Dialogic® DSI SS7G41 Signaling Server
SWS Mode Release Notes

Document Reference: RN002LGD

Contents

Release 2.1.10

1 Overview

This release is a maintenance release which provides additional support for sending of Process USSD Requests in addition to a number of minor changes and corrections as detailed below.

This is the first generally available release since Release 2.1.2 and it is fully backwards compatible with that release.

1.1 Applicability

This release is suitable for all users.

Applications should make use of the *SWS XSD file* (Release 1.2.6) which contains full definitions for all services.

1.2 Resolved Customer Issues

The following customer issues are resolved in this release: IPY00117001, IPY00117249, IPY00117305, IPY00117310, IPY00117345, IPY00117717, IPY00117885, IPY00118008 and IPY00118009.

2 New Functionality

2.1 Sending Process USSD Request

This release adds support for the sending of Process Unstructured SS Requests. The new USSD XML attribute msi="true" should be set, to denote that the USSD request should be sent as if from a Mobile Station.

To facilitate the service the <origRef> element has also been added, allowing the TCAP Origination Reference to be recovered from incoming Process Unstructured SS Requests and set for outgoing Process Unstructured SS Requests.

Refer to the SWS XSD file for the full definitions.

2.2 SCCP – GTT Capacity

This release increases the number of Global Title Translations supported per Network Context to 512.

3 Other Changes

3.1 Software Licensing (IPY00117310)

During restart, on detection of a new software license the unit will automatically perform a full hard restart so that the new license takes effect.

3.2 Configuration Restoration

This release corrects an issue introduced in Release 2.1.4 which, on reverting to a previous software release, failed to correctly revert to the previous configuration when that option was selected.

3.3   Disk Partition Full (IPY00118008)

This release corrects an issue that could, in the case of a large number of failed login attempts, result in one of the partitions on a hard disk filling to capacity. In turn this prevented correct creation of new user accounts with the result that new users were unable to gain SFTP access to the unit. This release corrects the issue by enforcing a limit on the maximum size of the offending log file.

3.4   CNBOS Command - Board Configuration

This release checks the mandatory BRDTYPE parameter for the CNBOS command and rejects the command if the parameter is invalid or omitted.

3.5   Use of ITU-T links at 56kb/s

This release includes a correction to allow ITU-T SS7 links to optionally operate at 56kb/s. Previously only ANSI links supported 56kb/s operation.

3.6   SS7MD Link Congestion Count (IPY00118009)

This release contains corrections to the operation of two per-link measurements for the SS7MD board, the 'Congestion Count' and 'Tx Messages Discarded'.

3.7   STSLP Command - SS7 Link Status

This release corrects operation of the STSLP command to allow use of the LINK parameter to display status for a single link.

3.8   SWS Service Profiles

Previously, spurious configuration failure alarms could be generated when upgrading to Release 2.x.x from earlier software. These alarms related to default SWS service profiles that had become corrupt. These default profiles are unnecessary and this software release removes them.

Release 2.0.0 introduced an issue such that additional MAP MO-SMS transmit profiles could no longer be added. This has been corrected.

3.9   MSL – Messages received after session closed

This release includes corrections to ensure that messages received from the network relating to a user client session that has already been closed are correctly handled without corrupting internal resources.

3.10   MSL – Resource Diagnostics

This release adds additional diagnostics parameter to the MSL_MSG_ERROR_IND message (0x0946) which is reported to the internal maintenance log. The parameter is intended for use by Dialogic in the event that the MSL module reports an MSLSWE_NO_INTERNAL_RESOURCES error (4) and identifies which internal resource is affected.

3.11   MSL- Internal Resource Handling (IPY00117885)

This release improves internal resource handing in the MAP USSD Service to ensure correct operation in the case that all outgoing dialog resources are exhausted.

Additionally, the maximum number of simultaneous pending service requests (requests which are waiting for a message from the network) has been increased from 1000 to 2000.

3.12 MSL – Handling unexpected DELETE (IPY00117717)

This release corrects SWS operation in the case that a DELETE request was received with an invalid session ID, which coincided with a new session that had not yet been passed up to a client via an HTTP response. Previously this sequence of events could result in the system restarting.

3.13 Message Router - Alias Point Code (IPY00117354)

Previously, if a Message Router concerned relationship was configured where the concerned entity was in a different Network Context from the Point Code it was concerned about an implicit route to an alias Point Code would be created in the Network Context of the concerned entity. Configuration of an SCCP RSP using this alias Point Code was rejected. This release corrects this issue and allows a SCCP RSP to route to an alias Point Code.

3.14 Message Router – Concerned Entity

This release corrects operation of Message Router Concerned Entity mapping in the case where the concerned domain is a User Part (ie CONC_DOMAIN=UPART) and the concerned entity is in a different network context to the affected entity (ie. CONC_NC != NC). Previously status indications were not passed to the user part in this case.

3.15 Message Router – Message Priority

This release corrects an issue that potentially resulted in message priority getting set to zero when a message passes through the Message Router Function.

3.16 Message Router - Destination DPC (IPY00117249)

This release corrects an issue which prevented correct operation of the Message Router Destination DPC parameter when using 24 bit point codes.

3.17 SCCP Load Share Table - Dynamic Addition

This release corrects an issue which prevented dynamic addition of an additional DPC to an SCCP Load Share Table.

3.18 SCCP – GTT using Translation Type 2

This release corrects operation when configuring SCCP Global Title Translation rules which use GT Translation Type 2. In previous releases, using an odd number of GTAI digits in the pattern or address (including any separators) would cause the Signaling Server to incorrectly pad the GTAI digits with an additional zero. This has been corrected.

3.19 SIGTRAN Route - Congestion Level

When viewing the status of a SIGTRAN route (using the browser interface or the STSRP command) the current congestion level is now displayed using the CONG_LEVEL parameter.

3.20   SIGTRAN Link Port Validation (IPY00117305)

This release provides enhanced checking of SIGTRAN link configuration parameters to prevent invalid configurations being accepted but subsequently failing to operate. Specifically all associations using the same local port value must use the same set of Local IP addresses.

3.21   SIGTRAN Link Measurements

This release corrects reporting of the 'Out of Service Duration' for M2PA links and allows SIGTRAN Link measurements on page 1 (SCTP) and page 2 (M3UA) to be individually reset on a per-page basis.

3.22   DTS Routing (IPY00117001)

This release corrects the operation on the 'Route on Billing ID' when using DTS in conjunction with host-based IS41.

3.23   ACPOS Command - Account Control Policy

This release corrects operation of the Account Control Policy Configuration command, ACPOS when the WMSER parameter is set to HTTPS.

3.24   License Commands

The licensing configuration and status commands have been improved. The CNLCP command now reports the actual licenses present on the system and their throughput, where applicable, in link equivalents. The STLCP command reports the actual capacity, in link equivalents, of the licensed transport layer capabilities.

3.25   Log files

Following a restart, logging to the mmi, maintenance, stats and alarms log files now appends to the existing file rather than starting a new file. This ensures better utilization of the available disk capacity.

3.26   IP Logging

This release corrects an issue that previously could result in PCAP logging to the syslog/iplog file stopping spontaneously.

Operation of IP has been enhanced so that it continues to operate during periods of system overload. Previously logging was disabled during periods of overload.

3.27   Snapshot Generation

Generation of snapshot files for diagnostic purposes now takes place in the background so that user access can continue whilst the snapshot is being created. During creation, the snapshot is called snapshot_notready.tmp, once read for use access it is renamed snapshot.tgz.

3.28   Security Enhancements

This release includes an update to the web server within the web management interface in order to guard against potential vulnerabilities.

Dialogic
08-Apr-16
Revised 15-Jun-16

Release 2.1.2

1 Overview

This is a maintenance release which provides a correction to the operation of concatenated SMS delivery to ensure that the MMS (More Messages to Send) parameter is set correctly.

This release is fully backwards compatible with the previous release.

1.1 Applicability

This release is applicable to all users.

1.2 Resolved Customer Issues

The following customer issue is resolved in this release: IPY00117091.

2 Changes

2.1 Concatenated SMS Delivery (IPY00117091)

This release provides a correction to the operation of concatenated SMS delivery to ensure that the MMS (More Messages to Send) parameter is present when needed and it set to the appropriate value.

The decision to include this parameter is taken internally when long text SM messages are sent and is derived from the setting of the <mms> field in the client provided xml when sending binary concatenated SM messages.

Dialogic
04-Feb-15

Release 2.1.1

1 Overview

This release is a feature release which adds the ability to gather measurements on a periodic basis and store them in CSV format. Measurements are available for different layers of the protocol stack and are useful for traffic measurements and performance monitoring. The release adds new measurement commands to the user interface for SCCP and M3UA

The release also supports new load balancing capabilities within the Message Router Functionality through the ability to configure SLS rotation and inversion on a per Custom Profile basis.

The release provides a fourfold increase in capacity for PCAP trace files allowing more information to be retained and further changes and corrections as detailed below.

This is the first GA release since Release 2.0.1 and it is fully backwards compatible with that release.

1.1 Applicability

This release is applicable to all users.

The following user documentation describes fully the Periodic Measurement Collection capability:

Dialogic® DSI SS7G41 Performance Measurements Reference Manual Issue 2.

1.2 Resolved Customer Issues

The following customer issues are resolved in this release: IPY00116964 and IPY00117021.

2 New Functionality

2.1 Periodic Measurement Collection

This release adds the ability to gather measurements on a periodic basis and store them in CSV format. Measurements are available for different layers of the protocol stack and are useful for traffic levels and performance monitoring.

Traffic measurements include, for example, the number of messages sent and received, the number of octets sent and received, the peak traffic rate and peak link utilization. Performance monitoring includes features such as error counts (to assist detection of transmission path issues), routing failure causes (to detect possible configuration issues) and a number of other parameters to assist with smooth operation of the network.

Measurements are collected on a per-entity basis (eg per-link, per-origin, per-network context) basis according to the type of measurement. The frequency of measurement collection can be selected on a per measurement type basis from the following values: 5 min, 10 min, 15 min, 30 min, 1 hour, 4 hours and 1 day.

Measurements are logged to a file called "stats.csv" in the syslog/stats subdirectory of the user account. The file will accumulate data until the file size reaches a maximum at which point a new file will be created and the

original will be rotated into a file called "stats.n.csv" where n is a digit. A maximum of 10 files will be retained.

This initial release supports collection of the following measurement types: LIU, SCTP link, M2PA link, MTP2 link, MTP3 link set, MTP3 peak link utilization and per network context SCCP. For M3UA it supports M3UA per network context, M3UA per network context peak traffic, M3UA per-link and M3UA per-link peak utilization measurements It also supports Message Router measurements for Origins, Destinations and Routing Keys.

Control of the period for each measurement is provided using the System Administration > Server Management > Diagnostics > Stats Reports menu.

2.2   MSSCP Command – SCCP Measurements

A new command, MSSCP, has been introduced to report global SCCP measurements for each Network Context.

2.3   MSSTP Command – M3UA Measurements

The SIGTRAN link measurement command, MSSTP, has been extended to report M3UA peak utilization on page 3 of the command.

2.4   Increased PCAP Trace Capacity

This release provides a fourfold increase in the capacity of PCAP format trace logs in the syslog/trace subdirectory of the user account. The maximum file size has increased from 5MByte to 20Mbyte.

3 Other Changes

3.1   SS7LD Clock Operation

This release corrects a clock recovery issue which in some circumstances resulted in the unit either attempting to recover clock from the wrong E1/T1 interface or entering holdover mode rather than switching to the next highest priority clock recovery source. Operation of the SS7LD board is that when set to recover clocks it will always use the lowest numbered interface that contains a suitable signal.

3.2   Security update (IPY00116964)

This release disables the ability for TLS encryption to be negotiated down to SSLv3 or lower to reduce the potential for 'POODLE' type man in the middle security attacks.

3.3   IP Token Validation (IPY00117021)

This release validates the length of the IPTOKEN parameter in the IP_TOKEN command to ensure the length does not exceed 15 characters. Previously lengths of 16 were accepted but subsequently rejected by the STN_LINK command.

3.4   IP Logging

This release corrects operation of the IPLGI command by ensuring that the command is only accepted if the IPADDR parameter is set to an actual IP address value. Previously IP logging could be inadvertently disabled.

3.5   Alarms - Severity

The setting of the 'Alarm Severity' field in the alarm log has been corrected so that the original severity is retained even when the alarm has cleared. The 'Alarm State' should be used to determine which alarms are currently active.

3.6   Alarms – SCTP Path Failure

This release corrects an issue with the SCTP Path Failure alarm which sometimes prevented the alarm clearing when the path recovered.

3.7   MSSLP Command – Peak Utilization Monitor

The per link Peak Utilization Monitor on page 3 of the MSSLP command now reports Peak Rate to one decimal place and Peak Load to two decimal places in Erlangs for MTP2 links and Link Equivalents for M2PA links.

3.8   M2PA – Timer T2

This release corrects an issue which, in some cases, resulted in failure to start M2PA timer T2. This ensures that if the peer is not responding the link will periodically drop back to Out of Service and then reattempt alignment.

3.9   MSL – Default for SRI SM-RP-PRI

This release corrects the default setting for the SM-RP-PRI parameter used in the MAP SendRoutingInfoForSM operation so that SM-RP-PRI is set to FALSE.

Dialogic
23-Dec-14

Release 2.0.1

1 Overview

This release is a significant feature release which provides as a Generally Available Release all the enhancements from Release 1.3.11, Release 2.0.0 and a number of additional enhancements as described below.

This release adds additional flexibility when using SMS services with the Multiple Global Title Translation Table functionality introduced in Release 2.0.0. The release also provides the ability to automatically restore the previous configuration files when reverting to the previous software release and supports the ability to rebalance Class 0 SCCP traffic to ensure even load distribution. It includes new SCTP configuration options as well as further changes and corrections as detailed below

This is the first Generally Available release since Release 1.3.3 and it is fully backwards compatible with that release. Users should read carefully the release notes for Release 1.3.11 and Release 2.0.0 prior to installing this software.

1.1 Applicability

This release is applicable to all users.

Applications should make use of the *SWS XSD file* (Release 1.2.5) which contains full definitions for all services.

This release should be used in conjunction with DSMI MIB package V4.03.

The following user documentation updates are available for use in conjunction with this release:
Dialogic® DSI Signaling Servers – SS7G41 Operators Manual, Issue 11,
Dialogic® DSI Protocol Stacks – SCCP Programmer's Manual, Issue 11,
Dialogic® DSI Protocol Stacks – MAP Programmer's Manual, Issue 21.

1.2 Resolved Customer Issues

The following customer issue is resolved in this release: IPY00116703

2 New Functionality

2.1 New RIID for MT SMS TX messages to MSC SMS

This release expands on the Multiple Global Title Translation Table functionality introduced in Release 2.0.0 by adding a second RIID parameter for the MT SMS TX service for messages sent to the MSC thereby allowing the user to configure a routing indicator for messages sent to the MSC (eg ForwardSM) which is different to that for messages sent to the HLR (eg SendRoutingInfoForSM).

For the MT SMS TX service profile, the existing RIID parameter is renamed HLRRIID and a new parameter designated MSCRIID has been added. HLRRIID is used when sending messages to the HLR and MSCRIID is used when sending messages to the MSC.

2.2   SCCP – Rebalance of Class 0 Traffic

This release introduces the ability for Connectionless Class 0 SCCP traffic to be evenly balanced towards a Remote Signaling Point through regeneration of the SLS in a cyclic manner.

The option can be selected on a per-RSP basis by setting bit 6 in the rsp_flags field of the SCCP_SSR command when configuring the Remote Signaling Point.

2.3   SCTP – Per-association options

The following new per-association options are supported in the OPTIONS parameter of the STN_LINK command:

Bit 8, when set, disables use of the Nagle algorithm to ensure that outgoing packets are transmitted without delay.

Bit 9, when set, disables path MTU discovery and selects a fixed MTU value of 1438.

Bit 10, when set, designates the path associated with the first remote IP address (RIP1) as the primary SCTP path that if available will always be used.

2.4   MAP – Options to Control Default TCAP QoS

This release adds two new global MAP options to control the default value for the Quality of Service (QoS) parameter sent to TCAP (when QoS is not explicitly specified by the MAP user). These options are supported in the OPTIONS parameter of the MAP_CONFIG command and are defined as follows:

Bit 8, when set, causes the 'Return on Error' field to be set by default.

Bit 9, when set, causes Sequence Control to be disabled by default (selecting Class 0 operation).

3 Other Changes

3.1   MSL – Default for SRI SM-RP-PRI

This release corrects the default setting for the SM-RP-PRI parameter used in the MAP SendRoutingInfoForSM operation so that SM-RP-PRI is set to FALSE.

3.2   Operation of add in Network Interface Card

This release corrects an issue introduced in Release 2.0.0 that could prevent (after a few restarts) operation of the optional dual port expansion Network Interface Card.

3.3   Reverse Path IP Filter

By default, reverse path filtering is enabled. This ensures that packets received from a remote source IP address are only accepted when the packet is received on the interface that would be used to send packets to that IP address. The purpose of reverse path filtering is to prevent receipt of spoofed IP packets. In some situations, (eg asynchronous routing) it may be necessary to disable this filtering for correct multi-path operation.

Reverse Path Filtering can be disabled by setting RPFILTER=0 in the ACPOS command (System Policy Management). By default RPFILTER is set to 1.

3.4   Alarms

A new alarm, "SS7 link cong", is reported when an SS7 link is in congestion.

A new alarm, "SCTP path fail", is reported for a SIGTRAN link when one or more paths within an active SIGTRAN association have failed.

The release includes a correction to avoid incorrectly reporting "File Sys Warning" alarms.

Parse errors are now reported on Page 2 of the active alarm list.

3.5   Dual Operation

This release corrects an issue that previously could result in a failure of two units operating in a dual configuration to correctly exchange remote accessibility data.

3.6   SS7LD Board – MTP2 T6 Timer Operation

MTP2 on the SS7LD Signaling Board has been corrected such that it no longer starts the T6 timer upon reception of SIB when the link is in service and the retransmission buffer is empty.

3.7   LIU Control

This release provides the ability for test purposes to dynamically control Line Interface Unit operation on E1/T1 interface ports. The Maintenance PCM Set (MNPCS) MMI command allows the setting of diagnostic loopbacks, generation of AIS and generation of PRBS data on the interface. The command syntax is:

```
MNPCS:PORTID=[,AISGEN=][,LOOPMD=][,PRBSGEN=];
```

Current settings for the AISGEN, LOOPMD and PRBSGEN are displayed on the PCM Status (STPCP) command. Modifications to the default values for the parameters are not preserved over a system restart.

3.8   MSSLP Command - SIGTRAN Link Measurements

This release corrects the measurement period reported on page 2 of the MSSLP command following change of system time.

3.9   STSTP Command – SIGTRAN Link Status

Page 2 of the SIGTRAN Link Status command (STSTP) has been enhanced to include the status of implicitly configured paths (configured within the SCTP INIT or INIT ACK). It also reports additional per-path attributes.

3.10   SCCP - Dynamic Global Title Configuration

This release corrects the operation of dynamic Global Title Configuration to preserve the sequence in which entries in the table are used irrespective of the sequence in which they are added. The entry with the lowest GTPID value is always used first.

3.11   SCTP - Secure Mode

This release corrects the operation of "Secure Mode" for an SCTP association when operating in multi-homing mode.

3.12   SCTP – Failure To Establish Association If Primary Address Is Down (IPY00116703)

This release corrects an issue where an association to a multi-homed peer, failed to be established if the peer responded to the INIT from a different address than the INIT had been sent to even if that address had previously been configured as a valid peer address.

3.13   SCTP – Maximum Retransmissions

The maximum number of times a HEARTBEAT message is lost before the network address marked failed and the maximum number of times a data chunk will be retransmitted before the association is aborted have both been changed from a default value of 2 to a default value of 3.

3.14   Software roll-back restores previous configuration

If it is necessary during a software update cycle to revert to the previous version of software then the MNRSI command should be used with RESTART=PREVIOUS. This causes the previous release of software to be automatically reinstalled. From this release it will also automatically restore the previous configuration files (config.txt, config.CF3 & SWS.CF3) that were saved internally at the time of the software upgrade.

This feature simplifies the process of reverting to an earlier software release where the configuration file formats were not completely compatible (such as reverting to a pre Release 2.0.0 version). Users are still advised to make their own configuration backup prior to performing a software upgrade but the new feature makes it less likely that it will need to be used.

NOTE: If a software release (old or new) is manually loaded and the unit restarted without using the RESTART=PREVIOUS then the restoration procedure will not revert to previous configuration files.

Dialogic
23-Sep-14
Revised 24-Oct-14

Release 2.0.0

1 Overview

This release is a significant feature release which adds support for IPv6, provides a number of OA&M enhancements and provides MAP service layer enhancements to provide additional API control of certain parameters and enhanced SCCP routing flexibility.

IPv6 is supported for the configuration of SIGTRAN protocol software as well as SIU host links (RSI), NTP, SNMP, IP Gateways and firewalls. IPv6 access to the unit is permitted using Browser, Telnet, FTP, SFTP and SNMP.

This release supports enhanced syntax for config.txt commands. The new syntax allows parameters to be entered in any order and allows optional parameters to be omitted. Each parameter is entered in terms of parameter name and parameter value

The release also includes major enhancements to the Alarm List including addition of new fields, addition of an Alarm Log (which list historic alarms) and the additional logging of alarms to a text file for offline analysis.

This release includes major new SNMP enhancements including the ability to view the active alarm list using SNMP and provision for SNMP notifications on changes of state of alarms. In addition, this release addresses an important syntax issue with respect to the SNMP MIB.

This is the first release since Release 1.3.11 and it is fully backwards compatible with that release, however there are some important differences as follows which should be read and understood prior to commencing installation:

- This release should be used in conjunction with SNMP MIB V4.xx, which owing to the correction of a syntax error in the MIB is not fully backwards compatible with the previous MIB. A mechanism is provided to allow users to select the previous mode of operation as a short term option to ease migration. See below for details of the changes and how to retain compatibility if required.

- IP configuration is maintained when upgrading to this release however downgrading to an release will result in the reset of the system IP configuration to its default values. It is therefore important to take a backup of the config.txt and config.CF3 files prior to upgrading to this release.

- The IP configuration commands for local IP address configuration have changed. Instead of using IPEPP/IPEPS to configure local IP addresses the commands IPNIC/IPNIP/IPNII/IPNIE should be used.

- For local IP Address configuration, IP Gateway and IP firewall configuration rather than using a separate SUBNET mask the IP address and netmask should expressed in CIDR notation where the IP address and netmask are separated by the '/' character and netmask is a integer identifying the number of leading (i.e. significant) bits in the mask.

- IP firewall configuration is maintained when upgrading to this release however downgrading to an earlier release will result in the IP firewall configuration reverting to the values it held prior to system upgrade.

Users should familiarize themselves with the full content of these release notes prior to commencing deployment.

1.1   Applicability

Users are encouraged to use Release 2.0.1 which supersedes this release and is now Generally Available to all users.

Applications should make use of the updated *SWS XSD file* (Release 1.2.5) which contains full definitions for all services.

This release should be used in conjunction with DSMI MIB package V4.01 (or later). Please note that due to a correction of syntax errors within the MIB this MIB is not fully backwards compatible with the previous release however an option is provided to allow the SS7G41 to operate in accordance with the old MIB to ease migration. Please note the section on SNMP MIB Compatibility below.

2 New Functionality

2.1   Multiple Global Title Translation Tables

This release introduces the concept of multiple Global Title Translation Tables which allows the user to select a different SCCP routing plan for different service profiles.

Selection of the Translation Table is performed using a new integer parameter RIID (Routing Indicator Identifier) which takes a value between 1 and 65535 and acts as a token to identify the table.

The RIID parameter is optional and can be used when configuring the GT Translation (in the SCCP_GTT config.txt command), when configuring the MAP Service Layer Profile and when configuring a Remote Signaling Point (in the SCCP_RSP command). The following services support the use of the RIID parameter when configuring a profile:

- Tx Atomic MT-SMS
- Tx Atomic Send Routing Info for SM
- Tx USSD
- Tx MO-SMS (Atomic)
- Tx Ready for SM
- Tx Get Subscriber data (Location, Subscriber State or IMSI)

2.2   Service Timeout under Application Control

For the following MAP services the MAP operation timeout can now be set by the user using the `mapTimeout` parameter as defined in the XSD.

- Tx Atomic MT-SMS
- Tx Atomic Send Routing Info for SM
- Tx Atomic Report SM Delivery
- Tx MO-SMS (Atomic)
- Tx Ready for SM
- Tx USSD
- Tx Get Subscriber data (Location, Subscriber State or IMSI)
- Tx Alert Service Centre

2.3　Service Center Address under Application Control

For the following MAP services the Service Centre Address parameter (`srvCtr`) can be set by the application. Refer to the XSD for further details.

- Tx Combined MT-SMS (non-atomic)

- Tx Atomic MT-SMS

- Tx Atomic Send Routing Info for SM

- Tx Atomic Report SM Delivery

- Tx Alert Service Centre (provided for testing the API)

2.4　Enhanced config.txt Command Syntax

This release rolls out enhanced format config.txt command syntax for the majority of the currently supported commands (whilst maintaining backwards compatibility so that existing config.txt files continue to function as normal).

The new syntax allows parameters to be entered in any order and allows optional parameters to be omitted. Each parameter is entered in terms of parameter name and parameter value as follows:

```
<command>:<parameter1>=<value1>,<parameter2>=<value2>;
```

For example:

```
MTP_LINKSET:LINKSET=0,OPC=321,APC=320,LABEL=Paris;
```

Many commands support an optional user-provided text 'LABEL' parameter to improve readability. This label parameter is used in both user output and SNMP where applicable.

Full details of command syntax (and which commands support the new format) are contained in the *SS7G41 Operator's Manual*.

2.5　IPv6 Support and IPv4 Changes

This release adds IPv6 support and in doing so makes some changes to the commands previously used for IPv4 configuration. IPv6 is supported for the configuration of SIGTRAN protocol software as well as SIU host links (RSI), NTP, SNMP, IP Gateways and firewalls. IPv6 access to the unit is permitted using Browser, Telnet, FTP, SFTP and SNMP.

For both IPv4 and IPv6, static IP addresses are now specified in CIDR notation containing IP address followed by the '/' separator followed by the subnet mask (which is an integer identifying the number of leading (i.e. significant) bits in the mask).

To accommodate IPv6 configuration the old commands IPEPS/IPEPP have been replaced (for IPv4 and IPv6) by the new commands IPNIC and IPNIP for configuring IP Network Interfaces. The STEPP/MSEPP commands have been replaced by STNIP and MSNIP which display status and measurements for the network interfaces.

The IPGWx commands have been modified to support IPv6. As both IPv4 and IPv6 networks can have a default gateway the 'Default' identification should be assigned to the IPNW parameter rather than the IPGW id parameter. When configuring non default gateways the IP Network and Network Mask are both configured using the IPNW in CIDR notation.

A new config.txt command IP_TOKEN allows the user to create a token associated with a numerical IPv6 (or IPv4) address. This token can then be used throughout config.txt when configuring IP addresses without the need to retype the full IP address each time.

2.6   SCCP_GTT Command

This release adds the ability to have separate Global Title Translation (GTT) tables for incoming and outgoing messages. This is achieved by the addition of a new optional parameter (GTTSRC) to the config.txt command SCCP_GTT. When GTTSRC=LOCAL the command only applies for messages generated by a local sub-system (ie. outgoing messages). When GTTSRC=REMOTE the command only applies to messages passed up to SCCP from the network (ie. incoming messages). If GTTSRC=ANY (or the parameter is omitted) the command applies to all messages.

A new optional parameter (BAK_DUAL) has been added to the SCCP_GTT command that when set to Y causes any SCCP messages that matches the GTT pattern, but cannot be routed due to network failure, to be passed to SCCP on the partner unit so that it can reattempt routing.

A new optional parameter (OPTIONS) which is reserved for future use has been added to the SCCP_GTT command.

2.7   IP Port Bonding

IP Port bonding has been enhanced to support more than 2 ports in a single bond. Previously a Port Bond was created using the IPEPS MMI command and setting the IP address of a particular IP port to be the 'standby port' of another IP Port. The mechanism has changed and a BOND is considered a distinct Network Interface that Ethernet Port Network Interfaces can be attached to. To configure a Port Bond a BOND Network Interface should first be added using the IPNII command. Individual Ethernet Port Network Interfaces can then be added to the bond using the IPNIC command. The bond will use the MAC address of the lowest numbered Ethernet Port.

2.8   IP Firewall

Operation of the IP Firewall has been enhanced to support more sophisticated IP rules. In addition to being able to limit traffic for a particular service based on a source network/address the command now supports specification of a destination network/address. The parameters NETWORK and MASK have been replaced with IPSRC and IPDEST where IP Network Addresses and associated network masks should be entered in CIDR notation.

Previously the IPEPx command could be used to limit access to the Web management interface for particular Ethernet ports. This functionality has been removed. If required the IP firewall should instead be used to limit access from particular IP addresses.

2.9   IP Ping and Route Tracing

The STIPP command has been enhanced to support the ability to trace the route to an IP Address providing indications of the best, worst and average ping times to the destination and each way point.

2.10   New and changed config.txt Commands

The new command SIU_DUAL replaces the old command SIU_REM_ADDR.

The ability to specify the Network Context (NC) in the commands MTP_CONFIG, SCCP_CONFIG and STN_CONFIG means that the commands MTP_NC_CONFIG, SCCP_NC_CONFIG and STN_NC_CONFIG are no longer required.

The SCCP_RSS command (whilst still available for backwards compatibility) has been replaced by three new commands SCCP_LSS, SCCP_RSP and SCCP_RSS to configure SCCP Local Sub-System, SCCP Remote Signaling Point and SCCP Remote Sub-System resources respectively.

2.11   New MML Commands

New MML commands allow the user to read the current configured values for MTP and SIGTRAN protocol timers. The commands CNM2P, CNM3P, CNQSP, CNG2P, CNG3P and CNGSP are documented in the *SS7G41 Operator's Manual*.

2.12   Browser Interface

Several small changes and enhancements have been made to the browser interface to improve ease of use. Changes include a new color scheme, addition of status information at the top of each page, the ability to connect to the partner unit and some layout changes affecting SCCP configuration.

Presentation of large amounts of data now uses tables and allows the user to select the data rather than needing to scroll through the whole table. The number of line displayed per view is user configurable and data tables can be sorted (by clicking the head of the column) or filtered (by clicking on the required data component value).

2.13   Alarm Log Enhancements

This release includes a number of enhancements to the operation of the Alarm Log mechanism which result in format changes to the ALLIP (Alarm List) command and the alarms.log CSV text file and the addition of the date and time of alarm occurrence.

A new command, ALLOP, provides alarm log history. The command is similar to the ALLIP command except that it reports the previous 1000 alarm events (occurrence or clearing of alarms).

Alarm events are also archived to the text file 'alarm.log' in the syslog/alarms sub-directory of the ftp account.

The following alarm log fields have been added or modified:

NODE – A new user configurable field providing a short-form identity of the unit. This is displayed on the browser interface, on the MMI interface at login and included on a per alarm event basis in the SNMP ALARM MIB and the CSV format alarms.log file. The field is up to 9 alphanumeric characters and is set using the CNSYS command.

SEQUENCE – Sequential reference number of an entry in the alarm log since the last restart.

CODE – Numeric identifier of the alarm code. Each alarm condition has a unique CODE value.

STATE – Current state of the alarm which can be Active, Acknowledged (the alarm is still active but has been acknowledged by an operator) or Cleared. The user can acknowledge an alarm using the browser interface or using the new ALLIS command specifying the SEQUENCE parameter.

SEVERITY – Perceived severity of the active alarm (previously called CLA).

TITLE – Descriptive title for the alarm code. The text for some alarm types has changed slightly from the previous release to align with the values reported for SNMP events.

TYPE – Classification of the alarm into an alarm type from the following list: communicationsAlarm (2), qualityOfServiceAlarm (3), processingErrorAlarm (4), equipmentAlarm (5) and environmentalAlarm (6). This field replaces the previous Category (CAT) field so the STSYP command no longer lists the count of alarms in the following categories: System, PCM and Protocol.

CAUSE – Probable cause for the alarm code based on the principles of ITU Recommendations M.3100, X.733, and X.736 and GSM 12.10 (ETS 300 618). The values used are defined in the DSMI-TC MIB (V3.00).

DIAG1, DIAG2 – Additional diagnostic information provided on the occurrence of an alarm. The meaning of these fields varies based on the alarm code.

The new command ALCDP lists for each CODE the assigned SEVERITY, TYPE and CAUSE.

The STSYP and STSWP commands now report the count of "Warning" alarms in addition to the existing counts of "Critical", "Major" and "Minor" alarms.

2.14   SNMP MIB Compatibility and Alarm MIB

The SNMP DSMI Notification MIB has been restructured to remove syntax errors encountered with certain SNMP managers. This release should be used in conjunction with V4.01 or later of the DSMI MIB package.

Due to the nature of the changes to the Notification and Alarm MIBs the notifications transmitted by the system are not compatible with SNMP manager using MIB packages earlier than V4.00. To provide for continued backwards compatibility with earlier MIB packaged a new parameter, MIB, has been introduced on the CNSNS command. By default this parameter is set to a value of V4 however if a SNMP manager wishes to continue to use MIB packages earlier than V4 the MIB parameter can be set to PRE_V4.

This release adds support for a new SNMP MIB which allows the current active alarm log to be read using SNMP and permits generation of SNMP notifications whenever the state of an alarm changes (i.e. on Occurrence, Acknowledgement or Clearing of the alarm condition).

Generation of SNMP notifications is controlled by a new parameter (DSMIEVENT) of the CNSNS (Configuration SNMP Set) command. The following values are supported:

OBJECT – Report SNMP notifications based on changes of state related to the individual object MIBs only. (This is the default and is equivalent to pre Release 2.0.0 operation)

ALARM – Report SNMP notifications based on changes of state related to the ALARM object MIB only.

ALL – Report SNMP notifications based on changes of state related both to individual object MIBs and to the new ALARM MIB.

NONE – Do not report any SNMP notifications.

2.15   MTP3 – Increased Link Set Capacity

The number of supported MTP link sets has increased from 64 to 120.

2.16   MTP3 – Peak Utilization Monitor

This release adds a Peak Utilization Monitor which captures the peak traffic utilization over a 10 second period on a per-link basis for all MTP3 signaling links. It allows the user to read back the peak utilization over the previous 5 minute interval, the previous 1 hour interval and the previous 24 hour interval.

The monitor tracks peak utilization in Message Signal Units per second transmitted or received over a 10 second measurement interval and link utilization as a percentage based on number of octets transmitted and received in a 10 second measurement interval.

The Peak Usage Monitor is accessed using the existing MSSLP MMI command by setting PAGE=3. For full details refer to the SS7G41 Operator's Manual.

2.17   SCCP - GTT Load Share Table Measurements

A new measurements command MSLTP has been added which allows the user to read measurements associated with GTT load share tables.

3 Other Changes

3.1   USSD Service - DCS = 0x48

This release includes a correction to the handling of USSD requests and indications to allow Data Coding Scheme 0x48 to be used. This is a UCS2 based format with no language prefix.

3.2   Snapshot and Diagnostic Files

This release includes minor changes to the structure and filenames used within the browser based Files menu to improve clarity as follows:

The filename of the snapshot file (which is stored in the 'User' folder) is now snapshot.tgz (rather than syslog.tgz). This is the file that should be provided for the diagnosis of technical support issues.

The content of diagnostic files startup.log, shutdown.log and diag.log contained within the snapshot.tgz file has been enhanced.

The previous 'Snapshot' folder is now called diag to remove ambiguity and the 'Licenses' and 'Server' folders have been removed.

A default config.txt is now available in the 'Configuration' folder and is called 'default_config.txt'. This should be used as the starting point when creating a new config.txt. It contains the syntax for each command.

3.3   Restart Error

Reporting of the "Restart Error" alarm has been changed so that instead of multiple "Restart Alarm" events being generated the unit will now generate a single "Parse Error" alarm. Further information on the cause of the error is now available on page 2 of the active alarm list.

When the unit fails to start up correctly (indicated by "Config fail" or "Parse errors" alarms) the unit will actively prevent dynamic configuration changes. The user must correct the configuration issues and restart the unit.

3.4   MNRSI Command

This release corrects an issue with the operation of the MNRSI command which previously failed to execute correctly if a second user was logged on and executed a command shortly after MNRSI was executed.

3.5   MSSTP Command

This release corrects the value of the measurement period for the MSSTP command which previously was a smaller value than it should be. In addition the TBUSY and TCONG parameters on page 2 of the MSSLP command have been corrected to display duration in seconds (rather than tenths of a second).

3.6   MTP3 - Dual Operation with Discrimination Disabled

This release corrects the processing of messages received on the partner link set when point code discrimination is disabled to ensure that messages are sent to the network (rather than the user) whenever an MTP_ROUTE to the DPC is defined.

3.7   SCCP – Event Report Limiting

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

3.8   MAP –User parameters > 255 octets

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.

3.9   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.

3.10   SCTP – Failure to Establish Associations

This release corrects an issue that prevented SCTP server associations being established when multiple associations shared the same local port but different local IP addresses. M3UA/M2PA License Allocation.

3.11   M3UA/M2PA License Allocation

This release corrects the allocation of licensed capacity when using the TDMSHARE parameter to share allocation between TDM interfaces and either M3UA or network facing M2PA. Previously due to a rounding error the licensed capacity was artificially reduced.

3.12 SNMP Trap Events on Startup

This release prevents suppression of SNMP trap events during the startup sequence to ensure that the SNMP manager is notified of the creation of all objects during the initialization sequence.

3.13 SNMP V3 Configuration

The use of the ENGINE parameter for the CNSMI command has changed and is now optional. If not specified then the default engine ID for the system will be used. ENGINE can be displayed using the CNSNP command.

When configuring an SNMP V3 User Account, the CNUSI command now supports the PRIV (Privacy Protocol) and PRIVPASS (Privacy Password) parameters which previously could only be entered using the CNUSC command.

3.14 Alarms

A new alarm, "SS7 linkset lost", indicates failure of a Link Set.

A new alarm, "NTP sync fail" is generated when NTP is configured but the unit has been unable to establish contact with the NTP server.

This release corrects an issue that previously resulted in incorrect reporting of alarms for BPOS=0, PCM=0 when the PORTID was not set to zero.

3.15 Ability to trace SMNP messaging

This release expands the PCAP diagnostic logging function to allow logging of UDP messages as used for SNMP. To achieve this, LGTYPE=UDP should be set using the IPLGI command. This option also allows filtering based on individual UDP port numbers using LGDATA parameter.

3.16 SS7LD Board – Memory Leak

This release corrects a problem which occurred in systems using the SS7LD board whereby a progressive memory leak within the board driver resulted in the unit restarting. The time between restarts is non-deterministic but some users have experienced a restart within 1 to 2 months of operation.

3.17 SS7MD Board – LIU Status

This release corrects the generation of LIU status reporting to ensure that state transitions are not missed. When operating in T1 mode there was previously a timing issue that could result in loss of status indications and a LIU status mismatch.

This release corrects an issue with the SS7MD board that under extreme load could result in links failing and being unable to recover.

Dialogic
22-Jul-14
Revised 24-Oct-14

Release 1.3.11

1 Overview

This is a maintenance release combining multiple changes since the previous GA release. It increases the number of concurrent HTTP sessions supported and provides flexibility in the use of the language parameter for USSD

The release includes other changes and corrections as detailed below.

This release is fully backwards compatible with the previous GA software (Release 1.3.3).

1.1   Applicability

This release is applicable for all users.

Applications should make use of the *SWS XSD file* (Release 1.2.4) which contains full definitions for all services.

1.2   Resolved Customer Issues

The following customer issues are resolved in this release: IPY00102759, IPY00102821, IPY00115530, IPY00115471, IPY00116423 and IPY00116599,

2 New Features

2.1   Increased HTTP Connections

This release increases the maximum number of simultaneous HTTP connections supported by the system from 8,000 to 16,000.

2.2   Dynamic GTT Configuration

This release provides the ability to dynamically add and remove Global Titles without impact to other components in the system.

In the same manner as other dynamic configuration commands, new GTT addresses are loaded from an updated config.txt file using the CNGAI MMI command, GTT patterns are loaded using the CNGPI MMI command and the GTT itself is loaded and applied using the CNGTI MMI command. GTTs can also be removed by first deleting them from the config.txt file and unloading them from the system by executing a CNGTE to remove the translation followed by CNGPE to remove the pattern and CNGAE to remove an address.

2.3   USSD – Omit DCS=0x11 Language Prefix

When using USSD with Data Coding Scheme 0x11 (UCS2 with language prefix) this release provides the ability to optionally omit the language prefix.

On sending of a USSD request the two octet language prefix is omitted unless the language is explicitly included in the XML request.

On the reception of a USSD indication the first two octets are passed to the user as part of the UCS2 encoded string (rather than the language prefix). If the language prefix is included in the message, the user can recover it from first two characters of the USSD string.

The option (which only applies to Data Coding Scheme=0x11) is enabled by setting bit 1 of the USSD options field on the profile configuration page.

3 Other Changes

3.1   LMSI parameter handling (IPY00116423)

In the previous release the LMSI parameter in the SendRoutingInfoforSM response was incorrectly handled leading to XML parsing errors. This release corrects the handling and formatting of this parameter.

3.2   USSD Language and DCS handling (IPY00116599)

This release corrects handling of USSD Language parameter to allow the language to be specified on a per message basis, and for the language and DCS to be correctly used throughout the dialog.

3.3   USSD Service (IPY00115530)

Previously, on the initialization of a network initiated USSD session, if the MSISDN received in the MAP-OPEN request had a Tag set to non-standard value of 0x82 the MSISDN was discarded. The behavior has been changed and this circumstance the message is now forwarded to the user.

3.4   USSD Service (IPY00102821)

This release corrects an issue related to the handling of over-length USSD messages containing UCS2 encoded characters. The issue resulted in an internal failure whilst converting to UTF8 format which would result in the system restarting.

3.5   Badly Formatted XML (IPY00115471)

This release corrects an issue whereby badly formatted XML issued by the user could cause an internal error resulting in a restart of the unit. The issue occurred when an XML parameter is received that contains only the opening and closing tags but no value is present.

3.6   Diagnostic Core Files

In the event that an internal process crashes and the system is restarted (either automatically or by user action) a new diagnostic core dump is created. This file (core.tgz) is created in the syslog subdirectory of the ftp account and can be used by Dialogic to investigate the cause of the failure.

3.7   SCTP - Potential Restart

This release corrects operation within SCTP which could occasionally result in a restart following receipt of an INIT on an un-configured port.

3.8   Concatenated MT-Forward-SM (IPY00102759)

This release corrects an issue which previously resulted in the unit restarting when the delay between sending successive segments of a concatenated MT-Forward-SM exceeded 30 seconds.

3.9   Location Service

This release adds support for the VLR number and MSC number to be returned on the Location Based Service if those parameters are present in the Any Time Interrogation Response. The updated XSD file should be used to recover the parameters. The following example XML illustrates the case where the MSC/VLR address is shown instead of other location information.

```
<?xml version="1.0" encoding="utf-8"?>
<!-- -->
<location version="1">
  <msisdn ton="International" np="ISDN">447777123456</msisdn>
  <msc ton="International" np="unknown">443258945454</msc>
  <vlr ton="International" np="unknown">443258945455</vlr>
</location>
```

Dialogic
04-Jul-14
Revised 24-Oct-14

Release 1.3.3

1 Overview

This is a maintenance release which corrects important issues relating to M3UA route availability and Signaling Web Server operation.

The release increases the licensed throughput capacity from 256 link equivalents to 512 link equivalents, introduces the ability to configure the TCAP idle dialogue timeout from within config.txt and adds new MAP protocol capabilities.

The release includes further changes and corrections as detailed below.

This release is fully backwards compatible with the previous release.

1.1   Applicability

This release is applicable to all users.

1.2   Resolved Customer Issues

The following customer issues are resolved in this release: IPY00102249 and IPY00102543.

2 New Features

2.1   512 Link Equivalent Throughput

This release adds the ability to license the Signaling Server for capacities of up to 512 link equivalents (compared with the previous of 256 link equivalents).

To use this increased capacity users should purchase multiple licenses to make up the desired throughput capacity. For example, a 256 SIU link license and a 128 SIU link license would permit a total throughput capability of 384 link equivalents.

2.2   TCAP - Idle Dialogue Timeout

This release allows the timeout value for the TCAP Idle Dialogue Timeout to be configured in the config.txt file using a new TCAP_TIMER command which has the following syntax where the <reserved> field should be set to zero and the <value> is the timeout value in seconds.

TCAP_TIMER <reserved> TDLG_IDLE_TOUT <value>

2.3   M3UA - 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.

This release introduces option to ignore the NA in received messages for situations where the peer is sending NA but rejects NA in messages it receives. M3UA on the Signaling Server may therefore be configured to not send a NA and ignore any NA it receives.

This option is configured by setting bit 5 of the STN_LINK options.

3 Other Changes

3.1   MSL - MT-Forward-SM

The MT-Forward-SM operation has been modified so that if a SMS is sent using the Web Services API call "sms", the report SM delivery option is set for the profile and the MT-Forward-SM operation fails the Report SM Delivery Status message sent to the HLR will now contain the delivery outcome "absentSubscriber" rather than the previous "MemoryCapacityExceeded".

3.2   MSL – MAP NOTIFY

This release corrects an issue on receiving MAP NOTIFY messages, previously MSL assumed that the MAP stack had released the resources associated with the dialogue and MSL would free its own resources, however MAP does not consider the dialogue to be released therefore MAP and MSL are no longer in alignment. In the new release, on receipt of MAP NOTIFY, MSL will inform the user application of this information and also abort the MAP dialogue.

3.3   M3UA – Route availability (IPY00102249)

This release corrects a problem (introduced in Release 1.2.0) that results in M3UA sometimes failing to detect remote point code availability when a route becomes available. The fault occurs when a DAVA from the network is preceded by a SCON message indicating a congestion status of zero. As a result SCCP and Message Router deployments might have failed to detect point code recovery.

3.4   M3UA - Network Context Configuration

The STN_NC command requires that the <share> parameter be set when multiple Network contexts are specified to ensure that the throughput is correctly shared between different Network Contexts. Prior to this release this rule was not fully enforced and it was possible to configure M3UA network contexts without a share parameter that resulted in an incorrect distribution of the License between the Network Contexts. This has been corrected to ensure that <share> must always be set on the STN_NC command.

3.5   M3UA - Auditing of Congested Destinations

Previously when connecting to a Signaling Gateway, enabling the Destination Audit (DAUD) option enables auditing of both unavailable and congested destinations. This behavior has been modified so that only congested destinations in ANSI Network Contexts are audited.

3.6   STN_LINK Local IP Address

The release adds a validation check for the STN_LINK command to prevent attempts to configure a local IP address which has not previously been configured as a system IP address.

3.7   NTP Operation (IPY00102543)

This release ensures that when using Network Time Protocol (NTP) the timestamp maintained by the built-in hardware clock is updated to the NTP time. This ensures that any timestamps in the diagnostic 'messages' file generated immediately following a restart (which would be derived from the hardware clock) are correct.

The release corrects an issue which resulted in a spontaneous unit restart when NTP was active but had failed to achieve NTP synchronization as a result of the time difference between the two servers exceeding a set threshold (1000 seconds). The restart would occur after approximately 9 hours of operation.

Now if unable to obtain synchronization, the unit will show the NTP status as inactive and will stop attempting to synchronize. To recover from this condition the user should manually reactivate NTP.

3.8   TCAP Maintenance and Error Event Indications

The TCAP Maintenance and Error Event Indication messages (TCP_MSG_MAINT_IND and TCP_MSG_ERROR_IND) now contain a 12 byte parameter area which is used to provide additional diagnostic information.

3.9   TCAP –Tracing of TCAP Management messages

TCAP diagnostic tracing has been extended to support tracing of TCAP management messages. Tracing of TCAP management messages can be activated by setting the following bits in the MMASK parameter of the CNTMS MMI command for the TCAP MODULE.

bit 0 - Trace the TCP_MSG_CONFIG message.
bit 1 - Trace the TCP_MSG_NC_CONFIG message.
bit 2 - Trace the TCP_MSG_CNF_DGRP message.
bit 3 - Trace the TCP_MSG_HA_CONFIG message.
bit 4 - Trace the TCP_MSG_DEF_PARAM message
bit 5 - Trace the TCP_MSG_S_TCU_ID message.
bit 6 - Trace the TCP_MSG_S_TCI_ID message.
bit 7 - Trace the TCP_MSG_RESET message.

All other bits are reserved and should be set to zero.

3.10   MAP - Formatting of Abort sent to TCAP

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

3.11   MNSSI Command – Additional Diagnostics

This release enhances operation of the diagnostic snapshot creation command MNSSI in order to provide additional system parameters relating to hard drive and Ethernet port status.

3.12   STSTP Command - SIGTRAN Status

This release improves operation of the STSTP when PAGE=2 to ensure appropriate reporting of path status for associations that are not in the active state.

3.13   SS7MD – Increased buffer allocation

This release increases internal buffer resources for the SS7MD board to prevent failure of SS7 links when operating with high throughput applications with high numbers of SS7 links.

3.14   Maintenance Logs

Additional events generated from MTP3, TCAP, M2PA and SCTP are now logged and or decoded in the maintenance log and sent to the management host. These messages include the following: MTP_MSG_LINK_CONG, TCPEV_DLG_TIM_TIMEOUT, TCPEV_EXCESSIVE_DLG_ABORTS, M2P_MSG_EVENT_IND and SCTP_MSG_EVENT_IND.

3.15   config.txt - MRCEI Command

This release improved the error reporting in the event that the configured ALIAS already exists. The error code 'already used' will be displayed.

Dialogic
15-May-13
Revised 21-Jun-13

Release 1.3.2

1 Overview

This is a maintenance release which contains important corrections for M3UA Route availability indications and MSL allow SS7G41 units fitted with latest versions of the SS7LD board to function correctly. Previous software releases will not operate correctly with the latest revisions of the SS7LD board.

The release also includes a correction relating to throughput licensing when acting as a SIGTRAN gateway and a correction to the validation checks when configuring MTP link sets.

This is the first release since 1.3.0 and it is fully backwards compatible with that release.

1.1   Applicability

This release is applicable to all users. It is essential for correct operation of any SS7G41 units containing SS7LD boards with **serial number RC920000** or later. The serial number of the board can be read using the STBOP MMI command.

2 Changes

2.1   SS7LD Boards from Serial Number RC920000

Due to a new hardware device on later revisions of the SS7LD signaling board, any SS7G41 units fitted with SS7LD boards with Serial Number RC920000 and greater will not operate correctly with software prior to this release.

When fitting new SS7LD boards in the field, users should seek to upgrade to this software release prior to fitting the new board.

Prior to downgrading to an earlier software release in the field, users should use the STBOP command to confirm that the unit does not contain any SS7LD boards with a Serial Number of RC920000 or greater.

The impact of using an incompatible software release is that the SS7 signaling links will fail to come into service.

2.2   M3UA Licensing

This release corrects the usage of the SIU and SWS licenses to ensure the correct allocation of license capability for M3UA when the Signaling Server is acting as a Signaling Gateway towards a M3UA application server.

2.3   Multiple Network Contexts

This release corrects an important issue affecting users of multiple network contexts in dual operation which previously in some cases prevented configuration of multiple Originating Point Codes (OPC). The issue occurred only when NC0 is in use and prevented configuration of other Network Contexts.

Dialogic
08-Mar-13

Release 1.3.0

1 Overview

This is a feature release which adds support for the new MAP services and adds the ability to configure multiple profiles for each MAP service.

The release supports the Get IMSI Service and the ability to simulate certain services received from an HLR (Receive Send Routing Information for Short Message Request, Receive Report SM Delivery Request, Receive Ready for SM Request, Receive Subscriber State, Receive Location Request, Receive Get IMSI Request) or sent by an HLR (Send Alert Service Centre).

The ability to configure multiple profiles for each web service allows the application to select which configuration profile to use on a per transaction basis. This feature allows full use of all four Network Contexts.

To support the new services and capabilities an updated command set has been introduced to manage configuration of MAP Web services.

SWS service configuration data previously held in the binary configuration file (config.cf3) is now stored in a new binary configuration file (sws.cf3). Files created using Release 1.3.0 or later software are not compatible with earlier versions of software. When Release 1.3.0 is first run it will automatically upgrade the format of the configuration file to the new format. If there is need to revert to a previous software release any configuration data changes made since upgrading to Release 1.3.0 will be lost.

This is the first release since 1.2.0 and it is fully backwards compatible with that release.

1.1 Applicability

This release is applicable for all users.

Applications should make use of the updated *SWS XSD file* (Release 1.2.3) which contains full definitions for all the new services.

This release should be used in conjunction with *Dialogic® DSI SS7G41Signaling Server SWS Developer's Manual, Issue 4* which provides full details on the URIs and XML parameters and *Dialogic® DSI Signaling Servers SS7G41 Operator's Manual, Issue 5* which details full command syntax. In addition the use of SWS Profiles is documented in *Dialogic® DSI SS7G41 Signaling Server Introduction to SWS Profiles* (GA020LGD).

2 New Features

2.1 New SWS Services

This release allows the transmission of the following MAP services via the API.

- MAP-SEND-IMSI

- MAP-ALERT-SERVICE-CENTRE

This release allows the reception of the following services and sending the result

- MAP-SEND-ROUTING-INFO-FOR-SM (Result includes MAP-INFORM-SERVICE-CENTRE)

- MAP-REPORT-SM-DELIVERY

- MAP-READY-FOR-SM

- MAP-ANYTIME-INTEROGATION

- MAP-SEND-IMSI

The updated *SWS XSD file* (Release 1.2.3) contains full definitions for all services

2.2   SWS Profiles

This release adds the ability to configure multiple profiles for each SWS service. This provides the user the ability set up several sets of configuration parameters which can be invoked each time a transaction takes place by including a reference to the specific profile within the web service URI at run-time. This also allows the user's application to make use of all four of the Network contexts supported by the SS7G41.

Refer to the *Dialogic® DSI SS7G41Signaling Server SWS Developer's Manual, Issue 5* for details of using the Functional API to select a profile.

Refer to *Dialogic® DSI SS7G41 Signaling Server Introduction to SWS Profiles* (GA020LGD). for details of the new configuration commands used to configure SWS services and profiles.

2.3   SWS Service Configuration Commands

The functionality introduced in this release makes use of a new set of configuration screens and MML commands which are fully documented in *Dialogic® DSI SS7G41 Signaling Server Introduction to SWS Profiles* (GA020LGD).

The introduction of the new commands means that the following existing commands are now obsolete and they are no longer supported.

```
MALBP - MAP LBS Services Configuration
MALBS - MAP LBS Services Set
MARSP - MAP Ready for SM Configuration
MARSS - MAP Ready for SM Set
MASMP - MAP SMS Services Configuration
MASMS - MAP SMS Services Set
MAUSP - MAP USSD Services Configuration
MAUSS - MAP USSD Services Set
MSLBP - MAP LBS Web Services Measurements
MSSMP - MAP Ready for SM Measurements
MSSMP - MAP SMS Web Services Measurements
MSUSP - MAP USSD Services Measurements
```

3 Other Changes

3.1   Event Logging

The following maintenance events are now logged to the maintenance log and to the management host: MTP2 events (MGT_MSG_SS7_EVENT), M3UA errors (M3U_MSG_M3U_ERROR) and M3UA events (M3U_MSG_M3U_EVENT).

Dialogic
04-Feb-13

Release 1.2.0

1 Overview

This release is a feature release which extends Subscriber Services allowing it to determine the status of a mobile subscriber by querying the HLR with an MSISDN.

The release supports up to four Telnet MMI sessions and up to eight browser based MMI sessions.

The release also includes additional features, functionality and corrections as detailed below.

This is the first full release since Release 1.1.0, it is fully backwards compatible with that release.

1.1   Applicability

This release is applicable for all users.

Applications should make use of the updated *SWS XSD file* (Release 1.2.2) which contains full definitions for all the new services.

This release should be used in conjunction with *Dialogic® DSI Signaling Servers SS7G41 Operator's Manual*, Issue 5 which details full command syntax.

Additional User Documentation supporting the new Sigtran Gateway Capability and Message Router Functionality - *Dialogic® DSI SS7G41 Signaling Server – Introduction to Message Router Functionality (GA017LGD)* is available on request.

2 New Functionality

2.1   Subscriber State Requests – Get Subscriber API

This release extends Subscriber Services allowing the user to determine the status of a mobile subscriber by querying the HLR with an MSISDN.

To request the Subscriber State of a mobile device, the client should call GET on the following URI:"/dialogicwebservices/signaling/<msisdn>/subscriberState".

The service uses an AnyTimeInterrogation request and response as shown in the following figure:
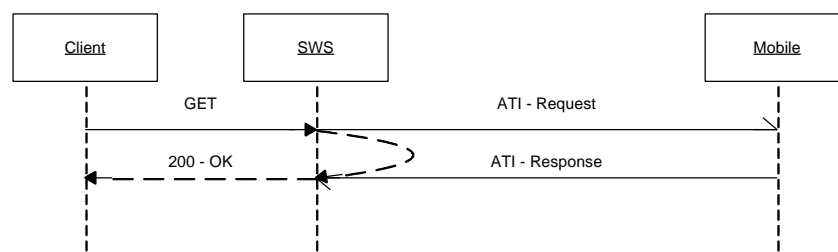
For example:

```
HTTP GET
http://192.168.0.1:81/dialogicwebservice/signaling/4477881213212/
subscriberState
```

The XML payload returned will include the subscriber state, for example:

```
<?xml version="1.0" encoding="utf-8"?>
<!-- -->
<subscriberState version="1">
  <state state="assumedIdle"/>
</subscriberState>
```

Full details of the possible return values are contained within the XSD file.

To facilitate support for the Subscriber State Request service the MALBS, MALBP and MALBP MMI commands have been replaced with MASSS, MASSP and MSSSP commands respectively. Rather than simply allowing configuration of the 'Location Based' Subscriber Service the new commands will allow configuration and report measurements for Location Based and Subscriber State Request Subscriber Services.

2.2   M3UA – Support for 4096 Routes

This release increases the maximum number of M3UA routes from 256 to 4096.

2.3   Global Title Load Share Tables

Global Title Load Share Tables support the distribution of messages for a configured Global Title translation rule across a number of Destination point codes. A load share table holds a number of Point Codes across which messages will be distributed.

A new configuration command**, SCCP_LOAD_SHARE_TABLE,** allow users to establish a Load Share Table and select run-time options.

A second command, **SCCP_LOAD_SHARE_DPC** should be used to associate a destination point code with the Load Share Table. The command should be used multiple times, each time adding a single point code to the Load Share Table.

A Load share table can be associated with a GTT by configuring it as the point code in the **SCCP_GTT_ADDRESS** command.

A new command, **CNLTP**, displays current Load Share Tables and the command **CNLDP**, shows the assignment of Destination Point Codes to a Load Share Table.

The command syntax is specified in the *Dialogic® DSI Signaling Servers SS7G41 Operators Manual*.

2.4   Drop and Insert

'Drop and Insert' functionality allows a combined media and signaling E1/T1 to be terminated on the SS7G41 with the signaling processed by the SS7G41 and the media passed on through another E1/T1 interface to the media processor.

To support 'Drop and Insert' a new configuration command**, STREAM_XCON**, has been introduced to control the cross connect switch on the signaling boards, enabling the cross- connection of timeslots between the two PCM ports on each signaling.

2.5   Browser based MMI

This release allows up to eight independent browser based MMI sessions.

The browser based MMI now supports equivalents to the existing MMI commands STTDP, STIPP and STDEP. To identify how to access browser commands, the '?' query can be used on the Telnet command line interface to produce help output for an MMI command. This help output will now also identify the associated browser page where the equivalent function can be accessed. In addition the browser interface identifies the command line MML command/parameter that performs the equivalent function.

2.6   Telnet MMI.

Prior to this release the signaling server allowed telnet access on two ports, 8100 and 8101.This release extends telnet access so that users can telnet into two further ports 8102 and 8103.

The CNSYx command supports a new parameter, LINES, which specifies the number of lines that will be displayed before prompting a user to "Press return to continue or Ctrl-X to cancel". When LINES is set to 0 this paging mechanism is disabled.

The CNSYx command supports a new parameter, TLO, to change the inactivity period (in minutes) before a Telnet MMI session automatically logs out. By default this timeout period is 30 minutes.

A new MMI command, STUAP, has been introduced which displays which users are currently logged on.

The per-port MMPTx commands are no longer available.

3 Other Changes

3.1   NTP Initialization

This release enhances the NTP startup sequence to more quickly adjust to the current time.

3.2   MNSSI command

The MNSSI takes a snapshot of key system data, storing it in a single file (syslog.tgz) in the root directory of the ftpuser account. This release adds the ability to include trace files in the snapshot file which is achieved by setting the parameter TRACE=Y when executing the MNSSI command.

3.3   STTDP command - TCAP Dialog Status

The STTDP command now omits any dialogues that are in the IDLE state resulting in a more compact display.

3.4   CNPCP command - PCM Status – Board Position

This release corrects the board position displayed by the CNPCP command (which previously was one greater than it should have been).

3.5   MTP2 - HSL Links

This release corrects an issue which previously could result in restricted HSL link throughput when operating over high latency links.

3.6   M3UA – Trace for received Transfer Requests

A new M3UA trace event (bit 16) has been added to the input mask for M3UA to enable receipt of outgoing Transfer Requests from user parts to be traced.

3.7   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.

3.8   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.

Dialogic
18-Oct-12
15-May-13 (Revised)

Release 1.1.0

1 Overview

This is a feature release which adds several new services for implementation of or interfacing to a Short Message Service Centre (SMSC). The release also allows the user the ability to optionally invoke the "Send Routing Information for Short Message" and the "Forward Short Message" services as separate API calls providing more application flexibility.

The release also includes a number of corrections and enhancements as detailed below.

This release is fully backwards compatible with the previous release.

1.1 Applicability

Whilst this release is primarily targeted at users that require the new services, it does include some corrections to existing services and is suitable for deployment by all users.

Applications should make use of the updated *SWS XSD file* (Release 1.2.1) which contains full definitions for all the new services.

This release should be used in conjunction with *Dialogic® DSI SS7G41 SWS Developer's Manual,* Issue 3 which provides full details on the URIs and XML parameters and *Dialogic® DSI Signaling Servers SS7G41 Operator's Manual*, Issue 4 which details full command syntax.

1.2 Resolved Customer Issues

The following customer issue is resolved in this release: IPY00100028.

2 New Features

2.1 Atomic Routing and SMS API Calls

This release provides the option to handle the "Send Routing Information for Short Message" requests and "Forward Short Message" requests separately using individual "Atomic" API calls. This permits applications more control of when to send routing request and when to choose not to.

The Atomic SMS and Routing API calls use the configuration supplied for existing SMS Services using the management web interface or the MASMS and MASMP commands.

2.2 New incoming services

This release allows the reception of the following services via the API.

- MAP-ALERT-SC-WITHOUT-RESULT

- MAP-ALERT-SERVICE-CENTRE

- MAP-INFORM-SERVICE-CENTRE

Configuration of the "Alert Service Centre" service is set using the new ASC parameter of the existing SMS Services command, using the management web interface or the MASMS and MASMP commands.

ASC	AUTO	Automatically acknowledge AlertSC indications. This is the default value.
	OFF	Always reject
	MAN	Enable user access of AlertSC via web-service API. If this option is set user is required to retrieve AlertSC indications, if not retrieved before timeout they will be rejected

2.3   New outgoing services

This release allows the sending of the following services via the API.

- MAP-NOTE-SUBSCRIBER-PRESENT

- MAP-READY-FOR-SM

The "Ready for SM" service can be configured using the management web interface or the new MARSS and MARSP commands The "Note Subscriber Present" service is only used where the NSUBP option has been enabled in the MARSS command.

2.4   Send Report SM Deliver Status

This release adds the ability to optionally send a "Report SM Delivery status" message to the HLR. The signaling server can be configured to automatically send a "Report SM Delivery status" via the configuration interface, or the user can send it manually using the RESTful API.

The Automatic Report SM Deliver Status configuration is set using the new RDEL parameter of the existing SMS Services command, using the management web interface or the MASMS and MASMP commands.

| RDEL | Y | Automatically send ReportSMDelivery update indication to HLR. These updates are only generated for Web-Service API request via the combined SMS delivery requests addressed using the MSISDN. Users of the separate SendRoutingInfo and ForwardSM request API calls can generate the ReportSMDelivery indications manually using an API call. |
| | N | No not automatically send ReportSMDelivery. This is the default value. |

3 Other Changes

3.1   Cell ID correction (IPY00100028)

A correction has been made to the Location Based service. Previously the values reported in the <cellId /> element were incorrectly formatted in the XML response.

Dialogic
30-Apr-12

Release 1.0.5

1 Overview

This is a maintenance release which includes several important corrections as detailed below. All users are advised to upgrade to this release which is the first generally available release since 1.0.2.

This release is fully backwards compatible with the previous release.

1.1 Applicability

All users are advised to upgrade to this release.

Additionally SNMP users are advised to upgrade to SNMP MIB package V2.02 or later.

The following user documentation updates are available for use in conjunction with this release:
Dialogic® DSI Signaling Servers – SS7G41 Hardware Manual, Issue 2,
Dialogic® DSI Signaling Servers – SS7G41 Operators Manual, Issue 3,
Dialogic® DSI Signaling Servers – SNMP User Manual, Issue 3.

1.2 Resolved Customer Issues

The following customer issue is resolved in this release: IPY00099282 and IPY00099335.

2 Changes

2.1 Ethernet Port Bonding (IPY00099335)

This release corrects an issue which arose when using Ethernet port bonding to bond Ethernet port 1 with Ethernet port 0. Under these conditions if the unit was restarted it would revert to a condition where it needed to be manually reconfigured into SWS mode.

The release also simplifies the status for bonded Ethernet ports by the STEPP MMI command. Instead of reporting ACTIVE/STANDBY/DOWN the status is now either UP or DOWN.

2.2 Serial Number Display

The CNSYP MMI command has been enhanced to display the serial number of the unit using the UNIT_SERIAL parameter.

2.3 Disk Drive Control

This releases corrects operation of the internal Hard disk Controller to ensure reliable support for hot swapping of hard drives. In such cases it is essential to follow the disk replacement procedures described in the operators manual.

2.4 License Sharing

This release corrects the usage of the TDMSHARE parameter on the CNSYS MMI command so that when multiple throughput-based protocols are used, the allocation of license capability for M2PA and M3UA is correctly allocated between the protocols based on the user command.

2.5   Diagnostic Snapshot

The MNSSI command takes a snapshot of key system data, storing it in the syslog/snapshot subdirectory of ftpuser account. This release causes all snapshot data (excluding trace and binary files) to be written to a single file (syslog.zip) root directory of the ftpuser account.

2.6   SNMP Licensed Capability

The Licensed Capabilities reported over SNMP have been corrected. Users are advised to update the SNMP MIB to V2.02 or later which includes revised descriptions of the Licensed Capabilities values.

2.7   Startup Sequence

A problem during the boot sequence which could cause the system to hang waiting for user input has been corrected.

This release corrects a problem that could occasionally prevent units containing SS7LD boards from starting up correctly.

2.8   Alarms and Event Reports

A new alarm, "CMOS Bat Low", has been added to indicate event that the CMOS back-up battery back-up has become discharged.

A new alarm, "File sys err" has been added in the case that a file system check (at startup) detects possible errors. In the event that this alarm occurs users should restart their system to attempt auto correction.

From startup M2PA links are now shown as failed until they come in service.

MTP2, M2PA and M3UA links no longer generate alarms when they have been manually deactivated.

License events from M2PA and M3UA, including license throughput congestion, will be reported to the management host and maintenance log using the MGT_MSG_LIC_EVENT message.

2.9   STCRP - SS7 Route Status

The SS7 Route status MMI command STCRP has been enhanced to allow a user to request the status of an individual route by specifying the optional C7RT parameter on the command.

2.10   MSLCP & STLCP Resource Leakage

This release corrects a resource leakage issue encountered using the MSLCP and STLCP commands where an internal message was not released. If the commands were executed a large number of times this could result in internal congestion and ultimately a system restart.

2.11   SS7MD – Sync Alarm

This release corrects an issue with the PCM Sync alarm when using CRC4 Multiframe Operation on the SS7MD board which previously resulted in failure for the alarm to clear despite the PCM signal being valid.

2.12   PCM – Bit Errors and Code Violations

Two additional PCM Measurements are now reported; BITERR is the count of bit errors detected by the framer and CV is the count of line code violations.

2.13   SCCP – Disable UDTS Generation

An option has been introduced to allow automatic generation of UDTS messages by SCCP to be disabled. Further details are available on request.

2.14   M2PA - Dynamic Configuration

Previously issues existed where a user was unable to deactivate an SS7 M2PA link, dynamically add a TDM with the same blink as an existing M2PA link (which identifies the SIGTRAN link id for M2PA) as well as not being able to re-add a previously removed SS7 M2PA link. These have been corrected.

2.15   M3UA – Default Trace Mask

To improve usability the MMI command CNTMS has been modified to offer default values for the input and output trace masks that allow tracing RX_IND and TX_REQ messages without needing to explicitly set the trace masks.

2.16   Web Services API

A problem existed where users could not configure the Web Services API to operate above any Ethernet port other than ETH 0. This has been corrected and the IPEPS MMI command can be used to set the WSAPI to allow configuration of Web Services above any Ethernet port.

Dialogic
27-Apr-12

Release 1.0.2

1 Introduction

This is the first full release of SWS Mode software for the Dialogic® DSI SS7G41 Signaling Server. The SS7G41 is a functional replacement for the existing SS7G31 and SS7G32 signaling servers. It delivers high density (up to 248 Low Speed Links or 8 High Speed Links) in a low profile 1U form factor and supports one or two signaling boards that are either high or low density.

The SS7G41 supports SWS (Signaling Web Server) and SIU (Signaling Interface Unit) operating modes. The full documentation set for the product range which comprises:

- Dialogic® DSI SS7G41 Hardware Manual.

- Dialogic® DSI SS7G41 Operators Manual.

- Dialogic® DSI SS7G41 SWS Developers Manual.

- Dialogic® DSI SS7G41 SIU Developers Manual.

- Dialogic® DSI SS7G41 SIU Migration Guide.

NOTICE

This Release should NOT be loaded onto pre-production SS7G41 units (as used for the field trial). Pre-production units are identified by a Serial Number of the format S/N LGD00xxx.

Users of Pre-production units should contact their Dialogic Support centre for further instructions

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Dialogic
21-Oct-11