Urbano – software group for cadastral purposes – GIS infrastructure

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Urbano is a software group to carry out the GIS infrastructure projects, such as wastewater system projects, water supplying system projects, gas pipeline projects, etc. Urbano is partly based on experience and technology invested in Canalis, a software to design sewage systems and Hydra, a software to design water distribution systems. Thus supplemented programs to design and carry out GIS projects, became valuable tools to treat network systems. Urbano is based and developed on Autodesk technology, i.e. AutoCAD, Autodesk MAP and MapGuide programs.

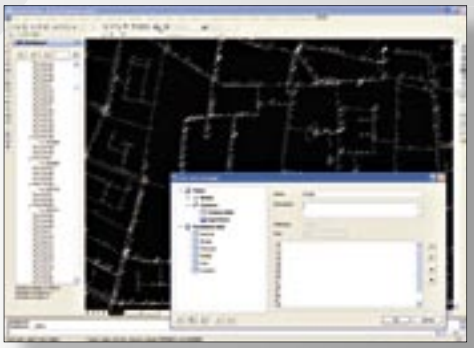
Urbano Consists of the Following Modules and Extensions:

Kernel
Interactive definition of the network, network editing, setting of the basic tasks, reviews and annotations.

Data Extension
Connection to arbitrary databases, drawing and data processing, specific GIS analysis.

Server
Contemporaneous work of more that one user with central database. Comprises several server techniques – DBMS, IIS (Internet application, web services).

Internet Extension
Internet Extension – Based on MapGuide technology, an extension to present, analyse and administrate data in Internet environment.



Development and distribution

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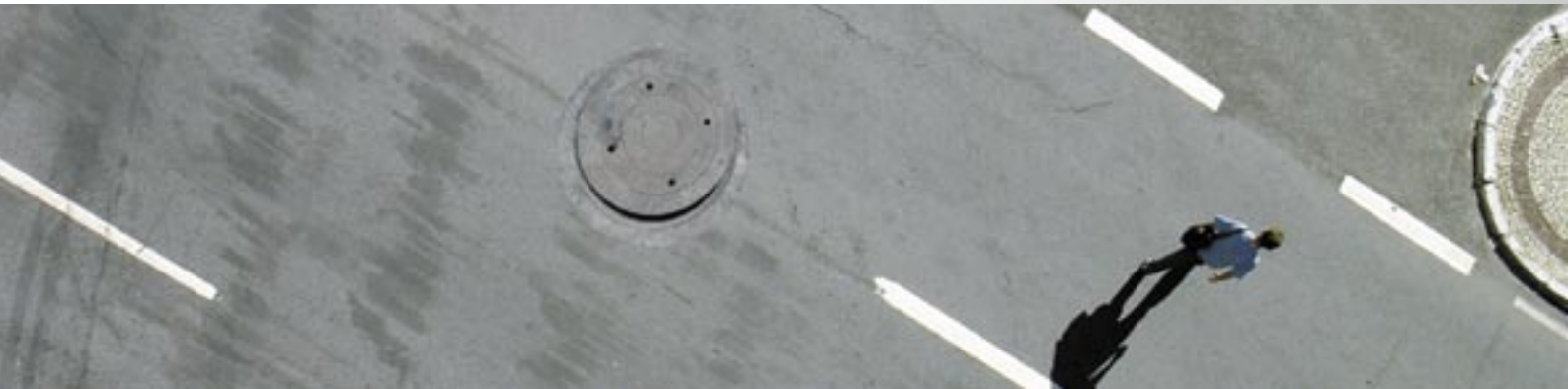

Main Software Characteristics:

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Interactive Network Definition – interactive node and section network definition using geodetic or scanned maps, conversion from AutoCAD line or point symbols including automatic creation of topology.

Network Editing – arbitrary adding, erasing and moving of the sections and nodes including automatic adjustment of dependent parameters and annotations.

Data Definition – logical definition of arbitrary data individually or by group, including automatic check on data accuracy.

Data Review – individual or group review of the data in a tabular form which can be adjusted, connected to elements in the drawing, transferred to Excel. Hierarchical review of all topology elements. Thematic mapping based on arbitrary data.

Annotation – intelligent annotation of all pipe and node parameters, capability to create user labels, direction and station labels.

External Database – connection to the arbitrary databases, mapping and data reading including the creation of arbitrary location and SQL queries, creation of a direct entity and record connection, database updating in accordance with drawing modifications.

Connection with External Documents – the possibility of automatic connection of drawing entities with arbitrary external documents, such as photos, reports and schemes.

Infrastructure Intersection – the capability to analyse infrastructure intersections including the capability to calculate the difference of heights, drawing of cross-sections along the arbitrary lines (cut lines).

Longitudinal Sections – drawing of the longitudinal sections of arbitrary pipe sections including arbitrary definition of tables and scales, definition of other infrastructure elements.

Server Component – consists of DBMS System (SQL Server, Oracle...), Internet application and a set of the web services (IIS). Enables the work in multi-user environment, supports long transactions. All graphic and attributive data are placed in central database regardless the format. Defines the users access priority, enables the follow-up of all system activities as well as a simple centralized back-up.

Query manager – a system to create, manage and combine SQL and/or spatial queries. Capable to store queries, enables their subsequent utilization by any authorized user.

Central Database Updating – data drawing, modifying and updating activities are grouped into a "long transactions" provided with a sophisticated lock-up mechanisms. Any modification is recorded and data recovery is possible at any moment.

Extensions – creation of graphic and attributive reports including automatic storage and searching of the stored files.

Internet – "upon-request" activation of sorted data replication to a distant database exposed on Internet. On the basis of replicated data an automatic generation of files to create a web application based on MapGuide server. Managing of the users right to Internet access, following-up the activities within the system, dynamic elaboration of different reviews and reports.