ESPRIT Project No. 25 338

Work package F

Service Interaction

Requirements

ID:	DF2 v1.0		Date:	11-01-98
Author(s):	Nick Taylor		Status:	
Reviewer(s):	Steve Battle		Distribution:	

Change History

Document Code	Change Description	Author	Date
DF2	First version of document.	Nick Taylor	11-01-98

1 Introduction

The Service Interaction (SI) WP is an important and highly visible component in FollowMe. It will provide a means by which Service Providers (SPs) may integrate their services into the architecture and also allow agents in the FollowMe domain to interact with those services. It is envisaged that the outputs from this WP will consist of software and a set of guidlines or patterns detailing what a Service Provider must do in order to provide a point-of-presence within a FollowMe system.

This document will follow the approach described by Jacobson et al [1] in developing a requirements model which be presented as a Use Case Model and a Domain Object Model. It will describe the requirements of the Service Interaction WP and define the functionality of the SI WP.

2 Domain Object Model

A domain object model is useful because it allows the objects in the problem domain to be clearly stated in context with all other domain objects. The domain objects types in SI are limited as illustrated in figure 1, however, there could well be a large number of services that participate and therefore the Service Directory will need to efficiently implemented with global scope.

Figure 1 introduces a new idea of a service proxy object which are intended to allow providers straddle the boundary between the SI WP and the "The World". Many Service Proxies may exist in different Places however they could all quite possibly get their data from a single service source. This approach allows us to formally introduce providers presence into the system and also allows flexibility for the Service Deployment WP.
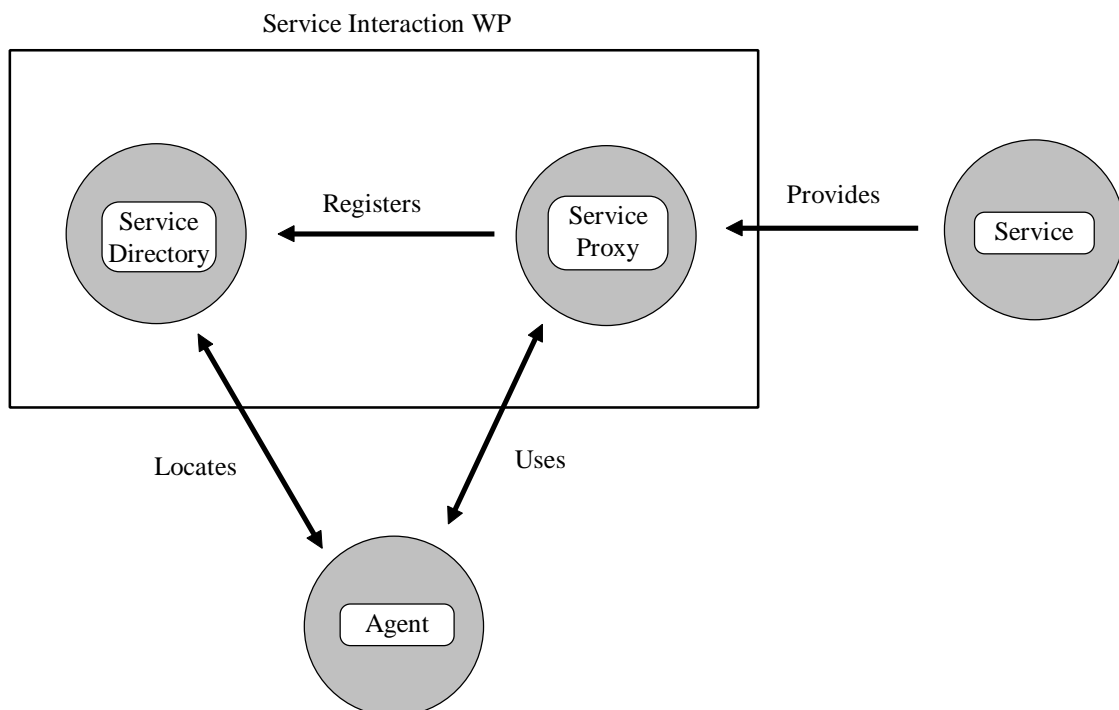

Figure 1

3 Use-Case Model

The number of use-cases on the SI WP is limited however for completeness sake these will be outlined.
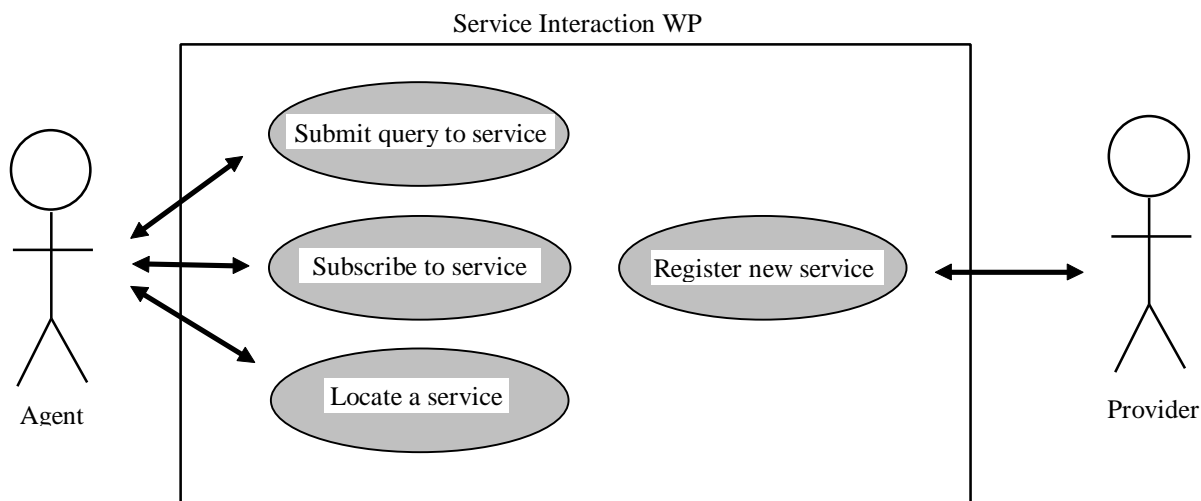
Service Interaction WP

Figure 2

Locate a service
When a task agent is launched against a particular service, it must first find the appropriate service. It achieves this through consultation with the Service Directory which returns an address of some description.

Submit query to service
Once a service has been located, an agent may wish to interact with it. This use-case outlines an ad-hoc query against a service and an example would "Give me the price of Iona stock". This use-case is therefore the general case where an agent uses a query facility provided by the service. Interactions of this type will typically be of a short duration.

Subscribe to service
Once the service has been located, an agent may wish to issue a query similar to that outlined in the "Submit query" use-case but qualified with an additional *when* clause. For example, "Give me the price of Iona stock when less than 10". This kind of query could be of a long duration if the constraints to be satisfied do not occur often.

Register a new service
When a provider wants to introduce a service into FollowMe, it must be advertised through the Service Directory. If there are multiple proxies for a service, then each must have an entry in the Service Directory.

4 References

[1]   **Object-Oriented Software Engineering**, Jacobson, Christerson, Jonsson, Overgaard, ISBN 0-201-54435-0

[2]   **Process Descriptions for Pilot Applications**, Stein, WP_I_Processes v 1.0, Project Internal Document

[3]   **Deliverable DI1 - Survey**, Rajakarunanayake and Stein, Survey v1.0, Project Internal Deliverable