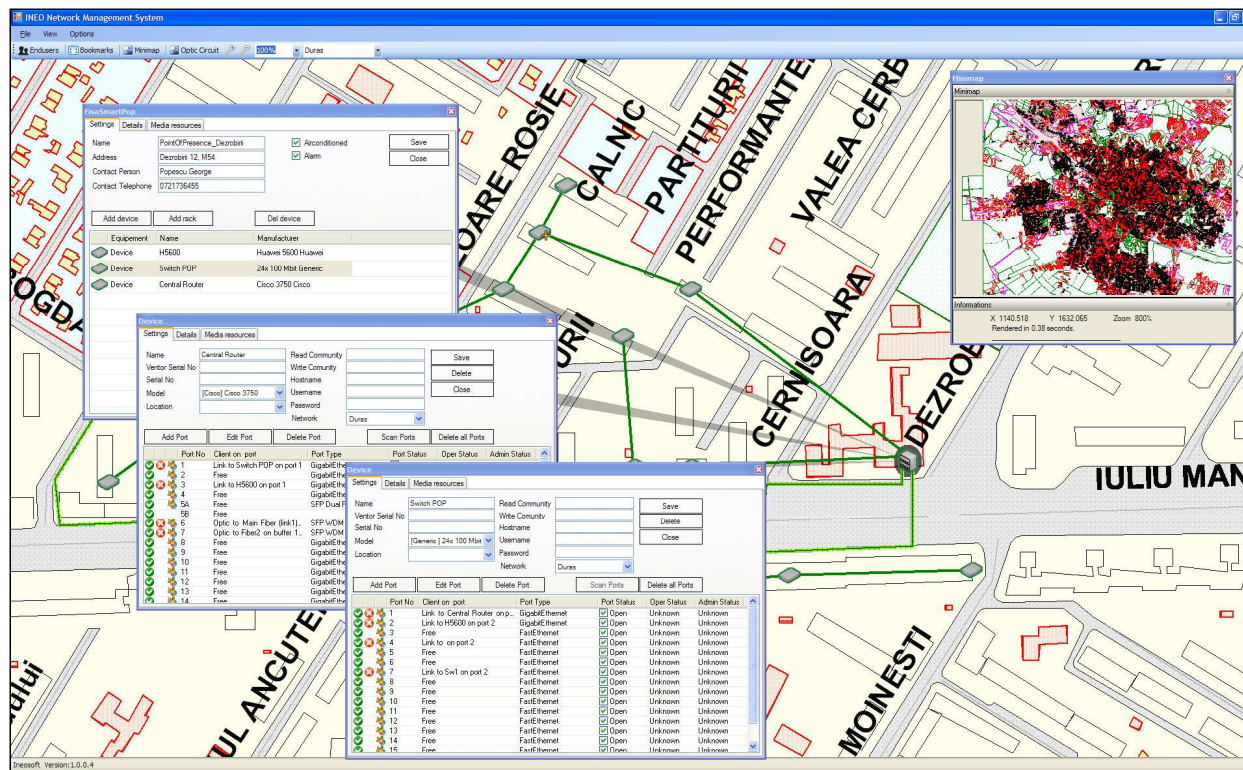


ANMS

Adaptable Network Management System



ANMS - **Adaptable** Network Management System



Alexandru Smeureanu

Cost 605 - 2010



What software is used across the industry to describe and document networks?



Why commercial GIS are not good at describing networks and what are the alternatives?



What is an **Adaptable Network Management System?**

System Architecture

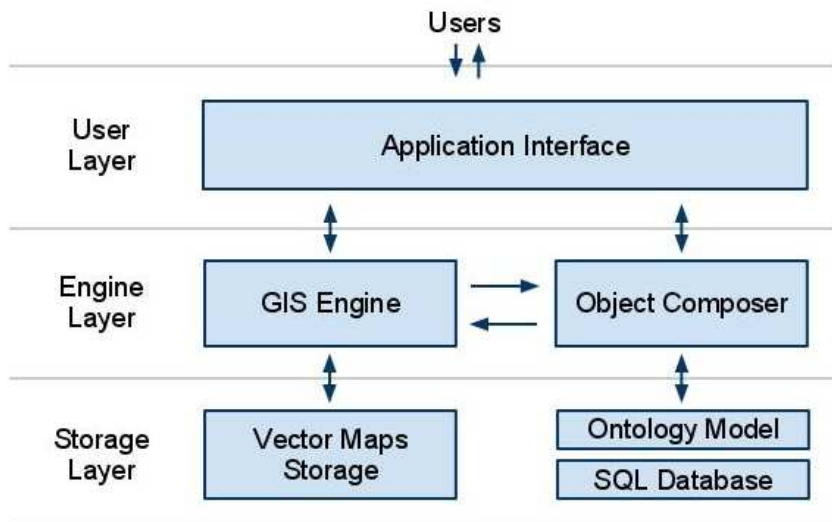


Figure 1. Logical System Architecture

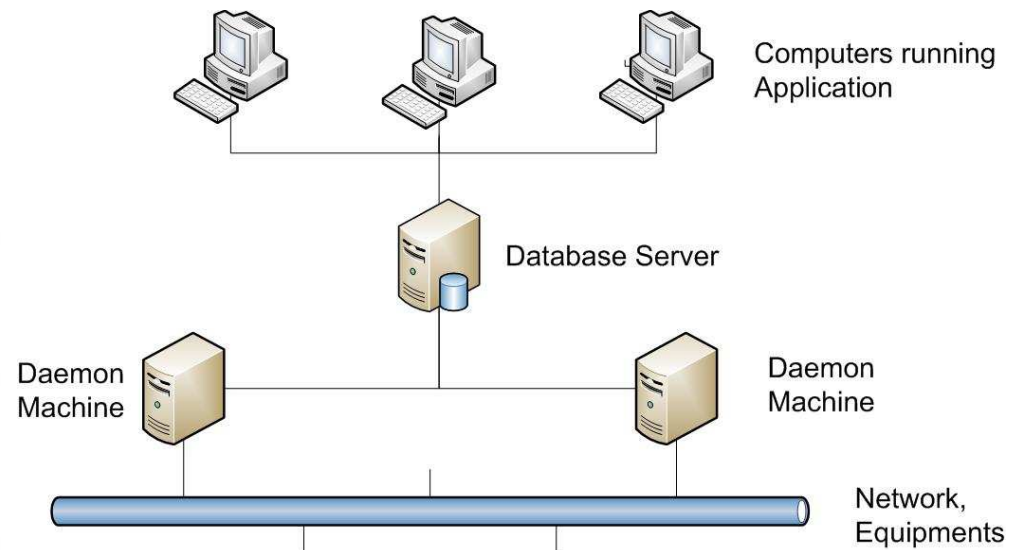


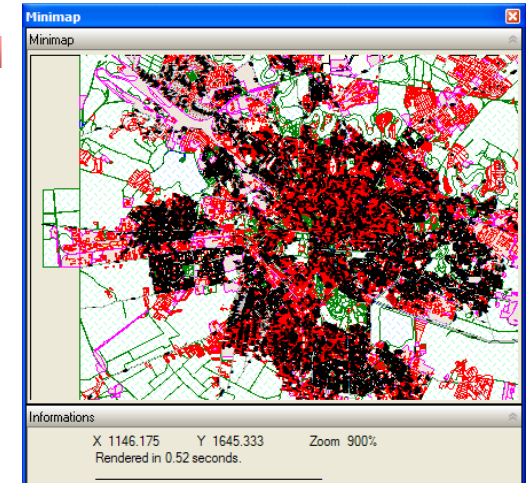
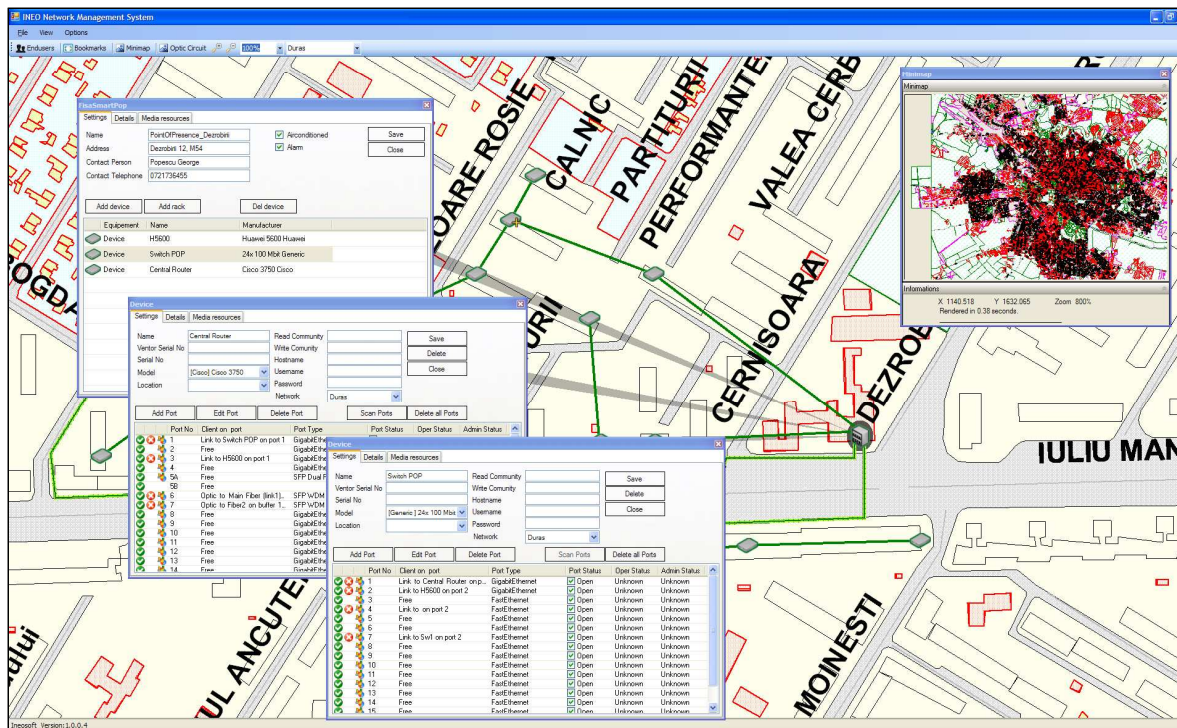
Figure 2. System Diagram

Features:

- **Easy to use GIS System**
- **Network Planning and Description**
- **Real-time network monitoring**
- **Managed equipment control**

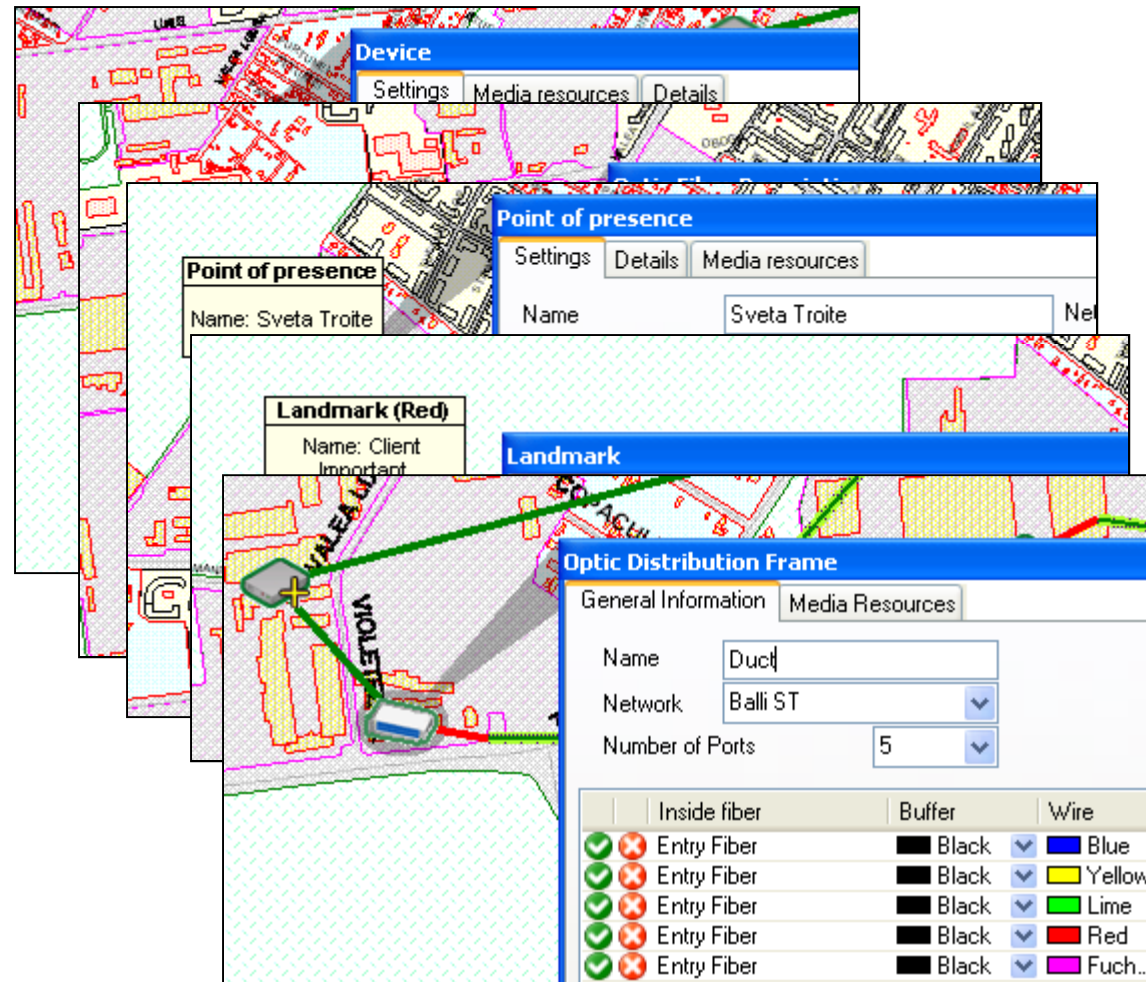
Easy to use GIS System

- Uses vector maps
- Employs Raster Caching techniques to improve performance



- Easy navigation:
- Minimap
- Zoom
- Bookmarks

Network Planning and Description



Device description

Network devices

Fiber optic

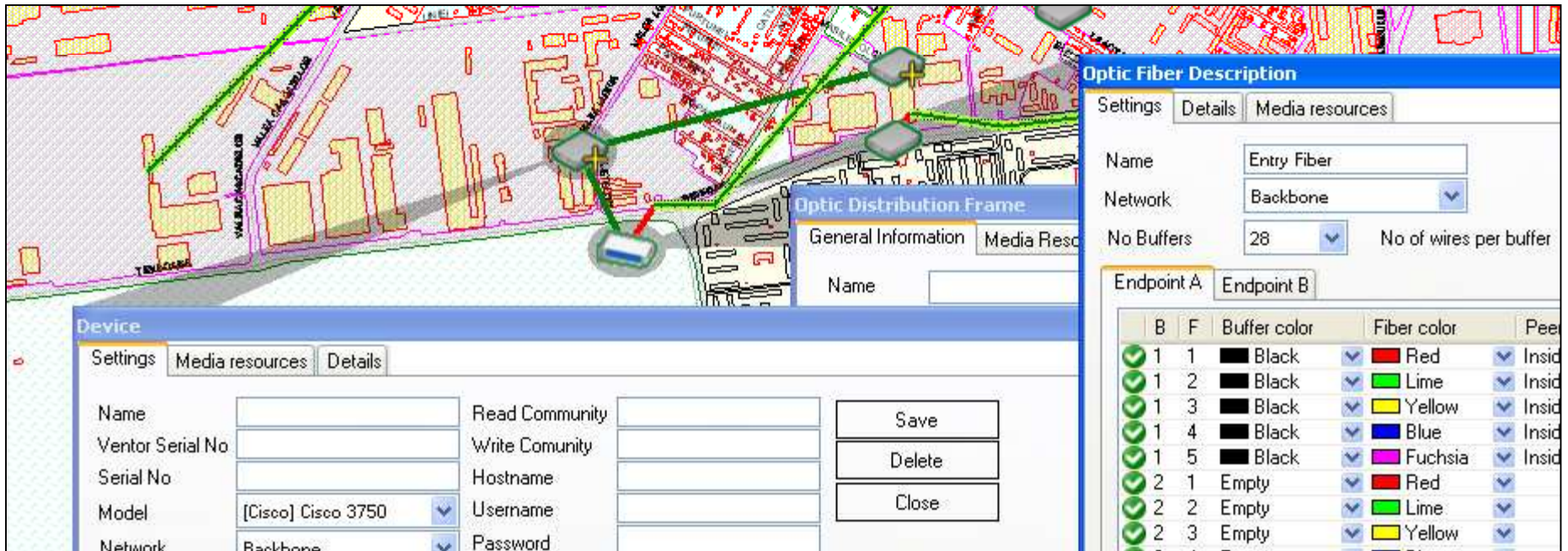
Point of presence

Landmark

Optical distribution frame

Network Planning and Description

- Connecting devices via Drag and Drop
- Placing devices at actual real-life positions on the map

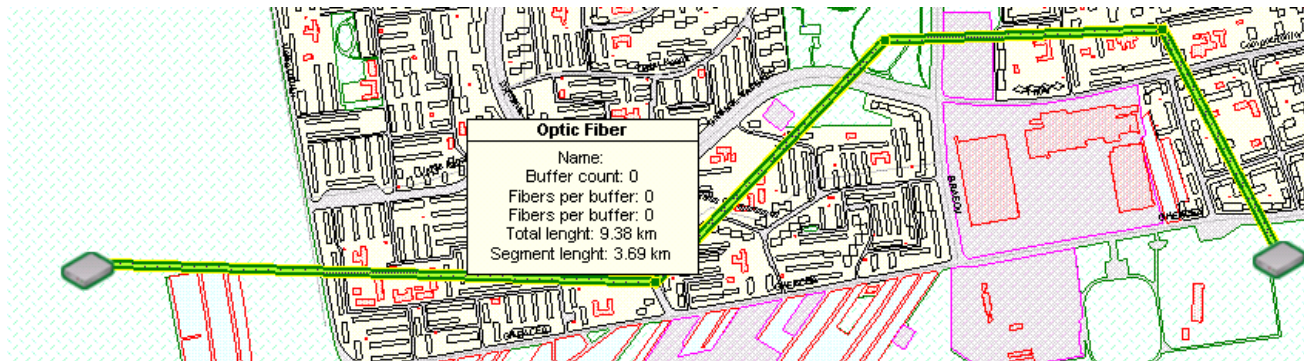


The screenshot displays the ANMS interface for network planning. It features a map with various buildings and streets. Network devices are placed on the map, and green lines represent fiber connections between them. The interface includes several panels:

- Device Panel:** Contains fields for Name, Vendor Serial No, Serial No, Model (Cisco 3750), Network (Backbone), Read Community, Write Community, Hostname, Username, Password, and buttons for Save, Delete, and Close.
- Optic Distribution Frame Panel:** Contains a General Information tab and a Media Resources tab.
- Optic Fiber Description Panel:** Contains a Settings tab, a Details tab, and a Media resources tab. It includes fields for Name (Entry Fiber), Network (Backbone), No Buffers (28), and No of wires per buffer. It also has tabs for Endpoint A and Endpoint B.

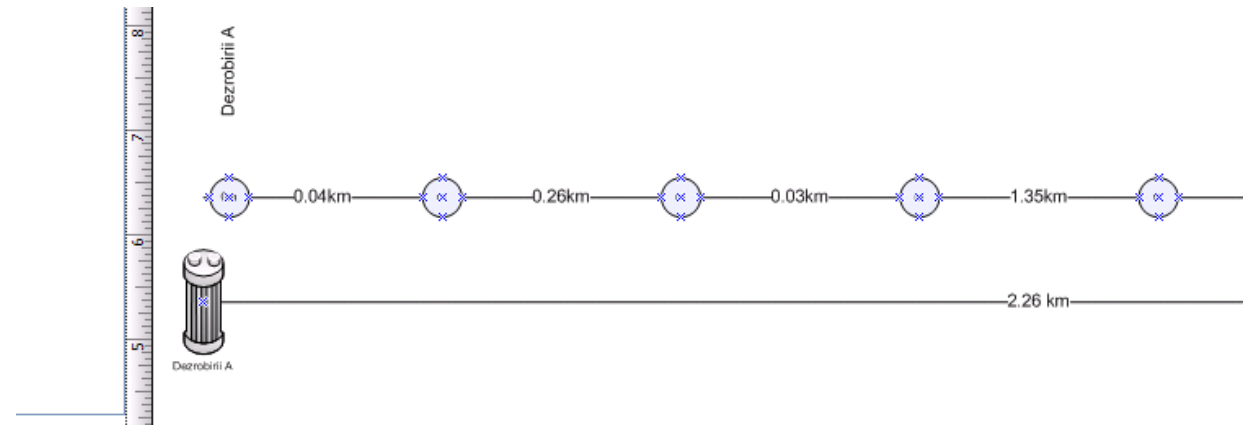
B	F	Buffer color	Fiber color	Peer
1	1	Black	Red	Insid
1	2	Black	Lime	Insid
1	3	Black	Yellow	Insid
1	4	Black	Blue	Insid
1	5	Black	Fuchsia	Insid
2	1	Empty	Red	
2	2	Empty	Lime	
2	3	Empty	Yellow	

Network Planning and Description



Distance calculation based on vector maps (**telemetrics**)

Fiber Optic Reports

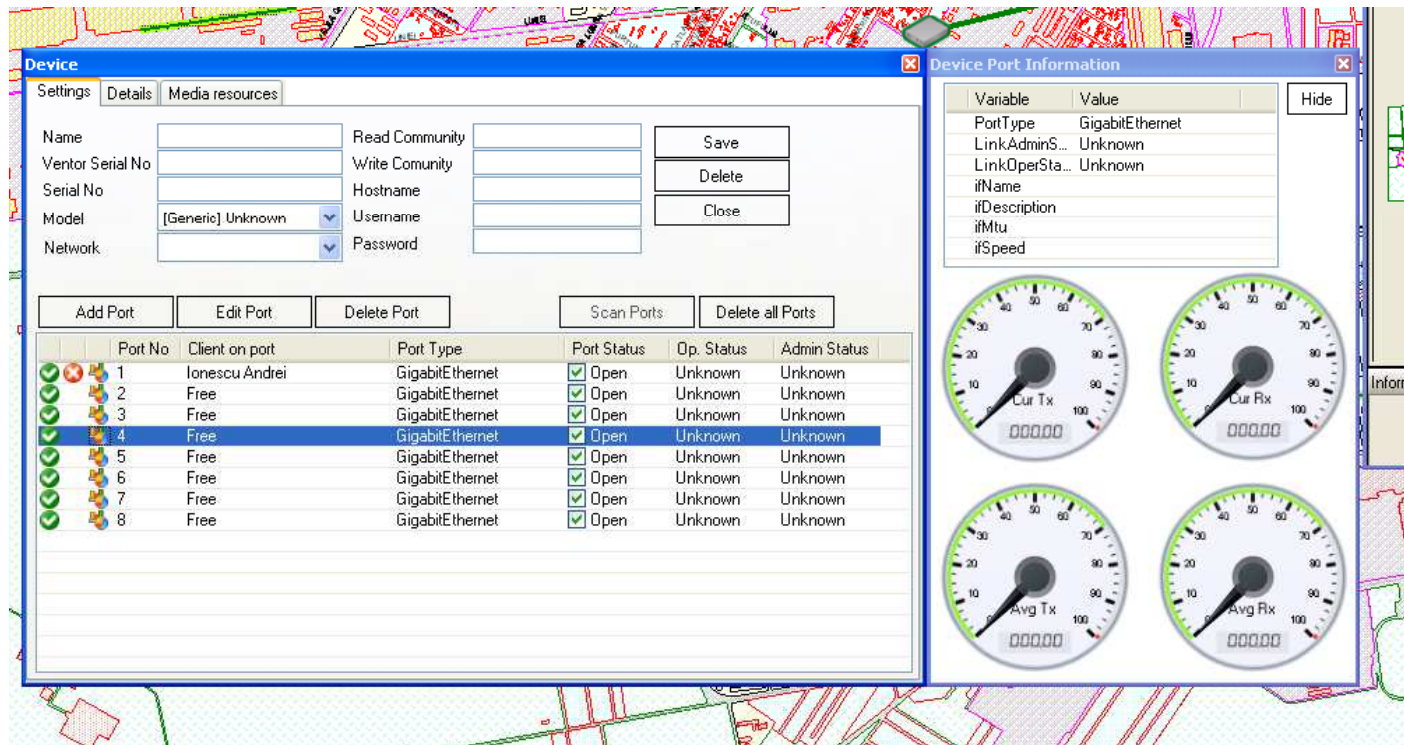


Real-time network monitoring

- Equipment level monitoring by port level statistics
- Monitoring and alerting by SMS and email for any problem that appears
- Ensuring real-time communication

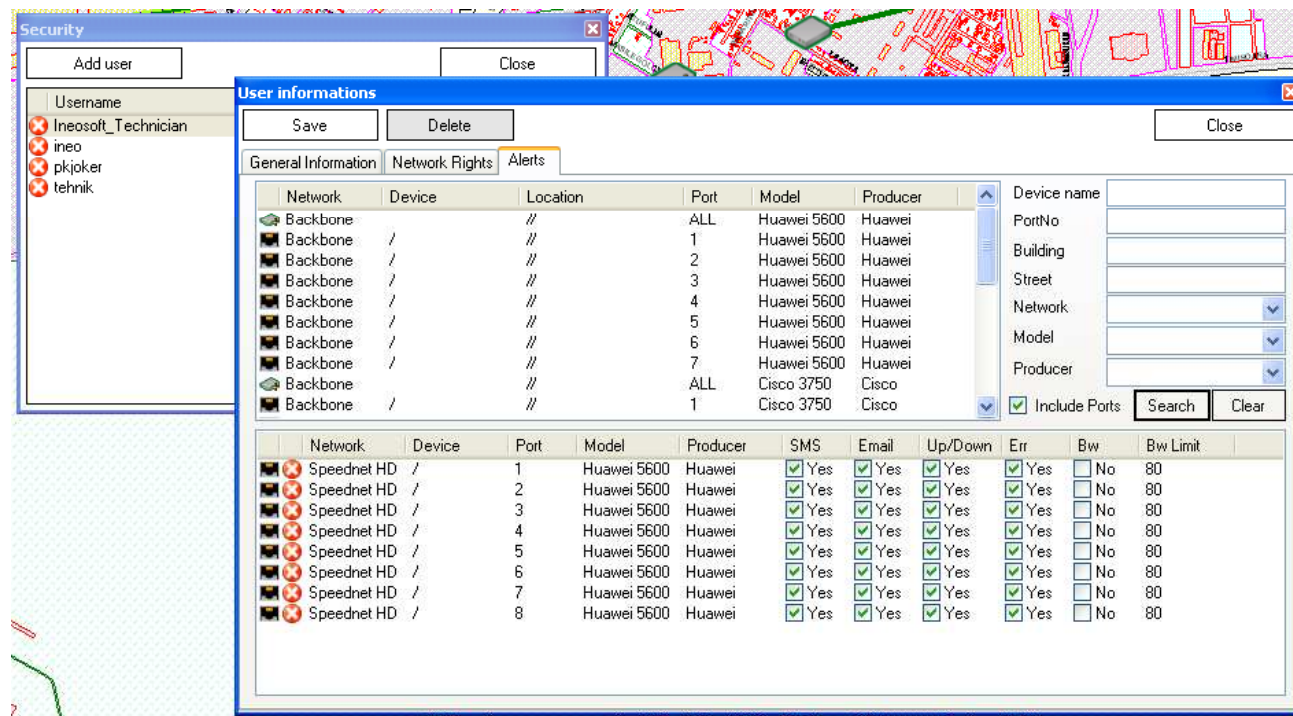
Real-time network monitoring

Equipment level monitoring by port level statistics



Real-time network monitoring

Monitoring and alerting by SMS and email for any problem that appears



Encountered problems and future development

Problems

Real-time character of the application

GIS rendering performance

GIS performance of message processing

Future development

MPLS configuration support

VLAN configuration support

Conclusions

- Problem detection and identification time is substantial decreased

- Service quality improvement

- Human resources scale-down and process improvement due to automatization

- Employee knowledge sharing and leveling



- Money saving and profit increase by improving service quality and procedure improvement