

**IVOA Interop Meeting**  
**Pune**  
27-29 September 2004



**WS-I Basic Profile...**

**...VO Web Services Basic Profile**



# Reminder, Boston meeting

## ■ **WS-I** : *Web Services Interoperability organization*

- Open industry (IBM, Microsoft, Sun, SAP, BEA, Oracle, ...) effort chartered to promote Web Services interoperability across platforms, applications, and programming languages.
- The WS-I Deliverables : **Basic Profile**, **Basic Security Profile**, ...

## ■ **(WS-I) Basic Profile** : a set of non-property Web Service specifications

- With clarifications about how to use correctly (in the same way, better for a good interoperability...) "often ambiguous" specifications.
  - **VO existing Web Services test**

## ■ **VO Web Services Basic Profile**

- A guideline on how to use the existing specifications in the IVOA Web Services domain (conformance to (WS-I) Basic Profile and to other IVOA WGS specifications) ?



# (WS-I) Basic Profile aim

- "Basic Profile 1.1" describes :
  - **Messaging** : exchange of Web Service protocol elements
  - **Description** : enumeration of the messages associated with a Web Service, with implementation details
  - **Discovery** : metadata which gives information about the Web Service
  - **Security** : mechanism which provides integrity, confidentiality authentication
  
- Only the two first points can be taken into account
  - IVOA Discovery not based on UDDI...
  - Security under discussion



# Example of conformance rules

## ■ Format

- Rxxxx statement text

## ■ Examples

**R0001** An Instance of a Web service **MUST** be defined by a WSDL service description

**R1140** A message **SHOULD** be sent using HTTP/1.1

**R1141** A message **MUST** be sent using either HTTP/1.1 or HTTP/1.0

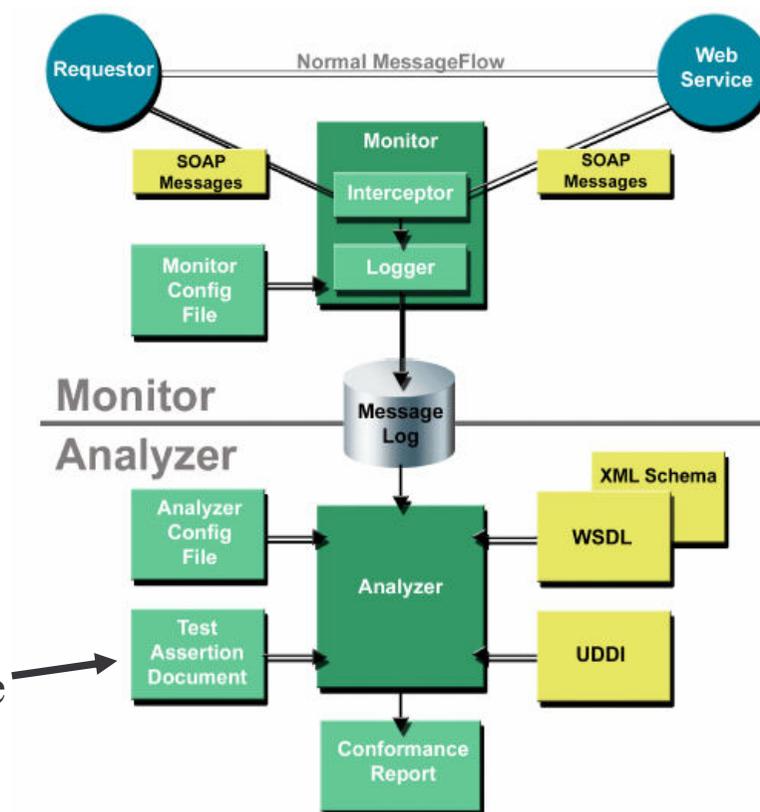
...

Cf. VO WS Basic Profile 0.1 document for explanation about MUST, SHOULD, ...



# Conformance check : how to proceed ?

- Manually...
- ... or using WS-I conformance test tool (available for Java and C#)



Each rule checking can be set/unset

# A first set of services

## ■ Experiment has been done for the following services :

### ■ .Net

- Cosmic distances
- NEDServices
- SDSSCatalogues

### ■ Tomcat/Axis

- VizieR
- Sesame
- UCD

### ■ Perl

- eStar



# example of conformance report file

## ■ Tomcat/Axis

WS-I Profile Conformance Report - Mozilla

File Edit View Go Bookmarks Tools Window Help

Home Bookmarks Instant Message WebMail Calendar Radio People Yellow Pages Download Customize... RealPlayer

Result	passed
--------	--------

Assertion: [WS11201](#)

Result	passed
--------	--------

Assertion: [WS11701](#)

Result	passed
--------	--------

Assertion: [WS1308](#)

Result	failed
Failure Message	A child of the soap:Body element has a soap:encodingStyle attribute.
Failure Detail Message	<pre>&lt;?xml version="1.0" encoding="UTF-8"?&gt; &lt;soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsd="http://www.w3.org/2001/XMLSchema" &gt;   &lt;soapenv:Body&gt;     &lt;ns1:getURLfromTagResponse soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/" xmlns:ns1="urn:Jg:       &lt;return xsi:type="xsd:string"&gt;http://vizier.u-strasbg.fr/cgi-bin/votable?-meta&lt;/return&gt;     &lt;/ns1:getURLfromTagResponse&gt;   &lt;/soapenv:Body&gt; &lt;/soapenv:Envelope&gt;</pre> <p>Element Location: lineNumber=58</p>

Assertion: [WS1013](#)

file:///C:/wsi-test-tools/IVOAtests/VOPProfileTest/common/profiles/BasicProfileTestAssertions.xml#WS11308

Démarrer Microsoft PowerPoint - [...] WS-I Profile Conform... FR 18:41

# example of conformance report file (2)

## ■ .Net

WS-I Profile Conformance Report - Mozilla

File Edit View Go Bookmarks Tools Window Help

Home Bookmarks Instant Message WebMail Calendar Radio People Yellow Pages Download Customize... RealPlayer

**Entry: 6**

**Message Entry:**

<b>Type</b>	response
<b>Conversation ID</b>	3
<b>Sender Host and Port</b>	voservices.net:80
<b>Receiver Host and Port</b>	127.0.0.1:1197
<b>HTTP Headers</b>	<pre>HTTP/1.1 200 OK Connection: close Date: Mon, 20 Sep 2004 08:01:29 GMT Server: Microsoft-IIS/6.0 X-Powered-By: ASP.NET X-AspNet-Version: 1.1.4322 Cache-Control: private, max-age=0 Content-Type: text/xml; charset=utf-8 Content-Length: 1720</pre>
<b>Message</b>	<pre>&lt;?xml version="1.0" encoding="utf-8"?&gt;&lt;soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsi="http://www.w3.526&lt;/objname&gt;&lt;objtype&gt;GPair&lt;/objtype&gt;&lt;/CrossID&gt;&lt;CrossID&gt;&lt;objname&gt;Whirlpool_Galaxy&lt;/objname&gt;&lt;objtype&gt;GPair&lt;/objtype&gt;&lt;/CrossID&gt;G21&lt;/objname&gt;&lt;objtype&gt;GPair&lt;/objtype&gt;&lt;/CrossID&gt;&lt;CrossID&gt;&lt;objname&gt;1327+47&lt;/objname&gt;&lt;objtype&gt;Other&lt;/objtype&gt;&lt;/CrossID&gt;&lt;/Array0.00000&lt;/data&gt;&lt;/MoreData&gt;&lt;/ArrayOfMoreData&gt;&lt;/ObjByNameResult&gt;&lt;/ObjByNameResponse&gt;&lt;/soap:Body&gt;&lt;/soap:Envelope&gt;</pre>

**Assertion: [WSI1601](#)**

<b>Result</b>	passed
---------------	--------

**Assertion: [WSI1201](#)**

Done

Démarrer Microsoft PowerPoint - [...] WS-I Profile Conformanc... FR 19:41

# First results :

## ■ Very minor nonconformance

- **Tomcat/Axis** : one nonconformance found

  - **Axis 1.2** will resolve this

- **.Net** : conformance ok

- **Perl** : one nonconformance found but SOAP::Lite provides (may evolved) partial wsdL support

  - **SOAP::Lite** will evolve but no guarantee about the will to take the conformance checking into account

- But problems in case of interface using attachment : Attachments Profile to explore



# Why so less conformance problems ?

- **Many rules are given for the “SOAP engine” developers**
  - **WSDL is generated automatically for a Web Service**
    - Recommendations about WSDL : Microsoft, Apache, ... **duty**
  - **If i implement Web Services, a major part of the conformance to the Profile is implied by the server configuration (http server, soap engine, ...)**
  
- **Nonconformity could be higher if :**
  - **I write a part (just what I need) of a SOAP engine myself**
  - **I use uncompleted implementations**
  - **...**



# A step further with VO WS Basic Profile

- **WS-I Basic Profile is just one part of it**
- **VO WS Basic Profile :**
  - **Recommendations to follow when implementing Web Services**
  - **Not at the same level than the VO Support interfaces**
    - Recommendations about the VO Support interfaces can be put in the profile
    - Recommendations about data format (what kind of result (String, Object, ...) ?
    - ...
  - **Useful on each side**
    - Data/Service provider side : check list
    - Consumer side : the service he tries to use is not completely “exotic”



# Something like that...

## 1. WS-I Basic Profile

... IVOA Support interfaces short description... (and justification)

**VOR 0001** A VO WS MUST be compliant to WS-I Basic Profile

## 2. VO Support interfaces

... VO Support interfaces short description... (and justification)

**VOR 0051** A VO WS SHOULD implement a getRegistration interface

**VOR 0052** A VO WS MUST implement getAvailability interface

...

## 3. ...

future documents about Security, Authentication, Registry, ...



## ... and checked with tools

- **Providing tools to check the conformance**
  - Java and C# packages like WS-I Basic Profile ?
  - Perhaps better to have an online checking tool : reduce maintenance, less work for the data/service provider, ...
    - Like a language compiler : list of errors or warnings, correction, retry, ...



# Possible roadmap

- **VO WS Basic Profile 0.2**
  - **Conformance to WS-I Basic Profile**
  - **Conformance to VO Support interfaces**
  - **Check Attachments Profile**
  
- **Testing tool**
  - **Just one tool**
  - **Useful if online**



# Conclusion

- **Define a VO WS Basic Profile is probably a good thing for the future of the VO Web Services**
  - **WS-I Basic Profile as a very basic compliance need**
  - **Others like VO Support interfaces to be added**
  - **Tool(s) to be provided**

- **Creating Basic Profiles (and checking tools) could be interesting for other VO WG**
  - **For a data/service provider : easier to follow one document than to be lost in many...**
  - **A complementary work for WG people but a lot of saved time for many others...**
  - **A useful exercise**

