**Migration Framework and Tasks**

The generic methodology follows the following steps:

1. Architectural representation of the legacy application: Based on the source code and text descriptions, we can analyze the legacy system and reconstruct an architectural model of the legacy application.

Tasks: 1. Represent and analyze the legacycode starts from source text to code structure, to function-level, and then to architecture representation. Extract some valuable information, such as business entities and metadata, from legacysystem. Research on automated code analysis tools

1. Redesign the architecture model: redesign the original architecture model and in particular identify services that can be provided in a SaaS architecture, specified in a SoaML model;

Principle： One primary redesign principle is to make the target architecture more service oriented or component-based, which would bring features like high cohesion and low coupling to the target architecture and make it more structural. Different software design patterns, like the GRASP (General Responsibility Assignment Patterns) can be considered in this step.

Task: Summarize SOA design pattern catalog.

1. MDA transformation: with MDA transformation technology, we can easily transform the architecture model like SoaML, SysML, UML to target code like WSDL, JEE Annotation;

Task: Study on the transformation tools.

1. Web service generation: We can generate the target Web service based on the WSDL or JEE Annotation;
2. Web service-based invocation of legacy functionalities: The service-base application invokes the functionalities from identified function and service points in the legacy application;

Principle：The service to be deployed on the Web server exposes a number of methods callable from the SOAP client. The service residing on the Web server acts as a client to a legacy application that resides on a different server. The legacy client code that resides on the Web service has a wrapper layer over it. This will facilitate a clean separation from the legacy calls. A Web service adapter (wrapper) is built over the legacy application to expose it as Web service. The legacy client code can be isolated with this kind of design. The wrapper invokes the methods from the legacy application through SOAP.

1. Selection of suitable Cloud Computing Platform: According to the specific requirements of target system, the most suitable cloud computing platformwill be chosen to support the execution of the Web services;

Principle: take other advantages of cloud technologies to make our application more scalable and effective to use.

Tasks: Comparison of different cloud platform and management tools.

1. Web service deployment in the service cloud: End users can consume the legacy functionalities through the Web services that run on the cloud.