

WEB SERVICES AND TOOLS FOR THEIR COMPOSITION CONSIDERING ASPECTS OF DIGITAL TV WORKFLOW

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ABSTRACT

In this paper some research directions and tools in the area of web service composition are discussed. The service composition is defined as a process that combines web services into new service aiming at constructing a solution to the given business problem.

INTRODUCTION

The term “service” became very popular last years. It is used in different context: for example, Software-as-a-Service (SaaS) gives to user an access to remote resources and develops an idea for accessing applications from service providers. Customer-facing services are services offered from various web-sites and a spectrum of such services varies widely – they cover e-commerce, e-mail, and providing real-time data. IT-services are services that information departments provide to the enterprises that are governed by IT Service Management (ITSM) and Business Service Management (BSM). Loosely coupled services are used to construct systems, and ensure data exchange and software components functionality. Such services in principle are web services (in spite of fact that loosely coupled services can use other technologies) and they are considered as a base for services-oriented architectures. Using of Service Oriented Architecture (SOA) provide: Independent and loosely coupled services that can communicate; Services with high granularity which are acceptable through Service Bus.

SOA promises more flexibility with lower technological expenses and better suits business needs by

- Unification based on simplification of the integration process;
- Reusing of components and their combination;
- Process automatization and support of changing business requirements;
- Standardization;
- Modernization, merger and compatibility of IT systems after merging;
- Migration from existing systems.

In the paper the web services and possibilities for their compositions are discussed in this sense.

WEB SERVICES

Web services can be accepted as a concept for universal data integration between different web and software applications independently from their vendors, methods, operation systems and principles of their realization. This is a module of application software that can be published, discovered and invoked in web by XML-based standards.

Communication between distributed applications is not a new problem, but the development of open standards for web services provides an interaction that is unrestricted by company’s private rights and gives an opportunity for achieving more interactive and intelligence behaviour. Web services are functioning in the web, they are using the web as transport and an environment, but they have their own protocols and standards. Tools for web service construction assist automatic generation of everything that is necessary for their functioning (at present, on the base of SOAP, WSDL and UDDI) with help of wizards. For example, CapeStudio generates Java from WSDL by using WSDL Assistant. Sun ONE Studio 4 supports web service generation and makes web services attainable for every experienced Java programmer. IBM Web Service Toolkit (WSTK) is a set of tools and tutorials for using Java with SOAP, WSDL and UDDI. WSTK works with WebSphere Application Server. With Microsoft Visual Studio .NET, Enterprise Edition the constructing of web services is more simple than in Java.

Technologies and concepts for web services are still in the continuing process of standardization and discussion of services nature itself. A lot of research projects are conducting aiming at design of program environment allowing web service composition for universal integration of various applications. For realizing this ambitious goal it is necessary to identify web services that can be combined for satisfying user’s functional needs and quality criteria. Clear definition of service composition does not exist yet. Beside the term “service composition” often a “behaviour of web services” or “properties of the interactions”, or “high level description of interactions” are considered. It is reasonable to accept that composition of services is a process by which services are connected and which gives new service using appropriate operators to find a solution for some business task. Service composition has to satisfy functional and non-functional requirements and has to provide a correct result. A service or composed service can be an element of the service composition.)