



## ATM Signaling Stack

Enea's ATM-Bricks is a portable software package that implements the signaling protocols in the endpoint equipment (User side) and switches (network side and private network to network) used in Asynchronous Transfer Mode Networks (ATM). Enea<sup>®</sup> ATM-Bricks is fully compliant with ITU-T recommendations: Q.2931 and Q.21 10 (SSCOP) and with ATM Forum specifications UNI 3.0, 3.1, 4.0 and P-NNI 1.0. Enea ATM-Bricks also implements an Interim Local Management Interface (ILMI) compliant with ATM Forum specifications UNI 3.1, 4.0.

Enea<sup>®</sup> ATM-Bricks is based on Enea's object-oriented Netbricks architecture. Utilizing message passing mechanism for inter-entity communications, Enea ATM-Bricks can process rough synchronous byte streams or support an HDLC controller. Enea ATM-Bricks supports a companion stack for the user plane known as Enea<sup>®</sup> LEC-Bricks (LAN Emulation Client), and an AAL type 2 signaling stack that conforms with ITU-T Q.2630 and Q.2150.

Enea ATM-Bricks is available with interfaces to most commercial RTOs, including AMX, Nucleus<sup>®</sup>, PSOS+, RTC, VRTX, and VxWorks<sup>®</sup>. Enea offers custom implementations of ATM-Bricks for OEMs who require an application-specific solution.

### Enea ATM-Bricks Features

ATM Signaling ATM Adaptation Layer:

- ITU-T Q.2130 Service Specific Coordination Function at UNI (SSCF-UNI)
- ITU-T Q.2140/Q.2144 Service Specific Coordination Function at NNI (SSCF-NNI) for support of MTP3b
- ITU-T Q. Specific Connection Oriented Protocol (SSCOP)

ATM Signaling and Management:

- Signaling protocols compliant with:
  - ITU-T Q.2931 (User and Network side)

- ATM Forum UNI 3.0, 4.0, 4.1
- ATM Forum P-NNI V1.0
- Interim Local Management Interface ILMI compliant with:
  - ATM Forum UNI 3.0 and V4.0

Enea ATM-Bricks supports several signaling variants of UNI and NNI in the same system. The specific selection is made at provisioning time.

An ATM user Call control is provided for controlling call semantics.

### Protocol Entities

Enea ATM-Bricks consists of three primary software entities:

- AALCP: ATM Adaptation Layer Common Part
- SSCOP: ATM Data Link with UNI and NNI SAPs, ANS: ATM Network Signaling
- ACC: ATM Call Control.

SSCOP implements the following functions:

- Q.2130 SCCF UNI SAP
- Q.2140/2144 SCCF NNI SAP, Core SSCOP
- Error correction
- Provisioning and Re-provisioning, APIs
- Standards: ITU-T Q.2110

ATM Network Signaling (ANS) implements the following functions:

- Access on demand

- Q.2931 syntax encoder decode
- Q.2931 Finite State Machine
- Provisioning and Re-provisioning
- APIs
- Standards: ITU-T Q.2931, ATM Forum 3.0, 3.1, 4.0

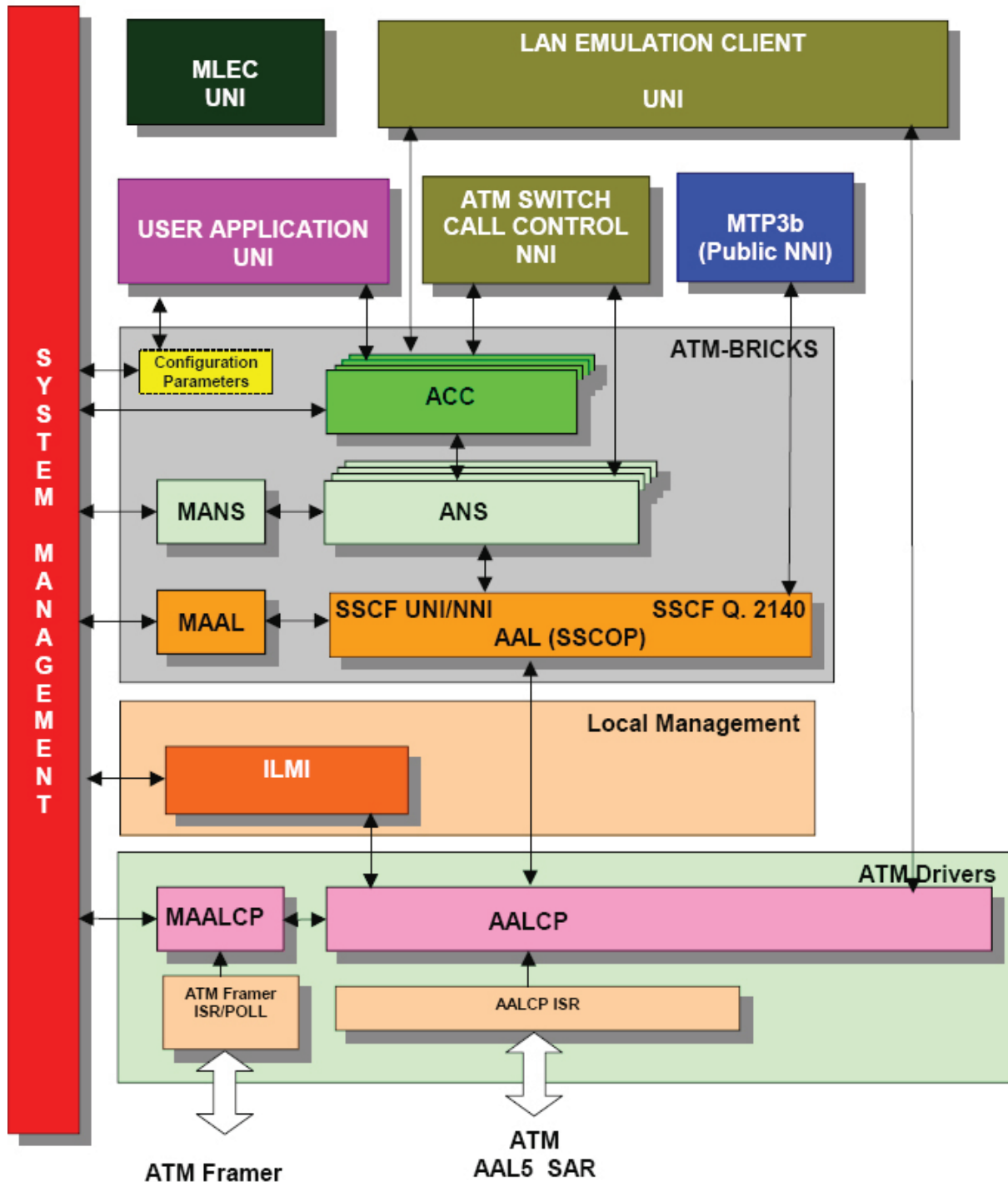
ATM Call Control (ACC) implements the following functions:

- Management of call parameters
- Provisioning and re-provisioning
- APIs
- Standards: ITU-T Q.2931, ATM Forum 3.0, 3.1, 4.0

### Enea ATM-Bricks Software Architecture

- System management entity (SM)
- Physical layers
  - MAALCP management for AAL5 CP
  - AALCP AAL 5 CP
- ATM stack:
  - ILMI ATM ILMI entity
  - MAAL ATM Adaptation Layer management entity
  - SSCOP entity
  - MANS ATM network signaling management entity
  - ANS network signaling entity
  - ACC call control entity

# ENEAA<sup>®</sup> ATM-BRICKS



Enea ATM-Bricks Software Architecture.



Enea<sup>®</sup>, Enea OSE<sup>®</sup>, Netbricks<sup>®</sup>, Polyhedra<sup>®</sup> and Zealcore<sup>®</sup> are registered trademarks of Enea AB and its subsidiaries. Enea OSE<sup>®</sup>ck, Enea OSE<sup>®</sup> Epsilon, Enea<sup>®</sup> Element, Enea<sup>®</sup> Optima, Enea<sup>®</sup> Optima Log Analyzer, Enea<sup>®</sup> Black Box Recorder, Enea<sup>®</sup> LINX, Enea<sup>®</sup> Accelerator, Polyhedra<sup>®</sup> Flashlite, Enea<sup>®</sup> dSPEED Platform, Enea<sup>®</sup> System Manager, Accelerating Network Convergence<sup>™</sup>, Device Software Optimized<sup>™</sup> and Embedded for Leaders<sup>™</sup> are unregistered trademarks of Enea AB or its subsidiaries. Any other company, product or service names mentioned above are the registered or unregistered trademarks of their respective owner. DS50 012009. © Enea AB 2009.