

Intergrated solution for water network Management

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- Intergraph Poland is a part of Intergraph Corporation
 - Intergraph Corporation is a software company focused on GIS solutions for governments, local governments, local societies and utility companies
 - Intergraph has a number of offices accross the European Community. Offices exchanges their experiences in order to prepare efficient solutions which are also adjusted to local requirements.
 - Utility & communication team has been working on solutions for different classes of water and waste water companies. Our solution works in towns of different scale (from 50 000 to 1 000 000 habitants)
 - Our customer are different and we have different solutions for them.



Intergraph Poland has been cooperating with Polish Academy of Science (PAS) in order to prepare and offer „Integrated solution for water network maintenance”.

The solution contains G/Water application integrated with package of computation software designed by PAS. It can be integrated with other systems (SCADA, CIS).

We try to offer it as solution dedicated for waterworks of different scale:

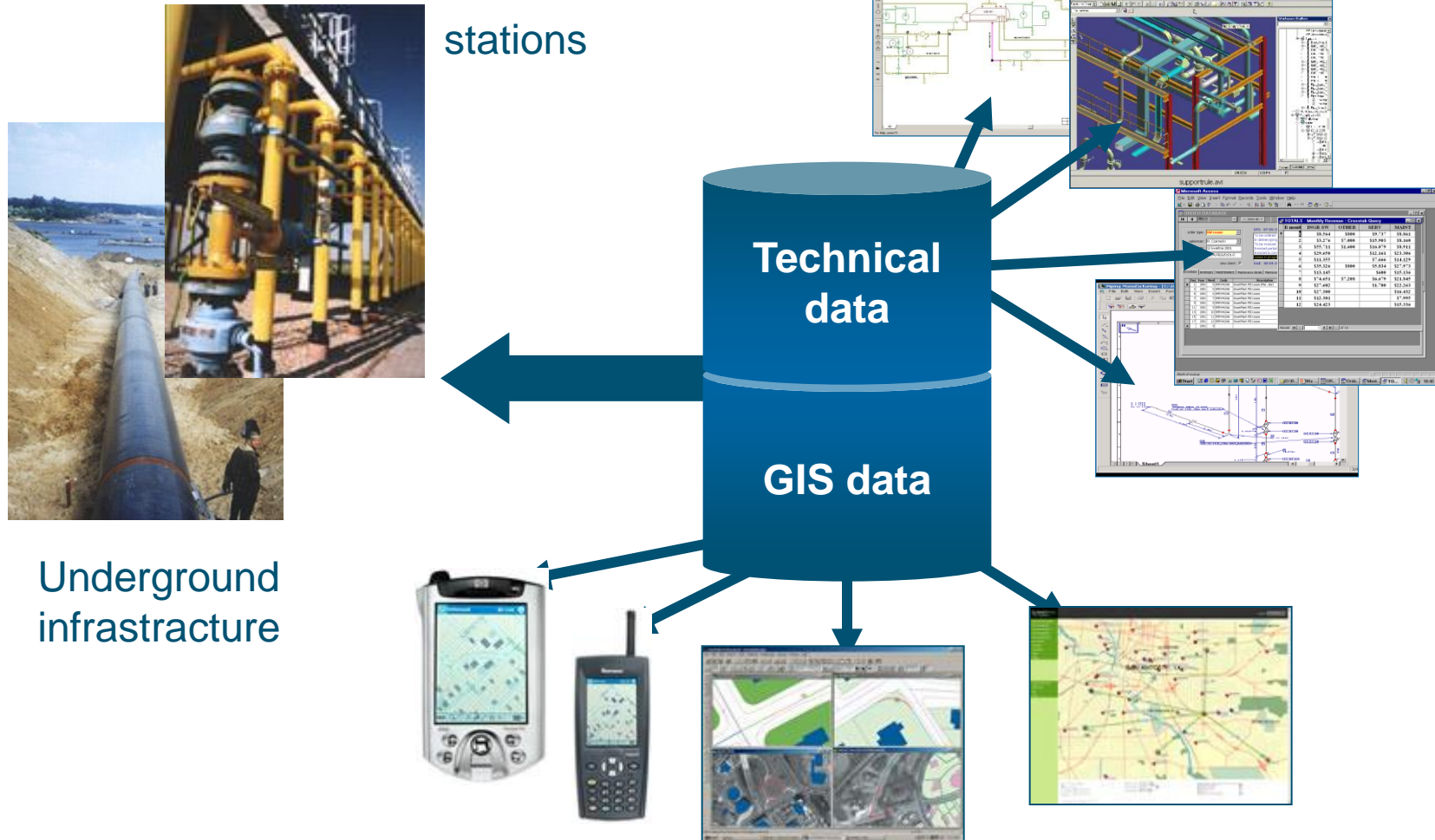
Middle and big size: classic solution with installation in customer's environment

Small size : system can be hosted on servers from infrastructure of PAS. It solves problems:

- Lack of hardware environment
- Lack of IT staff

In addition, it simplifies all administrative tasks and support for customer.

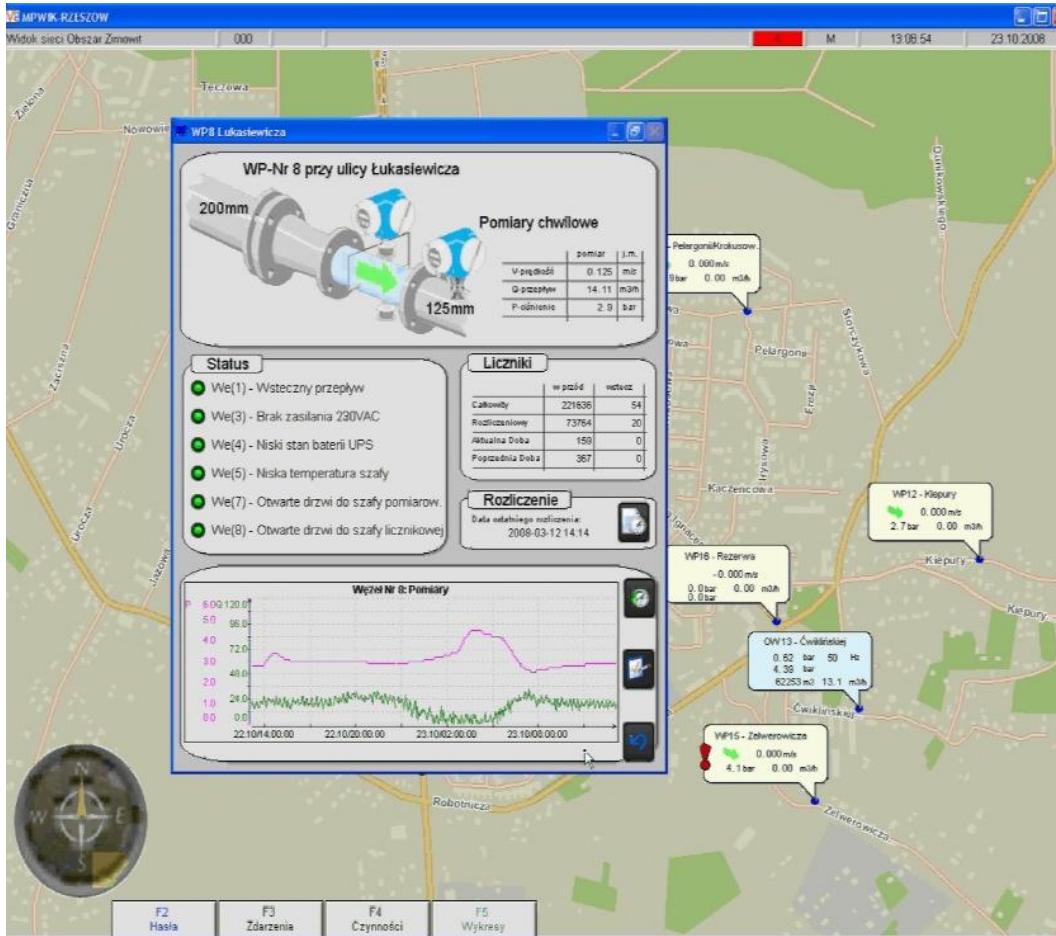
Integrated system of geospatial resource management



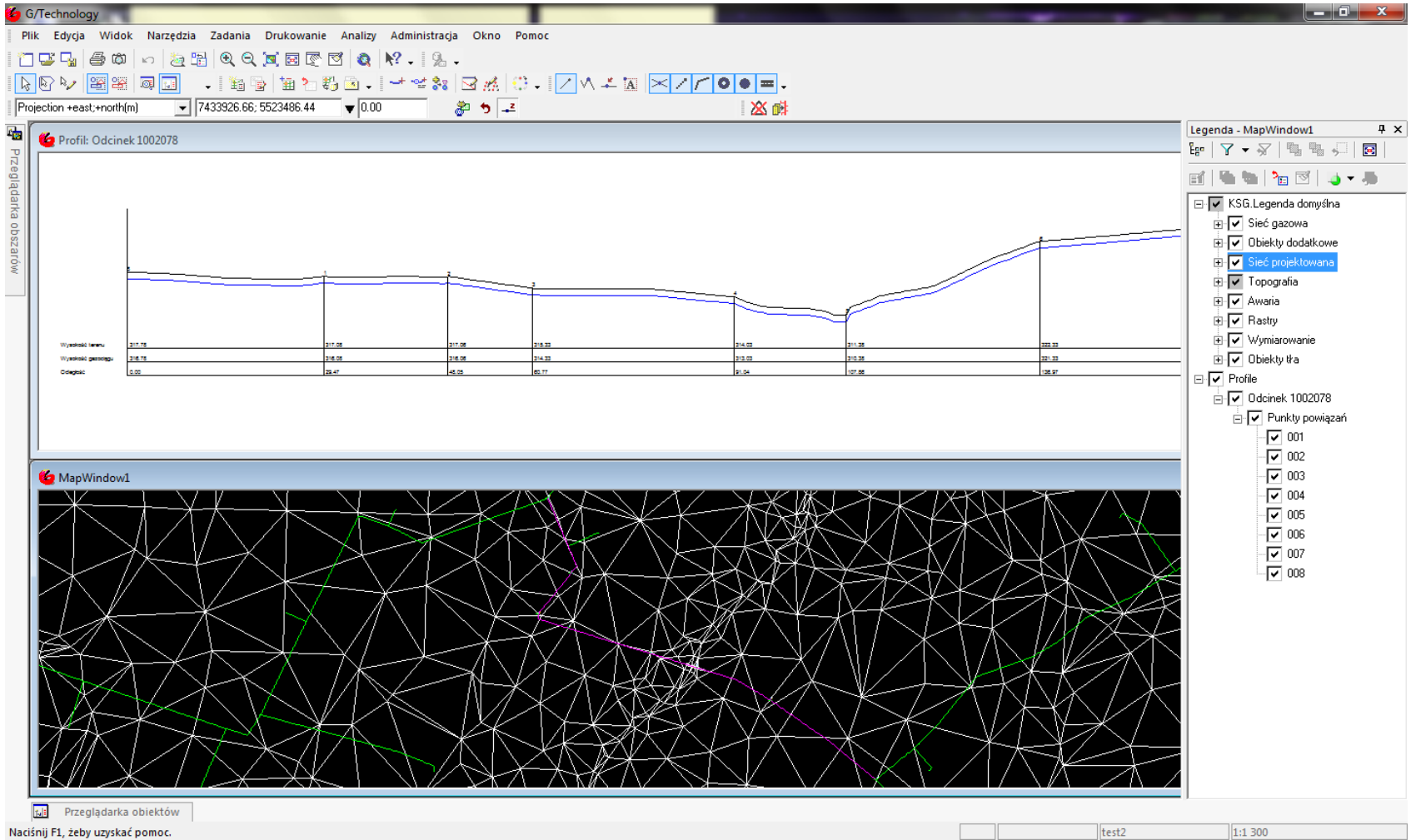
Integrated environment

The screenshot displays a software interface for water supply net management. The main window, titled "Water-supply net management - Zasiew", shows a network diagram with yellow lines and red triangles. A sidebar on the left lists various applications: "Hydrau", "Monitor", "Net (op)", "N (op)", "Pump-st op", "Lea", and "Water age distributin in the net". The "Water age distributin in the net" application is currently inactive. A secondary window, "G/Technology - [Okno mapy]", displays a map of the network area with a red dashed boundary and a coordinate display showing "7569194,42; 5547446,73". A toolbar on the right of the map window includes buttons for "zoom -", "linia ciś.", "wykres LC", "Pomoc", and "OK". The bottom status bar shows the coordinates "X = 672.306396, Y = 7477.601074" and a "NUM" indicator.

Integration between SCADA and G/Water



DTM and length profile for the pipelines



- Data
 - Complete data set describing water network in GIS is required
 - Collect data about water consumption – typically imported from CIS system
 - Data about terrain (DTM). Z-coordinate are required in all topological nodes
 - SCADA/monitoring system should exist and should be integrated with GIS
- Computation
 - Data model needs to be tuned in order to return proper computation results
 - Tuning process is a stage of project, and can be supported by software modules or performed by experts. Typically it is mixed solution.
- Result analysis
 - Properly tuned data set can be source of information for additional modules.
- Individual task in every projects:
 1. Analyze of data model and already acquired data
 2. Configure data model to meet computation software requirements
 3. Collecting DTM data
 4. Integration with SCADA/monitoring
 5. Integration with CIS
 6. Testing on small, isolated area
 7. Model tuning
 8. Comparing results with other sources of knowledge

Computation and optimization software was designed by other members of the project consortium for computing hydraulic parameters of water network.

Input data are taken from GIS, SCADA and CIS systems during process of network tracing.

Operator can choose type of tracing :

- whole network,
- Network inside an area boundary,
- only mains,
- mixed network (mains + subnet).

Main goals : protect water resources, guarding healthy water for local communities and cutting costs



Cutting costs contains some main issues in operating of a water company. Main points are:

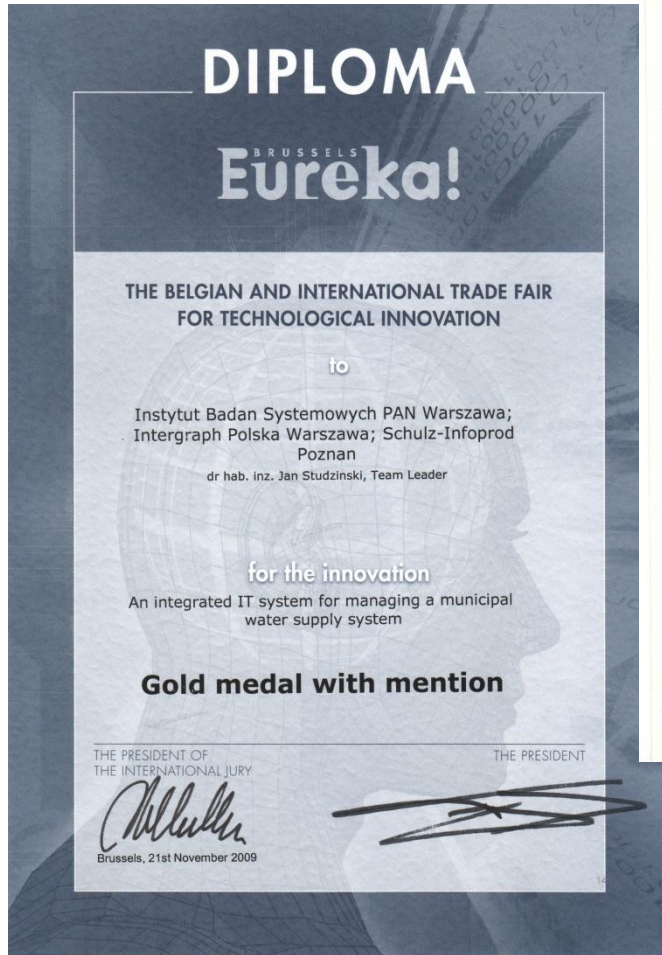
- Savings on building (renovating) processes,
- Savings on water (decreasing leaks),
- Savings on energy – mainly on optimization pumps work in such way to still keep technical requirements.
- Savings on cost of work spent for repairs

Main goals : protect water resources, guarding healthy water for local communities and cutting costs



System should help to :

- Save natural water resources
- Provide water of better quality by optimization its flow in the pipeline network (reducing age of water)
- Protect communities against water contaminations
- Exchange data between other local agencies with standard technologies (WMS/WFS/web portals)





Q & A

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