Using SOA for development of information system "Smart city"

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Abstract – **An approach to building information system of the smart city, based on the technology of SOA is discussed in the paper. The proposed approach will improve the manageability of the system, increase its speed and reliability, as well as no less important to provide security.**

Keywords – **Smart city, Service-Oriented Architecture, network protocol.**

I. INTRODUCTION

Smart City is a program focused on modernization and reconstruction of existing engineering networks, to create a common information space of the territory. The core of the project "smart city" is an information system of monitoring of state of city basic municipal objects, information processing and provision of various services to consumers. These services may include: notification of overload situations, information on consumption of various resources, information about the cost of resource consumption, etc. For example, in terms of residents, the creation of such system allow to organize a single payment center, where they will be able to pay for all services, to find out the status of him accounts. Today, in many large cities these problems are solved partially, but solutions are fragmented and can not provide all the needs of users. The proposed concept allows, along with the creation of new elements of information systems to connect to it already existing, which significantly reduce the cost and timing of commissioning.

II. ARCHITECTURE OF INFORMATION SYSTEM

The architecture of the information system can be divided into several independent levels in accordance with solved problems:

- User system;
- Office Services;
- Transport and conjugation;
- Source of information.

Using this architecture allows to reduce the costs of developing new components and connection of existing ones. Using SOA (Service-Oriented Architecture) technology as a practical implementation of this architecture is the most effective one.

The effectiveness of the proposed solutions is conditioned by the fact that the developed system mainly focuses on providing services related to the processing and transfer of information between different objects. Consequently, the interfaces between different software and hardware platforms are sufficiently acute in such system.

Architecture of information system according to the technology SOA is shown in Fig 1.
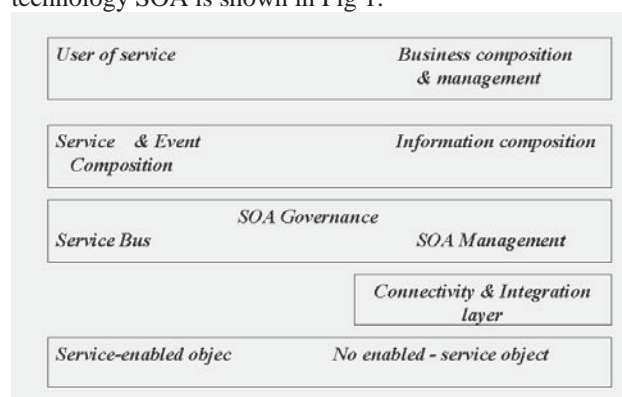

Fig.1 Architecture of information system

In accordance with this architecture the main elements of the system are:

1. Object of networks. Buildings, area of commutations, transport vehicle, organizations, association and etc.

2. Node of network. Tied to carries out the objects of network collection and information transfer to the eventual object of network. Completed by interconnect by an equipment and autonomous, energy independent sources feeds.

3. District node. Collects and processes information from the knots of network. Manages information streams and services.

4. Central municipal node. Connected to the Internet, to the center of digital TV, provides telephonies treatment of digital streams, actings from district knots networks.

III. CONCLUSION

Construction of a unified city network on service-oriented architecture technology will improve the manageability of the network and increase its speed and reliability, as well as equally important to ensure safety. The concept of the smart city is a new stage of development of infrastructure of the city with significant improvements in the lives of its inhabitants.

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