

SS7 and SIGTRAN Glossary

A glossary for SS7, SIGTRAN and related telecommunications and communications terminology.

ZYTRAX now offers [SIGTRAN and SS7 training](#).

AS	Application Server (AS). Term used in SIGTRAN to describe an application which runs in an IPSP and which is addressed using either a DPC/OPC or SIO/DPC/OPC (if using SCCP) and represents a Routing Key .
BISUP	Broadband ISDN User Part (BISUP). Call set-up procedures for Broadband networks to deliver services such as HDTV, video-conferencing.
BSSMAP	Base Station System Mobile Application Part (BSSMAP). Procedures used from the Mobile Switching Center (MSC) to the Base Station Controller (BSC) in GSM networks.
Call Control	Call Control is the generic term used to describe messages which are concerned with establishing (call set-up) or terminating (call tear-down) a connection on a Circuit Switched Network (CSN) .
CAMEL	Customised Applications for Mobile networks Enhanced Logic (CAMEL) defines a set of services used in GSM/3G networks. Messages are carried in the CAP SS7 protocol.
CAP	CAMEL Application Part (CAP) is a subset of INAP and is carried in an extension of TCAP .
CSN	Circuit Switched Network (CSN). Network in which a permanent end-to-end circuit is maintained from call establishment to call tear-down. Contrasted with packet networks .
DPC	Destination Point Code (DPC) is carried in the Routing Label and indicates the Point Code to which the messages is addressed. It is used by MTP3 to address SS7 MSUs .
End Point	End Point (EP) is a term used in Common Channel Signaling System #7 SS7 to describe a final destinations for MSUs addressed using Point Codes . Thus SSPs (which provide end-user services) and SCPs (which provide database services) are end points. STPs (which provide routing and other services) are not end points.
FISU	Fill-In Signal Unit (FISU) is one of three packet types that are used in a SS7 signaling network. The FISU is sent only when the SS7 network is idle and is used to monitor signal quality and network integrity. The other packet types are LSSU and MSU .
HLR	Home Location Register (HLR). Term used in mobile networks to describe the system which contains information about a mobile subscriber such as subscribed services, billing information and current location. If the subscriber is currently roaming there will be a copy of some of this information in the VLR of the roaming network.
INAP	Intelligent Network Application Part (INAP). Advanced Signalling associated with Intelligent Network (IN) (RoW) or Advanced Intelligent Network (AIN) (US).
IPSP	An IP Signalling Point (IPSP) is defined by SIGTRAN (an IETF protocol) to be an SS7 end-point in a IP network and which runs one or more AS .
ISUP	ISDN User Part (ISUP) is a Call Control protocol used in establishing (call set-up) or terminating (call tear-down) a connection on a Circuit Switched Network (CSN) . Other call control protocols are TUP , BISUP and national variants such as IUP and NUP .
IUP	Interconnect User Part (IUP) is a UK Call Control protocol used in establishing (call set-up) or terminating (call tear-down) a connection on a Circuit Switched Network (CSN) . Other call control protocols are TUP , BISUP , ISUP and national variants such as NUP .
LSSU	Link Status Signal Unit (LSSU) is one of three packet types that are used in a SS7 signaling

	network. The LSSU is to send information about link status between end-points. The other packet types are FISU and MSU .
M2PA	M2PA is part of SIGTRAN and is an IETF protocol that allows SS7 MTP3 messages to be transferred to an IP network. M2PA by preserving the MTP3 layer each end-point in the IP network to have a Point code .
M2UA	M2UA is part of SIGTRAN and is an IETF protocol that allows SS7 MTP3 messages to be relayed to an IPSP . The Signaling Gateway (SG) acts transparently and does not need a point code.
M3UA	M3UA is part of SIGTRAN (an IETF protocol) that allows SS7 MTP3 messages to be used by the Signaling Gateway (SG) to select multiple IPSP destinations based on criteria defined to the M3UA layer and without the need for additional point codes .
MAP	Mobile Application Part (MAP). The pre-3G term used to define procedures used in mobile networks such as roaming. Sits on top of TCAP .
MGC	Media Gateway Controller (MGC). Generic term which describes any system that converts from one media or network type to another such as a VoIP gateway.
MSC	Mobile Switching Center (MSC) is a generic term used in wireless/mobile networks to define a system that, while it may be comprised of one or more physical systems, typically handles the functions of cell-handoff, SS7 interworking (for PSTN calls), SMS services, voice conferencing and billing/charging. The MSC is logically part of the Network Support System (NSS) and is typically either connected to, or has embedded within it, the HLR , VLR and Authentication Center (AuC).
MSU	Message Signaling Unit (MSU) is one of three packet types that are used in a SS7 signaling network. The MSU carries User Part protocol messages. The other packet types are LSSU and FISU .
MTP	Message Transfer Part (MTP). Generic term covering layer MTP3 , MTP2 and MTP1 .
MTP1	Message Transfer Part 1 (MTP1). The physical layer concerned with placing data onto, and reading from, a single (point-to-point) network connection.
MTP2	Message Transfer Part 2 (MTP2). Data Link Layer - concerned with ensure reliable communication between both ends of a single (point-to-point) network connection.
MTP3	Message Transfer Part 3 (MTP3). Network layer - concerned with moving data between end points in the network. The end-point address (point code) is visible to MTP3.
NIF	Nodal Inter-working Function (NIF) is a term used in SIGTRAN (an IETF protocol) to describe a glue layer that interfaces various layers within the SS7 or SIGTRAN stacks. The functionality of the NIF is not defined within the standard and is therefore implementation specific.
NUP	Network User Part (NUP) is a UK Call Control protocol used in establishing (call set-up) or terminating (call tear-down) a connection on a Circuit Switched Network (CSN) . Other call control protocols are TUP , BISUP , ISUP and national variants such as IUP .
OPC	Origination Point Code (OPC) is carried in the Routing Label and indicated the Point Code that originated the messages. It is used by MTP3 to address SS7 MSUs .
Point Code (PC)	Point code (PC) is the address of an end-point in a SS7 network (or a SIGTRAN enhanced service). The ITU-standard uses 14 bits, ANSI (North America) uses a 24 bit code (network, cluster, member octets).
RANAP	Radio Access Network User Part (RANAP). Term used by 3G and defines communication between the Mobile equipment (ME) and the Radio Network Controller (RNC) and the Mobile Switching Center (MSC). Roughly equivalent to BSSMAP in pre-3G (GSM) networks.
Routing Key	The Routing Key is a term used in SIGTRAN and defines the SS7 message parameters, such as DPC or SIO (or combinations) that will be handled by a specific AS (IPSP). Essentially it defines the SS7 to IP address mapping for a specific function (SIO) or address (DPC) and may be regarded as a routing element within a routing table.

Routing Label	The Routing Label in SS7 is used by MTP3 to address SS7 MSUs and consists of the DPC and OPC .
SCCP	Signaling Connection Control Part (SCCP) is carried in MSUs and allows for routing to applications based on one or more of the Point Code , subsystem number or called/in calling party number. SCCP supports and number of services such as TCAP , MAP , RANAP , INAP .
SCP	A Service Control Point (SCP) is End Point in a Common Channel Signaling System #7 SS7) network that provides a service such as credit card calling and typically but not exclusively requires database lookup. SS7 networks consist of SCPs, STPs and SSPs .
SCTP	The Stream control Transmission Protocol (SCTP) is used by SIGTRAN (an IETF protocol) to reliably transport SS7 messages in an IP network from a Signaling Gateway (SG) to an IPSP . Adaption layers (M2PA , M2UA , M3UA and SUA) use the SCTP as a transport service.
SG	The Signaling Gateway (SG) is part of SIGTRAN (an IETF protocol) and defines a system that converts from the SS7 network to the IP network. SGs use a common IP and SCTP base and adaption layers (M2PA , M2UA , M3UA and SUA).
SIGTRAN	SIGTRAN is an IETF protocol that allows SS7 messages to be reliably transported over an IP network using a common IP and SCTP base and adaption layers (M2PA , M2UA , M3UA and SUA).
SIO	Service Indicator Octet (SIO) is used by MTP3 and indicates the higher level protocol being carried such as ISUP or TCAP and is used to route the MSU .
SS7	Common Channel Signaling System #7, more commonly abbreviated to Signaling System 7 (SS7) is an out-of-band, packet-like network used to send messages to end-points in a telecommunications network, examples of such messages may be Call Control (using ISUP or application requests such as TCAP . SS7 networks consist of SSPs , STPs and SCPs .
SSN	Subsystem Number (SSN) is used by SCCP to identify the subsystem (application) for which the message is destined for example a specific database or system such as a HLR .
SSP	A Service Switching Point (SSP) is an End Point in a Common Channel Signaling System #7 SS7) network that provides end user services such as call set-up and tear-down. SS7 networks consist of SSPs , STPs and SCPs .
STP	A Signaling Transfer Point (STP) in a Common Channel Signaling System #7 SS7) network provides intelligent routing and management features between various End-Points such as SSPs and SCPs .
SUA	SCCP User Adaption is part of SIGTRAN and is an IETF adaption layer protocol that allows SS7 SCCP messages to be IP aware.
TCAP	Transaction Capability Application Part (TCAP). Protocol layer that sits on top of SCCP . In turn TCAP carries higher level protocols such as RANAP , MAP etc.
TUP	Telephony User Part (TUP). Older version of call control procedures concerned only with analog telephony. Not widely used, ISUP is more common since it offers more extensive services.
USER PART	User Part is the collective term given to all information carried above the Message Transfer Part (MTP) .
VLR	Visitor Location Register (VLR). Term used in mobile networks to describe a system which contains information about a mobile subscriber who is currently roaming in this network. The VLR obtains information (using MAP) from the subscribers HLR .