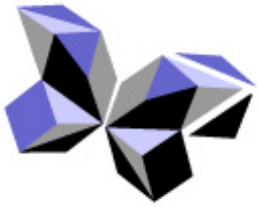

Digital Business Ecosystem

Contract n° 507953

# Workpackage 35:
# The European Research Area and DBE

# Deliverables D35.2.1 :
# Connection with Standards Bodies andmarket standards

# Interim Report

Information Society Technologies

Project funded by the European Community under the “Information Society Technology” Programme

**Contract Number**: 507953

**Project Acronym**: DBE

**Title**: Digital Business Ecosystem

**Deliverable N°**: D35.2.1

**Due date**: 11/2005

**Delivery Date**: 12/2005

**Short Description**:

Having aligned the DBE strategy with ERA, SP11 has to move to the actual market situation, reaching full technological interoperability with the main market standards (B19). IBM will analyse relevant standards (*de jure* and *de facto*) in use in the market and will produce, within the first 6 months of activity (months 13-18) a list of these standards and their specifications. In the second project phase, the overlap and technical interoperability between the DBE structure and these standards will be analysed.

**Author**: IBM

**Partners contributed**: IBM

**Made available to**: Public

**VERSIONING**

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| **01.01** | **20/12/2005** | **JONATHAN SAGE, IBM** |
| **01.02** | **20/12/2005** | **ELMAR HUSMANN, IBM** |
| **01.03** | **21/12/2005** | **PETER STANBRIDGE, IBM** |
| | | |
| | | |

**Quality check**

**1st Internal Reviewer**: David Singer /IBM Research SAB Member

**2nd Internal Reviewer**: name/organisation

**Interim report Workpackage 35**

Workpackage objectives and starting point of work at beginning of reporting period

*Having aligned the DBE strategy with ERA, SP11 has to move to the actual market situation, reaching full technological interoperability with the main market standards (B19). IBM will analyse relevant standards (de jure and de facto) in use in the market and will produce, within the first 6 months of activity (months 13-18) a list of these standards and their specifications. In the second project phase, the overlap and technical interoperability between the DBE structure and these standards will be analysed.*

**Progress so far**

There are over 150 technology and e-business related standards which could have an impact on the DBE project. Having consulted with internal and external experts on standards and representatives on standard bodies, it was not regarded as productive for the project to carry out new research on any existing standards and their protocols since these are readily available within our networks – rather it was considered more important to identify important areas that will have an impact on the project and provide market focused feedback for the project as needed.

Three very important areas for the project were identified:
(1) open source and open source licence models,
(2) application cases for SMEs and market standards and
(3) web services and SOA.

A DBE Market watch issue published in September 2004 related to Open Source Standards and specifically to possible licences. A second market watch published in December 2005 compares the first DBE application cases by our Driver SMEs to alternative realization possibilities using competing market standards. This will also result in a combined DBE business / technology roadmap to be published in the first half of 2006. A summary of web services standards and SOA with links to standards was completed in December 2005 as a separate report and is provided at Annex 1.

**SAB**

The project has engaged experts with direct experience as current or past members of standards bodies and enlisted them on the project's Strategic Advisory Board (SAB). This has been productive in providing relevant experience to the project.

The project has deepened the interaction with OMG and specifically the SBVR working group through appointing Stan Hendryx as a SAB member. In the same way the project has involved IBM's W3C former representative, David Singer, to review the core P2P architecture of the DBE and mediate between different proposals in the consortium and has appointed him to the SAB.

**Ongoing actions**

It is certainly an important task to analyse, as planned, how existing standards overlap with the DBE in the second phase and to highlight potential weaknesses that can be addressed through standards. However, the delay in actually launching the

first DBE services until late 2005 has meant that tasks relating to an actual analysis of technical interoperability can only commence now and a full report on technical interoperability can only be completed at the end of the project, after interoperability testing has taken place.

Nonetheless, relations to standards bodies and adoption of standards have been critical for the project in several key areas, those being:

(1) **Model Driven Architecture / software development - carried out by technical partners (SOLUTA and ISUFI)**

OMG and OASIS were the main organizations that ISUFI and SOLUTA engaged with – attendance at OMG conference in 2005.

(2) **Semantic Description** – the relationship developed with the SBVR emerging standard which has had a large impact on BML.

In the first phase of the project, decisions were made to embrace as many open standards and protocols as possible and to enable services to interoperate with DBE via filters or other tools without having to recode extensively. Hence it is possible for users that have current WSDL, SOAP, .NET or other services to test and use the DBE infrastructure without great additional effort.

With the publication of the DBE technical architecture D21.3 in May 2005 as well as the first releases of the Execution Environment in June and the DBE Studio in October, the project made the first concrete statements on the technological outlook of the DBE infrastructure and the adoption of open standards and Open Source.

In the final phase of the project, the supporting WP35 task on open standards and market standards will describe (1) deeper interaction with those standards of direct relevance for the actual, current DBE infrastructure and (2) clarification of standards and the related strategic choices relevant for the future evolution of the actual infrastructure

**Next phase**

The project has started to transition from an FP6 research project to the DBE Foundation as the long-term governance organization. This needs to be aligned to all activities with standard bodies. The project seeks to establish in 2006 long-term relationships to all relevant organizations directly through the DBE Foundation.

As stated above, the project is – as of November 2005 - in a transition period towards the long-term sustainable organization including governance and funding. The D35.2.1 deliverable on open standards and market standards can therefore only be preliminary. It describes the necessary future actions rather than a „steady state“, The final deliverable will be provided by the end of the project.

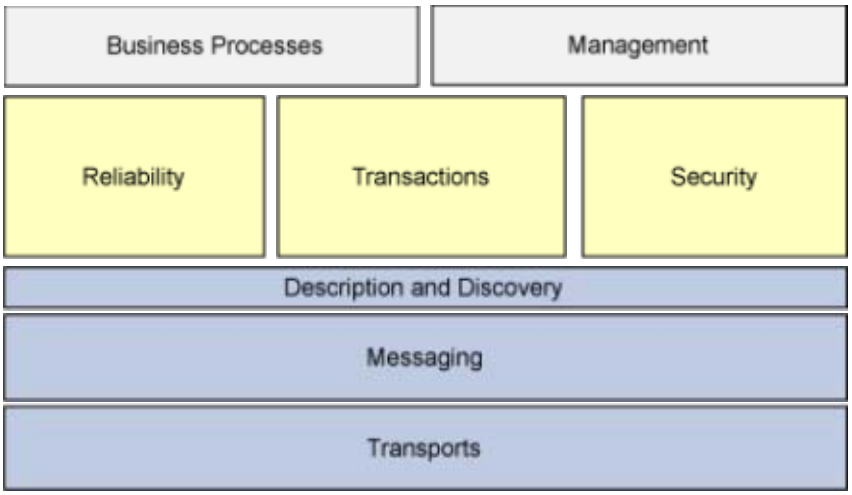
## Annex 1 – Web Services and SOA

Web services are a set of emerging standards that enable interoperable integration between heterogeneous information technology processes and systems. You can think of them as a new breed of Web application that is self-contained and self-describing, and which can provide functionality and interoperation ranging from the very basic to the most complicated business and scientific processes. In short, Web services hold the promise for providing a common standard mechanism for interoperable integration among disparate systems, and the key to their utility is their standardization. This common mechanism for delivering a "service" makes them ideal for implementing a Service-Oriented Architecture (SOA).

Besides using the common Web transports, Web services also require a common language for the data exchanged -- Extensible Markup Language (XML). Of course, XML is just the scaffolding for the actual exchange. In order for the Web services protocols to be interoperable across diverse systems and suitable for serious applications, it is necessary for standards bodies such as W3C, OASIS, and WS-I to formally standardize these protocols. It is clear how this is relevant for Web services when you look at the decomposition of these standards and specifications below.

### Standards and specification categories

The following image gives a graphical representation of how all the categories of standards and specifications fit within the context of a Web services framework. Below it is a breakdown of the individual specs and how they relate to this framework:




### Transports

BEEP, the Blocks Extensible Exchange Protocol (formerly referred to as BXXP), is a framework for building application protocols. It has been standardized by IETF and does for Internet protocols what XML has done for data.

Blocks Extensible Exchange Protocol (BEEP)

### Messaging

These messaging standards and specifications are intended to give a framework for exchanging information in a decentralized, distributed environment.

- SOAP 1.1 (Note)
- SOAP 1.2 (Specification)
- Web Services Addressing
- Web Services Notification (WS-BrokeredNotification, WS-BaseNotification, WS-Topics
  Web Services Attachments Profile 1.0
- SOAP Message Transmission Optimization Mechanism

**Description and discovery**

Web services are meaningful only if potential users may find information sufficient to permit their execution. The focus of these specifications and standards is the definition of a set of services supporting the description and discovery of businesses, organizations, and other Web services providers; the Web services they make available; and the technical interfaces which may be used to access those services.

- UDDI 3.0
- WSDL 1.1 (Note)
- WSDL 1.2 (Working draft)
- WSDL 2.0 (Working Group)
- Web Services Metadata Exchange
- Web Services Policy Assertions Language
- Web Services Policy Attachment
- Web Services Policy Framework
- Web Services Resource Framework

**Reliability**

It is not possible to solve business issues if the participants are unable to be sure of the completion of message exchanges. Reliable messaging, which allows messages to be delivered reliably between distributed applications in the presence of software component, system, or network failures, is therefore critical to Web services.

- Web Services Reliable Messaging
- WS-RM Policy Assertion

**Transactions**

Transactions are a fundamental concept in building reliable distributed applications. A Web service environment requires coordination behavior provided by a traditional transaction mechanism to control the operations and outcome of an application.

- Web Services Atomic Transaction
- Web Services Business Activity
- Web Services Coordination

**Security**
Using these security specifications, applications can engage in secure communication designed to work with the general Web services framework.

- Web Services Federation Language
- WS-Federation: Active Requester Profile

- WS-Federation: Passive Requester Profile
- Web Services Provisioning
- Web Services Secure Conversation Language
- Web Services Security 1.0
- Web Services Security Addendum
- WS-Security Kerberos Binding
- Web Services Security Policy
- Web Services Trust
- Security Assertion Markup Language (SAML)

**Business processes**

A business process specifies the potential execution order of operations from a collection of Web services, the data shared between these Web services, which partners are involved and how they are involved in the business process, joint exception handling for collections of Web services, and other issues involving how multiple services and organizations participate. BPEL specifies business processes and how they relate to Web services.

- WS-BPEL Extension for People
- Business Process Execution Language for Web Services V1.1

**Management**

Web services manageability is defined as a set of capabilities for discovering the existence, availability, health, performance, usage, as well as the control and configuration of a Web service within the Web services architecture. As Web services become pervasive and critical to business operations, the task of managing and implementing them is imperative to the success of business operations.

- Web Services Distributed Management
- Web Services Manageability
- Web Services Manageability -- Concepts
- Web Services Manageability -- Representation