



Scampi overview

QoS Measurement and Monitoring
Workshop

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Outline

- ⑩ What
- ⑩ Who
- ⑩ First goals
- ⑩ Long term goals
- ⑩ Basic ideas
- ⑩ Application ideas
- ⑩ Architecture
- ⑩ Outcome

What

- ⑩ EU project to develop a scaleable monitoring platform
- ⑩ ten partners from the commercial, research and academic sectors
- ⑩ total EUR 5.5 million 50% from IST
- ⑩ started on 1 April 2002 and runs until 30 September 2004.

Who

- .coordination by TERENA
- .principal academic contractors
 - . Czech National Research and Education Network (CESNET)
 - . Foundation for Research and Technology Hellas (FORTH)
 - . Interuniversitar Micro-Elektronica Centrum (IMEC)
 - . Leiden Institute of Advanced Computer Science (LIACS)
 - . UNINETT AS
- .principal industrial contractors
 - . 4Plus Technologies S.A
 - . Hellenic Telecommunication and Telematics Application Company S.A (FORTHnet)
 - . NETikos S.P.A
- . associate industrial contractor – Siemens AG

First goals

- ⑩ Development of an open and extensible architecture for network monitoring.
 - Develop monitoring and measurement tools for
 - Attack detection (denial-of-service, scan)
 - Quality-of-service, SLS auditing,
 - Traffic analysis and engineering
 - Reports for accounting - not billing
 - Development of a high-performance intelligent programmable monitoring adapter, initially at speeds of 10 Gbps.

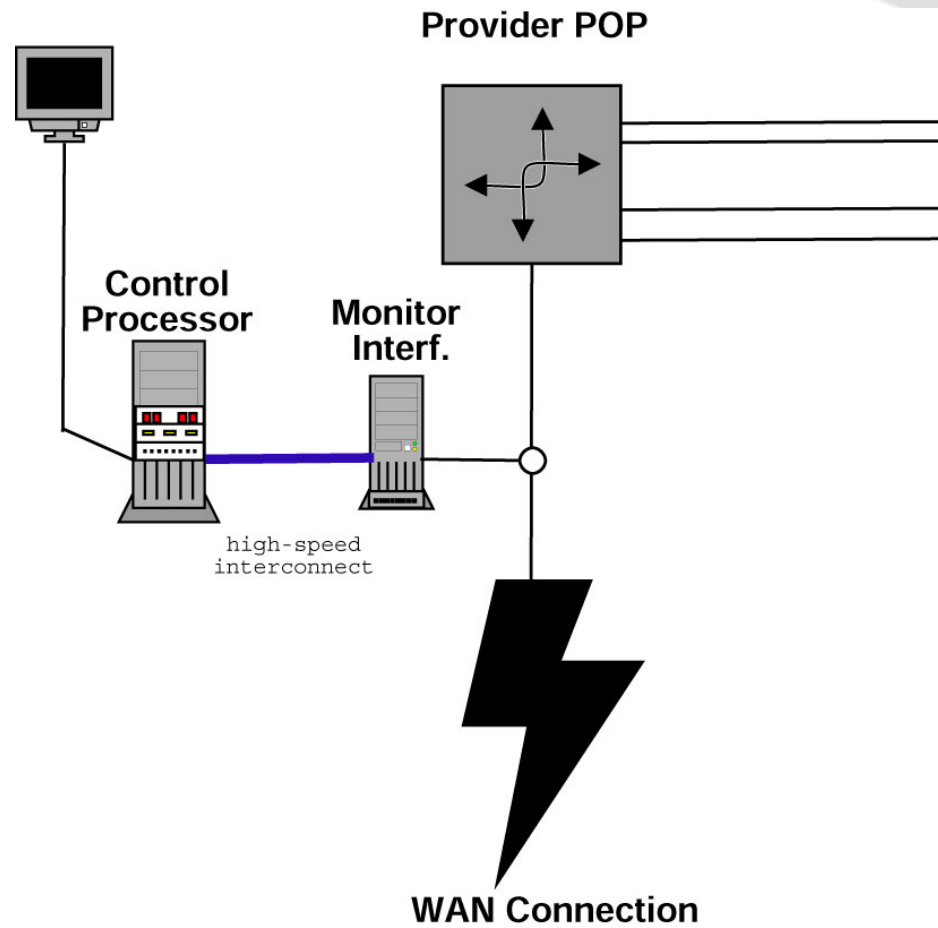
Long term goals

- .Investigate strategies and methodologies for monitoring systems operating at 40-100 Gbps and beyond.
- .Collaborate with other monitoring activities and standardisation bodies (IETF, TF-NGN).
- .Dissemination of results(workshops).

Basic ideas

- ⑩ Passive monitoring with optical splitters
- ⑩ Card with programmable circuits – FPGA, contentaddressable memory, local CPU (Ocx-mon idea)
- ⑩ Finegrained time-stamps on the board(GPS)
- ⑩ Fast bus and BPF-inspired driver
- ⑩ Monitoring multiuser API for programming and retrieval

Scenario

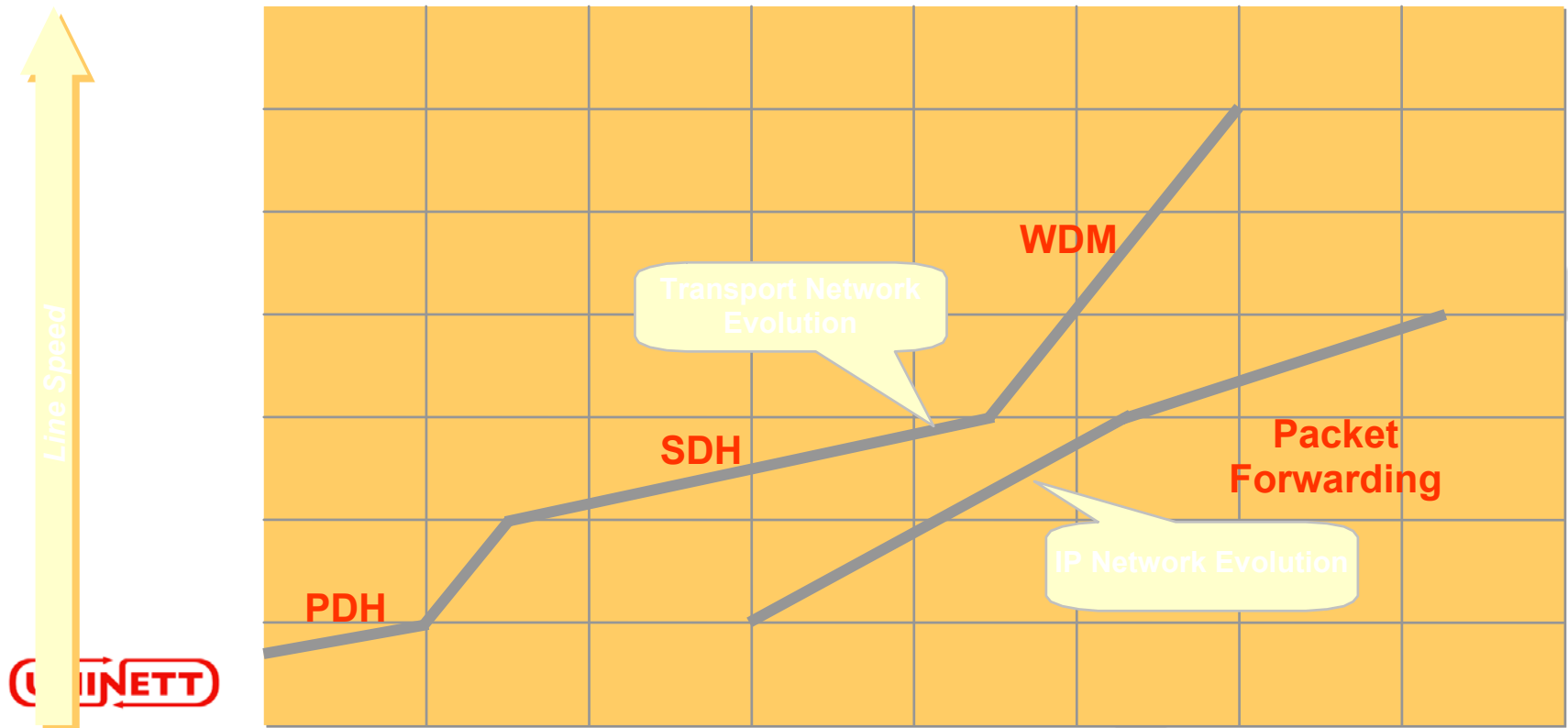


Application ideas

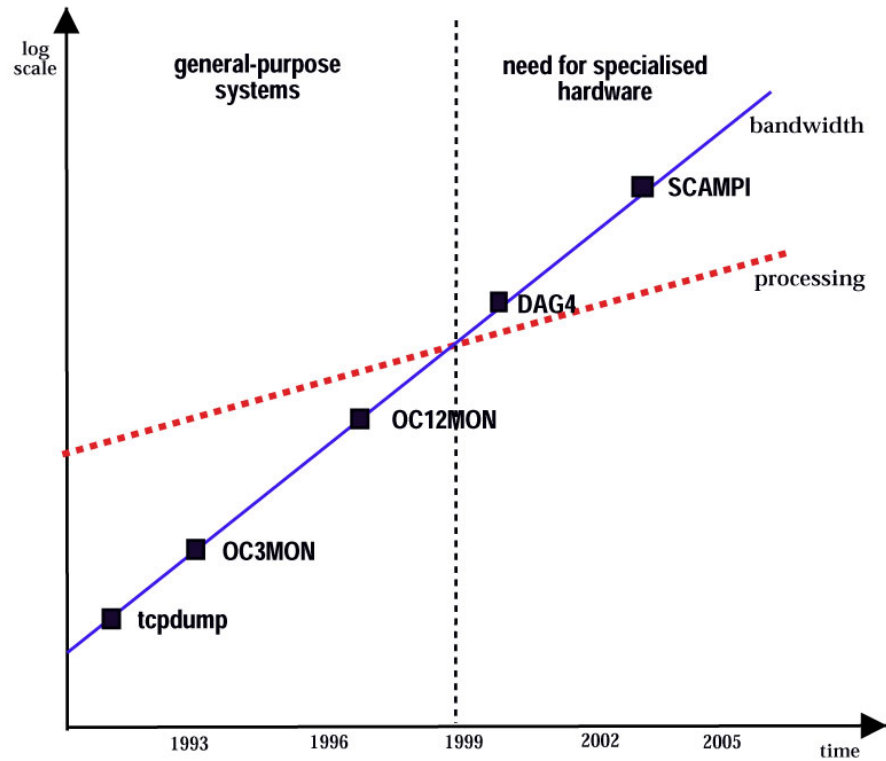
- ⑩ flow export (IPFX/netflow)
- ⑩ Flow processing (flow-tools++)
- ⑩ SNORT rule compilation
- ⑩ Protocol analysis -Tcpdump/libpcap interface

WDM systems increase the bandwidth of transport networks for the need of next generation router and IP networks

Optical Systems and Routing



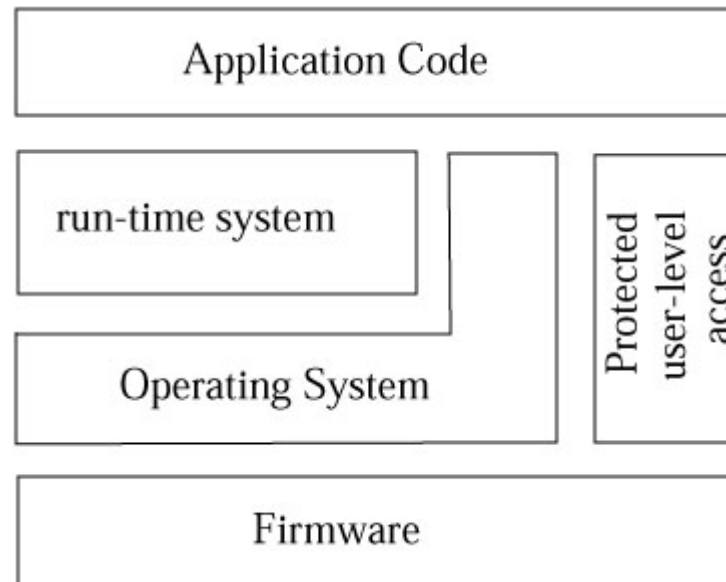
Speed and processing



Architecture

- .Standard PC-architecture – fast buses**
- .fast cards for passive monitoring (DAG, Scampi)**
- .data filtering & reduction to pass bus to CPU**
- .MAPI - monitoring API to kernel**
- .reuse as much as possible libpcap, BPF**
- .open source software**

System design



Outcome

- ⑩ Open source software available to the community
- ⑩ A common platform for development traffic measurements tools
- ⑩ A fast and advanced monitoring card
- ⑩ <http://www.ist-scampi.org>