The 32-bit GX "Run" option is equivalent to the 16-bit System Request menu. See Technical Note IN267 for further details;

● A new utility, $RUNERR, is provided to display an errors generated from the GX "Run" menu. Note that $RUNERR cannot be run directly but is used by the 32-bit GX "Run" option within GSM;

- The following 32-bit, GX-only commands are now available to provide the same functionality as the equivalent 16-bit System Requests:

  $32OV$I   equivalent to 16-bit <SYSREQ> I
  $32OV$V   equivalent to 16-bit <SYSREQ> V
  $32OV$Y   equivalent to 16-bit <SYSREQ> Y
  $32OV$?   equivalent to 16-bit <SYSREQ> ?
  $32OV$>   equivalent to 16-bit <SYSREQ> >

  Equivalent functionality is provide for the following 16-bit System Requests:

  <SYSREQ> A   mapped to standard Windows charmap.exe
  <SYSREQ> C   mapped to standard Windows calc.exe
  <SYSREQ> D   mapped to month.exe, released with GX V2.8
  <SYSREQ> P   replaced by in-built Print Window in GX V2.7,
  and later

- $BADGN has been enhanced to display a warning message if an attempt is made to create a Global format Speedbase database with a physical-id (e.g. 210) instead of a logical-id (e.g. CLD). Although creating a Global format database with physical-id's is not illegal it should discouraged as it leads to many obscure problems when copying such databases between units.

6. Minor Changes to GSM Run Time

- A minor problem in $ERLIST that can cause some "internal only" EXIT and STOP codes from being displayed on external systems, has been fixed;

- A problem in $MENUCUS that can result in a NO BASE exception at #F318 when <ESC> is keyed to the Master Password, has been fixed;

- The main Speedbase run-time DLM (BA$EXE) has been enhanced to display error messages in a dialogue box on GX;

- A problem in the main Speedbase run-time DLM (BA$EXE) that causes a spurious STOP 25006 under some conditions, has been fixed;

- By default, the default Authorization level for new operators added to the $$AUTH file is "S". This "default default" can now be modified to any level between "A" and "Z";

- The $BALOCK utility has been slightly revised to improve the various error and warning messages;

- A problem (OVERFLOW AT #87BC in BO$MEN) that occurs when $MN32 is used on a 192-wide GX screen, has been fixed;

- A new $BADC utility, which is functionally equivalent to the existing $BADB utility, is now available to create and maintain "Extended C-ISAM" databases. **IMPORTANT NOTE**: Do not use $BADC to convert a "normal" C-ISAM database to an Extended C-ISAM database unless explicitly advised to do so. Global 3000 does **NOT** include support for Extended C-ISAM databases;

- A new B$OPC routine, which is functionally equivalent to the existing B$OPN "Open Database" function, is now available to open "Extended C-ISAM" databases;

- The $BAST and $32BAST utilities have been enhanced to operate with "Extended C-ISAM" databases;

- A new version of the Speedbase Read-Only Access Method (SPAM) is now available to access "Extended C-ISAM" databases;

- A problem in $DGEMAIL that results in an OVERFLOW at #0820, has been fixed;

- The Order Number checking in $32LICE has been removed thus making it possible to merge two, or more, Global Product Licence Files, into a single licence file;

- A problem in the 32-bit Initial Debug Overlay (OV*) that resulted in the omission of the Link Stack from 32-bit debug reports, has been fixed;

- The View Debug Report option now displays the name of the report file on the window caption;

- A new, specialised utility, $NETSTAT, is now available (upon request) to display details of all the NETWORK controller channels on a GSM (Windows) configuration;

- $AUTH has been modified to remove the somewhat over zealous checking of the serial number in the $$AUTH file. This checking, which was introduced to improve GSM security, only serves to make it more difficult to troubleshoot a problem SYSRES. If the improved security of a serialised Authorisation File is required then $PASSWD must be used instead of $AUTH;

- All references to the confusing M5TITL symbol in the BO$MEN (Menu Handler) DLM have been replaced by $$MENU;

- The $AUTH utility has been enhanced to support "Trusted GX Users" on GSM (Unix) configurations. Trusted GX users are not prompted for a GSM password (as it is assumed that they have already supplied a valid Unix password);

- The Speedbase Printing DLM (BA$PPF) has been improved to avoid displaying the error message "Printer File Cannot be Opened – Enter New Printer Unit" both on the baseline and in a message box;

- A new, 32-bit Authorisation utility, $AUTH32, has been released **FOR EVALUATION ONLY.** Do not attempt to use $AUTH32 unless you are participating in the evaluation program;

- $BN32 has been enhanced to accept a command block parameter (the PA-block). For example:

      EXEC "$BN32" USING PA

  A field in the PA-block instructs $BN32 to generate the same dialogue, when EXEC'ed from an initiator program, that $BN32 would generate when running under Job Management;

- $BN32 has been modified to suppress the warning message that is displayed when a $SEQ field is encountered that does not appear in any index;

7. Global Development System Enhancements (Sub-routines etc.)

- The following new 32-bit routines are available to allow sanitized access to an FD:

      FDOFL$ Return Open Flag from FD, as PIC 9(2) COMP
      FDCRE$ Return File Creation Date, as PIC 9(6) COMP

    FDOCT$ Return File Open Count, as a PIC 9(2) COMP

- The following new 32-bit routine is available to emulate the 16-bit CMND$ routine:

    CMNDX$ 32-bit equivalent of CMND$

  Note that the CMNDX$ routine should be used in preference to the "EXEC" statement when converting the 16-bit CMND$ routine to 32-bit. CMNDX$, unlike EXEC, emulates the special handling in 16-bit CMND$ that prevent locks, asserted on a file in the root program, from being cleared when the "locked file" is opened and subsequently closed in the overlay program;

- A new 32-bit routine, GXTBW$, is now available to define a window as a "Tab Button Window". This routine allows the TAB key to move between the various buttons defined on the window;

- A new 32-bit routine, GXDCF$, is now available to disable the automatic clearing of a field in a currently displayed window. This routine would typically be used to prevent a field with a TXT option that is displayed in a particular attribute from being cleared in ENQ mode;

- A new 32-bit routine, GXRST$, is now available to reset and/or override the current GX customisation of a window;

- A new 32-bit routine, GXMWS$, is now available to minimise the size of the next window to be displayed by removing extraneous blank areas;

- A new 32-bit routine, GXPHD$, is now available to preserve the status of the GX Header text, which would normally change once a frame has been unloaded;

- A new 32-bit routine, STRMX$, is now available to move a zero-terminated string to a fixed-length string, removing the LOW-VALUE terminator;

- A new 32-bit routine, SYSRQ$, is now available to run 32-bit System Requests on GX;

- A problem in the GXDEL$ routine, that causes a spurious STOP 7913, has been fixed;

- A new, highly-specialised 32-bit routine, SERVE$, is now available to test for the presence of a remote Global Server;

- Two new DLM's are available to provide external blocks of HIGH-VALUES (BI$HIG) and LOW-VALUES (BI$LOW). These DLM's, and the brief instructions for their use, are not released in the P.$SDLMO library but are available upon request;

- A new variation of the 16-bit RSAM Access Method that EXEC's the 32-bit $PRI32 overlay is now available. Use of this version of RSAM allows 16-bit programs to print to the (essentially 32-bit) GXPrint controller;

- A new 32-bit routine, INIT$, is available to provide an "intelligent" control block initialisation function. The INIT$ routine initialises the control block by setting all bytes to a supplied Initial Value, then setting all computational fields to binary zeroes; and all pointer files (PIC PTR) to HIGH-VALUES (provided the fields are present in the Symbol Table). Note that any sections of the control block that do not correspond to fields in the local Symbol Table will be merely set to the Initial Value (see the INIT$ documentation for more details of this subtle issue);

- A new 32-bit utility, SCRX$, is now available to delete all the files on a unit which are not currently IN USE (i.e. in circumstances that would cause the traditional SCR$ to fail);

- The 32-bit GXBRW$ routine has been enhanced to return an exception if the Cancel button is selected by the operator;

- The size of the maximum length text supported by the HEADING verb has been increased from 32 characters to 124;

- A new 32-bit System Value, $ZFUNC, is now available to hold the original "low level" function number return from GX. This System Variable should be used with care as the exact values returned by GX are subject to change;

- A new 32-bit System Variable, $$098, is now available to hold the character passed to TYP$ that was responsible for a STOP 25098.

8. Global Development System Enhancements (Utilities)

- The $SDE editor has been enhanced to include all the functionality of the $SDX editor. This version of $SDE also include support for DBX Data Dictionaries. The $SDX editor will be withdrawn in a future Global Development System Service Pack;

- The entries for some Speedbase codes in the STOP and EXIT code databases have been clarified by removing references to the STOP/EXIT codes generated by the now obsolete SCF routines;

- The S.SYS32 copy-library is now distributed with the 32-bit Global Development System product. A "sanitized" version of the FD copy-book is now included in S.SYS32. The E$ copy-book (for the EMAIL$ routine) is also included in S.SYS32;

- The 16-bit compiler, $SDL, ignores the "CON" option so that, under some (special) circumstances, sources can be shared between 16-bit and 32-bit compilers.

NEW FEATURES IN GSM SERVICE PACK 9

1. Introduction and Overview

Global System Manager V8.1 Service Pack-9 (GSM SP-9) includes several new features and many significant enhancements to GSM SP-8 (and GSM SP-7 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-9 can be applied directly to any of "vanilla" GSM V8.1l, GSM SP-1, GSM SP-2, GSM SP-3, GSM SP-4, GSM SP-5, GSM SP-6, GSM SP-7 or GSM SP-8 (i.e. **there is no need to upgrade V8.1l to GSM SP-8 before applying GSM SP-9**).

VERY IMPORTANT NOTE-1: For GSM (Windows) configurations GSM SP-9 includes the same changes to the GSM licencing mechanism that were introduced for GSM SP-6. If you are upgrading a GSM (Windows) configuration to GSM SP-9 from GSM SP-5, or earlier, you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-2: For GSM (Unix) configurations GSM SP-9 includes the same changes to the GSM licencing mechanism that were introduced in GSM (Windows) for GSM SP-6. If you are upgrading a GSM (Unix) configuration to GSM SP-9 you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-3: For GSM (Windows) configurations GSM SP-9 **MUST** be used with GLOBAL.EXE V3.6 (or later) and GX V2.9 (or later). If you attempt to load GSM SP-9 on pre-V3.6 GLOBAL.EXE or use a pre-V2.9 GX.EXE a warning message will be displayed (see gsmsp6.doc).

VERY IMPORTANT NOTE-4: For GSM (Unix) configurations GSM SP-9 **MUST** be used with the V3.306 (or later) BACNAT components and GX V2.9 (or later). If you attempt to load GSM SP-9 with a pre-V3.306 BACNAT or use a pre-V2.9 GX.EXE a warning message will be displayed (see gsmsp6.doc).

2. New features in the GSMSP9 utility

In addition to the new features introduced in GSMSP6 (see section 2 of gsmsp6.doc), GSMSP7 (see section 2 of gsmsp7.doc) and GSMSP8

(see section 2 of gsmsp8.doc), the GSMSP9 utility includes the following features:

- The GSMSP9 utility now copies P.MN to SYSRES during the Service Pack upgrade. In addition, GSMSP9 exports the $STARH file to global.lic when running on a GSM (Unix) configuration. Thus, no files on SYSRES are serialised - all the serialisation information is held within the external global.lic file. Furthermore, GSMSP9 no longer differentiates between GSM non-PM and GSM-PM configurations making it possible to rapidly upgrade a GSM non-PM configuration to GSM-PR;

- The GSMSP9 upgrade utility automatically runs the $AUTHEX command to create an empty $$AUTHEX file on $M. This empty file will only be used if $AUTHEX is customised, using $CUS, as the Authorisation Program;

3. Changes to the GSM Licence File

FOR GSM (WINDOWS) SP-6, AND LATER, THE GLOBAL $STARH FILE HAS BEEN REPLACED BY THE EXTERNAL global.lic FILE. See section 3 of gsmsp6.doc for further details.

FOR GSM (UNIX) SP-9, AND LATER, THE GLOBAL $STARH FILE HAS BEEN REPLACED BY THE EXTERNAL global.lic FILE.

4. Changes to GSM Installation and Start-Up

- The GSM start-up processing that attempts to lock the User File ($$USER on $M) now retries for 60 seconds (with a 1 second pause between each retry), rather than 20 seconds. This change is required for some large GSM (Unix) configurations. The 60 second retry loop can be aborted by keying ^G. If ^G is used to abort a GSM user file access the following Initiation Error is displayed:

      $57 INITIATION WARNING 376 - LOCK RETRY ABORTED

  If the User File access is abandoned the following warning message is displayed:

      $57 INITIATION ERROR 377 - UNABLE TO LOCK USER FILE

- A number of obsolete TAP's (e.g. for the NyCE-base terminals) are no longer installed;

- An example Printer Control File, $$PGXGDI, for the GXPrint GDI printer interface is distributed with GSM SP-9. This PCF is not installed but is available on the HAA volume;

- $STARX has been enhanced to include a 10 second timeout when displaying the Contract Protection Message;

- The GSM start-up processing has been enhanced to automatically download files to the GX thin-client. This feature is fully described in Technical Note IN271 (when available);

- The default GX Run Menu has been enhanced to include a <SYSREQ> Z replacement which simply clears the GX status line;

- The GSM start-up processing has been enhanced to include extra logic for GSM-PR systems. As a result of these changes a new Initiation Warning Message (error code 502) may appear on incorrectly configured systems;

- The default size of SYSRES for new installations has been increased to 30Mb;

- GSM installation has been modified to allow the simple transition from a GSM non-PM system to a GSM-PM system;

- The GSM start-up processing has been enhanced to prevent spurious warning messages if the 32-bit option has been disabled on GSM non-PM systems;

- The TAP load overlay in the GSM start-up processing has been improved to open the $RStttt Terminal Customisation file in shared mode to prevent the spurious FILE IN USE messages that may appear when large GSM (Unix) systems are started;

- The GSM start-up processing now checks the BACNAT version for both GSM (Unix) and GSM (Windows). Furthermore, a warning message is displayed in text-mode, on non-GX screens;

- The GSM start-up processing has been corrected to fix a long-standing minor problem that was introduced with the release of GSM V8.1j. The Swap-File, $$SWAPxx, is now closed on all virtual memory operating systems (i.e. on GSM (Windows) and GSM (Unix)). Since the release of GSM V8.1j the Swap File remained IN USE during the entire GSM session;

- The GSM start-up processing for GSM SP-9 now checks that the version of GLOBAL.EXE is V2.9, or later;

- The GSM start-up processing has been improved to prevent the transient display of a text screen that can sometimes appear when a GX session is started;

5. Major Changes to GSM Run Time

- Some "early bird" pre-release versions of GSM SP-9 were released without a MN component. This could lead to a mixture of the "vanilla" GSM V8.1l MN program with the GSM SP-9 P.MN library. Such a combination will result in a STOP 21699 when an attempt is made to amend a menu. This error was corrected before the first end-user release of GSM SP-9;

- GSM SP-9 contains the first version of the policing code required for GSM PR systems. Please refer to Technical Note IN285 for further details. **Important Note:** The changes to GSM required for Global 3000 Payroll have effectively forbidden a number of obscure file organisations from being used on GSM or GSM-PR systems. The following table describes the restrictions:

File organisation	Allowed on GSM?	Allowed on GSM-PR?	Allowed on GSM-PM?
95	No	No	Yes
96	No	No	Yes
97	No	No	Yes
98	Yes	Yes	Yes
99	No	No	Yes
All others	Yes	Yes	Yes

Any attempt to access files with organisations 95, 96, 97 or 99 on a GSM or GSM-PR system will result in the message:

SORRY - YOU ARE ATTEMPTING TO USE A SERVICE WHICH IS NOT PART OF YOUR GLOBAL SYSTEM MANAGER

Developers are advised to check programs for statements such as:

```
ORGANISATION OR$85 TYPE 99 ...
ORGANISATION OR$85 TYPE 97 ...
ORGANISATION OR$85 TYPE 96 ...
ORGANISATION OR$85 TYPE 95 ...
```

and:
```
MOVE 99 TO ULORG
etc.
```

- All GSM (Unix) configurations have been modified to use the global.lic as the GSM licence file instead of the $STARH file. The situation is as follows:

GSM Service Pack	GSM (Windows) licence file	GSM (Unix) licence file
Vanilla GSM V8.1l	$STARH	$STARH
GSM SP-1 to GSM SP-5	$STARH	$STARH
GSM SP-6	global.lic	$STARH
GSM SP-7	global.lic	$STARH
GSM SP-8	global.lic	$STARH
GSM SP-9, and later	global.lic	global.lic

- $S now displays "GSM PR" for GSM-PR (Payroll systems). Please refer to Technical Note IN285 for further details;

- The following utilities have been upgraded to operate with Global 3000 Payroll databases: $SDE, $BASTS, $BADCT, $BARBL and $BASAV;

- The $AUTH32 utility has been extensively enhanced. See Technical Note IN290 (when available) for further details;

- The 32-bit Menu Handler and Menu Maintenance have been enhanced to allow a System-ID to be associated with each menu line. The System-ID is associated with the $AUTH32 Authorisation model and is fully described in Technical Note IN290 (when available);

- The $DXU DBX database conversion utility is now available;

6. Minor Changes to GSM Run Time

- A minor modification to 16-bit Speedbase has been implemented to prevent 16-bit Speedbase applications running on GSM-PR systems;

- The new DBX EXIT and STOP codes have been included in the $$ERREX and $$ERRST databases;

- $DLIB has been enhanced to allow Program Files (type PL) to be included in E. libraries;

- A new utility, $SHCMD, is now available to run a program on the host operating-system. This utility acts as a shell around the SHCMD$ sub-routine;

- The Price Level Upgrade function of $CUS has been modified to allow the User Count to be reduced as well as increased. The menu prompt has been changed from "Upgrade price level" to "Apply price level change";

- The $ERLIST utility has been modified to suppress the display of Exit Codes higher than 25599;

- $INSTALL has been enhanced to warn that GX is required to install certain classes of Global Cabinet Files;

- A bug in $BADGN, in the dialogue that appears when converting a Pervasive or Microsoft SQL Speedbase database to Global format, has been fixed. The problem causes the default directory of the 1st Global format Speedbase database file to be set to the first three characters of the Gateway Server name.

- The 32-bit Pop Menu Handler now correctly displays the Speedbase Help information associated with a pop menu;

- A problem that resulted in an OVERFLOW at BO$AMS/2E72 when printing to a GXPrint printer, has been fixed;

- Both 32-bit Menu Maintenance and the 32-bit Menu Handler have been enhanced to support a Special Documentation Index and Special Documentation ID for use with those 3rd party applications that integrate with the GX context-sensitive Help sub-system;

- A problem in $INSPECT that results in a NUMERIC OVERFLOW AT 16-BIT/#23C8 when a spool unit contains more than 129 (sic) repetitions of the same spool file, has been fixed;

- A problem in the $STATUS TER command (and $BYE) that can cause a hang if the termination is attempted from a GX workstation, has been fixed;

- The $BBS multiple file export option has been enhanced to convert any "$" characters in the Global file to "_" in the

Windows file. This change has been implemented to avoid problems with the "$" character within file names for some versions of Unix;

- $UNPACK has been enhanced to prevent the unnecessary serialisation of all the libraries in the V4.5 GCF file;

- $GSP has been enhanced to by-pass the GSM version checking for internal release versions of GSM;

- A problem in $RUNMAIN that can result in an EXIT 401 under some circumstances, has been fixed;

- $BADGN has been modified to support Global 3000 Payroll databases;

- The $SHCMD utility is now available as a shell around the SHCMD$ routine to execute Windows and Unix programs directly from a Global menu;

- $CUS has been enhanced to allow a GSM system to be upgraded to GSM-PR. This has also involved changes to $LICENCE;

- The $GSPMAKE utility, which creates the V5.0 GCF files, has been enhanced to prevent an (incorrectly) serialised program from being included in a GCF file;

- The BA$GUI DLM has been modified to fix a problem that results in the occasional appearance of STOP 25098;

- The Speedbase date validation has been extended to allow dates such as "1.1.02" to be treated as valid in addition to similar format dates such as "1/1/02";

- The $F LI? and LS? commands have been modified to only display the serial number for serialised Program Libraries;

- A minor problem in the $BADN and $BN32 Rename database functions has been fixed: A reply of "N" to the "Is this the database you want to rename" prompt is no longer ignored. Furthermore, a problem that can result in a spurious STOP 201 has been fixed;

- $F has been enhanced to display the sub-volume sizes of a domain listing in Kb, Mb or Gb, as appropriate. This change improves the readability of a $F domain listing;

- The GX TAP (i.e. $.911) has been modified to fix a problem that can result in corrupt screen displays (i.e. normally the right-hand side of text boxes appear distorted) when 16-bit application displays boxes on the GX Window-Zero screen;

- All Speedbase calls to the Speedbase Gateway have been modified to use the new GATE$ sub-routine;

- The $BN32 Import database and Dump database functions have been improved to recognise a database with a name that consists of less than 5 characters;

- A problem in $PASSWD which causes the spurious message "Unable to send message data" to appear on the GX screen, has been fixed;

- A problem in the BA$GUI DLM that results in an INCORRECT NUMBER OF PARAMETERS AT BA$GXM/#4F52, has been fixed;

- The $LICENCE AND $32LICE utilities now function correctly on GSM (Unix) configurations. Previous versions of $LICENCE and $32LICE produced spurious INVALID GLOBAL DIRECTORY messages when used on GSM (Unix);

- The $LIBPR utility has been rationalised. Only the EXT, COP and END commands are supported. The COP command new refuses to copy any program that is an earlier date than the corresponding existing library member;

- The $AUTHEX utility, which can refuse a user login for several more criteria than either $AUTH or $PASSWD, displays a unique error message on GX, for each different condition;

- The 32-bit Menu Handler (BO$MEN) now closes the menu file under all conditions (previous versions of the Menu Handler left the menu file open during an accept operation on an Application menu);

- $LICENCE now checks both upper-case an lower-case file name on GSM (Unix) configurations;

- The dialogue for the $CUS Change Contract Protection Message option has been improved to remove some extraneous messages;

- The DISPLAY WINDOW CENTRED option now returns a user-trappable exception if the current record is not valid;

- A cosmetic issue in the $BN32 utility has been fixed: The database name is now concatenated with the "DB" prefix;

- A problem in the 32-bit $BN32 and the 16-bit $BADN that results in an EXIT 1201, has been fixed. The problem only occurs if an incorrect output unit is subsequently corrected;

- A minor spelling mistake in the final dialogue box of $QADFTP has been corrected;

7. Global Development System Enhancements (Sub-routines etc.)

- The following copy-books have been added to the S.SYS32 copy-library:

      B$ B$BAD
      I$ BTICN$
      F$ FILBR$
      e$ TXGUI$
      p$ GRPLT$
      q$ GRXAX$

- The 32-bit COPYP$ routine uses the DELEP$ routine, instead of DELE$, to delete the output file if it already exists. This change prevents the spurious PLEASE KEY PASSWORD prompt if the existing output file is password protected;

- A new 32-bit sub-routine, B$RCNV, is now available to copy an existing Speedbase record to a new format record;

- A new 32-bit sub-routine, GXSDF$, is now available to send the "Application Documentation Folder Index" and "Application Documentation Folder File" to GX;

- A new 32-bit sub-routine, GXAPV$, is now available to set the GX Application Version Text;

- A new 32-bit sub-routine, GXSBM$, is now available to set the GX Status Bar Message Text;

- A new 32-bit sub-routine, GXOPI$, is now available to set the GX Status Bar Operator-id text;

- A new 32-bit System Variable, $WFUNC, is now available. This new System Variable mirrors $FUNC, except that $WFUNC is always cleared on entry to a new window;

- A new, highly-specialised 16-bit sub-routine, ESTAT$, is now available to return the UESTAT field from the current User Element;

- The AUTHA$ routine now closes the DB$OPID and DBAUTHP databases selectively;

- A new 32-bit sub-routine, MENUX$, is now available to display extended menus, on GX;

- A problem in GXSBM$ that causes an ILL OP exception, has been fixed;

- A problem in the EMAIL$ sub-routine that causes a NO BASE EXCEPTION AT BO$CLR/#025E when no text is passed, has been fixed;

- The calling interface for the AUTHA$ routine has been changed to accept a single PIC X(10) Authorisation Token parameter;

- The performance of the GX commands required to implement the HEADING verb has been increased;

- The MBOX$ 32-bit sub-routine has been enhanced to include an optional time-out;

- A new 32-bit sub-routine, GXGIS$, is now available to obtain a setting from the GX.INI file;

- A new 32-bit sub-routine, GXFDT$, is now available to return the date and time, in Windows format, of an Open GX BDAM file;

- A new 32-bit sub-routine, WINOP$, is now available to provide a sanitized interface to SVC-61;

- A new 32-bit sub-routine, WINOX$, is now available to provide a sanitized interface to SVC-88;

- A new 32-bit sub-routine, GXTBI$, is now available to set a GX Toolbar Icon;

- The Open BDAM Access Method has been enhanced to allow a Windows pathname that is longer than 99 characters. If the 1st byte of the PANAME redefinition in the FD is set to HIGH-VALUES (i.e. #FF) then the next 4 bytes are used a pointer to the zero-terminated filename;

- A new 32-bit sub-routine, FFORM$, is now available to return the description of a Speedbase field from a Data Dictionary;

- GXCOP$ has been enhanced to recognise the extended filename format supported by Open BDAM;

- GXCOP$ has been extended to support a "Download" option in addition to the "Copy" and "Move" options;

- A new 32-bit sub-routine, ADDOF$, is now available to return the address of a 32-bit symbol;

- A new 32-bit sub-routine, DSFMT$, is now available to return the format of a 32-bit symbol;

- A problem in OPEN$ that caused all units to be considered as spool units, has been fixed;

- Speedbase run-time has been enhanced to extend the V- Exit condition to support EXIT WITH 2 to indicate that a "silent error" has occurred. Where a Field Selection pop-up is automatically called, returning EXIT WITH 2 from the V- routine causes the Window Manager to re-accept at the current field, without sounding the bell. Any automatic look-up should now complete with an EXIT WITH 2 to avoid Window Manager skipping through;

- Three new 32-bit sub-routines, ACMBO$, CCMBO$, DCMBO$, are available to display Combo Boxes on a GX window;

- A new 32-bit sub-routine, GXNFW$, is now available to identify a GX window as a "Numeric Field only" window;

- A new 32-bit sub-routine, GXSLA$, is now available to set the attribute of a label on a GX window;

- A new 32-bit sub-routine, BTICN$, is now available to update a Button Icon;

- The IMAGE$ routine has been extended to support a zero-terminated string (in addition to a fixed length string);

- The performance of the GX RSAM interface has been improved. This has a very noticeable effect when using the GXPrint printer interface;

- The 32-bit MENU$ routine has been enhanced to process Run Menu functions while a MENU$ menu is displayed;

- A problem in the 32-bit SNDDE$ sub-routine that can result in a spurious STOP 8622, has been fixed.

8. Global Development System Enhancements (Utilities)

- The 32-bit debugger, $DBUG, has been enhanced to support DBX Data Dictionaries;

- The DBX Data Dictionary Maintenance utility, $DXM, is now available;

- A problem in $SDE that caused a switch to 132 wide-mode when editing 80-character wide windows, has been fixed;

- A problem in $SDE that results in the spurious message "Window will not fit there - move aborted" when attempting to move a scrolled window, has been fixed;

- $SDL32 always ensures an immediate screen display, in GX Window Zero, when run from Job Management;

- A problem in $SDE that results in a NUMERIC OVERFLOW exception when TAB'ing through fields on a wide-mode screen, has been fixed;

- The $SDL32 compiler and $SDE editor now support the Group Box construct. The "BOX" window construct header statement allows

the display of up to 8 group boxes within a given window. The syntax of the clause is as follows:

```
BOX line col width depth [heading]
```

where line and col are the line and column numbers of the top left-hand position of the box; width is the width of the box in columns, and depth gives the vertical dimension in lines. The optional heading is a literal text string which is displayed over the top line of the box. Note that all of these items must be coded as literals.

The line and column co-ordinates are self-explanatory. Depth is expressed as the arithmetic difference between the top and bottom lines of the box. Thus if the top line of the box is 4, with the bottom line at 7, depth will be 3 (even though the box will physically occupy 4 lines). Box width is similarly calculated. The minimum width and depth of a box is 2, meaning a box must enclose no less than a single character.

Note that the line and column co-ordinates are affected by the Window Base (as coded by the BASE clause), even if the BASE clause is coded after the BOX.

FIXES TO GSM SERVICE PACK 9

1. Introduction and Overview

This document describes the contents of a re-release of GSM SP-9. All the changes apply to 32-bit DLM's in the P.$SDLM0 library. Consequently, this library is the only component supplied for this emergency fixes release.

2. Details of Changes

The following problems have been resolved:

- The bug which caused an ILL OPC in BA$DBD/#2758 has been fixed. The problem occurred only with 32-bit applications using Gateway databases of any format (i.e. both DBX and non-DBX Speedbase Pervasive SQL and MS SQL databases). If the application reads (and locks) the same record into 2 or more IO channels (for example a prime channel plus a substituted channel), and the record is rewritten from one of those channels with one or more of its record key segments or GVF fields altered, then the above ILL OPC will occur;

- The bug which caused a spurious STOP CODE 25403 AT BA$DXX/#0FCA has been fixed;

- The bug caused a STOP CODE 25502 AT BA$DBX/#03F2 has been fixed;

- The 32-bit DLM's now support the compiler change that allows the physical length of a field as displayed on GX to differ from a field's usual display length;

- A problem that causes the scrambling of fields on GX has been fixed. The problem affects those windows that include overlapped, identical fields;

- The BA$RBG and BA$RBL routines have been enhanced to support Global 3000 Payroll databases;

- The Menu Handler now supports Authorisation points. Note that this change requires a re-release of $MN32 which is currently planned for GSM SP-10. **IMPORTANT NOTE**: The release of this

change to BO$MEN in GSM SP-9 introduced a further problem which is described in section 3;

- The bug that results in a STOP 9103 when a system is configured with more than 127 users, has been fixed;

- The bug that results in a STOP 8622 when a system is configured with more than 127 users, has been fixed;

- The problem that results in spurious comma prompts when running 32-bit jobs has been fixed;

- The bug that causes an EXIT CODE 25508 AT BO$AUT/#1C4A has been fixed;

- A problem that can cause the MENUX$ sub-routine to crash GLOBAL.EXE has been fixed;

- The GXFHP$ sub-routine is now available;

- The WIBMP$ sub-routine is now available;

- The GXSFL$ sub-routine is now available;

- The GXDSO$ sub-routine is now available;

- The BA$OPN DLM has been modified to return a correct exit code (EXIT 25525) rather than a spurious EXIT 9825.

3. 3rd Release of GSM SP-9

During Jan-2003 the original SP-9 Menu Handler DLM, BO$MEN, was fitted back into the GSM SP-9 download to fix a problem that prevented the Menu Handler from automatically rolling over the date at 24:00 hours.

The "version" of GSM SP-9 can be determined from the contents of the P.$SDLMO library:

Date of BA$DBD DLM	Date of BO$MEN DLM	GSM SP-9 release
24/10/2002	24/10/2002	Original GSM SP-9 release
12/11/2002	07/12/2002	Release documented in section 2
12/11/2002	24/10/2002	Release documented in section

		3

NEW FEATURES IN GSM SERVICE PACK 10

1. Introduction and Overview

Global System Manager V8.1 Service Pack-10 (GSM SP-10) includes several new features and many significant enhancements to GSM SP-9 (and GSM SP-8 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-10 can be applied directly to any of "vanilla" GSM V8.1l, GSM SP-1, GSM SP-2, GSM SP-3, GSM SP-4, GSM SP-5, GSM SP-6, GSM SP-7, GSM SP-8 or GSM SP-9 (i.e. **there is no need to upgrade V8.1l to GSM SP-9 before applying GSM SP-10**).

VERY IMPORTANT NOTE-1: For GSM (Windows) configurations GSM SP-10 includes the same changes to the GSM licencing mechanism that were introduced for GSM SP-6. If you are upgrading a GSM (Windows) configuration to GSM SP-10 from GSM SP-5, or earlier, you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-2: For GSM (Unix) configurations GSM SP-10 includes the same changes to the GSM licencing mechanism that were introduced in GSM (Unix) for GSM SP-9 and GSM (Windows) for GSM SP-6. If you are upgrading a GSM (Unix) configuration to GSM SP-10 you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-3: For GSM (Windows) configurations GSM SP-10 **MUST** be used with GLOBAL.EXE V3.7 (or later) and GX V3.0 (or later). If you attempt to load GSM SP-10 on pre-V3.7 GLOBAL.EXE or use a pre-V3.0 GX.EXE a warning message will be displayed (see gsmsp6.doc).

VERY IMPORTANT NOTE-4: For GSM (Unix) configurations GSM SP-10 **MUST** be used with the V3.306 (or later) BACNAT components and GX V3.0 (or later). If you attempt to load GSM SP-10 with a pre-V3.306 BACNAT or use a pre-V3.0 GX.EXE a warning message will be displayed (see gsmsp6.doc).

2. New features in the GSMSP10 utility

In addition to the new features introduced in GSMSP6 (see section 2 of gsmsp6.doc), GSMSP7 (see section 2 of gsmsp7.doc), GSMSP8 (see

section 2 of gsmsp8.doc) and GSMSP9 (see section 2 of gsmsp9.doc), the GSMSP10 utility includes the following features:

• The GSMSP10 job copies the appropriate DI$OPID data dictionary to SYSRES. Note that DI$OPID is only used by $AUTH32 - if you are not using $AUTH32 ignore the rest of this section. However, to avoid potential problems with dictionary generation numbers, the new DI$OPID is always copied as **$OPID. Note that although the generation number of the DI$OPID dictionary released with GSM SP-10 is the same as the generation number of the GSM SP-9 DI$OPID, this cannot be guaranteed for future GSM Service Packs.

3. Changes to the GSM Licence File

FOR GSM (WINDOWS) SP-6, AND LATER, THE GLOBAL $STARH FILE HAS BEEN REPLACED BY THE EXTERNAL global.lic FILE. See section 3 of gsmsp6.doc for further details.

FOR GSM (UNIX) SP-9, AND LATER, THE GLOBAL $STARH FILE HAS BEEN REPLACED BY THE EXTERNAL global.lic FILE.

4. Changes to GSM Installation and Start-Up

• The GSM installation dialogue has been greatly simplified: A European date format is always assumed. A century boundary year of 1960 is always assumed. Note that both of these options can be customised, after the installation, by $CUS. Furthermore, the prompt "[A.38] Is this a Global System Manager PM system?" has been removed since this response to this prompt can be deduced for CD installations. In addition, the prompts for the Terminal Code, Global 3000 V4.5 memory pages and Global Reporter memory pages have been removed. Note that ALL the available Terminal Codes are always installed. Finally, the GSM installation job no longer attempts to run $MH at the end of the installation process - this can cause a spurious "MENU FILE VERSION IS TOO HIGH" warning message on update installations if the system menu has been converted a 32-bit menu File.

5. Major Changes to GSM Run Time

• The GUI/GX licence checking has been removed for GSM (Unix) configurations. Thus, both GSM (Unix) and GSM (Windows) now allow an unlimited number of GUI/GX users;

- The appropriate warning messages are now displayed on every operators screen, at sign-on time, if the Service licence has expired, or is about to expire (i.e. if the current date is either later than, or within 30 days of, the expiry date);

- A problem in GSM SP-9 that has the effect of disabling 32-bit on non-PM GSM systems that are upgraded to GSM-PR, has been fixed in GSM SP-10;

- Any attempt to run a 16-bit Speedbase frame on a GSM SP-9 system that has the 32-bit option (sic) disabled will fail with a spurious Licence Infringement message. This issue has been resolved for GSM SP-10;

- A 32-bit version of $BADGN, $32BADG, is now available **for informal evaluation only**. This utility will only operate on GX;

- A 32-bit version of $BASAV, $32BASA, is now available **for informal evaluation only**. This utility will only operate on GX;

- A 32-bit version of $PRINT, $32PRIN, is now available **for evaluation only**. This utility will only operate on GX. A problem with an early pre-release version of $32PRIN that caused a NO BASE exception, has been fixed;

- The 32-bit version of $S (i.e. $32S) has been enhanced and has been promoted from "evaluation status" to "full release" status;

- $BADGN has been enhanced to operate on Global 3000 Payroll databases;

- $BADN now automatically runs the 32-bit equivalent (i.e. $BN32) if the GSM configuration supports 32-bit applications. Note that $BN32 will operate on both GX and non-GX screens;

- $BN32 has been enhanced to operate on Global 3000 Payroll databases;

- $BADS automatically runs the 32-bit equivalent (i.e. $BS32) if the GSM configuration supports 32-bit applications. Note that $BS32 will operate on both GX and non-GX screens;

- $BS32 has been enhanced to operate on Global 3000 Payroll databases;

- $BAST automatically runs the 32-bit equivalent (i.e. $BAST32) if the GSM configuration supports 32-bit applications. Note that $BAST32 will operate on both GX and non-GX screens;

- $BAST32 has been enhanced to operate on Global 3000 Payroll databases.

A note on the conversion of 16-bit system utilities to 32-bit: We are developing and gradually releasing 32-bit equivalents of all the important 16-bit utilities. For those 32-bit utilities that have been released for evaluation purposes the equivalent 16-bit utility is unchanged (i.e. the 32-bit "evaluation release" utility must be run explicitly e.g. $32SPOO). For those 32-bit utilities that **have** been fully released the equivalent 16-bit utility has been changed to automatically run the 32-bit program, if appropriate. Some of the released 32-bit utilities will only operate on a GX screen whilst others will operate on both GX and non-GX screens. At the time of writing the following 32-bit utilities have been fully released:

Table 1 – Fully released 32-bit utilities with a 16-bit equivalent		
32-bit utility	Equivalent 16-bit utility	GX only utility
$BN32	$BADN	No
$BS32	$BADS	No
$BAST	$BAST32	No
$32A	$A	Yes
$32S	$S	Yes
$32U	$U	Yes

By default, a 16-bit utility will automatically chain to the equivalent 32-bit **GX-only** utility (i.e. a 32-bit utility that functions only on a GX screen) **unless** any one of the following conditions are met:

- The 32-bit run-time option has been disabled;

- The screen is not a GX session;

- The Force16BitUtilities registry option is enabled;

- The 16-bit utility is running under Job Management;

- The type-ahead buffer is not empty;

- The reply to the 16-bit program name is terminated by <CTRL C> instead of the usual <CR>.

By default, a 16-bit utility will automatically chain to the equivalent **generic** 32-bit utility (i.e. a 32-bit utility that functions on both GX and non-GX screens) **unless** any one of the following conditions are met:

- The 32-bit run-time option has been disabled;

- The Force16BitUtilities registry option is enabled;

- The 16-bit utility is running under Job Management;

- The type-ahead buffer is not empty;

- The reply to the 16-bit program name is terminated by <CTRL C> instead of the usual <CR>.

So, to continue to use all the 16-bit utilities that would, by default, chain to the 32-bit equivalent, enable the "Force16BitUtilities" registry setting. To run a particular 16-bit utility, that would, by default, chain to the 32-bit equivalent, terminate the program name with ^C instead of the normal <CR>.

The following 32-bit utilities, which have been converted from a 16-bit equivalent, are released for informal evaluation purposes only:

Table 2 – Evaluation only 32-bit utilities with a 16-bit equivalent		
32-bit utility	Equivalent 16-bit utility	GX only utility
$32BADG	$BADGN	Yes
$32BASA	$BASAV	Yes
$32DLMM	$DLMMAIN	Yes
$32INST	$INSTALL	Yes
$32LICE	$LICENCE	Yes
$32PRIN	$PRINT	Yes
$32SFMA	$SFMAIN	Yes
$32SPO	$SPOOL etc.	Yes
$32STAT	$STATUS etc.	Yes

As explained above, none of the 16-bit utilities listed in Table 2 will attempt to chain to the 32-bit equivalent (although this situation will change in future GSM Service Packs).

All the remaining 32-bit utilities that have no direct 16-bit equivalent (e.g. $AUTH32, $DXM, $DXU etc.) are fully supported.

6. Minor Changes to GSM Run Time

- A problem in $AUTH32 that causes a STOP 25504 when amending menu entries, has been fixed;

- A problem in $AUTHEX that causes the "case insensivity" option to be ignored when entering a new password, has been fixed;

- $AUTHEX now correctly establishes the Global System Manager language code;

- $AUTHEX now forbids a changed password to be the same as the original password;

- A utility, $CHKMENU, is available to check that a 32-bit Menu File, converted from a 16-bit Menu File by $MN32, has been initialised correctly;

- A problem in $DLIB that prevents the ^B option from working correctly when copying multiple files, has been fixed;

- A new version of the $DXU utility has been released with GSM SP-10. This version includes the change to replace absolute pathnames by relative pathnames in the BDCF files;

- A problem in the 16-bit Menu Handler, $MH, that causes a spurious Error N, followed by a STOP 5701, on GSM (Unix) configurations when the date/time roll-over code is invoked, has been fixed;

- The 32-bit Menu Handler, $MH32, has been enhanced to check Authorisation Points defined in the Menu File. If the Authorisation check is enabled and the Authorisation point is set to spaces the program/frame name will be used as the Authorisation Point. This extra validation is only performed if the customised Authorisation Program is $AUTHEX;

- 32-bit Menu Maintenance, $MN32, has been enhanced to allow Authorisation Points to be defined in the Menu File;

- 32-bit Menu Maintenance, $MN32, has been enhanced to include a new option to leave the case of Menu Titles unchanged (i.e. rather than always converting Menu Titles to upper-case);

- 32-bit Menu Maintenance, $MN32, has been enhanced to allow a reply of 0 to the menu number to select the first "orphaned", and thus re-usable, menu line;

- The work-unit used by $MN32 is now always the System Work Unit (i.e. $WK) regardless of the name of the menu file. Previous versions of $MN32 (and all versions of MN) attempt to use xxW, where xx is the first two characters of the menu file, as the work-unit if the menu filename is xx-Menus (e.g. a work unit of CLW would be used for the CL-Menus menu file);

- $MN32 now warns if the menu file contains "mixed" application and normal menu line types, which is strictly invalid. An Application Menu (i.e. a menu with one, or more, type "A" menu lines e.g. CL-Menus) must **not** contain any type "F", "G" or "M" menu lines. A Standard Menu (i.e. a menu with one, or more, type "F", "G" or "M" menu lines e.g. $$MENUS) must **not** contain any type "A" menu lines. Note that both classes of menu file (i.e. Application Menus and Standard Menus) may contain type "N", "R" and "S" menu lines;

- $MN32 now allows a Special Help Folder index of 10 (in addition to 1 to 9);

- $QADFTP has been extended to display the time taken to complete the file transfer;

- $S has been enhanced to display the GSM (Windows) BACNAT in full (e.g. "3.9a" is now displayed for BACNAT V3.9a, rather than the truncated, and purely numeric, "3.9");

- $S now displays the elapsed time that the Global client has been running;

- $STATUS has been modified to display the terms "Client" and "Server" on GSM (Windows) configurations;

- The GX start-up code has been improved to fix a problem, that requires the operator to key an extra <CR>, after a "System is quiesced" message has been displayed on GX;

- Several improvements have been made to the $STATUS QUI command: The operator who issued the quiesce command is always allowed to sign back in again. A new option in GX is available to over-ride the quiesce condition, allowing any operator, normally a designated System Administrator, to sign-in. When running on GX, the $STATUS QUI command now allows a verbose message to be associated with the quiesce condition. This message is displayed when an operator attempts to sign on to the quiesced system using GX;

- The GSM start-up processing suppresses all warning messages if there are no files to download to GX;

- The GSM start-up processing now calls the GXOPI$ routine to send the current operator-id to GX. The operator is displayed on the GX status-pane;

- The GSM start-up processing now checks that the version of GLOBAL.EXE is V3.7, or later; and the version of GX.EXE is V3.0, or later;

- A problem in the AUTHA$ routine that results in a spurious STOP 25508, has been fixed;

- AUTHA$ now displays a warning message if the expiry date associated with a User Password is invalid. Furthermore, the "password expired" error message that is displayed by AUTHA$ is now formatted correctly;

- A problem that caused an ILL OPC AT BA$DBD/#2758, has been fixed. The problem only occurs with 32-bit applications that access Pervasive SQL and Microsoft SQL databases if the application reads (and locks) the same record into 2 or more I/O channels (for example a prime channel plus a substituted channel), and the record is rewritten from one of those channels with one, or more, of its record key segments or GVF fields altered;

- The problem that caused a spurious STOP 25403 in BA$DXX, has been fixed. Furthermore, the Speedbase Gateway error code, which is responsible for the STOP 25403 termination, is now

moved to the $$CRES System Variable, for subsequent access by the Debug System;

- A problem in the BA$GEX DLM that can result in a spurious STOP 25505, has been fixed. This problem only occurs with those frames that have been compiled using the $SDL32 "NAD" option;

- A potentially serious problem that can result in screen corruption in those GX applications that employ the "duplicate field" technique (i.e. two, or more, fields that occupy the same position on the screen), has been fixed. The problem occurred because optimisation in the Window Manager suppresses the transmission of an unchanged field to GX (without realising the presence of the "mirrored" duplicate field;

- The various interfaces to GX have been enhanced to operate with a User Number higher than 127;

- $PASSWD, $AUTHEX and the Menu Handlers have been enhanced to prevent a spurious STOP 9103 when the User Number is higher than 127;

- A new utility, $AU32CNV, is now available to convert $AUTH password files (i.e. $$AUTH) and $PASSWD password files (i.e. $$PASS) to $AUTH32 password databases (i.e. DB$OPID). **THIS UTILITY IS CURRENTLY RESERVED FOR INTERNAL USE ONLY.**

7. Global Development System Enhancements (Sub-routines etc.)

- The B$OPN routine has been modified to return the correct exception condition (i.e. EXIT WITH 25525 rather than EXIT WITH 9825) if an error occurs when attempting to open a database. The error messages displayed by this DLM have been improved to appear correctly on a GX screen;

- The B$RBG and B$RBL routines have been extended to function correctly on Global 3000 Payroll databases;

- A new 32-bit sub-routine, GXDSO$, is now available to disable/enable the GX toolbar under application program control;

- A new 32-bit sub-routine, GXFHP$, is now available to enable GX Field Level Help;

- The maximum GX Help Folder Index supported by GXSDF$ has been increased from 9 to 10. **Important Note**: A GX Help Folder Index of 10 is reserved for internal use by Global 3000 Payroll only;

- A new 32-bit sub-routine, GXSFL$ (Set Small Field Length), is now available to override, on a per window basis, the Small Field length that would normally be loaded by GX from the .CUS file);

- A problem in the MENUX$ sub-routine, that can crash GLOBAL.EXE if the passed menu line is too small, has been fixed;

- The 32-bit Job Management system has been enhanced to avoid displaying a spurious comma prompt, if the Job does not include a title;

- A new 32-bit sub-routine, WIBMP$, is now available to display bit-map images within a Speedbase window on GX;

- A new 32-bit sub-routine, B$PATH, is available to return the Server name and pathname associated with a (closed) Pervasive SQL (Btrieve) schema file.

8. Global Development System Enhancements (Utilities)

- $SDE now operates on 25-line deep screens;

- $SDE has been enhanced to correctly display PIC 9(8) C fields as "99,999,999". Previous versions (incorrectly) displayed this field format as "9,999,9999";

- A problem in $SDE that causes a NUMERICAL OVERFLOW EXCEPTION AT 16-BIT/#93E8 when attempting to generate a scrolled window containing all the fields in a record, has been fixed;

- The $SDX utility has been withdrawn. $SDE is a complete super-set of $SDX;

- The 32-bit compiler, $SDL32, has been enhanced to allow the physical length of a field as displayed on GX to differ from a field's usual display length. The compiler allows the picture clause, as specified in the Window Statement, to vary from the picture clause of the referenced variable. When a varying

picture clause is coded, the picture clause must be coded as a PIC X field. For example, The variable:

```
77   VAL  PIC S9(12,4)
```

would normally cause GX to create an 18 byte control in which the field is displayed. Coding the following in the Window Division:

```
10 10     VAL  X(10)
```

will cause GX to create a smaller 10 characters control. The space assigned may be increased or decreased from the default size. Where no explicit picture clause is coded for a field, the field continues to be displayed in the default number of characters. **Important Note on compatibility**: In previous versions of $SDL32, a picture clause when coded was required to exactly match the picture clause of the referenced variable. There are therefore no backward compatibility issues. However, **any program making use of this feature can only be used on GSM SP-10, or later.** Note that this feature is only supported for operation under GX, and any applications making use of this feature must test the $$GX system variable to prevent use of the application from any other interface;

- A new, GX-only utility, $DXDCT, is now available to create a copy-library from a DBX data dictionary. A problem with an early pre-release version of $DXDCT that caused a spurious READ ERROR, has been fixed;

- A new version of the $DXM utility has been released with GSM SP-10.

NEW FEATURES IN GSM SERVICE PACK 11

1. Introduction and Overview

Global System Manager V8.1 Service Pack-11 (GSM SP-11) includes several new features and many significant enhancements to GSM SP-10 (and GSM SP-9 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-11 can be applied directly to any of "vanilla" GSM V8.1I, GSM SP-1, GSM SP-2, GSM SP-3, GSM SP-4, GSM SP-5, GSM SP-6, GSM SP-7, GSM SP-8, GSM SP-9 or GSM SP-10 (i.e. **there is no need to upgrade V8.1I to GSM SP-10 before applying GSM SP-11**).

VERY IMPORTANT NOTE-1: For GSM (Windows) configurations GSM SP-11 includes the same changes to the GSM licencing mechanism that were introduced for GSM SP-6. If you are upgrading a GSM (Windows) configuration to GSM SP-11 from GSM SP-5, or earlier, you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-2: For GSM (Unix) configurations GSM SP-11 includes the same changes to the GSM licencing mechanism that were introduced in GSM (Unix) for GSM SP-9 and GSM (Windows) for GSM SP-6. If you are upgrading a GSM (Unix) configuration to GSM SP-11 you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-3: For GSM (Windows) configurations GSM SP-11 **MUST** be used with GLOBAL.EXE V3.7 (or later) and GX V3.0 (or later). If you attempt to load GSM SP-11 on pre-V3.7 GLOBAL.EXE or use a pre-V3.0 GX.EXE a warning message will be displayed (see gsmsp6.doc).

VERY IMPORTANT NOTE-4: For GSM (Unix) configurations GSM SP-11 **MUST** be used with the V3.306 (or later) BACNAT components and GX V3.0 (or later). If you attempt to load GSM SP-11 with a pre-V3.306 BACNAT or use a pre-V3.0 GX.EXE a warning message will be displayed (see gsmsp6.doc).

2. New features in the GSMSP11 utility

In addition to the new features introduced in GSMSP6 (see section 2 of gsmsp6.doc), GSMSP7 (see section 2 of gsmsp7.doc), GSMSP8 (see section 2 of gsmsp8.doc), GSMSP9 (see section 2 of gsmsp9.doc), and GSMSP10 (see sections 2 and 9 of gsmsp10.doc) the GSMSP11 utility includes the following features:

- The GSMSP11 upgrade job allows a service pack upgrade from **any** revision of GSM V8.1 (e.g. V8.1h, V8.1k etc.). See Technical Note IN294 for further details;

- The GSMSP11 utility always copies the V1.6/V1.6A Reporter P.$BRPGS library to SYSRES;

- A problem in the first release of the GSMSP11 utility on GSM (Unix) has been fixed. The problem does **not** occur on GSM (Windows) configurations. The problem causes the value in the "NumberOfMemoryPages" registry emulation file to be set to the spurious value 538976288 instead of the correct value 60. The problem does not occur if the upgrade involves the export of the $MONITOR file to $GLDIR/Monitor/ NumberOfMemoryPages etc. (i.e. it does not occur if GSM SP-11 is the first GSM Service Pack to be applied). The problem only occurs if a previous GSM Service Pack has been applied (i.e. if the NumberOfMemoryPages file is being updated to change

the setting from 57 to 60). The fixed version of the GSMSP11 utility displays the extra message: "[with fix for GSM (Unix) NumberOfMemoryPages problem]". For example:

> Apply GSM V8.1l Service Pack 11 (from any version of V8.1)
> **[with fix for GSM (Unix) NumberOfMemoryPages problem]**

3. Changes to the GSM Licence File

FOR GSM (WINDOWS) SP-6, AND LATER, THE GLOBAL $STARH FILE HAS BEEN REPLACED BY THE EXTERNAL global.lic FILE. See section 3 of gsmsp6.doc for further details.

FOR GSM (UNIX) SP-9, AND LATER, THE GLOBAL $STARH FILE HAS BEEN REPLACED BY THE EXTERNAL global.lic FILE.

4. Changes to GSM Installation and Start-Up

- The GSM start-up overlay ($STARC) has been extended to allow 32-bit Global 3000 Payroll to be used on GSM-PM configurations with perpetual PM licences (normally such configurations would not be capable of running a 32-bit application).

5. Major Changes to GSM Run Time

- The Speedbase Undelete function is now supported on GX;

- $GSP now functions correctly on GSM (Unix) configurations. The changes include the recognition of both lower-case and upper-case Unix filenames, and Unix-style wildcard filenames. Furthermore, $GSP has been extended to handle Unix filename conventions (i.e. where lower-case filenames are considered different from equivalent upper-case filenames);

- $32LICE now functions correctly on GSM (Unix) configurations. The changes include the recognition of both lower-case and upper-case Unix filenames, and Unix-style wildcard filenames;

- The $BADB and $BADC utilities now allow a database name of less than 5 characters to be specified for the Dump, Generate, Create and Delete functions;

- Both $BAST and $BAST32 have been extended to recognise the Extended Speedbase C-ISAM database format (i.e. the database format created by the $BADC utility);

- The $CUS System Maintenance option ($MAINT) has been extended to allow a Global 3000 Payroll V7.0 licence to be applied to a GSM-PM configuration. Before this
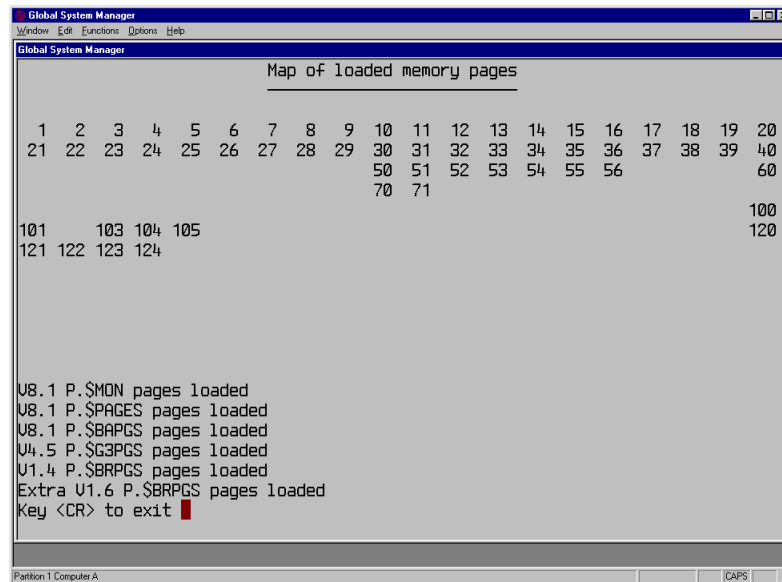
change, $MAINT only allowed a Payroll licence to convert a GSM non-PM system to GSM-PR. This enhancement has also involved a change to $LICENCE.

6. Minor Changes to GSM Run Time

- The formerly "GX-only" $GSP utility has been extended to function, albeit with reduced functionality, on non-GX screens;

- $GSP includes a directory browse option, when this is appropriate;

- $GSP ensures that all windows are specifically cleared. This prevents "ghost windows" from remaining on GX when $GSP terminates;

- When running on GX, the report displayed when the $GSP History button is selected now indicates that the change included within a GSP has been effectively applied by a re-installation of the product from a Global Cabinet File;

- $GSP has been extended to allow the special product code of "**" to list all products, including all non-installed products (normally $GSP ignores GSP's for un-installed products). Furthermore, $GSP has been improved to only rebuild the GSP list when required;

- $GSP does not allow the application of possibly corrupt GSP's (i.e. GSP's with mis-matched header records);

- The formerly "GX-only" $SETUP utility has been extended to function, albeit with reduced functionality, on non-GX screens;

- The 32-bit installation utility $32INST, which was formerly released for evaluation only, has been renamed to $SETUP for full release. The $32INST utility is still available but merely chains directly to $SETUP;

- $SETUP has been extended to invoke the product-specific installation phase with a CT parameter block;

- The 16-bit installation utility, $INSTALL, automatically runs the 32-bit $SETUP if any of the appropriate Global Cabinet Files are detected;

- The formerly "GX-only" $INSLOG utility has been extended to function, albeit with reduced functionality, on non-GX screens;

- $INSLOG now allocates the $$L unit, and creates an empty $$INSLOG file, if $$L is not assigned. This avoids the need to run $CUS, to create a $$INSLOG etc., before using $INSLOG;

- $INSLOG is now invoked from $SETUP if the $$L unit is not assigned when $SETUP is run. $INSLOG displays a progress message when copying the empty $$INSLOG file to the freshly allocated $$L volume;

- $LICENCE automatically runs in 32-bit mode ($32LICE) on GX;

- The $LICENCE and $32LICE utilities warn if the output and input directories are the same (if the directories are the same then the input GCF file will be deleted during the licencing process);

- When $LICENCE is invoked by the $CUS "Apply Payroll Licence" option it checks that the serial number of the Global Product Licence file is the same as the run-time serial number. Note that this test is not necessary when $LICENCE is used, in its "normal" mode, to activate Global Cabinet Files. Note also that although, if appropriate, $LICENCE will normally chain to $32LICE, the automatic switch from 16-bit to 32-bit is never attempted when $LICENCE is invoked from $CUS;

- The Amend Menu Line option of $MN32 has been improved: The baseline prompt now includes all the available options;

- $AUTH32 has been extended to include a Module-id. Important note: The Generation Number of the DI$OPID dictionary released with GSM SP-11 is 48. The Generation Number for all previous released, versions of DI$OPID is 46;

- The BO$MEN DLM now differentiates the effects of the <F2> and <F3> functions on Standard Menus and Application Menus. On Standard Menus, the <F2> and <F3> functions have the effect of running the specified Function Program. On Application Menus, the <F2> and <F3> functions merely have the effect of establishing the relevant field in the MI-block;

- $MENU32 has been extended to use the GXDCM$ routine (see below) when displaying a Password Window;

- A new utility, $MPAGES, is available to display the 16-bit memory pages that are currently loaded. This utility is intended to diagnose problems with the Reporter memory pages library and various Memory/Monitor pages customisations in $MONITOR and the Monitor section of the registry (or Unix registry emulation). The screen displayed by $MPAGES is quite crude. For example:

```
 Global System Manager                                                 _ □ ×
Window  Edit  Functions  Options  Help
 Global System Manager
                             Map of loaded memory pages
                             ─────────────────────────

    1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20
   21  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36  37  38  39  40
                                       50  51  52  53  54  55  56              60
                                       70  71
                                                                              100
  101      103 104 105                                                        120
  121 122 123 124



  V8.1 P.$MON pages loaded
  V8.1 P.$PAGES pages loaded
  V8.1 P.$BAPGS pages loaded
  V4.5 P.$G3PGS pages loaded
  V1.4 P.$BRPGS pages loaded
  Extra V1.6 P.$BRPGS pages loaded
  Key <CR> to exit █


 Partition 1 Computer A                                          CAPS
```

  The top portion of the screen contains the page numbers of the 16-bit memory pages that have been successfully loaded into memory. In this example pages 1 to 40, 50 to 56, 60, 70 to 71, 100 to 101, 103 to 105 and 120 to 124 have been loaded successfully (i.e. a total of 60). The bottom-left portion of the screen shows the results of the analysis of the loaded page numbers. In the example shown above, all 60 of the current pages distributed with GSM V8.1 SP-11 are shown as loaded;

- A number of enhancements have been applied to the (evaluation only) $32BADG and $32BASA utilities. These enhancements are beyond the scope of this document;

- A problem in $BAST32 that could cause a number of unpredictable results on GSM (Unix) configurations, has been fixed. Furthermore, a spelling mistake in the dialogue displayed by $BAST32 has been fixed;

- A new System Variable, $$MAST, is available to hold details of the last master record for diagnostics purposes. The BA$DXX DLM has been extended to populate the $$MAST with the last master record before generating a STOP 25409;

- A new System Variable, $$XDIAG, is available to hold extended diagnostic information;

- The "Index nearly full" message displayed by the 32-bit BA$DBX DLM has been changed from:

Warning: IDX Blocks Free: *nn*

to:

Warning: IDX Block Free in DB*xxxxx*:*nn*

- All error messages displayed by the 32-bit BA$DBX DLM now appear in dialogue boxes on GX;

- The code in the 32-bit BA$GXM DLM that generates the STOP 25022 now writes extra diagnostics to the $XDIAG System Area field;

- $MENU32 now invokes $BYE, instead of $E, when a close-down exception is returned from GX;

- A new utility $CLOSE is now available which either runs $E or $BYE to either close down a single thin-client, or an entire thin-client system, as appropriate;

- The BA$EXE 32-bit DLM has been extended to return a STOP 25097 if a frame in the back-frame list does not exist in the Link Stack. This condition is only likely to occur with highly-specialised system routines;

- An internal-only utility, $GSPMAIN, is available to list all the components in a GSP file;

- A 32-bit version of the $BADC utility, $BC32, has been released for evaluation only;

- The following 16-bit utilities no longer automatically chain to the 32-bit, GX version equivalent if running under Job Management, or if there are characters is the type-ahead buffer:

  $A
  $U
  $BADN
  $BADS
  $BAST

- $AUTH32 has been improved to avoid writing Group Authorisation records with an Access Flag of "N" to the DB$OPID database. Such records do not have be written to the database as the default Access Flag is "N". This change reduces the number of GA-records written to the database when a new Group is added;

- $BAST32 has been improved to display a title line when used on terminal type $.711 etc.;

- The $CUS System Customisation overlay ($MAINT) has been improved to avoid the spurious "Please assign BACRES unit" prompt if the $BA unit is not assigned; or if the unit assigned to $BA does not exist. If $BA is assigned to a non-existent 2*xx* unit (normally 261), it is automatically assigned to the equivalent A*xx* unit (normally A61);

- $BN32/$BS32 have been enhanced to display a progress message of the form "block number *X* of *Y*") during a database rebuild;

- The program title of the $STARX start-up overlay has been changed from "START-UP CHECKING" to "Checking Configuration...".

The tables of fully-released and evaluation-only 32-bit utilities that were documented in the GSM SP-10 Notes have been updated for GSM SP-11:

Table 1 - Fully released 32-bit utilities		
32-bit utility	**Equivalent 16-bit utility**	**GX only utility**
$BN32	$BADN	No
$BS32	$BADS	No
$BAST32	$BAST	No
$32A	$A	Yes
$32S	$S	Yes
$32U	$U	Yes
$SETUP ($32INST)	$INSTALL	No
$32LICE	$LICENCE	No
$GSP	None	No
$INSLOG	None	No
$AUTH32	None	Yes
$MN32	MN	No
$MENU32	$MH	No

Table 2 - Evaluation only 32-bit utilities		
32-bit utility	**Equivalent 16-bit utility**	**GX only utility**
$32BADG	$BADGN	Yes
$32BASA	$BASAV	Yes
$BC32	$BADC	No
$32DLMM	$DLMMAIN	Yes
$32PRIN	$PRINT	Yes
$32SFMA	$SFMAIN	Yes
$32SPO	$SPOOL etc.	Yes
$32STAT	$STATUS etc.	Yes

7. Global Development System Enhancements (Sub-routines etc.)

- A number of spurious DISPLAY statements have been removed from the B$RBL routine;

- A new, highly-specialised GX-only sub-routine, GXGPD$, is available to accept data from a DDE server process. The initial evaluation release of the GXGPD$ 32-bit sub-

routine was improved prior to the GSM SP-11 release to return an EXIT 23930, instead of a STOP 23957, when an unexpected error from GX is detected;

- The B$RCNV sub-routine has been extended to operate with DBX I/O channels;

- A number of minor problems in the B$BAD and B$RBG sub-routines have been fixed;

- A new, GX-only sub-routine, GXDCM$, is available to ensure that the current menu does not disappear when the next window (e.g. typically an "accept password" window) appears;

- The B$POP function has been extended to allow pop-menu lines of up to 70 characters;

- The 32-bit STRMX$ sub-routine has been extended to accept an optional 4th parameter into which the length of the input string is returned;

- The 32-bit FREEX$ sub-routine has been extended to allow the name of the temporary 32-bit page to be specified;

- A number of new 32-bit sub-routines are available for various Logical functions:

XORB$	Exclusive OR bytes function
XORW$	Exclusive OR words function
XORD$	Exclusive OR double-words function
ORB$	Logical OR bytes function
ORW$	Logical OR words function
ORD$	Logical OR double-words function
ANDB$	Logical AND bytes function (equivalent to AND$)
ANDW$	Logical AND words function (equivalent to AND$)
ANDD$	Logical AND double-words function (equivalent to AND$)

  The routines, which are only available if the version of GLOBAL.EXE is V3.7d, or higher (otherwise a STOP 7902 will occur), are considerable faster than an equivalent emulation routine;

- A problem with the B$GTWK routine when used on a non-GX screen, has been fixed;

- The 32-bit version of the Direct Windows Access Method (DWAM) attempts to open read-only files in "read only" mode if an Access Denied error is returned for the Open Old operation.

8. Global Development System Enhancements (Utilities)

- The DBX Database Manager, $DXM utility and $SDL32 32-bit compiler have been significantly extended to provide support for cascaded GVF/GVA's in DBX data dictionaries;

- A problem in $DXDCT that caused a NUMERICAL OVERFLOW if the DBX key length is higher than 99, has been fixed. In addition, $DXDCT now operates correctly when running under Job Management;

- $DBUG has been extended to display the value of the $$XDIAG Diagnostic System variable;

- A problem in $SDE that causes an OVERFLOW AT 9648 when the <F9> Q option is used with large DBX data dictionaries, has been fixed;

- A problem with the $DC32 utility, that results in an OVERFLOW at #9E1A, has been fixed.

9. Re-release of GSM SP-11 (3-May-2003)

The P.$SDLM0 library included with GSM SP-11 was upgraded on 3-May-2003 to include a new BA$STA member (date 15/04/2003). The re-application of this 2nd revision of GSM SP-11 fixes the problem in Global 3000 Payroll V7.0 that causes a spurious database file full condition to be reported on Payroll databases. This problem is also fixed by Global ESP SY81_000007_000.GSP.

The only way to tell the difference between the original GSM SP-11 and the 3-May-2003 revision is by examining the date of member BA$STA in the P.$SDLM0 DLM library:

BA$STA	03/03/2003	Contains bug that give spurious file full errors in Payroll
BA$STA	15/04/2003	Fixed version

NEW FEATURES IN GSM SERVICE PACK 12

1. Introduction and Overview

Global System Manager V8.1 Service Pack-12 (GSM SP-12) includes several new features and many significant enhancements to GSM SP-11 (and GSM SP-10 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-12 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-11 before applying GSM SP-12**).

VERY IMPORTANT NOTE-1: For GSM (Windows) configurations GSM SP-12 includes the same changes to the GSM licencing mechanism that were introduced for GSM SP-6. If you are upgrading a GSM (Windows) configuration to GSM SP-12 from GSM SP-5, or earlier, you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-2: For GSM (Unix) configurations GSM SP-12 includes the same changes to the GSM licencing mechanism that were introduced in GSM (Unix) for GSM SP-9 and GSM (Windows) for GSM SP-6. If you are upgrading a GSM (Unix) configuration to GSM SP-12 you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-3: For GSM (Windows) configurations GSM SP-12 **MUST** be used with GLOBAL.EXE V3.7 (or later) and GX V3.2a (or later). If you attempt to load GSM SP-12 on pre-V3.7 GLOBAL.EXE or use a pre-V3.2a GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V3.2a is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V3.2a (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility.

VERY IMPORTANT NOTE-4: For GSM (Unix) configurations GSM SP-12 **MUST** be used with the V3.315 (or later) BACNAT components and GX V3.2a (or later). If you attempt to load GSM SP-12 with a pre-V3.315 BACNAT or use a pre-V3.2a GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V3.2a is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V3.2a (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility.

2. New features in the GSMSP12 utility

● Run-time Global Reporter V1.6A is included in GSM SP-12. The V1.6A Global Reporter components consist of the P.$BRPGS Monitor Pages library and the P.BR run-time Reporter program library;

- The GSMSP12 utility is functionally equivalent to GSMSP11 (see section 2 of gsmsp11.doc).

3. Changes to GSM Installation and Start-Up

- The GSM start-up overlay for GSM SP-12 checks that the GSM (Windows) GLOBAL.EXE variant is V3.7, or later; and the GSM (Unix) BACNAT variant is V3.315, or later. If the GLOBAL.EXE or BACNAT variants are incompatible with GSM SP-12 the Menu Handler will fail with STOP 9302;

- The GSM start-up overlay for GSM SP-12 checks that the version of GX is V3.2a, or later;

- The GX/GXIO download overlay ($STARX) has been extended to open the GX*nn*.EX_ and GXIO*nn*.EX_ files in shared mode, rather than exclusive mode, to allow 2, or more, PC's to download new copies of GX/GXIO simultaneously. Furthermore, the GX/GXIO download overlay has been extended to allow GX/GXIO to be downloaded from a GSM (Unix) host;

- The GSM start-up overlay has been enhanced to recognise the following new option in the "Customisations" section of the GSM (Windows) registry:

      ExpiryDateMessageOnlyForAuthZ

  If this option is enabled the various Expiry Date warning messages are only displayed if the Authorisation Level is "Z".

4. Major Changes to GSM Run Time

- The $32SPOOL utility has been enhanced and is now available for general use (i.e. it has been moved from the "evaluation" list to the "supported" list). The tables of fully-released and evaluation-only 32-bit utilities that were documented in the GSM SP-10 & SP-11 Notes have been updated for GSM SP-12:

Table 1 - Fully released 32-bit utilities		
32-bit utility	**Equivalent 16-bit utility**	**GX only utility**
$BN32	$BADN	No
$BS32	$BADS	No
$BAST32	$BAST	No
$32A	$A	Yes
$32S	$S	Yes
$32U	$U	Yes
$SETUP ($32INST)	$INSTALL	No
$32LICE	$LICENCE	No
$GSP	None	No

$INSLOG	None	No
$AUTH32	None	Yes
$MN32	MN	No
$MENU32	$MH	No
$32SPOOL	$SPOOL etc.	Yes

Table 2 - Evaluation only 32-bit utilities		
32-bit utility	**Equivalent 16-bit utility**	**GX only utility**
$32BADG	$BADGN	Yes
$32BASA	$BASAV	Yes
$BC32	$BADC	No
$32DLMM	$DLMMAIN	Yes
$32PRIN	$PRINT	Yes
$32SFMA	$SFMAIN	Yes
$32STAT	$STATUS etc.	Yes

- The 32-bit Menu Handler and Menu Maintenance have been extended to allow a "return to previous Menu in the previous Menu File" option. This has been achieved by implementing a new "X" menu-line type that returns control back to the previous Menu File at the point at which the current Menu File was invoked. Prior to this change it was only possible to use a type "M" menu line to return to the initial Menu of the Menu File. Note that type "X" menu lines are only allowed Standard Menus (as defined in gsmsp10.doc). Type "X" menu lines are **not** allowed in Application menus;

- $STATUS has been enhanced to replace the uninformative message "AWAITING GX ACCEPT" to the more useful "ACTIVE GX PARTITION" or "GX QUIET FOR *nnn* MINS" message. Furthermore, prior to GSM SP-12, the change from "active" to "inactive" status was deemed to occur after 1 minute of inactivity. This inactivity delay has been reduced to 15 seconds (in 15 second intervals) so that the following new status messages will now appear:

```
ACTIVE                      (between 0 and 14 seconds inactivity on non-GX)
INACTIVE FOR 15 SECS        (between 15 and 29 seconds inactivity on non-GX)
INACTIVE FOR 30 SECS        (between 30 and 44 seconds inactivity on non-GX)
INACTIVE FOR 45 SECS        (between 45 and 59 seconds inactivity on non-GX)
ACTIVE GX PARTITION         (between 0 and 14 seconds inactivity on GX)
GX QUIET FOR 15 SECS        (between 15 and 29 seconds inactivity on GX)
GX QUIET FOR 30 SECS        (between 30 and 44 seconds inactivity on GX)
GX QUIET FOR 45 SECS        (between 45 and 59 seconds inactivity on GX)
```

- $DXU has been extended to support more than 127 record types in a DBX database. Furthermore, a problem in $DXU that results in an ILL OPC at BO$SMS / #1424, has been fixed.

5. Minor Changes to GSM Run Time

- The dialogue of $32A has been improved. It is now possible to key the target unit address immediately without selecting the relevant record in the scrolled area;

- $SETUP has been enhanced to only activate the Install button if there are valid cabinet files to be installed;

- The dialogue of $32U has been improved;

- A new utility, $BACLOSE, is now available to force the Speedbase Gateway to close all open databases;

- A new utility, $BADIAG, is now available to force the Speedbase Gateway to re-read all the diagnostic registry settings. This utility is required because of a change to the Speedbase Gateway. All versions of the non-DBX Speedbase Gateway prior to V2.23 (DBX Gateway V3.15) read the registry to obtain the current diagnostics settings for every database operation. This extra registry read operation was found to introduce a small delay for all Gateway operations. Consequently, in order to improve Gateway performance, the V2.23, and later, versions of the non-DBX Speedbase Gateway (V3.15, and later, of the DBX Gateway) do **not** read the registry during every operation. The corollary of this Gateway improvement is that an explicit command is required after a registry change to force the Gateway to read the diagnostic settings (see Technical Note IN274 for further details). The $BADIAG command provides this facility;

- A new utility, $BAFIX, is available to correct the file labels for Global 3000 Payroll V7.0 databases and data dictionaries so that the $F LIS reports 0% spare space instead of the (misleading) EMPTY file status;

- The $BAST and $BAST32 utilities have been extended to operate correctly when a 32-bit Global Client is accessing a Speedbase Btrieve database via the Speedbase NLM on a Novell Netware server. Furthermore, the $BAST32 utility has been extended to recognise DBX databases;

- A new utility, $BDCF, is now available to dump out the contents of Speedbase Pervasive SQL (Btrieve) and Speedbase Microsoft SQL BDCF files;

- $F has been enhanced to forbid the truncation of Speedbase databases (file organisation 99);

  - $GSP has been extended to ignore .GSP files that have been renamed from the strict naming convention of *mmvv_nnnnnn_nnn*.GSP. Also, a spelling mistake (criterea instead of criteria) has been corrected;

  - $GSP now correctly determines if a GSP has been included in a re-installation of a newer version of a product;

- A problem in $GSP that results in the unintentional truncation of a program library when an entire library (i.e. instead of a number of individual components) is included in a Product Service Pack, has been fixed;

- $GSP now includes additional validation of program libraries to check that the length of each individual member never exceeds the length of the library;

- The non-GX overlay of $GSP now warns if a Product Service Pack has already been applied; and allows a lower-case reply to the "Only Apply Unapplied Service Packs" prompt;

- $GSP has been made more efficient to avoid the table rebuild when updating the GSP "Applied" field;

- The Program List displayed by $GSP is now sorted in alphabetic order;

- A problem with $INSTALL that results in an ILL JUMP AT #31F8 if the reply to the "Apply...." baseline message is an upper-case letter, has been fixed. Note that this fix avoids the documented work-around of supplying a lower-case letter to the "Apply…" base-line prompt;

- A problem in $L that results in an overflow when the page number exceeds 9999 has been fixed;

- A problem in $LIBX that causes unpredictable results after the use of the PRI command, has been fixed;

- A new utility, $LIST, is available to provide a detailed directory list, sorted according to a variety of different criteria (e.g. file size, creation date etc.). $LIST, unlike $F or $DIR, also includes an option to display details of the gaps between files in the directory;

- The 32-bit Menu Maintenance utility, $MN32, has been simplified to remove the prompt "Do not force Pop menus for GUI?". An enhancement included in the V3.6 GSMWIN32.EXE now makes this Menu Handler option obsolete;

- The 32-bit Menu Maintenance utility, $MN32, has been enhanced to allow a new 50-character, free-format text-field to be associated with each menu line. The contents of this "Tag Data" field are moved to the new $$MTAG System Variable when the menu line is executed;

● The manner in which non-retry-able Executive Error messages (e.g. "ERROR N") are displayed on GX has been improved. Prior to this change such messages would appear in GX Window Zero. For GSM SP-12, and later, these messages appear in a Dialogue Box on GX;

- A problem in the $PAGES utility that results in a NUMERIC OVERFLOW if the total size of the 32-bit pages exceeds 100Mb, has been fixed;

- A problem in $PASSWD that results in a STOP 201 when <ESC> is keyed to the "CLEAR PASSWORD FILE - ARE YOU SURE?" prompt, has been fixed;

- $REORG has been enhanced to forbid the truncation of Global format Speedbase databases (file-type 99);

- Both $S and $32S have been enhanced to display the amount of 32-bit memory on GSM (Unix) configurations. This feature is only available if the GSM (Unix) BACNAT variant is V3.325, or later. Furthermore, the format of the information displayed by $32S on GX screens has been slightly improved;

- The $SAVE utility has been supplemented by $SAVEJ. Whereas $SAVE uses the "standard" SAVE$ routine, which by-passes Job Management for response to the "Backup Title" prompt, $SAVEJ uses the SAVEJ$ routine (q.v.) which allows the Backup Title to supplied in Job Management dialogue;

- $SETUP has been enhanced to display the message "Global Cabinet file of wrong format detected" on a non-GX screen, instead of failing with a STOP 14201 IN BO$CON/#184C;

- $SETUP has been extended to accurately determine the free space on the Program Unit for product re-installations;

- $SPOOL has been extended to force an immediate display before the various baseline messages that wait for a ^G to be keyed. This change causes all such messages to be displayed immediately on a GUI (i.e. $.711 family) screen; and avoids an apparent hang on a GX screen;

- $SPOOL has been enhanced to invoke the 32-bit version of the Print File View overlay, when this is possible, instead of the 16-bit version of the Print File View overlay. This change allows more than 10 continuation print files to be included in the File View;

- The $SPV utility has been extended to allow the target file to be selected using the same dialogue as $SP and $SPS;

- The format of the $STATUS "LIS" report has been simplified by replacing the GX terminal type number "911" by the text "GX";

- $STATUS has been enhanced to include the new PLK command. This command prints the entire Lock Table;

- A problem in the B$BAD routine, which does not set the file size on a newly created file, has been fixed. The symptom of this minor problem is that when B$BAD is used by Global Payroll V7.0 to create the various Payroll databases, each database appears as "EMPTY" in a $F listing;

- The 32-bit Menu Handler (in the BO$MEN DLM) has been enhanced to reduce the number of extraneous Window-Zero displays that are sent to GX;

- The 32-bit Menu Handler has been enhanced to always force "Pop Menu" or "SAA" style menus on GUI-1 (i.e. $.711 etc.) screens, regardless of the settings in the Menu Parameter file. The "ForceGUIMenuStyleToSAA" and "ForceGUIMenuStyleToPop" registry settings, under the "Customisations" key, now control the Menu Handler. Note that the confusing "Do not force Pop menus for GUI?" flag in the Menu File is now ignored;

- The Expiry Date checking in the Menu Handler has been improved to take into account the 14-day "grace period";

- 16-bit Menu Maintenance, MN, has been enhanced to allow the "Run in Text Mode" flag to be amended for Protected menu lines. This change has been implemented to allow PM V7.1 menus, which include a number of protected lines, to be modified to execute in "text mode";

- When the $32SPOOL utility invokes the View option, the text-mode screen is now switched into wide (132 character) mode;

- A problem in $32SPOOL, that results in a NO BASE exception when deleting all the spool files, has been fixed. In addition, the print duration is now displayed correctly;

- A problem in $32SPOOL that results in a STOP 25305 when the $$SP file is empty, has been fixed;

- The various messages displayed by the 32-bit Menu Handler have been revised to provide an improved look-and-feel on GX;

- A problem in the $32SPOOL option that results in the appearance of an empty file when viewing a spool file created by another operator, has been fixed;

- A problem in the BO$MEN DLM that results in a persistent CANNOT LOAD MENU FILE message if an error is encountered when processing a type "M" menu line, has been fixed;

- A problem in the $32SPOOL View option when the end of the file is encountered, has been fixed.

6. Global Development System Enhancements (Sub-routines etc.)

- A family of new 32-bit sub-routines are available to create and maintain DBX databases:

B$DBXC	Create database
B$DBXR	Rebuild database
B$DBXN	Convert database
B$DBXD	Delete database
B$DBXP	Change directory path

- The B$FRER sub-routine has been extended to return the correct result on Global 3000 Payroll databases. This change fixes the problem in Global 3000 Payroll V7.0 that causes a spurious file full condition to be reported on Payroll databases;

- The BA$DSX DLM has been extended to use the MSGX$ sub-routine (i.e. rather than the MSG$ sub-routine) to implement the HEADING verb on non-GX screens;

- The BA$DXX DLM has been enhanced to include the run-time support for the INITIALISE verb (see section 7);

- The BA$GEX DLM has been enhanced to include a fix for the "unreleased lock" problem. Prior to GSM SP-12, the BA$GEX DLM failed to release any lock on the target I/O channel following either an <ENQ> or <CLR> operation. It should be noted that this problem only occurred on GX screens;

- The BA$GEX DLM has been enhanced to include run-time support for the FOCUS verb (see section 7) which allows the focus to be directed at a specific field within a window. **It should be noted that the FOCUS verb is only supported on GX screens;**

- The Pop-Menu Handler has been extended to recognise a menu line of the following format as a "hard-disabled" pop-menu line:

   X ? menu_line_text

   so that:

X - menu_line_text	Normal, enabled pop-menu line
*X * menu_line_text*	"Soft" disabled pop-menu line
X ? menu_line_text	"Hard" disabled pop-menu line

   Note that a "hard" disabled pop-menu line is only recognised by GX V3.2d, or later;

- The BA$PPF DLM has been extended to support more than 132 characters in a PF. This DLM has also been enhanced to recognise the $PRFID System Variable;

- The BA$WEX DLM has been enhanced to recognise the **highly-specialised** "PreSP9GUIFieldInitialise registry setting;

- A read-only version of the BDAM Access Method is now available. This version of BDAM is considered highly-specialised and should not be required for most applications;

- A problem in the BO$AMS DLM that results in an EXIT 1601 at BO$AMS/#65C4 (for various Access Methods), has been fixed;

- The GXBRW$ sub-routine has been extended to include a default filename;

- A new 32-bit, GX-only sub-routine, GXCFE$, is available to test if a given file exists on the PC running GX;

- A new 32-bit, GX-only sub-routine, GXMKD$, is available to create a Windows folder on the PC running GX;

- The GXSHL$ sub-routine has been extended to optionally return the exit code from the Windows program. This new feature is only enabled if the version of the SH control block is higher than 1;

- The MIDN$ routine has been extended to include the same Expiry Date handling that is currently present in the Menu Handler;

- The 16-bit SAVE$ sub-routine has been extended to include 2 new entry points: SAVEJ$ is functionally similar to SAVE$ but the Backup Title can be supplied by Job Management dialogue; SAVEM$ is functionally similar to SAVEN$ but the Backup Title can be supplied by Job Management dialogue;

- The SBTYP$ sub-routine has been extended to return a Type Code of 4 (rather than an EXIT 9302) for an Extended C-ISAM database;

- The Speedbase Access Method (SPAM) has been extended to support DBX databases. The following ORGANISATION statement must be used:

      ORGANISATION OR$99D TYPE 99 EXTENSION 392

  The FD redefinition that defines the Index Name is now:

      02   FILLER   PIC X(81)
      02   SPINDEX   PIC X(16)
      02   SPRNN   PIC 9(9) COMP

During these changes both the DBX and non-DBX versions of SPAM were enhanced to return the following new STOP codes: 9919, 9920 and 9922; and to fix a problem that could result in an incorrect value returned in $$RES (i.e. binary 1 rather than ASCII "1");

- A problem with the FREEX$ sub-routine that results in a NO BASE exception when FREEX$ is called without an FM-block, has been fixed;

- A variation of the MSG$ routine is now available, MSGX$, which calls the Console Executive directly rather than using SVC 23 (the normal MSG$ interface);

- A new 32-bit sub-routine, UPPER$, is now available to convert a text-string to upper-case.

7. Global Development System Enhancements (Utilities)

- The $BUILD utility has been extended to maintain a list of source file names and units on a per operator-id basis;

- The 32-bit debugger, $DBUG, has been extended to allow a date field to be set to binary-zero;

- The $DEV utility has been extended to allow up to 6 copy-libraries when developing using $SDL32;

- $DXM has been improved so that the Scrolled Label and Non-Scrolled Label strings default to the Field Title Label. Furthermore, $DXM has been extended to support lower case variable names and record types;

  - A problem in $SDE that results in an OVERFLOW AT 9EEC, has been fixed;

  - $SDL32 now supports the INITIALISE verb. This verb causes the target I/O channel to be reset to its initial values. It is coded as follows:

    INITIALISE *rt*

where *rt* is a DBX record type. The verb causes the data-record area within the I/O channel to be reset to spaces or low values matching it's initial compiled state. An unlock operation automatically takes place if the I/O channel contained a locked or protected record. Note that the operation is supported for DBX I/O channels only, and the verb will produce a STOP CODE if used on non-DBX databases. The operation is supported by Global entry-point B$DXIN which may be called instead of using the INITIALISE verb. The call is of the form:

CALL B$DXIN USING $rt

The B$DIXN call and INITIALISE verb otherwise behave identically.

- $SDL32 has been enhanced to allow up to 350 external modules;

- $SDL32 has been extended to allow more than 132 characters in a PF construct. The Speedbase printer handling has been extended to allow long print lines to be constructed. Before GSM SP-12, all print lines were a fixed length of 132 characters. Using the new compiler option "PW" you may now specify an increased printer line width in the range of 132 - 256 characters inclusive. When the PW option is used, all PF constructs coded within the source program will be compiled with print-lines of the specified length. If the PW option is not used, print lines of 132 characters will continue to be produced. Some consideration must be given to the opening of the print files and spool files. When opened, the print/spool file must be created using a record length corresponding to the allocated PF size. When the file is opened automatically (as a result of the first PRINT statement) a file of the correct record length is automatically created. When the file is opened using the MOUNT statement AND the statement contains an alignment PF the printer line width of the PF is again used to open a file of the correct record length. When the MOUNT statement does not include an initial alignment PF the printer must first be opened using the B$PRO Open Printer call. This call has been extended to allow a Printer Width parameter to be passed:

    CALL B$PRO USING *line-width*

where *line-width* is a PIC 9(4) C literal or variable containing the required line-width required for the production of the report. If line-width is not supplied, then a line-width of 132 will be assumed. If the printer is opened with an insufficient line-width (i.e. a value less than the value specified by the PW compiler option), then the report will simply be left-truncated. A line-width higher than the value specified in by the PW compiler option has no effect other than wasting some disk space in spooled print-files.

Frames compiled with the new PW compiler option can only be used with the GSM SP-12 run-time components (i.e. the GSM SP-12 P.$SDLM0 library) otherwise a resolver error (symbol BA$PPF not found) will be reported when attempting to load the frame.

Furthermore, a new System Variable, $PRFID, has been implemented to allow the name of the print-file to be specified. Before GSM SP-12, the name of a report was always the same as the name of the creating frame. The default file name can be over-ridden using the $PRFID System Variable. $PRFID must be set to the required name before the printer is opened. The value is automatically reset to SPACES after the Open operation has completed so that the value is not inadvertently used in a subsequent printer Open operation;

- $SDL32 has been enhanced to support the new FOCUS *field* verb. The FOCUS verb, **which is only supported on GX screens**, allows the focus to be directed at a specific field within a window;

- $SDL32 has been extended to support up to 16 BOX statements per window (previous versions of $SDL32 only supported 8 BOX statements);

- $SDL32 has been extended to support lower case variable names and record types (for DBX dictionaries only);

- $SDL32 has been extended to support a maximum of 126 Copy Libraries;

- The STOP and EXIT code databases are now available in html format.

NEW FEATURES IN GSM SERVICE PACK 14

1. Introduction and Overview

Global System Manager V8.1 Service Pack-14 (GSM SP-14) includes several new features and many significant enhancements to GSM SP-12 (and GSM SP-11 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Triskaidekaphobics will be relieved that GSM SP-13 was not released externally.

Important Note: GSM SP-14 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-12 before applying GSM SP-14**).

VERY IMPORTANT NOTE-1: For GSM (Windows) configurations GSM SP-14 includes the same changes to the GSM licencing mechanism that were introduced for GSM SP-6. If you are upgrading a GSM (Windows) configuration to GSM SP-14 from GSM SP-5, or earlier, you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-2: For GSM (Unix) configurations GSM SP-14 includes the same changes to the GSM licencing mechanism that were introduced in GSM (Unix) for GSM SP-9 and GSM (Windows) for GSM SP-6. If you are upgrading a GSM (Unix) configuration to GSM SP-14 you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-3: For GSM (Windows) configurations GSM SP-14 **MUST** be used with GLOBAL.EXE V3.7 (or later) and GX V3.2a (or later). If you attempt to load GSM SP-14 on pre-V3.7 GLOBAL.EXE or use a pre-V3.2a GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V3.2a is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V3.2a (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility.

VERY IMPORTANT NOTE-4: For GSM (Unix) configurations GSM SP-14 **MUST** be used with the V3.315 (or later) BACNAT components and GX V3.2a (or later). If you attempt to load GSM SP-14 with a pre-V3.315 BACNAT or use a pre-V3.2a GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V3.2a is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V3.2a (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility.

2. New features in the GSMSP14 utility

- The GSMSP14 utility copies the "current" version of the DI$OPID Data Dictionary, renamed as DI$OPID_, to SYSRES (note that previous versions of GSMSP*n* (e.g.

GSMSP12) included a DI$OPID renamed as **$OPID). The GSMSP14 utility also copies the "current" version of the DIAUTHP Data Dictionary, renamed as DIAUTHP_, to SYSRES (note that previous GSM Service Packs (e.g. GSM SP-12) did not include this dictionary). If the Generation Number of the existing DI$OPID dictionary does not match the new DI$OPID_ dictionary, GSMSP14 displays a warning message reminding the operator that the DB$OPID database should be regenerated (using $BADGN, $BADN, $BN32 etc.). If the Generation Number of the existing DIAUTHP dictionary, if present, does not match the new DIAUTHP_ dictionary, GSMSP14 displays a warning message reminding the operator that the various DBAUTHP database(s) should be regenerated (using $BADGN, $BADN, $BN32 etc.);

- The GSMSP14 utility also sets the ExtendedSYBANK registry setting to "On".

3. Changes to GSM Installation and Start-Up

- The GSM Start-Up processing has been enhanced to allow more than 127 memory banks (previous versions suffer an OVERFLOW at start-up if more than 127 memory banks are configured);

- The GSM start-up processing has been revised to ensure that the Number of Users never exceeds the Number of Memory Banks available. This removes the need for "Disk Swapping" configurations (i.e. those that use a $$SWAP file). This change was necessary to allow the 32-bit debugger to be used on configurations with more than 127 users. Note that the "Disk Swapping" option, which is a remnant of GSM (BOS) and GSM (DOS) configurations, is effectively obsolete on virtual memory GSM (Windows) and GSM (Unix) configurations. Note that a small (4608 byte) $$SWAP*xx* file is still created on the $SW unit but this file is only accessed at sign-on time;

- The GX file down-load option has been **extensively** revised. Please refer to Technical Note IN271 for further details;

- GX now displays the Operator-id in all partitions. Furthermore, the current Authorisation Level is also sent to the GX client;

- The $$MOTD (Message Of The Day) file is now Open Shared when being read by an operator at sign-on time;

- The problem that results in an Expiry Date message displayed twice on the first partition of the "root console", has been fixed;

- The GSM start-up processing has been enhanced to support the $CUS "Multiple Sign-On" option;

- The GSM start-up processing has been extended to support a GX encryption mode option. This option is reserved for future use.

4. Major Changes to GSM Run Time

- $CUS now includes an option, in the Additional Customisations section, to enable the Multiple Operator-id sign-on. This option, when used in conjunction with $AUTH, $PASSWD or $AUTH32, optionally allows an operator-id(s) to sign-on more than once on a GSM configuration. **IMPORTANT WARNING: Some applications use the operator-id ($$OPID) to create unique filenames for work-files etc. DO NOT ENABLE THIS OPTION UNLESS YOU ARE SURE THAT IT IS SAFE TO DO SO;**

- $AUTH32 has been enhanced to support multiple operator-id's when used in conjunction with a new $CUS customisation (i.e. optionally allowing the same operator-id to sign-on more than once). In addition, the various authorisation points can be displayed in a variety of Display Attributes. Furthermore, the enforced change of password on an operator's first login is now optional. $AUTH32 has also been enhanced to restrict a user to a particular node-id (or small range of possible node-id's);

- $PASSWD has been enhanced to support multiple operator-id's when used in conjunction with a new $CUS customisation (i.e. optionally allowing the same operator-id to sign-on more than once). In addition, the enforced change of password on an operator's first login is now optional. Furthermore, a default Authorisation Level for all new entries can now be specified. $PASSWD has also been enhanced to restrict a user to a particular node-id (or small range of possible node-id's);

- $AUTH has been enhanced to support multiple operator-id's when used in conjunction with a new $CUS customisation (i.e. optionally allowing the same operator-id to sign-on more than once);

- The $RUNMAIN utility has been enhanced to allow an Authorisation Level to be associated with each line in the GX Run Menu. In addition, $RUNMAIN also allows a Toolbar Index to be associated with each entry allowing a Run Menu item to be invoked directly from a GX Extended Toolbar icon. See document gxtoolbar.doc for further details;

- The $32BASA utility (i.e. the 32-bit equivalent of $BASAV) has been enhanced and is now available for general use (i.e. it has been moved from the "evaluation" list to the "supported" list);

- The $32BADG utility (i.e. the 32-bit equivalent of $BADGN) has been enhanced and is now available for general use (i.e. it has been moved from the "evaluation" list to the "supported" list). For the benefit of DBX developers the $32BADG utility supports a direct call from $DXM. The tables of fully-released and evaluation-only 32-bit utilities that were documented in the GSM SP-12 Notes have been updated for GSM SP-14:

Table 1 - Fully released 32-bit utilities		
32-bit utility	Equivalent 16-bit utility	GX only utility

$BN32	$BADN	No
$BS32	$BADS	No
$BAST32	$BAST	No
$32BADG	$BADGN	Yes
$32BASA	$BASAV	Yes
$32A	$A	Yes
$32S	$S	Yes
$32U	$U	Yes
$SETUP ($32INST)	$INSTALL	No
$32LICE	$LICENCE	No
$GSP	None	No
$INSLOG	None	No
$AUTH32	None	Yes
$MN32	MN	No
$MENU32	$MH	No
$32SPOOL	$SPOOL etc.	Yes

Table 2 - Evaluation only 32-bit utilities		
32-bit utility	**Equivalent 16-bit utility**	**GX only utility**
$BC32	$BADC	No
$32DLMM	$DLMMAIN	Yes
$32PRIN	$PRINT	Yes
$32SFMA	$SFMAIN	Yes
$32STAT	$STATUS etc.	Yes

5. Minor Changes to GSM Run Time

- The 32-bit SYSREQ-I overlay has been modified to forbid the potentially dangerous delete and purge assignment options;

- The 32-bit $S has been enhanced to return the full GSM (Windows) GLOBAL.EXE version string, including the optional trailing letter (e.g. V3.7w is displayed instead of merely V3.7);

- The 32-bit spooler View option now switches the screen to wide mode;

- The 32-bit spooler has been enhanced to recalculate the printer duration value before each Spooler Table display. A problem that causes a STOP 25305 when the $$SP file is empty, has been fixed. The schedule table is now rebuilt more frequently so the effect of deleted files appearing on the selection list does not occur. A gap of one empty record between the historical information and the live records has been added to the spooler schedule table. The accelerator key shortcut has been removed from the Interrupt button;

- $AUTH has been enhanced to correctly display the "new password" prompt during a GX sign-on. A problem in $AUTH that prevents the $STARX overlay, which is responsible for GX updates, from being executed if the $$AUTH file is empty, has been fixed;

- $BADGN has been enhanced to automatically run $32BADG (q.v.) when running on GX. A problem in $BADGN that results in the message "SORRY - YOU ARE ATTEMPTING TO USE A SERVICE WHICH IS NOT PART OF YOUR GLOBAL SYSTEM MANAGER." on GSM-PR systems when converting a Global 3000 Payroll database using a Conversion Dictionary, has been fixed;

- $BADGX, a slightly enhanced alternative to $BADGN, is now available. $BADGX is functionally similar to $BADGN except that the conversion offers the option to convert one, or more (up to 5), computational fields to an equivalent character field. $BADGX does not perform any checking on the field so care must be taken to ensure that the fields affected are not GVA/GVF fields.

- $BADN and $BN32 have been enhanced to include a File Conversion option. To activate the new option, which results in incompatible dialogue with previous versions of $BADN etc., reply with an "X" character to the "Do you want to Convert to a new version" then reply "Y" to the next prompt that appears;

- The format of the log file produced by $BALOCK has been improved;

- A number of cosmetic changes have been made to $BAST32. In particular, the format of Gateway error messages has been improved;

- $BAST32 has been extended to display the versions of the Speedbase Gateway and the underlying Database Manager (i.e. the version of Pervasive SQL or Microsoft SQL). In addition, a problem in $BAST32 that results in an OVERFLOW on some DBX databases, has been fixed;

- A new utility, $BDCF, is now available to dump out the contents of Speedbase Pervasive SQL (Btrieve) and Speedbase Microsoft SQL BDCF files. A problem in the pre-release version of $BDCF that results in an EXIT 1601 for some DBX databases, has been fixed;

- $BN32 has been enhanced to display "Block number X of Y" in all the progress messages for all the conversion options. Please note that since the release of GSM SP-14 it has been discovered that the Target Block Number, Y, is not always accurate for some databases. This problem will be fixed in GSM SP-15. The main menu displayed by $BN32 has been changed from a pop-menu to a standard utility menu;

- $DXU supports a Field Name Mapping option. To activate the new option, which results in incompatible dialogue with previous versions of $BADN etc., reply with an "X"

character to the "Do you want to Convert to a new version" then reply "Y" to the next prompt that appears;

- The manner in which $DXU handles errors returned from the Speedbase Gateway has been considerably improved. The changes are backward compatible with all versions of the DBX Gateway. $DXU now produces Error Report Logs for both Rebuilds and Conversions. The errors included in the report include details of missing Masters and overflowing GVA's;

- The temporary file, DB%TP*nn*, that is created during a database conversion is now removed after the conversion completes;

- The dialogue for the $GSP "Apply All" function has been improved to avoid the requirement to acknowledge every service pack that has been applied. The dialogue for $GSP when running on a non-GX screen has also been improved to allow <F1> to select the Apply All option;

- $GSP now supports a Print function that allows either a single GSP, or a batch of GSP's, to be printed;

- A problem in $GSP that caused an ILL LOAD when applying some GSP's has been fixed. The problem only affected GSP's that contain long strings of hyphens in the descriptive text. A further problem in $GSP that affects those GSP's with large pre-requisite lists, has been fixed;

- $GSP has been significantly enhanced to support Local Installation Log files on each of the installed program units. A small file (type SY), $$*pp* (where *pp* is the Product Code e.g. $$PR for Payroll) is automatically created for each installed product on each installation volume. The Local Log File contains details of the GSP's that have been applied to each particular product. If a Local Log File does not exist on a program unit it will be created automatically by $GSP to resynchronise the installed program unit with the master $$INSLOG file on $$L. If $GSP detects a mismatch between the central $$INSLOG file and the local $$*pp* file a warning will be displayed allowing $INSLOG to resynchronise the $$INSLOG with the $$*pp* file. Under normal circumstances, of course, the central $$INSLOG file and the Local Log File will remain in step. However, the log files will drift apart if an older version of the program unit, that is lacking the most recent service packs, is restored from a back-up copy;

- All error messages displayed by $GSP now include the name of the GSP responsible for the problem;

- The full functionality of $INSLOG is now available when running on a non-GX screen;

- $INSLOG has been enhanced to include a new "Check program Volume" facility.

  - The concept of a "Bespoke Product Number" has been removed from $INSLOG;

- $LIB has been extended to warn if the library file size in the directory label is strictly invalid;

- The various error messages displayed by $MENU32 have been enhanced to appear in message boxes on GX screens. In addition, $MENU32 has been enhanced to support various Menu Styles (Menu Style 0 is the "traditional" Flat Page style; Menu Style 1 is an "Expanded Button" style; other styles are reserved for future use);

- The 32-bit Menu Handler, $MENU32, now recognises the simple Authorisation Level and Password settings on a menu line when $AUTH32 authorisation has been enabled (i.e. earlier versions of $MENU32 ignored the simple Authorisation Level and Password settings on a menu line if the Authorisation Program is set to $$AUTHEX). Note the Menu Handler ignores Menu Access Rights if the Authorisation Program is set to $$AUTHEX;

- A problem in $MN32 that sets the Access Rights Table to a value that is misinterpreted by $AUTH32, has been fixed. This problem is only likely to affect those sites that have enabled $AUTHEX as the Authorisation program;

- A problem in $MN32 that causes a spurious EXIT 402 if there is insufficient space in the work file, has been fixed;

- The "View before Print" option has been removed from the Print function of $MN32;

  - $MN32 has been extended to allow a reply of 0 to the Menu Number prompt to automatically select the next available free Menu Number;

  - A problem in the $MN32 "Upgrade 16-bit menu to 32-bit" function has been fixed. The problem caused the database flags to become corrupted during the upgrade;

- $MN32 now correctly provides the current menu as the default menu to be updated. When $MN32 detects a 16-bit menu it now offers the option to leave the menu as 16-bit and run MN to maintain the menu (in addition to original options of abandoning the update or upgrading the menu to 32-bit);

- If the Debug overlay receives an exception from the GX "Return Date" function, the GX Date in the Debug Log file is set to "??.??" instead of a random date;

- $PAGES now correctly displays a 32-bit Profile Page with a description of "Profile" rather than "Type R";

- A problem in the 32-bit spooler that results in a blank screen when an attempt is made to view a spool file created by another operator, has been fixed;

- A problem in the $STATUS "LIS" option that results in an OVERFLOW (at various addresses) when a GX screen had been inactive for several days, has been fixed. A new $STATUS message "INACTIVE FOR MANY DAYS" is reported;

- A problem in $STATUS that prevented the RES, DIS or CAN commands from operating on a user with a User Number higher than 99, has been fixed;

- A problem in the $STATUS LIS command that limits the display of user on other clients to 127 users, has been fixed;

- A problem in the $STATUS PUR command that causes an EXIT 1601 if the $$USER file is larger than 1Mb (approx.), has been fixed;

- A new command, RIU, has been added to $STATUS. The RIU command **R**estarts all **I**nactive **U**sers;

- The $STATUS PLK command now correctly prints the Access Method Lock table;

- A problem in the BA$DXX DLM that causes a problem with the FETCH NEXT and FETCH EQUAL statements on DBX databases has been fixed. The problem, **which only affects DBX databases**, is that the Record Area is not set to HIGH-VALUES when an EOF exception is generated. Note that applications should not test the contents of the Record Area for the EOF condition but should, instead, test the exception code returned;

- A problem in the BA$GEX DLM that can result in spurious STOP 25302 exceptions, has been fixed.

- A problem in the BA$GEX DLM has been fixed. The problem is that, under some conditions, a button in a window is not being disabled despite a DISABLE button clause. This is caused by a problem in the B$ENAB sub-routine which incorrectly updates the button list of the current window and not the button list of the passed window. Therefore if the passed window is not the current window, which could happen if another window is displayed in between, then the wrong button table is updated;

- A problem that results in an ILLEGAL OPCODE in BA$GUI when a window contains massively large amounts of fixed text, has been fixed;

- A problem in the BA$OPN DLM that can occasionally result in an EXIT 1601 when reporting errors from the Speedbase Gateway, has been fixed. Furthermore, all Gateway error messages are displayed in a Message Box of GX;

- The BA$WEX DLM has been enhanced to return a STOP 25309 if the Displayed Picture Clause of a field does not match the Data Length when the field is displayed on a non-GX screen;

- The Menu Handler has been enhanced to recognise the following new option in the "Customisations" section of the GSM (Windows) registry:

  ExpiryDateMessageOnlyForAuthZ

  If this option is enabled the various Expiry Date warning messages are only displayed if the Authorisation Level is "Z".

- A problem in the 32-bit Menu Handler results in an infinite loop after the error condition that results in an "CANNOT LOAD MENU FILE" error message, has been fixed. Furthermore, the Menu Handler has been enhanced to call the ASCHK$ routine (q.v.) to test for duplicate unit assignments. A warning message is displayed if any duplicate unit assignments are detected;

- A problem that causes an ERROR I from the BO$VEW DLM when the file being viewed is not on a spool unit, has been fixed. Furthermore, a problem that causes the view option to wrap around at the end of the print file, has also been fixed;

- Two utilities are available to edit and repair 32-bit menu files:

  MN32N   Sets the "Run Frame in 16-bit mode" flag in the frame lines of a 32-bit menu to the complement of the `Run Frame in 32-bit mode' flag from the original 16-bit menu file;

  MN32O   clears stale access rights from 32-bit menu files

  Neither of these utilities are distributed within GSM SP-14 but both are available upon request;

- The BA$GXM DLM has been modified to generate a STOP 25071 if the number of RDA's exceeds the space available in the internal re-connection buffer.

6. Global Development System Enhancements (Sub-routines etc.)

- A new PIC X(1024) 32-bit System Variable, $$300$, is now available for use by vertical applications. Note that the related $$3000 System Variable is reserved for use by G-3000;

- A new PIC 9(9) COMP 32-bit System Variable, $$XUSER, is now available. $$XUSER is an unsigned, extended copy of the well-known $$USER;

- A new 32-bit sub-routine, ASCHK$, is available to check for duplicate unit assignments. This routine is reserved for internal use (by the Menu Handler) only;

- Two new 32-bit sub-routines, B$GVER and B$GV2, are now available to return various Pervasive and Microsoft SQL database version information;

- A problem in the B$PRL routine that results in a PARAMETER STACK exception when called with 2 parameters has been fixed. This routine can now be called with either 2 or 3 parameters;

- A new 32-bit sub-routine, B$ST, is now available to obtain the status of a DBX database. The DBX-only B$ST sub-routine is equivalent to BSTA, BSTB etc. for non-DBX databases. See Technical Note IN269 for further details. Note that pre-release versions of B$ST could generate STOP 25075 and STOP 25076. These STOP codes have been replaced by the unique STOP 25085 and STOP 25086;

- The AUTHA$ and AUTHM$ sub-routines have been enhanced to check the Generation Numbers of the DB$OPID database (on $M) and the DBAUTHP database (on $P). If the Generation Numbers are not as expected for the GSM SP-14 version of the BO$AUT DLM, an Assist Frame is executed to access the database(s) of the older generation. This technique is only required if the DB$OPID database, on $M, has not been regenerated since the upgrade to GSM SP-14; or if the DBAUTHP database, on multiple $P's, have not been regenerated since the upgrade to GSM SP-14. The following table describes the combinations of databases and Generation Numbers:

DB$OPID Generation	DBAUTHP Generation	Comments	Action
48	11	Neither database regenerated since the GSM SP-14 upgrade.	AUTHA$ and AUTHM$ will invoke $A0048011 overlay to perform the database access.
48	14	Only DBAUTHP (on $P) has been regenerated since the GSM SP-14 upgrade.	Illegal combination. If one, or more, DBAUTHP databases have been regenerated then DB$OPID **must** also be regenerated.
50	11	Only DB$OPID (on $M) has been regenerated since the GSM SP-14 upgrade.	AUTHA$ and AUTHM$ will invoke $A0050011 overlay to perform the database access. Note that it is legal, although not recommended, to regenerate the DB$OPID database without regenerating the various DBAUTHP databases.
50	14	Both databases have been	AUTHA$ and AUTHM$

		regenerated since the GSM SP-14 upgrade.	access the databases directly.

- A new, 16-bit only (sic) routine, DIGEN$, is available to return the Generation Number of a non-DBX Speedbase Data Dictionary;

- A problem in the EDTTX$ routine that causes a small memory leak, has been fixed;

- A new GX-only, 32-bit sub-routine, GXAUT$, is available to send the value of the $$AUTH System Variable to GX. This routine is reserved for internal-use only;

- A new GX-only, 32-bit sub-routine, GXGCN$, is available to obtain the Windows computer name, the GXHOSTS Location Reference and the GXHOSTS Computer Reference from GX;

- The GXMSG$ routine has been extended to recognise the new MSFONT field if the #40 bit of the MSPOS field is set. This extension allows the text message font to be selected under application program control;

- A new 32-bit sub-routine, GXSWC$, is available to set the GX Window Caption.

- The highest Toolbar Index allowed by the GXTBI$ routine has been extended from 12 to 84;

- The GXTBT$ routine has been enhanced to validate the range of the Toolbar Button field. This change makes GXTBT$ compatible with the closely related GXTBI$ routine. Note that the highest Toolbar Index (BTINX) allowed by GXTBT$ is 84;

- A new sub-routine, LOWER$, is available to convert a text-string to lower-case letters;

- The MBOXX$ sub-routine has been extended to allow the Close-Box/<ESC> key to generate a Cancel exception;

- A new Line-based open Text-File Access Method (LTAM) is now available. This access method allows reads and writes to Windows and Unix text files but does not involve the relative complexity of Open TFAM (and TFAM). Simple, variable-length records are processed without the need for LOW-VALUES terminators. Further documentation is available upon request;

- A **SERIOUS** problem in the OPIDX$ sub-routine (both 16-bit and 32-bit versions) has been fixed in GSM SP-14. The problem is that a 20-byte block at some random offset past the PIC X(2000) work-field parameter is corrupted to LOW-VALUES. The problem only occurs if the maximum User Number is higher than 99. A less serious problem that can sometimes result in the wrong partition number returned for users higher than 127 has also been fixed. All 32-bit applications that call OPIDX$ automatically include

this fix when using the GSM SP-14 P.$SDLM0 DLM library. However, **ALL 16-BIT PROGRAMS THAT CALL OPIDX$ SHOULD BE RE-LINKED WITH GDS SP-14;**

- The RUNME$ sub-routine has been extended to send the current Authorisation Level and optional extended Toolbar Index to GX

- The S.SYS32 copy-library has been extended to include the following new copy-books:

    z$ for EDTTX$ CB-block

- The SPAM "Index Not Found" condition now returns an EXIT instead of a STOP 9923. This STOP code has been withdrawn;

- A bug in the STRM$ routine that results in an ILLEGAL LOAD if the only significant characters in the text string are not higher than "!", has been fixed;

- A new routine, STRS$$, is now available. STRS$$ is functionally equivalent to the existing STRM$$, except that text-string is passed directly (i.e. STRM$$ expects a pointer to the string);

- A new sub-routine, TX-LI$, is available to reformat the text-block returned by the EDTTX$ routine: The unstructured text-block is split into a number of fixed-length lines. Further information is available upon request;

- The USERX$ routine has been extended to support the Multiple Operator Sign-in option that can be enabled in $CUS (q.v). An optional PIC 9(4) COMP parameter can be used to pass the Occurrence Number (between 1 and 250) of the signed-on operator-id;

- A problem in the VIEW$ routine when viewing very large files has been fixed.

- The GX version of the Window Manager has been extended to allow ranges of records to be displayed. In previous versions it was only possible to restrict records using the Dependant clause. While this generally works well for character fields, it does not allow a range of records to be selected when the discriminating key is computational (i.e. when required range boundaries do not happen to fall on a character boundary). This enhancement overcomes the limitation thus allowing you to specify a key range using the R-FETCH routine. See document gxrangechecking.doc for further details.

7. Global Development System Enhancements (Utilities)

- The $BUILD utility now allows the "per operator list" to be purged. It is also possible to alias the current operator to another developer;

- $DBUG now recognises variable names that include lower-case letters. $DBUG has been enhanced to display the Last Transfer of Control address;

- $DXDCT now supports 40 character field names in DBX databases;

- $DXM has been extensively revised to provide an improved look-and-feel on GX;

- $DXM has been modified to treat Global fields in a different way from previous versions. In previous versions, $DXM treated any Primary Key field as a Global Field throughout the database, and required that all 5 instances of the field in all records were identical. These requirements have now been relaxed, which should make the process of allocating new field names slightly easier. Link fields (Foreign Keys), which are used to identify the master belonging to a servant record, are still required. They are necessary to allow a master and servant record to be linked together, and the Name and Picture of each field must be identical to the fields in the Master Record's Primary Key. However, there are no requirements beyond this. It is now permissible to use the same field name in other (unrelated) record definitions, using either the same or a different picture clause. The previous versions of $DXM automatically propagated any changes made to a Global Field, thus ensuring all Global fields were identical throughout the database. This feature has obviously been dropped to allow Global fields to have different attributes on different records. When you change the picture clause or the name of a Primary Key field, you must now make the same changes to the Link Fields within all Servant record definitions. If you omit to do this, you will get an error message when you next try to generate a dictionary;

- $DXM now allows the Generation Number to be specified. Note that the Generation Number will still be incremented when the Database Generation option is run;

- The number of indexes per record for a DBX database has been extended from 16 to 64;

- $DXM now supports a change Record-ID feature;

- The Field Description printed in the $DXM report now contains the full 40 characters;

- A problem in $SDE that results in an OVERFLOW if the length of a field processed during the window design dialogue (i.e. <F9> Q) exceeds a PIC X(999), has been fixed;

- $SDE has been enhanced to allow BACKTAB to return from the Unit-id prompt to the Filename prompt;

- $SDE has been enhanced to recognise both 3 character and 4 character Window-id's. In addition $SDE now recognises variable names and Record-id's that include lower-case letters;

- A problem in $SDE Window Edit mode that results in an OVERFLOW when multiple deletes involving all the fields in a record set, has been fixed. A further problem, that appears to hang $SDE, when a particular combination of keystrokes are used on a record-less window, has been fixed;

- The size of the Hold Buffer allocated by $SDE has been increased. It is no longer merely the current size of the Work Buffer;

- The $SDE Window Edit mode has been enhanced to display NSL fields in the normal Text-Field Colour;

- $SDL32 has been enhanced to recognise both 3 character and 4 character Window-id's. In addition, $SDL32 always creates an RS listing file if the Printer Unit is a Spool Unit;

- Previous versions of $SDL32 failed to set the high-order bit of the $XX>XX symbol number when a DBX I/O channel is read-only. This problem can lead to an unexpected ILLEGAL OPERATION CODE AT BA$DXX/#118A, under some conditions. This problem has been fixed. **TO AVOID THIS PROBLEM ALL DBX DEVELOPERS SHOULD RECOMPILE APPLICATIONS USING THIS VERSION OF $SDL32**;

- A problem in $SDL32 that results in an OVERFLOW AT #44CA in $SDLD has been fixed. The problem only occurs when the length of a field longer than 127 characters is itself longer than the Display Length;

- $SDL32 now generates an ERROR 400, instead of an OVERFLOW, if the right-most character of a field exceeds the maximum GX co-ordinate position.

8. Some Known Issues with GSM SP-14

This section describes two known issues with GSM SP-14.

- As described above, the GSM start-up processing has been revised to ensure that the Number of Users never exceeds the Number of Memory Banks available. This removes the need for "Disk Swapping" configurations (i.e. those that use a $$SWAP file). If the Number of Users **would** exceed the Number of Memory Banks the following Initiation Warning message is displayed:

    $57 INITIATION WARNING 202 - NOT ENOUGH ROOM FOR SYSTEM OF *nn* PARTITIONS
    SYSTEM OF FIRST *nn* PARTITIONS IS POSSIBLE:

The Number of Memory Banks may be reduced from the optimum value to below the actual Number of Users if any of the following conditions are met:

A. If the amount of available virtual memory on the PC is less than (N * 60Kb, approx) where N is the Number of Users. This is very unlikely on "modern" versions of Windows or Unix;

B. If the amount of virtual memory available to GLOBAL.EXE has been artificially reduced by the "..\Client\MaximumMemory" registry setting. This registry setting should never be explicitly set to any value less than the default value of 32768 (which is equivalent to a limit of 32Mb);

C. If the Number of Memory Banks has been artificially reduced by the "..\Monitor/NumberOfMemoryBanks" registry setting. This setting should normally be set to 0 to allow GSM to calculate the optimum number of Memory banks.

- Although not a problem with GSM SP-14 per se, the following problem **could** occur when upgrading from GLOBAL.EXE V3.7 to GLOBAL.EXE V3.8 (and some pre-release versions of GLOBAL.EXE V3.8 e.g. V3.7z): The option in $PASSWD (and $AUTH32) that allows an Initial Menu to be configured on a per-user basis requires that an Extended System Area has been enabled using the "..\Nucleus\ExtendedSystemAreaSize" registry setting. The corollary of this is that any system without an Extended System Area, the per-user Initial Menu option that may be configured in the $$PASS file (or $AUTH32 database) will be ignored and the default $$MENUS on $DP will be used as the Initial Menu. For GLOBAL.EXE V3.7 the default value of the "..\Nucleus\ExtendedSystemAreaSize" registry setting is 0 (i.e. Extended System Area **disabled**). For GLOBAL.EXE V3.8 (and V3.7z etc.) the default value of the "..\Nucleus\ExtendedSystemAreaSize" registry setting is 16 (i.e. Extended System Area **enabled**). If a configuration with an invalid, but dormant, Initial Menu setting is upgraded from GLOBAL.EXE V3.7 to V3.8 etc., the invalid Initial Menu will become activated and the message "Cannot Open Menu" file may appear instead of the first page of $$MENUS on $DP.

NEW FEATURES IN GSM SERVICE PACK 15

1. Introduction and Overview

Global System Manager V8.1 Service Pack-15 (GSM SP-15) includes several new features and many significant enhancements to GSM SP-14 (and GSM SP-12 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-15 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-14 before applying GSM SP-15**).

VERY IMPORTANT NOTE-1: For GSM (Windows) configurations GSM SP-15 includes the same changes to the GSM licencing mechanism that were introduced for GSM SP-6. If you are upgrading a GSM (Windows) configuration to GSM SP-15 from GSM SP-5, or earlier, you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-2: For GSM (Unix) configurations GSM SP-15 includes the same changes to the GSM licencing mechanism that were introduced in GSM (Unix) for GSM SP-9 and GSM (Windows) for GSM SP-6. If you are upgrading a GSM (Unix) configuration to GSM SP-15 from GSM SP-8, or earlier, you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-3: For GSM (Windows) configurations GSM SP-15 **MUST** be used with GLOBAL.EXE V3.8 (or later) and GX V3.4 (or later). If you attempt to load GSM SP-15 on pre-V3.8 GLOBAL.EXE or use a pre-V3.4 GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V3.4 is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V3.4 (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V3.4 and a compatible version of GXIO.EXE are also available in ZIP file format.

VERY IMPORTANT NOTE-4: For GSM (Unix) configurations GSM SP-15 **MUST** be used with the V3.315 (or later) BACNAT components and GX V3.4 (or later). If you attempt to load GSM SP-15 with a pre-V3.315 BACNAT or use a pre-V3.4 GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V3.4 is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V3.4 (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V3.4 and a compatible version of GXIO.EXE are also available in ZIP file format.

2. New features in the GSMSP15 utility

- GSMSP15 has been extended to upgrade an "internal version" of GSM to GSM SP-15. Previous GSMSP*nn* installation jobs (e.g. GSMSP14, GSMSP12 etc.) refused to upgrade from an internal version of GSM.

3. Changes to GSM Installation and Start-Up

- A problem in GSM start-up that results in the spurious message "SORRY - YOU ARE ATTEMPTING TO USE A SERVICE WHICH IS NOT PART OF YOUR GLOBAL SYSTEM MANAGER" in P2, P3, P4 etc. on configurations that have the 32-bit run-time option disable, has been fixed;

  - The GSM start-up overlay ($STARX) has been enhanced to check the versions of GLOBAL.EXE and GX.EXE. For GSM SP-15, the minimum version of GLOBAL.EXE is V3.8; and the minimum version of GX.EXE is V3.4;

- The GX file download overlay ($STARQ) has been enhanced to support version numbers within the various GXCUSTx.CUS files that may be downloaded from the Global server to the various GX PC's. The file last modification date/time, which is normally used to control the GX file download, cannot be used for .CUS files as these files are frequently updated by GX.EXE. When the $STARQ overlay detects a server-based file with a name of the format GXCUST*n*.CUS the file is scanned for a "Version" setting within a "[Version]" section. If the Version setting contains a value "V*x.y*" (where *x* and *y* are both digits) the version number of the equivalent file on the GX PC is obtained from GX. The GXCUST*n*.CUS file is only downloaded to GX if the version number of the file on the server is higher than the file version on the GX PC;

- The GX file download overlay ($STARQ) has been enhanced to allow the GX.INI file to be updated automatically from the server without requiring any self-referencing settings in the existing GX.INI files on the various GX PC's. Any files in the "*gxupdates*\GXINI\GXINI\" folder on the server will be automatically downloaded to the current GX folder on the GX PC. This new option simulates a "GXINI=." setting in the "[GXINI]" section within every GX.INI and avoids the "chicken-and-egg" situation of arranging to automatically download a new copy of GX.INI to every GX PC if the existing GX.INI does not already contain a self-referencing section to enable the download;

- The GSM start-up overlay ($STARX) has been enhanced to display a warning message if a Windows hard-disk partition is deemed to be full. This change, which is controlled via a number of registry settings and requires GLOBAL.EXE V3.8, or later, is fully described in global38.doc;

  - The GSM start-up overlay that controls the auto download of new versions of GX ($STARX) has been enhanced to support "silent" update and reload options. See Technical Note IN257 (in257updatinggxautomatically.doc) for further details.

4. Major Changes to GSM Run Time

- A long-standing, obscure problem in both 16-bit and 32-bit ASSIG$ has been fixed. The problem occurs when a unit assignment is deleted from the "traditional" part of the assignment table followed by the modification of another assignment that is already present in one of the "extended" assignment tables. Under some conditions, depending on the size of the assignment table, an entry can appear twice in the assignment table;

- The Database Manager has been enhanced to avoid the database rebuild that is necessary following an attempted WRITE or REWRITE when the Database Manager detects that a required master record is not locked. The Database Manager attempts to recover the situation but if this fails, either because the master is locked or does not exist, then the operation will be terminated and the application is terminated with a stop code. Prior to this change the database would be corrupted, requiring a rebuild. For GSM SP-15, and later, if any master is missing or unlocked, the Database Manager generates a new stop code - STOP 25078. In this event, no I/O operations will have taken place, and hence no database corruption can occur. The STOP 25078 indicates that the required master was not read and/or not locked before the target I/O occurred. Either way no I/O will have taken place, and the database status will be as immediately prior to the I/O request. There is no significant performance implication in this change as no I/O operations are needed to detect the condition. Note that GVA overflows arising out of otherwise valid WRITE or REWRITE operations will continue to result in database corruption. The change applies to all Speedbase database formats;

- $CUS has been enhanced to set a system-wide "GSM reload required" flag when a customisation that requires a reload of GSM has been made. In addition, the user login processing has been extended to display a warning message if a customisation that requires a reload of GSM, has been made;

- The dialogue for $DXU has been extensively revised. These changes include the display of a progress bar during time consuming functions. If it is required to by-pass the display of the initial $DXU menu two related utilities, $DXUP and $DXUM, are now available. $DXUP maintains Pervasive SQL format DBX databases, $DXUM maintains Microsoft SQL format DBX databases.

5. Minor Changes to GSM Run Time

- A problem in $32BADG that results in an ILLEGAL LOAD if two database regenerations are attempted in the same invocation of $32BADG, has been fixed;

- A problem in $32BADG that results in a STOP 201 if two database regenerations are attempted in the same invocation of $32BADG, has been fixed;

- A problem in $A050011 etc. that can result in an EXIT WITH 1 has been fixed;

- $AUTH32 has been modified to alter the meaning of the System Override Control Flag. This flag now has 3 possible values: Y = controlled; N = not controlled; SPACE = use control at the system level;

- A problem in $AUTH32 that results in a number of program exceptions (e.g. OVERFLOW) when navigating using the buttons after reaching the end of the User List, has been fixed. Furthermore, a number of small, cosmetic changes to $AUTH32 have been implemented;

- $AUTH32 now displays a meaningful error message (i.e. instead of failing with a STOP 25014) when generation number of the DB$OPID database is incorrect;

- $AUTH32 has been enhanced to include a Print Report which lists all the users who are authorised to use the various groups defined in the Authorisation database;

- $AUTHEX now displays a warning message if a Start Menu has been defined for the current user but the Start Menu cannot be used because the configuration does not include an Extended System Area;

- A minor problem in $BASTS that results in an EXIT 13302 if the data dictionary is not on the database unit, has been fixed;

- The total block count displayed by $BN32 is now accurate;

- The 32-bit debugger, $DBUG, has been enhanced to allow a User Number to be supplied (as an alternative to the Operator-ID and Partition Number combination) to directly specify the target (debugee) partition. The Partition Number field is assumed to contain the target User Number (i.e. rather than a Partition Number) if the User Name is set to spaces);

- $E now resets the Extended Assignment Table (EAT) for all partitions (previous versions of $E only reset the EAT for partition-1). This problem contributed to a more serious problem that results in duplicate unit assignments in P2, P3, P4 etc.;

- A new utility, $EXIT, that runs $E or $CLOSE, as appropriate, is now available;

- $GSP has been extended to support a "sub-volume offset" for products distributed on chained sub-volumes. This technique only applies to GSP's created by resellers and does **NOT** apply to Global 3000 or Global Payroll service packs;

- $GSP has been extended to delete a file from a unit or library if this action is prescribed in the .GSP file;

- The $INSLOG function that synchronises the Central Installation Log File (on $$L) with the Local Installation Logfile (on $P) now checks that the Central Installation Log File has sufficient free space;

- The $INSLOG function that emails details of the Installation Log File to the Global Support Centre now optionally sends the details to the email address specified by the following registry option: ..\Client\Debug\EmailToAddress;

- $LIBX has been enhanced to import members from standard 100-member ($LIB) libraries into extended, 1000-member libraries;

- The 32-bit menu Handler has been modified to continue to honour the simple menu-file authorisation level and password security when $AUTHEX has been configured as the Authorisation Program. Note that Menu Access Rights will continue to be ignored if $AUTHEX is the Authorisation Program;

- The $MENUCUS "INS" option now displays a warning message if an attempt is made to insert a new menu line into a full (18-line) Menu Page;

- $DXUBTR and $DXUSQL has been withdrawn. These $DXU-related utilities have been (effectively) replaced by $DXUP and $DXUM, respectively;

- $MN32 now includes extra logic to perform internal house-keeping on the Menu File when writing back after a modification;

- $PASSWD has been enhanced to display a warning message if a Start Menu has been specified but an Extended System Area, which is used to hold the name of the Start Menu, has not been configured;

- A problem in $REORG that results in a OVERFLOW AT #6952 on configurations with more than 127 users has been fixed;

- A new utility $UPLOAD is available to provide an uni-directional FTP upload function from a GX PC to a Global server. This utility, which is a cut-down version of $QADFTP, is reserved for internal use only;

- A STOP CODE, rather than an OVERFLOW, is produced if the line or column number passed to the B$MOV routine would result in a invalid sized window;

- The Window Manager now returns a unique STOP 25077 if an attempt to re-connect a GX session was refused because the application is in an "non-reconnectable" state;

- The BOX statement is now ignored completely if the application is running on a non-GX screen. Previous versions of the Window Manager would display several strings of "rubbish characters" on a non-GX screen;

- Both the 16-bit and 32-bit versions of the BDAM Access Method have been modified to return an EXIT 8502 (as documented) instead of an EXIT 13302 if the CLOSE operation fails;

- A problem in BO$AUT that can result in a STOP 25308, has been fixed;

- The GX Run-Menu option will now honour the Authorisation Level associated with a Run-Menu option when the application specified by the Run-Menu is a non-Global application;

- $DBUG now correctly validates the partition number of the target (debugee) partition;

- A problem in GXBAR$ which results in a NO BASE exception when called with no parameters, has been fixed;

- The Database Manager now correctly updates the "Last Operation" field in the System Area for Open and Close operations. This operation is displayed in the Debug Log File when a Debug Event occurs;

- The $CUS option that controls the Multiple Operator-ID sign-on option now allows 3 possible options:

  - **Allow** Multiple sign-on for **all** Operator-ID's;

  - **Forbid** Multiple sign-on for **all** Operator-ID's;

  - Only allow Multiple sign-on for those Operator-ID's configured for Multiple sign-on in the **Authorisation File** (i.e. as customised by $AUTH, $PASSWD or $AUTH32);

- The $$CRES System Variable is now correctly established for **all** combinations of SVC-61 functions and error codes. Prior to this change, the value in $$CRES was not always a true reflection of the Windows error code;

- $32BADG has been modified to remove an incompatibility with $BADGN: $32BADG now allows a database conversion to proceed without supplying a data dictionary;

- $AUTH32 now displays a warning message if the $$AUTHEX file is locked by another operator;

- Both $BADN and $BN32 have been extended to handle the exception (error 282) returned by the Speedbase Gateway when a "fast conversion" has been initiated in a separate processing thread;

- The $BAM32, Speedbase utilities menu, has been revised to provide an improved look-and-feel on GX;

- A problem with $BAST32 that results in a STOP 25309 on non GX screens, has been fixed;

- A problem in $BN32 that results in a STOP 25250, has been fixed;

- $DXU has been enhanced to provide a more detailed error report;

- The $DXU rename option has been extensively revised: A leading @ character is now allowed to signify a Sharename; MS-DOS style file names (e.g. D:\) are allowed (the ":" character is automatically converted to a "$" character);

- A problem in $DXU that occurs when loading a Global format database to a DBX database when a record type contains no records, has been fixed;

- The $DXU Special Conversion option is now prohibited when the Input and Output Schema files are the same;

- $GSP has been extended to support Logical Unit-ID's within the $$INSLOG file records (previous versions of $GSP, and $INSLOG, only supported Physical Unit-ID's within $$INSLOG Installation Log records);

- $GSP has been extended to support extended libraries created by $LIBX;

- $INSLOG has been modified to fix a number of cosmetic problems when processing "Local Installation Log" files. Note that these files were referred to as "Application Service Pack" files prior to GSM SP-15;

- $INSLOG has been extended to allow Logical Unit-ID's to be included in Installation Log records. Logical Unit-ID's should **NOT** normally be specified. In particular **DO NOT** specify Logical Unit-ID's (e.g. PRR) for Global-3000 V5.0 or Global Payroll but continue to use Physical Unit-ID's (e.g. A20);

- $CUS has been extended to allow the GSM User Count to be customised by a "User Count Activation Key", without the need for an Upgrade BACRES. Furthermore, a minor cosmetic change has been made: The menu entry "Apply Ecommerce user password" has been changed to "Apply extra user licence";

- The STOP RUN processing now clears the 32-bit $$DEBUG System Variable;

- The $PASSWD print option has been extended to include the following details: Restricted client-id's, initial menu files, unit-assignments and the multiple sign-on option;

- Both $SPOOL and $32SPOOL have been modified to change the message displayed for files that have been kept after printing. Such files are described as "Kept after Printing" rather than "Held";

  - The Database Manager has been enhanced to maintain a small table of the last 100 database operations. The list of the last 100 database operations is written to the Debug log file when a program exception occurs;

- The performance of the Database Manager has been slightly improved. The slight improvement applies to all formats of both DBX and non-DBX databases;

- The Undelete function now works correctly on GX screens;

- The FOCUS statement is now supported in V- routines;

- The menu handler now traps all exceptions from the ASSIG$ routine to prevent spurious EXIT 10801 exceptions appearing during menu processing;

- A minor problem in the CAL16$ routine which results in screen corruption on return from the 16-bit program, has been fixed.

6. Global Development System Enhancements (Sub-routines etc.)

- A family of new 32-bit subroutines are available to display an Advanced Message Box on GX:

  AMBIN$ Initialise Advanced Message Box
  AMBAI$ Add icon to Advanced Message Box
  AMBAT$ Add text to Advanced Message Box
  AMBAB$ Add button to Advanced message Box
  AMBAC$ Accept response from Advanced Message Box

- A new 32-bit sub-routine, B$RFIL, is available to return the record file number (for Global format Speedbase databases) of the various record sets in the database;

- The B$ST sub-routine (return DBX database status) reverts to the B$STA calling convention if the target database is non-DBX;

- Three new, GX-only, 32-bit sub-routines are available to specify the width of the GX Window-Zero:

  GX80$ Set Window-Zero width to 80 columns
  GX132$ Set Window-Zero width to 132 columns
  GX192$ Set Window-Zero width to 192 columns

- The GXBRU$ sub-routine has been enhanced to allow the minimum and maximum values in a Progress Bar range to be reset;

- The MBOXX$ sub-routine has been extended to allow the default Message Box font to be changed;

- A new 16-bit sub-routine, RES$, is available to Restart, Cancel or Disconnect a user. Note that a 32-bit version of this sub-routine is not currently available;

- A new 32-bit sub-routine, STCAT$, is available to concatenate two zero-terminated text strings;

- A new 32-bit sub-routine, STMRG$, is available to merge two fixed-length text strings;

- A new 32-bit sub-routine, TDHMS$, is now available to convert an internal-time to an external time, with the appropriate number of days appended to the start of the HH.MM.SS time, when time is higher than 23:59:59. The days/time value is returned in a PIC (14) field in the following format: *ddddd.hh.mm.ss*;

- A new, 32-bit only sub-routine, COPYQ$, is available. COPYQ$, which uses the SVC-61 CopyFile function, is slightly faster than the standard COPYX$;

- A new 32-bit sub-routine, GXMOD$ is available to return the current GX operating mode (i.e. Speedbase window mode or textual "Window Zero" mode). This routine is reserved for internal use in System Subroutines;

- The internal-use IMBOX$ routine has been extended to support more MBOX$ message box styles;

- A problem in the LTAM Access Method that can result in corruption of the data immediately after the LTAM FD definition has been fixed;

- A new 32-bit only sub-routine, MKDIR$, is now available to create a new Windows directory (using the SVC-61 CreateDirectory function);

- A problem in the 16-bit RES$ sub-routine has been fixed. The problem causes RES$ to fail to recognise that the target user is the current user;

- The Speedbase Memory Access Method has been considerably enhanced to provide full indexing and database capabilities. Further details are available on request;

- The SUBS$ routine has been enhanced to generate a STOP 23001 if the sum of the size of the new sub-volume and the spare space on the domain would exceed 2Gb;

- A new 32-bit only sub-routine, TESTF$, is now available to test for the presence of a Windows file. This routine, which requires a timeout period to be specified, is recommended when it is necessary to wait for the appearance of a Windows file before performing an Open operation on the file (e.g. when the file is on a potentially inaccessible network drive);

- Two new 32-bit sub-routine THHMS$ and HHMST$ are now available. These routines are equivalent to T-HMS$ and HMS-T$, respectively except that the character field is a PIC X(12) in the format "HHHHHH.MM.SS";

- The TXEDT$ sub-routine has been modified to display a windows edit control (instead of a text window) if the application calling the sub-routine is running in "Speedbase mode" on GX. When running on GX the functionality of TXEDT$ is slightly reduced (i.e. some fields in the EE control-block are ignored and not all of the text-mode keyboard functions are recognised). However, it is anticipated that the greatly enhanced look-and-feel on GX will more than make amends for the slight incompatibility. When running on GX, TXEDT$ allows the Window caption text to be supplied as an optional 3rd parameter.

7. Global Development System Enhancements (Utilities)

- A problem in $SDE when the text-string "WINDOW" appears within a window definition has been fixed. The problem results in the error message "Unable to determine end of window";

- The $SDECUS facility is now available to create and maintain the $SDE Customistion File, $$SDECUS on $G. The version of $SDECUS released with GSM SP-15 allows the tab positions used by $SDE to be customised;

- A problem in $SDL32 that prevented the MOVE operation from working with DBX databases, has been fixed;

- $SDL32 has been enhanced to increase the number of indexes associated with a window from 16 to 32;

- A problem in $SDL32 that can result in STOP 1000 when compiling a source with large numbers of symbols, has been fixed;

- A problem in $SDL32 that results in an OVERFLOW when compiling frames with long PIC X fields, has been fixed;

- $GSPMAKE has been extended to operate in "Reseller Mode" to allow resellers to create their own .GSP files. Furthermore, $GSPMAKE has been enhanced to support a "sub-volume offset" for products distributed on chained sub-volumes;

- $GSPMAKE has been enhanced to allow wildcards in the filename when specifying the program(s) to be included in the Service pack;

- A problem in $GSPMAKE when processing wildcard file specifications, has been fixed. The problem results in the symbolic debug warning message being displayed for all files. $GSPMAKE has been changed to only display this message for the first file in the set that contains symbolic debug information;

- $GSPMAKE has been extended to support extended libraries created by $LIBX.

8. Re-releases of GSM SP-15

The following revisions to GSM SP-15 have been released.

8.1 GSM SP-15 2nd Release

GSM SP-15 release 2 includes a new version of the P.$CMLB3 library with a revised $GSP utility. The version of $GSP included in the initial release of GSM SP-15 appears to indicate an apparent problem with Payroll Service pack 74. It must be stressed that the problem is **cosmetic** only - the contents of the service pack **are** applied correctly by $GSP. If applying PR SP-74 with the initial release of GSM SP-15 the Payroll service pack installer will see two apparent problems:

A.   The Long Description text will be truncated (only the first 6000 characters out of a possible 8000 will be displayed in the message box);

B.   AFTER the Service Pack has been applied a new message box will appear unexpectedly. This message box will contain the remainder of the description.

Note that PR70 GSP-74 is the only service pack that is affected by the problem in $GSP.

The 2nd release of GSM SP-15 can be distinguished from the 1st release by the following text displayed by GSMSP15:

Apply GSM V8.1I Service Pack 15 (from any version of V8.1)
(This is the 2nd release of GSM SP-15 with revised $GSP).

The only way, at run-time, to differentiate between the first release of GSM SP-15 and the 2nd release is by examining the date of members $GSP, $GSP01 and $GSP02 in the P.$CMLB3 program library:

$GSP etc.   25/02/2004   Version included in initial GSM SP-15 release
$GSP etc.   15/04/2003   Version included in 2nd release of GSM SP-15

8.2 GSM SP-15 3rd Release

GSM SP-15 release 3 includes a new version of the P.$CMLB1 library with a revised $STARX overlay. The version of $STARX included in the initial release of GSM SP-15 contains a problem that affects the automatic download of new versions of GX.EXE and

GXIO.EXE on GSM (Unix) configurations. The problem does **NOT** affect GSM (Windows) configurations. The problem causes the suppression of the "confirm download" dialogue box that normally appears before the file download commences.

The 3rd release of GSM SP-15 can be distinguished from the 1st release by the following text displayed by GSMSP15:

Apply GSM V8.1l Service Pack 15 (from any version of V8.1)
(This is the 3rd release of GSM SP-15 with revised $GSP and $STARX).

The only way, at run-time, to differentiate between the first release of GSM SP-15 and the 3rd release is by examining the date of members $STARX in the P.$CMLB1 program library:

$STARX	25/02/2004	Version included in initial GSM SP-15 release
$STARX	11/03/2004	Version included in 3rd release of GSM SP-15

8.3   GSM SP-15 4th Release

GSM SP-15 release 4 includes a new version of the P.$CMLB0 library with a revised $STARC overlay. The version of $STARC included in the initial release of GSM SP-15 contains a problem that **ONLY** affects those GSM-PM configurations with a Perpetual PM licence. The problem causes the following fatal exception immediately GSM SP-15 is reloaded:

$91 TERMINATED - EXIT 11101
$50 DEBUG:

This problem cannot be avoided and requires a restore from backup copy of SYSRES (and SYSIPL) that was taken immediately before the GSM SP-15 upgrade.

Apply GSM V8.1l Service Pack 15 (from any version of V8.1)
(This is the 4th release of GSM SP-15 with revised $GSP, $STARX and $STARC).

The only way, at run-time, to differentiate between the first release of GSM SP-15 and the 4th release is by examining the date of members $STARC in the P.$CMLB0 program library:

$STARC	25/02/2004	Version included in initial GSM SP-15 release
$STARC	16/03/2004	Version included in 4th release of GSM SP-15

If version of GSM SP-15, **earlier than release-4**, is applied to a GSM-PM configuration with a Perpetual PM licence the following zap must be applied to P.$CMLB0 on SYSRES **BEFORE** the GSM SP-15 system is reloaded:

ZZZZZZ
GSNRYV

HMRWQP
HLZTPM
RCSQRC
VRVNKL
FJKHNV

NEW FEATURES IN GSM SERVICE PACK 16

1. Introduction and Overview

Global System Manager V8.1 Service Pack-16 (GSM SP-16) includes several new features and many significant enhancements to GSM SP-15 (and GSM SP-14 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-16 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-15 before applying GSM SP-16**).

VERY IMPORTANT NOTE-1: For GSM (Windows) configurations GSM SP-16 includes the same changes to the GSM licencing mechanism that were introduced for GSM SP-6. If you are upgrading a GSM (Windows) configuration to GSM SP-16 from GSM SP-5, or earlier, you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-2: For GSM (Unix) configurations GSM SP-16 includes the same changes to the GSM licencing mechanism that were introduced in GSM (Unix) for GSM SP-9 and GSM (Windows) for GSM SP-6. If you are upgrading a GSM (Unix) configuration to GSM SP-16 from GSM SP-8, or earlier, you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-3: For GSM (Windows) configurations GSM SP-16 **MUST** be used with GLOBAL.EXE V3.9 (or later) and GX V3.5f (or later). If you attempt to load GSM SP-16 on pre-V3.9 GLOBAL.EXE or use a pre-V3.5f GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V3.5f is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V3.5f (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V3.5f and a compatible version of GXIO.EXE are also available in ZIP file format.

VERY IMPORTANT NOTE-4: For GSM (Unix) configurations GSM SP-16 **MUST** be used with the V3.315 (or later) BACNAT components and GX V3.5f (or later). If you attempt to load GSM SP-16 with a pre-V3.315 BACNAT or use a pre-V3.5f GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V3.5f is not

currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V3.5f (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V3.5f and a compatible version of GXIO.EXE are also available in ZIP file format.

2. New features in the GSMSP16 & GDSSP16 utilities

- The GSMSP16 Service Pack installation job has been improved to copy a default $$PGDESC file (the file that holds the Program Descriptions) to SYSRES if the $$PGDESC file does not already exist on $M;

- The GSMSP16 Service Pack installation job now updates the P.BR library on SYSRES;

- The GDSSP16 Development System Installation job has been enhanced to allow the Global Development System to be installed on SYSRES. This new mode is enabled if the volume-id of the $G volume is "SYSRES" instead of the normal "SYSSBD". **Important Note**: Don't simply assign $G to the SYSRES volume before running GDSS16 as this will destroy the P.$CMLB0 command library. The "Development SYSRES" must be carefully prepared before running GDSS16. Note also that the changes included in GDSSP16 are documented in sections 6 and 7 of this document.

3. Changes to GSM Installation and Start-Up

- A problem, introduced in GSM SP-15 that results in a spurious EXIT 11101 under some conditions when GSM loads, has been fixed. Note that this change was retrofitted to GSM SP-15;

- A problem in the GSM start-up code that prevents users with an automatic sign-on from logging in after a Quiesce has been applied, then rescinded, has been fixed;

  - The GSM start-up overlay that downloads new copies of GX has been enhanced to recognise the "Silent update" option on GSM (Unix) configurations. The "Silent update" option is fully documented in Technical Note IN257 (in257updatinggxautomatically.doc);

- The GSM start-up code has been enhanced to check for stale copies of GX.EXE and/or GXIO.EXE in the GX "updates" folder. If

files are detected in this folder, which should be empty following a successful GX (or GXIO) update, a warning message is displayed.

4. Major Changes to GSM Run Time

- $MENU32 has been enhanced to support "Button Style" GX menus. This option is enabled by changing the "Menu Style" in the Amend Menu Parameters screen from 0 to 1;

The use of Button Style menus can change the appearance of the menus markedly as the following examples (of different menu

files) demonstrate:

It should be stressed that the menu colour scheme is fully customisable;

- $CUS and $MENU32 (BO$MEN) now support an overall Menu Style customisation. If this customisation has been applied all Menu Files with a Menu Style of 0 are assumed to be in the customised style. Thus, the following Menu File Menu Styles are possible:

    0   Use $CUS customised menu style
    1   GX Use Button Menu style
    2   Use "traditional" menu style
    >2   Reserved for future use

- A new feature in GSM (Windows) allows NETWORK connections to be reserved for "Spoofed" users. These connections, which are defined by various registry settings (see global39.doc) can be

used to auto-run "background processes". The $$SPOOF System Variable is set to 1 for a Spoofed User;
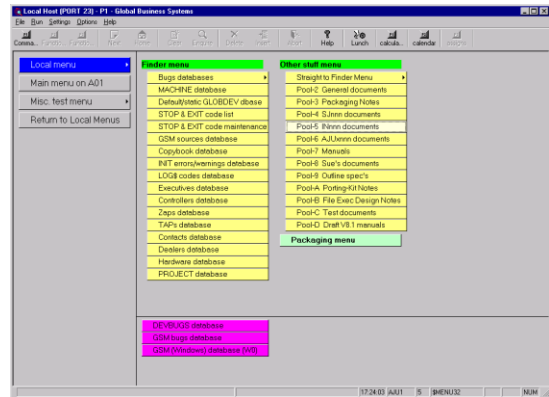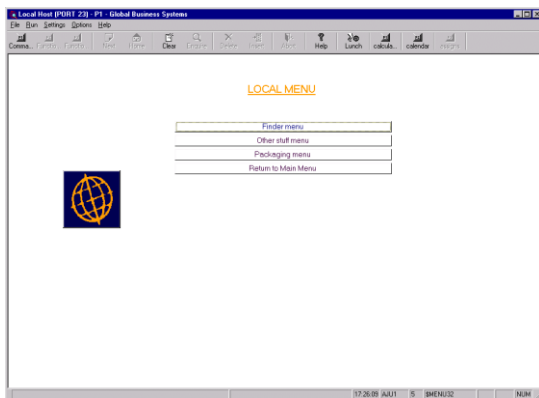
- $PASSWD has been enhanced to by-pass the password prompt for "Spoofed" users;

- The 32-bit Authorisation Program, $AUTHEX, has been enhanced to by-pass the password prompt for "Spoofed" users;

- A number of DLM's have been modified to increase the maximum number of fields per application window from 127 to 254.

5. Minor Changes to GSM Run Time

- $STATUS has been enhanced to include a new "INT" (Interrupt) command. This command sends a ^G to a specific partition, or all the partitions of a specific operator;

- $STATUS has been extended to include a description of the currently running program in the status information displayed by the "LSF" command. The new "PDE" command is available to associate a Program Description with the name of a Program File;

- $STATUS has been extended to include the contents of the User Defined $$STAT field in the report displayed by the LSF command. This field is available for "background applications" to update their current processing status;

- $STATUS has been extended to allow a quiesce to be limited just to the users on the current Global Client (i.e. the traditional QUI command affects ALL clients on the network). Two new commands, "LQU" and "LAC" allow the Local Quiesce and Local Activate, respectively;

- A problem in $STATUS that can result in a spurious STOP 9302, has been fixed;

- A 32-bit version of $BADC, $BC32, is now available;

- $32BADG now correctly restores the original database if a database size increase fails unexpectedly;

- The warning displayed by $MN32 when converting a menu from 16-bit to 32-bit now includes a reminder to change the $CUS Initial Program from $MH to $MENU32;

- $32SPOOL now displays an appropriate message if an error occurs when opening the print file;

- $BBS has been enhanced to replace any "%" characters in the Windows filename by "_" (underscore) characters;

- A problem that results in a STOP 1601 after keying "?" followed by "O" to the $SP baseline message, has been fixed;

- A problem in $PASSWD that affects operators without an associated Start Menu has been fixed. Although $PASSWD always correctly established the Start Menu for operators that have a Start Menu configured, it did not reset the Start Menu for operators that did not have a Start Menu configured. Thus, if an operator with a Start Menu configured signs on, then signs off, and a different operator, without a Start Menu configured signs on, the second operators "inherits" the Start Menu of the first operator (i.e. rather than the default of $$MENUS on $DP);

- A problem in $AUTH32 ($AUTHEX) that affects operators without an associated Start Menu has been fixed. Although $AUTHEX always correctly established the Start Menu for operators that have a Start Menu configured, it did not reset the Start Menu for operators that did not have a Start Menu configured. Thus, if an operator with a Start Menu configured signs on, then signs off, and a different operator, without a Start Menu configured signs on, the second operators "inherits" the Start Menu of the first operator (i.e. rather than the default of $$MENUS on $DP);

- A number of minor problems, mainly affecting the logging of I/O operations in the Debug log file when a Database Access Intercept Routine is present, within the Database Manager DLM, have been fixed;

- The BA$GXM DLM now updates the $$XDIAG Diagnostic System Variable for all responses from GX;

- The 32-bit $32BADG utility now accepts record numbers of 8388350, and higher. Additionally, the problem that allowed

less records to be allocated than are currently in the database, has been fixed. Furthermore, a minor problem in the Data Concentration option has been fixed;

- $GSP has been enhanced to support 3 character version numbers;

- $32SPOO (and VIEWS$) have been improved to avoid switching the partition into textual wide-mode, display the title in lower-case. In addition, a time-out facility is now supported when viewing a report;

- The Window Manager has been improved to return an EXIT 25254 (rather than a STOP 25305) when a DISPLAY window is attempted without a record channel;

- A problem in $BN32 that can result in a spurious INCORRECT NUMBER OF PARAMETERS exception, under some conditions, has been fixed;

- $BN32 and $BC32 have been improved to use MENU$, rather than POPM$, when running on a GX, or non GUI-1 screen (for a GUI-1 screen, POPM$ is still used);

- The $32SPOO "Waiting For Spooler Status" now includes an active Interrupt Button;

- $LIB has been extended to allow the Q. file prefix to be treated as valid for Program Libraries (note that the Q. prefix is also used for $RCP scripts);

- A problem in $BAST32 that results in an OVERFLOW when printing the report for a DBX database with a large number of indexes, has been fixed;

- $BN32 has been enhanced to allow the Create New Database and Import Database options to work correctly under Job Management when a database of the same name already exists;

- $BADN has been enhanced to allow the Create New Database option to work correctly under Job Management when a database of the same name already exists;

- A problem with Job Management that can permanently disable "GX mode" on a GX screen has been fixed;

- The following utilities have been changed to become more "Job Management" friendly: $BN32, $BADN, $BC32, $BADB, $BADC. In all cases a reply of 0 to the main menu exits the application;

- A problem in $32SPOOL, that can cause multiple files to be deleted unexpectedly, has been fixed. Keying <CR> to select files now produces the same effect as clicking the List button (i.e. instead of selecting all files from the current list);

- The Error Message displayed for a STOP 25014 (Database Generation mismatch) is now displayed correctly on GX. This message has been improved to include both the Generation Number of the current database as well as the Generation Number used during the compilation;

- The Error Message displayed for Database Not Open condition is now displayed correctly on GX;

- A problem in $32SPOOL that causes the "REPRINT ARE YOU SURE" message to appear spuriously when printing an alignment pattern, has been fixed;

- The Window Manager has been modified to fix a problem that resulted in a STOP 25507 when an attempt is made to resize an empty scrolled window;

- A problem in 32-bit RSAM that results in the suppression of a Printer Mount Message if a Printer Control File is not present on SYSRES, has been fixed;

- $32A has been enhanced to include a Delete button;

- $BAST32 has been enhanced to improve the display of Error Message boxes;

- A problem in the Extended SMEM Database Manager which results in the failure on multiple FETCH without a key functions, has been fixed;

- A problem in $BC32 that can result in an EXIT 25250 which can lead to a further STOP 7602, has been fixed;

- An obscure problem in $BBS that prevents long pathnames (i.e. greater than 37 characters) to be used in the Multiple File Export command;

- A problem in $32BADG that prevents the resize function from functioning correctly, has been fixed;

- An obscure problem in $MENU32 that results in the spurious diagnostic message ""PT-block Head Pointer is null" on GSM (Windows) configurations, has been fixed. Note that this message is only displayed if the DiagnosticDisplays registry setting is enabled;

- A problem in $BC32 that results in spurious "Header Mismatch" errors, has been fixed;

- $MN32 has been extended to allow a PIC X(30) Caption Text string to be sent to GX when the menu line is selected;

- $GSP has been extended to recover from the situation when a service pack fails to apply because of an IN USE error on a program library. Under these conditions the service pack is no longer flagged as "applied";

- $GSP now allows the application of unapproved (i.e. "emergency") service packs;

- The $32BADG Resize option has been enhanced to highlight any full record sets (providing the full record set does not consist of a single record);

- The number of Overlay Levels supported by GSM has been extended from 16 to 127. This change fixes the STOP 25002 that occurs if more than 16 levels of EXEC are attempted;

- The Menu Handler has been enhanced to support a new menu-line type "O". If the menu is a top level menu an "O" menu line is treated as an "S" type line (e.g. to run $E, $CLOSE or $EXIT etc.). If the menu is not a top level menu an "O" menu line is treated as an "X" type line;

- $AUTH32 has been modified to change the Application System Menu when groups or users are selected for a particular system. The Authorisation Point window now offers a Copy button (available only on controlled systems) which offers a User/Group from which Access Rights may be copied;

- A problem in $DBUG that results in a spurious EXIT WITH 1 under some conditions has been fixed;

- A problem in Extended SMDM which can cause a Master Record to be deleted unexpectedly, has been fixed;

- $BBS has been extended to support the "P" command on GSM (Unix) configurations. The "P" command allows full control of the Unix file permissions of the files created by $BBS. The customised file permissions are saved over $BBS sessions (but will be lost when a further GSM Service Pack is applied);

- The $INSPECT "WS" command has been enhanced to create a text-file (type TF) if the output file-prefix is either "S." or "F.". For all file prefixes an RSAM file is created. All previous versions of $INSPECT create an RSAM file if the prefix is "F.")

- The <F1> handling of $DIRP has been extended to include an "Edit Source" option, which invokes $SDE, if the currently selected file is type TF, has a prefix of S., F. or Q. and the $G unit is assigned;

- The Window Manager Lock Message now displays the User Number in addition to the Operator Name and Partition Number (so that operator locks on a multiple operator configuration can be uniquely identified);

- $AUTH32 has been enhanced to ensure that System-ID records are correctly initialised. Furthermore, the BO$AUT DLM has been modified so that when sychronising the $OPID database with the AUTHP database, if the version of the required System/Module differs between the two databases no sychronisation occurs. In these circumstances, a new System-ID should be created and the relevant menus set to this System-ID. The authorisations from the old System-ID can be transferred to the new System-ID (this allows two different versions of a product to exist in the Authorisation database simultaneously);

- $GSP has been enhanced to display the optional "after application text" if the Global Product Service Pack includes this feature. As the term suggests, the optional "after application text" describes any special procedures that must be followed after applying the relevant Service pack;

- $GSP has been extended to allow Global product Service packs to be held in sub-folders below the notional "root" GSP folder. The sub-folder for a series of GSP files must be the same as the associated module name. For example, a folder containing:

  c:\servicepacks\pr71*.gsp
  c:\servicepacks\zc50*.gsp
  c:\servicepacks\zd50*.gsp

  can be re-arranged to:

  c:\servicepacks\pr\pr71*.gsp
  c:\servicepacks\zc\zc50*.gsp
  c:\servicepacks\zd\zd50*.gsp

  This more logical arrangement of GSP files makes it faster for $GSP to search for the relevant Service pack files;

- $BALOCK has been enhanced to offer a default Gateway server when a suitable server is defined in the registry;

- $E has been extended to reset the GSM time to the current (host-o/s) System Time in **all** partitions (previous versions of $E only reset the time in P1);

- The dialogue for $BADIAG has been improved and a default Gateway server is offered, where appropriate. This utility should be used AFTER making changes to the Gateway registry to force the Gateway to reload the registry settings. Note that not all the registry settings are reloaded by the Gateway. Please refer to the relevant documentation for further details;

- The Window manager has been enhanced to map the <BACKSPACE> key to <DELETE> if, and only if, <BACKSPACE> is not a valid Function Key (as defined by $BACUS in the T>nnn file);

- $PAGES has been enhanced to run on configurations with more than 99 users;

- A problem in the Window manager when operating with DBX databases containing more than 8,388,607 records, has been fixed. The problem typically results in a spurious STOP 25507;

- The GSM (Windows) File Converter, FCONV-W1, has been improved to avoid the use of the dubious "Set Directory" SVC-61 function in the Multiple File Export option.

6. Global Development System Enhancements (Sub-routines etc.)

- A new 32-bit, GX-only sub-routine, GXSSC$, is now available to set Scroll Cell Offset (i.e. the height of a line in the scrolled area);

- A new 32-bit, GX-only sub-routine, GXCPO$, is now available to override the default caption Prefix;

- A new 32-bit, GX-only sub-routine, B$ASEL, is now available to establish a window as an Automatic Select window (i.e. a record is automatically selected on a mouse click);

- The VIEW$ sub-routine has been enhanced to provide a Windows compatible print-view interface (i.e. rather than displaying the print file in Window-Zero text-mode);

- A new 32-bit System Variable, $$SYNC, is available to synchronize the GSM date/time with the server date/time. This field is not used by GSM SP-16 but will be recognized by GSM SP-17 utilities (e.g. $D and $CUS);

- A new PIC X(80) 32-bit System Variable $$UDIAG is now available. This field can be updated by applications to set diagnostic information;

- The GXCOP$ routine has been extended to allow GX-to-GX copy operations to be performed locally on the PC running GX;

- The 32-bit EDTTX$ sub-routine has been enhanced to recognise an OP control block as an optional 3rd parameter. The OP block can be used to set the initial cursor position at the end of the text-block;

- A number of enhancements have been made to the Advanced Menu handler sub-routines. AMHDR$ now recognises a menu Bitmap option and a Help-option; AMACC$ now generates a unique exception when the end-user Help option is selected;

- A 32-bit version of the DIGEN$ (Get Dictionary Generation Number) routine is now available;

- A problem that causes an ILLEGAL BRANCH exception in the BA$PPF DLM, has been fixed;

- A family of new 32-bit sub-routines are now available to supplement the existing B$BNC routine to allow the manipulation of non-DBX Pervasive or Microsoft SQL databases. The B$BND routine allows the deletion of a non-DBX Pervasive or Microsoft SQL database. The B$BNN routine converts a non-DBX Pervasive or Microsoft SQL database. The B$BNP routine changes the path of a non-DBX Pervasive or Microsoft SQL database. The B$BNR routine rebuilds a non-DBX Pervasive or Microsoft SQL database;

- The default button number for the GXTBW$ routine has been changed from 1 to 0. The default of 0 informs GX to use the last button in the Button Set as the default button;

- A new GX-only, 32-bit sub-routine, GXWIN$, is now available to alter the properties of the next Speedbase window displayed. The GXWIN$ routine effectively replaces AOTOP$, GXNFW$, GXNBT$, GXMWS$, GXTBW$, GXSSC$, GXBSB$ with a single routine (although none of these routines have been withdrawn);

- The Extended SMEM Database Manager now correctly handles 4-byte Record Numbers (previous versions only coped with 3-byte record numbers);

- The B$GTIO sub-routine has been enhanced to operate with DBX databases;

- A suite of new 32-bit sub-routines are now available to provide the various functions available in $BN32:

B$BNC	Create database
B$BNR	Rebuild database
B$BNN	Convert database
B$BND	Delete database
B$BNP	Change path

- A new 32-bit sub-routine, B$WLJ, is available to left justify a field that has been right-justified by B$WRJ;

- The BREXEC (Reporter Interface) routine has been extended to chain to the BRINT frame, if BRINT is available to replace the normal Global Reporter handling;

- The GXBMP$ sub-routine has been extended to allow the bitmap to be changed when running on Global Windows Workstation (GUI-1);

- A new 32-bit, GX-only sub-routine, GXGUN$, is now available to obtain the Windows user name;

- The S.SYS32 Copy Library has been enhanced to include an extended DS-block (SVC-61 interface block);

- A new 32-bit, GX-only sub-routine, GXWFM$, is now available to allow any of the current Window manager functions to be masked out from the current window;

- A new 32-bit, GX-only sub-routine, GXBOX$, is now available to allow lines and/or boxes to be drawn within the current window;

- A new 32-bit, GX-only sub-routine, GXPRG$, is now available to set the maximum and minimum ranges for a Progress Bar Field in a window;

- The AMHDR$ routine has been extended to allow a Colour Profile Index to be established;

- The AMCOL$ routine is now available to return the current Menu Colour Index;

- A new 32-bit sub-routine, CPM$, is now available to read the User Name and Address details from the Global Licence File;

- The 32-bit CAL16$ sub-routine has been enhanced to reset the (16-bit) $$INDE System variable. This change fixes a problem that can result in spurious TRAP exceptions when CAL16$ is used to invoke 16-bit programs (e.g. Reporter) from 32-bit applications;

- A problem with the NEOPN$ has been fixed: The File Handle is now preserved for subsequent NELIS$ operations. Prior to this change it was not possible to call NEOPN$ repeatedly on different directories simultaneously;

- The AMPAG$ sub-routine has been modified to relax the validation of the Menu type field (M1TYPE). This field can now contain any upper-case letter (previous versions restricted this field to just "A", "N" or "S");

- A new 32-bit, GX-only routine, GXSPT$, is now available to update the currently displayed program title;

- A new 32-bit, GX-only sub-routine, GXBSB$, is now available to change the format of the scroll bar on GX windows from the normal style to "button" style. This routine effectively allows the GX.INI parameters "ButtonStyleScrollBar" and "MinimumScrollBarButtonHeight" to be over-ridden on a per-window basis;

- A new 32-bit, GX-only sub-routine, GXGBP$, is available to set the text and attributes of a Group Box;

- Two new 32-bit sub-routines, B$RJF & B$LJF, are now available. These routines are equivalent to the RJF- and LJF- entry-points in the P.MIDDLE DLM library;

- The RSCRN$ sub-routine has been enhanced to disable all the console attributes and restore the original screen colours correctly;

- The B$EKTO System Variable is now available. This field contains the function key tops for functions 21, and above;

- The GXSLA$ sub-routine has been extended to allow RGB colours to be specified directly;

- The various "Advanced Menu" 32-bit GX only sub-routines (AMHDR$, AMPAG$, AMACC$, AMCLR$, AMSEQ$) have been enhanced to support extended control blocks;

- A problem in the 32-bit, GX version of VIEW$ that causes GX to ignore the last few lines of a report when the report includes an alignment pattern, has been fixed;

- A new 32-bit, GX only sub-routine, B$WMOD, is now available to set the Speedbase Mode. Unlike the related B$SPMD, which accepts the mode as a set of bit-flags, B$WMOD accepts the modes as a series PIC X(3) mnemonic strings.

- A new 32-bit sub-routine, B$PROI, is now available to open a PF while providing an Intercept Routine. The Intercept Routine can be used to suppress or translate the various Printer Status Messages displayed by the OPEN and PRINT verbs;

- A new 32-bit, GX-only sub-routine, GXWTM$, is now available to set a time-out for the current Speedbase window;

- A new 32-bit, GX-only sub-routine, PREGE$, is now available. This routine, which provides an interface to pregemview.exe, is not for general use;

- The B$TTLS routine has been enhanced to accept an optional extra parameter. If the optional (numeric) parameter is set to 1, B$TTLS subtracts 1 from the line number of the Title Text;

- A new 32-bit, GX-only sub-routine, GXGWV$, is now available to obtain the version of the Windows operating system that is running on the GX PC;

- A new 32-bit sub-routine, STFIL$, is now available to return the number users who have a file Open Shared;

- The Open Direct Access method has been enhanced to allow the Windows Open Mode to be specified;

- The AUTHM$ sub-routine has been extended to return a Password exception if a password is required;

7. Global Development System Enhancements (Utilities)

- $SDL32 has been extensively modified to increase the maximum number of fields per window from 127 to 254. **Important Note:** Any application compiled using the GDS SP-16 version of $SDL32 that contains more than 127 fields in a window will only run correctly on GSM SP-16, or later;

- $SDL32 has been enhanced to allow more than 32,000 internal symbols in a single compilation;

- $SDL32 has been enhanced to allow any character in the program name (e.g. "%PRRUN" is now a valid program name);

- A problem in $SDL32 that can cause a spurious "ERROR 45 – DICT'Y DRA/RCB LOAD FAILURE" to be reported, has been fixed;

- $SDL32 has been extended to support the "PD" option that allows the Page Depth of the listing file to be changed from the default of 60;

- $SDL (sic) has been enhanced to ignore the "OPT" option (which is only available with $SDL32);

- A problem in $SDE when editing a window with a multiple column scroll area has been fixed;

- A problem in $SDE has been fixed. The problem occurs if an attempt to move a field from the scrolled area to the non-scrolled area fails. Although the field is restored to its original location it still retains its new attributes. This can cause a subsequent PGM CHECK to occur if the field no longer fits in the window;

- $SDE now closes the loader's FD to prevent the P.$CMLB0 library of $G remaining permanently "IN USE";

- A problem in $SDE that resulted in the spurious message "ERROR - INVALID WINDOW DIMENSIONS" when a processing a SCROLL statement under some conditions, has been fixed;

- $SDE and $SDECUS have been enhanced to make the file size increase constant a customisable parameter;

- $SDE has been enhanced to allow the <F9> X and Y commands to operate with text-files with an F. file prefix (before this change these commands only recognised files with an S. file prefix);

- $SDE now allows the DEPENDENT ON record to include a lower-case letter;

- The number of BOX statements allowed in the $SDE Window Editor has been increased from 8 to 32;

- A 32-bit version of $SDE, $SDE32, is now available **for evaluation purposes only.** Note that $SDE32 continues to operate in text-mode on GX. A fully integrated GX editor, $EDITOR, is currently under development;

- A number of minor problems with the evaluation-only $SDE32 have been fixed. FMT "," numbers and PIC (15.2) COMP fields are now displayed correctly in Window edit (F9 Q) mode. A problem that results in a NUMERIC OVERFLOW during repeated searches has been fixed;

- $SDE32 has been extended to recognise the special "U-7" button;

- $SDE32 supports the F9 ~ command (i.e. key <F9> followed by the "~" character). This command displays the current window expanding the various special GX fields (e.g. radio buttons) in a format that more closely emulates the size and position on the true GX window;

- The evaluation-only editor, $SDE32, has been enhanced to allow it to be EXEC'ed from any other 32-bit program or frame: EXEC "$SDE32   " USING ED. Since $SDE32 is currently only available for evaluation purposes, details of this interface, which is subject to change, are available upon request;

- $DXM has been enhanced to display a warning message if number of GVF's for a master exceeds 127;

- $DXM has been enhanced to display a warning message, rather than an exception, if there is insufficient space in the data dictionary to load further database records. In addition, a problem when performing extra loads of non-DBX databases, has been fixed;

- The $DXM Clear Dictionary option now clears the background windows on exit;

- $DXM now allows the loading of further non-DBX dictionaries after the creation of an initial DBX dictionary;

- $DXM has been enhanced to keep the Field Definitions window on the screen, in background, when displaying the Index Definitions window;

- Both 16-bit ($JOB) and 32-bit ($JOB32) Job Management have been extended to allow jobs that invoke a 32-bit utility to run on a GX screen. Before this change a job that invoked a 32-bit utility that ran in GX Window mode would typically stall at the first accept operation. This change has been achieved by running all jobs in GX Window-Zero mode (a further development is required to run jobs in GX Window mode). Note that all 16-bit jobs ($JOB), but not 32-bit jobs ($JOB32) must be re-jobbed in order for this change to take effect;

- A problem with $JOB that can result in a Memory Violation if the job file contains an error, has been fixed;

- The number of Copy Libraries supported by $BUILD has been extended from 6 to 126;

- A problem in an internal version of $GSPMAKE, that results in the loss of the last 2000 bytes of the 8000-byte, descriptive text, has been fixed for the SP-16 release. A similar problem affected an unreleased, internal version of $GSP;

- $GSPMAKE now correctly allows for the size of the "after application" text block;

- A problem in $GSPMAKE, that can result in spurious PLEASE MOUNT prompts under some conditions (if the target program unit is part of a linked sub-volume chain), has been fixed;

- $GSPMAKE has been improved to always convert the Module Name to upper-case. Furthermore, the Windows filename is always converted to upper-case internally to avoid possible problems with mixed-case filenames.

NEW FEATURES IN GSM SERVICE PACK 17

1. Introduction and Overview

Global System Manager V8.1 Service Pack-17 (GSM SP-17) includes several new features and many significant enhancements to GSM SP-16 (and GSM SP-15 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-17 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-16 before applying GSM SP-17**).

VERY IMPORTANT NOTE-1: For GSM (Windows) configurations GSM SP-17 includes the same changes to the GSM licencing mechanism that were introduced for GSM SP-6. If you are upgrading a GSM (Windows) configuration to GSM SP-17 from GSM SP-5, or earlier, you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-2: For GSM (Unix) configurations GSM SP-17 includes the same changes to the GSM licencing mechanism that were introduced in GSM (Unix) for GSM SP-9 and GSM (Windows) for GSM SP-6. If you are upgrading a GSM (Unix) configuration to GSM SP-17 from GSM SP-8, or earlier, you **MUST** read gsmsp6.doc in addition to this document.

VERY IMPORTANT NOTE-3: For GSM (Windows) configurations GSM SP-17 **MUST** be used with GLOBAL.EXE V3.9 (or later) and GX V3.6a (or later). If you attempt to load GSM SP-17 on pre-V3.9 GLOBAL.EXE or use a pre-V3.6a GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V3.6a is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V3.6a (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V3.6a and a compatible version of GXIO.EXE are also available in ZIP file format.

VERY IMPORTANT NOTE-4: For GSM (Unix) configurations GSM SP-17 **MUST** be used with the V3.344 (or later) BACNAT components and GX V3.6a (or later). If you attempt to load GSM SP-17 with a pre-V3.344 BACNAT or use a pre-V3.6a GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V3.6a is not

currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V3.6a (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V3.6a and a compatible version of GXIO.EXE are also available in ZIP file format.

2. New features in the GSMSP17 & GDSSP17 utilities

- The GSMSP17 Service Pack installation job has been improved to copy a default $$SYMESS file to SYSRES.

3. Changes to GSM Installation and Start-Up

- A new GSM start-up overlay, $START, has been implemented to send Translation File records to GX. This overlay is only executed if GX Translation mode has been enabled. The GX translation option is fully described in a separate document;

- A problem in the GSM start-up overlay, $STARX, that miscalculates the PM Expiry Date by 14 days, has been fixed. Furthermore, the Expiry Date message is no longer suppressed on a GX session running as $$USER=1 (i.e. in a configuration where the first screen controller is a NETWORK controller);

- The GSM start-up overlay, $STARX, has been enhanced to recognise the new SingleUserGXUpdate registry setting. If this option is enabled then concurrent GX downloads to multiple users are prevented. This option may be required to prevent simultaneous GX downloads swamping the network on low-bandwidth networks;

- The GSM start-up overlay, $STARX, has been enhanced to allow it to be EXEC'ed from another 32-bit program. This interface allows $STARX to be run in all partitions rather than just partition-1;

- The GSM start-up overlay, $STARX, has been enhanced to recognise the new ExpiryDateMessageOnlyForExpired registry setting (under the Customisations key). If this setting is enabled the Expiry Date warning message that is normally displayed 30 days before the Expiry Date, is suppressed;

- The GSM start-up overlay, $STARX, checks the version of GSM (Unix) BACNAT is V3.344, or later. This is the first version of the GSM (Unix) BACNAT that supports the CRDAS$ sub-routine;

- The GSM start-up overlay, $STARX, checks the version of GX is V3.5x, or later. This is the first version of GX that supports the various HTTPX$ sub-routines. Note that other features of GSM SP-17 increase the minimum required GX version to V3.6a;

- The GSM start-up overlay, $STARX, has been extended to update the local GX.INI file from a "template" GX.INI file in the central "gxupdates" folder on the server. See Technical Note IN257-updatinggxautomatically.doc for further details;

- The GSM start-up overlay, $STARX, has been extended to suppress translation around the Contract Protection Message;

- The GSM Start-Up processing has been extended to automatically open the Pervasive SQL or Microsoft SQL databases established by the $BADBASE utility.

4. Major Changes to GSM Run Time

- The Print Manager has been extended to support the advanced TCPI Printing option. This option, which is beyond the scope of these Service Pack Notes, is fully described in a separate document;

- Foreign Language translation is fully supported for GX applications. A new utility, $XTRAN, is available to perform on-the-fly translation. The GX translation option is fully described in a separate document;

- The changes to the depth of the Scrolled Area on a GX screen are now saved centrally on the server instead of being saved locally on each GX PC.

5. Minor Changes to GSM Run Time

- The $$SYMESS file (the file containing the translatable GSM System Messages) has been extended to include messages displayed from the various start-up overlays;

- A specialised TAP, $.1, is available for use when GSM (Unix) is initiated as a cron process. A Speedbase TAP, T>1, is also available;

- $32BADG has been improved to fix a minor problem that can occur if there is insufficient space to create the resized index file;

- A problem in $32BADG that allows the new Maximum Number of Records to be less than the current number of used records (resulting in subsequent record loss and/or database corruption), has been fixed;

- A problem in $32BADG that can cause an ILLEGAL OPCODE exception when converting a database from Pervasive SQL format, has been fixed;

- The 32-bit spooler, $32SPOO, has been extended to allow an optional time-out to be specified in the Options section. When this option is enabled the spooler automatically closes if no operator intervention occurs within the time-out period. Note that this time-out feature is not supported in either 32-bit Spooler Status or any of the 16-bit spooler components;

- The 32-bit Spooler Status and Spooler View options both include an option to allow only the files for the current operator to appear in the file list;

- The 32-bit Spooler Status has been enhanced to include an option to suppress the historical information in the spooler status window;

- $AUTH has been extended to allow the setting of the $$USA System Variable (USA format dates) to be toggled from the default $CUS setting, on a per-operator basis;

- A new utility $BADBASE is now available to maintain a list of Pervasive SQL or Microsoft SQL format databases that are automatically opened at GSM start-up time. Opening a Pervasive database at GSM start-up time avoids the small delay that occurs when the first user attempts to access the database. This utility creates and maintains the system customisation file $$DBASE on $DP;

- $BADN and $BN32 have been improved to allow a longer pathname to be specified for the Rename Path to Database option;

- $BN32 has been modified to reduce the size of a window displayed during the Conversion option so that the window displays correctly on non-GX screens;

- $CUS has been extended to allow an Authorisation Level to be specified to prevent operators (who are below that Authorisation Level) from using the 32-bit Spooler to release or delete spool files;

- $D has been extended to allow the GSM clock to be immediately synchronised with the Windows or Unix system clock;

- The $DBG and $DEBC debug overlays have been extended to support an option that allows a user restart event to be triggered via a special, internal STOP code. This feature is reserved for future use;

- $DBUG has been extended to disable foreign language translation during a debug session;

- $DIRP has been extended to use $LIBX for the "Library Maintenance" function, instead of $LIB, when the current file is an "extended library";

- A problem in the "special field conversion" functionality of $DXU has been fixed;

- $DXU has been modified to create a backup Schema File during a database conversion. The backup file is deleted when the conversion completes successfully;

- $DXU has been improved to allow a longer pathname to be specified for the Rename Path to Database option;

- The "Apply All" option of $GSP has been modified to change the order in which grouped service packs are applied. Before this change, all the service packs in a group were applied immediately after the "leader" service pack in the group. With this change, the various grouped service packs are applied after the last service pack in the "Apply All" set. Furthermore, the various grouped service packs applied at the

end of an "Apply All" set are only applied if the service pack has not already been applied by a previous $GSP session;

- $GSP now provides an indication that a service pack is a member of a Service Pack Group;

- The $GSP Print facility now includes an option to print just the latest information for each program included in a series of service packs. Furthermore the Print All option now includes the "After Application" descriptive text;

- A problem in $GSP that results in an EXIT 9801, under some conditions, has been fixed;

- $GSP no longer attempts to apply group service packs for products that are not installed;

- $GSP now checks the correct record in the $$INSLOG file when deciding whether a pre-requisite Service Pack needs to be applied;

- A problem in $GSPMAKE that results in a corrupt Service Pack file if a new member is added to a Service Pack that contains some "After Application Text" has been fixed;

- $GSPMAKE has been modified when being used to create Reseller Service Packs. The cabinet file directory, and related prompts, are skipped. The first software release (in Year, Month, Revision format) that the Service Pack applied to is set to 010101. Thus, the service pack will apply to **all** possible releases;

- A problem in $INSLOG when synchronizing the local $$prod file with the central $$INSLOG file, has been fixed. The old Product Record in $$INSLOG is now correctly marked as "inactive" when it is replaced by an entry from the $$prod file;

- A problem in $INSLOG that results in the message "Service History Mismatch" appearing too many times, has been fixed;

- A problem in $INSTALL when re-installing a product that has service packs applied has been fixed;

- The Menu Customisation overlay, $MENUCUS, has been improved to silently ignore an attempt to add or insert a menu line to a full menu page, when running under Job Management;

- The GSM changes required to automatically restart a user when a GX connection has been lost, have been implemented. Note that further changes to GLOBAL.EXE are required to complete this optional feature;

- A problem in the Debug Overlay that results in some information appearing on the far RHS of the Debug Log File, instead of on a new-line, has been fixed;

- A problem in $S that causes the reply to the "Key P to print..." baseline message to auto-terminate, has been fixed;

- A new utility, $SLEEP, is available to delay for a specified period. This utility is of little use except in specialised batch jobs;

- The 32-spooler, $32SPOOL has been enhanced to display the creation date of the spool file;

- $SETUP has been enhanced to install pre-licenced Cabinet Files (e.g. for products GW V1.0 and ZU V6.0);

- A problem in $SETUP that can cause an OVERFLOW exception on multiple installations, has been fixed;

- A problem in $STATUS that results in the message "$STA013 TOO LARGE" under some conditions, has been fixed;

- A problem in the Database Manager, that truncates the text of a Lock Message under some conditions, has been fixed;

- The processing of the INITIALISE verb has been extended to correctly initialise an Extended Speedbase Memory Database record.

- A problem in the Database Manager that results in a spurious EXIT 1601 when displaying some Pervasive SQL error codes, has been fixed;

- A problem in the Window Manager, that can result in a spurious STOP 25006 under some conditions, has been fixed;

- A problem in $MN32 that results in an "ERROR I" when an attempt is made to update a button style pop menu, has been fixed;

- The 32-bit Menu Handler DLM (BO$MEN) has been modified to allow both SPACES and LOW-VALUES to specify an unused Access Rights field. Without this change some GX Button Style Menus were being displayed incorrectly because of assumed Access Rights within the menu files;

- A problem that could result in a spurious STOP 14718 when mixing 16-bit and 32-bit Job Management, has been fixed;

- A problem in 32-bit Job Management when processing NULL replies has been fixed;

- The various file utilities (e.g. $F, $DIR etc.) have been modified to recognise a new File Type "DC" for a Speedbase Database Control File (e.g. DBxxxxx9);

- The 32-bit GX VIEW$ routine, which is used by the 32-bit spooler, has been extended to recognise the ForceTextVIEW$ option in the Customisations section of the registry. If this option is enabled the viewer displays in "legacy" text mode instead of GX "window mode". This option is only available to provide compatibility with the 16-bit VIEW$ routine;

- A problem in the 32-bit GX VIEW$ routine, which is used by the 32-bit spooler, that suppresses the display of the last line, if the listing file does not include an Alignment Pattern, has been fixed;

- A problem in the 32-bit GX VIEW$ routine, which is used by the 32-bit spooler, that results in an initial page number of 0 instead of 1, if the listing file contains no page-breaks, has been fixed;

- A problem in the 32-bit GX VIEW$ routine, which results in a crash of GX.EXE has been fixed. The problem only occurred with "empty" print files.

6. Global Development System Enhancements (Sub-routines etc.)

- A new System Variable, $$SYNC, is now available. When this variable is nonzero the GSM date/time is synchronised to the Windows date/time;

- A new System Variable, $$PGNX is now available. $$PGNX is an extended, PIC 9(9) COMP, equivalent of the more familiar, $$PGNO Page Number;

- A new System Variable, $SCURR, is now available. This variable can be checked in the R-START routine (**and only in an R-START routine**) to determine if the Window Manager has a "current record" (0 = no current record; 1 = current record available);

- A new System Variable, $SFUNC, has been introduced. This System Variable can be considered an extension to $FUNC. At the time of writing the only valid combinations of $FUNC and $SFUNC are $FUNC=-1; $SFUNC=900 which signals a time-out exception on the GX window;

  - All error messages displayed by the BA$OPN DLM that include the phrase "Btrieve error" have been changed to "Gateway error";

  - The ACMBO$ sub-routine has been extended to support a 3rd optional Response String parameter;

  - A new sub-routine, ADDAU$, is now available to add an entry to the $$AUTH Authorisation File;

  - The B$BAD sub-routine has been extended to allow the creation of a DBxxxxx9 Control File;

  - The B$BNC and related sub-routines have been extended to test the Display Routine pointer for HIGH-VALUES;

  - A new sub-routine, B$CWMD, is now available to set the Window Mode. This sub-routine is related to the B$WMOD sub-routine;

  - The B$DBXC and B$BNC sub-routines have been extended to recognize a Server Name of SPACES. If the Server Name is set to SPACES and there is no existing Schema File to pick up the Server Name from, then Server Name in the registry used. Also, if the Server Name is set to "%" the value in the registry is always used;

- The format of the control block passed to the (DBX) B$DBXC sub-routine has been changed to become compatible with the control block passed to the related (non-DBX) B$BNC sub-routine;

- The B$DBXP and B$BNP sub-routines have been extended to recognize a Server Name of "%". If the Server Name is set to "%" the value in the registry is always used;

- A new sub-routine, B$DIX, is now available to read the index details from the dictionary from a given window;

- The B$DBXN and B$BNN sub-routines have been extended to default the destination Schema File name and unit to the source Schema File name and unit if the destination Schema File name and unit parameters are set to SPACES. Furthermore, if the destination Schema File unit is SPACES then it defaults to the source Schema File unit;

- A problem in the B$GTWK sub-routine that causes a ILLEGAL BASE exception under some conditions, has been fixed;

- A problem with the B$PATH sub-routine that returns an incorrect pathname for some Schema Files, has been fixed;

- The B$POP sub-routine has been enhanced to enable the <TAB> function for Pop Menus;

- A new sub-routine, B$RCID, is now available to return the Record-ID of the N'th record in a Pervasive SQL or Microsoft SQL Schema File;

- The B$ST2N sub-routine has been extended to check the number of free records in a Speedbase database;

- A new sub-routine, B$TYP, is available to return the type (i.e. Global format, C-ISAM, Pervasive SQL or Microsoft SQL) of an open Speedbase database;

- A problem in the Extended Speedbase Memory Database Manager that results in an Out of File exception for the GET operation, under some conditions, has been fixed;

- A problem in the Extended Speedbase Memory Database Manager that results in a spurious STOP 25588, under some conditions, has been fixed;

- A problem in the B$SMDE sub-routine has been fixed: All dynamically allocated data pages are now cleared by this sub-routine;

- The size of the database pathname supported by the B$OPN routine has been extended from 72 to 120 characters;

- A new System Variable, $$UDIAG, is now available for use by application code to populate during batch type processing. The contents of $$UDIAG are included in the Debug Log file when a Debug Event occurs;

- A new routine, BOOL$, is now available on both GSM (Windows) and GSM (Unix) configurations, to test if a zero-terminated string contains a value Boolean setting (e.g. "On", "Off" etc.);

- A new sub-routine, CACHE$, is now available to enable caching on files opened using the GX Open Direct Access Method (OR$98X);

- The DIGEN$ sub-routine has been extended to accept an optional 4th PIC 9(4) COMP parameter. If the 4th parameter is supplied the database type (i.e. DBX or non-DBX) is returned;

- A new sub-routine, GXATM$, is now available to set a time-out on the next GX Field Accept operation;

- A new sub-routine, GXCFN$, is now available to set the GX Customisation File Tag Name for one, or all, the GX Customisation Files (e.g. GXCUST2.CUS);

- The GXCOP$ sub-routine has been enhanced to recognise a CPBAR value of 3. This value displays a progress bar window without a Cancel button. A problem in the GXCOP$ sub-routine, that can result in a NO BASE exception under some circumstances, has been fixed;

- A new sub-routine, GXLFI$, is now available to allow a particular field in all RDA's to be linked such that an update

to the field is passed on to all RDA's. This linkage prevents the field from being cleared;

- A new sub-routine, GXLNG$, is now available to return the GX Language Code;

- A new sub-routine, GXSBC$, is now available to set the button text for a button on a **specific** window (cf. GXSBT$ which assumes the **current** window);

- A new sub-routine, GXSIS$, is now available to set an INI file setting in the GX.INI file;

- A new sub-routine, GXSWS$, is now available to restore the original customistion settings on exit from a window;

- A new sub-routine, GXTAB$, has been implemented to associate a window with a button. This sub-routine is **not** suitable for external use.

- The GXWIN$ sub-routine has been moved from the BA$BAX DLM to BO$WWW;

- A new sub-routine, GXXLT$, is now available to enable/disable the GX Translation option;

- A series of new sub-routines, HTTPO$, HTTPC$, HTTPH$ and HTTPS$ are available to connect and interface with an external web-server;

- A new sub-routine, PRG32$, is now available to determine whether a particular operator is running a particular 32-bit program (in any partition);

- A new sub-routine, REGRS$, is now available to read a string setting from the registry. This routine is supported on both GSM (Windows) and GSM (Unix) configurations;

- A new 16-bit sub-routine, RESC$, is now available to restart the current user. A 32-bit version of this sub-routine is **not** currently available;

  - A long-standing problem in SUBS$ which results in an inaccurate value for the maximum free space available on a sub-volume, has been fixed;

- The TIME2$ sub-routine has been extended to call MIDN$ to effect an automatic date/time roll-over at midnight if the "AdvanceDateAtMidnight" registry option is enabled. Note that the equivalent change to the DT-DL$, DT-DS$ and TIME$ sub-routines was implemented for GSM SP-5;

- The new sub-routine GXMRZ$ is reserved for internal use only.

7. Global Development System Enhancements (Utilities)

- The Development Options menu of $32BADG has been extended to include a new Control File Maintenance option. This option allows a minimum size, expressed as a percentage, to be associated with one, or more, records sets in the Global format database. If this option is enabled a new DBxxxxx9 control file is created alongside the traditional DBxxxxx, DBxxxxx1, DBxxxxx2, DBxxxxx3 index and data files;

- A 32-bit version of $BUILD, $BUILD32, is now available. Note that $BUILD32 maintains a customisation file $$BUILD on the $G unit;

- A new 32-bit compiler, $COMPILE, is now available **for informal evaluation only**. $COMPILE is 100% compatible with $SDL32. $COMPILE has been extended to allow it to be EXEC'ed from a "System Rebuilder" type utility. Details of the interface are available upon request;

- A GX-only, 32-bit editor, $EDITOR, is now available for informal evaluation only.

- $SDE32 has been enhanced to support the F9 ~ command. This command, which is related to F9 Q, displays a textual representation of the selected window as it would be displayed in GX mode;

- The $SDL32 compiler has been enhanced considerably to support the "XP" option for extended TCPI PF printing. This advanced printing option is fully described in a separate document;

- A problem in $SDL32 that results in a spurious COPYBOOK NOT FOUND error under some conditions, has been fixed;

- A long-standing problem in $SDL32 that results in an EXIT 13401 when the System Time is higher than 99.59.59, has been fixed;

- The error message associated with error 277 has been modified to indicate that it applies to any level of Controlling Frame;

- Foreign Language translation is fully supported for GX applications. A new development utility, $XLMAINT, is available to maintain the Application Translation Database. The GX translation option is fully described in a separate document.

NEW FEATURES IN GSM SERVICE PACK 18

1. Introduction and Overview

Global System Manager V8.1 Service Pack-18 (GSM SP-18) includes several new features and many significant enhancements to GSM SP-17 (and GSM SP-16 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-18 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-17 before applying GSM SP-18**).

For GSM (Windows) configurations GSM SP-18 **MUST** be used with GLOBAL.EXE V4.0 (or later) and GX V4.0 (or later). If you attempt to load GSM SP-18 on pre-V4.0 GLOBAL.EXE or use a pre-V4.0 GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V4.0 is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V4.0 (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V4.0 and a compatible version of GXIO.EXE are also available in ZIP file format.

For GSM (Unix) configurations GSM SP-18 **MUST** be used with the V3.344 (or later) BACNAT components and GX V4.0 (or later). If you attempt to load GSM SP-18 with a pre-V3.344 BACNAT or use a pre-V4.0 GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V4.0 is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V4.0 (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V4.0 and a compatible version of GXIO.EXE are also available in ZIP file format.

2. New features in the GSMSP18 & GDSSP18 utilities
No new features have been implemented in either GSMSP18 or GDSSP18.

3. Changes to GSM Installation and Start-Up

- A number of GSM start-up overlays have been enhanced to support the implementation and licencing of GX OneOffice configurations;

- The GSM start-up overlay $STARX now checks the version of GLOBAL.EXE is V4.0, or higher; and the version of GX.EXE is V4.0, or higher;

- The GSM start-up overlay, $STARX, has been extended to check that the screen resolution for GX screens is at least that required for Global 3000 V6.0 (i.e. 1024*768). As explained in the GLOBAL.EXE V4.0 notes, global40.doc, this checking can be disabled by the Customisations\SuppressTestForGXScreenResolution registry setting. This feature of $STARX was back-ported to GSM SP-17. Furthermore, the technical message "Version of GX is incompatible with the Run Menu" previously displayed by $STARX has been changed to the more generic message "Unable to download Run Menu to GX";

- The GSM start-up overlay, $STARX, now checks that the GX version is sufficiently high before attempting to enable the GX Translation option. This test is necessary to prevent a spurious STOP 25022 if GX Translation is enabled, but the version of GX being used does not support the Translation option;

4. Major Changes to GSM Run Time

- A number of 32-bit DLM's have been extended to support the TCPI Extended Printing option. See Technical Note IN343 (when available) for further details;

- The Menu Handler has been enhanced to support GX OneOffice tree-structured menus;

- A problem in the user initiation code within GSM that is responsible for a long-standing problem that frequently results in a GLOBAL.EXE crash when GSM is terminated using $BYE, has been fixed. This change was back-ported to GSM SP-17;

5. Minor Changes to GSM Run Time

- The $STATUS "FIL" command has been extended to list the open files on local units (e.g. 201). Previous versions of $STATUS only supported the "FIL" command on network units (e.g. A01);

- Another revision of the GX-only, 32-bit equivalent of $STATUS (i.e. $32STAT) is available for informal evaluation;

- The 16-bit Menu Handler, $MH, has been extended to prevent a NUMERIC OVERFLOW exception when a 16-bit menu is displayed on a very wide (192 columns) screen. Note that this problem does not affect the 32-bit Menu Handler, $MENU32. Note also that the only example of a 192-wide screen is when GX is used in conjunction with the WiderWindowZero GXHOSTS.INI file setting;

- A problem in the 32-bit Menu Handler (BO$MEN) that incorrectly treats Menu Style 2 (explicit Traditional format menu) as Menu Style 1 (GX Button Style Menu), under some conditions, has been fixed;

- A problem in the 32-bit Menu Handler (BO$MEN) that results in the wrong Special Help value being set, under some conditions, has been fixed. The Special Help value for the last selected entry in the menu hierarchy was simply being used. No account was taken of the possible Special Help settings in type "N" menu lines traversed in order to action the selected menu line;

- $SETUP has been extended to support Cabinet Files that do not default to previous installations of a different version of the same module. A default unit is only offered if the same version of the same module has previously been installed;

- The System Messages file, $$SYMESS, required by the GX Translation facility, has been updated to include a number of new and changed messages displayed by the various GSM start-up overlays;

- A problem in the $GSP Print option that results in only a sub-set of all the possible Service Packs appearing in the report, thus giving misleading information regarding the "latest frame date" information appearing in the report, has been fixed;

- Some of the $32SPOO screen dialogue has been improved. The "History" button in the main spooler window has been replaced by the "Suppress History" tick-box in the initial window.

- A problem that results in a spurious STOP 8625 on non-GX screens if the "Force16BitDebugOverlay" setting is disabled, has been fixed;

- The $32BADG Restore function now correctly displays the number of used records in the database;

- $DIR and $DIRP have been enhanced to allow the update of Long Volume Descriptions (LVD's). When listing a domain, key "H" to update the LVD of the domain or "B" to update the LVD of the sub-volume currently under the cursor. When listing a sub-volume key "H" to update the LVD of that sub-volume;

- $GSP has been enhanced to include an option to extract the members of a Global Product Service Pack. This option is only available when using GX and is reserved for internal-use;

- The System Messages file, $$SYMESS, required by the GX Translation facility, has been updated to include a number of new messages displayed by the Extended TCPI Printing DLM;

- The 32-bit Menu Maintenance utility, $MN32, has been enhanced to allow an optional Menu File and Unit to be specified for type "S" menu lines when the target program is a Menu Driver that loads the specified Menu File from the specified unit. Note that a "Menu Driver" is an application (e.g. CL3000) that invokes the Menu Handler sub-routine to display an Application Menu File (e.g. CL-Menus). This enhancement is required to build the multiple Menu-File Hierarchy required by the tree-structured GX OneOffice menu option;

- Menu Maintenance and the Menu Handler have been improved to allow a generic Sign-Off Delay to be specified when the "Sign-Off Delay In Use?" option is enabled. This generic Sign-Off Delay is used for all menu pages that do not include an explicit Menu Page specific Sign-Off delay;

- $BN32 has been enhanced to detect, and operate correctly, with a GSM (Novell) Speedbase NLM (i.e. for when a 32-bit GSM (Windows) client is connected to a Novell file-server);

- A new utility, $RP-SC, is available to convert a Global Reporter report to a skeletal frame source file containing example PF logic. Note that the source file produced by $RP-SC is **not** immediately compile-able but is merely intended to act as **starting-point** for the further changes required to emulate the Report;

- $MN32 has been improved to complete menu updates even when a work unit is not specified;

- The GSM System Message file, $$SYMESS, now includes a verbose description of every System Message. The $XLAT utility, which only operates on GX, has been enhanced to display the description associated with each System Message;

- The dialogue of the $XLMAINT utility has been revised and improved;

- A problem in 32-bit $LICENCE ($32LICE) that confusingly reports a corrupt cabinet file instead of a missing cabinet file in GSM (Unix) configurations, has been fixed;

- For multiple-line text strings, $XLMAINT has been improved to display more than just a single line of the original and translated text strings;

- A problem in the $32BADG "Special Conversion" mode during the conversion of a PIC 9(4) COMP field in the input dictionary to a PIC X(7) field in the output dictionary, has been fixed. The problem prevents the right justification of the computational field extending to the full length of the character field;

- The $32BADG "Special Conversion" option has been extended to include an option to Zero-Fill the converted field;

- A problem in the 32-bit spooler ($32SPOO) that results in the display of an incorrect creation date for some files that exceed the spool unit allocation size, has been fixed;

- The $BAST32 utility now correctly closes the Speedbase database if the operator simply exits the main menu without invoking any of the status options;

- Menu Maintenance has been extended to allow a 2-character Company-ID to be specified in a menu line. This Company-ID parameter is available for use by Global-3000 V6.0;

- $SETUP has been extended to ensure that the default installation unit for those products with a Parent Product is always the installation unit of that Parent Product;

- A problem in $32BADG, that results in various problems when options from the "Development options sub-menu" (e.g. Create standard meta-dictionary) are selected, has been fixed;

- The $DXU utility has been extended to support a Zero-Fill option on the Special Conversion mode;

- The $BN32 utility has been extended to support a Zero-Fill option on the Special Conversion mode;

- A problem in $SETUP that results in a STOP 25068 when the "Units" button is selected, has been fixed;

- $SETUP does not attempt to update the Long Volume Description (LVD) of the installation unit during product installation if that product is one of a number of siblings of a Parent Product. The Long Volume Description of the final program unit is always the LVD from the cabinet file of the Parent Product;

- Several of the warning and error messages displayed by $SETUP have been changed to improve their readability and clarity;

- A number of problems in the $GSP "Print program List" option have been fixed. The programs in the Program List now appear in the order of Program Name and Service Pack Number (previous versions sorted this List by Program Name and Program Date – the date could not always be relied upon);

- $LICENCE has been improved so that when selecting the "Browse" button of a field the focus of the accept is moved to that field;

- $SETUP has been improved so that Product Version Number is considered when determining the default unit for a product that is about to be re-installed. For example, if Payroll V7.1 is installed on B01 and Payroll V7.2 is installed on B02, previous versions of $SETUP would (incorrectly) offer B01 as the default unit for a re-installation of V7.2. The SP-18 version of $SETUP (correctly) offers B02 as the default unit;

- $SEARCH (and $SRCH32) have been enhanced to prevent a NUMERIC OVERFLOW exception when the source file being searched contains more than 32767 lines;

- $DXU has been corrected to make the "Zero-Fill" option independent from the "Field Name Mapping" option. **IMPORTANT NOTE: The GSM SP-18 version of $DXU will only operate correctly with Speedbase Gateway V3.81, or later;**

- $BN32 has been corrected to make the "Zero-Fill" option independent from the "Field Name Mapping" option;

- The error messages displayed by $SETUP when a Parent Product is not among the currently selected products, have been improved;

- $SETUP now checks that the year and version of a Parent Product are the same as the product currently being installed;

- $GSPMAKE has been improved to allow the creation of "Enhancement Service Packs";

- $GSP has been improved to recognise and process "Enhancement Service Packs". Enhancement Service Packs, which will be introduced with Global 3000 V6.0, include a link to a URL that provides documentation, and other details, of the major enhancement(s) included in the service pack;

- The Menu Handler DLM (BO$MEN) has been improved so that type "B" menu lines are never passed via GX to the GX OneOffice Menu Handler;

- A problem in the $32BADG utility (32-bit $BADGN), that results in the Used Record Count field being displayed as *'s under some conditions, has been fixed;

- The $32BADG utility (32-bit $BADGN) has been extended display the record-id, as well as the less useful, message number, when the starting position of a Record Set within the database exceeds the 32Mb limit;

- The format of the various progress messages displayed by 32-bit $LICENCE ($32LICE) has been improved;

6. Global Development System Enhancements (Sub-routines etc.)

- The GXVEX$ sub-routine has been extended to return the screen width (in pixels) and the screen depth (also in pixels);

- A problem in the B$GTWK sub-routine that returns details of the wrong window, has been fixed. The problem is a side-effect of a change made to this sub-routine in GSM SP-17 in order to fix a NO BASE problem. By default, B$GTWK now returns the sanitized control block information for the **current** window (i.e. rather than the window passed as a parameter). However, a new, optional parameter can be specified to force B$GTWK to return the information for the **passed** window. This change remains compatible with the GSM SP-16, and earlier, version of the sub-routine **and** fixes the bug that was fixed in a different (albeit incorrect way) in GSM SP-17;

- The MCUS$ sub-routine, which is used by G-3000 installation programs, has been extended to increment the GX Menu Sequence Number when an amendment to a menu displayed in GX Button Style, has been made;

- The Open BDAM Access Method has been extended to recognise, and display appropriately, a "32-bit Address Error" ($$CRES = 1,000,000) from the SVC-61 functions invoked;

- The PRIFN$ sub-routine has been extended to automatically chain to the PRFGX$ sub-routine (see below) if the Printer Type is "GXPrint" and the GX version is V3.6C, or later;

- A new 32-bit sub-routine, PRFGX$, is now available to provide the same facilities as PRIFN$ on "GXPrint" printers (note that PRIFN$ was implemented for "DOSPrint" printers);

- The DEVIN$ sub-routine has been extended to return the Printer Controller Code in the DNCODE field;

- A new 32-bit sub-routine, B$DBXL, is now available to provide the same functionality as the $DXU Load Database option;

- The $$PGNX System Variable, which introduced for "traditional" PF Printing in GSM SP-17 as a PIC 9(9) COMP equivalent of the more familiar $$PGNO Page Number, is now available for Extended TCPI PF Printing;

- A new 32-bit sub-routine B$CWIX is now available to disable (and re-enable) a member of the set of indexes that is automatically built by the compiler for a particular window. Thus, this sub-routine now makes it possible to specify **precisely** which indexes are available in a window;

- The 32-bit Menu Customisation sub-routine, MCUS$, has been enhanced to allow an optional Menu File and Unit for type "S" menu lines when the target program is a Menu Driver that loads the specified Menu File from the specified unit. This enhancement is required to build the multiple Menu-File Hierarchy required by the tree-structured GX OneOffice menu option;

- The following 32-bit sub-routines have been enhanced to be considerably more efficient by only calling the (optional) Progress Message Display Routine when there has been change to the DT-block: B$DBXL, B$DBXR, B$DBXN, B$BNR, B$BNN;

- A problem in the B$RBG sub-routine has been fixed: This problem can cause the sub-routine to loop under some circumstances;

- A problem in the NEOPN$ routine when called by an application that issues multiple NEOPN$, NECLS$ calls, has been fixed. The problem, which occurs with $GSP when multiple levels of service pack folders are configured, can result in a crash of GLOBAL.EXE;

- A new 32-bit sub-routine, STSIG$, is now available to return the significant length of a text string, ignoring any trailing spaces or binary zeroes. This functionality could be coded in-line, without the need for a special sub-routine, but STSIG$ uses a new SVC (SVC 96) that optimises the performance of the string handling;

- A problem in the B$DBXC sub-routine that results in the Dictionary Name, instead of the Schema File Name, being used to create the BDCF file, has been fixed. This problem only occurs if the name of the database being created is different from the name of the dictionary being used to generate that database;

- The GXCOP$ sub-routine has been enhanced to use a different internal block size which should improve the efficiency of some file copy operations;

- A new 32-bit sub-routine, B$BREC, is now available to return the number of records in a **closed** Speedbase database. Note that, for a Global format Speedbase database, B$BREC returns the actual number of records used (rather than the maximum possible number of records);

- A problem affecting the Progress Information returned by the B$DBXN sub-routine, has been fixed;

- A new 32-bit sub-routine, B$BCN, is now available to convert a Global format database using a new conversion dictionary. This routine provides the equivalent of the $BADGN/$32BADG conversion functions;

- The B$BCN sub-routine now calls the optional Progress Message Display Routine with the correct record set-id established in the Progress Message control block;

- A problem in the B$BCN sub-routine that prevented a newly established record set from having less that 50 records, has been fixed;

- The B$BCN sub-routine now correctly returns an exception when a Record Start Address in the converted database would exceed the 32Mb limit;

- The BTICN$ sub-routine has been extended to accept an optional, third parameter to supply the Hover Text associated with the Iconic button;

- A problem in the B$BNN sub-routine when the new directory path is left as SPACE's and the existing directory starts with a "@" character, has been fixed;

- A new 32-bit sub-routine, REGRV$, is now available to return a DWORD numeric value from the registry. This new sub-routine is closely related to REGRS$ which was released with GSM SP-17;

- The B$DBXN sub-routine has been enhanced to operate correctly when the Speedbase Gateway Intelligent Conversion option is enabled (i.e. when the IntelligentConversion registry setting is nonzero - see Technical Note IN274 for more details);

- A new 32-bit sub-routine, B$SMP, is now available to set a the Database Pointer of one SMEM Record Set to another Record Set thus effectively establishing a "substituted" Record Set;

- The Speedbase Access Method (SPAM) for C-ISAM databases has been improved to fix an ILL LOAD exception if the last index block has no entries (because all the entries in that block have been deleted by previous processing);

- A new sub-routine, B$CSMP, is now available to clear the Channel Pointer for a SMEM Record Set;

- The FIT$ sub-routine has been improved to handle a file list that contains duplicate filenames (previous versions of FIT$ would generate a STOP code if the file list contained duplicates);

- A new sub-routine, GXRSF$, is now available to return the GX "Remote Session Flag". For example, this routine can be used to test if the GX session is running in Windows Terminal Services;

- The B$RBG sub-routine has been improved to fix a problem that can occur with complex databases such as the G-3000 V6.0 Cash Manager (DBCM) database;

- The B$BCN sub-routine has been improved to return a unique exception when an Insufficient Space condition is detected;

- A problem in the MCUS$ sub-routine that causes a spurious "Please Assign   " message to appear under some conditions when installing Global applications, has been fixed;

- The S.SYS32 copy-library has been updated to include new copy-books $0 to $5 to provide the various control blocks for the BBNC, BBND, BBNN, BBNP and B$BNR sub-routines;

- The S.SYS32 copy-library has been amended to correct the format of the 0$ (B$DBXN and B$DBXR) and c$ (B$DBXC) copy-books;

- The S.SYS32 copy-library has been updated to include the S$ copy-book to provide the S4 control block for the B$ST sub-routine;

7. Global Development System Enhancements (Utilities)

- The 32-bit Symbolic Debugger, $DBUG, has been extended to allow a lower-case Symbol Name to be entered into a Watch Window;

- The 32-bit Symbolic Debugger, $DBUG, has been considerable enhanced to support CPU resource usage and application code profiling features. These powerful new features are fully described in document $dbug.doc (when available);

- The user dialogue and screen presentation of the 32-bit Symbolic Debugger, $DBUG, has been improved in several areas of the dialogue;

- $SDE has been improved to remove the BELL statement when an attempt is made to position past the rightmost character in the edit window. This BELL statement has the effect of clearing the type-ahead buffer, which can prevent large amounts of data being pasted from the Windows clipboard into the text file currently being edited;

- $SDM has been improved to allow any fatal error messages (e.g. "Load Aborted") to be read by the operator;

- The 32-bit compiler, $SDL32, has been extended to support the new language verbs required for the TCPI Extended Printing option. See Technical Note IN343 for further details. These changes have also been included in the $COMPILE 32-bit compiler;

- Both $SDL32 and $COMPILE have been enhanced to increase, from 64 to 99, the number of Access Channels allowed in a single compilation;

- $SDL32 has been improved to handle source files that contain more than 32767 lines. Previous versions of $SDL32 would suffer an OVERLOW exception if the source file line count exceeds 32767;

- $DXDCT has been extended to allow it to be EXEC'ed by another program;

- $BADCT has been extended to invoke $DXDCT if the Data Dictionary specified is a DBX dictionary;

- A problem in $DXM that results in an ILLEGAL OPCODE in BA$EXE if the "Select Another Database" option has been selected, has been fixed;

- $DXM has been modified so that the Field Description is the default string for the SQL field Name;

- The dialogue for $DXM has been improved. In particular, a new "GVF" button has been added to allow direct navigation to the GVF window to avoid processing all the field update windows;

- The restricted default dictionary size, assumed by $DXM when creating a new DBX dictionary, has been removed.

- $DXM prevents an inadvertent attempt to specify cascading GVF's for a SMEM data dictionary;

- $BUILD has been extended to allow ^A, ^B etc. in the dialogue of *#RUN command lines;

NEW FEATURES IN GSM SERVICE PACK 19

1. Introduction and Overview

Global System Manager V8.1 Service Pack-19 (GSM SP-19) includes several new features and many significant enhancements to GSM SP-18 (and GSM SP-17 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-19 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-18 before applying GSM SP-19**.

For GSM (Windows) configurations GSM SP-19 **MUST** be used with GLOBAL.EXE V4.0 (or later) and GX V4.0q (or later). If you attempt to load GSM SP-19 on pre-V4.0 GLOBAL.EXE or use a pre-V4.0q GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V4.0q is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V4.0q (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V4.0q and a compatible version of GXIO.EXE are also available in ZIP file format.

For GSM (Unix) configurations GSM SP-19 **MUST** be used with the V3.344 (or later) BACNAT components and GX V4.0q (or later). If you attempt to load GSM SP-19 with a pre-V3.344 BACNAT or use a pre-V4.0q GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V4.0q is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V4.0q (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V4.0q and a compatible version of GXIO.EXE are also available in ZIP file format.

2. New features in the GSMSP19 & GDSSP19 utilities

The GSMSP19 upgrade utility includes the following improvements over previous versions of the GSM Service Pack upgrade utilities (i.e. GSMSP18, GSMSP17 etc.):

- The DI$OPID Data Dictionary is copied to SYSRES as file DI%OPID. Note that previous versions of the GSM Service Pack

upgrade utility copied this dictionary to SYSRES as file DI$OPID_;

- The DIAUTHP Data Dictionary is copied to SYSRES as file DIAUTHP **potentially overwriting earlier versions of this Data Dictionary**. Note that previous versions of the GSM Service Pack upgrade utility copied this dictionary to SYSRES as file DIAUTHP_. Furthermore, the Generation Number of the DIAUTHP Data Dictionary on SYSRES is no longer checked to prevent a different version from being overwritten since the "live" versions of the AUTHP Databases and Dictionaries should only be held on Application program Units (i.e. never on SYSRES);

- The DI$XTRN Data Dictionary is copied to SYSRES as file DI%XTRN. Note that previous versions of the GSM Service Pack upgrade utility did not copy this Data Dictionary to SYSRES. If a DI$XTRN Data Dictionary already exists on SYSRES with a different Generation Number from the DI%XTRN dictionary, a message is displayed warning the user that the DB$XTRN database must be regenerated.

3. Changes to GSM Installation and Start-Up

- The GSM Start-Up logic and Command Handler have been enhanced to integrate with OneOffice 3000 Workspace (OO3KWS). GSM SP-19 is the first version of GSM that can be used with OO3KWS;

- The GSM Start-Up overlay has been extended to read the registry to test the SuppressPrintDialogueWindow setting. This setting is used by Global 3000 V6.0;

- A problem that results in an NUMERIC OVERFLOW AT #71FA in $STARX, under some conditions (when a GX file download fails), has been fixed.

4. Major Changes to GSM Run Time

- A 32-bit, GX version of $INSPECT ($32INSP) is now available. $INSPECT will automatically chain to $32INSP when running on a GX screen. $32INSP is fully described in Technical Note IN352. Note that $32INSP allows the inspection of text and report files within ($DLIB) Data Libraries;

- When running on GX or the OneOffice 3000 WorkSpace client $INSPECT automatically chains to the GX-only $32INSP;

- $BYE has been enhanced to operate correctly with the OneOffice 3000 WorksSpace client;

- $CUS has been enhanced to allow the application of OneOffice 3000 Workspace licences;

- $E has been extended to operate correctly with the OneOffice 3000 Workspace client. Furthermore, the Supervisor Program is ALWAYS set to $MENU32 in this environment;

- The Menu Handler has been extended to operate with the OneOffice 3000 WorkSpace client;

- Menu Maintenance has been extended to allow Menu Files to be maintained when using the OneOffice 3000 WorkSpace client. $MN32 temporarily disables the OO3KWS menu style to allow the target menu to be displayed independently within the GX application window.

5. Minor Changes to GSM Run Time

- The 32-bit Spooler Status command ($32SPS) has been enhanced to support a new "Enter Spooler Status at end of pending list" option. When this option is enabled the Spooler Status window is entered on the record to be printed. This is either the last page of the Spooler Status list when displaying in "normal order"; or the first page when displaying in "reverse order". The following examples illustrate the various options

Normal Schedule Table order & Enter Spooler Status at end of pending list disabled

Reverse Schedule Table order & Enter Spooler Status at end of pending list disabled

Normal Schedule Table order & Enter Spooler Status at end of pending list enabled

Reverse Schedule Table order & Enter Spooler Status at end of pending list enabled

- A problem in the spooler that causes the priority of a file to be lost and the priority to appear as blank, when an attempt is made to commence printing from a file that is "kept", has been fixed;

- The dialogue of the Multiple File Selection window in the 32-bit spooler, $32SPOO, has been improved;

- The 32-bit spooler status now allows the format letter to be changed for all pending spool files with the exception of the file that is currently being printed;

- A problem in $AUTH32 has been fixed to ensure that an amended User Name in a user record that has just been copied from a template is consistent within the DB$AUTH database. Furthermore, the "Copy" button in window $AUTH01/W9 is now available in ADD mode as well as INS mode. In addition, a problem that sometimes results in the spurious message "The current time is invalid" when users login on a system that has been configured with $AUTHEX as the Authorisation program, has been fixed;

- The 32-bit version of $BADGN ($32BADG) has been modified to allow less than 50 records to be specified when creating a new Global format database. The dialogue of the Special Conversion option has been improved;

- The $BADBASE utility has been revised to improve the dialogue: The buttons are now labeled "Save" and "Abandon";

- A problem in $BN32 that results in an OVERFLOW AT #2A22 when rebuilding large (> 10Gb) databases, has been fixed;

- A minor spelling mistake in $CUS has been fixed. The printer format letter is now displayed correctly in all the screens in the Printer Customisation dialogue. Furthermore, the $CUS Printer Customisation option now logs the operator and date/time of the last update to the Printer Control File;

- A problem in $DXU that results in a STOP 1201 in the Database Conversion function, under some conditions, has been fixed. Furthermore, a cosmetic problem in the $DXU SQL Database Size/Name pop-up which obscures some of the information in the underlying window, has been fixed;

- A problem with $GSP that results in an apparent hang if insufficient free directory entries are available on the destination program unit, has been fixed. A number of cosmetic issues with $GSP have been addressed. $GSP now allows the potentially lengthy "Building List of Service Packs" process to be interrupted;

- $GSP has been improved to allow Service Pack Groups to be applied correctly when the members of the group are held in separate module-specific sub-folders;

- A new end-user utility $GSPL is now available to allow end-users to view the text and "applied" status of Global product Service Packs. Unlike $GSP, this new utility does **not** allow the application of Global Product Service Packs. Note also that $GSPL assumes the last Service Pack folder that was used by $GSP. $GSPL does not allow this folder to be modified;

- $INSLOG now contains a "Delete Log" button that allows a single product to be logically deleted from a Program Unit. This button removes the need to use the "Delete Unit" button

to logically delete **all** products from a unit, followed by the re-addition of all the products except for the one to be deleted;

- $LICENCE "remembers" the Windows folders used for the unlicenced and licenced Global Cabinet Files in a small log/customisation file $$LICLOG on $M. For most sites it is perfectly acceptable, and highly desirable, to default the Windows folders to the same as the last use of $LICENCE. However, on some configurations it may be necessary to hold these customisations on a per operator basis. $LICENCE (and $32LICE) recognize an operator-specific customisation file $$LCoooo (where oooo is the operator-id) that overrides the settings in $$LICLOG;

- $LNAT now correctly handles the situation when the report file becomes full;

- The Menu Handler and Menu Maintenance have been enhanced to allow Line Type Icons, Shortcut Icons, Hover Text and a Colour Profile to be associated with menu lines in GX Button Style menus;

- $PASSWD now correctly ensures that the $$OPID file is kept in synchronization with the $$PASSWD file at all times;

- If a user login fails because the operator is restricted from connecting to the selected client (i.e. when the $PASSWD restricted node-id option is enabled) a unique error message is written to the Event Log File;

- $PASSWD has been extended to optionally allow the Supervisor to be notified when a user logs in to a GSM session;

- A new utility, $TALK, is available for evaluation only, for multi-user conversations on a GSM network;

- $XLAT has been extended to suppress the option of translating the System Messages File if GX Translation is disabled;

- $XLMAINT has been extended to extract the System Message Descriptions from the System Messages File, where possible. In addition, $XLMAINT has been extended to support the translation of Button Hover Text. Furthermore, a date/time stamp is now associated with every translation record in the translation database;

- The handling of the error condition that produces a STOP 25078 has been improved to display, on GX only, the Target Record-ID, Master Record-ID and the Master Key that is required;

- The handling of the error condition that produces a STOP 25502 has been improved to display, on GX only, the ID of the failing record;

- A problem in the Window Manager that results in a NUMERICAL OVERFLOW AT #144A in BA$DXX if an invalid User Number is returned by the Speedbase Gateway for a lock condition, has been fixed;

- The 32-bit Window Manager has been extended to support the byte stream generated by the TYPU$ routine to be extracted from the Type-Ahead buffer;

- The CLEAR WINDOW function now exits normally (i.e. without returning an exception) if the target window is not currently displayed;

- The 32-bit Window Manager has been extended to support the R-INIT routine;

  - The Record-ID, when appropriate, of the currently executing window is now displayed within the GX "About" Box;

- A problem in the Menu Handler, that inadvertently suppresses the calls to LOGOF$ and NLOGF$ on GX Button Style Menus, has been fixed;

  - The Print View overlay of the 32-bit spooler, $32SPOO, has been extended to recognize Alignment Patterns under all conditions;

- A number of utilities that use the GXMSG$ sub-routine have been modified to produce a slightly larger and improved message box;

  - The $$SYMESS Messages File has been updated to include the new System Messages introduced for GSM SP-19.

6. Global Development System Enhancements (Sub-routines etc.)

- A problem with the AMPAG$ sub-routine, that can sometimes result in the display of the Icon, Help-Text, Short-Cut Icon and Hover-Text for the wrong menu-line, has been fixed. The (obscure) problem only occurs if the menu contains one, or more, suppressed lines;

- The AUTHB$ sub-routine has been enhanced to operate with the OneOffice 3000 WorkSpace client;

- The B$BAD and B$RBG sub-routines have been extended to support an optional Message Display Progress Routine;

- A new GX-only, 32-bit sub-routine, B$POPI, is now available to produce Pop-Menus in "Iconic Button" style;

- A problem in the Extended SMEM Database Manager, which can sometimes result in the loss of index blocks during an index split function, has been fixed;

- The B$XPO sub-routine has been extended to allow a Style Block to be established within the Extended PF print mechanism. See technical Note IN343 for further details. Furthermore, a problem with the B$XPO sub-routine when called with no parameters, has been fixed;

- A 32-bit version of the RSAM for Data Library Access Method is now available;

- A 32-bit version of the TFAM for Data Library Access Method is now available;

- The BTICN$ sub-routine has been extended to accept an optional parameter which specifies the Hover Text associated with the selected button. Furthermore, the BTICN$ routine has been modified to use a "streamed GX operation" to increase performance. The use of a streamed operation means that some EXIT and STOP codes, that were returned by previous versions of BTICN$, are no longer returned by the default operating mode of the GSM SP-19 version of BTICN$. The original (slower) synchronous BTICN$ operation, which does return all the STOP and EXIT codes returned by pre SP-19 versions of this sub-routine, is still available by setting the #80 bit of the ICINX field in the interface block;

- A problem in the GXCOP$ sub-routine that resulted in the corruption of the $$CRES & $$RES System Variables if an error occurs on the output file, has been fixed;

- A new GX-only sub-routine, GXDTR$, is now available to return the status of the "Define Translation" flag (i.e. the flag that indicates whether GX is operating in "Translator Mode");

- A new GX-only, sub-routine, GXERC$, is now available to change the default Caption Text (i.e. "Speedbase Error") for the next Speedbase error dialogue box that is displayed by the Window Manager;

- A new internal-use, GX-only sub-routine, GXRCD$, is now available to send the current Record-ID to GX. The Record-ID, when available, is displayed in the GX Window "About" box;

- A new GX-only sub-routine, GXTRN$, is now available to translate a text-string using the GX Translation mechanism;

- A problem in the OPDE$ sub-routine which results in the Record Length field within the passed FD being cleared, under some conditions, has been fixed. The problem only occurs when OPDE$ is called with an RSAM FD on GX;

- A family of new sub-routines OPOPN$, OPLIS$ and OPCLS$, are now available to return the list of active users from the $$USER file on $M;

- The S.SYS32 Copy Library has been extended to include the following new Copy Books: $B (Extended PF Printing Backdrop control block); $P (Extended PF Printing Style Block); $X (Extended PF Printing B$XPO control block);

- A new GX-only, sub-routine, TYPU$, is now available to allow a Speedbase Function or GX Button Number to be pushed into the Type-Ahead buffer for the current user;

- A new sub-routine, USERM$, is now available as an alternative to USERX$. USERM$ searches for the specified user in the $$USER file on $M rather than the User Elements control blocks on the local computer;

- A new sub-routine, WOYRX$, is now available. WOYRX$ is an extended version of the familiar WOYR$ (Return Week Number)

sub-routine. Whereas WOYR$ assumes the first day of the week is a Monday, WOYRX$ allows any day to be specified as the first day of the week.

7. Global Development System Enhancements (Utilities)

- The 32-bit Debugger, $DBUG, has been enhanced to increase the number of Watch Windows from 4 to 8. Furthermore, the number of Watch Lines has been increased to 8. In addition, the last "repeatable" button selected by the operator is the default for next time so that <CR> can be used to repeat the previous button command. An example of a "repeatable" button is the Step button where it is obviously a useful feature to be able to key <CR> repeatedly to step through a program. An example of a "non-repeatable" button is the Page Table button, where it is not sensible to select this function repeatedly;

- The 32-bit Debugger, $DBUG, has been enhanced to include a new Keywords button. Selecting this button produces a window allowing rapid navigation to lines in the debug-listing that contain keywords;

- A problem in $DBUG that results in a spurious EXIT WITH 1 under some conditions (when setting a Program Trap) has been fixed. A further problem in $DBUG that results in a spurious EXIT WITH 1 on GSM (Unix) configurations, has been fixed;

- The 32-bit Debugger, $DBUG, has been enhanced to provide an option to display the contents of the Type-Ahead buffer for the partition being debugged. Note that the "Type Ahead" button is only available if the GSM kernel code (GLOBAL.EXE or glintd) supports the required internal function to return the contents of the Type-Ahead buffer;

- The dialogue of the $DXDCT utility has been improved. In addition, the parameter block passed to $DXDCT when the utility is EXEC'ed by another program, has been extended. The extended PA block allows details of the Copy Library to be specified. Furthermore, the Copy Library details window contains the Generation Number of the dictionary;

- The report produced by the $DXM utility has been improved to ensure that any additional lines in the report, included in

order to detail all the GVA/GVF relationships are aligned with the GVA/GVF information on the first line;

- $NSD (remove 32-bit Symbolic Debug information) now uses the current Unit Number as the default for the next Unit Number;

- The $RP-SC utility has been improved to support paging and total accumulation;

- A problem in $SDE32 and $EDITOR that results in a NUMERICAL OVERFLOW EXCEPTION AT $SDEW32/#8C46 when a Text Label has a DIS attribute defined, has been fixed;

- $SDL32 and $COMPILE have been enhanced to support an R-INIT routine in a window. The R-INIT routine is called at the end of a DISPLAY window statement and at the beginning on an ENTER window statement;

- $SDL32 and $COMPILE have been extended to support the following new constructs:

```
IF A <> B        * IF A NOT EQUAL B
IF A >= B        * IF A NOT LESS THAN B
IF A <= B        * IF A NOT GREATER THAN B
```

- $SDL32 and $COMPILE have been extended to support an extension to the PRINT verb for Extended PF Reports:

```
PRINT PF [ATTRIBUTE n] [NEWPAGE [BACKDROP b]]
```

See technical Note IN343 for further details. Furthermore, Extended PF's can be translated using the GX Foreign Language Translation mechanism;

- $SDL32 and $COMPILE now allow the abbreviated form "SUB" to be used as an optional alternative to "SUBSTITUTING";

- $SDL32 and $COMPILE have been extended to support new forms of the ENTER WINDOW statement to allow the window to be entered with a specific index (for GX only):

```
ENTER WINDOW WD [ENQUIRE index-id] [(line:col)]
ENTER WINDOW WD [INDEX index-id] [(line:col)]
```

Note that there is no validation to check that the Index-ID matches that of the record in the WINDOW definition: Unpredictable results will occur if there is a mis-match;

- A new utility, $SDSQL, allows explicit SQL names to be associated with all the fields in a non-DBX data dictionary;

- The GX Combo Box example frame, EXCOMB, has been extended to establish a short code;

- The Extended PF Printing test program, REPTST, has been upgraded to GSM SP-19 standards.

NEW FEATURES IN GSM SERVICE PACK 20

1. Introduction and Overview

Global System Manager V8.1 Service Pack-20 (GSM SP-20) includes several new features and many significant enhancements to GSM SP-19 (and GSM SP-18 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-20 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-19 before applying GSM SP-20**.

For GSM (Windows) configurations GSM SP-20 **MUST** be used with GLOBAL.EXE V4.0 (or later) and GX V4.0q (or later). If you attempt to load GSM SP-20 on pre-V4.0 GLOBAL.EXE or use a pre-V4.0q GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V4.0q is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V4.0q (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V4.0q and a compatible version of GXIO.EXE are also available in ZIP file format.

For GSM (Unix) configurations GSM SP-20 **MUST** be used with the V3.344 (or later) BACNAT components and GX V4.0q (or later). If you attempt to load GSM SP-20 with a pre-V3.344 BACNAT or use a pre-V4.0q GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V4.0q is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V4.0q (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V4.0q and a compatible version of GXIO.EXE are also available in ZIP file format.

2. New features in the GSMSP20 & GDSSP20 utilities

The GSMSP20 upgrade utility includes the following improvements over previous versions of the GSM Service Pack upgrade utilities (i.e. GSMSP19, GSMSP18 etc.):

- The GSMSP20 job no longer copies the various Speedbase Tap files (e.g. T>711) from the Service Pack folder to SYSRES (these SpeedbaseTap files have not changed for many versions of

GSM). The various *.gsm files continue to be distributed with GSM SP-20 but must be copied to SYSRES using $BBS "by hand" if required.

3. Changes to GSM Installation and Start-Up

- GSM start-up has been extended to support the $CUS option that allows a user to always enter a debug session regardless of their authorization level;

- The $STARD GSM start-up overlay has been enhanced to support OneOffice 3000 WorkSpace (OO3KWS) clients on GSM (Unix) configurations;

- The option to download new copies of GX.EXE (and GXIO.EXE) is suppressed when running on a OneOffice Workspace 3000 client.

4. Major Changes to GSM Run Time

- $AUTH and $AUTH32 haves been enhanced to support OneOffice 3000 Workspace licences on GSM (Unix) configurations;

- $AUTH32 has been extended to provide a complete functional super-set to both $AUTH and $PASSWD For example, $AUTH32 now includes support for login messages sent to supervisors; a default default (sic) authorization level; multiple operator logins; Unix trusted GX user flag; $$USA flag toggle on a per user basis.

5. Minor Changes to GSM Run Time

- The 32-bit File Inspection utility, $32INSP, has been enhanced to display a list of the members of a Data Library, allowing a member of the library to be selected for inspection;

- The following new strings have been added to the $32INSP Key Word list: "UNLOAD DIVISION", "LOAD DIVISION", ".BOOK". See Technical Note IN352 for further details;

- The $32INSP Case Insensitive Search option now correctly finds target strings that have been specified in lower-case;

- It is now possible to exit $32LICE cleanly if an invalid licence file has been inadvertently specified;

- The 32-bit Task Status option has been removed from the Run Menu when the OneOffice 3000 Work Space client is in use. The Task Status is meaningless on this environment. Note that this option is still available for the GX thin-client;

- A problem in $32S that results in the "PM Expiry Date" displayed as 14 days later than the actual PM Expiry Date has been fixed;

- The Format Letter List window displayed by the 32-bit spooler, $32SPOO, has been enhanced to display both the (short) Format Letter Description and the (verbose) Format Letter Comment Text;

- The $AU32CNV utility has been enhanced to convert a $AUTH or $PASSWD authorization file to a GSM SP-20 compatible $$OPID database;

- The feature in $AUTH that was introduced in GSM SP-17 to allow the "USA/UK Date Format" flag to be toggled on a per-user basis, has been extended to work in all partitions rather than just P1;

- A problem in $AUTH32 that can result in the loss of password changes under some conditions, has been fixed;

- A new utility, $BAPATH, is now available to change the path of all SQL (both Pervasive SQL and Microsoft SQL) databases on a Schema file volume. $BAPATH recognises both traditional and DBX database schema files;

- $BAST32 has been enhanced to close the SQL database (both Pervasive SQL and Microsoft SQL) after a lock enquiry;

- A new option in $CUS allows a user to always enter a debug session regardless of their authorization level;

- $CUS ($CUSB) now warns that GSM must be restarted for a new PM Expiry Date password to take effect;

- The "Print Format Letter Details" option of $CUS includes all details (e.g. including Printer Width and Printer Depth) in the report;

- The Printer Control File Customisation option has been extended to allow comments to be associated with each Printer Letter. **IMPORTANT NOTE**: This enhancement has resulted in a change to the Printer Control File format. Although a Printer Control File amended using GSM SP-19 (or earlier) can be used on GSM SP-20 (or later) a Printer Control File amended on GSM SP-20 (or later) **cannot** be used on GSM SP-19 (or earlier). If an attempt is made to access a GSM SP-20 Printer Control File on GSM SP-19, or earlier, an error message of the form "Wrong Extent Size" will appear;

- The layout of the progress bar displayed by $DXU has been improved;

- Both $GSP and $INSLOG have been extended to support more than 1000 service packs per module-code;

- $GSP has been improved to keep a history of the last 10 "service pack folders". A drop down list is available to select the required folder;

- The slightly misleading $GSP "Cancel" button has been replaced by the more accurate "Close";

- $GSP has been modified to suppress the installation of "Hot Service Packs" by the Apply All function;

- A problem in $INSLOG that results in an early exit from the Service Pack window has been fixed;

- Further checking is applied when $GSP and $INSLOG attempt to resynchronise the contents of the $$INSLOG file on the $$L unit from the $$mm file on the Program Unit: If the version number of the product on the Program Unit is different from the version number of the product in the $$INSLOG a stern warning message is displayed. If the "last service pack" number of the product on the Program Unit is different from the "last service pack "number of the product in the $$INSLOG a warning message is displayed;

- The code in 16-bit $INSPECT that chains to 32-bit, GX $32INSP is now triggered when $INSPECT has been invoked from $DIRP;

- $MN32 has been extended to forbid type "O" menu lines in Application Menus. Type "O" menu lines are only allowed in GSM System Menu files.

- The Debug overlay OV* has been extended to allow a user to always enter a debug session regardless of their authorization level;

- A small cosmetic problem in $SETUP that results in the truncation of some error messages, has been fixed.

  - The $TALK utility has been modified to replace the use of MSG$ with MSG2$;

  - A problem in $U that displays the wrong page of information when the "Back" option is selected, has been fixed;

  - The $UPLOAD utility, used to send data to the FTP folder on the Global web-server has been enhanced to send message to all members of the Support Team when a file has been successfully uploaded to the server;

  - The error message displayed by the Database Manager immediately before a STOP 25502 has been improved. Furthermore all the code paths that can result in a STOP 25502 now display the correct error window;

  - A problem in the BA$EXE DLM, that can result in a spurious ILL OPC exception under some conditions (when the B$CDB routine is called in the UNLOAD DIVISION of a DLM), has been fixed.

- A new utility, MN32P, is available to check that all menu lines are consistent with the Menu Type.

6. Global Development System Enhancements (Sub-routines etc.)

  - The local RSAM FD within the BA$PPF DLM has been exposed for external access as Global Symbol $PF-FD.

- A new 32-bit sub-routine, BNKAD$, is now available to return the bank address details for a given Bank Sort Code from the PostCode Anywhere web-server;

- The AMHDR$ sub-routine has been extended to allow additional lines (defined in the GX.INI file) to be included in the Context Sensitive Help options for a Menu Line.

- The AMACC$ sub-routine has been extended to support return codes 50 to 59. Codes in this range are only returned when one of the Context Sensitive Help Lines has been selected;

- A new 32-bit sub-routine, GXAHG$, is available to alter the start-position and length of characters highlighted on the next GX Accept operation;

- A problem in the GXGBP$ sub-routine that can sometimes result in an ILL OPC exception has been fixed;

- A new 32-bit sub-routine, GXREN$, is now available to rename a Windows file on the PC running GX;

- A new 32-bit sub-routine, INACT$, is now available to return the number of minutes that a user has been inactive;

- A new 32-bit sub-routine, MSG2$, is now available to display a message in the middle of the screen, within a pop-up window on GX;

- The OR$98X Access Method for GSM (Unix) configurations has been modified to use a smaller block size when reading a file on a GX PC. This change is necessary to prevent hanging problems that can occur if the Unix type-ahead buffer is too small when XON/XOFF hand-shaking has been disabled in the Unix tty controller;

- A new 32-bit sub-routine, PCFDR$, is now available to return the formatted address for an entry in the Address File returned by a previous call to PCODE$;

- A new 32-bit sub-routine, PCODE$, is available to return an address, or range of addresses, from the PostCode Anywhere web-server;

- A new 32-bit sub-routine, REGWS$, is now available to update (write) an existing registry string setting;

- A new 32-bit sub-routine, REGWA$, is now available to create (add) a new registry string setting;

- The SUBS$ sub-routine has been improved to assume a maximum sub-volume size of 2Gb-1 instead of returning a STOP 23001, when the maximum sub-volume size would exceed 2Gb-1;

- A new 32-bit sub-routine, VBNKD$, is now available to validate bank details from the from the PostCode Anywhere web-server.

7. Global Development System Enhancements (Utilities)

- The operator-id specific table in $BUILD has been extended from 10 to 50 possible users;

- Several problems in $DBUG that result in spurious EXIT WITH 1 exceptions, under some conditions, have been fixed. A further problem that results in a spurious EXIT 25502 has also been fixed;

- $DBUG now provides an indication of the current watch window. $DBUG also displays a (limited) hex display of the current field;

- A new utility, $DC32, is available to provide a formatted dump of 32-bit object files;

- A problem in the 32-bit editor, $SDE32, that results in a spurious STOP 201 when accessing the Data Dictionary, has been fixed;

- The 32-bit compilers, $SDL32 and $COMPILE, have been improved to allow statements such as "CALL routine USING window" and "ENTER WINDOW window" will compile correctly when the "WINDOW window" definition is coded **after** the statement that refers to it. This improvement also applies to the language verbs "CLEAR window" and "DISPLAY window";

- $SDM has been enhanced to include a new option to check that all the field names in a Speedbase meta-dictionary conform to SQL field naming conventions (i.e. field names do not include any illegal characters and do not contain any SQL reserved words);

- A new utility, $SDMSQL, is now available to check that all the field names in a Speedbase meta-dictionary conform to SQL field

naming conventions (i.e. field names do not include any illegal characters and do not contain any SQL reserved words);

- A new utility, $VLCOMP, to compare the contents of two program volumes, is now available;

- $GSPMAKE has been extended to allow up to 10 Development List logs to be associated with each service pack. $GSPMAKE also adds a record to the log file servicelog.txt when a service pack has been approved. Both of these features are reserved for internal use only.

NEW FEATURES IN GSM SERVICE PACK 21

1. Introduction and Overview

Global System Manager V8.1 Service Pack-21 (GSM SP-21) includes several new features and many significant enhancements to GSM SP-20 (and GSM SP-19 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-21 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-20 before applying GSM SP-21.**

For GSM (Windows) configurations GSM SP-21 **MUST** be used with GLOBAL.EXE V4.0 (or later) and GX V4.0q (or later). If you attempt to load GSM SP-21 on pre-V4.0 GLOBAL.EXE or use a pre-V4.0q GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V4.0q is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V4.0q (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V4.0q and a compatible version of GXIO.EXE are also available in ZIP file format.

For GSM (Unix) configurations GSM SP-21 **MUST** be used with the V3.344 (or later) BACNAT components and GX V4.0q (or later). If you attempt to load GSM SP-21 with a pre-V3.344 BACNAT or use a pre-V4.0q GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V4.0q is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V4.0q (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V4.0q and a compatible version of GXIO.EXE are also available in ZIP file format.

2. New features in the GSMSP21 & GDSSP21 utilities
No new features have been implemented in the GSMSP21 utility.

3. Changes to GSM Installation and Start-Up

- The GSM Start-up Overlay, $STARD, has been modified to replace the warning message "$57 INITIATION WARNING 475 - GX-WORKSPACE COUNT EXCEEDED" by either "$57 INITIATION WARNING 476 - NO

OO3KWS LICENCE APPLIED" or "$57 INITIATION WARNING 475 – OO3KWS LICENCE COUNT EXCEEDED";

- The GSM Start-up Overlay, $START, has been enhanced to set the System Variable $$XT to 1 if GX Language Translation is enabled;

- The GSM Start-up Overlay, $STARX, has been enhanced to suppress the GX.EXE and GXIO.EXE download if the "NoDownLoads" option in the GXHOSTS.INI file is set.

4. Major Changes to GSM Run Time

- $GSP has been enhanced to improve the performance of the scan of the Service Pack folder on GSM (Windows) configurations: When a single product is selected, $GSP uses the Windows wildcard search facility rather than scanning every service pack file in the folder, discarding the service packs that don't match the selection criteria. In addition, $GSP has been modified to prevent the application of a "hot" (unapproved) service pack on external configurations. Furthermore, $GSP has benefited from some cosmetic improvements, including the removal of trailing "_" characters from some service pack names;

- $GSP has been improved to display the "Post Application" instructions for all service packs when the "Apply All" option is used;

- $GSP now displays the correct Service Pack name in the message "Later service packs have been applied" for members of a Service Pack group;

- $GSP now displays service packs that have been "effectively applied" as a result of a cabinet file upgrade in a different colour from those service packs that have actually been applied (by running $GSP);

- The $GSP Print option now includes the URL of the Enhancement Note associated with a service pack;

- A new option in $GSP to perform a "sanity check" on the installed program unit is now available;

- A new option in $GSP to create a Restore-Point (using the $GSPREST overlay) is now available. If the call to $GSPREST fails (i.e. if $GSPREST fails to create the Restore-Point file) $GSP displays a warning message and gives the operator the option of continuing with the application of the service pack(s), without a Restore-Point, or to abort the application of the service pack(s);

- $GSPREST now longer attempts to restore the next Restore-Point when a Restore-Point is deleted.

5. Minor Changes to GSM Run Time

- $BN32 and $BS32 have been extended to include an option to specify the "Increment Number" for $$SEQ fields. Note that this option is only available when not running under Job Management and if the Type-Ahead buffer is empty;

- $DXU has been extended to include an option to specify the "Increment Number" for $$SEQ fields. Note that this extra prompt is only available when $DXU is used on a GX session);

- The dialogue of $DXU has been improved to include an indication of the database type (i.e. "Microsoft SQL" or "Pervasive SQL") in all windows;

- $DXU has been improved to display a warning when a failed conversion results in the Schema File being renamed to a temporary file. The name of the temporary file is displayed allowing the user to restore the Schema File;

- A 32-bit version of the $MAIL Jot Notes System Request, <SYSREQ> J, is now available. Note that this option ($32OV$J) is not included in the standard Run Menu File ($$RUNMEN);

- A new utility, $ALERT, to create and maintain OneOffice 3000 Workspace alerts, is included with this service pack. This utility is reserved for future use;

- A number of minor problems in the $AU32CNV utility have been addressed: When converting a $PASSWD Password File to a DB$OPID database, a window appears which incorrectly refers to $AUTH. The destination DB$OPID database does not have to empty (i.e.

conversion is allowed to a partially populated DB$OPID database);

- A new option in $AUTH32, "Disable G3000 Frame Name Authorisation", is available to inform the AUTHA$ sub-routine to ignore CALL's made with just 2-parameters;

- Several of the warning messages displayed by the $AUTH32 utility have been improved. In addition, a number of cosmetic improvements have been made to the $AUTH32 dialogue;

- The $BAPATH utility has been enhanced to clearly list the directory name formats that are allowed. In addition, a number of further cosmetic issues have been addressed;

- A new utility, $IM, is available to send "Instant Messages" to users or groups of users. $IM can be considered a GX-version of the more familiar $M utility;

- A problem in $INSLOG that generates a spurious "ERROR M" has been fixed. In addition, $INSLOG now allows enquires on Product Code, Date and Unit;

- $INSTALL now warns if an attempt it made to install Global-3000 on a non-GX screen;

- The Menu Handler has been improved to treat a value of SPACES in either the "Authorisation Point" or "Authorisation Token" fields as an indication that $AUTH32 checking is disabled;

- $SETUP now warns if an attempt is made to install Global-3000 on a non-GX screen;

- $SETUP now longer forces the re-installation of a product that is a pre-requisite of the product currently being installed. The re-installation is by-passed if a pre-requisite product of the same revision (i.e. version, year and month) is already installed. Practically, this means that Product Maintenance (ZM) is not re-installed when a "top-up" product (e.g. Global Manufacturer, ZV) is installed;

- A problem in the $UPLOAD utility which results in a corrupt Status Message, has been fixed.

6. Global Development System Enhancements (Sub-routines etc.)

- A new 32-bit sub-routine, ALERT$, is available to set Alerts in the OneOffice 3000 Workspace environment. This sub-routine is currently for internal use only;

- The AUTHA$ sub-routine has been extended to handle all released versions of the DB$OPID and DBAUTHP databases;

- The AUTHA$ sub-routine has been extended to recognize the $AUTH32 "Disable G3000 Frame Name Authorisation" option (when AUTHA$ is called with 2 parameters);

- The text of some messages displayed by AUTHA$ has been improved;

- A problem in the B$DBXN sub-routine that results in a STOP 25406 under some conditions, has been fixed;

- A description of the last STOP code generated by the BA$DBX DLM is written to the GSM (Windows) file .\log\debug\stopcodedescription.log and the GSM (Unix) file /tmp/stopcodedescription.log.

- All messages from the BA$EXE DLM now appear in Message Boxes on GX;

- The Message Box displayed when the message "Record Key Already Exists - Enquire" now includes "Yes/No" buttons instead of "OK/Cancel" buttons;

- The BA$PPF DLM has been improved to test the $$XT flag to check if GX Translation has been enabled;

- The Extended PF Printing mechanism has been extended to allow the height and depth of a Print Cell Attribute to be specified without the need to construct a (complex) PA-block. See Technical Note IN343-ExtendedPFPrinting.doc for further details;

- The Extended PF Printing mechanism has been extended to allow the Font point size to be specified. See Technical Note IN343-ExtendedPFPrinting.doc for further details;

- The Menu Handler has been enhanced to integrate with the Alert System when used on a OneOffice-3000 WorkSpace environment;

- The Menu Handler has been enhanced to be more robust against non-standard menu hierarchies when used on a OneOffice-3000 WorkSpace environment. In particular, the Menu Handler is defensive against Menu Line Number and Next Menu Number Overflows;

- The Menu Handler has also been enhanced to treat a value of SPACES in both the Authorisation Point flag and Authorisation Token field in the same way as LOW-VALUES;

- The Extended PF printing option (see Technical Note IN343-ExtendedPFPrinting.doc) now downloads backdrop images correctly on GSM (Unix) configurations;

- A new System Variable, $$ALDT, is reserved for future use (for OneOffice-3000 WorkSpace Alerts);

- A new System Variable, $$XT, is available to test the status of the GX Translation option;

- A new 32-bit sub-routine, CCXML$, to Close an XML file is reserved for future use;

- A new 32-bit sub-routine, COXML$, to Open an XML file is reserved for future use;

- A new 32-bit sub-routine, CWDAT$, to Write Data to an XML file is reserved for future use;

- A new 32-bit sub-routine, CWETG$, to Write an End-Tag to an XML file is reserved for future use;

- A new 32-bit sub-routine, CWTAG$, to Write a Tag to an XML file is reserved for future use;

- A family of new 32-bit sub-routines, DT-DI$, DI-DT$, DL-DI$, DI-DL$, DS-DI$, DI-DS$ are available to convert internal and external dates to ISO-8601 Date Format;

- The EDTTX$ sub-routine has been improved to avoid the ILLEGAL LOAD exception if the Window Title is not specified in the CB control block;

- The GXCOP$ sub-routine has been enhanced to support a new option to auto-create the folder for the output file if the folder does not already exist;

- A new 32-bit sub-routine, IMCSV$, is now available to import data from a Windows CSV file;

- The long pathname option of the Open File Direct Access Method (OR$98) is now supported on GSM (Unix) configurations;

- The STLEN$ sub-routine has been enhanced to operate on GSM (Unix) configurations;

- The AUTHA$ sub-routine has been modified to facilitate internal testing: AUTHA$ is only active on "Internal Systems" if the operator is a member of the special group "TESTAUTHA$".

7. Global Development System Enhancements (Utilities)

- $SDL32 and $COMPILE now recognise most of the obvious misspellings of the ORGANISATION clause with the FD statement;

- A minor typo in one of the $SDM error messages has been fixed;

- A new utility, $ALMNT, to define a list of Application Alerts, is included with this service pack. This utility is reserved for future use.

NEW FEATURES IN GSM SERVICE PACK 22

1. Introduction and Overview

Global System Manager V8.1 Service Pack-22 (GSM SP-22) is a "minor release" to address some performance and cosmetic issues with the OneOffice 3000 Workstation environment.

Important Note: GSM SP-22 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-21 before applying GSM SP-22.**

For GSM (Windows) configurations GSM SP-22 **MUST** be used with GLOBAL.EXE V4.0 (or later) and GX V4.0q (or later). If you attempt to load GSM SP-22 on pre-V4.0 GLOBAL.EXE or use a pre-V4.0q GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V4.0q is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V4.0q (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V4.0q and a compatible version of GXIO.EXE are also available in ZIP file format.

For GSM (Unix) configurations GSM SP-22 **MUST** be used with the V3.344 (or later) BACNAT components and GX V4.0q (or later). If you attempt to load GSM SP-22 with a pre-V3.344 BACNAT or use a pre-V4.0q GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V4.0q is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V4.0q (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V4.0q and a compatible version of GXIO.EXE are also available in ZIP file format.

2. GSM SP 22 Raison d'être

Unlike other GSM Service Packs, GSM SP-22 is a "minor release" to address the following problems with the OneOffice 3000 Workstation environment:

- The Menu Handler has been enhanced to recognize the SeparateWorkSpaceApplicationMenus setting in the Customisation section of the registry. When this option is enabled application menus are displayed in the GX Window, instead of

being grafted into the OneOffice Menu Tree, within the OneOffice 3000 Workstation environment;

- The GXRCD$ sub-routine has been modified to provide acceptable performance in a OneOffice 3000 WorkStation environment. Note that several of the STOP CODES generated by previous versions of this sub-routine will **NOT** be generated by the new version;

- The GSWSC$ sub-routine has been modified to provide acceptable performance in a OneOffice 3000 WorkStation environment. Note that several of the STOP CODES generated by previous versions of this sub-routine will **NOT** be generated by the new version;

- The GXOPI$ sub-routine has been modified to provide acceptable performance in a OneOffice 3000 WorkStation environment. Note that several of the STOP CODES generated by previous versions of this sub-routine will **NOT** be generated by the new version;

- The GXAUT$ sub-routine has been modified to provide acceptable performance in a OneOffice 3000 WorkStation environment. Note that several of the STOP CODES generated by previous versions of this sub-routine will **NOT** be generated by the new version;

- The GXAPV$ sub-routine has been modified to provide acceptable performance in a OneOffice 3000 WorkStation environment. Note that several of the STOP CODES generated by previous versions of this sub-routine will **NOT** be generated by the new version;

- The GXSBM$ sub-routine has been modified to provide acceptable performance in a OneOffice 3000 WorkStation environment. Note that several of the STOP CODES generated by previous versions of this sub-routine will **NOT** be generated by the new version;

- The GXSBT$ sub-routine has been modified to provide acceptable performance in a OneOffice 3000 WorkStation environment. Note that several of the STOP CODES generated by previous versions of this sub-routine will **NOT** be generated by the new version.

3. Other Features in GSM SP 22

In addition to the important OneOffice 3000 Workstation changes detailed above, GSM SP-22 includes the following enhancements:

- The $SETUP utility has been extended to avoid the requirement to install a pre-requisite product, if a pre-requisite of the same version (but potentially with a different Cabinet File

Year, Month or Revision) has already been installed. For example, this change allows the V6.0 G-3000 Manufacturer module (code ZV) to be installed on an existing V6.0 G-3000 Ledger or Ledger/Distribution system **without** the need to re-install Product Maintenance (code ZM). This change to $SETUP also provided the opportunity to fix some cosmetic problems that appeared on GSM (Unix) configurations.

- The Extended PF Printing DLM (BA$XPF) has been extended to support a "No Print" option in the XPOPT field. See technical Note IN343 for further details;

- A new 32-bit subroutine, B$XPAT, is available to change the Extended PF Printing File Attributes "on the fly". See technical Note IN343 for further details;

- The B$DBXN sub-routine has been improved to return the correct record-id to the optional Progress Display Routine;

- The BA$DXX DLM has been extended to provide detailed information if a FETCH operation suffers a Lock exception (for both DBX and non-DBX databases). A number of new System Variables are populated:

  ```
  B$LUSR    PIC 9(4) COMP   User number of user with lock
  B$LRID    PIC X(2)        Record-id  locked  (spaces  if  not
  available)
  B$LLND    PIC X(2)        Node-id of user with lock (spaces if
  not available)
  B$LOPD    PIC X(4)        Opid  of  user  with  lock  (spaces  if
  not available)
  B$LPRT    PIC 9 COMP            Partition  number  of  user  with
  lock
  ```

- The BA$GXM DLM has been improved to avoid the Overflow exception that can occur if a GX session is used continuously for several days;

- A problem in the BA$RBG sub-routine has been fixed. The error caused spurious errors to be returned for all calls after a previous call that suffered a legitimate error condition;

- A new 32-bit sub-routine, DTSY$, is available to amend the GSM Date/Time Synchronisation flag;

- The size of the text block supported by the EDTTX$ sub-routine has been extended from 8Kb to 32500 characters. Note that this version of EDTTX$ requires GX V4.1p, or later;

- A serious problem in the IMCSV$ sub-routine has been fixed. This routine now correctly reads CSV files that are larger than 512 bytes;

- Two new 32-bit System Variables are available: $NRDA contains the number of RDA's in the current window; $CRDA contains the number of the current RDA;

- A new 32-bit sub-routine, TRACE$, is available to allow the creation of an Application Trace.

NEW FEATURES IN GSM SERVICE PACK 23

1. Introduction and Overview

Global System Manager V8.1 Service Pack-23 (GSM SP-23) includes several new features and many significant enhancements to GSM SP-22 (and GSM SP-21 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-23 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-22 before applying GSM SP-23.**

For GSM (Windows) configurations GSM SP-23 **MUST** be used with GLOBAL.EXE V4.0 (or later) and GX V4.0q (or later). If you attempt to load GSM SP-23 on pre-V4.0 GLOBAL.EXE or use a pre-V4.0q GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V4.0q is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V4.0q (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V4.0q and a compatible version of GXIO.EXE are also available in ZIP file format.

For GSM (Unix) configurations GSM SP-23 **MUST** be used with the V3.344 (or later) BACNAT components and GX V4.0q (or later). If you attempt to load GSM SP-23 with a pre-V3.344 BACNAT or use a pre-V4.0q GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V4.0q is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V4.0q (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V4.0q and a compatible version of GXIO.EXE are also available in ZIP file format.

2. New features in the GSMSP23 & GDSSP23 utilities
No new features have been implemented in the GSMSP23 utility.

- The GDSSP23 utility has been enhanced to install $COMPILE, and the related P.$COMP library, on the $G Development unit.

3. Changes to GSM Installation and Start-Up

- The $STARS start-up overlay and 32-bit Menu Handler have been extended to recognise the SeparateWorkSpaceApplicationMenus registry setting within the "Customisations" key. When this option is enabled the Global-3000 menu lines on OneOffice WorkSpace configurations are displayed in individual GX tabbed-windows, instead of the main WorkSpace tree-menu;

- The $STARS start-up overlay has been extended to recognise the "EnableTraceForAllPartitions" registry setting, within the "Customisations" key. This setting is used in conjunction with the $TRACE utility and TRACE$ sub-routine;

- The GSM start-up overlay that obtains the GX version to decide if an automatic GX download is necessary, now normalizes the raw version-text returned by GX. This prevents an obscure problem that can result in unnecessary GX downloads. This same overlay has also been modified to include 2 crucial GX error codes in the error message "Unable to download Run Menu to GX (GX function XX; GX result XX)".

4. Major Changes to GSM Run Time

- The $32INSP (32-bit $INSPECT) utility now includes a "Print" button. In addition, $32INSP has been extended to include a calling interface to allow Global applications to include a "File Inspect" function. Details of this interface are available in Technical Note IN352-$inspectforgx.doc;

- $AUTH and $AUTH32 have been enhanced to support a new "Toggle separate OO3KWS application menu" option. This new "per-operator" option allows the SeparateWorkSpaceApplicationMenus registry setting, within the "Customisations" key, to be overridden for a single operator, or set of operators;

- A new option in $PASSWD allows the "Separate OO3KWS Application Menu" flag to be toggled on a per user basis.

5. Minor Changes to GSM Run Time

- The dialogue of $32BADG has been improved. In particular buttons have been added to several of the $32BADG windows;

- A 32-bit version of the $OPID Operator Maintenance utility is now available: $32OPID;

- The $32STAT (32-bit $STATUS) now supports the Restart User option. Note that $32STAT is released for evaluation purposes only;

- The $BADN Change Path to Directory option now supports pathnames that include the SPACE character. At the time of writing, this change is not included in either $BN32 or $DXU;

- $BAPATH has been modified to improve the help information that appears on the main window;

- $BAST32 has been enhanced considerably. The dialogue has been improved to conform with GX standards. In addition, the Speedbase Gateway revision letter is now displayed; and Index segments now appear in the Long Report;

- A problem in $BN32 that causes an OVERFLOW when rebuilding a (very large) database has been fixed;

- $CUS now displays a warning message if the User Count of the Upgrade BACRES is the same as the current User Count rather than displaying the confusing "User Count will be reduced" error message;

- $FX has been modified to support the extra Memory Page required for GSM SP-23;

- $GSP has been modified to prevent a hang when attempting to update a stand-alone file that is in-use;

- The $GSPREST utility has been enhanced to display a count of the total number of restore point files in the restore-point folder, together with the accumulated file size;

- $INSPECT has been amended to allow a renamed version, renamed as $I, to always run in 16-bit text mode even when running on a GX session. The standard $INSPECT (as $INSPECT) will normally run in 32-bit Windows mode on a GX session;

- A problem with $INSLOG that can result in a STOP 14201 when running on a non-GX session, has been fixed;

- $MN32 now allows a number of "reserved" Menu Pages to be defined in the Extended Menu Parameters section. These

"reserved" pages are only used by the MN32S utility (see below);

- The $OPID utility now automatically chains to $32OPID when running on a GX session;

- The Menu Handler has been enhanced to recognize a new $CUS "GX menu style override" setting of 9. When "GX menu style override" is set to 9 the old menu style (type 2) is assumed for **all** menus regardless of the actual "Menu Style" setting in the Menu Files.

6. Global Development System Enhancements (Sub-routines etc.)

- A 32-bit version of the RES$ (Restart User) sub-routine is now available;

- The 16-bit RES$ subroutine has been modified to use the new Monitor Page released with GSM SP-23;

- A new DLM, BO$DDW, is included in the P.$SDLM0 System DLM library. The entry-points in this DLM are reserved for future use.

7. Global Development System Enhancements (Utilities)

- A pre-release version of the $DDWMAIN utility is included in this service pack. This utility is reserved for future use;

- $BUILD now recognizes $COMPILE as a valid alternative to the $SDL32 compiler option. In addition, if the "Map$SDL32To$COMPILEin$BUILDDialogue" registry setting, within the "Customisations" key, has been enabled, $BUILD automatically translates "$SDL32" to "$COMPILE" in all *#BUILD source directives. See Technical Note IN219-$build.doc for further details;

- $BUILD now supports the *#LIBRARY source directive. Note that the "NLIB" runtime option can be used to suppress the dialogue that would normally be generated by the *#LIBRARY directive. See Technical Note IN219-$build.doc for further details;

- The number of Data Dictionaries supported by $COMPILE (only) has been increased from 12 to 16;

- Both $SDL32 and $COMPILE have been extended to support the INITIALISE verb to initialize record fields to the values defined by $DXM;

- $COMPILE (only) has been extended to support Field Attributes for Extended PF's;

- Both $SDL32 and $COMPILE allow "$seq" and "$sq" as alternatives to "$SEQ" and "$SQ" for Auto-indexes in Extended SMEM databases. Note that mixed case strings (e.g. "$Seq" are not allowed);

- $DXDCT has been enhanced to include an option to write the copy books in alphabetical order;

- $DXM has been considerably enhanced. The Generate Dictionary processing has been modified to display an error and fail if there are no records in an index set;

- $DXM has been enhanced to include support for Common Fields. Fields of the same name and with the common flag set will all be updated in unison if a change has been made to one of them. A new window has been added to the field window dialogue to display all the fields with the same name in the dictionary and allow you to set their common flags. Another window is also available to provide a display of all the fields of the same name with the Common Flag set. Note that this change has required a change to the DI$DXM meta dictionary;

- The "Print Now" option of $DXM has been changed to a "print in alphabetic order" option with the addition of a cancel button to cancel the print;

- XML tags have been added to $DXM;

- The following pop-up message "Record has more than 127 GVF's" displayed by previous versions of $DXM has been changed to "Record RR has more than 127 GVF Relationships";

- $DXM has been extended to allow initialised values for non GVA fields;

- $DXM has been enhanced to support a new "Enquiry" button to allow sorting on an RT, record name or title;

- $DXM now warns if the new Dictionary Generation Number is less than the original Generation Number;

- $DXM has been enhanced to allow a description to be associated with each Dictionary Generation Number;

- A new utility, $DXMSQLC, is now available to check that all the field names in a Speedbase DBX meta-dictionary conform to SQL field naming conventions (i.e. field names do not include any illegal characters and do not contain any SQL reserved words). $DXMSQLC is the DBX equivalent of the $SDMSQLC utility that was released with GSM SP-20;

- The $GSPMAKE utility has been enhanced to replace the dummy "next service pack to create" in the scrolled list by a "Create" button. Furthermore, $GSPMAKE now allows two status flags (the "to QC" status and the "released" status) to be associated with a service pack. In addition, a slight problem in the display of the Development List items associated with the service pack, has been fixed;

- $SDE has been enhanced to include an option to chain to $BUILD to automatically compile (build) the source file that has just been edited. This new default option can be disabled using $SDECUS;

- $SDECUS has been extended to remove the option in $SDE to automatically chain to $BUILD;

- A problem in the $SDE Hold Buffer size calculation has been fixed. This problem resulted in the annoying message "less than 4% space left";

- $SDE has been extended to allow lower-case record-id's in the WINDOW id;

- An evaluation version of the $SDENTRY utility is now available;

- Both $SDL32 and $COMPILE have been enhanced to recognize the new EXTENDED-PRINTING keyword. This option allows the Extended Printing option to be used selectively in one, or more, frames

within a single source file. Note that the "XP" Compiler Option affects ALL frames in a single source;

- The $SDMSQLC utility now supports an optional "log mode" that logs all changes made to a field names and titles within a meta-dictionary. In addition, "START" has been added to the list of SQL reserved words;

- A new utility, $TRACE, is available to toggle the Application Trace Option (ATO) for a single user (single partition). Enabling the ATO on a single partition may be preferable to using the "EnableTraceForAllPartitions" registry setting to enable ATO for **ALL** users;

- A problem in $XLMAINT that results in a STOP 25409, has been fixed;

- The BA$XPF DLM has been modified to recalculate the field line/column positions every time a PF is printed. This change is required to fix a problem when ATACLY is used to modify the font-cell depth;

- The BA$XPF DLM has been modified to support the Image File option in the PA-block. See document in343-ExtendedPFPrinting.doc for further details;

- The BA$XPF routine has been modified to re-use spare internal PF numbers. This change is required to prevent a NUMERIC OVERFLOW within BA$XPF if the cell size of an attribute is changed repeatedly. In addition, the BA$XPF now validates the contents of the PA-block. If a field in the PA-block contains an illegal value a STOP 25398 will be generated;

  - The MN32R utility is available to change the ownership of a set of access rights on all the 32-bit menu files on a unit. Note that this utility does NOT affect 16-bit menu files;

  - The MN32S utility is available to copy all non-reserved menu pages from a template menu to "live" menu.

NEW FEATURES IN GSM SERVICE PACK 25

1. Introduction and Overview

Global System Manager V8.1 Service Pack-25 (GSM SP-25) includes several new features and many significant enhancements to GSM SP-23 (and GSM SP-22 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Note that GSM SP-24 was not released externally.

Important Note: GSM SP-25 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-23 before applying GSM SP-25**.

For GSM (Windows) configurations GSM SP-25 **MUST** be used with GLOBAL.EXE V4.0 (or later) and GX V4.0q (or later). If you attempt to load GSM SP-25 on pre-V4.0 GLOBAL.EXE or use a pre-V4.0q GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V4.0q is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V4.0q (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V4.0q and a compatible version of GXIO.EXE are also available in ZIP file format.

For GSM (Unix) configurations GSM SP-25 **MUST** be used with the V3.344 (or later) BACNAT components and GX V4.0q (or later). If you attempt to load GSM SP-25 with a pre-V3.344 BACNAT or use a pre-V4.0q GX.EXE a warning message will be displayed (see gsmsp6.doc). At the time of writing, GX V4.0q is not currently available as an installable version of GX (i.e. it cannot be installed using the SETUP.EXE utility). GX V4.0q (or later), which is available on the Global web-site, can only be installed using the GX automatic download facility. Note that GX.EXE V4.0q and a compatible version of GXIO.EXE are also available in ZIP file format.

2. Changes to GSM Installation and Start-Up
No changes to GSM Installation were implemented for GSM SP-25.

3. Major Changes to GSM Run Time

- The Speedbase run-time code has been extended to support RANGE handling;

- The Speedbase run-time code has been enhanced to support the DIABLEV & ENABLEV options;

- The Speedbase run-time code has been enhanced to support the SCROLL REVERSE option;

- The Speedbase run-time code has been extended to support the XNOLOCK option;

- The Speedbase run-time code has been modified to fix a bug in enquiry mode when a page up is attempted on an empty date field. If a Validation Routine is present the Page-Up reports that No Records are Found; if a Validation Routine is not present the Page-Up function works correctly. The problem was in the "after validation code" checking to determine if a field has been modified by the validation routine. This checking did not work if the field was originally a date field;

- The SHOW and HIDE verbs now exit silently, rather than generating a STOP 25065, when running on a non-GX screen;

- Cascaded GVA/GVF's are now supported for SMEM (memory) databases;

- The number of PF-blocks allowed in the Extended PF option has been increased from 127 to 255. In addition, a STOP 25385 is generated when Extended PF printing suffers an exception because the print file contains more than 255 unique PF blocks. In addition, the restriction on only calculating the cell size for an attribute already defined in the PA-block has been removed. Furthermore, a new STOP CODE 25384 is generated if a DLM containing the PF is swapped out of memory during the printing process. Although the additional checking that generates a STOP 25384 cannot catch the problem where the program containing a PF is reloaded between successive prints; it can catch most coding errors that manifest in obscure problems;

- A new option, NOTRIM, is supported in the Extended PF option. By default, to optimise the amount of data transmitted to GX, trailing spaces are trimmed from all print fields that are sent to GX. The "NOTRIM" option prevents this default behaviour so

that trailing SPACE's are **not** removed from fields with the PF. With the "NOTRIM option enabled, the underscore, over-score and box field attributes will underline, over-score and surround the **entire** field **including any trailing spaces**. This option is coded after the START or ATTRIBUTES statements within the PF;

- A new option, SAMEPAGE, is now supported on the PRINT statement. This option resets the print position back so that the PF is printed on the same page;

4. Minor Changes to GSM Run Time

- A problem in $32BADG that can result in the loss of the database when attempting to increase the number of records under some extreme conditions, has been fixed;

- A problem with the pagination of some $AUTH screen reports has been fixed;

- $AUTH32 has been enhanced in several areas: An additional System Parameter allows case-conversion in operator-id's. A default password for new operators has been added. A problem where some users were incorrectly listed as active/inactive in the group user list has been fixed;

- The $AUTHEX start-up overlay has been modified to keep the Password File closed when the operator selects to change the current password;

- The final message box displayed by $BAPATH only appears if the path rename process has been 100% successful. The message box is suppressed if one, or more, errors occur during the changes to the path names;

- $BAST32 now correctly displays the pathname for C-ISAM databases;

- A problem in $DXU, $BN32 and $BADN that occurs when the directory name includes embedded SPACE characters, has been fixed;

- $BN32 has been enhanced to allow it to be EXEC'ed to execute the Rebuild function;

- $32BADG has been enhanced to allow it to be EXEC'ed to execute the Rebuild function;

- $DXU has been enhanced to provide the current database as the default the Generation Dictionary;

- $DXU has been enhanced to allow it to be EXEC'ed to execute the Rebuild function;

- $DXU has been modified to fix a problem in the Change Path to a Directory option when the new directory includes SPACE characters in the path-name;

- $DXU has been modified to validate the output schema file for the conversion after the output path has been specified. This can prevent spurious deletion of the existing database;

- $CUS has been enhanced to ensure the User Authorisation program is only one of $AUTH, $PASSWD or $AUTHEX;

- $CUSP has been enhanced to include a new option "Alignment pattern in separate print file?" to allow the alignment pattern to be printed in a separate print file. This option is expected to be useful on GSM (Unix) spooled printers to force the printing of an alignment pattern on printer sub-systems that don't support flush or close options;

- A problem in $GSPREST that can result in an EXIT CODE 25506 under some conditions, has been fixed;

- $IM now correctly only displays a confirmation message that the message has been sent, if a message has actually been sent;

- $INSLOG now emails the Installation Log File to the global@global3000.co.uk email address;

- The GSM Printing Sub-System has been extended to allow the Alignment Pattern to be printed in a separate file. This option prevents some problems that have been reported when Mount Messages are printed on host o/s (specifically Unix) printers;

- $PASSWD has been enhanced to close the Password File during the change of password dialogue;

- A new utility, $REBUILD, is now available to rebuild any type of database. $REBUILD determines the database type and initiates $32BADG, $BN32 or $DXU, as appropriate;

- The new registry setting, "Map$SDL32To$COMPILEin$BUILDDialogue", under the Customisation key is now available. If this option is enabled $BUILD automatically substitutes $COMPILE for $SDL32;

- A problem which caused authorisation level protection on a line for standard GX style menus not to be recognised if $AUTHEX is the active authorisation program, has been fixed. Also, a problem where $AUTH32 authorisation passwords are not signalled to Global-3000 WorkSpace has been fixed;

5. Global Development System Enhancements (Sub-routines etc.)

- The Open GX Access Method displays the name of the current Windows file in all Error Message Boxes;

- A new entry-point, AUTHL$, has been added to the BO$AUTH DLM. This entry-point is for internal use only;

- The COPYS$ sub-routine has been extended to optionally retain the locks on the file being copied;

- A family of new sub-routines, EAGCA$,EASCA$ and EARCA$ are now available to Get, Set and Reset the GX colour attributes. These 3 routines are direct equivalents to the existing, but obscure, DFGCA$, DFSCA$ and DFRCA$ routines;

- The GXBRW$ sub-routine has been extended to support an optional Caption Text string;

- The GXSEA$ and GXSSA$ sub-routines have been extended to accept an extra parameter (the SA block - see the documentation) to allow a text only attribute to be specified;

- A new System Variable, $LKFRTN, is now available to implement an application-specific Failed Lock Intercept Routine;

6. Global Development System Enhancements (Utilities)

- $COMPILE has been enhanced to support a NOTRIM option on Extended PF's;

- $COMPILE has been enhanced to allow ranges (using the TO and MATCH clauses) in "Dependent On" windows;

- A problem in $COMPILE that results in the EXTENDED-PRINTING directive enabling the option for the current frame, and all subsequent frames in a source, has been fixed. The EXTENDED-PRINTING directive now correctly only applies to the **current** frame;

- $COMPILE now correctly limits the number of enquiry indexes on a DBX Access Channel to 8.

- A problem in $COMPILE that prevents access to locally defined variables within an Extended PF, has been fixed;

- A problem in $COMPILE that can result in a Numerical Overflow at #4298, has been fixed;

- $COMPILE has been enhanced to support the ENABLEV and DISABLEV verbs. ENABLEV and DISABLEV are functionally similar to ENABLE and DISABLE except that a character variable or string is required for both the frame name and window;

- $COMPILE has been enhanced to support the PRINT PF SAMEPAGE construct;

- $COMPILE has been extended to allow the XNOLOCK option on a window. This option applies the NOLOCK attribute on a window regardless of the modes that are allowed. Important Note: This option should be used with care; and only when no fields on the active record are ever updated in the window;

- $COMPILE has been extended to support the SCROLL REVERSE window attribute;

- $COMPILE has been enhanced to store GVF offset for cascading GVFs in SMEM databases only;

- $DBUG has been extended to replace the active "Type Ahead" button by an inactive button labeled "No T-Ahead" if the Type-

Ahead buffer is empty. In addition, a number of spurious EXIT exceptions have been prevented;

- $DXM has been enhanced to allow cascading GVFs for SMEM data-dictionaries;

- $SDE now supports the F9 > command to return to the last line that has been added or amended. This option is useful when inserting a block of code in the PROCEDURE DIVISION, interrupting the edit to inspect a DATA DIVISION item, say, then using the F9 > command to return to the point in the source where the text is being added;

- $SDE now supports the F9 ? command to view the contents of a Data Dictionary;

- A problem in $SDE that can cause the wrong text to be inserted under some conditions, has been fixed;

- $SDE now supports the SCROLL REVERSE window option;

- When the $SDE <F9>Q option is invoked on a blank line it is now possible to specify the Window Type. The optional Window Type can be any one of the following: NORMAL, HEADER, INFO, ERROR, ENQ, TRAILER or MENU;

- $SDE has been extended to integrate with $BUILD;

- A minor problem with the $SDE "Undelete" option has been resolved;

- $SDL32 has been enhanced to support a NOTRIM option on Extended PF's;

- $SDL32 has been enhanced to allow ranges (using the TO and MATCH clauses) in "Dependent On" windows;

- A problem in $SDL32 that results in the EXTENDED-PRINTING directive enabling the option for the current frame, and all subsequent frames in a source, has been fixed. The EXTENDED-PRINTING directive now correctly only applies to the **current** frame;

- $SDL32 now correctly limits the number of enquiry indexes on a DBX Access Channel to 8.

- $SDL32 has been enhanced to support the PRINT PF SAMEPAGE construct;

- $SDL32 has been extended to allow the XNOLOCK option on a window. This option applies the NOLOCK attribute on a window regardless of the modes that are allowed. Important Note: This option should be used with care; and only when no fields on the active record are ever updated in the window;

- $SDL32 has been extended to support the SCROLL REVERSE window attribute;

- $SDL32 has been enhanced to store the GVF offset for cascading GVFs in SMEM databases only.

NEW FEATURES IN GSM SERVICE PACK 26

1. Introduction and Overview

Global System Manager V8.1 Service Pack-26 (GSM SP-26) includes several new features and many significant enhancements to GSM SP-25 (and GSM SP-24 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-26 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-25 before applying GSM SP-26.**

2. Changes to GSM Installation and Start-Up
No changes to GSM Installation were implemented for GSM SP-26.

3. Changes to GSM Run Time
The GSM start-up processing has been improved to suppress Initiation Warning(s) if the main "GUI" console has been removed from the configuration i.e. if User Number 1 is configured as a NETWORK controller. Before this change, the display of an Initiation Warning could cause GSM to freeze until User-1 made a successful GX connection;

The GSM start-up processing has been improved to display extra diagnostic information if an Initiation Error 470 is reported;

$STATUS has been improved to prevent a problem that causes an Overflow if the CLR command is attempted on a User Number higher than 127;

$STATUS now displays a status of "DISCONNECTED" when a broken GX connection is detected;

The 32-bit Program Loader has been extended to auto-close the optional "$" extension library (e.g. the P.CL300$ library will be automatically closed after an overlay load). This is to prevent the "$" library from remaining open thus preventing $LIB/$LIBX updates;

$PASSWD has been extended to allow selected operators to sign-in without supplying a GSM password. **Warning** – enabling this option in $PASSWD can compromise system security;

$BBS has been extended to export/import password-protected files (e.g. Menu Files). In addition, a meaningful error message is displayed if file import fails because of insufficient space;

A 32-bit version of $BBS, $BBS32, is now available. $BBS32 is provides the same dialogue as $BBS but can also be executed by another program (e.g. $QADFTP – see below);

$QADFTP now chains to $BBS32 if the filename is either *.GSM or *.BBS and the transfer direction is from GX PC to the GSM server. The dialogue has been extended to allow the output path to be a folder as well as a full pathname. The length of the Windows filename prompt has been extended to 127 characters;

A problem in $REORG that can cause an unexpected EXIT 401, has been fixed;

A number of spelling mistakes in the dialogue of the $RUNMAIN utility have been fixed;

A problem in $DXU that causes a Numerical Overflow when the user number is higher than 99, has been fixed. A problem in the $DXU rebuild option with very large databases (>18Gb) has been fixed. The Default Directory Destination Path prompt has been reinstated within the Database Conversion dialogue;

A new utility, $GSPM, is available upon request, to delete Service Pack Folder records from the $$INSLOG database;

$INSLOG has been improved to display a meaningful message if the call to EMAIL$ fails;

$MN32 has been improved to use the "G3M" unit assignment, if available, rather than the xxD assignment;

The $CUS option to close the Loading Library is ignored for 16-bit programs to prevent problems with the 16-bit Quick Load routine;

A number of minor improvements have been applied to $BN32. The total record count is displayed within various progress messages;

$AUTH32 now correctly validates the Authorisation Level to be in the range "A" to "Z". The error message displayed when the Authorisation Level is invalid is now meaningful. The option in $AUTH32 to enforce upper-case operator-id's now works correctly: The setting is now saved by $AUTH32 and all 4 characters of the name are converted to upper-case;

The $AUTH32 Application Systems Export option now exports all the available information, including passwords. The Import option now includes an option to allow Passwords to be imported, if required;

$AUTH32 has been improved to continue with the current function if there is insufficient space in either the $$OPID or $$GROUP file;

$AUTH32 has been enhanced to allow a user marked as "inactive" to remain "active" within a group. The User Activity/Inactivity flag is now displayed separately from the Group Activity/Inactivity flag. When a user is marked as inactive $AUTH32 now prompts to allow that user to be removed from all the groups he/she is a member of. If this option is selected, the user will be de-activated from all the relevant groups;

The error handling of the Import function has been improved. Furthermore, the import of passwords is now forbidden if the name of the System has been changed;

The Menu Handler now explicitly clears current "GX Application Version Text" when a menu Return line is selected;

A problem in the Menu Handler that results in a spurious STOP 8625 on non-GX screens if the Customisations\SeparateWorkSpaceApplicationMenus registry setting is enabled, has been fixed;

A new Terminal Attribute Program, $.752, is available for GSM (Windows). This TAP is based on $.752 but supports 40 lines rather than the standard 24.

4. Global Development System Enhancements (Sub-routines etc.)

Three new 32-bit sub-routines are now available to change the AutoPage, AutoBackPage modes on the fly: B$APGE to set the AutoPage mode; B$ABPG to set the AutoBackPage mode; B$AOFF to clear both modes;

The B$DBXD routine now correctly closes the Schema File if an incorrect File Organisation is detected;

The B$DXIN routine now returns an EXIT 25075 rather than a Stop Code if an attempt is made to initialize a non-DBX channel;

A new 32-bit sub-routine, B$PFUP, is now available to update the line and column positions of fields in an extended PF on-the-fly;

A new 32-bit sub-routine, B$SMDD, is now available to delete all the records in a SMEM data set before de-allocating its pages. If this routine is used then the record position of any master records will be undefined. This new routine has been introduced because the existing B$SMDE routine just removes the data pages containing the record set and indexes and does affect the GVA calculations. B$SMDE does not perform an actual delete operation on all the records in the record set which would cause the GVA's to be reduced. Because of the extra functionality B$SMDD may be slight slower than B$SMDE;

A new System Variable, $$NOCL is now available to emulate the effect of the NOCLEAR option on a frame executed by an EXEC statement. Set this System Variable to 1 before executing the EXEC statement. There is no need to reset the variable after use;

The Speedbase DLM BA$EXE has been extended to send the current status of the "LegacyCRTabProcessing" flag to GX. Note that GX will only recognise the commands sent by BA$EXE if the DisplayLegacyCRTabFlag setting is enabled in the [general] section of the GX.INI file;

Some issues with the reliability of the $SCURR variable have been resolved. A new $PCURR variable has been added to supplement the value in $SCURR;

The Speedbase Window Manager has been enhanced to ensure that the current record in the record area is always the one under the cursor when in R-START routine;

A new System Variable, $PYOF, is now supported by the Extended PF option. This System Variable allows an additional vertical offset in lines by which the current report is to be shifted. This optional allows an existing report to be centered within a backdrop without needing to recode all of the column positions. The variable is set to zero when the report completes. It should be set immediately before the printer is opened;

The Extended PF option has been improved to allow selection of the Paper Tray for printers where this is appropriate. The 1st byte of the PIC X(2) XPOPTS parameter can be set to the following new values: "1" = Select 1st extra paper tray; "2" = Select 2nd extra paper tray; "3" = Select 3rd extra paper tray;

The B$XPO routine has been extended to support a new flag in the XP-block (XPFLAG) to indicate that numeric strings suffixed by either "CR" or "DR" are to be right-aligned. This option is expected to be useful in reports that include the FMT "C" or FMT "D" options;

A new read-only System Variable, $$$XPF, is now available to indicate the version of, and facilities supported by, the BA$XPF DL;

The Extended PF Printing option (in DLM BA$XPF) has been extended to support character strings that are longer than 127 characters;

A problem in the AUTHA$ sub-routine that results in the previous password being offered as the default for the next call under some conditions, has been fixed. **Important Note**: This problem could expose a security breach when $AUTH32 authentication is enabled in Global-3000 V6.0;

A new sub-routine, GXCMD$, is now available to initiate a Windows program on the PC running GX. GXCMD$ provides a much simpler alternative to SHCMD$;

A problem with the GXDSO$ routine that can result in unpredictable results, has been fixed;

A problem in the GXSHX$ routine that results in a spurious EXIT 23913 has been fixed;

A new sub-routine, HASH$, is now available to return a hash total from the first 256 bytes of a Windows or Global file. [Note that GSM SP-27 will allow the length of the Hash Block to be passed as an optional parameter];

The RENAX$ routine has been improved to use (non-blocking) SVC-88 instead of the (blocking) SVC-61;

The COPYQ$ routine has been improved to use (non-blocking) SVC-88 instead of the (blocking) SVC-61;

A new family of sub-routines are now available to write directly to a Windows print device. WINPO$ Open Windows print device; WINPW$ Write to Windows print device; WINPC$ Close Windows print device. Using these routines may be more convenient than the standard file-based Printer interface when writing a raw byte stream to the Windows print device. For example, when the Windows printer is a label printer that accepts low-level codes rather than text-lines.

5. Global Development System Enhancements (Utilities)

$AUTHP has been improved to display an Information Message when the internal version of the DBAUTHP is changed. A number of cosmetic changes to $AUTHP have been implemented including the removal of abbreviated labels on all windows;

$BUILD has been extended to support a new *#DLM option to allow a single DLM to be included from a DLM library; and a new *#LIBX option to run $LIBX. Two new run-time options are now available: NRUN to suppress the *#RUN directive; NCHN to suppress the *#CHAIN directive;

$COMPILE and $SDL32 have been extended to allow the arguments for the "START AT" and "START FROM/TO" statements to be variables as well at literals. For example: "START FROM Z-FROM TO Z-TO" allows a single PF to be used for multiple sections on a page;

$COMPILE & $SDL32 have been enhanced to allow all the "DEPENDENT ON" fields in a RANGE construct to be available for enquiries;

$COMPILE & $SDL32 now recognize the REVSUBKEY window option. The REVSUBKEY statement can only be used in a window that contains a DEPENDENT ON..MATCH clause. It causes the remainder of the key, not mentioned in the DEPENDENT on clause, to be displayed in reverse order in the window within the match table entry. In addition, a new RULE clause is allowed on the WINDOW statement;

$COMPILE & $SDL32 have been extended to support a new PIC STR clause to generate a character string that is automatically terminated with a byte of binary-zero;

$SDL32 now supports the XNOLOCK option;

$SDL32 & $COMPILE have been enhanced to allow "CUR" as a synonym for "CURRENT RECORD" so that "PROCESS REPEAT [UNTIL [NXT|CUR]]" is the same as "PROCESS REPEAT [UNTIL [NXT | CURRENT RECORD]]";

A minor cosmetic problem in $COMPILE when prompting for the Data Dictionaries has been fixed;

A problem in $COMPILE that generates a spurious compiler error on an ATTRIBUTE statement immediately following a START statement, has been fixed;

$SDE has been modified to support the XNOLOCK and REVSUBKEY window options;

$SDE now uses the default label type, SC (Scrolled) or NS (Non-scrolled), as established using $DXM;

$SDE has been improved to allow F9-Q to be used on a window that includes a "U-7" button;

The $SDE F9 ~ function is now optional, controlled by a setting in the $SDECUS utility;

$SDE now supports an "Alternate Editing Mode" which is enabled by the $SDECUS utility. When operating in "Alternate Editing Mode": <CR> always inserts a new line at current cursor position (i.e. splits the line if needed) and positions at the start of the new line; <LEFT ARROW> goes to 1 + last character of the previous line if there is one on top of previous line (the J wrap around command has no effect for left arrow); <INSERT> toggles between insert

character and overstrike character mode when a character is entered. The editor will start in insert mode; <DEL> in insert mode to always delete character to the left and if on first character to concatenate line with previous line; <TAB> in insert mode inserts spaces to the next tab position;

$DXM now includes a menu option to execute $DXMSQLC. A number of cosmetic changes to $DXM to improve the appearance of the main dialogue windows have been implemented;

$DXMSQLC now includes a "Quick Check" option that just validates record and field names for illegal characters. Furthermore, a problem that suppressed the display of all but the first erroneous field has been fixed;

A problem in $SDM that causes a Numerical Overflow when the user number is higher than 99, has been fixed.

NEW FEATURES IN GSM SERVICE PACK 27

1. Introduction and Overview

Global System Manager V8.1 Service Pack-27 (GSM SP-27) includes several new features and many significant enhancements to GSM SP-26 (and GSM SP-25 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-27 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-26 before applying GSM SP-27.**

2. Changes to GSM Installation and Start-Up
The GSM Start-up overlay responsible for applying PM Rental Expiry-Date passwords has been modified to recognize the new (March-2012), 28-character password string. **From March-2012, GSM SP-27, or later, is required to apply PM Rental Expiry Date passwords.**

3. Changes to GSM Run Time
The $CUS overlay responsible for applying PM Rental Expiry-Date passwords has been modified to recognize the new (March-2012), 28-character password string. **From March-2012, GSM SP-27, or later, is required to apply PM Rental Expiry Date passwords;**

A problem in the printer stationery alignment handling, introduced in GSM SP-25, has been fixed;

A problem in the BA$XPF routine that caused unpredictable effects in the Extended PF Printing System, has been fixed;

The BA$XPF DLM has been extended to recognize the XPSPIN parameter. This file can be used to select a specific printer as described in IN343.DOC;

The $QADFTP utility has been extended to provide a "move" function (the file is deleted from the input folder after a successful copy);

A minor, cosmetic problem in $32S has been fixed;

A cosmetic problem in the "Build from open database" option of $32BADG has been fixed;

A problem with LTAM Access Method that can result in a spurious STOP 8305 under some circumstances, has been fixed;

A problem in $DXU that results in a spurious Error 285 from the Speedbase Gateway has been fixed;

The AUTHA$ sub-routine has been improved to provide a more meaningful message for an Error 11;

$BAM32 has been enhanced to provide a menu for all the common database utilities, thus removing the necessity to remember the names of the various database utilities;

A problem in $DXU that can result in an early exit following an error condition has been fixed. The problem left both the database and dictionary open; and a progress bar on the screen;

A new utility, REPASS, is now available to reserialise the various password files used by $PASSWD i.e. $$PASS, $$OPASS and $$PLOG. Note that REPASS cannot reserialise passwords that are longer than 16-characters.

4. Global Development System Enhancements (Sub-routines)

The LINFO$ sub-routine now returns an exception 3 rather than an unpredictable result if called with a $LIBX Extended Library;

A new 32-bit sub-routine, LINFX$, which is functionally equivalent to LINFO$, is now available to return the details of a LIBX$ Extended Library;

A problem in the SOUND$ sub-routine, that can result in an ILLEGAL OPERATION exception under some circumstances, has been fixed;

The SBTYP$ sub-routine has been extended to return unique database types (5 & 6) for Pervasive-SQL/DBX and Microsoft-SQL/DBX format databases;

The B$CWMD sub-routine has been enhanced to support a single-parameter call to restore the Window Mode that was updated by the previous normal, two-parameter call. The mode is stored in the B$PMOD System Variable so that in the usual event of nested B$CWMD calls, the programmer must save the contents of B$PMOD if necessary;

The HASH$ sub-routine has been extended to accept an optional 3rd PIC 9(4) COMP parameter to override the default block length of 256. If the 3rd parameter is 0 then the size of the file is used.

A new 32-bit sub-routine, HASHE$, is now available as an extension to the HASH$ routine;

A new 32-bit sub-routine, JPG$, is now available to return some of the internal parameters from a Windows .jpg file;

Anew 32-bit sub-routine, EXCEL$, is now available to return the version of Windows Excel installed on the PC running GX:

A problem with GXBRW$ sub-routine that can result in a NUMERICAL OVERFLOW under some conditions, has been fixed;

A new 32-bit subroutine, CAMEL$, is now available to convert a text-string to "Camel Case";

A new 32-bit sub-routine, XFER$, is now available to allow RS files to be imported and exported to "fixed length" Windows text files;

The GETIP$ sub-routine now removes leading-zeroes from each element of the dotted-decimal IP address;

The HOSIP$ sub-routine now removes leading-zeroes from each element of the dotted-decimal IP address;

A new 32-bit sub-routine, RLZDD$, is now available to remove leading-zeroes from each element of the dotted-decimal IP address (e.g. 034.192.056.001 is converted to 34.192.56.1).

5. Global Development System Enhancements (Utilities)

$DXM has been modified to provide accelerator characters on the buttons for the GVA and GVF options;

A problem in $DXM that results a NUMERIC OVERFLOW if a GVF field is beyond the 127th byte position in a record has been fixed. $DXM now correctly displays a warning message under these circumstances;

$DXM has been extended to print the full description and SQL name for both records and fields;

$DXM has been improved to problem better defaults for some of the name fields: The default "SQL Name" is now the "Camel case" equivalent of the Field Name; the "XML Tag" is now the same as a "SQL Name"; the default comments are empty;

An alignment problem with one of the $DXM reports has been fixed;

$DBUG has been extended to provide a new function to clear all traps.

NEW FEATURES IN GSM SERVICE PACK 28

1. Introduction and Overview

Global System Manager V8.1 Service Pack-28 (GSM SP-28) includes several new features and many significant enhancements to GSM SP-27

(and GSM SP-26 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-28 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-27 before applying GSM SP-28.**

2. Changes to GSM Installation and Start-Up

- The Contract Protection Message has been modified to change "TIS Software" to "Kerridge Commercial Systems". This is the raison d'être for GSM SP-28 consequently the number of enhancements and bug-fixes (and the size of this document) are smaller than for previous GSM Service Packs;

- The GSM start-up processing has been extended significantly to support two new GX File Synchronization facilities. Both these options require GLOBAL.EXE V4.9, or later. The first option builds upon the mechanism described in IN271. By default, the GSM start-up overlay ($STARQ) examines all the folders and sub-folders under the GXUPDATES folder. For every file encountered on the server, a GX operation is executed to determine if there is a copy of the file on GX and if there is, the Last Modification Times of the two files are compared to determine if the server file is more recent than the version on GX. If the version of the file on GX requires updating, it is downloaded from the GXUPDATES folder on the server to the appropriate folder on the GX PC. When the new "UseSyncFile" registry option is enabled, GLOBAL.EXE builds a list of "server files" and dates in a temporary file called GX.SYN (this process is very quick). The comparison is made between the GX.SYN file on the server and a GX.SYN file on the GX PC. The process of comparing the two GX.SYN files can be considerably faster than comparing individual files especially when the GXUPDATES folder hierarchy contains several hundred files.

- In addition to the GX File Synchronization facility which updates files held within the GXUPDATES folder hierarchy, a completely new facility is now available to synchronize files from **any** folder(s) on the server with **any** folders(s) on the GX PC. This new facility is controlled by settings in a new gxsync.ini customisation file. The gxsync.ini file must be present in a new "sync" folder under the main GSM folder. The format of the gxsync.ini file is as follows:

  [*nnn*]

```
Type=update | create | mirror  | always
ServerFolder=server_folder
ClientFolder=client_folder
Subfolders=on | off
LastSection=on | off
```

(where nnn = 011 to 999). The various synchronization types are allowed:

Type=Update   Copy all files in the server_folder that do not exist in the client_folder. Copy all files in the server_folder that have a different size from the file in the client_folder. Copy all files in the server_folder that have the same size but a different hashsum from the file in the client_folder. Note that the file dates/times (any of them) are NOT considered by this processing.

Type=Mirror   Same as update but also delete any files in the client_folder that no longer exist in the server_folder.

Type=Create   Only copy those files in the server_folder that do not exist in the client_folder. i.e. files in the client_folder with different sizes and/or hashsums from the equivalent "master" files in the server_folder are NOT copied.

Type=Always   Always copy all files from the server_folder to the client_folder. This option is reserved for testing purposes only.

Note that only the 1st letter of the type setting is actually tested.

The server_folder and client_folder settings can be either absolute pathnames or paths relative to the GSM folder (on the server) or the GX folder (on the GX PC).

By default only files in the server_folder are considered, any files in sub-folders are ignored. Set the "SubFolders" setting to On consider all files, to any folder depth, within the folder hierarchy on the server.

Set LastSection=On in the highest numeric section to optimise the GXSYNC.INI file processing.

- The maximum number of Permanent Unit Assignments has been extended from 19 to 118. The extra 99 assignments are specified by settings under the new PermanentAssignments registry key.

3. Changes to GSM Run Time

- $QADFTP has been enhanced to allow the current settings to be saved;

- $AUTH32 has been modified to include a unique numeric error code in every error/warning message;

- A number of minor, cosmetic changes have been applied to $FIND;

- A number of minor, cosmetic changes have been applied to $CUS;

- The $PAGES diagnostic utility has been enhanced to support configuration with more than 16kb 32-bit memory pages;

- $32BADG has been improved to reduce the number of display messages sent to GX during database conversions. This change can improve the performance of native database conversions;

- A overflow problem in $DXU when the User Number is higher than 99 has been fixed.

4. Global Development System Enhancements (Sub-routines)

- A number of **highly**-specialised 32-bit sub-routines are now available in the BO$RFI DLM. A description of these sub-routines is beyond the scope of these notes;

- The HOSIP$ routine has been extended to return the server-name in addition to the dotted-decimal IP address;

- The B$PFUP routine has been extended to allow the attribute field to be updated;

- The EXCEL$ routine has been extended to allow the version of Microsoft Excel installed on the server to be determined;

- A problem in GXCOP$ that when copying very small Windows files (less than 10 bytes) has been fixed;

- A new variation of the GXREN$ routine, GXREX$, is available. Whereas GXREN$ tests for a GX screen and generates a STOP code if the thin-client is not GX; GXREN$ by-passes the test for GX and thus can be used when 16-bit Job Management is running;

- The BA$DXU DLM has been modified to prevent an overflow exception when a DBX database with more than 127 record sets is being processed;

- The BA$GEX DLM has been extended to allow a V- to EXIT WITH 3. This new exception suppresses clearing the type-ahead buffer;

- A problem in the BA$GXM DLM that results in an overflow when the count of bytes transmitted to GX in a session exceeds 999,999,999 has been fixed.

5. Global Development System Enhancements (Utilities)

- $DBUG has been enhanced to include an "Expand" button to allow the full contents of a long field (longer than 16 characters) to be displayed. The Expand button displays a secondary window that displays the full contents of the field (up to 128 characters) in both hexadecimal and ASCII;

- $DBUG has been enhanced to support configuration with more than 16kb 32-bit memory pages;

- $COMPILE has been enhanced to allow up to 20 Data Dictionaries to be specified in a single compilation;

- An overflow problem in $SDEW32 has been fixed.

NEW FEATURES IN GSM SERVICE PACK 29

1. Introduction and Overview

Global System Manager V8.1 Service Pack-29 (GSM SP-29) includes several new features and many significant enhancements to GSM SP-28 (and GSM SP-27 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-29 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-28 before applying GSM SP-29**.

The GSMSP29 installation job checks that no members of libraries P.$CMLB0, P.$CMLB1, P.$CMLB2 and P.$CMLB3 are held as stand-alone files on SYSRES. If a $-command is found both inside a command library and as a stand-alone file on SYSRES the "stale" version is deleted. For example:

```
Analysing SYSRES for members outside libraries...
Library member $STARX   should not be on SYSRES, key <CR> to delete
```

2. Changes to GSM Installation and Start-Up

- The Synchronization File processing has been considerably enhanced to include run-time diagnostics and support for further run-time options;

- The GSM start-up overlay $STARX now checks for the presence of an optional Reseller-specific expiry-date;

- The GSM start-up overlay, $STARC, has been enhanced to check for Reseller-specific expiry-date expiration;

- A new utility, $SYNC, that executes the Synchronization File functionality of $STARZ, is now available.

3. Changes to GSM Run Time

- The functionality of the $STATUS MON command has been changed to monitor disconnected NETWORK connects and restart "zombie" users automatically. Prior to this change, MON monitored and disconnected serial connections;

- The $32A utility has been enhanced to display the optional Windows Folder associated with a physical unit-id. Note that this enhancement will **not** be applied to 16-bit $A;

- A 32-bit version of $LNAT, $LNAT32, is now available;

- The rebuild and conversion options of $DXU have been extended to display the time taken to complete the rebuild;

- $GSP has been modified to continue with the service pack application if one, or more, units are invalid. A Message Box with a single OK button has been replaced by one with "Retry" and "Cancel" options;

- The obsolete menu-entry to apply a Payroll Licence has been replaced by a new option to apply a Reseller Specific password;

- The $AUTH32 option to copy a user's details now correctly copies details of all the Systems associated with the template user. When creating a user the default operator-id is now blanked thus forcing it to be changed. When the DB$OPID database is already in-use by another administrator using $AUTH32 a standard Lock Message, with user name and partition number is displayed;

- A problem in $BN32 that results in an EXIT 25301 if the "Special Conversion" window is cancelled, has been fixed;

- The $CUS overlay that applies Expiry Date passwords has been enhanced in two areas: Firstly, it is now no longer necessary to reboot the Global Client after applying a PM password. Secondly, the validation of password strings has been improved to avoid spurious STOP codes.

4. Global Development System Enhancements (Sub-routines)

- The B$DBXN sub-routine now works correctly when the User Number is higher than 99;

- A new sub-routine, B$CTYP, is now available. This routine allows the Speedbase/GX Window Type to be changed on the fly;

- The UNLOAD Division of the BA$XPF DLM now exits normally, after calling the B$XPC routine, rather than generating a STOP 25394 if the GX printer has not been closed by the application;

- The B$PFUP routine has been extended to allow the field attribute only to be updated;

- A new subroutine, B$PFU2, is now available as an extended version of B$PFUP.

- The OR$98 Direct Windows Access Method has been extended to support Windows Folder assignments (as required for Window Manager-3) i.e. rather than supplying the full-path of a Windows file in the FD extension it is now possible to supply just the file-name in the FD extension and a PIC X(3) Unit Assignment in the FDUAD field. The Unit Assignment is mapped to a Windows folder (using the GETWF$ routine – see below);

- The LOWER$ sub-routine has been extended to support 8-bit character sets. This facility is only available with GLOBAL.EXE V4.9f, or later. Note that UPPER$ has always supported 8-bit character sets;

- A new subroutine, HUMP$, is now available to convert a string to Camel Case. This routine can be considered an extension to CAMEL$ introduced with GSM SP-27. Whereas CAMEL$ removes white-space characters and only converts the 1st letter of each word to upper-case leaving remaining characters unchanged; HUMP$ preserves white-spaces, converts the 1st letter of each word to upper-case and ensures that all remaining letters of each word are lower-case;

- A new routine, ALPHA$, is available to validate a character as alphabetic (either upper-case or lower-case);

- A new routine, ALPHN$, is available to validate a character as alphanumeric (upper-case, lower-case or numeric);

- A new routine, GETWF$, is now available to map a PIC X(3) Unit Number to the equivalent Windows Folder as defined in the "WindowsFolders" section of the registry;

- The GXBRW$ routine has been modified to return an exception 24909 if the folder name is invalid;

- A new subroutine, DHMSD$, is available to convert a time, supplied in seconds, to a descriptive text-string;

- The GXCOP$ routine has been extended to allow the input file to be opened in Shared Mode, rather than the default Exclusive Mode. This routine has also been extended to support a diagnostics option;

- A new subroutine, GXBCO$, is available to change the Background Colour of the current GX window;

- A problem in the GXSPT$ routine which causes an ILLEGAL OPERATION exception, has been fixed;

- The menu handler now defaults to the last line of the menu if the menu line auto-selected by the Authorisation Program is invalid;

- A new sub-routine, DIFEX$, is now available to return a full file-name based on a partial name and list of possible file extensions;

- A problem in the OPNM$ routine has been fixed. The problem only returned the full-name for the first operator-id in the Authorization File;

- A new highly-specialised subroutine. MHDEA$, is available to de-allocate the 32-bit memory-page that holds the current Menu Page;

- A new subroutine, REPAS$, is now available to generate a Reseller-specific expiry date password.

5. Global Development System Enhancements (Utilities)

- A problem in the Value Trap handling of $DBUG, when the Page Number is > 32Kb, has been fixed;

- The internal-only $GSPMAKE utility has been enhanced to generate a warning if an attempt is made to include a component in P.xxLOAD in a service pack that is not for product ZM; or if an attempt is made to include DBAUTHP in a service pack that is not for product ZM;

- A new customisation overlay, $CUSC, to apply a Reseller-specific expiry-date password, is now available.

6. Upgrade Released Jan-2014

In Jan-2014 the GSM SP-29 P.$SDLMO library was updated to release new versions of the following DLMs:

BA$MID   Extension to the B$PATH sub-routine;

BA$STA   Release of new B$STNC sub-routine;

BO$FIL   Fix to GXCOP$ to prevent NO BASE exceptions when called
          with 2 parameters;

BO$GXM   Extension to BTICN$ to support non-current window;

BO$MRZ   Release of new BACK$ and CRYPT$ sub-routines;

BO$WWW   Extension to EMAIL$ to allow optional logging;

BA$MEX   Fix to Extended SMEM to prevent STOP CODE 25592 during
Delete operation.

NEW FEATURES IN GSM SERVICE PACK 30

1. Introduction and Overview

Global System Manager V8.1 Service Pack-30 (GSM SP-30) includes
several new features and many significant enhancements to GSM SP-29
(and GSM SP-28 to GSM SP-1; and Global System Manager V8.1 revision
V8.1l).

Important Note: GSM SP-30 can be applied directly to **any** version of
GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-29 before
applying GSM SP-30.**

The GSMSP30 installation job checks that no members of libraries
P.$CMLB0, P.$CMLB1, P.$CMLB2 and P.$CMLB3 are held as stand-alone
files on SYSRES. If a $-command is found both inside a command
library and as a stand-alone file on SYSRES the "stale" version is
deleted. For example:

```
    Analysing SYSRES for members outside libraries...
    Library member $STARX   should not be on SYSRES, key <CR> to delete
```

The raison d'etre for GSM SP-30 is to provide additional
functionality for future G-3000 service packs (within the new
$EXTN overlay). Consequently, SP-30 contains fewer "core"
enhancements than most GSM service packs.

2. Changes to GSM Installation, Customisation and Start-Up

$CUS has been extended to allow an optional serial number in the Reseller generated password. A small typo in the GX Menu Style Override message has been fixed.

3. Changes to GSM Run Time

A new System overlay, $EXTN, is now available to provide additional System-level functionality to Global 3000 modules. This overlay is reserved for the use by G-3000 only. Do not attempt to run this overlay from a menu or the READY prompt;

The $STATUS "MON" command has been modified to monitor NETWORK connections. Connections with the status of "DISCONNECTED" or "SCREEN I/O ERROR" will be automatically restarted by the "MON" command. In addition, $STATUS now calls MIDN$ before displaying the time of the restart function;

A problem in the $STATUS "PRT" command when more than 24 printers are configured, has been fixed.

4. Global Development System Enhancements (Sub-routines)

A new sub-routine, CRYPT$, is now available to calculate a hash checksum. See crypt$.doc for further details;

A new sub-routine, BACK$, is now available to back-up a Pervasive SQL format Speedbase database, See back$.doc for further details;

The B$PATH sub-routine has been enhanced to optionally return the backup folder associated with a Speedbase Schema file. See b$path.doc for further details;

A new database status subroutine, B$STNC, is now available. See b$stnc.doc for further details;

The EMAIL$ sub-routine has been extended to allow optional logging via a new pointer, $$EMIN. See email$.doc for further details;

The BTICN$ sub-routine has been extended to support non-current windows. See bticn$.doc for further details;

The NEOPN$ sub-routine has been enhanced to allow a pathname longer than 80 characters. The new maximum pathname length is now 256 characters;

The B$RBL has been modified to return an EXIT 14 if the target database is a Pervasive SQL format database. Previous versions of this routine would exit silently under these conditions, which lead to confusion;

A problem in GXCOP$ that resulted in a NO BASE exception when called with 2 parameters, has been fixed;

A problem in Extended SMEM which caused a STOP CODE 25592 during Delete operations, has been fixed.

5. Global Development System Enhancements (Utilities)

A problem in $COMPILE that resulted in an ILL LOAD AT 4120 under some conditions, has been fixed;

$BUILD has been enhanced to allow the listing file normally produced by the $SDL32 compiler to be suppressed.

NEW FEATURES IN GSM SERVICE PACK 31

1. Introduction and Overview

Global System Manager V8.1 Service Pack-31 (GSM SP-31) includes several new features and many significant enhancements to GSM SP-30 (and GSM SP-29 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-31 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-30 before applying GSM SP-31.**

The GSMSP31 installation job checks that no members of libraries P.$CMLB0, P.$CMLB1, P.$CMLB2 and P.$CMLB3 are held as stand-alone files on SYSRES. If a $-command is found both inside a command library and as a stand-alone file on SYSRES the "stale" version is deleted. For example:

```
Analysing SYSRES for members outside libraries...
Library member $STARX   should not be on SYSRES, key <CR> to delete
```

The raison d'etre for GSM SP-31 is to provide the GSM functions for Speedbase Window Manager-3. Consequently, SP-31 contains fewer "core" enhancements than most GSM service packs.

The WM-3 compiler generates program files and DLMs directly in Windows folders, by-passing the GSM filing system. The SP-31 32-bit loader will load programs/DLMs from either a GSM sub-volume or the equivalent Windows folder. A new utility, $EXPORT, is available to allow resellers to **evaluate** the new "open files" arrangement by exporting pre-WM-3 executables from the GSM environment to Windows folders. Note that $EXPORT will **not** be required when producing frames and programs using the WM-3 Development System.

Important Note: GSM SP-31 will only function correctly if the version of GLOBAL.EXE is V4.18, or higher.

2. Changes to GSM Installation, Customisation and Start-Up

• The GSM start-up overlay, $STARX, now generates a warning message if the current date is within 14 days of the optional Reseller Expiry Date;

• A problem in the $CUS overlay ($CUSC) that applies a Speedbase Password has been fixed. The problem caused a variety of symptoms, including an Illegal Operation exception and a Numerical Conversion error.

3. Changes to GSM Run Time

• A new utility, $EXPORT, is now available to export 32-bit program files and DLMs from the GSM filing system to the Windows filing system.

By default, the files from GSM unit ann (e.g. C24) will be exported to the following Windows folder:

    $GSM\windowsfolders\a00\nn\
    $GSM\windowsfolders\C00\24\

Where $GSM is the current GSM folder (e.g. the folder containing GLOBAL.EXE).

The default root Windows file folder (i.e. windowsfolder) can be overridden by the following registry setting:

    WindowsFolders\DefaultFolder

For example, if:

    WindowsFolders\DefaultFolder=D:\wm3files

the files from C24 will be exported to:

    D:\wm3files\C00\24

The Windows folder for a particular domain can be specified by a registry setting of this type:

    WindowsFolders\a00\Domaina00

For example, if:

    WindowsFolders\C00\DomainC00=F:\wm3filesfromsingledomain

the files from C24 will be exported to:

    F:\wm3filesfromsingledomain\24\

The Windows folder for a particular sub-volume can be specified by a registry setting of this type:

    WindowsFolders\a00\Unitann

For example, if:

    WindowsFolders\C00\UnitC24=G:\wm3filesfromsinglesubvolume

the files from C24 will be exported to:

```
G:\wm3filesfromsinglesubvolume
```

Because registry keys are case insensitive, a slightly different scheme is required for domains that start with a lower-case letter (e.g. d20). For domains that start with an upper-case letter (e.g. D00) the domain key is simply the 3-character alpha-zero-zero string e.g. "D00". For domains that start with a lower-case letter (e.g. d20) the domain key is formed by repeating the initial letter, followed by a zero to form an alpha-alpha-zero string, e.g. "DD0". An example should make this clear:

```
    WindowsFolders\D00\UnitD24          registry setting for unit
D24
    WindowsFolders\DD0\UnitD24          registry setting for unit
d24
```

Note that the domain keys are merely required to organize the (optional) registry settings in a hierarchical manner – they do not have to correspond to the physical configuration. For example, consider 2 physical domains E00 and E50, the (optional) registry settings to specifically map sub-volumes E01 (within domain E00) and E51 (within domain E50) to explicit Windows folders will be:

```
    WindowsFolders\E00\UnitE01
    WindowsFolders\E00\UnitE51     (i.e.                          NOT
WindowsFolders\E50\UnitE51 )
```

When GSM files are exported to Windows, care is taken to ensure the filename contains valid Windows characters. The following characters in filenames remain unchanged:

```
    0 to 9          A to Z          $    %    -    _
```

Lower-case letters are replaced by "~" followed by the upper-case letter. All other characters are replaced by "#" followed by the hex equivalent of that character.

32-bit program files are converted to Windows files with the extension .exes. 32-bit DLMs are converted to Windows files with the extension .dlm.

For example, the 32-bit program "Ab$%!Z" will be converted to Windows file A~B$%#21Z.exes.

32-bit program files and DLMs within both traditional and extended libraries are exported. The last 6 characters of the library name (i.e. excluding the P. prefix) form the name of a Windows sub-folder into which the library contents are exported. The invalid character rules for filenames, as described above, also apply to the "library sub-folder" names.

For example, if:

    WindowsFolders\C00\UnitC24=G:\wm3filesfromsinglesubvolume

and unit C24 contains the following files:

    CL3000
    P.CL3000 with members CL240, CL240A, CL240B
    P.MIDDLE with members DLM1, DLM2, DLM3

the files from C24 will be exported to:

    G:\wm3filesfromsinglesubvolume\CL3000.exes
    G:\wm3filesfromsinglesubvolume\CL3000\CL240.exes
    G:\wm3filesfromsinglesubvolume\CL3000\CL240A.exes
    G:\wm3filesfromsinglesubvolume\CL3000\CL240B.exes
    G:\wm3filesfromsinglesubvolume\MIDDLE\DLM1.dlm
    G:\wm3filesfromsinglesubvolume\MIDDLE\DLM2.dlm
    G:\wm3filesfromsinglesubvolume\MIDDLE\DLM2.dlm

- The 32-bit program loader has been enhanced to load 32-bit programs directly from Windows folders;

- The $32A utility has been enhanced to display the Windows Folder associated with a physical unit-id. Note that this enhancement will **not** be applied to 16-bit $A;

- The Speedbase run-time DLM, BA$GUI, has been extended to support the additional Interrupt Buttons "U-1" to "U-6";

- A problem in $STATUS, that results in the error "$STA02 IS TOO LARGE", has been fixed;

- GSM now includes a central character translation table, available in the new PIC X(255) System Variable, $$XLAT. The table can be initialized by adding registry entries of the form: Customisations\8BitCharNNN;

- $32BADG now prevents the "Unit" field being set to spaces;

- A minor cosmetic change in the $BN32B overlay (delete function) has been fixed;

- A problem in $DXU (overlay $DXUBC) that results in a NUMERIC OVERFLOW under some conditions, has been fixed;

- The core Speedbase DLM, BA$EXE, now recognizes (and silently ignores) an unexpected exception from SVC-79, function-34;

- The $EXTN extension to Global-3000 V6.0 has been enhanced to provide a function to display details of all the operators who have a file "open shared". Note that $EXTN should **only** be EXEC'ed by a G-3000 frame – it should not be run directly.

- The debugger, $DBUG, now includes some diagnostics to display some internal record sets in an attempt to diagnose an unresolved problem that can sometimes generate a spurious STOP 25502.

4. Global Development System Enhancements (Sub-routines)

- The Open BDAM Access Method has been extended to access Windows files through the GSM mapping explained above for $EXPORT and the WM-3 loader. The following redefinition of the Windows filename within the FD extension has been available since GSM SP-9:

```
    02   XXFLAG    PIC X                 * Flag byte
         VALUE     #FF           * -1 = Allow filename > 99
chars
    02   XXNAME    PIC PTR       * Pointer to Windows pathname
```

    This has been extended to:

```
    02   XXFLAG    PIC X                 * Flag byte
         VALUE     #FE           * -2 = Map GSM unit to Windows
folder
    02   XXNAME    PIC PTR       * Pointer to Windows filename
to be
                                 *  appended  to  the  Windows
                            folder mapped
                                 * from the FDUID field
```

and:

```
    02   XXFLAG    PIC X              * Flag byte
         VALUE     #FD        * -3 = Map GSM unit to Windows
                   folder
                                 * and include "library" sub-
                   folder
    02   XXNAME    PIC PTR    * Pointer to Windows filename
to be
                                 * appended to the Windows
                   folder mapped
                                 * from the FDUID field and the
                   "library".
    02   XXLIBR    PIC PTR    *    Pointer    to   library
"container" string
```

- A new sub-routine, LASTI$, is now available to identify the last Interrupt Button, "U-7" or "U-1" to "U-6", that was clicked;

- A new sub-routine, TABCR$, is now available to enable or disable the Legacy TAB/CR option for a particular operator. This routine will either: a).Do nothing if not running on GX; b).Enable LegacyTabCRProcessing if the opid is in any of these registry settings: Global\Client\Customisations\LegacyTabCRProcessing\Enable\Opera torIDnn=opid (where nn = 1 to 99); c).Disable LegacyTabCRProcessing if the opid is in any of these registry settings: Global\Client\Customisations\LegacyTabCRProcessing\Disable\Oper atorIDnn=opid (where nn = 1 to 99); d).Do nothing if the opid is not in either of the registry settings in (b) or (c);

- The EDTTX$ and TXEDT$ routines have been extended to support a character translation option;

- The BO$CLR DLM has been modified to remove the obsolete GETWF$ routine. This routine has been replaced by SVC-27.

5. Global Development System Enhancements (Utilities)

- $COMPILE has been extended to support 6 new button options "U-1", "U-2", …, "U-6". Providing the version of GLOBAL.EXE is

V4.14, or higher, these buttons will generate interrupts in the same way as the original "U-7". Note that this enhancement has **not** been applied to $SDL32;

- $DEV now supports the $COMPILE compiler. The "K" option, which was formerly used for the Intel-8086 assembler, is now used for $COMPILE dialogue. Note that the "N" option is still available to generate $SDL32 dialogue;

- $BUILD now recognizes that $COMPILE supports up to 20 data-dictionaries.

NEW FEATURES IN GSM SERVICE PACK 32

1. Introduction and Overview

Global System Manager V8.1 Service Pack-32 (GSM SP-32) includes several new features and many significant enhancements to GSM SP-31 (and GSM SP-30 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-32 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-31 before applying GSM SP-32**.

The GSMSP32 installation job checks that no members of libraries P.$CMLB0, P.$CMLB1, P.$CMLB2 and P.$CMLB3 are held as stand-alone files on SYSRES. If a $-command is found

both inside a command library and as a stand-alone file on SYSRES the "stale" version is deleted. For example:

```
Analysing SYSRES for members outside libraries...
Library member $STARX    should not be on SYSRES, key <CR> to delete
```

2. Changes to GSM Installation, Customisation and Start-Up

No changes to GSM Installation, Customisation or Start-Up are included in GSM SP-32.

3. Changes to GSM Run Time

The $BBS utility has been enhanced to allow wild-card characters in the input file names;

The $32A utility has been changed to use the standard GETWF$ sub-routine to map a GSM physical-unit to a Windows folder;

The various email addresses hard-coded in the $BALOCK utility have been updated to current Kerridge CS email account names;

The various email addresses hard-coded in the $DGEMAIL utility have been updated to current Kerridge CS email account names;

The various email addresses hard-coded in the $INSLOG utility have been updated to current Kerridge CS email account names;

The various email addresses hard-coded in the $32LICE utility have been updated to current Kerridge CS email account names;

The various email addresses hard-coded in the $GSPMAKE utility have been updated to current Kerridge CS email account names;

The various email addresses hard-coded in the EMAILGLF utility have been updated to current Kerridge CS email account names;

The 32$BADG utility has been enhanced to allow the special unit address of "$$$" for a meta-dictionary data-file. When the unit address of the meta-dictionary data-file (e.g. DBmeta 1) is set to "$$$", the unit address of meta-dictionary index file (e.g. DBmeta) is used for the data-file. This option allows database index-file/data-file combinations to be copied between units without changing any logical unit assignments or patching hard-coded direct unit addresses;

The $32BASA utility has been enhanced to recognize the special unit address of "$$$" for a meta-dictionary data-file. When the unit address of the meta-dictionary data-file (e.g. DBmeta 1) is set to "$$$", the unit address of meta-dictionary index file (e.g. DBmeta) is used for the data-file. This option allows database index-file/data-file combinations to be copied between units without changing any logical unit assignments or patching hard-coded direct unit addresses;

A new 50-line deep Terminal Attribute Program (TAP), $.777, is available for use with specialized versions of the Global Client (GLOBAL.EXE);

The legacy code in the Menu Handler, BO$MEN, that (confusingly) allows the F4 function "Clear" function to invoke $MENUCUS for operators with an authorization level of Z, has been removed;

The 32-bit Loader has been extended to retry the "DLM LIBRARY IN USE" error condition with a default retry time-out of 10 seconds. This change prevents the fatal error from the 32-bit Program Loader when another user is updating a DLM library;

The Speedbase Window Manager has been extended to support three extra Interrupt Buttons: U-8, U-9 and U-0.

4. Global Development System Enhancements (Sub-routines)

A problem in the SMEM Memory Database Manager (BA$MEX) that causes a series of FETCH NEXT operations followed by a DELETE operation to fail under some circumstances;

The BA$EXE now supports a new Intercept Routine Pointer, $INTER. The optional Intercept Routine is call before each new frame is entered. The Intercept Routine Pointer, $INTER, and the related Frame Name, $INAME, should normally be initialized in a LOAD DIVISION;

A new sub-routine, NORML$, is available to normalize the name of a Window Manager-3 filename, or library-name. This routine is intended for internal-use only;

A new sub-routine, EMAIX$, is available to send an email with an unlimited number of recipients, CC'ed addresses, BCC'ed addresses and attachments. This routine can be used to overcome the (generous) limitations in the traditional EMAIL$ sub-routine;

A new System Variable, $DCSEL, is now available that can be used to selectively map the double-click event to the "Select" function. This System Variable should be used only under very specific circumstances;

The B$OPN sub-routine has been enhanced to recognize the special unit address of "$$$" for a meta-dictionary data-file. When the unit address of the meta-dictionary data-file (e.g. DBmeta 1) is set to "$$$", the unit address of meta-dictionary index file (e.g. DBmeta) is used for the data-file. This option allows database index-file/data-file combinations to be copied between units without changing any logical unit assignments or patching hard-coded direct unit addresses;

A new sub-routine, B$XPC2, is now available to allow the paper orientation to be changed partway through an Extended PF PDF print operation;

The BTICN$ routine has been extended to allow an Interrupt Button to be transformed to an Iconic Button;

The USERX$ sub-routine has been modified to include improved exception handling to handle strictly invalid $$USER files in a controlled fashion;

A new sub-routine, B$DXCP, is now available to build a Copy Library from a DBX Data Dictionary;

A new sub-routine, B$GDCT, is now available to build a Pervasive SQL or Microsoft SQL format DBX Speedbase dictionary from an appropriate meta-dictionary;

A new sub-routine, IMAG2$, is now available to display .a JPG file. IMAG2$ uses the SHCMD$ routine to invoke the Windows assist program gsmjpg32.exe (compare IMAG2$ with the existing IMAGE$ sub-routine which uses SHCMD$ to invoke gsmbmp32.exe to display a .BMP file);

A new sub-routine, JULIA$, is now available to convert an internal-date to a Julian Date (see julia$.doc for further details);

A new System Variable, $$TIMS, is now available to change the delimiter character in external date strings;

The GETWF$ sub-routine has been modified to use the standard SVC-27 function to map a GSM physical-unit to a Windows folder.

5. Global Development System Enhancements (Utilities)

The $DXM utility has been enhanced to increase the length of the character string tested for uniqueness in external names from 14 to 20;

The $DXM utility has been enhanced to remove the validation that checks each GVA is within the first 127 bytes of the record;

The $DXM utility has been enhanced to allow it to be executed from a calling program;

The $SDECUS utility has been extended to support a new option "Always use 32-bit editor";

The $SDE editor has been extended to support the "Always use 32-bit editor" option enabled using the $SDECUS utility. If this option is enabled the 16-bit $SDE will automatically execute the 32-bit $SDE32;

The 32-bit Speedbase Editor, $SDE32, has been extended to recognize the $BUILD dialogue option enabled using the $SDECUS utility;

The 32-bit Speedbase Editor, $SDE32, has been extended to support the PDA and PDF field attributes;

The 32-bit Speedbase Editor, $SDE32, has been extended to support the "SCROLL REVERSE" window option;

The 32-bit compiler, $COMPILE, has been extended to support three extra Interrupt Buttons: U-8, U-9 and U-0.

NEW FEATURES IN GSM SERVICE PACK 33

1. Introduction and Overview

Global System Manager V8.1 Service Pack-33 (GSM SP-33) includes several new features and many significant enhancements to GSM SP-32 (and GSM SP-31 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-33 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-32 before applying GSM SP-33**.

The GSMSP33 installation job checks that no members of libraries P.$CMLB0, P.$CMLB1, P.$CMLB2 and P.$CMLB3 are held as stand-alone files on SYSRES. If a $-command is found both inside a command library and as a stand-alone file on SYSRES the "stale" version is deleted. For example:

```
    Analysing SYSRES for members outside libraries...
    Library member $STARX   should not be on SYSRES, key <CR> to delete
```

2. Changes to GSM Installation, Customisation and Start-Up

Before the release of GX V4.6a, GX could only decompress files compressed by the obsolete Microsoft COMPRESS.EXE utility. However, GX V4.6a, and later, can decompress files compressed by either COMPRESS.EXE (not very useful, see below) or PKZIP.EXE. All versions of GX up to, and including, V4.6a were compressed by COMPRESS.EXE. All versions of GX from V4.6b, and later, will be compressed by PKZIP.EXE. Thus to upgrade from V4.5z (and earlier) to V4.6b (and later) the upgrade must go through V4.6a as an intermediate version. All versions of GXIO up to, and including, V4.2a were compressed by COMPRESS.EXE. All versions of GXIO from V4.2b, and later, will be compressed by PKZIP.EXE. Thus to upgrade to GXIO V4.2b (and earlier) the upgrade must go through GX V4.6a as an intermediate version. The $STARX start-up overlay has been enhanced to warn if an illegal GX or GXIO upgrade is being attempted. This feature is only available if the version of GLOBAL.EXE, or the Global Client Service, is V5.1d, or later;

GSM start-up has been enhanced to allow a 14-day grace period when a Reseller Expiry Date Password expires;

The 32-bit Loader has been modified to correctly return the library name of the frame, program or DLM just loaded. This change allows the new $OBUG debugger (see below) to operate with Windows Open files;

A new System Variable, $$REXD, is now available. It holds the optional Reseller Expiry Date.

3. Changes to GSM Run Time

$BBS has been enhanced to export GSM files that are Open Shared;

A new program, $CLR, is now available to execute the $STATUS "CLR" function;

The $LNAT32 utility has been extended to offer a Desktop option to allow a Windows file on the PC running GX to be inspected. $LNAT32 has also been enhanced to dump Windows Open object files;

$SEARCH has been modified to change the default response for the "$68 PRINT REPORTS FOR FILES WHERE NO MATCHES FOUND?" from "Y" to "N";

The $QADFTP utility has been extended to include a "Yes to All" button when copying/over-writing files;

The SYSREQ-K System Request has been enhanced to support the "!" command to display keystroke macros in hexadecimal format thus allowing non-displayable characters to be examined.

4. Global Development System Enhancements (Sub-routines)

A new sub-routine, LCASE$, is available to convert just characters in the range "A" – "Z" to the lower-case equivalents. Note that other lower-case conversion sub-routines assume an ISO-8859 8-bit character-set;

A new sub-routine, UCASE$, is available to convert just characters in the range "a" – "z" to the upper-case equivalents. Note that other upper-case conversion sub-routines assume an ISO-8859 8-bit character-set;

The GXCOP$ sub-routine has been extended to include a "Yes to All" button when copying/over-writing files;

A new 32-bit sub-routine, ISMEM$, is available to test if a code-page is currently in memory;

The field in the BA$XPF DLM that controls the unique numbers allocated to each PF was always reset to 0 by the B$XPO function. This logic could lead to two different PFs being allocated the same id-number if a single frame prints a series of PFs followed by a subsequent print operation involved some of already printed PFs interspersed with new PFs. The BA$XPF DLM has been modified NOT to clear the unique number seed in the B$XPO function. This solution puts a limit of 255 on the number of unique PFs printed during a single session, where a session is defined as the lifetime of the BA$XPF resident in memory;

The various Date Conversion routines issue a STOP CODE if the optional Reseller Expiry Date Password has expired (allowing for a 14-day grace period);

The Menu Handler issues a STOP CODE if the optional Reseller Expiry Date Password has expired (allowing for a 14-day grace period);

A new sub-routine, BADIA$, is now available to send the "Read Registry" function, used by $BADIAG, to the Speedbase Gateway;

The DENAT$ sub-routine has been extended to delate a Windows Open file. This routine has also been extended to support a "long" (> 99 characters) Windows file-name;

A new sub-routine, RADIO$, is available to amend a set of Radio Buttons. The sub-routine requires GX V4.6f, or later;

A new sub-routine, GXFVC$, is available to override the default numeric format for the next field accepted by GX. This sub-routine requires GX V4.6e, or later;

A new, highly-specialised sub-routine, MAPWF$, is available to map a GSM physical or logical unit-assignment to a Windows Open File folder. Note that the existing GETWF$ sub-routine only maps physical units;

The NELIS$ and NLIST$ sub-routines have been changed to fix a problem which can sometimes return a spurious exception if the USA date-format is enabled (i.e. when $$USA=1);

The NELIS$ and NLIST$ sub-routines have been supplemented by NELI2$ and NLIS2$, respectively. These 2 new sub-routines return the full gamut of Windows file and directory types;

A new family of 32-bit sub-routines, NXOPN$, NXLIS$ and NXCLS$ are available to scan a Windows Open object folder for *.dlm files.

5. Global Development System Enhancements (Utilities)

The 32-bit compiler, $COMPILE, has been enhanced to support Windows Open Files. A number of new compiler options are available to control the output file format:

OOBJ	Create Windows Open object file (as *.exes)
LOAD	Create *.dlm object file instead of *.exes
ODEP	Use Windows Open object file for the dependent frame
ODLM	Use Windows Open object files for application DLMs
OSYS	Use Windows Open object files for System DLMs (in P.$SDLM0)
OPEN	Combination of OOBJ, ODEP, ODLM, OSYS

A problem in the 32-bit compiler, $COMPILE, has been fixed. The problem results in spurious error message when attempting to load overlay $COMPB if the $CUS "Close loading library" option is enabled;

A problem in the 32-bit compiler, $COMPILE, that results in every ENTER WINDOW statement being incorrectly associated with an index, has been fixed;

A new 32-bit debugger, $OBUG, is available to debug Windows Open files;

A problem in the 32-bit editor overlay $SDEW32 that can sometimes result in a spurious ERROR N, has been fixed;

The $SDE32 Editor, $SDE32, has been extended to support the additional Interrupt Buttons U-0 to U-6; and U-8 to U-9, in addition to the original U-7 Interrupt Button;

The 32-bit Editor, $SDE32, has been extended to support the "TABCONTENT" key-word;

$BUILD has been enhanced to support the $COM3 compiler;

A minor problem in the $DXMB overlay of $DXM has been fixed. The problem causes the display of the wrong error message "Primary index cannot be deleted here" the field does not exist when directly keying in the segments of an index;

$DC32 has been enhanced to dump (creating a formatted dump file) Windows Open object files;

A problem in $DC32 that results in an overflow when decoding the fields generated as part of a PF structure, has been fixed;

A problem in $GSPMAIN that resulted in spurious error messages if the $$INSLOG file could not be opened, has been fixed. In addition, the text of some error messages has been corrected;

$GSPMAKE has been enhanced to remove the symbolic debug information from a program file, instead of merely displaying a warning message if symbolic debug information is present in a file being included in an Application Service Pack;

$SOURCE has been enhanced to convert Windows Open object files.

NEW FEATURES IN GSM SERVICE PACK 34

1. Introduction and Overview

Global System Manager V8.1 Service Pack-34 (GSM SP-34) includes several new features and many significant enhancements to GSM SP-33 (and GSM SP-32 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-34 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-33 before applying GSM SP-34**.

The GSMSP34 installation job checks that no members of libraries P.$CMLB0, P.$CMLB1, P.$CMLB2 and P.$CMLB3 are held as stand-alone files on SYSRES. If a $-command is found both inside a command library and as a stand-alone file on SYSRES the "stale" version is deleted. For example:

```
        Analysing SYSRES for members outside libraries...
        Library member $STARX   should not be on SYSRES, key <CR> to delete
```

2. Changes to GSM Installation, Customisation and Start-Up

A problem in the GSM start-up overlay, $STARZ, that results in an OVERFLOW if an un-expected exception is returned by the GX File Synchronisation function, has been fixed.

3. Changes to GSM Run Time

A number of minor problems in $GSP have been fixed. $GSP now works correctly with a service pack containing 250 members. The option to display a list of the files in the service pack now

works correctly if the service pack contains more than 170 members (previous versions of $GSP display an empty window if the service pack contains more than 170 members). Finally, a problem with the logic that determines if the various stand-alone files within the service pack will fit on the target Program unit (previous versions of $GSP considered all members of the service pack, including those that are within program libraries);

A problem with $BAPATH if a Schema file is in-use has been fixed. Prior to this change all valid Schema files after the in-use file in the directory were ignored;

$INSLOG now displays the list of applied service packs in reverse order of service-pack number;

$PASSWD has been extended to handle very large $$PASS password files;

A problem in the $AUTH03 overlay of $AUTH32 that causes a Resolver Error, has been fixed;

A problem with the REPASS utility has been fixed. The new version now re-serializes the various $PASSWD password-files correctly;

The $PAGES utility now displays the number of 32-bit pages in use as determined by an empirical method. This empirical result should always agree with the current page count as returned from a counter variable in the SVC-79 function;

A new utility $ZIP is available to de-activate (and re-activate) a Windows .ZIP file. Depending on the contents, some ZIP files are removed by various email filters; the de-activated version of the ZIP file should be undetected by email filters thus allowing the file to be sent as an email attachment.

It can use wild cards so the name can be:
C:\folder\file.zip
C:\folder
C:\folder\
C:\folder*.zip
C:\folder\file.*
C:\folder*.*

It also handles .RAR files.

A new utility, $GXDTF, is now available to delete all the Extended PDF backdrop files in this folder on the PC running GX: ".\PFPRINT\IMAGES\global3000\";

The $EXTN overlay has been extended to include support for the RCHTX$ sub-routine (see below).

4. Global Development System Enhancements (Sub-routines)

A new sub-routine, RCHTX$, is available to allow a block of text to be displayed and optionally amended within a Windows Rich Text Edit Control. RCHTX$ can be considered the Rich-Text equivalent of the "plain-text" EDTTX$ sub-routine;
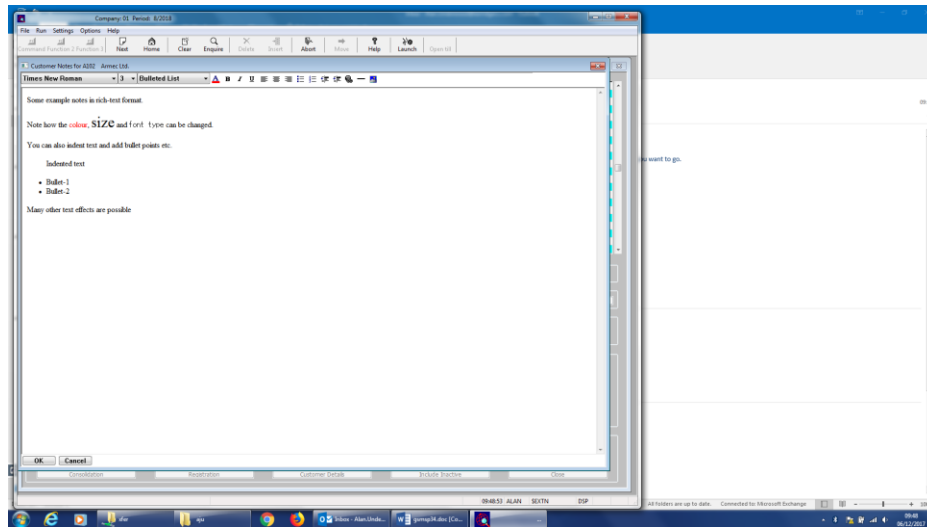
A problem with the BELL verb (in DLM MO$01) that results in a STOP 8622 if the User Number is higher than 127, has been fixed;

The GXSBT$ routine has been enhanced to allow an ampersand character (&) to indicate the Accelerator character in the text-string for a GX button. In this mode, GX does **not** perform any case-conversion on the Button text-string;

The GXSBC$ routine has been enhanced to allow an ampersand character (&) to indicate the Accelerator character in the text-string for a GX button. In this mode, GX does **not** perform any case-conversion on the Button text-string;

Three new sub-routines, GXFIF$, GXFIN$ and GXFIC$ are now available to support the Find First, Find Next and Find Close functions directly on the PC running GX.

A problem in the Speedbase Memory Access Method (SMEM) has been fixed. The problem was that the key-block was not rebuilt after a Delete operation. This is not normally a problem as most DELETE operations normally follow immediately after a GET or FETCH operation (the GET or FETCH will build the index blocks). However, this sequence of operations: GET rec1 LOCK, GET rec2 LOCK, GET rec 3 LOCK, DELETE rec1, DELETE rec2, DELETE rec3 will result in a STOP code because the required Master cannot be found;

A problem with the FILBR$ routine that can result in a NO-BASE error has been fixed. The problem only occurs if the FILBR$ is called more than once from a single Program or Frame;

The BA$EXE DLM has been enhanced to display a Message Box if the Intercept Routine pointed at by the IMP-SD variable, returns an exception;

A new sub-routine, B$SYNC, is now available to clear the internal type-ahead buffer held within the GX client;

A new sub-routine, B$PLPB, is now available to clear the count of unique PFs downloaded to GX;

A new System variable, $$SCTA, is now available. When set, this variable is tested by the CLRTA$ to skip the Clear Type-Ahead function. Note that CLRTA$ always clears $$SCTA;

Two new sub-routines, MAKWF$ and BLDWF$, are now available. These routines are reserved for internal-use only;

A new sub-routine, SYMBO$, is now available. SYMBO$ can be considered an extension to ADDOF$ as it returns the format of the symbol in addition to the address information.

5. Global Development System Enhancements (Utilities)

A problem with the $COMPILE 32-bit compiler that results in a NO-BASE error if the second, or a subsequent, copy-library is IN-USE, has been fixed;

$GSPMAKE now displays a running count of the number of members currently in the Service Pack being created or maintained. In addition, a problem in $GSPMAKE when the Service Pack contains 250 members has been fixed.

NEW FEATURES IN GSM SERVICE PACK 35

1. Introduction and Overview

Global System Manager V8.1 Service Pack-35 (GSM SP-35) includes several new features and many significant enhancements to GSM SP-34 (and GSM SP-33 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note: GSM SP-35 can be applied directly to **any** version of GSM V8.1. **There is no need to upgrade V8.1l to GSM SP-34 before applying GSM SP-35**.

The GSMSP35 installation job checks that no members of libraries P.$CMLB0, P.$CMLB1, P.$CMLB2 and P.$CMLB3 are held as stand-alone files on SYSRES. If a $-command is found both inside a command library and as a stand-alone file on SYSRES the "stale" version is deleted. For example:

```
Analysing SYSRES for members outside libraries...
Library member $STARX   should not be on SYSRES, key <CR> to delete
```

2. Summary of Changes

GSM SP-35 is a minor release. The raison d'être for the service pack is to provide a number of System Routines that will be required by the G-3000 V6.0 General Ledger enhancement to allow VAT submissions to be filed electronically.

The CRYPT$ sub-routine has been enhanced to support the MD-1 hashing algorithm. See document crypt$.docx for further details;

A new sub-routine, BAS64$, is now available to convert a data block to a Base64 encoded text string. See document bas64$.docx for further details;

A new sub-routine, DEC64$, is now available to decode a Base64 encoded text string. See document dec64$.docx for further details;

A new sub-routine, GXFOL$, is now available to return the current Windows folder of the running GX thin-client. See document gxfol$.docx for further details;

A new sub-routine, CPROC$, is now available to create a new Windows process to run an executable or batch file. This is essentially a simpler equivalent of the existing SHCMD$ sub-routine. See document cproc$.docx for further details.

A cosmetic problem with a $INSLOG window has been fixed.

The $ZIP utility has been enhanced to allow a wild-card filename;

A problem in the CRYPT$ MD-5 Hashing function has been fixed;

A cosmetic problem in $GSP, when the operator keys <ESC> to an information window, has been fixed;

The maximum length of the IP address parameter passed to the UHSTA$ routine has been increased from 16 to 40 characters to allow a variable-length Port number to be appended to the fixed-length dotted-decimal IP address;

The HTTPS$ routine saves the error reported by GX in the HSCODE field when an exception is returned;

The LTAM Access Method, OR$83L, has been extended to optional treat #0D (Carriage Return) as the End-of-Line character, rather than the default #0A (Line Feed). This option must be used when importing CSV files that may contain a Line-Feed character (within double-quotes) in the body of a text line;

A new sub-routine, GXMPW$, is now available to invoke the Windows Media Player within a Speedbase window. This routine is reserved for use by Global-3000 only;

A new sub-routine, EXTRA$, is now available for additional new functions. This routine is reserved for use by Global-3000 only;

The following sub-routines have been withdrawn: ALERT$, DDWIN$, DDAGD$, DDABD$, DDPSG$, DDTXT$, DDACC$, DDDEB$.

NEW FEATURES IN GSM SERVICE PACK 36

1. Introduction and Overview

Global System Manager V8.1 Service Pack-36 (GSM SP-36) includes several new features and many significant enhancements to GSM SP-35 (and GSM SP-34 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

Important Note 1: GSM SP-36 can only be applied to GSM SP-10, or later. It cannot be used to upgrade from GSM SP-9, or earlier.

The GSMSP36 installation job checks that no members of libraries P.$CMLB0, P.$CMLB1, P.$CMLB2 and P.$CMLB3 are held as stand-alone files on SYSRES. If a $-command is found both inside a command library and as a stand-alone file on SYSRES the "stale" version is deleted. For example:

```
Analysing SYSRES for members outside libraries...
Library member $STARX   should not be on SYSRES, key <CR> to delete
```

2. Summary of Changes

- The EXTRA$ sub-routine has been extended to support a number of new functions:

EXFUNC	EXMODE	Description	Equivalent sub-routine (see below)
1	0	Illegal	
1	1	Get time zone	GXGTZ$
1	2	Get MAC addresses	GXMAC$
1	3	Get IP address	GXGIP$
1	4	Get screen size	GXGSS$
1	5	Get GX main window size	GXGWS$
1	6	Get Windows OS version	GXGOS$
1	7	Get computer name	GXGKN$
1	8	Get device manufacturer	GXGD1$
1	9	Get device model	GXGD2$
2	0	Apply Percent Encoding	GXPCE$

- All the functions available via the EXTRA$ sub-routine are available as direct calls:

CALL GXGTZ$	Get time zone
CALL GXMAC$	Get MAC addresses
CALL GXGIP$	Get IP address
CALL GXGSS$	Get screen size
CALL GXGWS$	Get GX main window size
CALL GXGOS$	Get Windows OS version
CALL GXGKN$	Get computer name
CALL GXGD1$	Get device manufacturer
CALL GXGD2$	Get device model
CALL GXPCE$	Apply Percent Encoding

- The FREEX$ sub-routine has been extended to support a larger 32-bit page-size. The FM control block has been extended as follows:

```
01    FM
```

```
02  FMFUN       PIC 9 COMP       * Function required
                                 * 0 = Get work space (fixed name)
                                 * 1 = Free work space (fixed name)
                                 * 2 = Get Work space (variable name)
                                 * 3 = Free Work space (variable name)
02  FMSIZE      PIC 9(6) COMP    * Size of work space required, or 0
02  FMPTR       PIC 9(9) COMP    * Pointer to the 1st byte allocated
02  FMNAME      PIC X(8)         * Page name (only if FMFUN = 2 or 3)
02  FMESIZ      PIC 9(9) COMP    * Extended size, if FMSIZE zero
```

- The HTTPH$ sub-routine has been extended to support longer name and value parameters supplementing the original PIC X(100) fields by pointers to variable-length, zero-terminated strings;

- A new sub-routine, BAS32$, is now available to convert a binary-string to a Base32 text-string. See bas32$.pdf for further details;

- A new sub-routine, PAS32$, to validate an operator-id/password combination in the $$AUTHEX file. See pas32$.pdf for further details;

- $AUTHP has been enhanced to display a message if no updates have been made to the AUTHP database and provides the option to increment the internal Version Number;

- The Open Windows File Access Method (OR$98) has been extended to support the OPEN SHARED file processing statement;

- $PAGES has been enhanced to increase the size of Accumulated Memory value from 9 to 12 characters;

- $AUTH has been enhanced to provide an option to restrict the Operator-id to a strictly alpha-numeric string;

- A new sub-routine, GXSHT$, is now available to set the associated hover text for a Text-Button;

- The GXPCE$ sub-routine has been modified to rationalise the STOP and EXIT codes returned by the routine. See gxpce$.pdf for further details;

- The MENU$ sub-routine has been extended to increase the maximum number of menu lines from 16 to 40;

- A grammatical error in a warning message displayed by $A32 has been corrected;

- The 32-bit compiler, $COMPILE, has been enhanced to support a maximum of 700 Load Modules. In addition, the actual number of Load Modules involved in the compilation is displayed;

- The Line Text Access Method (LTAM), OR$83L, has been extended to recognise a new flag in the FD to allow the suppression of the LF (or CRLF) character(s) that is normally appended to the end of each line. The redefinition of the FD is now:

```
FD filename ORGANISATION OR$83L
[ASSIGN TO UNIT "?" FILE "?"
RECORD LENGTH IS length
[KEY IS keyname]
[SIZE IS size]
01      FILLER REDEFINES filename
 02     FILLER       PIC X(80)
 02     LPTR         PIC PTR            * Access Method Pointer for OPEN
 02     FILLER       PIC X(24)
 02     LTNAME       PIC X(256)         * File name with terminating #00
 02     FILLER       PIC X(9)
 02     LTPERM       PIC 9(4) COMP      * Unix permissions
 02     FILLER       PIC X(4)
 02     LTLENG       PIC 9(4) COMP      * Record length
 02     LTOVER       PIC 9 COMP         * Override flag
                                        * 0 No override
                                        * 1 terminate lines with <LF>
                                        * (Unix file convention)
                                        * 2 terminate lines with <CR><LF>
                                        * (Windows file convention)
 02     LTTERM       PIC 9 COMP         * 0 = Treat #0A as EOL character
                                        * 1 = Treat #0D as EOL character
 02     LTNOLT       PIC 9 COMP         * 0 = Add line terminator as LTOVER
                                        * 1 = Suppress line terminator char(s)
```

- The Speedbase Database Manager has been enhanced to invoke the optional user-supplied R-INIT routine for the following variation of the ENTER WINDOW statement:

```
ENTER WINDOW window-id [INDEX | ENQUIRE rtinx] [(line:col)]
```

- Similarly, the Speedbase Database Manager has been enhanced to invoke the optional user-supplied R-INIT routine for the ENTERX WINDOW statement.

- A problem with USERX$ that can result in a STOP 1002 under some conditions, has been fixed;

• A new 32-bit utility, $MESSAGE, is now available to provide a windows version of the original $M utility. You need to have StatusLineMessageBox%=On (eg StatusLineMessageBox1=On) in the [hosts] section of GXHOSTS.INI. See Technical Note IN360:

3.35   StatusLineMessageBox%
If this option is enabled all status line messages are displayed in a Windows message box.

The default setting is Off.

- The $AUTH32 utility has been amended to display an explicit error message when the GA-record set is full.

NEW FEATURES IN GSM SERVICE PACK 37

1. Introduction and Overview

Global System Manager V8.1 Service Pack-37 (GSM SP-37) includes a minor release to GSM SP-36.

Important Note 1: GSM SP-37 can only be applied to GSM SP-10, or later. It cannot be used to upgrade from GSM SP-9, or earlier.

Important Note 2: If you are already running GSM SP-36 & do not wish to run GSMSP37 to get the new feature, you can simply $BBS file P__SDLM0.GSM from the GSMSP37 archive and copy to SYSRES. No restart of Global required.

The GSMSP37 installation job checks that no members of libraries P.$CMLB0, P.$CMLB1, P.$CMLB2 and P.$CMLB3 are held as stand-alone files on SYSRES. If a $-command is found both inside a command library and as a stand-alone file on SYSRES the "stale" version is deleted. For example:

```
Analysing SYSRES for members outside libraries...
Library member $STARX should not be on SYSRES, key <CR> to delete
```

2. Summary of Changes

GSM SP-37 is a minor release in order to provide the System Routines required by Global-3000 Service Pack ZM60_000565.

- The EXTRA$ sub-routine has been extended to support the following new function:

EXFUNC	EXMODE	Description	Equivalent sub-routine
3	0	Obtain Pathname of file Received from Bluetooth	GXBTT$

- The new function available via the EXTRA$ sub-routine is available as a direct call:

CALL GXBTT$ Obtain Pathname of file Received from Bluetooth

See extra$.doc and gxbtt$.doc for further details.

NEW FEATURES IN GSM SERVICE PACK 38

1. Introduction and Overview

Global System Manager V8.1 Service Pack-38 (GSM SP-38) includes several new features and many significant enhancements to GSM SP-37 (and GSM SP-36 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

GSM SP-38 can only be applied to GSM SP-10, or later. It cannot be used to upgrade from GSM SP-9, or earlier. If you have GSM SP-9 or earlier, you will need to upgrade to GSM SP-35 first.

The GSMSP38 installation job checks that no members of libraries P.$CMLB0, P.$CMLB1, P.$CMLB2 and P.$CMLB3 are held as stand-alone files on SYSRES. If a $-command is found both inside a command library and as a stand-alone file on SYSRES the "stale" version is deleted. For example:

```
Analysing SYSRES for members outside libraries...
Library member $STARX   should not be on SYSRES, key <CR> to delete
```

2. Summary of Changes

- The $MESSAGE utility displays a warning message if an attempt is made to run it on a non-GX screen;

- $INSLOG now displays the physical unit number of the $$L unit address;

- $INSLOG has been enhanced to provide an option to produce a report of the Service Packs that have been applied to a particular Product/Version combination;

- A problem with the SHOW FIELD verb (sub-routine B$SHOW) has been fixed. Under some conditions, the attribute of the current field, rather than the attribute of the target field, is used;

- $AUTH32 now displays a warning message if the confirmation password string differs from the initial password string;

- $AUTH32 has been enhanced to only update the "Default Access" flag when a new Authorisation Point is added to the Authorisation Point. The "Default Access" flag is not changed when an Authorisation point is being updated;

- Both $BN32 and $BS32 now display an explicit error message, suggesting the use of $DBX, if the selected Data Dictionary is a DBX Data Dictionary (file-type D2) rather than a traditional Data Dictionary (file-type DD);

- A new 32-bit sub-routine, DLMX$, is now available to maintain a DLM Index File. See dlmx$.doc for further details;

- The 32-bit B$GTIO sub-routine has been enhanced significantly to return the following additional fields:

```
R1DULN      PIC 9(4) COMP      * USER RECORD LENGTH (EXCLUDES GVAS)
R1PKEY      PIC 9(2) COMP      * LENGTH OF PRIMARY KEY, OR 0 IF NONE
R1XSEQ      PIC 9(2) COMP      * INDEX NUMBER OF $SEQ KEY (OR 0 IF NONE)
R1SQLEN     PIC 9(2) COMP      * KEY LENGTH OF THE $SEQ KEY (0 IF NONE)
```

See b$gtio.doc for further details.

- A bug in $DBUG (overlay $DBUG1) that results in a numeric overflow when attempting to debug a user with a User Number higher than 127 has been fixed;

- A new 32-bit sub-routine, GXEWC$, is now available to enable/disable web-contents for the next field displayed by GX. See gxewc$.doc for further details;

- A new 32-bit routine, EX-RS$, is now available to export an RSAM file to Windows. See ex-rs$.doc for further details;

- A new 32-bit routine, IM-RS$, is now available to import an RSAM file from Windows. See in-rs$.doc for further details;

- A new sub-routine, FWILD$, is now available to find a file using a wildcard file specification. See fwild$.doc for further details;

- A bug in $SEARCH that results in an overflow when the page number of the report exceeds 999 has been fixed;

- A new 32-bit sub-routine, WSCR$, is now available to scratch a Windows directory. See wscr$.doc for further details;

- $32S has been enhanced to display the versions of both GX.EXE and GXIO.EXE. In addition, $32S has been enhanced to display the Windows computer name;

- A bug in $BBS that prevented a SPACE character in the name of a file or folder has been fixed;

- Some cosmetic improvements have been made to the default progress message dialogue box displayed by the GXCOP$ sub-routine;

- $BBS now includes a new "F" option to list a Windows folder, displaying the full Windows filenames as well as the 8.3 filenames displayed by the existing "L" option;

- The "ExpiryDateMessageWarningDays" registry setting is now available to change the Expiry Date Message warning period from the default of 30 days to the value, in days, specified by this new registry setting;

- The obsolete $CUS ($MAINT) option to "Apply a price level change" has been removed. To preserve the line numbers of the following menu lines the text now appears as "Reserved for future use";

- The $STARX start-up overlay now sends the text of the Contract Protection to the GX client;

- A problem with the "IC" (case-insensitive search) option of $SRCH32 has been fixed;

- A new 32-bit sub-routine, ST1St$, is now available to scan for the first significant character in a text-string. Unlike the SEARCH verb ST1ST$ is passed a length and does not require a special terminator character immediately after the end of the string being searched. See st1st$.doc for further details;

- Three new 32-bit sub-routines are now available to perform simple division operations:

  DIVY$ USING A B C D   Divide A into B giving C with remainder D
  DIV$ USING A B C   Divide A into B giving C
  REM$ USING A B D   Divide A into B returning remainder D

- A new 32-bit sub-routine, EASTR$, is now available to return the date of Easter Sunday for any year between 1700 and 2299. See eastr$.doc for further details;

- A new 32-bit sub-routine, WTIME$, is now available to return the current Windows time. See wtime$.doc for further details;

- The EXTRA$ sub-routine has been extended to support the following new function:

EXFUNC	EXMODE	Description	Equivalent sub-routine
4	0	Display GX font selection dialogue	GXFON$

- The new function available via the EXTRA$ sub-routine is available as a direct call:

  CALL GXFON$ Display GX font selection dialogue

  See extra$.doc and gxfon$.doc for further details.

- The GXVER$ sub-routine has been changed to replace a binary-zero in the last character position of the PIC X(6) version number string with a SPACE;

- The Operator-id validation routine in GSM start-up has been extended to recognise 2 special values in the "Language Code" field, as customised using $CUS:

  AAZ   Only permit Operator-ids consisting of either upper-case or lower-case letters;
  AZ0   Only permit Operator-ids consisting of upper-case letters, lower-case letters or numbers

- A new 32-bit sub-routine, VEXTN$, is now available to validate the Windows file extension of a file-name against a table of valid extensions. See vextn$.doc for further details;

- The Extended PDF Printer interface now validates the Windows extension of the Backdrop File(s) to be one of .jpg, .jpeg or .bmp;

- The Line Text Access Method (OR$83L) now supports the OPEN SHARED operation;

- A problem in $32STAT that results in a STOP 25593 when scrolling down the list of available printers has been fixed;

- Full details (i.e. User Number, Operator-id and the Partition Number) of each user associated with an IN-USE printer are now correctly displayed by $32STAT.

NEW FEATURES IN GSM SERVICE PACK 39

1. Introduction and Overview

Global System Manager V8.1 Service Pack-39 (GSM SP-39) includes several new features and many significant enhancements to GSM SP-38 (and GSM SP-37 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

GSM SP-39 can only be applied to GSM SP-35, or later.

The GSMSP39 installation job checks that no members of libraries P.$CMLB0, P.$CMLB1, P.$CMLB2 and P.$CMLB3 are held as stand-alone files on SYSRES. If a $-command is found both inside a command library and as a stand-alone file on SYSRES the "stale" version is deleted. For example:

```
Analysing SYSRES for members outside libraries...
Library member $STARX   should not be on SYSRES, key <CR> to delete
```

IMPORTANT NOTE: The first release of GSM SP-39 introduced a problem that affects GSM start-up on systems where an Authorisation Program is not configured in $CUS. The problem causes random TRAPs to occur in the $DLMEXEC overlay. The debug information will be suppressed if the login is attempted using GX so the user will typically just report a failed connection; and subsequent attempts to reconnect with GX will fail unpredictably.

The program overlay involved is $STARD in P.$CMLB0. The first release of GSM SP-39, with the potential problem, includes a $STARD component with a date 07/03/2022 and a size of 19776 bytes. The second release of GSM SP-39, with the problem fixed, includes a $STARD component with a date of 28/04/2022 and a size of 18902 bytes

2. Summary of Changes

A problem in the 32-bit version of $STATUS, $32STAT, which results in a STOP 25593 if an attempt is made to go past the end of the available printers list, has been fixed;

The 32-bit version of $STATUS, $32STAT, has been enhanced to include the User Number, Operator-id and Partition Number in the "Printer In Use" status message;

A new 32-bit sub-routine, VCHAR$, is now available to validate the characters in a Windows filename string. See vchar$.doc for more details;

$INSPECT now supports a Time-Out command. The file being inspected will be closed when the time-out period expires thus allowing it to be accessed by other users. The default time-out period is 60 seconds but can be amended using the new "T" command. A value of 0 disables the time-out. For $32INSP the time-out handling is implemented in GX and controlled by the $INSPECTInactivityTimeout setting in the [general] section of the GX.INI file;

The REGAS$, REGRV$ REGWS$ sub-routines have been changed to return an EXIT 20211 instead of a STOP 20204 when running on a GSM (Unix) configuration. Note that the related REGRS$ sub-routine has not been modified in this way;

The 32-bit WM-3 Program Loader (in $MON62) has been changed to prevent a STOP CODE when attempting to run 32-bit programs on a GSM (Unix) configuration;

A new 32-bit sub-routine, STREP$, is now available to replace a sub-string by another sub-string in a text-string. See strep$.doc for more details;

The messages displayed by GSM start-up process have been modified to change all references to "TIS Software" etc. to "Kerridge Commercial Systems Ltd";

The GSM start-up overlay $STARD has been enhanced to include a 10 second timeout to the Accept operations for both the Operator-id and Terminal Type. This change has been implemented to prevent spurious, half-completed logins hogging spare user-slots thus preventing genuine operators from signing-on to GSM;

A problem in $GSP that results in an OVERFLOW when a $LIB library is too full to accept a new library member has been fixed;

$BAST32 now displays the text "DBX" if the database is a DBX database;

A new sub-routine, B$DICT, is now available to return a list of record-ids in a Speedbase Data Dictionary. See b$dict.doc for full details;

The $DXDCT utility has been enhanced to provide an option to generate an explicit "PIC DATE", instead of "PIC 9(6) COMP" for date fields. In addition, $DXDCT also includes an option to generate a Reporter-style copy-library;

All references to "Novell" have been expunged from $DXU and $BAST32;

The FINFO$ routine has been enhanced to return the ULREC, ULSTA and ULLBN fields;

$SEARCH now supports a new option to search for text string(s) in files with **either** an F. or S. prefix. Without this option two separate searches were required. This Development System program is not included in GSMSP39.ZIP but is available upon request;

A new utility, $COMPARE, is now available to compare all program files on two different units. $COMPARE creates a report file rather than displaying the results (cf. $F/CFI and $LIB/COM functions). This program is not included in GSMSP39.ZIP but is available upon request;

A simple program, $WINDEL, is available to delete a named Windows file. $WINDEL can be used under Job Management This program is not included in GSMSP39.ZIP but is available upon request;

$DXM displays the actual number of records that have been defined after the "More than 90 indexes defined in the database" error message. $DXM also displays the length of the Key Extract Area after the "Key Extract Area exceeds 256 bytes" error message. This Development System program is not included in GSMSP39.ZIP but is available upon request;

A new Terminal Type, $.778, is now available for 78-deep windows. This program is not included in GSMSP39.ZIP but is available upon request;

A new Terminal Type, $.779, is now available for 79-deep windows. This program is not included in GSMSP39.ZIP but is available upon request;

A new Terminal Type, $.780, is now available for 80-deep windows. This program is not included in GSMSP39.ZIP but is available upon request;

NEW FEATURES IN GSM SERVICE PACK 40

1. Introduction and Overview

Global System Manager V8.1 Service Pack-40 (GSM SP-40) includes several new features and enhancements to GSM SP-39 (and GSM SP-38 to GSM SP-1; and Global System Manager V8.1 revision V8.1l).

GSM SP-40 can only be applied to GSM SP-35, or later.

The GSMSP40 installation job checks that no members of libraries P.$CMLB0, P.$CMLB1, P.$CMLB2 and P.$CMLB3 are held as stand-alone files on SYSRES. If a $-command is found both inside a command library and as a stand-alone file on SYSRES the "stale" version is deleted. For example:

```
Analysing SYSRES for members outside libraries...
Library member $STARX   should not be on SYSRES, key <CR> to delete
```

2. Summary of Changes

Changes to GSM Run-Time and Start-Up

A problem with the $STARD GSM Start-Up overlay when an Authorisation Program is **not** configured in $CUS. The problem causes random TRAPs to occur in the $DLMEXEC overlay. The debug information will be suppressed if the login is attempted using GX so the user will typically just report a failed connection; and subsequent attempts to reconnect with GX will fail unpredictably;

A problem in the 32-bit version of $STATUS, $32STAT, which results in a STOP 25593 if an attempt is made to go past the end of the available printers list, has been fixed;

$BBS has been enhanced to improve the error handling when a problem with the Windows file is detected. In particular, the full 32-bit Windows Error Code is displayed when a file error condition occurs;

In addition, $BBS has been enhanced to provide an option to only export files with the current date;

The $SRCH32 utility has been enhanced to support a new "PG" mode which suppresses the automatic page-break inserted between reports;

A new utility $CREATE is now available to execute a Windows program on the Global Server. $CREATE is a replacement for SHCMD$ and is essentially a "wrapper" around the 32-bit CPROC$ sub-routine. See cproc$.doc for full details;

The $LIST utility has been enhanced to provide an option to display the File List in reverse order. In addition, the problem $LIST that results on an Overflow when a file record length is higher than 9999, has been fixed;

The $STATUS "RES" command has been enhanced to write a record to the Event Log File;

The $AUTH32 utility has been enhanced to delete all the linked servant records associated with an Authorisation Point. In addition, when $AUTH32 is started any "orphaned" UA (User Authority) records which do not have an SU (System) record, are deleted.

Changes to 32-bit Sub-Routines

A problem in the BA$GEX DLM that can result in an Illegal Opcode at #23FE has been fixed;

A new 32-bit subroutine, B$DIC2, is now available for DBX Speedbase Data Dictionaries. See document b$dic2.doc for full details;

The 32-bit B$STB sub-routine has been enhanced to operate on DBX Speedbase databases. See document b$stb.doc for full details;

The 32-bit B$D-RN(XT) sub-routine has been "deactivated" by always returning a STOP WITH 1. Previous versions of this routine did not function correctly and the change has been made to ensure this routine is not called inadvertently. See document b$d-rn.doc for further details;

The 32-bit B$D-WR(ITE) sub-routine has been enhanced to function correctly on DBX Speedbase databases. In addition, the record data is now prefixed by a 2-character record-id. See document b$d-wr.doc for further details;

A new 32-bit sub-routine, EXPIR$, is now available to return the Speedbase Expiry Date;

The LTAM Access Method (OR$83L) has been enhanced to ensure that Read operations never return a #0A character in the data block.

Changes to the Development System

The 32-bit compiler, $COMPILE, has been enhanced to support the new "ULT" option on the PF construct. The "ULT" option directs GX V4.9j, or later, to only underline for the actual width of the text-string (i.e. rather than underlining for the entire width of the text-block);

The 32-bit compiler, $COMPILE, has been enhanced to support the new "CTR" option on the PF construct. The "CTR" option directs GX V4.9j, or later, to centre the field;

The $DXDCT utility has been enhanced considerably to provide a number of extra options to:

- Convert all PIC DATE fields to PIC 9(6) C
- Prefix all field-names by the 2-character record-id
- Prefix the first field in a record by a line containing 01 *rec-id*
- Add a line containing the PIC X(2) record-id field before the first field in a record
- Add a line containing PIC X(4) FILLER after the last record-id field for Master records.

All combinations of the five new options are allowed;

The $GSPMAKE utility has been enhanced to remind the creator of an application service-pack that they may have to create a new Global-3000 Authorisation Point;

The $SDECUS utility has been enhanced to support a new customisation to enable the use of the GX mouse with $SDE32.