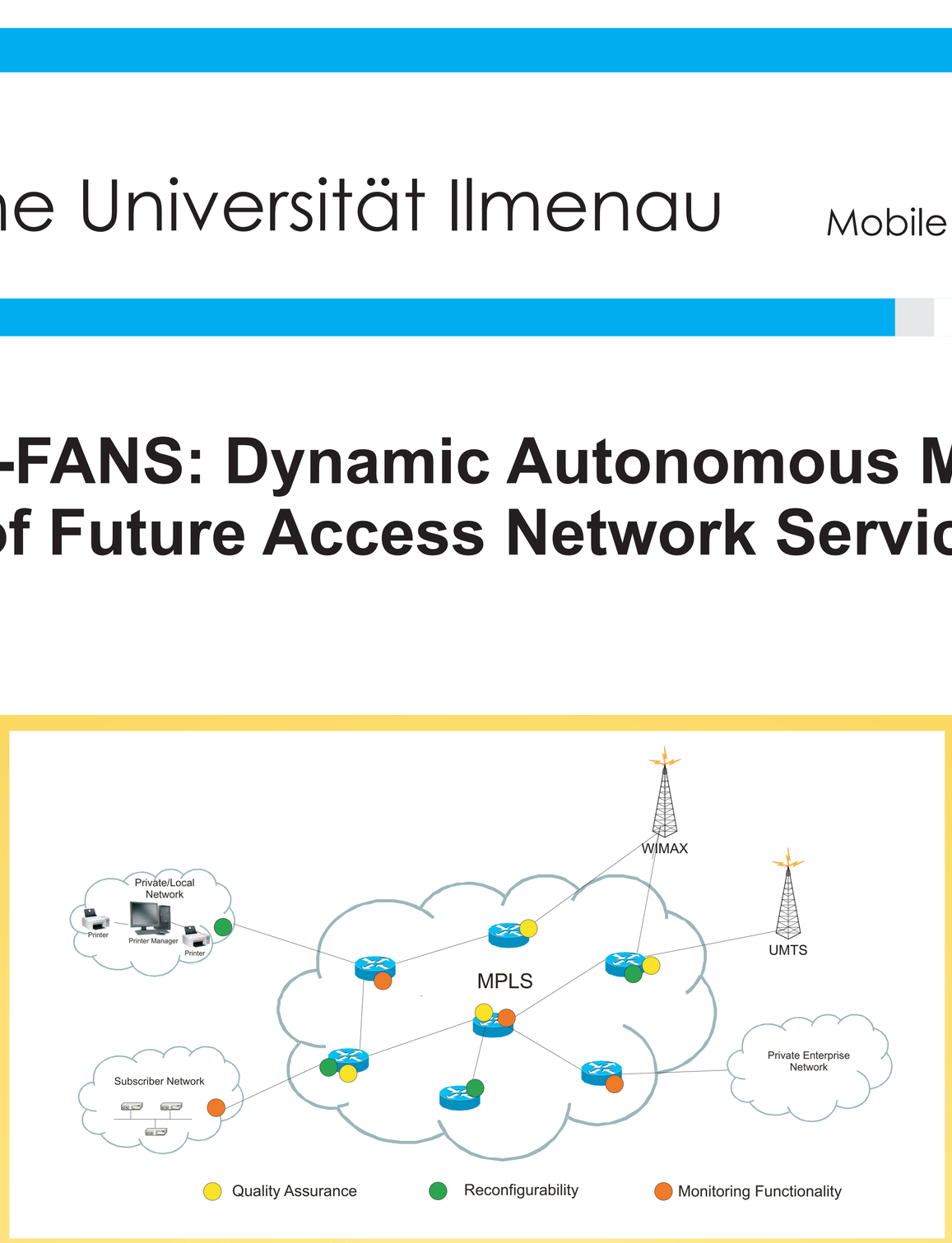
Technische Universität Ilmenau

Mobile Communications

DAM-FANS: Dynamic Autonomous Monitoring of Future Access Network Services



Realization of future access networks services

Dynamic Monitoring & Placement

Two main approaches can be used to decrease monitoring "Traffic" & "Cost".

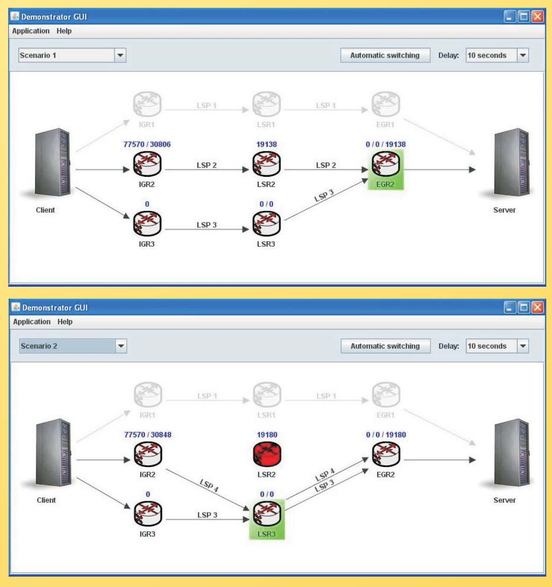
1. Reducing the information per monitored network element by:
   - Reconfiguration of logging mechanism.
   - Altering the frequency of monitoring interval.
   - Dynamically switching to different type of monitoring depending on priority levels.
2. Decreasing the number of monitoring points in the network by:
   - Choosing the optimal number and placement points of monitors.
   - Using intelligent communication among different monitors to react in a decentralized way.

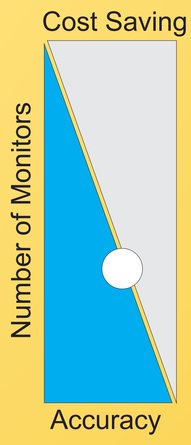
Implementations

- Procedure of dynamic autonomous monitoring has been studied on a large MPLS based network in Wireless Lab, TU Ilmenau.
- This high speed network has been realized as:
  - A group of upto 8 real MPLS routers in a real network.
  - Emulated MPLS network in NS-2.
  - Simulated MPLS network in Matlab.
- Different software applications are developed to achieve dynamic autonomous monitoring.
- Different approaches of autonomous placement of monitors in future access networks are being studied in Wireless Internet Lab of TU-Ilmenau.

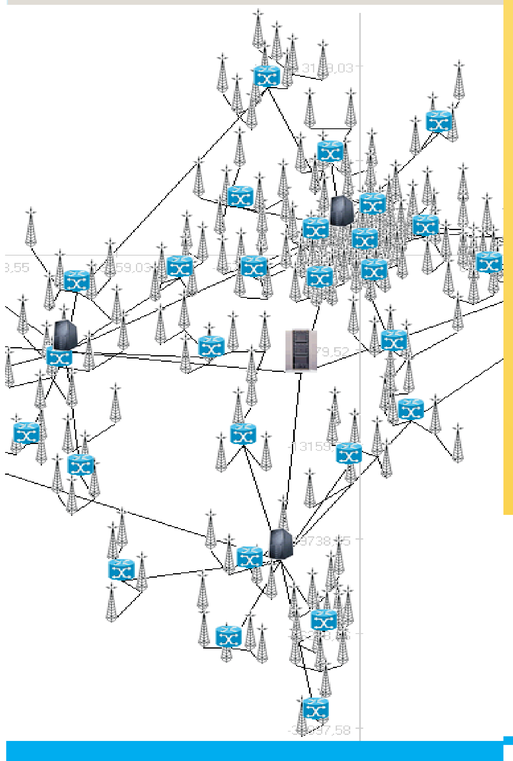
Results & Achievements

- Successful placement of optimal number of monitors in real MPLS network within seconds.
- A prototype application has been developed that places the service monitors in future access networks according to priorities about information level.
- Cost and signaling traffic have been reduced efficiently.
- The number of monitors can be reduced to observe the whole network while quality of monitoring information remains significantly high.





Dynamic placement of monitoring in MPLS networks



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Info

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