**Introduction of APIs for Institution Manger Service**

**1 Structure**

Server side:

The Java jar file InstManger.jar is deployed as RESTful Web service through Universal Distributed Dataflow Framework (UDDF). RESTful API is exposed for client side access.

Client side:

A Java library, libInstClient.jar is developed to access InstManager service. RESTful APIs are wrapped to provide an intuitive interface. Details are introduced in following text together with a simple example.

**2 Main methods in library**

1. Initialize Client

Class Name: InstClient

InstClient(String *APPService\_URL*,String *Datapool\_URL*, String *Username*, String *Password*, String *Request*)

*APPService\_URL*: the URL string for the InstManager Service

*Datapool\_URL*: the URL string to store the input request.

*Username* and *Password*: Credential information for service

*Request*: the String of event query.

1. Executing

Method name: UploadEventandGetNewState

List<String> edu.bath.APP2REST.Admin\_Tool.InstClient.UploadEventandGetNewState()

The list it returns contains all the results from InstManger. Results can be collected from it.

**3 Example**

Code:

InstClient ic = new InstClient(

“[*http://fog.cs.bath.ac.uk:48084/edu.bath.APP2REST/WS/APP\_Services/InstManger*](http://fog.cs.bath.ac.uk:48084/edu.bath.APP2REST/WS/APP_Services/InstManger)”,

“*http://fog.cs.bath.ac.uk:48084/edu.bath.APP2REST/WS/Datapool/A2*”,

“admin”,”admin”,”newArrival(Jason,normal)”);

List<String> resultState = ic.UploadEventandGetNewState();

System.out.println(“Result is: ” + resultState.get(0))

“A1” in the URL of Datapool represent the arbitrary name of the Datapool, which appears as a path parameter. It can be specified by users as long as it is valid characters in URL. The result in this case is “queueLast(jason),deadline,viaQueue(jason)”. Besides, in this case, user can access the list of stored values in the Datapool by the URL. All the contained data items’ URLs are listed in the response.

There is one InstManger service that has been deployed into server fog (<http://fog.cs.bath.ac.uk:48084>). The deployment process of the service is introduced in a separate file.

**4 Other assistant methods**

1. List<String> GetNewState()

Method used to access the result field which should be the same as the returned value of UploadEventandGetNewState().

1. String GetNewState\_URL()

This method will return a URL string. User can utilise the returned URL to access the result. It is stored as a static resource at server side.

**5 Dependencies**

1. jersey-client-1.4.jar
2. jersey-core-1.4.jar
3. jersey-json-1.4.jar
4. jersey-multipart-1.4.jar
5. jersey-server-1.4.jar
6. jdom.jar