

GDF SUEZ





Business process covered by the GIS solution Autodesk MAP3d ENTERPRISE 2012

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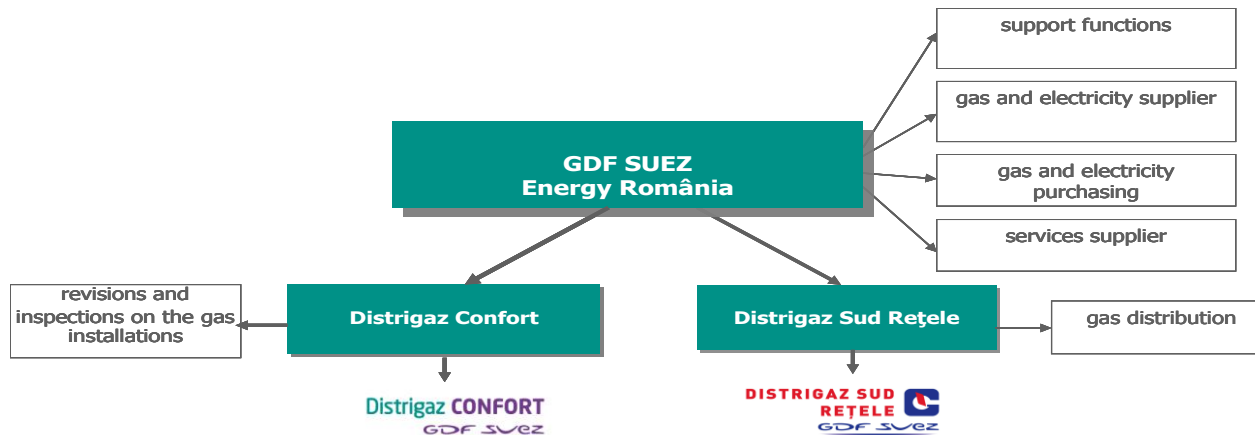
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Company profile

GDF SUEZ Energy România

- ❑ With over 1.3 million clients in Romania, GDF has a leader position on the gas distribution and delivery market and also in the area of services associated with natural gas installations;
- ❑ In 2009 GDF SUEZ ENERGY Romania entered the power supply market for business clients;
- ❑ In June 2009 in order to highlight its membership to an energy group of global importance, Distrigaz Sud changed its name to GDF SUEZ Energy Romania becoming a branch of GDF SUEZ Group.
- ❑ GDF SUEZ is leader in the natural gas sector in Europe;



DISTRIGAZ SUD Retele

- ❑ In March 2008 Distrigaz Sud Networks Company is established; the new company is the operator of gas distribution networks, as a consequence of separating the marketing activity from the distribution of natural gas;
- ❑ Main objective: the distribution of gas to consumers. The new company owns the distribution licenses for all the areas where it operates;
- ❑ Areas of interest: cities from 17 counties situated in the Southern part of the country. Total length of the network administered by DGSR is 16,000 km.
- ❑ The distribution of natural gas is the regulated activity through which the licensed operator provides the transport of natural gas, the exploitation, maintenance and development of the natural gas distribution system.
- ❑ Through the distribution the operator ensures the safe operation and at specified technical parameters of all the component elements of the natural gas distribution system and of the installations according to the regulations, technical specifications and contract terms.
- ❑ The distribution system consists of pipes, house connections, regulator stations with or without measuring, measurement systems, equipments and accessories that work up to 6 bars pressure; the licensed operator can execute specific regulated operations of revision, inspection, intervention in case of malfunction, etc;





Implementation strategies GIS solution

Strategy and objectives targeted in GIS implementation

In 2007 we initiated a data acquisition project . We collect field data related to gas distribution network. In the same time we study which kind of GIS solution will be best to cover all our requirements for a better management of all objects.

The data collection activity is ongoing. It is carried out using internal resources as well as GPS measuring equipments and total stations. As a follow up of this activity, the necessity of implementing a system to manage these information.

The system is supposed to carry out the following objectives:

- Create and visualize the equipments in the natural gas networks;
- Open architecture to be able to manage a big number of equipments in a centralized data base;
- Improve the decisional support by quickly obtaining the information on network status;
- Improve the quality of information;
- Secure access to spatial and descriptive data;
- The automation of updating processes;
- Minimize data conversion processes;
- Optimize and improve the productivity of the technical teams with various activities in the field;
- Improve efficiency of client oriented services;
- Easy maintenance of network information and topographic support;



IT solution implementation project

IT solution : Autodesk MAP3D Enterprise

Project timeline: 10 months with the following phases:

- Bussiness requirements analysis
- Development of hardware and software architecture;
- Installation of database and specific gas network model;
- Instalation of the application and data migration;
- Testing and Training

Project team : 20 pax

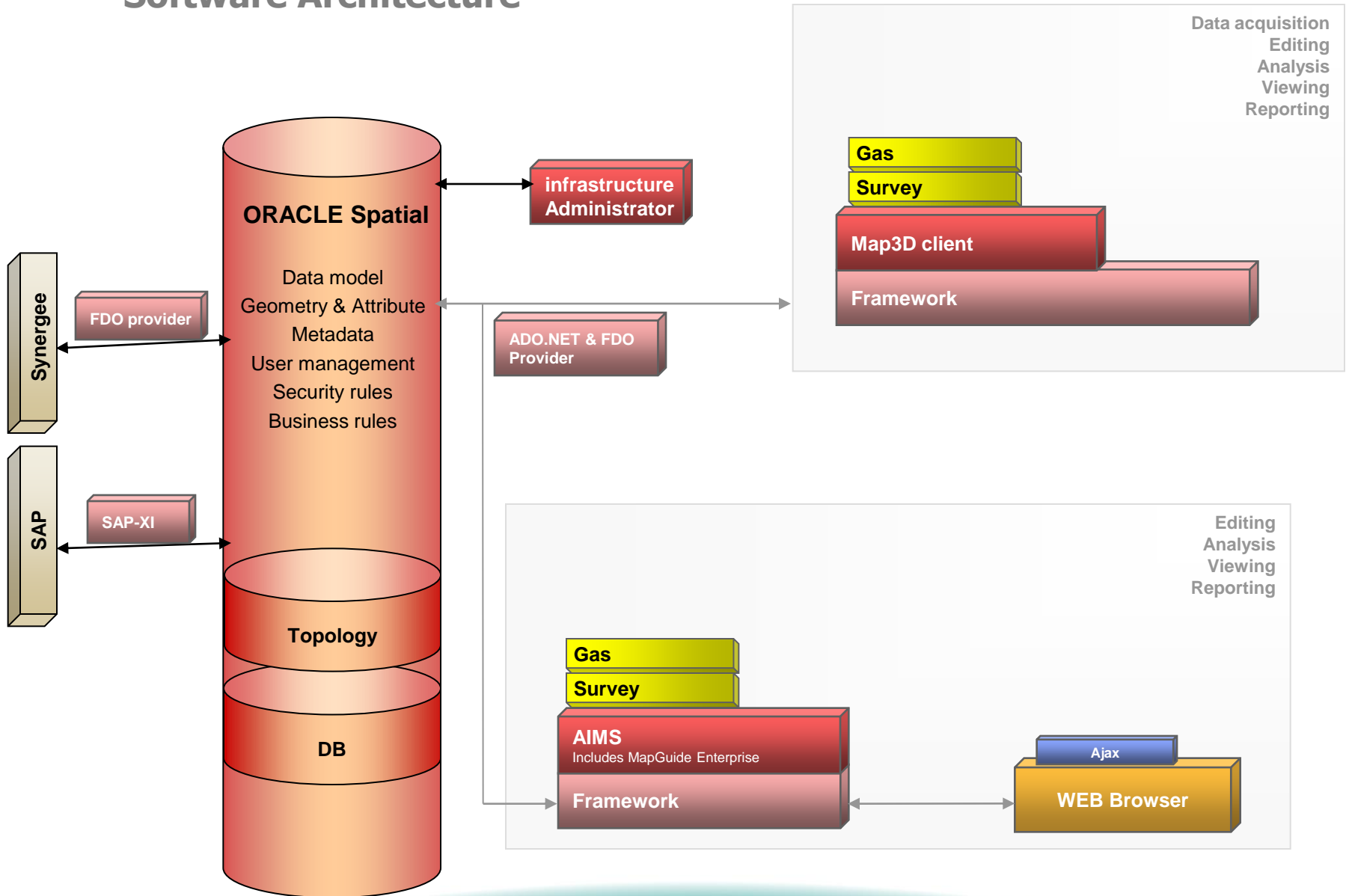
In 2010 the IT solution was deploy in production environment;



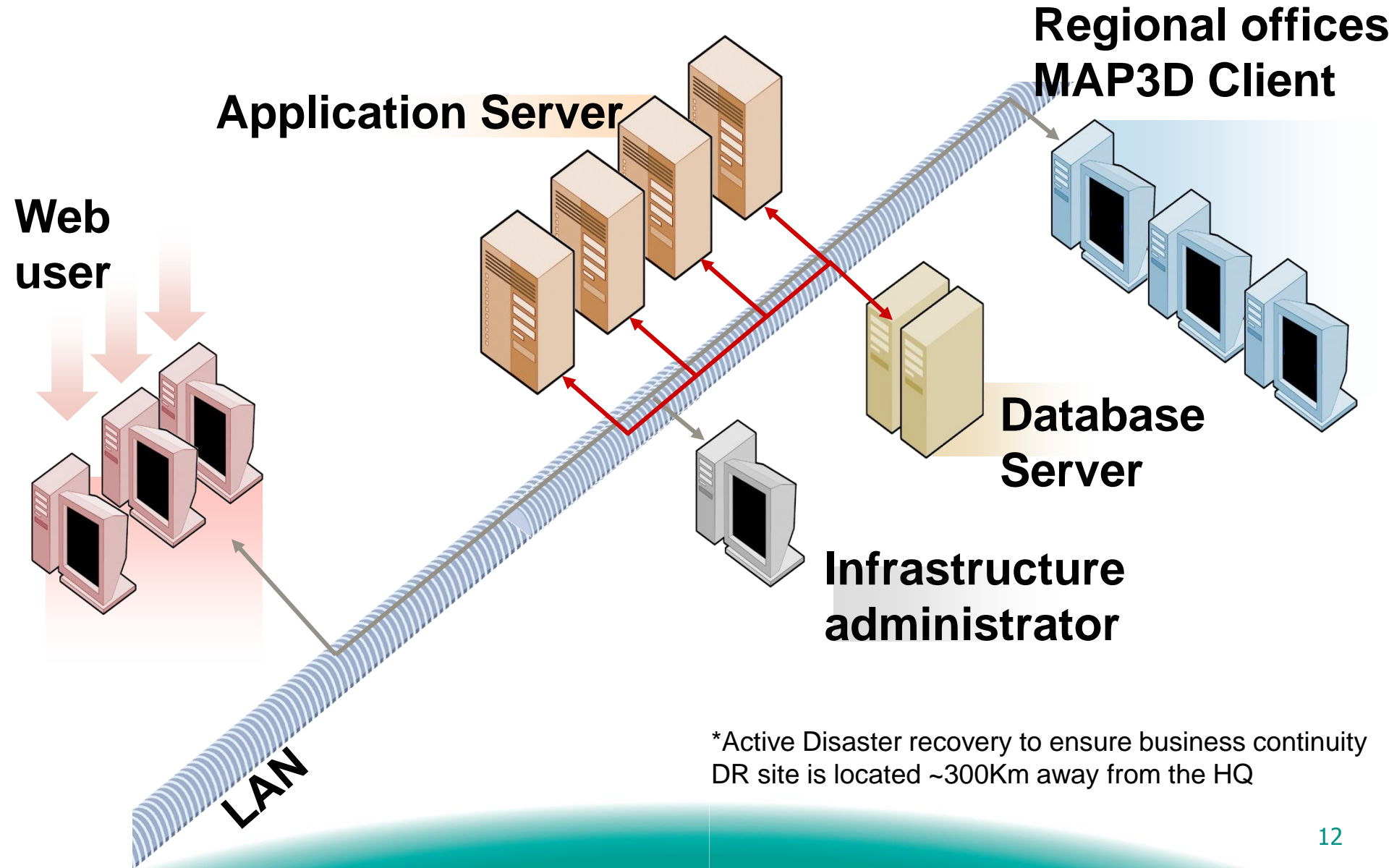


System Architecture

Software Architecture



Hardware Architecture

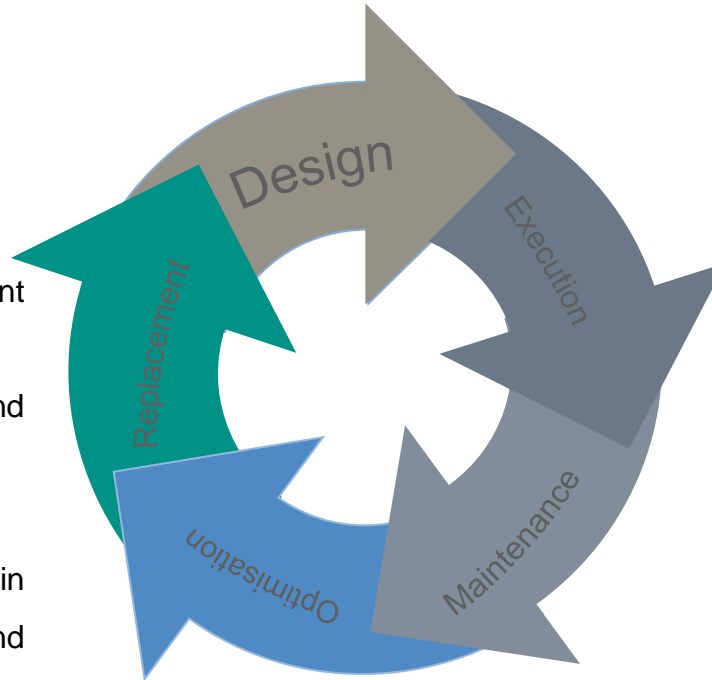


*Active Disaster recovery to ensure business continuity
DR site is located ~300Km away from the HQ

Business process covered by the MAP3d applications

GIS offers support for life cycle of the equipment. It is an tool used by the most of our services and offers support in order to respect the working process.

Main operation:



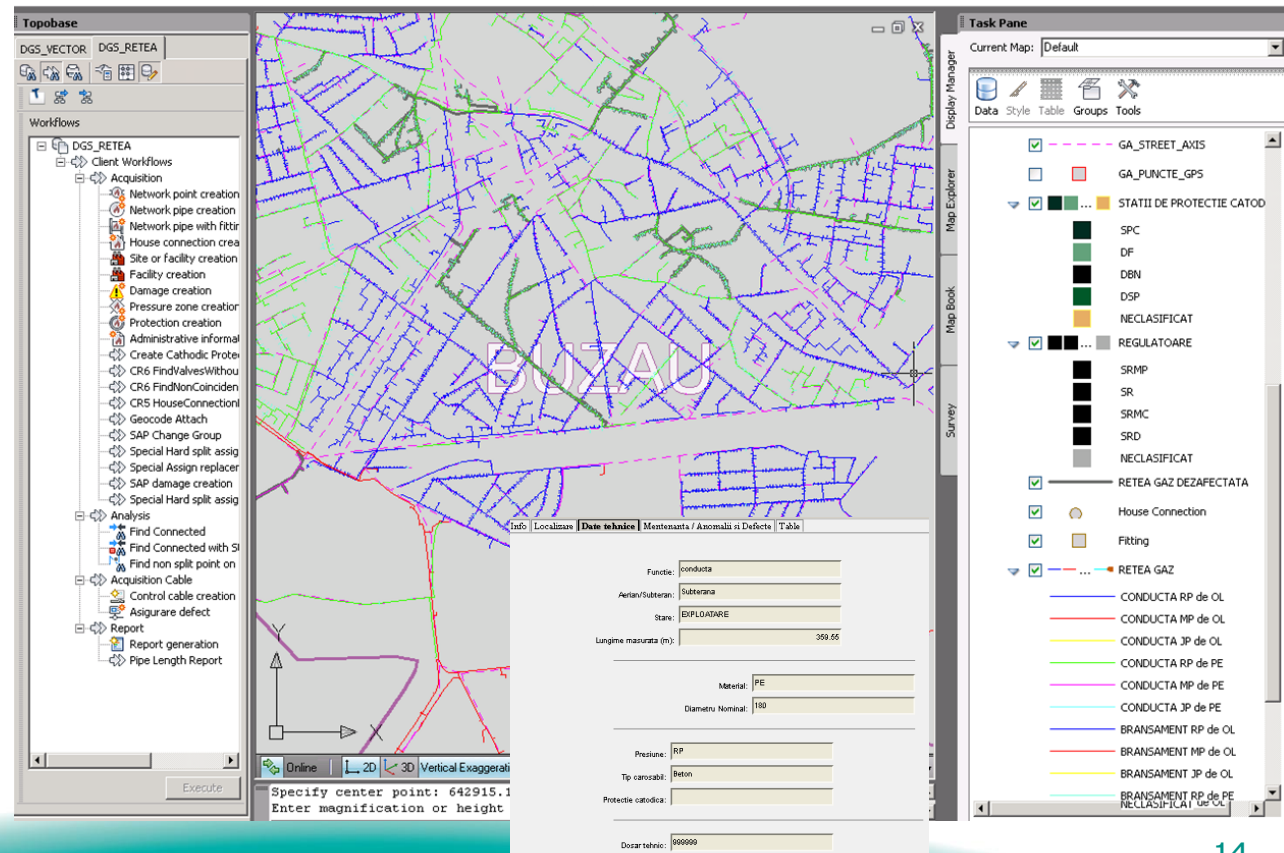
- Location in area of interest
- Import from measurement equipment
- Viewing technical attribute and geometry
- multiuse editing
- Network Topology creation in order to ensure data integrity and to minimize error in update process
- Graphical and tabular report

- Dashboard
- Distance measurement;
- Sketch drawing, redline in order to propose an approximate solution for supply
- Database versioning very useful for design team
- progress status of the execution of work
- Multi criteria analysis which is used for the investment plan ;
- Development of the work cost estimate;
- Extract network status report in the user define zone;

This is the base application used mainly by the specialized team whose main objective is to collect data in the field and manage them in the system.

Main operation:

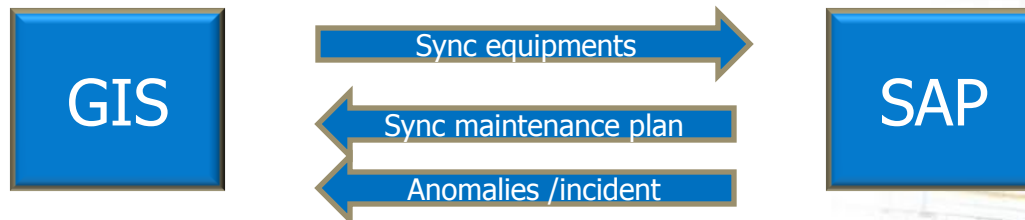
- Field data acquisition
- Creation of the new equipments;
- Geometry and attribute editing;
- Generation of the report;
- Network state analysis;



SAP Plant Maintenance integration

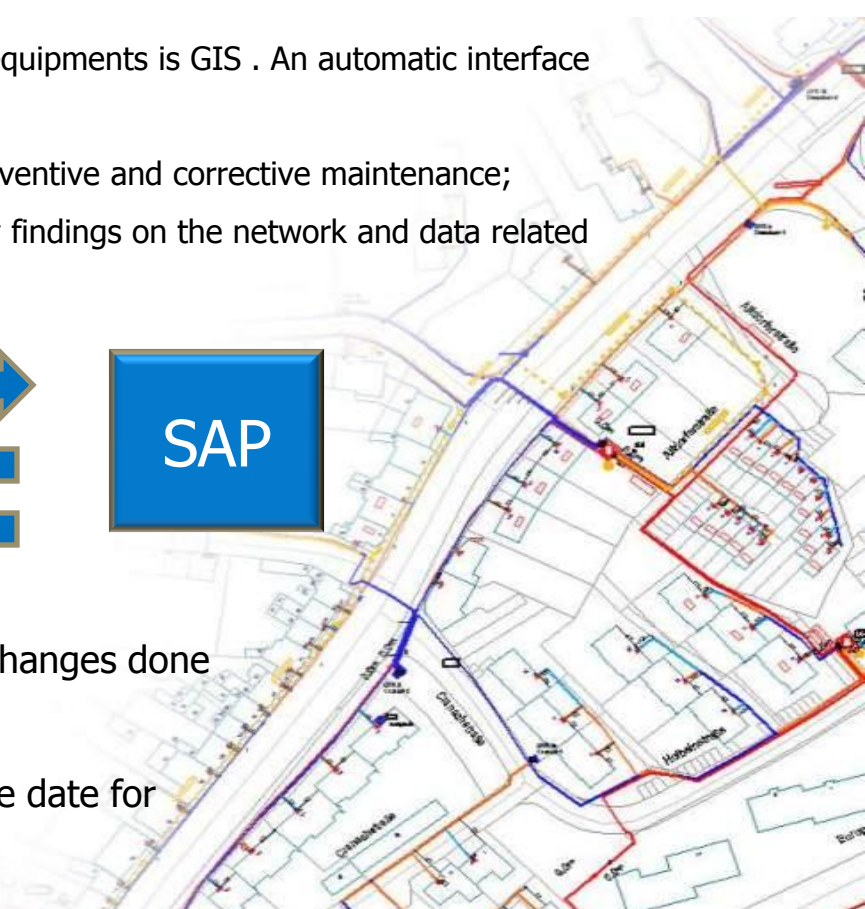
Objective:

- create maintenance plan for all equipments of the network . This object is pipe , house connection valve , regulator station , etc;
- The master system which manages the creation and changes of the equipments is GIS . An automatic interface sync all the data from GIS to SAP ;
- SAP- PM is the system which manages network object in terms of preventive and corrective maintenance;
- Also PM automatically sends all incident information , all the anomaly findings on the network and data related to revision/verification; ;



Synchronization process is managed by a two way interface:

1. sends to SAP information on the new equipments and all changes done in GIS;
2. GIS receive all the information related to maintenance, the date for revision , new incidents and status of this incident etc;

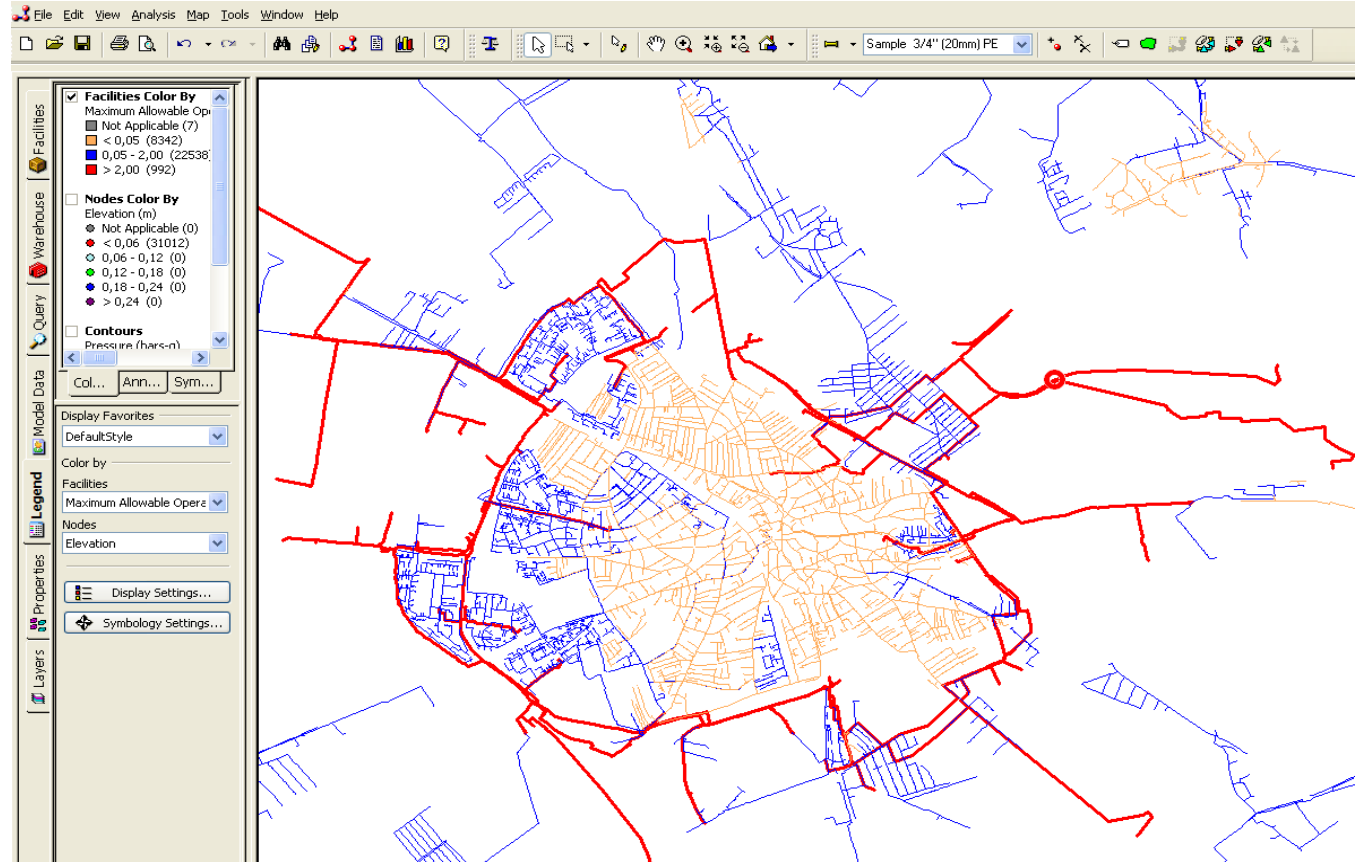


Network modeling and analysis system integration

DISTRIGAZSUD Network uses an application for hydraulic calculation and network modeling. This application proposes best solution for connecting to the network and solve gas balance on the network. Integration with GIS was done offline with dedicated ETL software . We transferred only a few objects such as pipe, valve and regulator stations to the modeling software .

Main operation:

- Area Isolation provides the tools you need to simulate the isolation of user selected areas of a gas network;
- Automated Design enables you to assess pipe size options for your model with specified loading conditions, material cost, installation cost and location.
- Solving "what if" scenario like closing a valve or closing a regulator station. The system can provide information of the behavior of the network in those cases.



Future of the project

- ❑ Develop tracking tools for new investment projects ;
- ❑ SCADA integration;
- ❑ SAP Asset accounting
- ❑ SAP ISU integration;
- ❑ Develop routing and proximity modules;
- ❑ Work force management integration;
- ❑ Mobile viewer application;



Thank you for your attention!