ENEA® V5-BRICKS

V5 Access Protocol For Access Networks and Local Exchanges

Enea's V5-Bricks is a portable software package implementing the V5 protocols in Access Networks (AN) and Local Exchanges (LE). Enea® V5-Bricks is fully compliant with ITU-TS recommendations G.964 and G.965 and with ETSI standards ETS 300 324, ETS 300 347 and EN 300 324, EN 300 347. Enea V5-Bricks supports PSTN User Ports as well as ISDN Basic Rate Access (BRA) and Primary Rate Access (PRA) User Ports.

Enea® V5-Bricks is based on Enea's object-oriented Netbricks architecture. Utilizing message passing for inter-entity communication, Enea V5-Bricks can process a rough synchronous byte stream or support an HDLC controller.

Enea V5-Bricks is available with interfaces to most commercial RTOSes, including AMX, Nucleus, OSE, Precise/MQX, PSOS+, RTC, VRTX, and VxWorks. Enea offers custom implementations of Enea V5-Bricks for OEMs who require an application-specific solution.

Features

Enea V5-Bricks provides the following primary entities:

- DL: Data Link (LAPV5) and Envelope Function (EF)
- V5 entity with the following protocols and Finite State Machine:
  - Control
  - PSTN
  - BCC (V5.2)
  - Link (V5.2)
  - Protection (V5.2)
- BCC-RM: Bearer Channel Connection Resource Manager
- MPH-FSM: Management of Port Status FSM

Layer 1 PH:

- MPH and PH: Physical Framer and Transceivers and HDLC drivers with an optional software-based HDLC
- MPH-D and PH-D for ISDN BRI (So and Uo 2B1Q) and PRI
- "F" User Side Finite State Machine
- "G" Network Side Finite State Machine,
- "J" Digital Section Finite State Machine
- "ET" End Termination Finite State Machine
- Alarm reporting
- Statistics reporting
- Provisioning and re-provisioning
- E1 framer support
  - Dallas Semiconductor: 2154 (E1), 21x54 (E1)
  - Infineon: FALC (E1, T1, J1), QUAQ-FALC (E1, T1, J1), ACFA/IPAT (E1, T1)
  - Mitel MT8930 (So/To), MT89790 (E1), MT9079 (E1)
  - PMC-Sierra: Comet (E1/T1)
- Standard: I.431 (E1), ANSI T1
- Support of BRI Uo (2B1Q)
  - Motorola: MC145572
  - Infineon: IEC-Q
- Standard: ITU-T G.961, ANSI

PH implementation for a synchronous full duplex bit stream:

- Frame delimitation (HDLC frame)
- HDLC bit stuffing and un-stuffing
- CRC16 calculation and error detection
- Error Rate Monitoring (Alignment and Normal)
- Provisioning and re-provisioning
- PH and Management APIs
- Supports:
  - Infineon ISAC-S, IPAC, FALC, ESCC2, ESCC8, Munich-32, HSCX,
  - Motorola MC683xx, PowerQUICC I and II
  - PMC-Sierra: Comet
- Standard: ISO HDLC 3309

V5 Data Link (DL) implements the following functions:

- Core DL
- DL Finite State Machine
- Error correction
- Provisioning and re-provisioning,
- Standards: ITU-TS Q.921, G.964, ETSI ETS 300 324

V5 PSTN (PSTN) implements the following functions:

- PSTN Signal Information Element
- Path management
- PSTN Finite State Machine (FSM)
- Provisioning and re-provisioning
- Standards: ITU-TS G.964 clause 13, ETSI ETS 300 324 clause 13

V5 Control (CTRL) implements the following functions:

- Common control protocol
- ISDN User Port control protocol
- PSTN User Port status indication and control protocol
- Provisioning and re-provisioning,
- Standards: ITU-TS G.964 clause 14 G.965 clause 15, ETSI ETS 300 324 clause 14

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V5 Link maintenance (LINK) implements the following functions:

- Link blocking and unblocking
- Link identification
- Link Control Finite State machine
- Provisioning and re-provisioning
- Standards: ITU-TS G.965 clause 16, ETSI ETS 300 347 clause 16

V5 Bearer Channel Connection (BCC) implements the following functions:

- Allocation/de-allocation of bearer channels
- Audit of bearer channels
- BCC Finite State Machine
- Provisioning and re-provisioning
- Standards: ITU-TS G.965 clause 17, ETSI ETS 300 347 clause 17.

V5 Protection (PROTECTION) implements the following functions:

- Switch over of communication paths
- Management of C-channels
- Protection Finite State Machine
- Provisioning and re-provisioning
- Standards: ITU-TS G.965 clause 18, ETSI ETS 300 347 clause 18

BCC-RM implements the following functions:

- Resource management for BCC functions (allocation, de-allocation, audit, and AN-fault indication)

MPH-FSM implements the following functions:

- PSTN User port status FSM
- ISDN User port status FSM

Enea V5-Bricks Software Architecture

- System management entity SM with V5 management API (U MA)
- Layer 1 drivers:
  - MPH Link physical management entity (line interface)
  - PH-C communication channel entity (HDLC):
    - HDLC Interrupt Service Routine.
    - PH-C entity
- V5 stack:
  - DL entity (LAPV5 and EF)
  - V5 entity with the following sub-entity
    - PSTN
    - CTRL
    - LINK
    - BCC
    - PROTECTION
  - BCC-RM entity
  - MPH_FSM entity
- API:
  - API-SERVER entity

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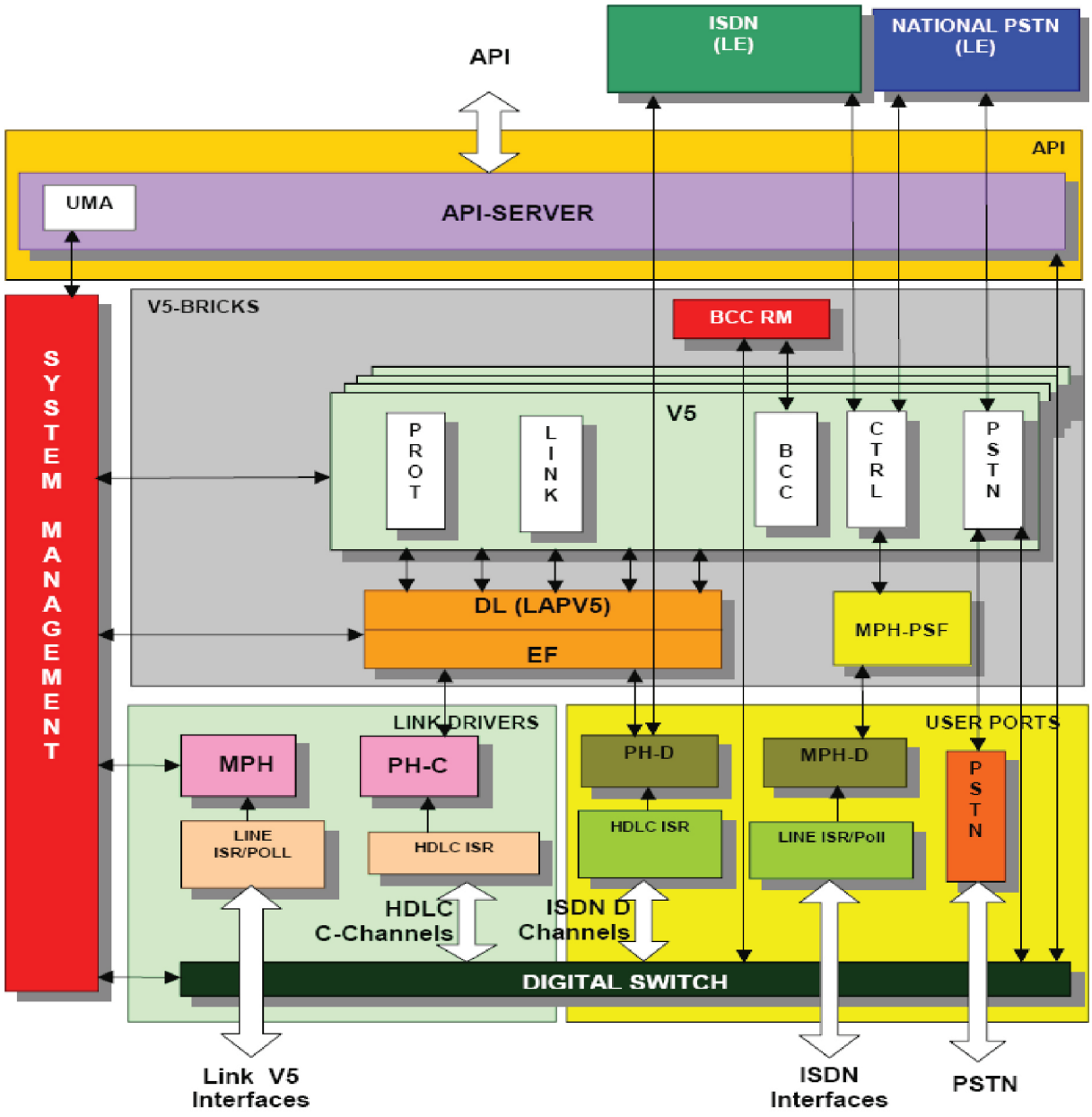

Enea V5-Bricks Software Architecture.