Dialogic® DSI Development Package for Windows
Release Notes

Document Reference: RN001DPK
Publication Date: July 2014

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1 Overview

This is a maintenance release which adds new capabilities for MAP and M3UA protocols and support for DoCoMo protocol variants as an extension to the existing Japan capabilities.

The release also includes corrections and changes as detailed below and is fully backwards compatible with the previous release.

This is the first full release since 6.4.2 and it is fully backwards compatible with that release.

1.1 Applicability

This release is applicable for all users.

The following User Documentation updates are applicable to this release of the Development Package:


1.2 Resolved Customer Issues

The following customer issue is resolved in this release: IPY00102391, IPY00102763, IPY00116461, IPY00115211, IPY00116450, IPY00116444 and IPY00102645.

2 New Functionality

2.1 MAP - CurrentSecurityContext data added to SendIdentification service

The MAP-SEND-IDENTIFICATION service has been updated and is now compliant with MAP specification 3GPP TS 29.002 v9.4.0. The request parameters are unchanged but the following optional parameters have been added to the response:

- KC for GSM
- CKSN for GSM
- GSM Security Context Ellipsis
- CK for UMTS
- IK for UMTS
- KSI for UMTS
- UMTS Security Context Ellipsis
For full details refer to the MAP Programmer's Manual.

The MAP-SEND-IDENTIFICATION service now correctly processes received response data if the AuthenticationSetList data is received in one TCAP message and the CurrentSecurityContext data is received in another.

2.2 **MTP3 – DoCoMo operation for Japan**

This release adds support for MTP3 Japanese DoCoMo operation and adds a new configuration option (Bit 25 of the <options> field of the MTP_CONFIG command) specifically for DoCoMo operation.

To select DoCoMo operation users should ensure that bits 10, 11, 20, 21 and 25 are all set in the <options> field of the MTP_CONFIG command.

2.3 **SCCP – Support for Japan DoCoMo operation**

This release enhances support for Japanese DoCoMo operation and adds a new configuration option specifically for DoCoMo operation. The new option is bit 4 in the <options2> parameter in the SCCP_CONFIG command when using config.txt or bit 4 in the 'ext2_options' field of the SCP_MSG_CONFIG message.

2.4 **SCCP – GTT Separator Character configuration**

This release allows the user to choose which character is used as a GTT separator character. Previously the fixed value 0x0e was used which prevented the use of character 0x0e in the Global Title itself. This release allows any value in the range 0x0a .. 0x0f to be used as the separator character for GTT configuration purposes.

Configuration of the separator character is achieved when using config.txt by setting the GTTSEP option using the CNOPS command as follows: CNOPS:MODULE=SCCP,GTTSEP=0x0a; The CNOPS command must appear prior to any SCCP_GTT_PATTERN, SCCP_GTT_ADDRESS or SCCP_GTT commands in the configuration file.

2.5 **SCCP – Global Title Load Share Table Statistics**

The message SCP_MSG_R_GLST_STATS (0x6756) has been added to allow user to obtain usage statistics for configured Global Title Load Share tables.

2.6 **M3UA – Support for 384 Associations**

When used in conjunction with SCTP/SCTPD, this release increases the maximum number of SCTP Associations from 256 to 384. Users with licenses that support 384 or more link equivalents can now use up to a maximum of 384 associations.

2.7 **MST – Monitoring Diameter Messages**

The capability of the SIGTRAN monitoring tool (MST) has been enhanced to support monitoring of SCTP based Diameter traffic. To invoke this capability the user should set bit 8 in the ‘stn_mask’ when configuring the MST Tap.
3 Other Changes

3.1 SSDH – SS7HD Congestion Recovery (IPY00116461)

This release corrects an issue where following system congestion the interface to the SS7HD board did not always recover correctly resulting in outgoing messages getting 'stuck' within SSDH.

3.2 ISUP – Reset Circuits

This release modifies ISUP behavior so that on reception of a circuit reset or group circuit reset from the network ISUP will now send a release with clearing cause value 41 (temporary failure) rather than the previous of 31 (normal unspecified).

3.3 BICC – Auto-Blocking

This release corrects operation of the BICC protocol so that ISUP correctly re-asserts blocking following receipt of a single circuit reset from the network on a locally blocked circuit by issuing a CGB message. Previously blocking was not re-asserted in this case.

3.4 SCCP – Event Report Limiting

To avoid excessive reporting of identical Maintenance Events (SCP_MSG_MAINT_IND) and Software Events (SCP_MSG_ERROR_IND) that can reduce system throughput, SCCP now issues a maximum of 10 event indications for an event type over any one minute interval. Further events during the interval are suppressed.

3.5 SCCP – Additional Diagnostics

SCCP now generates Selective Trace messages when certain Software Events or Maintenance Events occur. This contains the message that caused the software or maintenance event to occur.

SCCP tracing has been enhanced to support tracing of messages broadcast to the partner instance and error messages.

SCCP will now generate a Maintenance Event with event_code=18 (SCPEV_CO_NOT_CONFIGURED) if a Connection Request message (SCPPT_N_CONNECT_REQ) is received from the SCCP User but Connection Oriented operation has not been configured.

When configuration or management messages are rejected due to having insufficient length of data in the parameter area the status value is now set to value 11 (SCPE_BAD_MSG_LEN).

3.6 SCCP – Confirmation Messages

When confirming messages, SCCP will now issue the confirmation message after processing the original message (previously some confirmation messages were issued prior to processing).
3.7 SCCP – GTT Backup Routing
This release adds the ability on a per GTT translation for Connectionless messages that cannot be routed to be passed to the partner SCCP module using the SMB broadcast mechanism for routing. The option is enabled by setting bit 0 in the 'gtt_options' field when configuring the GTT translation. Further details are available on request. When this option is enabled SCCP will additionally send heartbeat messages to the partner SCCP in order to determine whether it is operational.

3.8 SCCP – Source specific GTT
This release allows configuration of different GTT tables for messages arriving from the Network and the User. The feature is enabled by an additional parameter in the message based GTT configuration message. Further details are available on request.

3.9 SCCP – Passing MTP label to SCCP LSS
The release adds the ability for Connectionless Messages to optionally pass the received MTP3 label to the Local Sub-System in the existing SCPFN_MTP_SIO_LABEL parameter. The feature is enabled by setting bit 5 in the 'ssr_flags' field of the SCP_MSG_CNF_SSR message.

3.10 TCAP - Event Indication Messages
The TCAP Maintenance Event Indication and Software Event Indication messages have been enhanced to include a 12 octet parameter area for additional diagnostic information as defined in the TCAP Programmer’s Manual.

3.11 TCAP – Tracing TCAP Management messages
The ability to trace management messages has been added to the TCAP module.

3.12 TCAP/MAP – Sending NC to TCAP
This release corrects a fault where Network Context (NC) is not sent to TCAP after the user sends a MAP_MSG_DLG_REQ, MAP-OPEN-REQ message with a NC parameter (MAPPN_NC). This only happened when the user doesn’t send any Service Requests (MAP_MSG_SRV_REQ), but follows the MAP-OPEN-REQ with a MAP-DELIMITER-REQ message. This release corrects the fault and will include a TCAP NC parameter in the TCAP BEGIN message if no TCAP Invokes were sent (the TCAP Invoke message is normally used to pass NC). The NC parameter is only passed to TCAP if its value is non-zero (the default NC). TCAP now correctly processes NC if received in a Dialog request.

3.13 MAP – User parameters > 255 octets (IPY00115211)
This release supports larger parameter lengths for two parameters (MAPPN_siginfo 2560 octets and MAPPN_ellipsis 500 octets) which exceed the previous 255 octet limit. In order to use parameters over 255 octets in length the MAP User must use the MAP Code Shift mechanism. Further information is available on request.
3.14 MAP – Merged Components
When Not Last (NL) components are received by the MAP module, the parameters are decoded and saved until the final Last component (L) is received. Then the saved parameters are combined with the latest parameters. For this release a maximum parameter length test is performed after merging. If the resultant parameter length exceeds the maximum allowed for the parameter, a service provider error is reported to the MAP-User and, if Not Last, a reject sent to the network.

3.15 MAP – Update Location Ellipsis (IPY00116450)
For previous releases the Update Location service did not always capture unexpected / unsupported parameter data from a received message and pass it in the MAPPN_ellipsis parameter to the MAP User. This has been corrected for and the MAPPN_ellipsis parameter now returns all unexpected / unsupported parameter data received for the top level (UpdateLocationArg) table of the operation. As a consequence of this correction, when using the MAPPN_ellipsis parameter to insert formatted ASN.1 data into the Update Location Invoke message, the data will be inserted at the end of the message that is sent to TCAP.

3.16 MAP – User Error codes (IPY00116444)
For previous releases when TCAP Reject components were received with Invoke problem codes of ‘Initiating Release’ or ‘Resource Limitation’, incorrect DSI MAP User Error codes where reported to the MAP User via the MAPPN_user_err parameter. This has been corrected so the correct errors are now reported – MAPUE_initiating_release (38) and MAPUE_resource_limitation (37).

3.17 INAP – User control of TCAP Idle Timeout
This release allows the INAP user to optionally control the TCAP Idle Timeout on a per dialogue basis.

A new parameter (INAPPN_dlg_idle_timeout 0x20) is defined for use in the INAP_MSG_DLG_REQ message when the primitive type is INAP-OPEN-REQ (1), INAP-OPEN-RSP (0x81) or INAP-DELIMIT-REQ (3).

The parameter is a 1 or 2 octet value which contains the timeout value in seconds. When the two octet version of the parameter is used the first octet is the most significant value.

When using the INAP API library, the dialogue Idle Timeout parameter can be set using the IN_set_dialogue_param() call for OPEN, DELIMIT or OPEN RESPONSE dialog primitives together with the new parameter INDP_dlg_idle_timeout.

3.18 SCTP/SCTPD – Path Selection (IPY00102645)
This release corrects an issue handling the situation where a lack of heartbeat on the active path is detected. The previous release would send a message on the failed path before resending on the correct alternative path. This release uses the alternative path as soon as the heartbeat failure is detected.
3.19 **M2PA – Link Recovery**

This release makes small changes to M2PA to ensure consistent operation on link restoration.

M2PA now does not attempt to establish the SCTP association until the first Start request is received from MTP3.

M2PA no longer generates SIB on Out of Service links.

3.20 **M2PA – Japan Support**

This release enhanced M2PA to support operation in Japanese networks. To invoke this feature, bit 4 should be set in the M2PA per-link options. When using s7_mgt this is achieved using a new M2PA_OPTIONS parameter for the SNLSI command as follows:

```
SNSLI:SNLINK=n, ... M2PA_OPTIONS=0x0010;
```

The range of timer values supported by M2PA has been increased to allow operation in networks such as DoCoMo in Japan.

3.21 **RSI – Enhanced Diagnostics**

This release includes updates within RSI to proactively detect a failure of communications between RSI and RSI_LNK and generate an event MGT_MSG_EVENT_ID (0x008) to the management module (0xef) for logging in the maintenance log. RSI also reports lost heartbeat responses using the same mechanism. The status value in the event report is set to 0xe1 .. 0xe4 for 1 .. 4 consecutive missed heartbeats respectively and 0xe5 in the event of failure to communicate with RSI_LNK.

3.22 **s7_log – Daily rolling logs (IPY00102391)**

This release corrects an issue with s7_log when using the –r option (to create a new log file each day) which prevented new daily log files being created after the end of a month until the log file size limit was reached. After a new file was created based on the size limit the daily rolling log would again be created.

3.23 **s7_mgt – Multiple RAS with same DPC**

This release allows M3UA to be configured with multiple associations connecting to the same remote Destination Point Code (DPC). This is achieved by adding a Local Application Server (LAS) parameter to the SNRAI command to ensure that each Remote Application server (RAS) has a unique combination of DPC and LAS. The full syntax of the SNRAI command is as follows:

```
SNRAI:RAS=,[DPC=],[RC=],[NASP=],[TRMD=],[SNMP=],[LAS=];
```

3.24 **s7_mgt - SNLINK command validation**

s7_mgt will now detect and reject SNLINK commands which specify the same host IP address and port information as previously configured SNLINK commands. Previously this configuration would have been accepted, but was not valid within SCTP.
3.25 s7_mgt – SCCP LSS Management Id
This release allows SCCP to be configured to send state change indications for concerned entities to the local sub-system (instead of to the configured SCCP management module). This is achieved by setting bit 0 in a new parameter (mgt_flags) for the SCCP_SSR command in config.txt. The full syntax for the command is now:

```
SCCP_SSR <ssr_id> LSS <local_ssn> <module_id> <flags> <protocol> [mgt_flags]
```

3.26 s7_mgt – Support for 256 RAS (IPY00102763)
This release increases the maximum number of Remote Application Servers (RAS) that s7_mgt can configure from 64 to 256 to allow the full capacity of M3UA to be used.

3.27 dsistat – IPv6 Support
The dsistat utility has been enhanced to support display of IPv6 addresses.

Dialogic
24-Jul-14
Release 6.4.2

1 Overview

This is a feature release of the Dialogic® DSI Development Package for Windows which adds support for additional PCIe signaling and media boards, enhances MAP and M3UA protocol capabilities and introduces IPv6 support for the RSI interface.

The release adds 'signaling only' support the Dialogic® DSI SS7LD Network Interface Board and adds 'combined media and signaling' support for the Dialogic® HMP Interface Boards when used in conjunction with Dialogic® PowerMedia™ HMP 3.0 Windows Service Update 343 and later. The supported boards are DNI2410TEPE2HMP, DNI1210TEPE2HMP, DNI610TEPE2HMP and DNI310TEPE2HMP although users should note that only the latest versions of the boards are supported (see below).

MAP protocol operation is enhanced to include support for more recent services and parameters as detailed below and in the latest MAP Programmer’s Manual.

M3UA is enhanced to support additional run-time license capacities, a greater number of destinations (4096) and support for multiple Local Application Servers (LAS).

RSI is enhanced to support operation in IPv6 networks.

The release includes further changes and corrections as detailed below. This is the first full release since Release 6.3.0 and it is fully backwards compatible with that release.

1.1 Applicability

This release is applicable for all users.

This release is validated for use with Windows Server 2008 (32 and 64bit) and Windows Server 2008 R2 (64bit). The SS7LD driver is 64 bit only.

The following User Documentation updates are applicable to this release of the Development Package:

Dialogic® DSI SS7LD Network Interface Board Programmer’s Manual, Issue 3
Dialogic® DSI Protocol Stacks – Sigtran Monitor Programmer’s Manual, Iss. 6

Users should note that the shared library installation directories are now c:\DSI\32 and c:\DSI\64 (previously c:\DSI\LIB32 and c:\DSI\LIB64 respectively).
1.2 Resolved Customer Issues

Updates to resolve the following customer issues are included in this release: IPY00099532, IPY00100565, IPY00100673, IPY00100800, IPY00101131, IPY00102013, IPY00102308 and IPY00102115.

2 New Functionality

2.1 Signaling support for SS7LD Board

This release adds support for the Dialogic® DSI SS7LD Network Interface Board. It includes a new binary ssdl.exe, new drivers and a new code file ss7.dc7 (V2.01) specifically for use with SS7LD boards. The driver is only for use with 64 bit operating systems.

This board is a Full Height, Half Length PCIe form factor and can support up to 16 SS7 signaling links running at 64kb/s, 56kb/s or 48kb/s. This board is a PCIe replacement for the existing Dialogic® DSI SPCI Network Interface Board.

This software can be used in conjunction with the following part numbers which either represent a board or a bundle of board with software license.

**Note:** Users should note that operation under Windows is only possible when using later versions of these boards as detailed in the table below.

<table>
<thead>
<tr>
<th>Board Type</th>
<th>Description</th>
<th>Supported Hardware Versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS7LDH4Q</td>
<td>SS7LDH4, PCI Express, 4 T1/E1, 4 LSL</td>
<td>310-944-54 or greater revision part numbers</td>
</tr>
<tr>
<td>SS7LDL2C1KQ</td>
<td>Kit, SS7LDH4 &amp; SS7SBLDISUP1K License</td>
<td>310-945-53 or greater revision part numbers</td>
</tr>
<tr>
<td>SS7DL4C2KQ</td>
<td>Kit, SS7LDH4 &amp; SS7SBLDISUP2K License</td>
<td>310-946-53 or greater revision part numbers</td>
</tr>
<tr>
<td>SS7DL4C4KQ</td>
<td>Kit, SS7LDH4 &amp; SS7SBLDISUP4K License</td>
<td>310-947-53 or greater revision part numbers</td>
</tr>
<tr>
<td>SS7LDH4L8C4KQ</td>
<td>Kit, SS7LDH4 &amp; SS7SBLDISUP4K8L License</td>
<td>310-958-52 or greater revision part numbers</td>
</tr>
<tr>
<td>SS7LDH4L16C4KQ</td>
<td>Kit, SS7LDH4 &amp; SS7SBLDISUP4K16L License</td>
<td>310-960-50 or greater revision part numbers</td>
</tr>
</tbody>
</table>

**Note:** The SS7LD board is not licensed for HMP operation. Users wishing to use combined media and signaling should purchase the appropriate DNIxx10TEPE2HMP board (see below) and a DSI software license.

Full details of the operation of the SS7LD Board are provided in the Dialogic® DSI SS7LD Network Interface Board Programmer’s Manual, Issue 3 and the Dialogic® DSI Software Environment Programmer’s Manual, Issue 14 which should be read in conjunction with these release notes.
2.2 Combined HMP media and SS7 signaling operation

This release adds the ability to run SS7 signaling links on the same board as Dialogic® HMP Software to support combined media and signaling operation on a single board.

This software can be used in conjunction with Dialogic® HMP Interface Boards and Dialogic® PowerMedia™ HMP 3.0 Windows Software (Service Update 343 and later). The supported boards are DNI2410TEPE2HMP, DNI1210TEPE2HMP, DNI610TEPE2HMP and DNI310TEPE2HMP.

*Note: Users should note that operation under Windows is only possible when using later versions of these boards as detailed in the table below.*

<table>
<thead>
<tr>
<th>Board Type</th>
<th>Description</th>
<th>Supported Hardware Versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNI2410TEPE2HMP</td>
<td>Octal Span T1/E1 Digital Network Interface Board for Host Media Processing Software, onboard echo cancellation, 6/6 RoHS compliant, half-length, standard-height PCI Express</td>
<td>306-427-54 or greater revision part numbers</td>
</tr>
<tr>
<td>DNI1210TEPE2HMP</td>
<td>Quad Span T1/E1 Digital Network Interface board for Host Media Processing Software, onboard echo cancellation, 6/6 RoHS compliant, half length, standard-height PCI Express</td>
<td>306-428-53 or greater revision part numbers</td>
</tr>
<tr>
<td>DNI610TEPE2HMP</td>
<td>Dual Span T1/E1 Digital Network Interface board for Host Media Processing Software, onboard echo cancellation, 6/6 RoHS compliant, half length, standard-height PCI Express</td>
<td>306-484-52 or greater revision part numbers</td>
</tr>
<tr>
<td>DNI310TEPE2HMP</td>
<td>Single Span T1/E1 Digital Network Interface Board for Host Media Processing Software, onboard echo cancellation, 6/6 RoHS compliant, half-length, standard-height PCI Express</td>
<td>306-483-52 or greater revision part numbers</td>
</tr>
</tbody>
</table>

2.3 MAP – NotifySubscriberDataModified service

Support for the MAP NotifySubscriberDataModified service has been added in accordance with the MAP specification 3GPP TS 29 002 version 10.3.0 (Release 10). The service is MAP-V3 only as defined in the specification.

2.4 MAP – ProvideSubscriberLocation service

Support for the MAP ProvideSubscriberLocation service has been extended to include additional parameters. The implementation is now compatible with the MAP specification 3GPP TS 29 002 version 10.3.0 (Release 10).

2.5 MAP – ‘Additional Roaming Not Allowed Cause’

New MAP V3 services error parameters have been added in support of the ProvideSubscriberLocation service. Additionally the new error parameter ‘Additional Roaming Not Allowed Cause’ is now supported.
These new error parameters are enabled for use by all MAP-V3 services supported by the MAP implementation that use the applicable error codes.

2.6 MAP - EPS-AuthenticationSetList data
Support for EPS-AuthenticationSetList data as used by the SendAuthenticationInfo service has been added to the response in accordance with the MAP specification 3GPP TS 29 002 version 9.4.0 (Release 9). Two additional parameters have been added to the request for the same service: numberOfRequestedAdditional-Vectors and additionalVectorsAreForEPS. The parameters for both changes are only required for MAP-V3 Application Contexts as defined in the specification.

2.7 MAP - UpdateGPRSLocation, CancelLocation and PurgeMS to MAP Release 8
The implementation of the following MAP services has been extended to support all the parameters detailed in MAP Release 8 as detailed in 3GPP TS 29.002 v8.18.0:

MAP-UPDATE-GPRS-LOCATION
MAP-CANCEL-LOCATION
MAP-PURGE-MS

2.8 MAP - CurrentSecurityContext data added to SendIdentification service
The MAP-SEND-IDENTIFICATION service has been updated and is now compliant with MAP specification 3GPP TS 29.002 v9.4.0. The request parameters are unchanged but the following optional parameters have been added to the response:

KC for GSM
CKSN for GSM
GSM Security Context Ellipsis
CK for UMTS
IK for UMTS
KSI for UMTS
UMTS Security Context Ellipsis

For full details refer to the MAP Programmer’s Manual.

The MAP-SEND-IDENTIFICATION service will correctly process received response data if the AuthenticationSetList data is received in one TCAP message and the CurrentSecurityContext data is received in another.

2.9 M3UA – Routing Key Management
This release adds support for the Routing Key Management (RKM) procedures when operating as an ASP. M3UA will send REG_REQ and DREG_REQ messages and handle the respective REG_RSP and DREG_RSP responses. Further details are available on request.
2.10 M3UA – Multiple Local AS support

This release supports the configuration and operation of multiple Local Application Servers (LAS). Changes to the configuration model now enable up to 4 LASs to be defined. Each LAS can be active across one or more shared associations with traffic distinguished by Routing Context (RC).

A peer IPSP or SGP would typically have an entry in its routing table for each LAS with a 1:1 mapping of routing key to LAS. For each routing key a RC is defined which accompanies the traffic on the association, to identify the LAS-server relationship to which it belongs. Previously all traffic was received by the single LAS and then distributed based on SI to the user parts. With Multiple LAS, traffic for a particular routing key from the peer SG or RAS is treated separately and when it arrives at the ASP it is distributed to the correct LAS, based on the RC. Each LAS-server relationship may be activated or deactivated independently of any other.

This new functionality can be configured using s7_mgt using the “LAS” parameter in place of the “AS” parameter in the SNAPI and SNLBI commands. The RC value should now be specified on the SNLBI command.

When used with configurations that include MTP User protocols such as ISUP or MAP, LAS1 will be configured with the appropriate Service Indicator and Module ID automatically. For all other LAS values the MTP_USER_PART command should be used. s7_mgt does not configure protocols which run above LAS2, LAS3 and LAS4.

To define the service indicator and the module ID of the application or module to process messages for a specific LAS, the MTP_USER_PART command should be used.

<table>
<thead>
<tr>
<th>LAS ID value</th>
<th>Network Context Value</th>
<th>Default M3UA Module ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NC0</td>
<td>0xd2</td>
</tr>
<tr>
<td>2</td>
<td>NC1</td>
<td>0xd6</td>
</tr>
<tr>
<td>3</td>
<td>NC2</td>
<td>0xd7</td>
</tr>
<tr>
<td>4</td>
<td>NC3</td>
<td>0xd8</td>
</tr>
</tbody>
</table>

For example:

```
MTP_USER_PART NC0 05 0x2d
MTP_USER_PART NC1 05 0x3d
MTP_USER_PART NC2 05 0x6d
MTP_USER_PART NC3 05 0x5d
```

To send traffic for additional LAS’ the following lines need to be present in the system.txt file, to send messages to the correct module ID.
The CNOPS and CNNCI commands now support multiple network contexts. The optional "NC" parameter can be used to identify the M3UA network context for which the remaining parameters apply. The M3UA network context is linked to the LAS as described in the table above. If the "NC" parameter is omitted the configuration applies to NC 0/LAS 1.

```
CNOPS:MODULE=M3UA,MOD_ID=0x6d;
CNOPS:MODULE=M3UA,MOD_ID=0xfd,NC=1;
```

2.11 M3UA – Support for 4096 Routes
This release increases the number of M3UA routes supported to 4096.

2.12 M3UA – Additional Licenses
This release adds support for new capacity licenses for 8, 384, 512 and 768 equivalent links.

2.13 rsi - IPv6 Support
This release adds support for connections between RSI clients and servers over IPv6 networks and for the destination address to be specified as a hostname.

Configuration of an IPv6 link is achieved via the updated rsicmd utility which now accepts an IPv6 address (or hostname) on the command line.

For a server connection, the IP address parameter is currently ignored and a socket is opened to allow a connection on the specified port via the hosts IPv4 or IPv6 address.

For a client connection, the IP address parameter should either be an IPv4 address (in a.b.c.d format), an IPv6 address (in abcd:1234::5678 format as per RFC5952) or a hostname (eg rsihost.example).

In the case of a hostname which resolves to multiple IP addresses (both IPv4 and IPv6), RSI will resolve the name once and will then attempt to connect to the server (over an IPv4 or IPv6 connection as appropriate) to each resolved address in turn until a connection is made.

3 Other Changes

3.1 ISUP - 8 Bit SLS Operation
This release corrects generation of 8 bit SLS values when using bit 22 of the ext_1_options field for Circuit Group Configuration (ISPX1GOP_SLS8).
3.2 **ISUP - Circuit group supervision message type handling (IPY00100673)**

On receipt of a Circuit Group (Un)Blocking message or acknowledgement containing an invalid ‘Circuit Group Supervision Message Type Indicator’ field, ISUP will now generate a Confusion Message with ‘cause’ set to 110.

3.3 **ISUP - BICC Timer Configuration (IPY00100565)**

Previously when a BICC variant circuit group was configured, ISUP incorrectly overwrote any user-configured timer values in the associated timer table. This has been corrected so that user-configured timer values are preserved.

3.4 **ISUP – Local Reset followed by IAM**

This release corrects ISUP operation in the case where an outgoing circuit group reset is immediately followed by an outgoing IAM message before a response is received from the network. Previously ISUP correctly released the call to the application but failed to follow up with a ‘Circuit Idle’ indication when the response to the GRS was eventually received from the network.

3.5 **ISUP – Call Answered Measurements**

This release allows the point at which a call is considered ‘answered’ for measurements purposes to optionally be set to be the point at which generation or reception of the Address Complete message takes place (rather than the Answer or Connect message). This is applicable in situations where the period between ACM and Answer is considered significant for measurements purposes.

This option is activated by setting bit 15 in the <options> field in the ISUP_CONFIG command in config.txt.

3.6 **SCCP – Round-robin routing using Load Share tables**

This release adds an SCCP global title load share table option to provide round robin selection of point codes. This option is bit 1 of the ‘options’ field of the SCP_MSG_GLST_ADD message. When set to 1, successive messages are sent to the next available destination point code in a round-robin manner (irrespective of the SLS value in the message). When set to zero the SLS value is used to determine route selection.

3.7 **SCCP – Generating UDTS or SST response using RSP pc_mask**

This release corrects operation when generating UDTS or an SST response towards a point code where the configured RSP (Remote Signaling Point) is identified by a pc_mask (rather than an explicit match of the point code. This ensures that the National Indicator is appropriately set from the configured RSP data.
3.8 SCCP – Routing label format in API_MSG_TX_REQ id

SCCP can now optionally indicate the routing label format in the id field of API_MSG_TX_REQ messages. This is achieved when using config.txt by setting bit 2 in the <options2> parameter of the SCCP_CONFIG command. For message-based configurations set bit 2 (SCPX2F_PC_SIZE) in the 'ext2_options' field of the SCP_MSG_CONFIG message.

When enabled the id field in the API_MSG_TX_REQ message will be set to 0 for 14-bit, 1 for 24-bit and 2 for 16-bit point codes.

3.9 SCCP – Increased number of GTT Tables

The maximum number of Global Title Translation (GTT) tables that can be allocated has been increased from 9 to 50. Each GTT table supports a single unique combination of Translation Type, Numbering Plan, GT Indicator and Nature of Address Indicator. The new release supports up to 50 such unique combinations.

3.10 SCCP – Connection Oriented Tint timer expiry (IPY00102308)

When the Connection Oriented end connection Tint timer expires, the connection is now placed in the idle state. Previously it was incorrectly placed in a Maintenance Blocking state.

3.11 TCAP – Maximum instance now 255 (IPY00100800)

TCAP now supports instance values in the range 0 to 255. When using config.txt, the TCAP instance is configured using the <tcap_inst> parameter in the TCAP_CONFIG command.

3.12 TCAP – Unnecessary use of large messages

TCAP now only attempts to allocate large messages when the payload exceeds 320 bytes. Previously, when large messages were available TCAP would allocate them in places where it was not necessary.

3.13 TCAP – Use of maximum incoming dialogs

This release corrects an issue that prevented TCAP working correctly when configured for maximum (65535) incoming dialogs and zero outgoing dialogs.

3.14 TCAP – Dialog Idle Timer (IPY00102013)

This release corrects a fault with the TCAP Dialogue Idle Timeout which previously resulted in timeouts greater than 6,553 seconds expiring early.
3.15 MAP - Correction to use of Ellipsis parameter in Dialog messages
When the MAP user specifies MAPN_dest_ref and MAPN_orig_ref parameters together with MAP-V1 application context parameter in a MAP-OPEN-REQ message, the MAP module automatically sends a Begin Subscriber Activity (BSA) component to TCAP. Previously if the user also included the MAPN_ellipsis parameter in the message the MAP binary could terminate. This issue has been corrected.

3.16 MAP - Formatting of Abort sent to TCAP
This release correctly formats the UABORT send from MAP to TCAP upon receipt of an invalid or unknown DialogID in a message from TCAP.

3.17 MAP - Discarded ‘NotLast’ Components (IPY00102115)
This release corrects an issue that previously could cause parameters received in a ‘NotLast’ Result response message from TCAP to be discarded. This fault only occurred when the response was received in two or more parts and parameter data was decoded for a ‘NotLast’ component and no parameter data was decoded for the ‘Last’ component.

3.18 MAP - MWD-Set Parameter
This release allows the MWD-Set parameter to be defined for an Absent Subscriber error response for the MAP V1 SendRoutingInfoForSM service.

3.19 MAP - Decoding of SendRoutingInfo Response
For previous releases the processing of received MAP V3 SendRoutingInfo response data would discard valid data if no data was received for any of the parameters defined under the ‘ExtendedRoutingInfo’ table. In this case the next valid data field in the response message was incorrectly discarded. This has been corrected in this release.

3.20 M3UA – Max SIF Length
A new parameter enables the size of Signaling Information Field (SIF) in outgoing transfer requests to be checked to ensure that the maximum SIF within the network is not exceeded. The maximum SIF length is set using the max_sif parameter within the M3U_MSG_CNF_NC (0x72c4) message.

3.21 M3UA - Ignore Network Appearance
Presently the use of the Network Appearance (NA) parameter may be enabled or disabled. When enabled, the parameter is sent and received in M3UA DATA and SSNM messages and when present in a received message it must match a NA configured on the association.
An option to ignore the NA in received messages has been added for situations where the peer is sending NA but rejects NA in messages it receives. Therefore DSI M3UA may be configured without NA and to ignore any NA it receives.
The option is configured by setting bit 8 (M3UOP_ASSOC_IGNORE_NA) in the association options in the M3U_MSG_CNFG_ASSOC (0x72c1) message.

### 3.22 M3UA - Audit of Congested Destinations

This release allows the user to disable M3UA auditing of congested destinations. Typically the auditing should be disabled for ITU-T type operation. The option is controlled by bit 4 of the M3UA options, either in the ‘options’ field of the M3U_MSG_CONFIG message or by setting the M3UA options using the CNOPS command in config.txt. The bit should be set to 1 to disable auditing – for example:

```plaintext
CNOPS:MODULE=M3UA,OPTIONS=0x0010;
```

### 3.23 M3UA – Trace bit for Transfer Requests

A new trace event bit M3U_EVTI_SS7_TX_REQ (bit 16) has been added to the input event mask to enable tracing of MTP-TRANSFER-REQ messages received from the user part.

### 3.24 M3UA – Updated header file definitions

Some M3UA message types and parameter names have been renamed in order to better reflect their usage. For example the message M3U_MSG_CNFG_INT_NA (0x72c4) has been renamed M3U_MSG_CNFG_NC to reflect that it is used to configure Network Context parameters. An all cases the original definitions are retained for backwards compatibility.

### 3.25 M3UA – 8-bit SLS values with 5-bit rotation

This release corrects the operation of SLS rotation to ensure that when operating with 8-bit SLS values and 5-bit SLS rotation the most significant bits of the SLS are preserved rather than being set to zero.

### 3.26 M3UA – DPC added to AS indications

This release adds the affected point code to the M3UA AS active and inactive indication messages M3U_MSG_AS_ACT_IND (0x02e0) and M3U_MSG_AS_INACT_IND (0x02e1). When using `s7_log` the point code is automatically decoded.

### 3.27 M3UA – MTP label format in RX indications

M3UA now provides an indication of the MTP3 label format (or point code size) in the id field of the API_MSG_RX_IND message. This allows the user part module to determine the format of the MTP3 routing label contained within the message.
### 3.28 MST – Prevent excessive event indications

To avoid excessive reporting of identical events that can reduce system throughput, MST now issues a maximum of 5 event indications for any event type over a 10 minute period. Further events during the 10 minute period are suppressed.

A count of all events (including suppressed events) is maintained within MST and may be read and optionally reset using a new message MST_MSG_R_ERROR_STATS (0x6e51) as documented in Sigtran Monitor Programmer’s Manual Issue 6.

### 3.29 MST – Unrecognised SCTP payloads

Messages for SCTP payloads other than M2PA, M3UA or SUA are now discarded without generating event reports or selective traces. These messages (eg H.248) are now counted in the ‘Unknown format’ counter of the MST Module statistics message.

### 3.30 MST – Monitor M2PA SNMM and SNTM messages

This release adds two new values for use in the ss7_mask parameter in the MST TAP configuration message (MST_MSG_CFG_TAP). These values allow receipt of MTP3 Signaling Network Management (SNM) and Signaling Network Test and Maintenance (SNT) messages when monitoring the M2PA protocol as follows:

- Bit 5 is used to enable receipt of SNM messages
- Bit 6 is used to enable receipt of SNT messages

### 3.31 DTC/DTS Operation

Operation of DTC/DTS (for use with the Dialogic® DSI SS7G41 Signaling Server in SIU mode) has been enhanced to reduce the need for application intervention to recover from transient failures of the IP network. Operation of s7_mgt has been enhanced to support additions to the DTC_CONFIG command and a new DTS_SERVER command. The functionality is detailed in DTS User Guide, Issue 10.

### 3.32 s7_mgt – Route Status Indications

On completion of the configuration sequence, s7_mgt now requests MTP3 and M3UA to indicate route status to all user parts. This ensures that SCCP (which assumes that RSPs are active unless told otherwise) is proactively informed of any destinations that are not accessible and avoids possible mismatch in route status between the user part and the transport layer.
3.33 **s7_log – Increased Precision Timestamps**

This release supports finer granularity in timestamps generated by s7_log. Selecting the -tp command line option will cause timestamps to show microsecond resolution as follows: YYYY-MM-DD hh:mm:ss.uuuuuu

3.34 **s7_log – Additional Decode (IPY00099532)**

s7_log provides additional decode of certain messages as follows:

- The DPC contained in M3UA AS active and inactive indication messages M3U_MSG_AS_ACT_IND and M3U_MSG_AS_INACT_IND is decoded.
- Decode of MTP_MSG_LINK_CONG message now correctly reports congestion status.
- TCAP Maintenance Events TCPEV_DLG_TIM_TIMEOUT and TCPEV_EXCESSIVE_DLG_ABORTS are now decoded.
- Maintenance Event MGT_MSG_LIC_EVENT message is not decoded.
- When decoding the M3U_MSG_NOTIFY_IND message, s7_log now only displays the ASP identifier when present in the message. Previously "ASP=0" was displayed when the ASP identifier was not present.
- s7_log will now log messages traced from the MTP3 to MTP2 interface on the SPCI board to the PCAP log file. These messages are of type SS7_MSG_TX_REQ and were not previously mapped to PCAP format.

3.35 **s7_play – Handling of missing newline (IPY00101131)**

This release corrects an issue which could result in s7_play failing to correctly process a message when the line is not terminated by a newline character ("\n").

Dialogic
07-Jun-13
Release 6.3.0

1 Overview

This is a feature release which includes protocol updates to SCTP, SCCP, MAP, TCAP, M3UA and MST and enhanced status reporting through gctload. Further changes and corrections are included as detailed below.

This release is the first GA release since Release 6.2.3 and is fully backwards compatible with that release.

NOTE: Dialogic recommends that the complete Development Package is used when upgrading from a previous release. If this is not possible users should note that licensed protocol binaries from the 6.3.0 (and later) releases will not work with versions of the gctlib shared object library prior to the 6.3.0 release. If a user needs to use a 6.3.0 (or later) licensed binary in conjunction with an earlier release of the Development Package then it is essential to also install and use the gctlib shared library from the 6.3.0 (or later) Development Package.

1.1 Applicability

This release is applicable for all users.

The following User Documentation updates are applicable to this release of the Development Package:

Dialogic® DSI SS7HD Board – Programmer’s Manual, Issue 11

This release includes an updated ss7.dc4 code file (V5.12) for use with the Dialogic® SS7HD Network Interface Board. The release notes for the code file are available separately.

This release includes an updated SNMP M3028_6_2 MIB package (V2.02) which includes support for the Dialogic® DSI SS7G41 Signaling Server.

1.2 Resolved Customer Issues

Updates to resolve the following customer issues are included in this release: IPY00091767, IPY00094595 and IPY00099532.
2 New Functionality

2.1 GCTLOAD – Enhanced Status reports

This release includes updates to gctload to provide additional information when run with the -t option to provide status reports. All status reports now include the date and time in the output.

The gctload -t1 output now includes additional measurements which may optionally be reset by the user using the command "gctload -t1r" which will display the current values and then reset the new measurements. The new measurements are the maximum number of messages allocated in each partition since reset and the number of congestion events since the last reset. In addition the time of the last congestion onset and the time of maximum message allocation (since reset) are both displayed.

The gctload -t1 output now also indicates whether there are time limited licenses in use within the system.

The gctload -t3 output has been modified and now includes the process id of the last process to read from the message queue.

A new gctload -t4 option has been added to list all host software licenses current in use and in the event that the license is time limited it shows the expiry date for the license.

2.2 SCCP – Per-RSP Configuration of SIO/SSF

To allow use of different Sub Service Field (SSF) values across a network, SCCP now allows optional configuration of the Service Indicator Octet (SIO) on a per RSP basis. When using s7_mgt for configuration, this is achieved using the new optional parameter <ssf> in the SCCP_SSR command:

SCCP_SSR <ssr_id> RSP <remote_spc> <flags> <pc_mask> [<ssf>]

Note: The use of multiple SSF values requires appropriate capabilities in the underlying MTP3 link set configuration.

2.3 SCCP – Disable UDTS generation on routing failure

A new option allows the user to prevent SCCP from automatically generating a UDTS/XUDTS response when it is unable to route a message. When using s7_mgt for configuration, this is achieved by setting bit 1 in the <options2> field of the SCCP_CONFIG command.

SCCP_CONFIG <local_spc> <ssf> <options> [<options2> [<partner_id> <instance>]]

Note: The <options2> field was previously called <management_options> the operation of bit 0 remains unchanged from previous versions.

2.4 SCCP - Connection Oriented Configuration

s7_mgt now supports configuration of SCCP Connection Oriented operation using config.txt.
Connection Oriented operation is activated by setting bit 31 in the <options2> parameter of the SCCP_CONFIG command. This will result in s7_mgt using the fixed configuration values detailed in the Software Environment Programmer’s Manual.

2.5 SCCP / M3UA – Support for 16 bit Point Codes
SCCP can now be configured to operate with 16 bit Point Codes as used in Japan. This mode of operation is selected by setting bit 15 of the ‘ext_options’ parameter in the SCCP Module Configuration message (SCP_MSG_CONFIG ) or setting bit 31 in the <options> field of the SCCP_CONFIG command in config.txt. When using 16 bit point codes, users should ensure that compatible options are selected for the MTP3 or M3UA layers.

M3UA can now be configured to operate with 16 bit point codes for use in Japan. This option is selected by setting the SS7MD parameter to ITU16.

2.6 SCCP – Segmentation/Re-Assembly for XUDTS
This release extends segmentation and re-assembly functionality to include XUDTS messages. SCCP now handles segmentation and re-assembly for XUDTS messages in the same manner as XUDT messages.

2.7 TCAP - Include TCAP Version in outgoing messages
This release adds an option to force the TCAP module to include TCAP Protocol Version information in the messages it sends to SCCP. The TCAP Version information sent for ITU identifies Q.771-5 1997 (and 1993) specifications and for ANSI T1.114 1996.

2.8 TCAP - Option to stop sent address being replaced by received address
This release adds an option to force TCAP to always use the original Called Party Address throughout an outgoing dialogue rather than allowing it to be replaced by the address received in the first response received from the far end. To activate this feature, bit 11 of the <options> parameter in the TCAP_CONFIG command should be set to 1.

2.9 MAP - CHECK-IMEI V3 Request Parameter made Optional
Some proprietary implementations of the CHECK-IMEI service do not include the ‘RequestedEquipmentInfo’ parameter. In order to allow compatibility with these implementations, the MAP module has been changed so that the MAPPN_requestedequipinfo (515) parameter is no longer mandatory for the MAP V3 CHECK-IMEI request operation.

2.10 MAP – Additional parameters for SMSC services
Support for the following parameters has been added within MAP:
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Mnemonic</th>
<th>Value (dec)</th>
<th>Value (hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional Alert Reason Indicator</td>
<td>MAPPN_add_alert_reason_ind</td>
<td>586</td>
<td>0x24a</td>
</tr>
<tr>
<td>SM Delivery Not Intended</td>
<td>MAPPN_sm_deliv_notintended</td>
<td>587</td>
<td>0x24b</td>
</tr>
<tr>
<td>IP SM GW Indicator</td>
<td>MAPPN_ip_sm_gw_ind</td>
<td>588</td>
<td>0x24c</td>
</tr>
<tr>
<td>IP SM GW Delivery Outcome</td>
<td>MAPPN_ip_sm_gw_deliv_outcome</td>
<td>589</td>
<td>0x24d</td>
</tr>
<tr>
<td>IP SM GW Absent Subscriber Diagnostic SM</td>
<td>MAPPN_ip_sm_gw_abs_sub_diagsm</td>
<td>590</td>
<td>0x24e</td>
</tr>
</tbody>
</table>

The parameters are used within the following services; full details are contained within the MAP Programmer’s Manual:

- SendRoutingInfoForSM service (MAP v3)
- InformServiceCentre service (MAP v3)
- ReportSMDeliveryStatus service (MAP v3)
- ReadyForSM service (MAP v3)

2.11 M3UA - Audit for Congested Destinations

This release extends the destination audit mechanism to include periodic auditing of a congested destination following receipt of SCON from a Signaling Gateway.

2.12 MST – Management Events and Selective Tracing

MST generates a Selective Trace indication whenever a formatting error is detected within the received packet. This release introduces additional, more specific, reasons for the formatting error and generates an additional event report to the management module when a formatting error occurs. The event report uses a new message MST_MSG_EVENT_IND (0x0e4c).

Generation of Selective Tracing and Management Event Indications is, by default, enabled however this release adds the ability to enable or disable both on a per event basis using a new message which sets the selective trace mask (MST_MSG_SELTRACE_MASK (0x5e50)).

Both new messages are documented in the Sigtran Monitor Programmer’s Manual.

2.13 MST – Long Message Support

This release supports the ability to pass messages containing between 321 and 4200 payload octets to the user without truncation. Previously messages were truncated at 320 octets. The new functionality is enabled by setting bit 0 in the 'options' field of the MST configuration message (MST_MSG_CONFIG). Users must also ensure that sufficient long messages are created using the NUM_LMSGS command in the system.txt file.
2.14 MST – License Capacity Alarm

In the event that the actual data throughput through the MST module exceeds an onset threshold of 80% of the licensed capacity the module will generate an alarm using the MGT_MSG_LIC_EVENT message with 'event_type' set to value 4 (Throughput Alarm) and 'event_indicator' set to value 1 (Alarm Active). When the throughput reduces below an abatement threshold (40% of the licensed capacity) the clearing of the alarm is indicated by the same message but with the ‘event_indicator’ set to value 0 (Alarm Inactive).

2.15 s7_log - Daily log files

A new option has been added to s7_log for use when rolling log files are enabled to cause a new file to be started the first time a new event is logged each day. This functionality is enabled by adding the new -r option (in conjunction with the -n option). This behavior applies to both text and PCAP format log files. For example:

`s7_log -ffilename.log -n10 -r -s10000`

3 Changes

3.1 GCTLIB - GCT_pending_msgs()

This release changes the operation of the GCT_pending_msgs() function to ensure that the DSI environment is up and running before attempting to access it. Previously a segmentation fault was possible if an application called GCT_pending_msgs() when gctload was not running.

3.2 GCTLIB - REDIRECT

The operation of the REDIRECT command has been corrected so that redirection only applies when messages are being sent and does not impact or modify the input queue that a receiving module reads from.

3.3 MTP2 - Configurable trace_id

The SS7HD board now supports MTP2 tracing to the alternative <trace_id> as specified using the TRACE_MOD_ID command in config.txt.

3.4 SCCP – Connection ID allocation

The method of allocating incoming SCCP Connection ID’s for Connection Oriented operation has been enhanced so Connection ID’s will cycle through the full range of values before reusing previous values.

3.5 TCAP - Receipt of TCAP Abort

A fault has been corrected where, under certain conditions, received TCAP Abort messages were reported to the TCAP User as P-ABORT rather than U-ABORT.
3.6 TCAP - User Information in P-ABORT-IND
TCAP, when operating in ITU-T mode, has been enhanced to report User Information from a received TC-P-ABORT Dialogue Portion to the user in the ‘TCPPN_USER_INFO’ parameter which is now optional for this message. Previously User Information was only reported for TC-U-ABORT.

3.7 MAP - Selective Tracing enabled by default
Selective Tracing within MAP, as documented within the MAP Programmer’s Manual, is now enabled by default for all events. If required the MAP_MSG_S_SELTRACE_MASK message can be used to modify which events are selectively traced.

3.8 MAP - GPRS Node Indicator parameter support
MAP services SendRoutingInfoForLCS and SubscriberLocationReport now support the GPRS Node Indicator parameter, MAPPN_gprs_node_ind (123).

3.9 MAP - Correction to Ellipsis parameter processing
Unrecognised parameters in received MAP messages are stored in the MAP Ellipsis parameter (MAPPN_ellipsis). This release corrects a problem (for some services including CHECK_IMEI) that previously caused only the first unrecognised parameter to be stored. A potential problem with ellipsis parameter formatting has also been corrected.

3.10 MAP - TC-REJECT parameters passed to user
On receipt of a valid TCAP REJECT component from the network, MAP now uses two new parameters to pass additional TCAP component data to the MAP user for diagnostic purposes.

MAPPN_tcap_rej_problem_code (584) contains the Problem Code (0 to 7) of the REJECT component and MAPPN_tcap_rej_problem_type (585) contains the Problem Code tag that was used (0x80 to 0x83). The interpretation of the problem code value is dependent on the tag used.

Reception of a valid REJECT component will cause a MAP-NOTICE-IND dialog message or a MAP-SERVICE-CNF message (with error parameter) to be sent to the MAP-User. In both cases the two new parameters will now be returned in the messages. For the MAP-NOTICE-IND message, the existing parameter MAPPN_invoke_id (14) will now also be returned with the new parameters to identify the component referenced by the REJECT (MAPPN_invoke_id is already returned by the MAP-SERVICE-CNF message).
3.11 MAP - ASN.1 indefinite length termination octets being returned in ellipsis data

When MAP encounters unrecognised data in received messages, it is returned to the MAP-User in the Ellipsis parameter. In the previous releases where the unrecognised data has been encoded using ASN.1 indefinite length encoding, it is possible for length termination octets ‘EOC’ (two 0x00 octets) to be returned at the end of the Ellipsis parameter data. This release corrects the fault. Ellipsis parameter data will not be incorrectly terminated by indefinite length encoding termination octets.

3.12 MAP - Begin Subscriber Activity with single address

For previous releases if the MAP-User specified only one of MAPPN_dest_ref (2) and MAPPN_orig_ref (4) parameters, sending of the BEGIN-SUBSCRIBER-ACTIVITY (BSA) service would be attempted and fail with MAPSWE_TX_FMT_ERR being reported. This has been corrected so that if only one of the parameters is present, it is ignored and the BSA component is not sent.

3.13 MAP - MAPPN_unk_sub_diag in MAP NOTE-MM-EVENT service

MAP now allows the optional parameter MAPPN_unk_sub_diag (61) to be used in the response for the MAP NOTE-MM-EVENT service when a User Error of ‘Unknown Subscriber’ is returned.

3.14 MAP - User and Provider Errors supported for all services

MAP now allows the error parameters MAPPN_user_err (21) and MAPPN_prov_err (22) in all MAP services that return a response to the MAP-User.

3.15 MAP - Accept MAP Refuse PDU from a TCAP P-ABORT

This release detects and decodes User Information contained in received P-ABORT-IND messages. If the information is for a MAP-Dialogue PDU with Refuse Info reason = ‘invalidDestinationReference’ or ‘invalidOriginationReference’, the module will send a MAP-OPEN-CNF message to the MAP-User setting the appropriate MAPPN_refuse_rsn and with MAPPN_result = ‘dialogue refused’ (1).

This results in a received MAP Dialogue Refuse PDU being reported to the MAP-User in the same way, whether reported by TCAP as a P-ABORT or a U-ABORT.
3.16 **MAP - Reports timeout on Abort from TCAP**

The TCAP module has an option (TCPF_DLG_TIM_ABORT) that will automatically abort dialogues after a timeout period. MAP has been updated to recognise these aborts and close the associated MAP dialog. When this happens MAP will send a MAP-DIALOGUE-IND, MAP-P-ABORT-IND message to the MAP-User with the new provider reason (MAPPN_prov_rsn) = MAPPR_idle_timeout (7).

3.17 **MAP - Diagnostic corrected when L_REJECT received**

An invalidly formatted response message causes TCAP to send an L_REJECT message (problem code = Badly Structured Component) to MAP and MAP will then send a MAP-NOTICE-IND message with a problem diagnostic (MAPPN_prob_diag) to the MAP-User. Previously MAP reported the problem diagnostic 'Response Rejected by Peer' (1) with the Notice message. This has been corrected for this release to report the problem diagnostic 'Abnormal Event Received from Peer' (2).

3.18 **MAP - ASN.1 BIT STRING encodings**

This release ensures that sufficient parameter octets are available to convey the maximum amount of ASN.1 BIT STRING encoded data required by the MAP specifications. Previously some parameters only supported a single octet which was insufficient.

The MAPPN_mwd_status parameter (which is the only parameter encoded/decoded within the MAP module) now always sends six ASN.1 BIT STRING encoded bits but will support receipt of three, four or six bits of validly formatted ASN.1 BIT STRING data.

3.19 **SCTP/SCTPD - Detection of path recovery**

This release improves detection of SCTP path failure and restoration in a multi-homed environment. It corrects an issue which in specific circumstances resulted in failure to detect path recovery. Previously if path failure was detected by lack of acknowledgement to a DATA element and no subsequent DATA elements were transmitted then path recovery was not detected. Transmission of a subsequent DATA element cleared the issue.

3.20 **SCTP/SCTPD - Receipt of INIT on an active association**

This release corrects operation upon re-initialisation of an SCTP association that has not been closed (i.e. receipt of an INIT whilst association is active) which previously caused the module to fail.

3.21 **SCTP/SCTPD - Tracing received messages**

This release includes the ability to trace data messages sent from SCTPD to SCTP. The functionality can be enabled by setting the DATA_REQ (bit 5) in the ip_evt_msg parameter within the SCTP_MSG_TRACE_MASK message (0x5285)
3.22 SCTP/SCTPD – TSN Event Indications
This release adds support for additional diagnostic event indications using the new SCTP_MSG_EVENT_IND (0x029e) message. The message status value will include the Event Type value as shown below.

<table>
<thead>
<tr>
<th>Event type</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCTP_EVT_UNEXP_EVENT</td>
<td>1</td>
<td>The retransmission list is invalid for the association</td>
</tr>
<tr>
<td>SCTP_EVT_HIGH_TSN</td>
<td>2</td>
<td>Invalid SACK received with a TSN higher than the expected range</td>
</tr>
<tr>
<td>SCTP_EVT_LOW_TSN</td>
<td>3</td>
<td>Invalid SACK received with a TSN lower than the expected range</td>
</tr>
</tbody>
</table>

3.23 SCTP - Long Heartbeat Memory Leak
This release corrects an issue where a received Heartbeat message in excess of 300 bytes would cause a memory leak within the SCTP association and eventually lead to association failure requiring module restart.

3.24 SCTP / s7_log - Event Indications
SCTP now generates event indications to management whenever the state of an association or a path within an association changes. The messages (SCTP_MSG_STATUS_CHANGE, SCTP_MSG_NETWORK_STATUS & SCTP_MSG_CONG_STATUS) are identical in format to the messages documented within the SCTP Programmer’s Manual which are issued to the SCTP user. The events are fully decoded by the updated s7_log binary.

3.25 M2PA – Link Configuration Defaults
The M2PA Link Configuration message (M2P_MSG_LINK_CONFIG) now allows timer values and congestion thresholds to be set to their default value by setting the corresponding field in the message to zero. Default values are defined in the M2PA Programmer’s Manual Issue 4.

3.26 M2PA – Timer Operation
This release corrects an issue with M2PA timers that could cause incorrect timer duration. In addition T3 operation has been corrected so that on expiry (during the proving period), the alignment cycle is aborted and the links goes into the Out Of Service state.

3.27 M2PA – Link Statistics Duration Counters
Minor corrections have been made to the generation of duration values (stats_duration & cong_duration) in the M2PA Read Statistics Request (M2P_MSG_R_STATS).
3.28 M2PA – Message retrieval
This release includes a correction to ensure that all messages can successfully be retrieved following a link failure. Previously messages received from MTP3 after a link had failed were not buffered and could not be retrieved.

3.29 MST – Recovery from lost connection
The algorithm used for in-sequence message delivery has been corrected to ensure immediate recovery following loss of an association.

3.30 MST – Measurements and Event Indications
A number of minor corrections have been made to the MST statistics gathering mechanism and event indications as follows:

Within the MST_MSG_R_STATS messages, any non-SCTP traffic is now counted as ‘Unsupported Protocol’ rather than ‘Badly Formatted’.

Within the MST_MSG_R_THR_STATS message, if the ‘version’ field is set to an invalid value the message will be rejected with status set to MSTE_BAD_PARAM (0x06).

Within the MST_MSG_R_ASSOCIATION_STATS message, calculation of the ‘association_uptime’ has been changed to be the total accumulated in service time since the statistics were last reset (rather than the time since last being out of service).

Within the MGT_MSG_LIC_EVENT message, the ‘protocol_type’ is now correctly set to the value 5 (LICMOD_MST) to allow the recipient to determine the source of the event.

3.31 s7_mgt - Board Failure Diagnostics
s7_mgt now forwards SSD event notifications (MGT_MSG_EVENT_IND and MGT_MSG_DIAG_IND) to module_id 0xef (REM_API_ID) to allow the events to be trapped by s7_log.

3.32 s7_mgt - HSL <data_rate>
In previous releases, s7_mgt would incorrectly configure the system where the MTP_LINK or MONITOR_LINK commands for HSL links omitted the <data_rate> parameter. Where the <data_rate> parameter is omitted, information from the LIU_CONFIG command will now be used.

3.33 s7_mgt - INAP_FE command
In previous releases, the INAP_FE command did not configure the module ID for the local FE correctly. s7_mgt will now use the module ID of the LSS associated with the SSN which is encoded in the <sccp_address> parameter.

3.34 s7_mgt - MTP3 with alternate module ID
This release corrects a problem, when the CNOPS command was used to configure an alternative module_id for the MTP3 module, but the link activation request message was sent to the default module ID for MTP3.
3.35  **s7_log – Additional decode (IPY00099532)**

s7_log now fully decodes the MGT_MSG_LIC_EVENT message.

When decoding the M3U_MSG_NOTIFY_IND message, s7_log now only displays the ASP identifier when present in the message. Previously "ASP=0" was displayed when the ASP identifier was not present.

s7_log will now log messages traced from the MTP3 to MTP2 interface on the SPCI board to the PCAP log file. These messages are of type SS7_MSG_TX_REQ and were not previously mapped to PCAP format.

3.36  **s7_log – Filename format**

s7_log now allows the format of the filename for rotating log files to optionally keep the '.log' extension as the last part of the filename so that the format is maint.2.log (instead of maint.log.2). This is activated by including the –x option on the command line.

3.37  **s7_log – Partial Messages Logged to File**

s7_log now avoids splitting a message across two files when operating with file rotation enabled. As a result files will typically be a few bytes less than the configured maximum length.

3.38  **s7_play – module_id configuration**

s7_play now allows the module_id that it uses for its input queue to be modified dynamically during execution of a playback file. A new "R" command can be used within the playback file to configure the module_id that s7_play uses for subsequent message reception. The command takes a single 16 bit parameter designated –m as follows:

R-m002d

3.39  **s7_play – Waiting forever**

This release prevents s7_play waiting forever for a response to a message that it failed to send. In the event that during execution of the "W" command GCT_send() fails, s7_play now reports an error and terminates.

3.40  **dsistat - M3UA, TCAP & LIU Status (IPY00094595)**

dsistat has been enhanced to report TCAP resource and TCAP dialog status. Handling of the id value for when requesting the status of an M3UA Remote Server has been corrected and additional LIU measurements for bit errors and code violations are displayed.

3.41  **dsitrace - M3UA Tracing**

The default trace mask for M3UA used by dsitrace has been modified to trace API_MSG_TX_REQ and API_MSG_RX_IND messages. Previously the input and output mask were by default set to 0 requiring a user to always specify which messages should be traced.
3.42 MTU – More messages to send flag
This release includes a correction within the MTU example application for the setting of the ‘more messages to send’ flag when sending an SMS. In addition there is a correction to the address setting in the TP-OA parameter.

3.43 MTR - AnyTimeInterrogation
The MTR example application in the User Part Development package has been updated to include support for the MAP AnyTimeInterrogation service.

Dialogic
15-May-12
Release 6.2.3

1 Overview

This is the first generally available release of the Development Package for Windows since V6.01. Users should refer also to the 6.2.0 release notes which describe the significant changes to consolidate all the functionality of the previous Development Package together with all Host Protocols binaries, all board code files and the User Part Development Package (UPD) into a single distribution.

This release is a maintenance release containing new M3UA and INAP API features and updates to TCAP and MAP functionality. The release also includes other changes and corrections as detailed below.

The following User Documentation updates are applicable to this release of the Development Package:

1.1 Applicability

This release is suitable for all users.

This release is generally backwards compatible with the previous release, however, INAP API library users should read the section on Ellipsis handling and note the corrected AIN tags.

1.2 Resolved Customer Issues

Updates to resolve the following customer issues are included in this release: IPY00093295.

2 New Functionality

2.1 INAP API - New AIN protocol services

This release adds three new services (ResourceClear, TerminationAttempt and SendNotification) for the AIN protocol - GR-1299-CORE. Further details on the parameter coding for these services is available on request.

2.2 M3UA - SLS Rotation – 8 bit option

The ‘options’ field of the M3U_MSG_CNFG_INT_NA message has been extended to support a new option which allows full 8 Bit SLS rotation. Bit 0 should be set to one to activate SLS rotation. When SLS rotation is activated, ‘options’ bit 1 is set to one to select 8 bit SLS rotation or set to zero for default SLS rotation based on MTP label format.

When using config.txt for configuration the ‘options’ field is set when configuring a Network Context using the OPTIONS parameter of the CNNCI command. When using the OPTIONS parameter the ROTATION parameter is no longer required and must not be used.
The revised syntax of the CNNCI command is as follows:

CNNCI:ss7md=<variant> [,options=<options>];

2.3 M3UA - Selective Tracing

M3UA operation has been enhanced to automatically generate a trace of any received message that results in generation of an M3U_MSG_M3U_EVENT (0x02ee) event indication. The trace is intended to assist with problem diagnosis and is sent to the trace module id (0xef by default but may be configured with the TRACE_MOD_ID <trace_id> command)

3 Changes

3.1 Software Installation

The following changes have been made to the Development Package installation process:

The example system and protocol configuration files have been renamed 'example_system.txt' and 'example_config.txt' respectively. This is change intended to prevent customer modified configuration files getting deleted when the package is updated.

The installation process automatically updates the Windows PATH environment variable to include the LIB32 sub-directory.

3.2 Support for Windows Remote Desktop

Previously the DSI software would not interoperate with the Remote Desktop Service. For example, this limitation would prevent a Windows Remote Desktop client from querying the DSI environment ('gctload -t1'). This limitation has been removed.

3.3 s7_mgt – Global Title with ITU 24 Bit point codes

This release corrects an issue that previously prevented Global Title configuration when using 24bit ITU-T format point codes.

3.4 TCAP - ASN.1 non-minimal length encodings

The TCAP specification Q.773 states that when ASN.1 encoding messages, length encodings should use as few as possible octets, e.g. encodings such as 0x8174 and 0x820074 should both be sent as 0x74. Previously the TCAP module would reject received network messages that did not conform to this rule. This restriction has been relaxed to accept messages that use ASN.1 non-minimal length encoding. Outgoing messages are always encoded in accordance with the TCAP specification using the minimal length for ASN.1 lengths.
3.5 TCAP - Overlength outgoing messages
In the event that a message exceeds the maximum size for transmission to the network, TCAP will now discard the whole message and abort the dialogue. Previously in some situations just the dialogue portion was discarded resulting in a malformed message being sent to the network.

3.6 TCAP - Abort with User Abort Information
When sending an ITU-T TCAP Abort message containing the User-Abort-Information parameter, any additional dialogue portion is discarded to ensure valid formatting of the outgoing message.

3.7 MAP - Maximum size of user UESBI data
To align with the MAP specification, the maximum size of UESBI data has been reduced (from 128 to 16 octets). This affects the MAPM_uesbi_iua and MAPM_uesbi_iub parameters.

3.8 MAP – Additional error codes
MAP now supports the following user error codes:
- MAPUE_unknown_MSC (3)
- MAPUE_no_handover_number_available (25)
- MAPUE_subsequent_handover_failure (26)
- MAPUE_forwarding_failed (47)

3.9 MAP - Missing mandatory parameters in user response data
MAP now checks for missing mandatory parameters when the MAP-User enters response data. For previous releases it was only request data that was checked for missing mandatory parameters. The check now applies to both request and response primitive entry using the MAP_MSG_SRV_REQ message. Reporting of missing parameters is unchanged (from request checking): a MAPSWE_USER_MAND_MISSING error is reported in a MAP_MSG_ERROR_IND message and the number of the first mandatory parameter not found is given in the parameter data.

3.10 MAP – Handling of segmented Result components
In the event that reassembly of partial response data fails (for TCAP segmentation using TC-RESULT-NL and TC-RESULT-L messages), instead of simply discarding the previously stored data, MAP will abort the affected InvokeID.

If abort occurs after a TC-RESULT-NL message, U-CANCEL is sent to TCAP, followed by MAP_CNFR with a Provider error to the MAP-User and finally a U-REJECT to TCAP. Aborts that occur after a TC-RESULT-L message will just send the MAP_CNFR message with Provider error. The Abort may be caused by parameter format checks or exhaustion of the buffer space. Exhaustion of the buffer space is also reported using MAPSWE_TC_RESULT_NL_TOO_BIG.
In addition this release modifies the processing of the SendParameters service so that response data received in multiple messages (one or more TC-RESULT-NL messages followed by a TC-RESULT-L) is correctly handled.

3.11 MAP – Invalid user-supplied Invoke id in response

If MAP receives an unknown Invoke ID in a response primitive in the MAP_MSG_SRV_REQ message, a software event report will now be generated. The event report uses the MAP_MSG_ERROR_IND message with error code MAPSWE_USER_INVOKE_ID_UNKNOWN (27) with the id field set to the UserDialogID and the first Diagnostic code set to the invalid InvokeID. MAP will also optionally generate a selective trace message with trace reason code MAPt_user_invoke_id_unknown (16).

3.12 INAP API - Correction to certain AIN tag values

Three tag values, used for existing AIN services have been corrected as follows:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Affected AIN Services</th>
<th>Previous TAG</th>
<th>Corrected Tag</th>
</tr>
</thead>
<tbody>
<tr>
<td>AINPN_GenericName (551)</td>
<td>AnalyzeRoute</td>
<td>0xa1</td>
<td>0x9f, 0x21</td>
</tr>
<tr>
<td>AINPN_TriggerInformation (24)</td>
<td>InfoAnalyzed, InfoCollected</td>
<td>0x9f, 0x21</td>
<td>0x9f, 0x81, 0x21</td>
</tr>
<tr>
<td>AINPN_AMABillingFeature (65)</td>
<td>AnalyzeRoute, Disconnect, SendToResource</td>
<td>0x9f, 0x3a</td>
<td>0x9f, 0x58</td>
</tr>
</tbody>
</table>

3.13 INAP API - Ellipsis processing for CAMEL protocols (IPY00093295)

For this release, decoding of ellipsis has been changed for CAMEL services that define additional parameters following the ellipsis. For these services any unknown data in a received message will always be placed in the ellipsis parameter as if it was located at the end of the message. The following services are affected by this change:

- CAP v2 InitialDP
- CAP v3 InitialDPSMS
- CAP v3 InitialDPGPRS
- CAP v3 ApplyChargingReportGPRS
- CAP v4 EstablishTemporaryConnection
- CAP v4 Connect
- CAP v4 InitialDPSMS
- CAP v4 InitialDPGPRS
- CAP v4 ApplyChargingReportGPRS
3.14 INAP API - IN_decode_error() AIN op code handling

The API function IN_decode_error() now correctly supports operation codes greater than 256 which is particularly important for AIN operations where operation codes are always greater than 256. Previously only the least significant 8 bits were recovered.

3.15 INAP API - Indefinite length termination in Ellipsis parameter data

In the previous release, any unrecognised parameter data in a component being decoded was returned in the Ellipsis parameter. If the message included indefinite length termination octets (two zero value octets) these could be added to the Ellipsis parameter if recovered as part of unrecognised parameters. For this release, indefinite length termination octets are not returned in the ellipsis parameter.

3.16 M3UA - Management error messages

Management error messages received from an M3UA peer contain a range of 'Tags', some of which were erroneously being rejected. The module has been updated to accept all tags that can be present. In addition the range of error codes allowed has also been extended.

3.17 M3UA - MBM local traffic mode

A backwards compatibility issue for systems where MBM configuration messages are still used has been rectified. The issue affected systems using message based configurations where the 'local traffic mode' was set using the MBM_MSG_CFG_AS (0x72f7) message. The traffic mode was not sent in ASP-ACTIVE requests to the peer, but has now been rectified.

3.18 M3UA - Multiple 'DOWN' indications

In the previous release M3U_ASS_STATUS_DOWN indications were repeated during association activation until the remote end became active. In this release a single 'DOWN' indication will be generated when the association is activated, and any retries will not be reported.

3.19 s7_mgt - Max links for Diva boards

The s7_mgt limit on the number of signaling links supported on DIVA Signaling boards has been increased from 4 links to 64 links.

Dialogic
29-Jun-11
Release 6.2.0

1 Overview

This release is a feature release containing new functionality and changes to the overall structure of the Development Package. The release adds SNMP capability for boards and host protocol software and includes several protocol updates and corrections as detailed below.

This release consolidates all the functionality of the previous Development Package along with all Host Protocols binaries, all board code files and the User Part Development Package (UPD) into a single distribution. All host-based software binaries take the same binary release number using a new three-part release designation – “Release x.y.z”.

This is the first release since V6.01 and incorporates the first release of all host based protocols subsequent to the following (Changes since these releases are documented in these release notes):

- MTP3 V5.05
- ISUP V7.03
- TUP V4.01
- SCCP V5.03
- TCAP V6.03
- MAP V4.04
- IS41 V4.01
- INAP V5.02
- M3UA V7.01
- M2PA V3.02
- SUA V1.06
- MST V1.04
- INAP API Library V5.06

Release notes for the board code files are contained in separate documents and can be downloaded from the web-site. The following code files are included as part of this Development Package:

- ss7.dc3 V1.16
- monitor.dc3 V1.06
- ss7.dc4 V5.09

The following User Documentation updates are applicable to this release of the Development Package:

- Dialogic® DSI SS7 Protocol Stack – MAP Programmer’s Manual, Issue 14,
- Dialogic® DSI SS7 Protocol Stack – TCAP Programmer’s Manual, Issue 11,
- Dialogic® DSI SS7 Protocol Stack – SCCP Programmer’s Manual, Issue 8,
- Dialogic® DSI SS7 Protocol Stack – M3UA Programmer’s Manual, Issue 6,

This release is backwards-compatible with previous release however users should note the following:

1. The root installation directory is now C:\DSI (previously it was C:\SEPTEL)
2. Certain host binaries no longer contain '_nt' within the filename so filenames will need to be modified in 'system.txt' (See section 2.1 below for further details).

1.1 **Applicability**

This release is suitable for all users, as a result of consolidating all software into a single package it simplifies installation and maintenance.

1.2 **Resolved Customer Issues**

Updates to resolve the following customer issues are included in this release: IPY00091767 and IPY00092143

2 **New Functionality**

2.1 **Enhanced Development Package Structure**

The Development Package for Windows has been enhanced to include, in a single distribution, all the software required by board and host software users of the Dialogic® DSI SS7 Boards and Dialogic® DSI Protocol Stacks.

The Development Package now includes all host protocol binaries (located in the HSTBIN directory), board code files (located in the DC directory) and the example software from the User Part Development Package (located in the UPD directory). This allows users to update multiple components within a single installation cycle.

As part of this change, all host based software now uses a three part release number in the form "Release x.y.z" to uniquely identify the software version. The new format replaces the Vx.yy format used previously and aligns with the format used on other Dialogic® Products. Furthermore all host based binaries that form part of this distribution have the same release number.

For example:

DSI gctload Release 6.2.0 (Build 1030)
Part of the Dialogic(R) DSI Development Package for Windows
Copyright (C) Dialogic Corporation 1994-2011. All Rights Reserved.

In order to provide common binary names across different operating systems and therefore simplify use and documentation, the names of a number of host binaries have changed so that they no longer include the '_nt' designation. Users will need to modify existing system.txt file accordingly in order to use the new filenames (and possibly to use the new directory names).
tick_nt.exe becomes tick.exe
tim_nt becomes tim.exe
mtp3_nt.exe_lnx6 becomes mtp3.exe
isup_nt.exe becomes isup.exe
tup_nt.exe becomes tup.exe
sccp_nt.exe becomes sccp.exe
tcap_nt.exe becomes tcap.exe
map_nt.exe becomes map.exe
is41_nt.exe becomes is41.exe
mst_nt.exe becomes mst.exe

to facilitate common system.txt syntax across all operating systems, GCTLOAD now automatically appends the '.exe' suffix to the filename specified in the FORK_PROCESS command (unless a suffix is explicitly specified already). Therefore users should avoid including the '.exe' suffix in the system.txt file.

In order to remove ambiguity, the DSI shared objects are now located in sub-directories: 'LIB32' for the 32 bit libraries and 'LIB64' for the 64 bit libraries.

The name of the Windows Service has been changed to 'Dialogic DSI Startup Service'.

The default installation directory has changed to C:\DSI.

The distribution is in the form of a single self extracting binary named DPKWIN.EXE. Full installation instructions are contained in the Software Environment Programmer's Manual.

### 2.2 SNMP Support

This release adds SNMP support for boards and protocols to the Development Package.

The Dialogic® Distributed Structured Management Information (DSMI) Simple Network Management Protocol (SNMP) Agent provides SNMP monitoring functionality for the Dialogic® DSI Development Package.

Dialogic® DSMI SNMP software supports SNMP V1, V2 and V3 reporting the state and events for Dialogic® DSI SS7 Boards and Dialogic® DSI Protocol Stacks through use of SNMP traps as well as queries from a SNMP manager.

The Dialogic® DSMI MIBs are distributed within c:\DSI as a compressed, ZIP file: dsi-mibs.zip.

For details of the DSMI SNMP MIBs supported, events, SNMP traps and configuration refer to the Dialogic® DSI Protocol Stacks SNMP User Manual.

### 2.3 User Part Development Package

The example software and configuration files within the User Part Development (UPD) package have been updated and changed to simplify use. This release features new and updated configurations which all use the DSI s7_mgt configuration utility rather than message based scripts, making the configuration process more complete and easier to follow.
The UPD provides users with an easy way to try out various DSI protocols and also provide developers with example source code on which they can base their own applications.

In addition the User Part Development Package Makefiles have been updated to simplify the build process should users wish to rebuild the samples. A number of issues in the sample source code have been resolved and all the binaries rebuilt.

### 2.3.1 New Functionality

M3UA configurations have been added for MTU, MTR and CTU – this allows users to use M3UA directly without having to first convert the previous M2PA offering.

The INTU code has been updated to recognise CAPv4 and CAPv4 for IMS Application Contexts.

MTU/MTR now support additional MAP services including USSD services, MT Forward SMS and SRI for SMS.

### 2.3.2 Usage Instructions

Prebuilt binaries for all examples are supplied within the Development Package. These can easily be rebuilt (to produce 32bit binaries by default or 64bit binaries by using the 64bit flag) using the 'makeall.bat' file as follows.

```makeall.bat clean
makeall.bat clean
makeall.bat 64bit```

### 2.3.3 Running UPD samples

From within the UPD RUN directory select the directory for the concerned sample, and then the configuration type (M3UA, MTP or M2PA) and CONFIG, CONFIG_1 or CONFIG_2.

For M3UA and M2PA configurations – in the config.txt file change the IP addresses to match the local and remote systems.

For MTP configurations – ensure the board type, codefile and board interface task are correct for the host system within the config.txt and system.txt files.

From within the same directory run gctlload and then the sample itself - unless it is started ('forked') within system.txt.

For detailed information on running each sample, refer to the relevant UPD sample user guide.

*Note: The development package contains the latest version of the configuration files which may differ from those given in the user guides.*
2.4 **Reading number of pending messages**

The ability to read back the number of outstanding messages queued on a message queue has been added. This can be achieved using a command line option for gctload or programmatically using a new function `GCT_pending_msgs()` contained within gctlb.

To use gctload the user should run a second instance of gctload using the `–t3` option as follows, this will list the number of queued messages on each local message queue:

```
gctload –t3
LOCAL 0x10: 5 messages queued.
LOCAL 0x20: 0 messages queued.
```

Alternatively the function `GCT_pending_msgs` can be used to programmatically return the number of messages currently queued on a single named local message queue. The function prototype is:

```
int GCT_pending_msgs(unsigned int module_id)
```

The function returns a positive integer indicating the number of messages currently queued on message queue, `module_id` or a negative integer on error.

2.5 **SCCP – Ability to receive messages for any DPC**

This release adds the ability for local sub-systems to receive Connectionless SCCP messages irrespective of the DPC contained within the message. This is achieved by a run-time configuration option associated with the Local Sub-System (LSS) which allows received messages for any DPC not explicitly configured to be sent to that LSS.

This functionality is enabled when configuring a LSS by setting bit 4 (`SSRF_ANY_PC`) in the `ssr_flags` parameter of the `SCP_MSG_CNFSR` (0x7741) message. When using config.txt this is achieved by setting bit 4 in the `<flags>` field of the `SCCP_SSR` command.

*Note: This new functionality does not apply to messages associated with Connection-Oriented operation.*

2.6 **RSI - Link Statistics**

This release adds the ability to read back measurements from the RSI module on a per link basis. It is necessary to run the new RSI and RSI_LNK binaries to support this functionality.

A new message `RSI_MSG_R_LNK_STATS` (0x6f87) has been defined for this purpose. Full details are available on request.

The measurements can also be read using the updated version of the dsistat command line management utility using the following command syntax:

```
dsistat RSIL STATS 0
```

For full command syntax run dsistat with the `–h` option.
2.7 **MST - Enhanced Tracing Capabilities**

This release adds support for tracing of messages and events received and generated by MST. Tracing is enabled at run-time by setting Trace Masks using a new message MST_MSG_TRACE_MASK. Further details are available on request.

In addition, MST will also automatically report any badly formatted messages received from the network using the Selective Trace mechanism.

3 Other Changes

3.1 **GCTLOAD - Environment Verification**

To prevent run-time errors due to incorrectly configured systems GCTLOAD has been updated to always verify that the host operating system has sufficient system resources to support the DSI environment specified in system.txt. GCTLOAD will terminate if the system resource verification fails.

Previously GCTLOAD only verified the host operating system's system resources if the 'VERIFY' command was present in system.txt.

3.2 **MAP - Message generation after MAP-NOTICE-IND and/or TC-U-REJECT**

For previous releases, MAP was not correctly handling some situations that required MAP-NOTICE-IND messages to be sent to the user and/or U-REJECT to be sent to TCAP and the dialog was left in an inappropriate state. MAP should either close the dialog and send a MAP-CLOSE-IND message or move to a next state and send the user a MAP-DELIMITER-IND message. This release ensures that it is correctly handled.

3.3 **ISUP - Circuit Group Measurements**

For previous releases, the ISUP circuit group measurement period was not being initialized to the current time when a group is configured. As a consequence the measurement period for circuit groups which were dynamically added was set incorrectly. This has been corrected.

3.4 **SCTP - Bundled chunks (IPY00091767)**

This release corrects the handling of multiple SCTP chunks in a single message to ensure that all chunks are correctly delivered to the user. Previously if more than ten chunks were received bundled in a single SCTP message, delivery to the user was not guaranteed.

3.5 **M2PA – Throughput Licensing**

Prior to this release the M2PA throughput licensing mechanism incorrectly calculated the number of received octets. This has been corrected.
3.6 **M3UA - Heartbeat**
M3UA now supports the ability to turn on heartbeats at the M3UA level. This capability is not usually required as the underlying SCTP protocol has its own heartbeat mechanism. For further information refer to the *M3UA Programmer's Manual*.

3.7 **M3UA - Network Appearance Removal**
Prior to this release M3UA would only process a M3U_MSG_UNMAP_NA (0x72cd) message for M3UA links 0-3. This has been corrected and now works for all M3UA links.

3.8 **M3UA - Link Deactivation**
Operation of the message M3U_MSG_DEACT_ASSOC (0x72cf) which causes an association to shutdown has been changed back to the pre V7.00 operation such that an SCTP_MSG_ABORT (0x728c) is sent to SCTP to requesting an immediate shutdown. This ensures more deterministic behavior.

3.9 **M3UA - DAVA causes crash**
A problem within M3UA that potentially could cause the binary to crash upon reception of DAVA (Destination Available message) from an SGP has been corrected.

3.10 **MST - Traffic Filtering**
The TAP configuration message (MST_MSG_CFG_TAP) has been updated to allow monitored traffic to be filtered according to the SS7 event mask (ss7_mask) and SIGTRAN event mask (stn_mask) parameters.

Bit 0 of the 'options' field in the MGT_MSG_CFG_TAP configuration message now serves the following function: When set, traffic will be monitored if it meets selection criteria within both the SS7 event mask and the SIGTRAN event mask. When bit 0 is not set traffic will be monitored if it meet at least one selection in one of the masks.

3.11 **MST - M3UA Message Parse Error**
Previous releases incorrectly calculated padding bytes following variable length parameters when recovering received M3UA messages. This resulted in some lost messages and an incrementing count in the 'Bad Format' of the per-module statistics. This fault, which typically only impacted messages containing the optional 'Correlation ID' parameter, has been corrected.

3.12 **s7_mgt – SCTP Retransmission Counts**
s7_mgt now allows the user to modify various SCTP retransmission limits at configuration time using the SNSLI command in config.txt.

Three new parameters are added: RTXI (max_retx_init), RTXD (max_retx_data) and RTXB (max_retx_heartbeat). The values can be set in the range 1 .. 20. If omitted the parameter is set by s7_mgt to 2.
The full syntax of the SNSLI command is as follows:

```
SNSLI:SNLINK=,IPADDR=,[SS7MD=,][IPADDR2=,][IPADDR3=,]
[IPADDR4=,][HIPADDR=,][HIPADDR1=,][HIPADDR2=,][HIPADDR3=,]
[HIPADDR4=,][HPORT=,][PPORT=,][SNEND=,][SNTYPE=,]
[M2PA=,][M2PA_VER=,][HPORT=,][PPORT=,][RTXI=,]
[RTXD=,][RTXB=];
```

### 3.13 GCTLIB – Segmentation Fault (IPY00092143)

This release corrects an issue that could potentially result in a segmentation fault when executing GCT_xxx() functions when using GCT_link() and GCT_unlink() to dynamically attach and detach from the DSI environment.

Typically only specialized applications make use of GCT_link() / GCT_unlink() so the majority of deployments are unaffected by this issue.

### 3.14 rsi_lnk - Process Remains Running

This release corrects an issue that, when running the DSI software as a Windows service, would result in the rsi_lnk.exe processes remain running after the stopping the Window's Service.

Dialogic
31-Jan-11
Release Notes for V6.01

1 Overview

This is the first release since V5.08 and this is a major release which adds support for the latest Windows® operating systems Windows® 7 and Windows Server® 2008 R2 and increases the level of support for some Windows® Vista configurations.

This release also includes enhancements to s7_mgt associated with configuration of the latest M3UA release and a TXA binary to allow Dialogic® DSI User Part software to be used in conjunction with Dialogic® TX Series SS7 Boards.

The release introduces three new command line management utilities to simplify control of, and status gathering from, protocol modules and activation of trace masks.

This release includes further enhancements as detailed below including the ability for s7_log to create multiple rolling log files when configured to create PCAP format logs.

The release is fully backwards compatible with the previous release.

1.1 Applicability

All users are advised to upgrade to this release when convenient, however users of Windows® operating systems later than Windows Server® 2003 must install this Development Package for correct operation.

1.2 Resolved Customer Issues

Updates to resolve the following customer issues are included in this release: IPY00081954 and IPY00081819.

2 New Functionality

2.1 Support for Windows® 7 / Windows® Server 2008 R2

This release offers full support for the latest Windows® operating systems including Windows® 7 and Windows® Server 2008 R2 as well as increasing the level of support for several earlier operating systems including Windows® Vista, Windows® XP and Windows Server® 2003.

The release includes signed 32 bit and 64 bit device drivers for Dialogic® DSI SPCI Network Interface Boards and Dialogic® DSI SS7HD Network Interface Boards.

The appropriate device drivers are installed during the installation procedure.
2.2 s7_mgt - M3UA Configuration - Default Routes

The SNRTI command which is used to configure SIGTRAN routes now has a new optional OPTIONS parameter to allow existing and future per-route options to be selected within config.txt at run-time.

The content of the OPTIONS parameter is used to populate the <options> field in the M3UA Route Configuration message M3U_MSG_CNF_ROUTE. Initially the main use of this parameter is to designate the route as a 'Default Route'.

<table>
<thead>
<tr>
<th>Bit</th>
<th>Mnemonic</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>M3UOP_ROUTE_ASSUME_AVAIL</td>
<td>Assume route always available</td>
</tr>
<tr>
<td>1</td>
<td>M3UOP_ROUTE_LOADSHARE</td>
<td>Loadshare across all servers in the route</td>
</tr>
<tr>
<td>2</td>
<td>M3UOP_ROUTE_DEFAULT</td>
<td>Default Route</td>
</tr>
</tbody>
</table>

If the OPTIONS parameter is omitted then s7_mgt will default to using the value 0x0002 to provide full backwards compatibility with the previous release. Example usage of the new parameter is as follows:

SNRTI:SNRT=1,DPC=200,OPTIONS=0x0004;

2.3 Management Utilities – dsictrl, dsistat and dsitrace

This release includes three new management utilities (dsictrl, dsistat & dsitrace) to assist the user when performing management functions from the command line.

dsictrl allows control of MTP links, Sigtran links, LIUs and ISUP circuit groups using a command line interface.

dsistat allows status and measurements to be easily extracted from individual protocol modules using a command line interface.

dsitrace allows trace masks for individual protocol modules to be conveniently set using a command line interface.

For a full syntax listing run the tool with the –h option.

2.4 TXA binary to run DSI User Parts above TX Series Boards

This release includes a binary – TXA – which allows host-based Dialogic® DSI User Part protocols to be run above the Dialogic® TX Series SS7 Boards. This is of particular use for existing users of deployed TX Series boards that may wish to run MAP, INAP or IS41 protocols in conjunction with host-based TCAP and SCCP above MTP3 running on the TX Series board.

Refer to User Guide: Running DSI User Parts Over Dialogic® TX Series SS7 for full information.

2.5 s7_log - Rolling PCAP Log files

The ability for s7_log to generate capacity limited rolling log files has been extended to include PCAP format log files.
When generation of PCAP log files is activated using the --p option, whenever either of the two options --s or --n are activated the PCAP log file will automatically be in the form of multiple, capacity constrained files with a numeric suffix.

2.6  s7_mgt - SIGTRAN Link Auto-Activation
s7_mgt has been updated to allow automatic activation of Sigtran associations to be disabled by the user if not required. The new optional AUTOACT parameter of the CNSYS command should be set to 'N' to disable auto-activation of Sigtran associations. For example:

CNSYS:IPADDR=192.168.1.20,AUTOACT=N;

3 Other Changes

3.1  s7_log – Preservation of previous log file
s7_log has been updated to create a backup of the existing log file, if one exists, with the filename <logfile_name>.old. For example, if s7_log is configured to capture its output to the log file, 'log.txt' and it detects an existing copy of 'log.txt' then 'log.txt' will be renamed 'log.txt.old' and a new 'log.txt' file will be created.

NOTE: This functionality is applicable only when s7_log is configured to use a single log file and does not apply when either the --s or --n options are used to create multiple rolling log files.

3.2  s7_mgt – GTT Configuration (IPY00081954)
In previous versions, when configuring an ITU Global Title Translation with the Global Title Indicator set to "0100", on occasions bit 8 of Octet 3 of the Global Title was incorrectly set to '1'. This bit will now always be set to '0'.

3.3  s7_mgt – M3UA Configuration with OPC
In previous releases when using s7_mgt to configure M3UA systems if the OPC parameter was used then the RC will fail to come into service. This has been corrected.

3.4  GCTLIB - Thread Initialisation (IPY00081819)
In previous releases an error could occur if multiple threads of an application tried to initialise the GCT environment at the same time. This has been corrected.

3.5  s7_log – PCAP Timestamp Incorrectly Reported
In previous releases the timestamps recorded in the PCAP log incorrectly reported the sub-second value. This has been corrected.

Dialogic
10-Feb-10
Release Notes for V5.08

1 Overview

This release contains enhancements to the inter-process communication mechanism which significantly increase system throughput in both single and multi-core processor deployments. The release also includes enhancements or corrections to SCTP and the management utilities s7_log and s7_mgt as detailed below.

The release is fully backwards compatible with the previous release.

NOTE: This release is no longer compatible with the statically linked Host Protocol binaries, or the statically linked Development Package binaries provided with Development Package V4.03 or earlier.

1.1 Applicability

All users should upgrade to this version of the Development Package to gain significant improvements in performance.

1.2 Resolved Customer Issues

Updates to resolve the following customer issues are included in this release:
IPY00080025, IPY00080200, IPY00080425, IPY00080945, IPY00081008 and IPY00081077.

2 New Functionality

2.1 Performance enhancements for Multi-Core Processors

The underlying inter-process communication mechanism has been enhanced to have less dependency on global system-wide resources in order to better exploit the capabilities of multi-core processor architectures.

As a result, significant performance gains in terms of system throughput are achieved. Systems based on multi-core processors are able to fully utilise the additional cores whilst even single core processors achieve increased throughput.

NOTE: The Multi-Core Optimizations utilise processor instruction sets found in Intel 80486 and later processors. In the unlikely event that an older processor type is in use, this development package can still be used but users should first contact Dialogic for additional configuration requirements.
2.2 SS7HD board failure diagnostics
The SSDH module has been extended to provide additional diagnostic information upon the detection of a SS7HD board failure. The SSD_MSG_STATE_IND message has been extended by the addition of two fields in the parameter area. Full details are provided in the Dialogic® DSI SS7HD Network Interface Boards Programmer’s Manual, Issue 10.

2.3 s7_mgt – Activating SLS Rotation for M3UA
s7_mgt is capable of activating SLS rotation in accordance with T1.111.5 within M3UA. To achieve this the ROTATION attribute must be set for the appropriate network context as shown below:

CNNCI:SS7MD=ANSI,ROTATION=Y;

3 Other Changes

3.1 MBM – End Resources
Previous releases of MBM did not generate a confirmation message for the MBM_END_RSP and MBM_MSG_END_AS messages. This fault has been corrected.

3.2 s7_mgt – M3UA Service Indicators
Previous releases of s7_mgt use a fixed configuration for M3UA Service Indicators such that ISUP (SI=5) and SCCP (SI=3) were always configured. This could cause problems if all the module message queues were not processed.

s7_mgt now configures an Adjacent Application Server or Signaling Gateway in M3UA (M3U_MSG_CNFG_SERVER), using only the Service Indicators and Module IDs for the protocols present in the config.txt configuration file.

If the M3UA-user protocols are to be configured later using messages then the MTP_USER_PART command should be used to configure the service indicator and module ID of that protocol.

3.3 s7_mgt – DTC Destination Module Id (IPY00080200)
Previously s7_mgt configured DTC to route messages directly to the SCCP module Id rather via the DTS module Id. s7_mgt will now correctly configure DTC to route messages via DTS.

3.4 s7_mgt – Monitor Links (IPY00080425)
Previous release of s7_mgt would not correctly configure monitoring links if the MONITOR_LINK command occurred before the MTP_LINK command in config.txt. This restriction has been removed.
3.5 s7_mgt – M2PA Links (IPY00080945)
Previous releases of s7_mgt incorrectly processed the value of the SIGTRAN Signaling Link Initiate Command’s (SNSLI) ‘M2PA’ parameter. This has been corrected.

3.6 s7_mgt – 32 bit Network Appearances (IPY00081008)
Previous releases of s7_mgt would reject a Network Appearance value where the most significant bit (bit 31) was set. This has been corrected allowing any 32 bit value to be used.

3.7 s7_mgt – More than 16 TCAP instances
Previous releases of s7_mgt always configured TCAP to use 4 bits in the transaction_id to identify the TCAP instance. This prevented use of more than 16 TCAP instances in a single system.

3.8 s7_mgt – Global Title Address Limitations
Previous releases of s7_mgt limited global title addresses to 8 octets or less. This has been corrected.

3.9 s7_mgt – SCCP and TCAP Trace Module Id
This release supports setting the trace_id for SCCP and TCAP to the value specified in the TRACE_MOD_ID command (subject to using a version of SCCP and TCAP that supports the configurable trace_id). In previous releases this command was not supported for SCCP or TCAP protocols so the default value of 0xef was used.

3.10 s7_log – PCAP Corruption (IPY00081077)
Previous releases of s7_log created corrupt PCAP log files when capturing trace event messages (SS7_MSG_RX_IND, API_MSG_TX_REQ and API_MSG_RX_IND) from a module. This resulted in WireShark displaying corrupt packages and has now been corrected.

3.11 s7_play – Response Messages (IPY00080025)
The previous release of s7_play did not release response messages requested by the ‘Wait for response’ playback command. This has been corrected.

3.12 SCTP Congestion Control
The congestion control mechanism in previous releases of the SCTP binary limited maximum throughput to 1,800 messages/s per association. This restriction no longer exists.

Dialogic® DSI Development Package for Windows - Release Notes
Release Notes for V5.08

Dialogic
03-Nov-09
Revised 22-Dec-09
Release Notes for V5.07

1 Overview

This release extends the Development Package to support both 32 bit and 64 bit applications.

The release also addresses a number of minor issues as detailed below.

This release is backwards-compatible with previous release.

2 New Functionality

2.1 Support for 64 bit Applications

The standard Dialogic® DSI Development Package for Windows contains binaries, drivers, libraries and DLLs that are all built for 32 bit operation. The Binaries, libraries and DLLs (but not drivers) can also be run on 64 bit systems using the WOW (Windows on Windows) emulation however this requires that the user’s application is also built in 32 bit mode. This potentially prevents users from exploiting some of the benefits of a 64 bit environment.

Extensions from Dialogic allow users to build 64 bit applications that can correctly co-exist beside the standard 32 bit binaries and run on a 64 bit system.


2.2 Optional M3UA Routing Context support

This release includes updated MBM and s7_mgt binaries which support configurations of M3UA systems which don’t use Routing Contexts. This affects the SIGTRAN Local Application Server Initiate (SNAPI) and SIGTRAN Remote Application Server Initiate (SNRAI) commands. In both cases the Routing Context (RC) parameter is now optional. The revised syntaxes are below.

Syntax

SNAPI: AS=,[RC=,][OPC=,][SS7MD=,][TRMD=,];
SNRAI: RAS=,DPC=,[RC=,][SS7MD=,][NASP=,];

Examples

SNAPI: AS=1,SS7MD=ITU14,TRMD=LS;
SNRAI: RAS=1,DPC=555;
2.3 **Local IP address control for SCTP Associations**

The SCTP modules have been updated to support the configuration of IP addresses on a per-association basis. This allows associations to use some, all or none of the available local IP addresses. The local host IP addresses to be used for the association can be configured using an updated SNSLI command in the config.txt file. Up to four addresses can be specified per association using the parameters HIPPADDR, HIPPADDR2, HIPPADDR3 and HIPPADDR4.

**Syntax**

SNSLI:SNLINK=,IPADDR=,SG=,[HIPADDR=,][HIPADDR2=,][HIPADDR3=,][HIPADDR4=,]

Example

SNSLI:SNLINK=2,IPADDR=172.28.148.40,HIPADDR=192.195.185.20,
HPORT=2906,PPORT=2906,SNEND=S,SNTYPE=M3UA;

If no HIPPADDRx addresses are specified in this command then the association will default to using the IPADDRx addresses specified in the CNSYS command.

2.4 **<options> parameter for SNRLI command**

A new optional parameter <options> has been added to the SNRLI command within the s7_mgt module allowing for run-time options to be added in the future without the need to further modify the command syntax. The <options> parameter is a 32 bit field and defaults to zero if not specified. The contents of this parameter are passed to the M3UA module at run-time.

The full syntax of the SNRLI command is as follows:

SNRLI:SNRL=,SNRT=,SG=,[OPTIONS=];

2.5 **ISUP - maximum SIF length**

A parameter has been added to the ISUP_CONFIG command which allows the user to specify the maximum SIF length to be used when sending messages to MTP3 or M3UA. The revised syntax for the command is:

ISUP_CONFIG <res1> <res2> <user_id> <options> <num_grps>
<num_ccts> [<partner_id> [<max_sif>]]

If this parameter is not set the default value of 272 will be used. When setting this parameter the <partner_id> must also be present or set to zero.
3 Other Changes

3.1 Unwanted MGT_MSG_NTP_SYNC messages

Previous releases of the s7_mgt module would send an MGT_MSG_NTP_CONFIG message to each SS7HD Signaling Processor irrespective of whether MONITOR_LINKS are configured to use time stamping. From this release the message is only sent to a Signaling Processor if monitor links are configured to use time stamping.

Dialogic
19-Dec-08
Release Notes for V5.06

1 Overview

This is a maintenance release which increases the maximum message length supported by the Sigtran SCTP module and offers support for config.txt configuration of SCCP and TCAP in dual chassis deployments. The release also addresses a number of minor issues as detailed below.

This release is backwards-compatible with previous release.

2 New Functionality

2.1 Increased message-length support for SCTP

In this release the SCTP module has been enhanced to offer support for longer payload messages that exceed the normal MTP2 limit of 272 octets. SCTP is now capable of sending and receiving payload messages with up to 4200 bytes in the parameter area of the message.

Use of this feature requires that the software environment is appropriately configured so as to have a pool of ‘Long Messages’ using the NUM_LMSGS command in system.txt. For full details relating to the capabilities and usage of Long Messages refer to the Dialogic® Distributed Signaling Interface Components - Software Environment Programmer’s Manual, Issue 7. If for any reason (e.g. exhaustion of the Long Message pool) the SCTP module is unable to allocate a message with sufficient capacity to store the received message then a management event indication MGT_MSG_EVENT_IND (0x0008) with status set to SCTP_RX_DISCARD (0xf0) is sent to the SCTP module’s management module.

From this release, the s7_mgt module configures the SCTP module’s management module to be the value specified in the MGMT_MOD_ID command with a default value of 0xef.

Check the release documentation to determine whether the SCTP user module (e.g. M2PA, M3UA or SUA) supports Long Messages.

The per-association statistics message (SCTP_MSG_R_STATS) has been extended by the addition of an rx_discard field to count any discarded incoming messages. The new field ‘rx_discard’ is offset 49, size 4 in the parameter area of the message. The new message length is 53 bytes.

2.2 config.txt configuration of dual chassis SCCP and TCAP

The ability to distribute the protocol stack over two separate chassis allows users to realise systems that appear to the network as a single point code whilst achieving fault tolerance in the event of a chassis failing.

See the Application Note: Enabling Dual Chassis Fault Tolerance with Dialogic® Signaling Boards for a description of how such a configuration can be used.
This release adds the ability to configure SCCP and TCAP in such configurations by extending the SCCP_CONFIG and TCAP_CONFIG commands. The full syntax of these commands is described in the SS7HD Programmer’s Manual. The modifications to these commands are detailed below:

**SCCP_CONFIG <local_spc> <ssf> <options>**

```
[<management_options> [<partner_id> <instance>]]
```

- `<partner_id>` specifies the module_id of the partner SCCP module.
- `<instance>` specifies the instance of SCCP running on this system.

**NOTE:** In order to use the `<partner_id>` and `<instance>` parameters the user must also provide the `<management_options>` parameter.

**TCAP_CONFIG <base_ogdlg_id> <nog_dialogues> <base_icdlg_id> <nic_dialogues> <options> <dlg_hunt>**

```
[ [<addr_format>] [<partner_id>] <tcap_inst> ]
```

The new parameters `<partner_id>` and `<tcap_inst>` are used as follows:

- `<partner_id>` specifies the module_id of the partner TCAP module.
- `<tcap_inst>` specifies the instance of TCAP running on this system.

### 3 Other Changes

#### 3.1 AMI with Zero Code Suppression

In previous releases configuration of a T1 interface using AMI with Zero Code Suppression (ZCS) line coding did not maintain transparency of the timeslot for SS7 signaling links. ZCS is now disabled for any timeslots containing SS7 signaling links.

#### 3.2 Monitoring 56/48kb/s links on SS7HD Boards

A correction has been made within the s7_mgt module to ensure that monitoring of 56kb/s and 48kb/s links is correctly set up on SS7HD boards.

#### 3.3 PCAP Support for MTP3 running on-board

The PCAP logging functionality provided by the s7_log module has been extended to support configurations where the MTP3 module is running on the board.

#### 3.4 Support for mixed M3UA Link Types

In previous releases support for Remote Application Server (RAS) and Signaling Gateway (SG) links was only possible if unique Identifiers were used for the RAS and SG parameters. This has been resolved.
3.5 Restriction on IPSP Links removed
In the previous release of the s7_mgt module only 4 M3UA links could be configured. This restriction has now been removed and it is possible to configure up to 64 links.

3.6 Parameter format restrictions in MMI commands
In earlier releases, the s7_mgt module could give unexpected results if spaces were used in numeric parameters (e.g. 0x7fff ffff). Configuration commands with spaces in the middle of strings are now rejected.

3.7 Unprintable ASCII characters
In previous releases of the s7_mgt module, if the module were configured to print the parameter area of a message which included unprintable characters, these were sent to the terminal. In this release unprintable characters such as control codes are replaced with an asterisk "*".

3.8 MBM Reliability Improved
In earlier releases the MBM module could occasionally, in certain configurations, fail to initialise correctly. This problem has been resolved.

3.9 Non-appearance of Device Driver in Device Manager
A problem has been identified with the software for the SPCI board that prevented the board’s driver interface being displayed in the Device Manager on Windows® XP and later platforms.
This problem has been resolved for systems where the board is present at install time. However, if the board is not present at install time the problem can be resolved by starting the driver interface at a command prompt using the command:
Net start Septel
After rebooting the interface will be displayed as expected.

3.10 SS7HD Board Information
Previous releases could report out of date board information in multi-board configurations using hot swap functionality. This problem has now been resolved.

3.11 Running software as a Windows® service under Windows® Vista
When running software as a Windows® service under Windows® Vista the instructions set out in the section ‘Running software as a Windows® service’ in the Software Environment Programmer’s Manual (U10SSS) must be followed. However an additional file ‘gctlib.dll’ must be copied from the development package install directory to the windows system32 directory prior to installation of the service.

Dialogic
26-Sep-08
Release Notes for V5.05

1 Overview

This is the first full release of the Dialogic® SS7 Development Package for Windows® since V5.02.

This release adds support for the Dialogic® SS7HDE High Density PCI Express Signaling Board.

This release of the SS7 Development Package for Windows adds support for the configuration of M3UA association’s Network Appearance into the s7_mgt binary. A new command has been introduced to allow users to specify the period of certain Sigtran timers.

The S7_LOG module has been extended to output a PCAP-formatted log file. This will allow a third party application to analyse packets.

Other improvements are included in this release, as described below.

Except for some minor changes to configuration messages outlined below, the release is fully backwards compatible with the previous release.

2 New Functionality

2.1 Support for SS7HDE Signaling Board

This release includes support for the SS7HDE Signaling Board. Full details of the operation of the SS7HDE Board are provided in the Dialogic® SS7HD Programmer’s Manual, Issue 8.

2.2 Support for Windows® Vista

This release of the SS7 Development Package for Windows® includes support for Windows® Vista.

NOTE: It is important to follow package installation as described in the "Software installation for Windows” section of the SS7HD Programmer’s Manual.

NOTE: On driver installation, a warning message is generated indicating that the driver has not been digitally signed by Microsoft. This warning may be ignored without impacting system functionality.

2.3 PCAP output for s7_log

To invoke this new functionality the new –p command line parameter should be used to specify the filename of the log file. Full details are provided in the Dialogic® Distributed Signaling Interface Components - Software Environment Programmer’s Manual Issue 7.
2.4 **s7_play Commands**

The command set supported by the s7_play module has been extended. Commands may now be issued that require the module to pause until a specified message or response is received. Full details are provided in the Dialogic® Distributed Signaling Interface Components - Software Environment Programmer’s Manual Issue 7.

2.5 **Support for Network Appearance added to s7_mgt**

The existing “SNSLI” command has been modified to configure an optional Network Appearance parameter. The parameter added takes the form: “NA=

When set the value of the NA parameter serves as the default Network Appearance for a M3UA Application Server and is transmitted to Remote Application Servers or Signaling Gateways as appropriate. The NA parameter is not applicable for M2PA operation.

```plaintext
SNSLI: SNLINK=,SNTYPE=M2PA,IPADDR=,[SNEND=,][IPADDR2=,]
[HPORT=,][PPORT=,][M2PA=,][M2PA_VER=,][NA=];
```

For example:

```plaintext
SNSLI:SNLINK=1,SNTYPE=M3UA,IPADDR=111.112.113.200,NA=1;
```

The NA parameter may take values in the range 0 to 2,147,483,647 (0x7fff ffff).

2.6 **Sigtran timer configuration**

A new command, CNTOS, has been added to the set supported by the s7_mgt utility. This allows the user to set the values of timers to be used in the SCTP and M2PA protocols. Refer to Dialogic® SS7 Protocols Programmer’s Manual, Issue 7 for SIGTRAN Host Software for details.

2.7 **Configuration of management and maintenance module ids**

The values specified in the configuration commands that the s7_mgt utility sends to the Host Protocol modules are not always convenient. These have been revised in this release. Full details are provided in the Dialogic® SS7HD Programmer’s Manual, Issue 10.

2.8 **s7_mgt - Number of SCCP SSRs**

The number of SCCP sub-system resource commands that the s7_mgt utility supports has been increased from 16 to 512.

2.9 **s7_mgt - Number of routes**

The number of MTP_ROUTE commands supported by the s7_mgt utility has been increased from 128 to 4096.
2.10  **s7_mgt - Non-consecutive links**

In earlier releases of the Development Package, if the config.txt file contained MTP_LINK commands with non-consecutive link reference numbers, the configuration commands generated by the s7_mgt utility would be rejected by the MTP3 module. In this release the commands are not rejected.

2.11  **Notify message for void config.txt message**

If configured, the s7_mgt utility now generates a Notify message even if the config.txt file does not contain any configuration commands.

2.12  **Non-circuit examples added to config.txt**

Additional configuration commands have been added to the configuration file config.txt. These demonstrate how the s7_mgt binary can be used to configure non-circuit protocols.

2.13  **Reporting number of Signaling Processors on SS7HD boards**

The SSDH module reports the number of boards configured in response to the SSD_MSG_BOARD_INFO message. In earlier releases, the module would only respond to this message once the board had been reset. In this release it responds to the message at any time after initialisation.

This allows users to query the number of Signaling Processors available on an SS7HD board before the codefile is downloaded.

See the SS7HD Programmer's Manual for details of this message.

2.14  **Configuration of Sigtran Links by s7_mgt**

The s7_mgt module passes dimensioning parameters to the M2PA and M3UA modules in the appropriate configuration message. In previous releases fixed values were used for these dimensioning parameters.

From this release the values are set according to the number of links that have been configured.

The maximum number of links that s7_mgt is capable of configuring has also been increased, as shown in the table below:

<table>
<thead>
<tr>
<th>Dimensioning parameter</th>
<th>Previous Value</th>
<th>Revised Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sigtran Links</td>
<td>32</td>
<td>64</td>
</tr>
<tr>
<td>M3UA Local servers</td>
<td>32</td>
<td>64</td>
</tr>
<tr>
<td>M3UA Remote Application Server Lists</td>
<td>32</td>
<td>64</td>
</tr>
<tr>
<td>M3UA Bindings</td>
<td>32</td>
<td>64</td>
</tr>
<tr>
<td>M3UA Routes from</td>
<td>32</td>
<td>64</td>
</tr>
<tr>
<td>M2PA Links</td>
<td>8</td>
<td>64</td>
</tr>
</tbody>
</table>
3 Other Changes

3.1 SSDH Geographic Addressing Support
In earlier releases of the Development Package, geographic addressing
switch settings were not supported. This support has now been added.

3.2 GEN_MSG_MOD_IDENT for SSDS and DTC
The GEN_MSG_MOD_IDENT message may be used to request a Revision
Identifier for a module. Support for this message has been added to the
SSDS and DTC modules.

NOTE: The Core Revision Identifier is returned by this message. This is not
the same as the Binary version that is reported, for example, by the sssds –v
command line parameter.

3.3 SSDH Hot Swap Support
In earlier releases of the Development Package, Hot swap settings were not
supported. This support has now been added and a single board maybe hot
swapped at a time.

3.4 Number of streams configured for M2PA
In previous releases of the s7_mgt utility, the command used to configure
SCTP associations for M2PA links specified that 32 streams should be used. In
this release only two streams are configured.

3.5 Use of SCPF_SMB flag in SCCP_MSG_CONFIG
message
In previous releases of the s7_mgt utility, the SCPF_SMB flag was being set
although SMB operation is not currently supported by the s7_mgt utility. In
this release this flag is no longer set.

3.6 SCTP Init chunk with variable parameters
In previous releases of the SCTP module, receipt of an INIT chunk with
variable parameters (which are not listed in Section 3.3.2 of RFC 2960)
resulted in failure of the SCTP module. In this release they are correctly
handled.

3.7 Comments in MMI commands
In earlier releases MMI style commands containing comments were rejected
by the s7_mgt utility. In this release these commands are processed
normally.

3.8 Correction to Device Driver Installation
Previous releases of the Development Package contained a problem in the
device driver installation scripts which could prevent more than two signaling
boards from being correctly configured. This problem affected the SPCI and
SS7HD signaling boards and has now been resolved.
3.9  **Flush output to screen**

In earlier releases, in configurations where multiple binaries are passing their output to a single file handle (e.g. s7_mgt and ssdh passing their output to STDOUT) the output would not appear in SSH console.

In this release, the output pipe is flushed after each write and the output appears.

Dialogic  
14-Mar-08  
Revised 20-Mar-08