



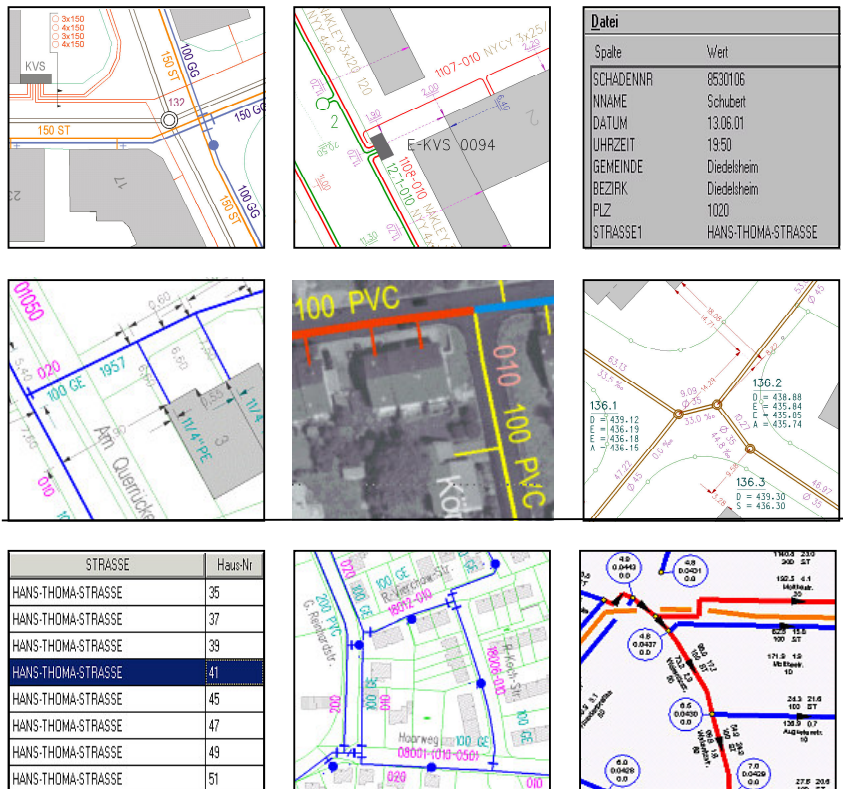
ingenieurberatung

Ing. Max Hammerer

hammerer-system-messtechnik

Geographical Information System PROFI Water, Sewer, Gas, Electricity

Consulting, implementation and delivery of software



**Safety and Economy by
modern pipe documentation with GIS**

Successful with PROFI

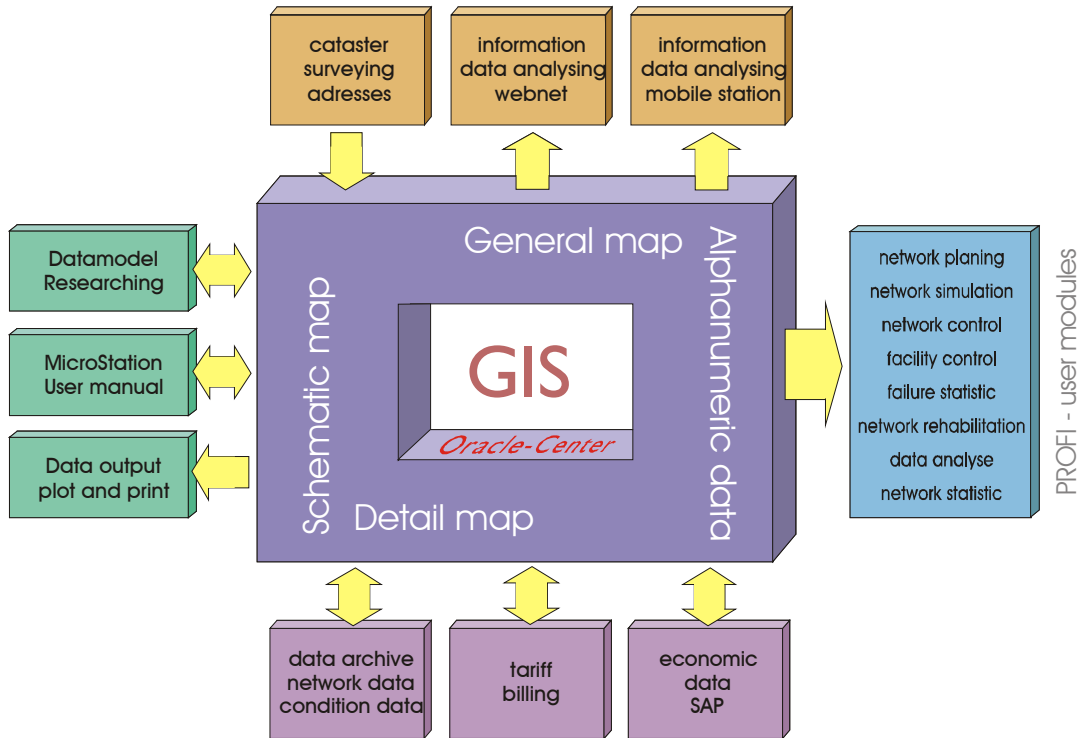
Programme for Pipe Network Organisation, Operation and Maintenance

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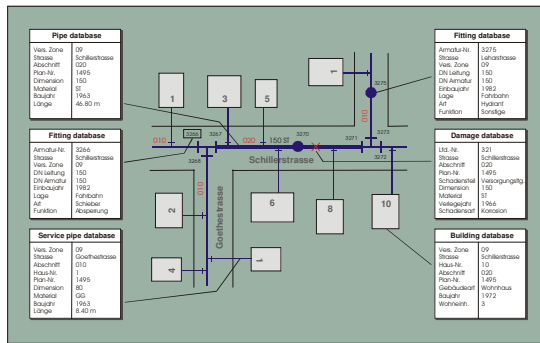
PARametricable Information System



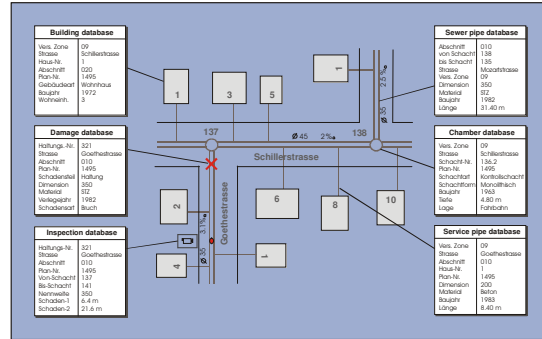
The object-oriented GIS/NIS PROFI administrates, connects, displays and integrates graphic information, numeric data as well as relation and rule information. All graphic and numeric data are stored and administrated in the relational database Oracle. The core of the system consists of object libraries for water, gas, sewer, district heating, electricity, and telecommunication and base maps. Capable interfaces allow the transfer of legal data (e.g. EDBS) and data from other GIS-Systems. Integrated interfaces allow the plug-in of external programmes for calculations, analyses and evaluations for maintenance, inspection and planning. The navigation in the system is feasible according to data contents, e.g. pipes, streets, house numbers and inscriptions. The graphical user-interface is Microstation. The data model is open for configuring topological relations. The graph and output of plans is supported by several background options, e.g. register, ortho-photos or scanned data. The processing of raster data is possible. Numerical results are transferred to MS Excel and thus, can be treated further. The technical reporting system is based on internet technology and allows the display of graphics and the analysis of graphical and numeric data. Data collection, information and data analyses of graphical and numeric data are performed on site with the mobile information desk.



Data model for water, gas, sewer, ...



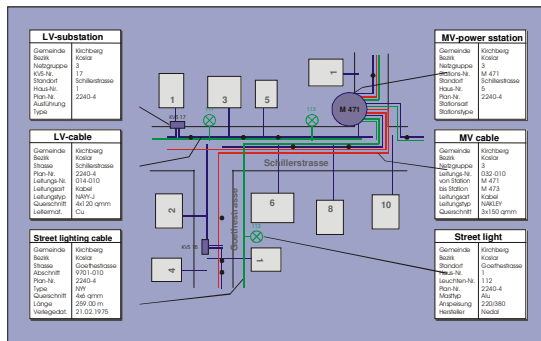
Data model water and gas



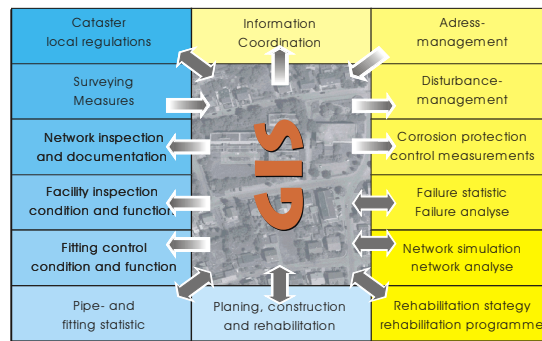
Data model sewer

Basis for the work with GIS are the data models of the several divisions, which were created in preliminary stages and can be configured with the support of the object libraries. PROFI assures data consistency between graphical elements and numeric data. PROFI has an open architecture to cope with the requirements of modern IT environments, by supporting current and future GIS applications. The dynamic data model allows the supplementation and extension of the existing object structures.

... Power supply and processes

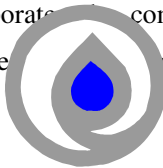


Data model power supply

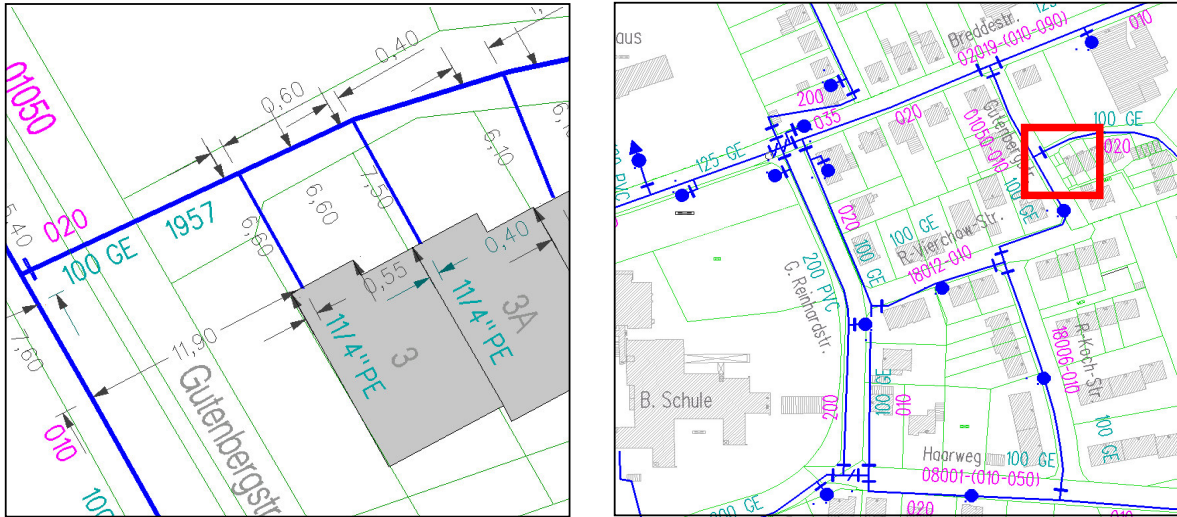


Business processes within the information system

Beside the management of pipe maps with various details, contents and scales the net relevant data of the GIS supports the information, statistics, analyses and business processes via freely configurable interfaces. These requirements have to be fixed before in a project handbook on the basis of the company-wide IT structure, which incorporates the communication ability of all used software programs. Due to the integration of business processes an additional benefit of the GIS is generated beside plan presentations and information.

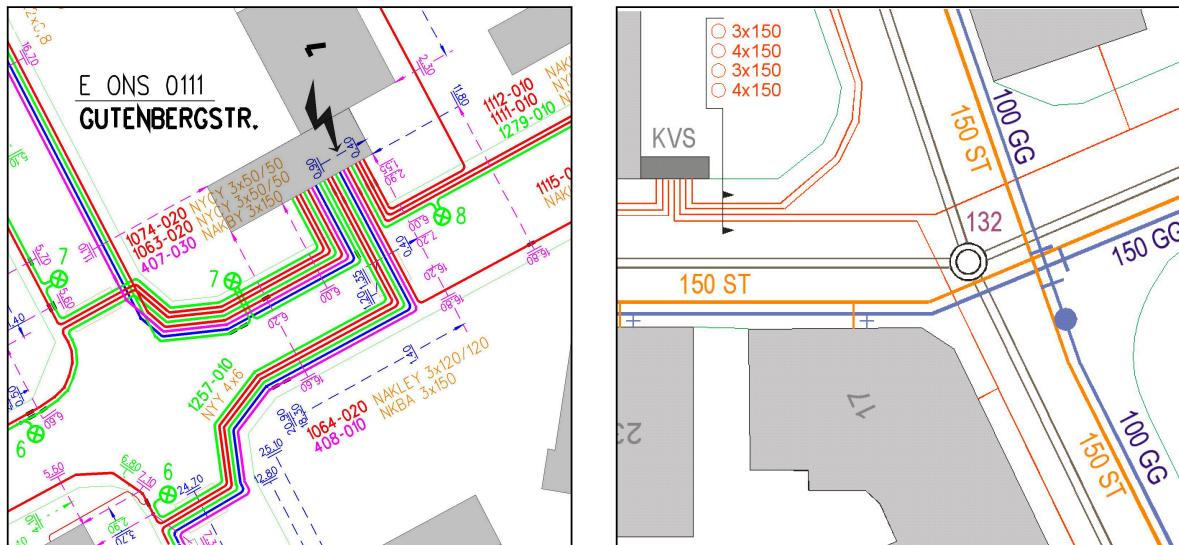


Network documentation with GIS



Display of asset map and overview map water

The network documentation for water and gas consists basically of asset maps and overview maps with different scales. The required contents are defined in DIN 2425. The numeric data and the communication with the graphical display is fixed in the data model.



Display of various maps for electricity and multi user maps

The documentation of electricity assets is very complex. Several voltage levels have to be displayed jointly and separately. PROFI displays consistently single lines with according profiles as well as multi-lines. The update of graphical elements is done centralized in the database.