

AWDI – Artefacts

Reference Model

The AWDI reference model is the collection of objects and their definitions; the collection of descriptions of the objects, the way they interact and the way that external objects can interact with them forms the description of the reference model. AWDI needs to be managed for the Custodian in accordance with the AWDI governance model. There may be a range of managers, each responsible for one or more parts. The major components that need to be described in the Reference model are: conceptual models and their definitions – how it works; code lists – ensuring consistent use of vocabularies; profiles – placing some bounds around what will be delivered; and governance arrangements – the policies that will allow AWDI to progress in an orderly and manageable fashion.

The responsibility for the generation, management and publication of the objects will be delegated under the governance arrangements. Please refer to the figure below for relationships between the objects.

1 Models (attributes, constraints and interactions)

Models are the conceptual realisation of how things work. Models need to be described to convey their content as they can not be intrinsically visualised.

Diagrams, schemas and written documents will be used to describe the models: allow for implementation of the model.

The following as a listing of some of the models required to support AWDI

- Governance (this is a key model)

- Data

- Query

 - WFS supported

 - Offline supported

- Transfer

These objects will be defined in schemas and UML diagrams, and briefly described textually in the reference model.

2 Quality Standards

- Data standards

 - Temporal, Positional, Quantitative Attributes, Non-quantitative attributes

- Collection standards (~StandardsWG – currently out of scope)

These objects will be defined in XML as well as briefly described textually in the reference model.

3 Code lists / vocabularies

Defining and implementing code lists ensure consistent use of the vocabularies that the codify. Vocabularies allow clients and users to understand the outputs of AWDI and will need to evolve to meet stakeholder needs.

The following as a listing of some of the code lists required to support AWDI

- Phenomenon
- Procedure
 - Sampling
 - Analysis
- Feature
 - Type
 - Use
 - Construction

These objects will be defined in XML, within the UML diagrams and briefly described textually in the reference model.

4 AWDI Profiles

Profiles are a set of definitions that indicate how an implementation will operate. It is likely that there will be a range of profiles within the AWDI umbrella to allow more effective testing of the implementations and to allow potential clients to identify useful services.

To show compliance to these service profiles tests should be implemented. Tests that indicate compliance will be important artefacts of AWDI, providing a mechanism to identify the behaviours the various types of AWDI service.

The following as a listing of some of the profiles that will probably be required to support AWDI

- Single phenomenon observations
 - Generic response – any feature with any allowable parameter
 - Regional surface water feature end of catchment aggregate results (NLWRA reporting)
 - Surface site feature daily aggregates observations [Flow, TN, TP, EC, NTU] (ESCAWRI)
 - Surface site feature discrete observation results [Flow, TN, TP, EC, NTU] (ESCAWRI)
 - Groundwater site feature daily aggregates observations [DWT, EC] (ESCAWRI)
 - Groundwater site feature discrete observations [DWT, EC] (ESCAWRI)
- Feature of interest
 - Surface water features
 - Sites
 - Regions
 - Groundwater features
 - Sites
 - Regions
 - Atmospheric features
 - Sites

Profiles will be defined using ISO 19106 (containing UML diagrams) and briefly described textually within the reference model.

5 AWDI Profiles compliance tests

A range of different objects will be generated to provide the range of tests required

6 Implementation

Reference Implementation
Services

documenting what:

AWDI profile they support and
Phenomena they deliver

These objects will be described using ISO19115/ISO19139 for services as well as briefly described textually within the reference model.

7 Registry for publishing service descriptions

To permit AWDI to meet its potential it needs to be discoverable. The key parts of discovery are:

- What services exist
- What is their purpose
- Will they meet the immediate need

To allow these questions to be answered we need to:

- Publish the AWDI profiles
- Publish the existence of the services
 - Identify what the capabilities are including AWDI profile that the service conforms to
- Publish the definitions, codes, vocabularies, models and schemas

To indicate usefulness to potential clients there is likely to be a need for monitoring and reporting of registered services

Some form of registry will be required to disseminate information about the AWDI services and reference implementations (see above)

The registry will be described using ISO19115/ISO19139 and briefly described textually within the reference model.

8 Issues register

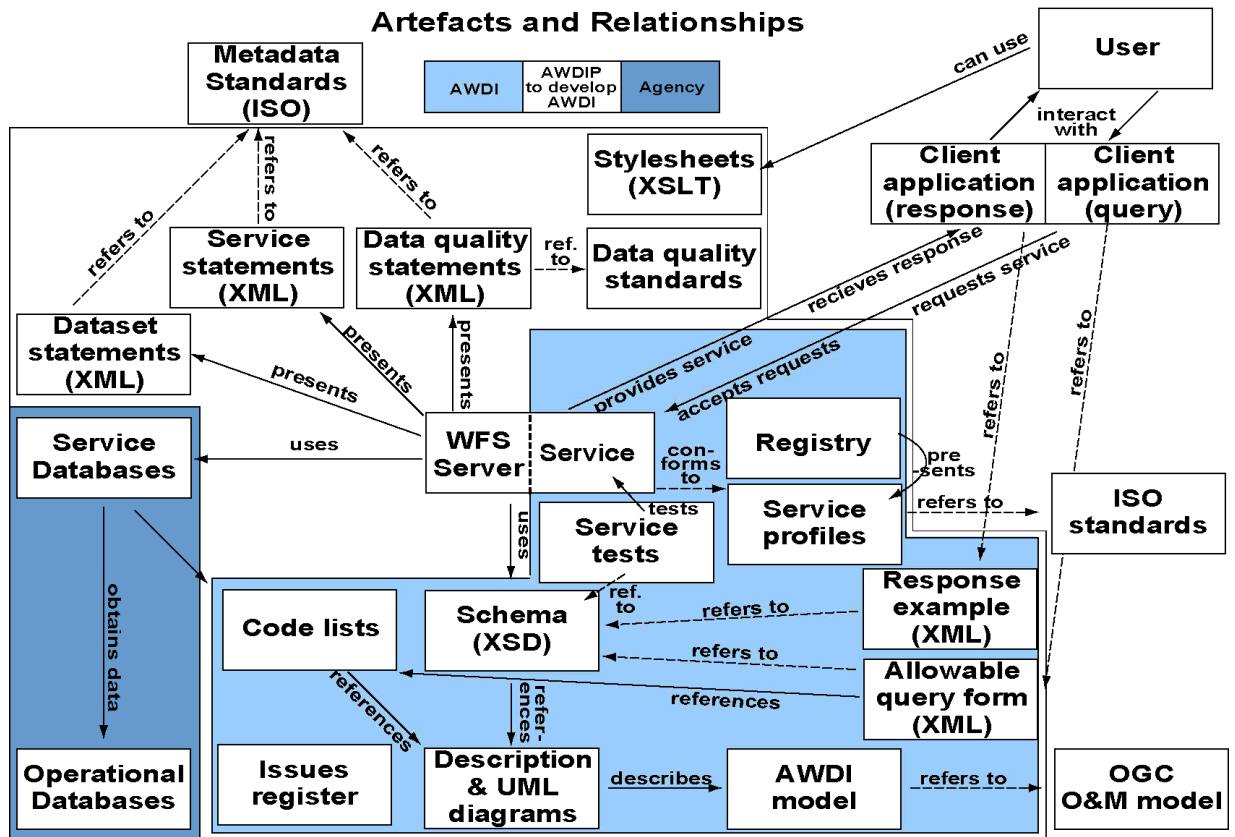
To allow for a free flow of comments that will ensure the AWDI remains strong and relevant a mechanism will need to be developed to allow service providers and service users to flag issues of concern. The issues register will provide a means to identify issues that need to be addressed. These issues will be progressed within the governance mechanism.

9 Output stylesheets

Stylesheets (XSLt) provide a simple mechanism to transform information from one format to another. This could include a process by which individuals can visualise the results produced by a service (eg conversion of complex XML into a spreadsheet form). Although stylesheets are relatively simple to create, they are a useful tool. As new clients are identified specific stylesheets to meet their requirements will need to be generated. Two of the basic stylesheets required would be:

- Result of observations to spreadsheet format; and
- Feature of interest to tabular format.

Additional stylesheets that transform output format will need to be developed as the need is identified.



The objects and their relationships that go to make up AWDI, AWDIP, Agency and external interests in the ESCAWRI water data infrastructure project (AWDIP).