

EASI enabler
getting started

version 1
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Enabling Applications and Services over IP (EASI)

EASI is meant to be an IMS service enabler delivering voice and video as well as data to the customer. EASI interfaces the operator's IP core network by introducing an additional interface to the functions and services of the IP core network.

EASI is based on the Session Initiation Protocol (SIP), the designated signaling protocol for the 3GPP IMS. Whereas the binding to the core network is not limited to SIP. Any signaling protocol could be used to connect to the core.

The customer's view on EASI is an IP based interface which allows easy (signaling protocol independent) access to the IMS core network functions. See figure 1.

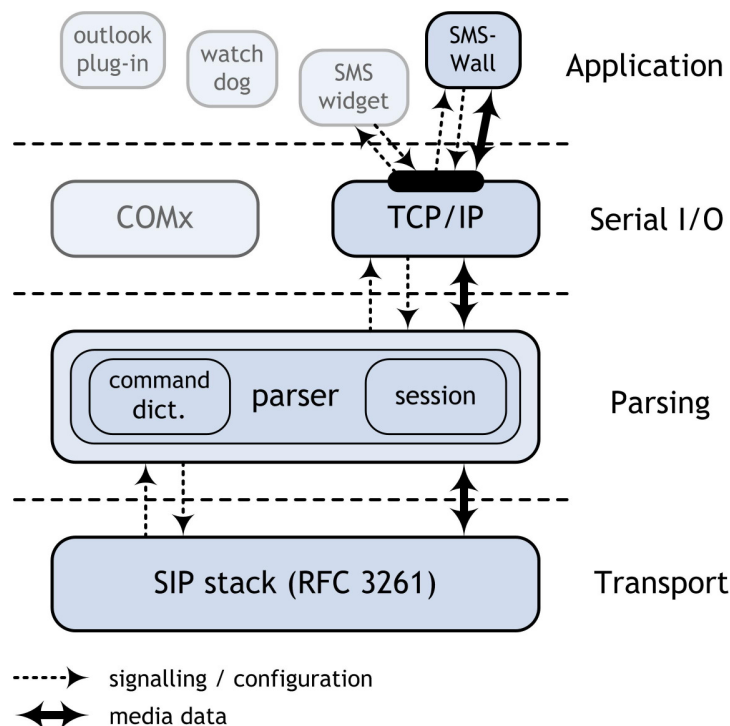


Figure 1: EASI architecture

Transport

As shown in figure 1 the transport layer (SIP stack) is connected to the IMS core network (using the A1 over IP service). Using SIP for signaling, we take advantage of the open source SIP stack mjSIP developed by the University of Parma and University of Roma (www.mjsip.org). Other SIP stack implementations are listed in table 1.

Parsing

The parsing layer converts the incoming data (audio, video, messages, etc) according to the application interface and forwards the data to the serial I/O.

At the moment the parser understands incoming and outgoing SIP MESSAGE messages.

Serial I/O

The interface to the custom applications is implemented as a TCP/IP connection at the localhost (where the EASI enabler was deployed)

Applications

Services at the application plane use the localhost's TCP/IP connection to send or receive messages. At this level the applications are totally decoupled from SIP.

Configuration of EASI Enabler

To configure the EASI enabler navigate to the [INSTALL_PATH]/easi/enabler/cfg/easiAgent.cfg file and change the following values. Usually the SIP access data should be already configured (by A1 Shoutbox installer). See table 1.

<i>parameter</i>	<i>value</i>
via_addr	auto-configuration or your local IP only change this value to your local IP address (connected to the Internet) when you run into problems. Usually the EASI enabler detects the network interface automatically.
auth_user	Your A1.net user name Should be configured by A1 Shoutbox installer. Don't add the domain here! (e.g. without '@A1.net')
auth_passwd	Your A1.net password Also configured by the installer.
auth_realm	a1.net
user	Exactly the same as auth_user
service_local_address	localhost the listening address of the EASI enabler. The enabler will wait for incoming connections from other applications at this IP.
service_local_port	5040 the listening port for incoming connections from other applications.

Table 1: EASI configuration parameters

The application interface

This chapter deals with the interface between the "serial I/O" and the "application" layer. The interface is based on a serial TCP/IP communication.

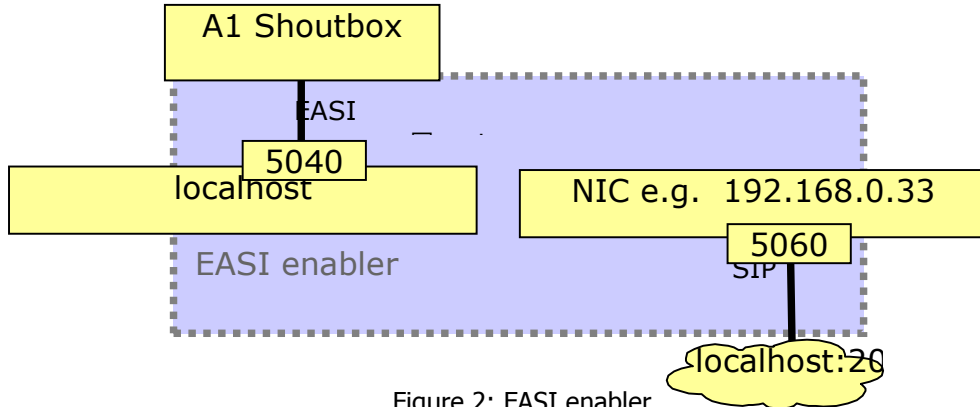


Figure 2: EASI enabler

Message structure

The message format is text-based. Each line must be terminated by a CR (\n). The end of the message is a CR followed by a NULL byte character (e.g. \n\0)

```
method service\n
sender\n
receiver\n
timestamp\n
\n
payload\n\0
```

Examples:

```
RECEIVE SMSWall\n\0
```

Tells the enabler to start with the delivery of messages for the SMSWall service.

```
MESSAGE SMSWall\n
sip:anton.test@example.com\n
sip:betty.test@domaine.net\n
1213878660\n
\n
This is an example payload message!\n
Also with multiple lines.\n\0
```

A message sent from the enabler to the application. (received via SIP)

```
STOP SMSWall\n\0
```

Stops the message delivery.

Method

At the moment 3 different methods are defined:

method	description
RECEIVE	Sent from any application to the EASI enabler. When the EASI enabler receives this message, it starts with the delivery of incoming SIP MESSAGE messages for the defines service. (at the moment the only implemented service is SMSWall. All incoming SIP MESSAGEs are forwarded to the SMSWall subscription.
STOP	Sent from any application to the EASI enabler. Stops the delivery of SIP MESSAGE messages to the service. (requires RECEIVE command before)
MESSAGE	Sent from either the application or the EASI enabler. application to enabler --> send message enabler to application --> receive message

Sender

The EASI sender is a copy of the SIP From header.

Receiver

The EASI receiver is a copy of the SIP To header.

timestamp

Timestamp is in UNIX time format. (http://en.wikipedia.org/wiki/Unix_time)

payload

The payload can be any UTF-8 character, except the end sequence "\n\0"

Using the EASI enabler

An example application which takes advantage of EASI enabler is A1 Shoutbox.

A1 Shoutbox

The A1 Shoutbox takes the advantage of the EASI application layer interface (see figure 1) to build an Adobe Flash based application. The A1 Shoutbox receives messages (SMS or SIP instant messages) and displays them within the Flash application.

The A1 Shoutbox consists of two interdependent parts. An administration tool and a display module. The administration tool is connected to the EASI application interface. It processes and prepares the messages for the display module. Display and administration module are connected via a TCP/IP. Therefore it is possible to run both on two different machines (e.g : one next to the video projector and the other one next to the host who "moderates" the messages.

