

JSP 602 Instruction	1017	Applicability	Applications, Infrastructure, Integration
Configuration Identity	Version: 01.02 Amended: 2009-03-02 Reviewed: 2006-06-21	Epoch Applicability	2005 - 2009

JSP 602: 1017 - Middleware and Web Services

Outline

Description: Middleware provides an interface mechanism for inter-process and inter-application communications and as such is part of the application support environment provided by the GII. Middleware protocols use calling mechanisms (i.e. RPCs) and are typically used to inter-link processes and applications that reside on different hosts. Web Services are a specific type of middleware that use XML-based protocols to provide non-proprietary inter-process communications.

The interface and protocol standards provided by middleware products provide an environment for processes and applications to communicate and share information. Middleware can be used to 'wrap' applications so that they provide a consistent interface to other applications and processes.

Reasons for Implementation: Compliance with this leaflet will improve the ability to gain access to services provided by applications and processes stored and executed on remote machines, provide the ability to encapsulate legacy applications so that they offer a standardised interface to other users of their services and increased support for interoperability between applications.

Issues: Interoperability between applications should be based upon open standards when possible. Care must be taken to ensure that the information exchanged between applications is not application specific and can be interpreted by other standards compliant applications. If the use of open standards is not possible then the documentation and appropriate IPR for the interchange standard must be obtained. More information on this is available in the Applications Architecture policy leaflet.

Any Web Service application must be designed to use open standards and not to interact solely with Microsoft Internet Explorer. The current version of IE cannot be seen as a long term platform. When MS Windows is updated, so will be IE. Any application designed solely to work with the current version of IE will almost certainly require work to enable it to work with later versions.

Guidance: This policy is consistent with the e-GIF. However, the e-GIF makes no mention of CORBA ORBs. This policy is consistent with the NC3TA

Policy

Strategic

1017.01: Inter-process Communication

1017.01.01 Web services that meet W3C and WS-I standards shall be the first choice when developing new applications (see comment).

Web Services are a collection of protocols and standards used for exchanging data between applications.

Comment: There are a number of competing Web Service protocols however due to their relative immaturity and rapid rate of change, it is impractical to mandate specific ones. At this stage it is deemed prudent to permit any set of protocols as long as they conform to the standards developed by the W3C and WS-I. This should ensure interoperability between competing products.

1017.01.02 Where there are compelling reasons why Web Services cannot be used, CORBA shall be used as the second preference using the following standard:

1017.01.02.01 CORBA, OMG formal/ 2002-12-06:2002

Ubiquitous standard for object based services requests. ORB support in a network of clients and servers on different computers means that a client program (which itself may be an object) can request services from a server program or object without having to understand where the server is in a distributed network or what the interface to the server program looks like. If Web Services are unsuitable then applications should be developed using CORBA.

Comment: When procuring COTS systems the selection process should favour those applications based upon open standards such as Web Services or CORBA.

1017.02: Message-Oriented Middleware

1017.02.01 Nothing is mandated in this area (see comment).

Comment: Message Oriented Middleware is typically used to connect EAI hubs. There are no open standards, though three implementations dominate the market: JMS, DBM MQ-Series and Microsoft BizTalk.

1017.03: Remote Procedure Calls

1017.03.01 RPC mechanisms shall only be used where interoperability with legacy systems enforce their use.

Comment: RPC mechanisms such as DCE/ONC are no longer used, having been superseded by web services (which encapsulate RPCs)

Deployed

As for Strategic domain.

Tactical
As for Strategic domain.
<i>Comment:</i> Due to the unique nature of the Tactical environment it is much more likely that a bespoke system will be required. If this is the case this system should be built upon open standards (Web Services, CORBA) when possible, or failing that, sufficient rights of use should be obtained to enable the proprietary protocols to be used for interoperability with other systems.

Remote
As for Strategic domain.

Responsibility for Implementing the Policy

Implementation of this policy shall be the responsibility of all MOD projects(and their suppliers) that provide Middleware and Web Services.

Procedure

Not Applicable.

Relevant Links

JSP602: 1001 - Application Architecture

A glossary of terms and abbreviations used within this document is available [here](#).

Instructions on how to read a JSP602 leaflet are available [here](#).

Compliance

Stage	Compliance Requirements
Initial Gate/DP1	MOD Projects shall submit a formal declaration that they have read and understood the policy and sought guidance from the SME(s).
Main Gate/DP2	MOD Projects shall reference in their SRD (and MODAF technical views) the specific policy elements contained within this leaflet that are applicable to the system, equipment or application they are procuring or updating.
Release Authority/DP5	MOD Projects (supported by their equipment suppliers) shall provide evidence of their compliance with the elements of this policy defined within the SRD (and MODAF technical views). Evidence of conformance with standards shall be presented; sources of evidence may include: conformance/compliance certificates provided by equipment suppliers (e.g. under type approval or other assessment regimes), demonstrations, inspection, analysis, tests carried out by suppliers (e.g. Factory Acceptance Tests) and tests carried out at Defence Test and Reference Facilities.