PeykAsa
TSA

- DPI Solution to Understand Application & Service Usage
- Network Optimization and Troubleshooting
- Monitor Customer Behavior to Reduce Churn
- Fully Scalable; Vendor and Network Independent
- Identification of Various Protocols and Applications

PeykAsa TSA
PeykAsa Transparent Signaling Analyzer

is a distributed and scalable core system that provides operator-independent analysis of signaling traffic in wireline/less networks. **PeykAsa TSA** with its intelligent SS7/IP probes, is the next generation DPI solution to drill further down into various types of metadata. **PeykAsa TSA** development team incessantly monitors changes in protocols and updates libraries of protocol signatures and metadata attributes. **PeykAsa TSA** is the central core that with minimum processing tasks provides an API to decode and encode different network packets such as:

- GSM/GPRS/UMTS
- PSTN/ISDN
- LTE
- VoIP

The plugin-based architecture of **PeykAsa TSA** simplifies the procedure of adding new extensions to this core and exchange different kinds of MSUs received from network nodes. You can simply implement your own plug-ins and benefit from the provided API to access various protocol layers and develop different kinds of telecom applications.

Some Application Areas

The applications are as limitless as the depth of the collected information. With the collected information provided by **PeykAsa TSA** various applications can be levitated.

Data Tracing

Using PeykAsa signaling analyzer, the requisite data for network operators can be collected and saved in any desired format, with the option of including as many details as possible depending on the customer requirements. For example, one would be able to trace the status of a subscriber based on their IMSI, MSISDN, etc and see if all the scenarios are going as expected.

International Roaming Monitoring

The international roaming plugin connected to **PeykAsa TSA** core, provides complete intelligence according to the data gathered from inbound and outbound roamers.
Identification and troubleshooting of roaming scenarios such as location registration, roaming enquiries, call processing, etc. could be named as some of the roaming plugin functionalities.
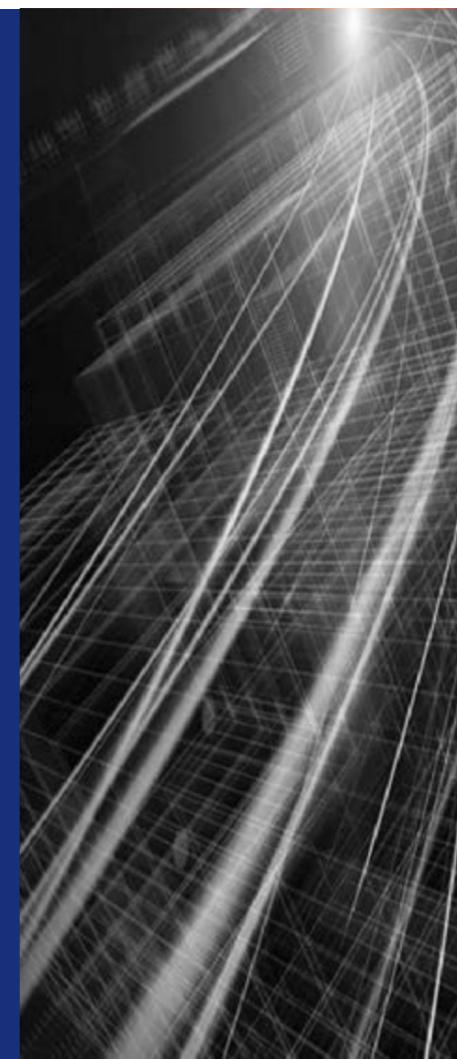
Network Monitoring

Based on performance and fault monitoring values provided by **PeykAsa TSA**, the functionality of the whole network can be easily monitored via PeykAsa-OMC (Operations and Maintenance Center) and user-specific reports can be quickly generated.

By setting user-defined threshold values in an appropriate plugin, thousands of packets can be monitored via **PeykAsa TSA** and any malfunctioning could be easily detected.

PeykAsa TSA Highlights

Extensibility and Scalability

PeykAsa TSA can operate without prior knowledge of its plugins which enables it to be highly scalable and extensible.
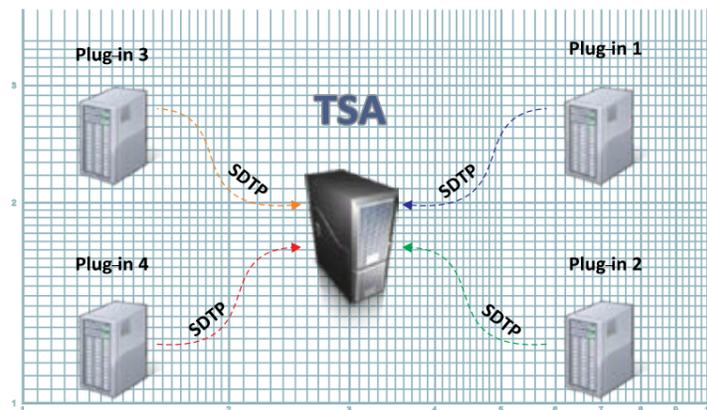
Communication with Plugins

PeykAsa TSA has a multithreaded decoding/encoding architecture and communicates with its plugins using a lightweight, simple-to-use proprietary protocol called PSDTP (PeykAsa Simple Data Transfer Protocol).

Runtime Plugin Attachment

Plugins can connect to **PeykAsa TSA** while it's up and running and request for desired packets in a seamless manner.

Runtime Configuration

Based on a proprietary technology you can configure **PeykAsa TSA** at runtime with no need to restart.

Transparency

PeykAsa TSA's transparency is the result of having two different point codes at the same time allowing it to be invisible to the end points. **PeykAsa TSA** is a transparent analyzer that can be used in active and passive modes.

In active mode **PeykAsa TSA** is capable of filtering the predefined packets without any interruption in the data flow.

On the other hand in passive mode it can be used as a monitoring element in the network.

Prioritization

Plugins can define their rules with priority which makes **PeykAsa TSA** able to send MSUs to them based on the specified preferences.
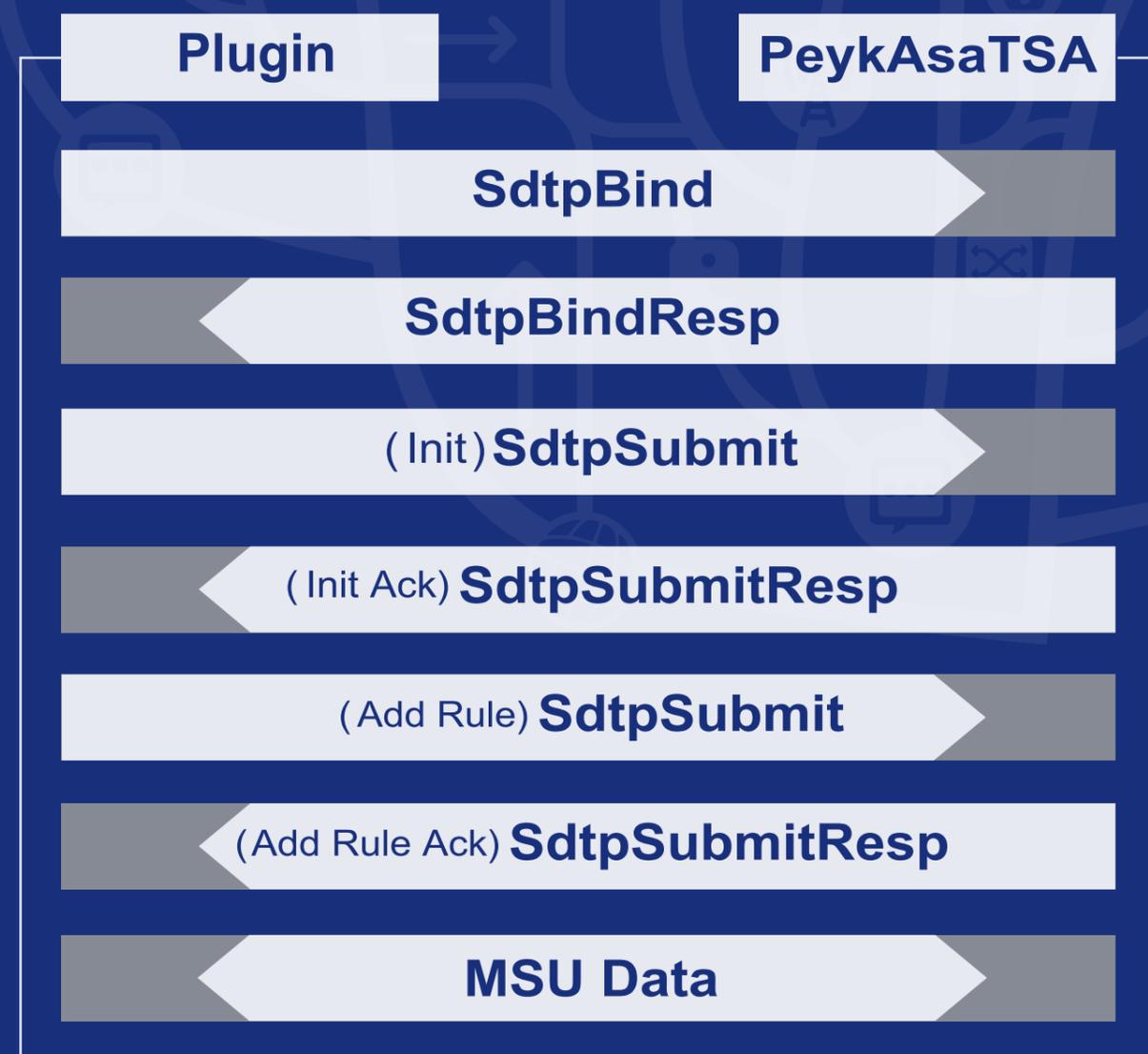
Distributed

According to the MNOs network, different links can carry its data. It would therefore be possible to deploy **PeykAsa TSA** in the network based on a distributed architecture.
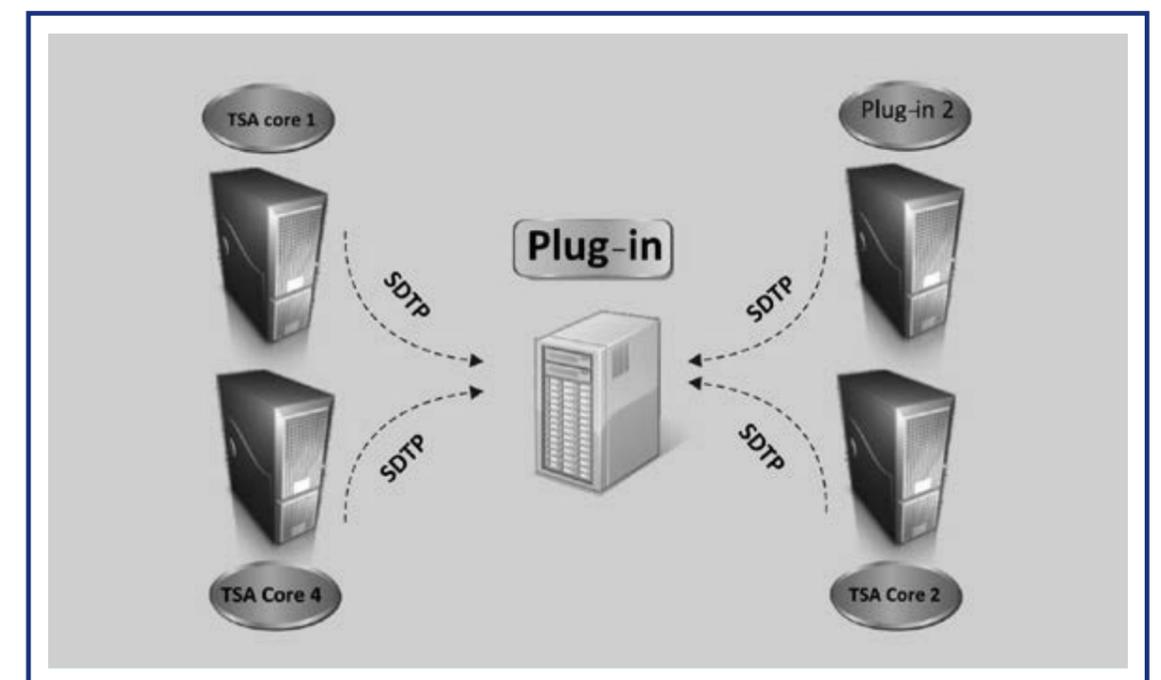
Main Responsibilities of PeykAsa TSA

▶ Decoding Received MSUs from the Network
▶ Sending Decoded Packet in Whole or Any Demanded Part of the Packet
Separately to the Requesting Plugins Based on the Rules Defined by Them
▶ Sending MSUs Received from Plugins Back to the Network

Message Flow Required to Attach Any Plugin to PeykAsa TSA

Plugin	PeykAsaTSA

SdtpBind

SdtpBindResp

(Init) SdtpSubmit

(Init Ack) SdtpSubmitResp

(Add Rule) SdtpSubmit

(Add Rule Ack) SdtpSubmitResp

MSU Data

Supported Protocol Layers

PeykAsa TSA can be deployed on various protocol stacks as shown in the figure below:

SS7 Portocol Stack

Map	ISUP/ BICC/ TUP
TCAP	
SCCP	
MTP LAYER 3	
MTP LAYER 2	
MTP LAYER 1	
PHYSICAL	

VoIp Protocol Stack

AOUDIO	VIDEO	DATA	SYSTEMCONTOROL USER INTERFACE		
G.711 G.722 G.723 G.728 G.729	H.261 H.263	T.120	CALL CONTROL	H.225 / RAS	H245 / CONTROL
RTP/RTCP					
UDP		UDP/TCP			
PHYSICAL					

Sigtran Protocol Stack

Map		ISUP/ BICC/ TUP	
TCAP			
SCCP			
MSUA	MTP8	MSUA	MTP3
	M2PA		M2PA
SCTP		SCTP	
PHYSICAL			

Diameter Protocol Stack

Credit Control Applications	3gpp appli- cations Cx, SH, Ro, Rf And More	Mobile Ipv4 Applications
Diameter		
SCTP	SCTP	
PHYSICAL		