eGov-BUS – Advanced eGovernment Information Service Bus

RODAN SYSTEMS S.A.

ZARZĄDZANIE INFORMACJĄ

eGov-BUS – Advanced eGovernment Information Service Bus (IST-4-026727-STP) January 2006 – December 2008

The eGov-Bus was STREP (Specific Targeted Research Project) project, accomplished in range of 2nd Priority: „Information Society Technologies" in Sixth Research and Technical Development European Union Framework Programme. Project consortium coordinated by Rodan Systems consisted of 8 partners. The project has started on 1st January 2006 and was accomplished for 2 years.

The project budget was above 3,3 million Euro, which included 2 270 000,00 subsidized by European Union. Laboriousness is 446,56 person/months, which included Rodan Systems work 111,55 person/months. The eGov-Bus project concerned inter-operating of public administration IT Systems.

Project description

The eGov-Bus was a dynamically adaptable information system supporting life events experienced by the citizen or business serviced by European government organizations.

The objective of eGov-Bus was to integrate and extend research and standards in the area of process and content management for government and cross-government systems, with the capability of creating advanced applications of electronic signature enhancing acceptance of the technology and establishing trusted system validity and non-repudiation, relying on web services, process and repository management platforms based on a highly secure, highly available, scalable and distributed architecture providing data access abstraction. A key downstream effect is the reduction of integration costs of many of eGovernment projects. It will research advanced infrastructure level technologies on which future developments of IDA (Interchange of Data between Administrations) will be enabled.

Specifically, the project:

1. Created adaptable process management technologies by enabling virtual services to be combined dynamically from the available set of e-Gov functions, personalizing preferences and supporting the rules of the specified life event.

2. Improved effective usage of advanced web services technologies by e-Government functions with: Service Level Agreements; Audit trail; Semantic representations; Availability and performance.

3. Exploited and integrate current and ongoing research results in the area of natural language processing to provide user-friendly personalizable interfaces to the eGov-Bus.

4. Orchestrated the available web services according to the specific life-event requirements, creating a comprehensive workflow process and providing explanation to the end-user.

5. Supported a virtual repository of data structures required by life-event processes, representing declarative (i.e. rules governing life-events categories) and procedural knowledge.

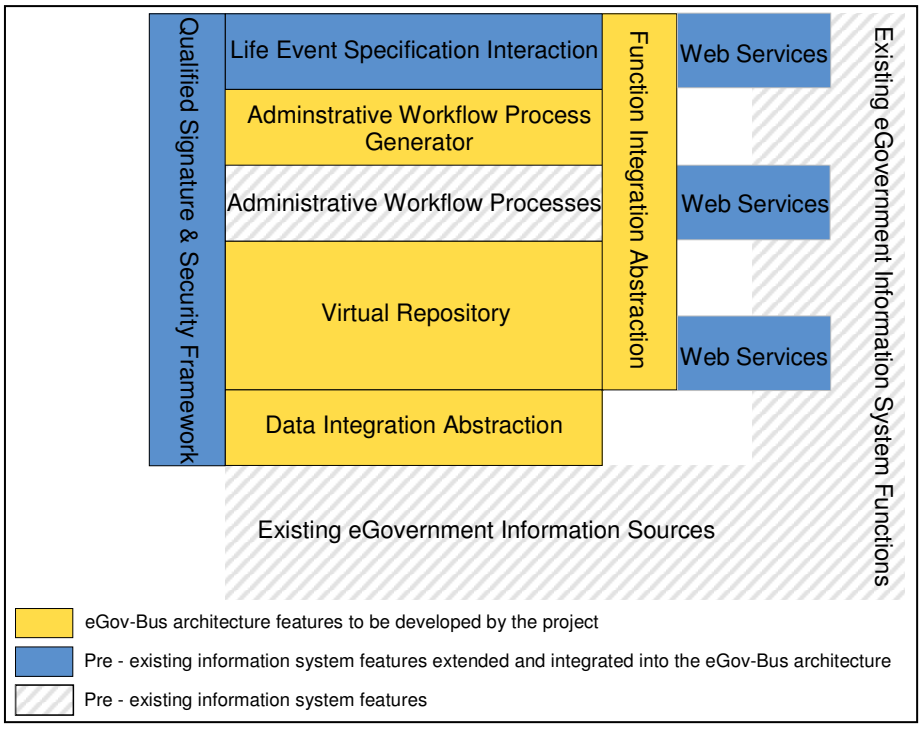
6. Researched a secure, non-repudiable audit trail for composed web services by advancing qualified electronic signature technology.

7. Provided these capabilities based on a highly available, distributed and secure architecture that uses existing systems.

Project objectives

Massive investments exist in the Government sector, both in new technologies (Web Services, massive citizen card roll-outs, latest infrastructures, etc.) and in existing technologies (mainframes, servers, with critical business applications running, etc.). However, specific technology innovations are missing which allow effectively leveraging these investments, providing a way to assemble them, and making them work in a seamless way.

In the eGov-Bus project, we researched and developed innovative mechanisms which will enable governments to provide new – and to combine existing – services to European citizens and industries, with the adequate level of security and auditability required by eGovernment, specifically regarding qualified signatures and workflow security. This is done so the complexity level is kept low and that the solutions are easy to assemble and useful for a wide variety of projects where technologies range from traditional mainframe applications to the latest state of the art.



Picture 1 The eGov-Bus system architecture

The overall eGov-Bus project objective was to research, design and develop technology innovations which will create and support a software environment providing user-friendly, advanced interfaces supporting "life events" of citizen or enterprises – administration interactions transparently involving many government organizations within the European Community.

The "life-events" model organises services and allows users to access services in a user-friendly and seamless manner, by hiding the functional fragmentation and the organisational complexity of the public sector.

This approach transforms Governmental portals into virtual agencies, which cluster functions related to the customer's everyday life, regardless of the responsible agency or branch of Government.

Such virtual agencies offer single points of entry to multiple governmental agencies (European, national, regional and local) and provide citizens and businesses with the opportunity to interact easily and seamlessly with several public agencies. "Life-events" inevitably lead to a series of transactions between users (citizens & enterprises) and various public sector organisations, often crossing traditional department boundaries. There are substantial information needs and service needs for the user that can span a range of organisations and be quite complicated. [eGov2001].

To achieve the main objectives of the eGov-Bus project the following groups of research problems were identified:

Goal 1: To define an architecture that will provide the right level of abstraction for data access, process execution and data presentation with the appropriate security

Goal 2: To research and develop a framework that provides appropriate open interfaces for the governments at the European, national, federal or local level so they can easily link-up to.

Goal 3: To research, develop and enhance qualified signature existing mechanisms to provide better user trust and acceptance of the system, through specific cross-government boudaries.

Goal 4: To abstract data access via the use of virtual repositories and present it as web services with the appropriate secure, scalable and available distributed architecture.

Goal 5: To design and develop a workflow process generator to trigger appropriate life-events exposed as combined web services.

Goal 6: To prototype all abstract concepts on selected link-layer technologies and platforms.

Goal 7: To validate the architecture and the prototype implementations.

Goal 8: To provide results where cost-effective metrics and efficient methods are described for re-use purposes.

As a result of eGov-Bus project's R&D the OfficeObjects®Service Broker – software for composite services management was created. It is a system supporting the organization's activity through providing Internet services enabling group work and business processes, corporate knowledge and electronic documents management. The system enables the creation and and integration of IT system in SOA architecture and implementation of the composite services in Internet portals.

Project's participants

1. Rodan Systems S.A, Poland (coordinator)
2. Centre de Recherche en Informatique Appliquée – Paris Dauphine, France
3. Europäisches Microsoft Innovations CenterGmbH, Germany
4. Uppsala University, Sweden
5. Polish-Japanese Institute of Information Technology, Poland
6. Axway Software, France
7. Secure Information Technology Center, Austria
8. Ministry of Interior and Administration of the Republic of Poland