

Parallel Service Oriented Architecture for Insurance Company Business

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Abstract. A new business architecture that is going to grow fast is Service Oriented Architecture. An architecture based on well-defined technology that is not a web service, furthermore is more than it. A Service Oriented Architecture might have most services and interfaces based on architecture with defining well and part of part any services construct service architecture. In this paper we will describe and design a Service Oriented Architecture helping of MetaModel Software Engineering capabilities to recognize department of this designing. This MetaModel Designing gives us a viewpoint of relations between services.

Keywords: Parallel Technology-SOA-MetaModel

1. Introduction

As Mentioned before a SOA is exactly what its name implies is architecture. It's more than any particular set of technologies, such as Web services. Within a business environment, a pure architectural definition of an SOA might be an application architecture within which all functions are defined as independent services with well-defined invocable interfaces, which can be called in defined sequences to form business processes. Note the components of this definition:

1. All functions are defined as services.
2. All services are independent.
3. In the most general sense, the interfaces are invocable; that is, at an architectural level, it is irrelevant whether they are local (within the system) or remote (external to the immediate system) [1].

We know every function describes a job and in SOA this job show us a service like 'DatabaseSubmissionService', 'MessageProvidingService' that are included in our paper and all of them execute one of the important parts of collection. Independency of services is worked services without influencing to each other. This influencing may be making another service operation badly, spelling another services operation. Depend on this definition, Services could not make better operation to each other. It seems creator dose not note this notation. For example a service that makes better the service of 'MessageRequestService', is 'MessageAlarmService'. We use of this capability in our implementing.

In next section we described our SOA for Insurance Company at Client Server Side. This architecture has a parallel choice that uses constant services for every kind of Insurance services. This implementing increases the speed of execution of collection. Also simplify the operation of execution. Reverse of

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Organization Chart that their nodes is depended on top down architecture this implementing has bottom up choice that the insurance kind is known.

2. Related Works

In [1] we use form some definition to knowing of some principles in designing the SOA as described in previous section.

In [2] we encountered a Model-Driven Model of SOA. Model-driven architecture (MDA) is a software design approach for the development of software systems. It provides a set of guidelines for the structuring of specifications, which are expressed as models [3]. Authors in a twelve pages a paper consider a model based on Model-Driven architecture. They Use from MetaModel for Introduction this SOA. In this paper we use from it in SOA Description. The UML section is not considered in this paper.

In [4] Authors Design a SOA. In a Section they use form a Layer concept for introduction their Designation. We derived from this concept and differed at most differences in introducing a parallel computation for increasing the ability of architecture. Authors present the three layers and process layer sets up on the integration layer. It implements, as the name implies, the IT-supported parts of business processes that are mapped to business services [5]. Thus mapping of services is related to business process layer.

3. Proposal Method in Insurance Company

As Shown in Figure2 Parallel SOAs are in tow section. Section ‘A’ is common services that are intersection in Section ‘B’ of Figure2. We first consider of section ‘B’.

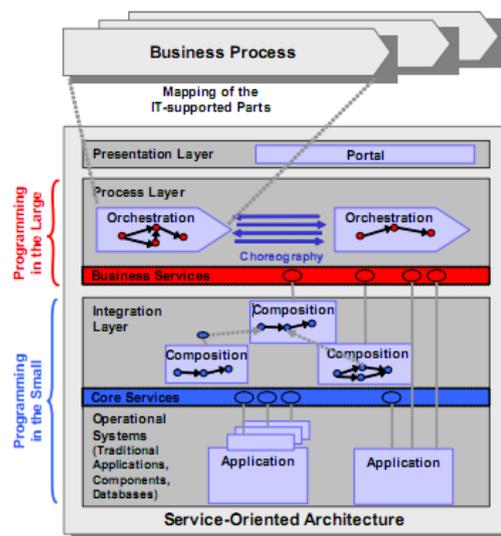


Fig.1: SOA Layers

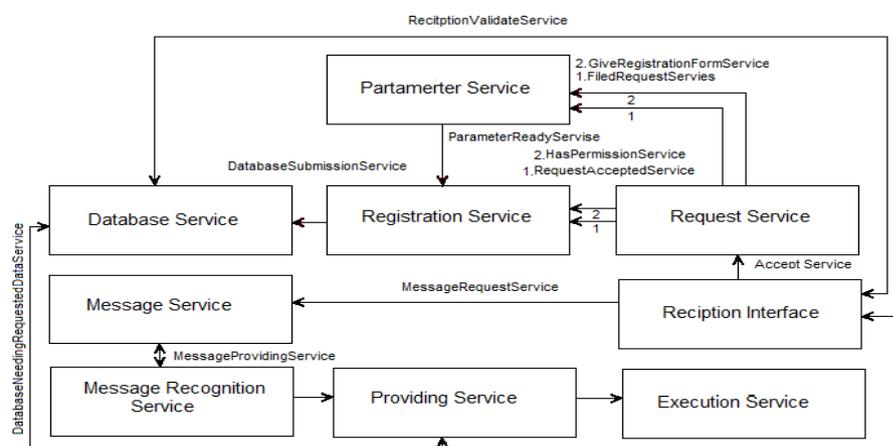


Fig.2: (A)Section ‘A’ Services

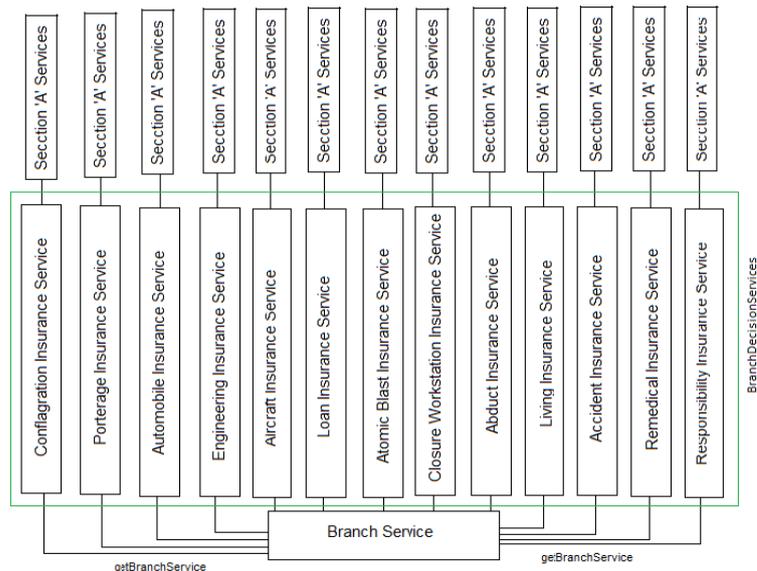


Fig. 2:(B)Parallel Branch Services



Fig. 3: Execution Sequence of Registration Services.

‘BranchService’ gives his service request to thirteen branches services simultaneous. Each of them reaches proper parameters with ‘BranchDecisionService’ requesting from section ‘A’ to operate and execute its request. When these services have no valid parameter no operations execute.

In Section ‘A’ input request is received with ‘ReceptionInterface’. For Registration of a person that is not included in Database that is indicated with ‘ReceptionValidateService’, this Interface decides about direction of service that should be performed. When a submission is required this interface decides that ‘AcceptService’ send his request to ‘RequestService’. From This Service output of tow Services that ‘GiveRegistrationFormService’ provide electronic possibility of Form Registration Capability and ‘FiledRequestService’ Provide fields of Registration Form. ‘ParameterService’, Reads and Provides this fields. ‘ParameterReadyService’ deliver these forms to’ RegistrationService’. This Service provides a possibility from a network to deliver ‘DatabaseSubmissionService’. This Service submits information in’ DatabaseService’. Figure3 illustrates sequence of execution Services.

From ‘ReceptionInterface’ when a service is required for a person ‘MessageRequestService’ send his request and Parameters to ‘MessageService’. ‘MessageService’ gives these parameters to ‘MessageRecognitionService’ With ‘MessageProvidingService’. ‘MessageRecognitionService’ asks from ‘ProvidingService’ to Authorized the person and receives the extra information with ‘DatabaseNeedingRequestedDataService’. When Authorization Completed the Execution Service acts the operation.

Each of this services and interfaces are classes and implementing in Integration Layer refers to partitions that is in object form.

4. Proposal Method in Total Level

In total level we should indicate the bottom state services that are major services of a system and are serviced with a branch services. Services are declined form branch service with decliner and accepted from one of them and a common collection of services, service every collection of services. This method is implementable when the common service is intersected in all collection services. If common services are differed from other, every common service should be implemented separately. In this state the simplification may be complicated than intersection state services. But speed of execution is still a major portion of capability but is still simplifier and more speeding than sequence state implementation.

The Efficiency Percent is calculated as:

$$P_{PI} = \frac{P_s - P_p}{P_s} \times 100$$

That if the sequence system is linear:

$$P_p \cong \frac{P_s}{B}$$

Thus we have:

$$P_{PI} = \frac{P_s - \frac{P_s}{B}}{P_s} \times 100 = \left(1 - \frac{1}{B}\right) \times 100$$

We see that if the system is linear and no condition is concluded in sequencing SOA the efficiency percent is improved with number of branches reversion.

P_s : Execution Time of sequencing SOA

B : Number of Parallel SOA branches.

P_p : Execution Time of Parallel SOA

5. Conclusions

Service Oriented Architecture has become more useful in business process. Adding ability to architecture leads to better capability of that architecture. In this article the parallel computation of this ability leads to faster and easier performance. It is more complicated when this classes has been broken to smaller classes. A new approach has been discussed in this article.

6. References

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