

# **GIS Based Gas Utility Data Model for Turkey**

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Although, gas utility sector faces major changes due to increased competition between distributors, efforts in improving services, and applying new technological solutions In Turkey, there is no fully GIS based system when the current systems were analyzed. In the current situation, most of the developed systems store only spatial data in CAD environment while few systems were designed as storing only spatial data in GIS environment and keeping non-spatial data in a different platform.

CAD environment cannot provide an integrated spatial and non-spatial data in a same database framework and this problem is tried to be solved using other software such as SAP, SCADA etc. Main scope of this research is to develop a GIS based model for use of gas utilities which enables the integration of information from many sources, which can be internal and external, into a common framework.

In this study, the appropriate data model for natural gas system in Turkey is evaluated. In details, gas models used all around the world and Turkey were analyzed and a GIS based data model was designed using the outputs of these analyses. During the designing phase, the INSPIRE Utility and government services at Annex III , FDGC (Federal Geographic Data Committee) Utility models and ESRI Pipeline Models were used as reference data models. The aim of developed model is manage and operate all infrastructure investments with a Utility Management System and build an enterprise GIS solution. This model was developed ESRI software as GIS environment and SQL Server as database.