P4 – Composite Service Bus

# Summary of the innovation

The Composite Service Bus (CSB) layer of FISpace Operating Environment is the middleware that enables integration of different FISpace service components and applications. CSB provides a set of integration interfaces and qualities of service, required to support a wide spectrum of information exchange scenarios, ranging from best effort notifications, to guaranteed delivery of transactional data. The Cloud Service Bus has virtually unlimited scalability, both in the number of supported end-points, and in the number of communication channels allowed by the Bus transport fabric.

The scalability challenge, posed by the large number of data producers, service providers and consumers in this cloud-based project, is addressed by Peer-to-Peer overlay technology. The CSB core is comprised of Bus Nodes, connected by a peer2peer structured overlay fabric. The CSB clients are the FISpace service components, using the Bus for integration and connectivity. This two-tier architecture allows us to build an enterprise-strength service bus, with extensive functionality set and assured delivery of transactional data.

# Key features / capabilities

* Peer-to-Peer overlay
* Queuing in peer-to-peer network
* Synchronous Request/Response
* Single Request/ Multiple Response mechanism
* Time-limited asynchronous Request/Response

# Maturity level (TRL - Technology Readiness Level)

* TRL 6 – technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)

# Availability

* Deliverable (report)
  + D200.7, “Operating Environment (260) components”
* Deliverable (code/prototype)
  + Short summary of format (code, binary, etc.)  
    Source code, with dependency on a number of external jars
  + URL / link to repository  
    https://bitbucket.org/fispace/csb

# Licensing

* The CSB is Open Source. Two basic components used by the CSB: SR and RUM remain IBM proprietary. However, we grant free unlimited usage of these components for users of the FIspace platform.

# FIspace partner(s) that own innovation & contact points

* IBM Research – Haifa, vita@il.ibm.com