The iS3000 is an advanced hybrid PBX system with utility specific features. Its architecture provides a combination of IP telephony and traditional solutions by combining the best of hybrid and server based technology. Beside the iS3000 full hybrid PBX, a server version is part of the communication platform. It supports the broad range of critical utility features and functions.

The call-processing software SIP@Net forms the basis for both the hybrid and the server solution.

iS3000 grants like all other ABB solutions for utility communication systems a high level of future oriented investment protection while keeping full interoperability with earlier deployments.

Communication is key

Information and communications technologies are constantly changing. Speech and data networks are merging. Converged networks based on internet protocol (IP) pave the way for completely new and integrated speech and data applications.

ABB implements Utility Communication networks with its FOX-family, the ETL-series for PLC-solutions, radio / Wi-Fi mesh infrastructure and LAN-devices, all offering the perfect mix of TDM and IP-services.

Thanks to state-of-the-art IP enabling technology in the SOPHO iS3000, all of the proven features of traditional TDM telephony are available for IP extensions as well.

SOPHO iS3000 gives utilities complete freedom in implementing an IP migration strategy. Earlier and future investments are therefore fully protected. Since the same performance is available for IP and TDM extensions, you determine the speed and the extent of your IP migration with full support of true IP peer-to-peer voice communication or SIP-based trunking.

Features that count for utilities

- Optimized use of existing PLC bandwidth for PLC networks with the latest algorithms for speech compression
- Busy trunk break-in and forced release
- Scalability and module design, available from small to very large systems
- Redundancy where needed
- TDM and IP hybrid communication solution
- In-System IP gateway for IP trunks and IP extensions
- IP DECT locally and remotely
- SIP-based IP trunks and extensions
- Wide range of signaling protocols
- Integrated voice mail and automatic attendant
- Test call set up by selecting specified trunks manually
- Remote extensions through E1 and E&M interfaces
- Touchscreen dispatcher console applications
- Local or remote management through TDM or IP
Integrated and external server solutions
The main-functionality of iS3000 is defined by the SIP@Net software running on processors either on one or for redundancy reasons two PMC modules plugged into an iS3000 chassis. This robust 19-inch housing can host also e.g. traditional analogue voice interfaces.

Instead of the embedded PMC version, one or several external servers can be used in combination with the traditional interfaces in the chassis. For pure SIP / VoIP – solutions not even an iS3000 chassis is required.

Furthermore, any combination of PMC and external server is supported by SIP@Net and provides unseen flexibility in terms of redundancy and distributed PABX-functionalities.

With latest SIP@Net release new networking oriented functionalities become available, enabling distributed server concepts. Various iS3000 sites can be IP-wise interconnected and work in master/slave-mode providing sophisticated back-up/redundancy schemes. In case of unlikely link interruptions, the remaining interconnected PABXs continue joint operation.

Ready for the future
The iS3000 with SIP@Net is perfectly hybrid. It can be used either as pure TDM based system, as pure SIP/VoIP system or any combination thereof. This allows customers migrating to their future IP dominated environment at their own pace.

Full SIP functionality is offered across extensions, trunk lines and applications. The large variety of interface boards available in the iS3000 product range and supported by the iS3000 19-inch systems ensures a high level of investment protection. Existing iS3000 deployments can easily be upgraded with latest features.

Utility specific dispatcher application
In addition to utility specific call-features and call-center applications based on iS3000, ABB has developed a unique utility tailored dispatcher application. One or several concurrent and freely configurable touch-screen consoles allow efficient dispatching & emergency handling for mission utility services.

System architecture

Full support for analogue, digital and wireless services, including SIP-based applications
Technical data

System capacity

<table>
<thead>
<tr>
<th>System capacity</th>
<th>Hybrid iS3000</th>
<th>SIP@Net server (single or dual integrated* or external server)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. no. of 19-inch shelves</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>Max. no. of remote peripheral modules</td>
<td>4 (via TDM)</td>
<td>24 (via IP)</td>
</tr>
<tr>
<td>Max. no. of ports</td>
<td>1216</td>
<td>5000</td>
</tr>
<tr>
<td>Max. no. of cordless DECT handsets (0.2 Erlang)</td>
<td>1216</td>
<td>2560</td>
</tr>
<tr>
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<td>5000</td>
</tr>
<tr>
<td>Max. no. of operators</td>
<td>8</td>
<td>12</td>
</tr>
</tbody>
</table>

* CPU4000 based with corresponding feature set

Hybrid configuration interfaces analogue extensions:
- Tone/pulse dialing
- Earth, flash, dial one recall

Digital extensions:
- B+D Uko (2-wire 2B1Q)
- 2B+D Upn (2-wire)
- 2B+D S0 (4-wire, ISDN TBR3)

IP extensions:
- 10/100 Mbit/s Ethernet
- TCP/IP, H.323, T.38
- G.711 A-law, μ-law, G.729A,AB
- ECMA 333
- QoS (802.1Q/p, ToS)
- SIP (RFC 3261)
- SRTP, TLS

Cordless extensions:
- DECT (GAP standard)
- WLAN (SIP standard)

Analogue trunks:
- Subscriber signalling
- DDI/DDO via pulse, MFC, DTMF
- Polarity detection
- Metering (50Hz, 12/16 kHz)
- Power failure switch (ESU)

Digital trunks:
- Euro ISDN:
  - ISDN basic rate TBR3 (2B+D)
  - ISDN primary rate TBR4 (30B+D)
- Channel associated (CAS –2Mb/s):
  - MFC

IP trunks:
- 10/100 Mbit/s Ethernet
- TCP/IP, H.323, T.38
- G.711 A-law, μ-law, G.729A,AB
- ECMA 333
- QoS (802.1Q/p, ToS)
- SIP (RFC 3261)
- SRTP, TLS

Analogue tie lines:
- CEPT-L1
- E&M (2/4 wire)
- Loop disconnect
- Local battery

Digital tie lines:
- 2B+D or 30B+D with:
  - BT DPNSS
  - ETSI QSIG

IP extensions/trunk/network/application with SIP@Net only server:
- Ethernet based
  - TCP/IP
  - G.711 A-law, G.729A,AB
  - QoS (802.1Q/p, ToS)
- SIP (RFC 3261)
Physical characteristics

- iS3000 19-inch version
  - Width 483 mm (19-inch)
  - Height 400 mm (9 U)
  - Depth 408 mm; 468 mm including front cover
- Weight: 15 kg excluding system boards and AC power unit

Power

iS3000 based solution can be AC- or DC-powered

- Operating voltage range:
  - AC: 240V, 47 to 63 Hz
  - DC: 42 to 60V, positive ground
- Safety class (IEC) 60950-1

Compliance

- European directives
  - Safety: 2006/95/EC
  - EMC: 2004/108/EC
  - R&TTE: 1999/5/EC
  - EU RoHs: 2002/95/EC
  - WEEE: 2002/96/EC
- Council recommendation
  - EMF 1999/519/EC
- European standards
  - EN55022
  - EN55024
  - EN61000-3-2
  - EN61000-3-3
  - EN60950-1

Environmental conditions

- ETS 300 019
  - Storage class 1.2
  - Transportation class 2.3
  - Stationary use class 3.1
- Temperature: –5° to +45°C
- Humidity: 10 to 85%

Complementing communications solutions

SOPHO is part of a comprehensive overall portfolio for utility communication systems covering following technologies and solutions:

Fiber optic equipment

ABB’s FOX-family covers the full range from access-multiplexers with integrated teleprotection interfaces up to high capacity SDH / WDM / OTN solutions for edge and core-networks. It fully supports all latest standards for packet oriented LAN / WAN networks.

Power line carrier

ABB’s combined analogue / digital power line carrier solutions are based on the ETL600 product family. ETL600 reaches so far unseen transmission rates and self-adapting speed- and multiplexing features.

Stand-alone teleprotection

ABB’s NSD-family has a long tradition of stand alone teleprotection devices. The latest generation of NSD570 provides highly reliable protection signaling over a wide choice of media (direct fiber, analogue / digital interfaces).

L2 & L3 – data-switches & firewall

ABB’s portfolio includes a range of hardened and robust Ethernet devices for switching and routing in utility networks. Their fast traffic protection and QoS schemes are essential for IP-based voice services.

Radio, microwave, Wi-Fi mesh

Where no fibers can be installed due to missing rights of way or topographic reasons, ABB provides radio-, microwave and Wi-Fi solutions, tailored to the local situation and the possible frequencies available.

For more information please contact:

ABB Switzerland Ltd
Power Systems
Bruggerstrasse 72
5400 Baden, Switzerland
Phone: +41 58 585 77 44
Fax: +41 58 585 55 77
E-Mail: communicationnetworks@ch.abb.com

www.abb.com/communicationnetworks