
Prosody X cPCI in major telco deployment

Background

T-Com, the business unit Broadband/fixed-network of the Deutsche Telekom AG, is one of Europe's leading providers of information and communications technology (ICT).

BASIS AudioNet is a leader in the design, implementation and management of creative technology solutions that meet the challenges facing communications carriers today.

As one of T-Com's integration and solution partner for the messaging platform, BASIS AudioNet is responsible for T-Com's complete Central Access Solution (CAS) for subscriber intelligent call redirect and a solid foundation for next generation applications within the messaging platform.

The challenge

T-Com is currently using IP to enable the deployment of new services that are better suited for an IP environment. One of these innovative services, named 'T-One', is a convergence product offering subscribers fixed, IP and mobile services. T-One offers its customers access to an integrated suite of fixed-line, IP and mobile communication services with a single handset: TC 300 by T-Com.

Customers may use the cell-phone-sized device to make calls via Voice-over-IP (VoIP) and WLAN calls - from home, or at approximately 7.500 T-Com and T-Mobile HotSpots. If WLAN is not available TC 300 automatically uses the mobile network. In Addition, customers can always be reached via fixed-line number. T-One users are given a fixed-line number, a VoIP number and a mobile number allowing users to switch back and forth between GSM and VoIP calls whenever necessary. Customers have the option of always being located via their fixed-line number and benefit from the advantage of a unified store (i.e., single centralized mailbox) of all messages directed to the TC300.

T-Com specified a solution that would fulfil a number of key requirements for the introduction of these new niche convergence services:

- A central location for mass provisioning and billing (OSS)
- Deployment of messaging facilities to decentralised locations
- Support of a multi-vendor strategy for its value added services
- Local storage of messages and profiles
- Interface to the T-Com network through PRI and IP connections
- Centralisation of commonly used features (eg. ASR) or non voicemail related applications (Conditional call forwarding, Pre service announcements) to be managed more effectively
- Provides customers with 'one number' access for all services and a transparent user interface to all enabled services

The solution

BASIS AudioNet proposed Central Access Solution (CAS), which is powered by Aculab's award winning Prosody X media processing card. BASIS AudioNet's scalable CAS incorporates the core technology that enables the central access and storage for the new convergence services specified by T-Com.

The CAS solution consolidates access for all applications and provides a single unified

store of all subscriber information in the T-Com telecommunications infrastructure - even when network elements are distributed across different locations, and come from different manufactures/vendors.

Using Aculab's leading-edge IP media processing resources on Prosody X cPCI, BASIS AudioNet enabled T-Com to continue to address the demands of their legacy infrastructure, while addressing the support and integration to next generation technologies - using open standards, and supporting carrier grade technology.

CAS offers load balancing to optimise the usage of connections to the databases. The platform has interfaces for billing and event recording as well as the capacity to terminate with a number of different value added services. When the project arose, Prosody X cPCI was still in development. However, Aculab was able to respond quickly, incorporating BASIS AudioNet's technical roadmap into its development, thereby offering T-Com a flexible, quick time to market solution.

Aculab's products form the entry point for all calls into the BASIS AudioNet Convergence Module. The media processing resources on Prosody X cards support the voice requirements of the Convergence Module, including; speech record and playback, tone handling and conferencing.

Based on a cPCI chassis, with a Pentium host processor board running a Linux-based operating system, BASIS AudioNet Convergence Module utilises a combination of 8 and 16 E1 trunks with Prosody X cards or Prosody S, for traditional PSTN and VoIP-based call servicing. The board audio path interconnection is achieved via the H.110 bus. The ubiquity of PCI and cPCI enabled BASIS AudioNet to use different Aculab platforms, processor boards and chassis to support the scalability requirements needed for large deployments, such as those required in the T-Com project.

BASIS AudioNet's cPCI-based Convergence Module software runs on the host processor board, and contains 'interface processes', which translate Convergence Module resource management commands into Aculab API calls. Audio data is fed from the host to the Prosody resources via the PCI bus or TCP/IP networking. The media and trunking resources are handled as separate entities by their respective interface processes. This enables flexibility in resource management.

Incoming calls can be handled by local applications running in conjunction with the Convergence Module software, or they can be referred or redirected to other systems, via another trunking resource. This arbitration is left to the discretion of the high-level application.

"BASIS AudioNet chose Aculab as its vendor partner for a number of reasons, including their willingness to consider and accept BASIS technical roadmap requirements, the high level of technical support during the development stage the time to deliver in order to meet the time sensitive customer deployment, the highest density offered by their DSP-based media processing platforms, and - especially - the level of post sale support," noted Johan Meij, CTO, BASIS AudioNet.