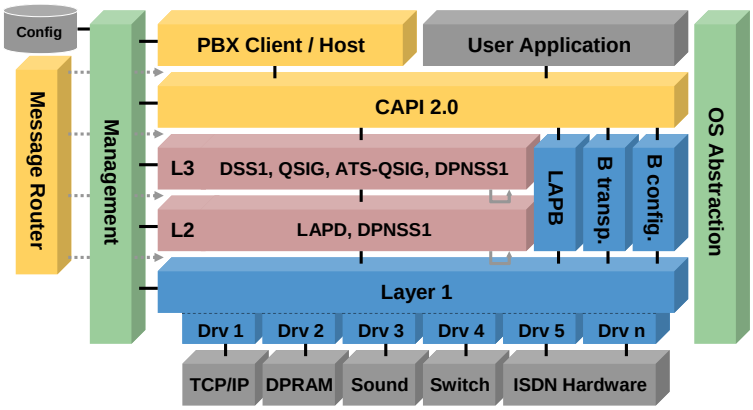
ISDN & Protocols

ikon ISDN and Protocol Software

General

The ikon ISDN and Protocol Software consists of a various Modules that reflect the different Protocol Layers, the Management and the OS Abstraction Module. An optional Message Router Module may be included to divide the Software Modules in Onboard part and Host part. It is available in “C” Source Code or in Binary format for integration in Customer specific Products.



PBX Application

The ikon PBX Software is a CAPI 2.0 based Application implementing PBX Functionality. It is built as a Client and a Host Software and may therefore easily be used in distributed Systems.

CAPI 2.0

Common ISDN API V2.0 (CAPI 2.0) is the most commonly used API for ISDN Applications. The ikon Implementation of CAPI is based on the actual 4th Edition of the CAPI 2.0 Specification and is pre-implemented with the ikon ISDN Protocol Stacks. In Addition to the Messages defined in CAPI Specifications Manufacturer specific Extensions are available, e.g. for the Support of direct Layer 2 Communications, NT Mode or Layer 1 Alarms.

The Interface to Layer 3 of the ISDN or DECT Protocol Stack is based on the Primitives defined by ETSI or ITU and may therefore easily be adapted to other Protocol Stacks.

Layer 3 Protocol Software

Besides the Signalling Protocols DSS-1, QSIG, ATS-QSIG, DPNSS-1 and 1TR6 a transparent Layer 3 is available if a Signalling Protocol is not needed.

All Layer 3 Modules support multiple Links.

DSS-1 (Euro-ISDN) / 1TR6

The DSS-1 Software Module is compatible to ETS 300 403. It is certified for use in Europe on several Hardware and Operating System Platforms. It includes the Basic Call Services as well as Supplementary Services like Hold, Charging Information, Retrieve, Calling Line Presentation and Explicit Call Transfer.

DSS-1 is available for PRI (S_{2M}) and BRI (S_0) Point-to-Point and Point-to-Multipoint, User side and Network side.

1TR6 is the Predecessor of DSS-1.

QSIG

QSIG is used for PBX Interconnection by major PBX Manufacturers. It is implemented according to the ECMA Specifications and includes the Basic Call Services plus Supplementary Services like Hold, Call Transfer and Three Party.

It is available for PRI and BRI Links.

ATS-QSIG

The ATS-QSIG Layer 3 Protocol is standardized in ECMA 312. It is recommended by EUROCONTROL for use in Air Traffic Services Voice Networks.

The ikon ATS-QSIG Implementation was tested and certified by EUROCONTROL.

DPNSS-1

DPNSS-1 is used for PBX Interconnection by certain PBX Manufacturers, like Northern Telecom and Ericsson. It is implemented according to the BT specifications. It includes Basic Call Services as well as Supplementary

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Services like Hold, Call Transfer and Three Party. DPNSS-1 is available for PRI links only.

Layer 2 Protocol Software

The ikon Layer 2 Software Modules may be used for ISDN Applications as well as for standard Data Transmission Applications. If no Data Link Layer is needed, a transparent Layer 2 is also available.

All Layer 2 Modules support multiple Links.

LAPD

LAPD conforms to Q.921 and ETS 300 402.

For use with ISDN Signalling, LAPD is available for Point-to-Point and Point-to-Multipoint Connections, User side and Network side. It is certified for use in Europe together with DSS-1 and 1TR6.

LAPB (X.75)

LAPB (X.75) is used for transporting User Information. It supports Point-to-Point Connections and is completely symmetrical.

It is used on the B-Channels of an ISDN Link.

HDLC

HDLC is also used as Data Link Layer for transporting User Information. The ikon Implementation supports the Balanced Mode Operation Class.

DPNSS-1

The DPNSS-1 Data Link Layer is tightly coupled with the DPNSS-1 Signalling Protocol. It is only used for DPNSS-1 Point-to-Point connections.

Layer 1 Software Module

The ikon Layer 1 Module interfaces between the Device Drivers and the Mailbox oriented upper Layer Stacks (e.g. for ISDN, DECT or ATM).

Besides the pure Data Transfer, the Layer 1 Module supports Activation and Deactivation of Channels, Transmission of Voice Messages and Tones, Interconnection of Channels incl. Conferences, Bundling of Channels and Jitter Buffer Management.

Driver Software

The available Drivers support ISDN PRI, BRI, channelized E1/T1 and standard serial Links as described in the following Section.

Besides supporting Hardware Devices, Drivers for Data Transport over TCP/IP or Tone Generation and Announcement are also available.

Please refer to our Driver data sheet for a detailed list.

Management Module

The Management Module allows easy Configuration of the Communication Stack. It also supports the Configuration of the Physical Interface and the Activation / Deactivation of the selected Protocols.

OS Abstraction Module

The OS Abstraction Module is used for porting the ikon ISDN & Protocol Software to other Operating Systems. Porting files for Windows, Linux, VxWorks ,pSOS+, and OS-9 are already available

Message Router Module

The Message Router Module is used to split the Communication Stack in a Board and a Host part.

ikonOS incl. TCP/IP

ikonOS is a self-developed Micro-Kernel with all necessary Functionalities to implement small Applications, e.g. an ISDN Card Software. ikonOS supports Memory and Buffer Allocation, Mailboxes, Timer Services and Communications via serial Interfaces or TCP/IP.

ikon Portfolio (Excerpt)

IP-DECT System

VoIP-CAPI

Various Protocol Stacks

Professional Services

Brief Description of ikon GmbH

ikon GmbH delivers Products and Development Services with main Focus on Telecommunications. Since its Foundation in 1988 ikon GmbH is a reliable Partner for customer specific Development in the Telecommunication Sector.

Parts of our Product Portfolio are several Protocol Stacks and Software Modules for Technologies like ATM, DECT, ISDN, VoIP, Frame Relay, MPLS, IP-Routing and V5.x.