

# Experiences with Network Management Issues in Integrated Voice/Data Switch

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This poster presentation describes the experiences related to network operations and management issues for a narrowband (class 5) switch progressing towards an integrated voice/data platform. These issues are about selecting a suitable network management tool, and about describing operations procedures for the craft person. The operations procedure include provisioning, fault management, alarming and performance data. Other issues relate to operational interactions between existing legacy OA&M systems and new nodes supporting SNMP based network management. These operational issues are complex, generic, and are very important from a Telco's perspective. These issues are further complicated as some telcos desire combined voice/data OA&M functions, while others prefer a clear separation of voice/data operations even when physically integrated on the same platform. We believe our experiences will provide a framework for solutions to some of these network management related issues

There is a trend in the future toward an integrated network that delivers high quality voice, video, and data [1]. Most of the digital switch equipment manufacturers, including Siemens AG, have already announced the integration of high speed data handling capability in their narrowband digital switches [3]. The new converged platform aims to eliminate congestion in the access network with a Digital Subscriber Line (xDSL) card. The new platform is a switch-integrated solution that splits data traffic out of the access network, and gives subscribers internet access that is many times faster than the fastest modem in the market today as well as existing POTS functionality. The examples of other internet services to be offered include switch integrated dial-up internet access, voice-over-IP, and switch integrated ATM capabilities. This integration of voice and data on the same switch raises a need for open OA&M interfaces and an integrated network operations/management system [2]. These interfaces should be developed in a standard way, but individual company needs are not all the same. The OA&M system for future will evolve as shown in Figure 1

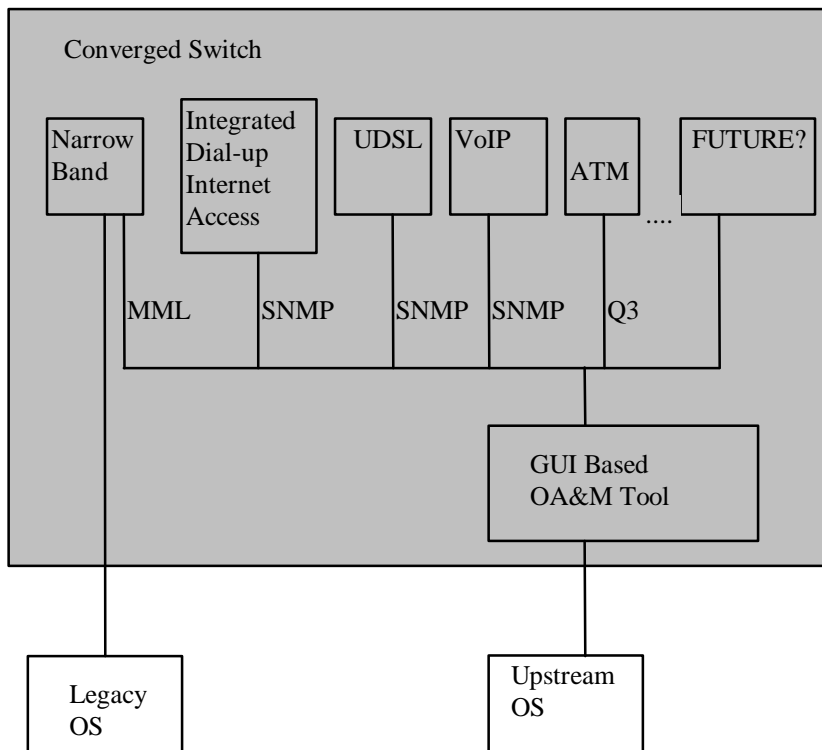


Figure 1: OA&M system for a converged Switch

The integration of data network elements within narrowband switch will increase the size and complexity of the switch. This will, in turn, increase by many folds the amount and complexity of information to be handled by a craft person. Therefore, there is a need for simplifying the OA&M information and also a need to upgrade the user interface capabilities available to the craft person.

In the final poster presentation, we will give the overview of the network management model, followed by various types of issues faced when preparing operation tasks for the integrated voice/data switch with particular focus on the integration of xDSL into a converged switch. Finally we will give some detail of our approach for designing operation tasks for the craft person.

## References

- [1] "An Integrated Network Vision", Telephony, May 11, 1998.
- [2] "Evolution of the EWSD Operations Environment", internal document, Siemens Telecom Network, August 1998.
- [3] "Convergence between Public Switching and the Internet", Ulrich Schoen, et al., IEEE Communication, January 1998 Vol. 36 No. 1.