ENEA® H324m-BRICKS

Multimedia session control and transfer protocols stack for 3G video

The ITU-T H.324 recommendation was initially issued to specify a suite of standards for sharing video, voice and data simultaneously over modem connections on PSTN (Public Switched Telephone Network). It defines a control protocol (H.245) and multiplexing mechanism (H.223) as well as audio and video codecs used for real-time multimedia streaming over an established switchedcircuit connection.

3G-324M has been derived from H.324 standards by 3GPP and 3GPP2 standardization bodies to specify multimedia communication in mobile switched circuit environments.

3G-324M set of protocols is well suited for delay sensitive applications like video phone, video conferencing, TV broadcasting, and video-ondemand. Such applications could not be satisfactorily operated using currently deployed mobile packet technology due to high packet transmission overhead, high BER, and variable transit delay.
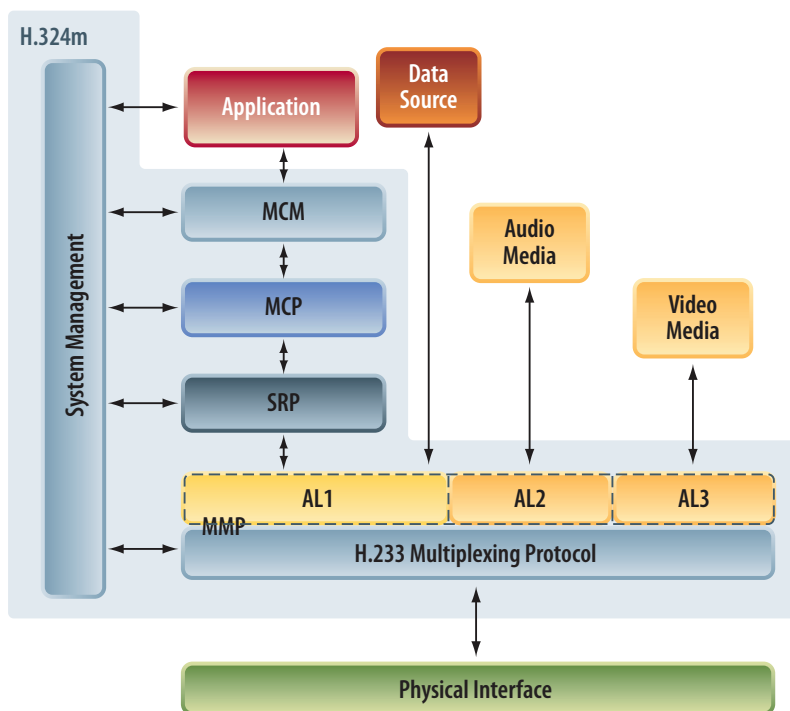
Enea H324m-Bricks

Enea® H324m-Bricks is a portable implementation of this set of standards compliant with:

■ ITU-T H.324 (09/2005) including mobile support specified in Annex A , C and K (Note 1)

■ 3GPP & 3GPP2 specifications: TS 26.111 (V6.01), TS 26.110 (V6.00), and TS 26.911 (V6.00)

■ ITU-T H.223 including Annex A, B, C and D (Note 1)

■ ITU-T H.245 version 11 (backward compatible) including support for H.223 Annexes A, B and C required for mobile communications

Enea H324m-BRICKS consists of the following:

■ ITU-T H.245 protocol for multimedia mobile call control in compliance with H.324 recommendation

■ ITU-T H.223 multiplexing protocol including:

☐ Adaptation layer procedures for data (H.223 AL1), audio (H.223 AL2) and video (H.223, AL3)

■ H.223 basic multiplexing protocol also called level 0

■ H.223 multiplexing protocol extensions for low bit rate multimedia mobile communication over low error-prone channels also called level 1 mobile H.223 extensions as specified in H.223 Annex A

■ H.223 multiplexing protocol extensions for low bit rate multimedia mobile communication over moderate error-prone channels also called level 2 mobile H.223 extensions as specified in H.223 Annex B

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- H.223 multiplexing protocol extensions for low bit rate multimedia mobile communication over highly error-prone channels also called level 3 mobile H.223 extensions as specified in H.223 Annex C and D (Note 1)

Note 1: support of ITU-T H.324 Annex K and H.223 Annex C and D will be part of future releases

Enea H324m-Bricks features

- Flexible support of various H.245 control messages according to requirements
- Modular architecture to ease protocol selection according to targeted equipment
- High level of flexibility thanks to dynamic configuration/reconfiguration procedures
- Enhanced flow control procedure for easy stream management by application
- Low footprint for embedded systems
- Fast call setup time with supports for H.324 Annex K (MONA–Note 1) and WNSRP
- Easy integration with other signaling protocols from Netbricks: MEGACO-Bricks, SIP-Bricks, MGCP-Bricks, Enea ISDN-Bricks

Enea H324m-Bricks is based on Enea's field proven portable architecture using object-oriented design and a message passing mechanism for inter-entity communication. Interfaces to many commercial operating systems are provided including Linux, Microsoft Windows®, VxWorks®, Nucleus®, Enea OSE®, PSOS+®, Thread-X®, Unix®, VRTX®, and many others.

The Enea H324m-Bricks package consists of source code (including build files and application examples), documentation (English), training, warranty and support period.

Enea H324m-Bricks can be easily combined with other Enea signaling protocols (Enea SIP-Bricks, Enea Megaco-Bricks, Enea ISDN-Bricks) providing a unique protocol base to develop Multimedia Mobile User Equipments (Cell phones, Smartphone, PDAs), Gateways, Interactive Video Responders, H324-compliant video phones, and video-streaming servers. It can also be easily integrated with Enea's softmodem product (Enea Softmodem-Bricks) for implementing H.324 compatible PSTN terminals.

Enea H324m-Bricks has been designed from the ground up for the OEM market.

Enea can develop any custom product based on Enea H324m-Bricks technology according to customers' specifications.

Enea H324m-Bricks Software Architecture

Enea H324m-Bricks software architecture is composed of the following components:

- SM: system management
- MCM: Multi Media Control Manager controls H.245 session and coordinates the protocol layers and the user application
- MCP: H.245 multi media control protocol module
- SRP: Simple Retransmission Procedure module (support of SRP, NSRP and WNSRP) also includes Control Channel Segmentation and Reassembly Layer functions (CCSRL)
- MMP: multiplexing and adaptation layer module operating in conformance with ITU-T H.223 supports level 0, 1 and 2. Level 3 will be provided in future release
- These entities provide a value-added API interfaces to the following User modules
- Physical: Physical driver to network access (bit stream) typically wireless physical interface or 64Kbps user channel interface of SS7and ISDN network access
- Video Media: Video media flow (with H.263 or MPEG4 compression for 3GPP/3GPP2 compliance
- Audio Media: Audio flow (with AMR compression for 3GPP/3GPP2 compliance)
- Data: depends on customer application