

## DIP Project Participants



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DIP Project



## ▶ DIP

Data, Information, and Process  
Integration with Semantic Web  
Services

Funded under FP6 – 507483.



Data, Information and Process Integration  
with Semantic Web Services

[dip.semanticweb.org](http://dip.semanticweb.org)





### The DIP Project

More and more business today is being conducted over the Internet. Consumers can purchase an ever expanding set of goods and services online. Predictions of the world value of business-to-business operations conducted via the Internet are in terms of trillions of Euros. A major bottleneck in conducting Internet based business, however, is the integration of the underlying ICT systems.

Each enterprise will hold its data according to a specific structure defined by the organisation and when two or more business systems need to communicate the data structures need to be harmonised. For example, one organisation may represent an address as a house number and a post code, whilst another may store all the constituent parts. This integration problem is exacerbated by the fact that large enterprises will typically contain tens of thousands of databases each with its own internal structure.

DIP is an Integrated Project funded within the IST programme which has involved 20 partners and tackles the integration of business services through a combination of Semantic Web and Web Service technologies. The Semantic Web is an extension of the current Web which is readable by machines facilitating the delegation of certain classes of task to intelligent computer agents. Web Services are computer programs which can be invoked over the Internet using standard protocols. More importantly Web Services can act as proxies for business services. For example, online flight booking systems are typically implemented using Web Service technologies.

Although Web Services have led to a dramatic increase in the amount of business that is conducted online, considerable human effort is still required to find and configure a set suitable of Web Services into a single coherent business software system.

By semantically describing Web Services DIP provides a platform where many of the steps involved in application development are automated. Additionally, the DIP architecture enables the construction of brokers able to mediate between the goals of a client or consumer and the capabilities provided by online services.

During the course of the project DIP technologies were tested within three specific domains:

**Telecommunications** – facilitating B2B integration across ISP partners, and supporting the management of product catalogues,

**eBanking** – supporting online mortgage application and stock-brokering

**eGovernment** – providing a single citizen portal which dynamically integrates services across three tiers of government, and supporting emergency planning through online context aware maps.

DIP deployment in all three areas was extremely successful, leading to a new £1M internal project, incorporation of DIP technologies within a corporate strategy plan, and a new governmental funded project. Moreover, the DIP framework now underpins a raft of new EU projects with a combined funding of over 70M Euros.

Through Semantic Web Services DIP offers the unique possibility to provide interoperable and seamless information exchange between heterogeneous business systems. Moreover, with DIP technology we see a future where client requirements are automatically on-the-fly transformed into corresponding new business applications created by combining and configuring online services.

DIP is EU funded under by FP6 – 507483.

### Main Results of DIP

#### Open source Semantic Web Services Architecture.

One of the key public deliverables of DIP is the Open source Semantic Web Services Architecture that is WSMX <http://www.wsmx.org>

#### Standard proposals through W3C and OASIS

DIP has contributed significantly to W3C and OASIS standards:

- WSMO, WSML , W3C Submission
- WSML Rule W3C RIF Submission
- WSML reasoning contributes to W3C “Semantics in Software Engineering” task force
- WSMX OASIS SEE TC: DIP API will now be referred to as SEE API
- SAWSDL: Semantic annotations to WSDL, Grounding for WSMO

#### Exploitable tools.

DIP has created a wide range of support tools available at: <http://dip.semanticweb.org/ToolsPrototypes.html>

#### DIP Links

##### DIP Deliverables

<http://dip.semanticweb.org/deliverables.html>

##### DIP Publications

<http://dip.semanticweb.org/publications.html>

##### DIP Website

<http://dip.semanticweb.org>