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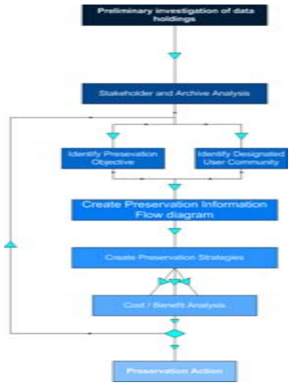
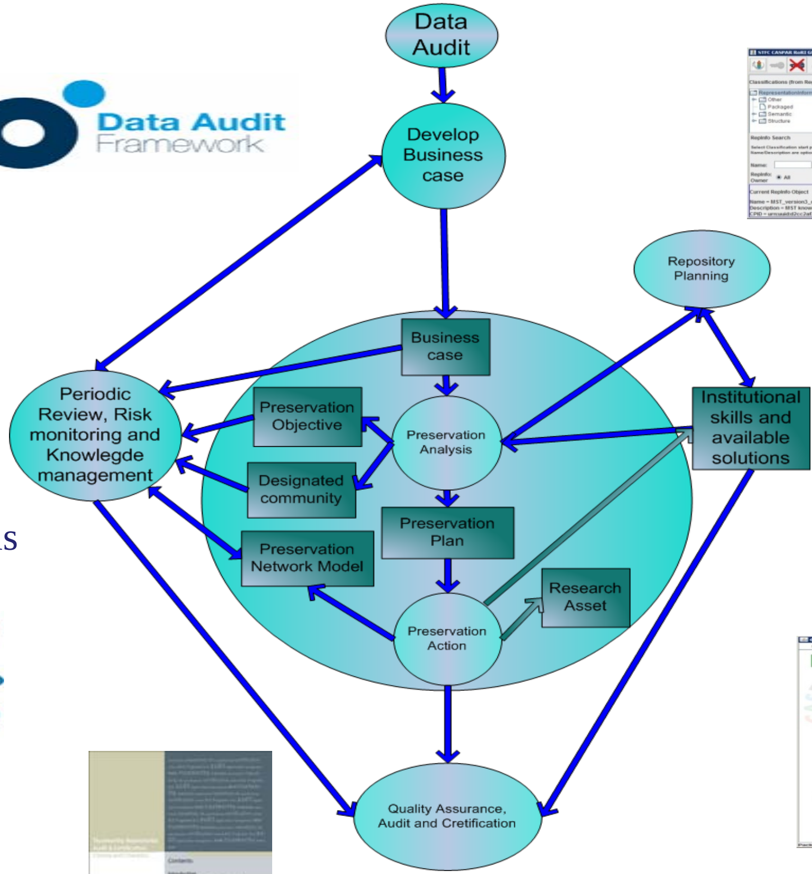
Preservation Network Models: Creating Stable Networks of Information to Ensure the Long Term use of Scientific Data

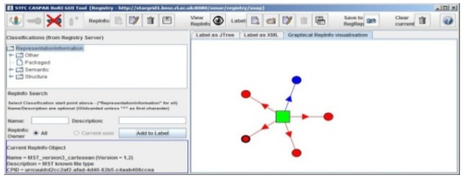
Preservation Analysis



Data Audit Framework

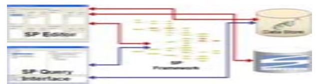


Registry Repository of Representation Information

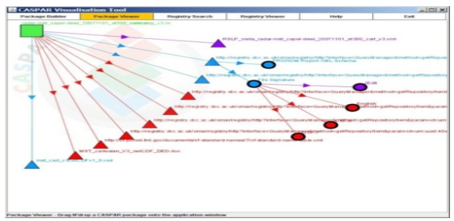


Toolkits

SPEQS

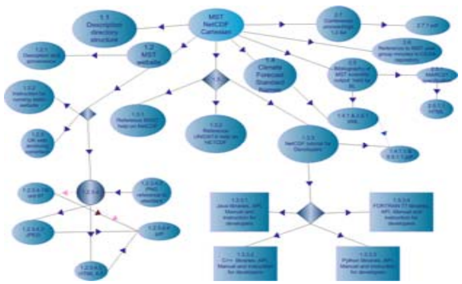


Packaging



DRAMBORA interactive Digital Repository Audit Method Based on Risk Assessment

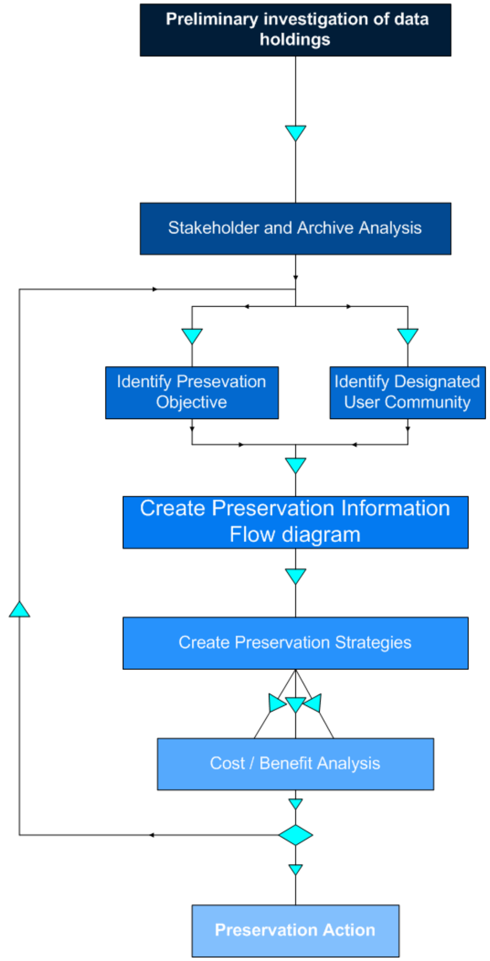
Preservation Network Models



DCC

CASPAR

Preservation Analysis Workflow



Preservation Network Models

Preservation network modelling has many similarities to classic conceptual modelling approaches such as Entity-Relationship or Class diagrams, as it is based upon the idea of making statements about resources. The preservation network model consist of two components the digital objects and the relationships between them.

Objects

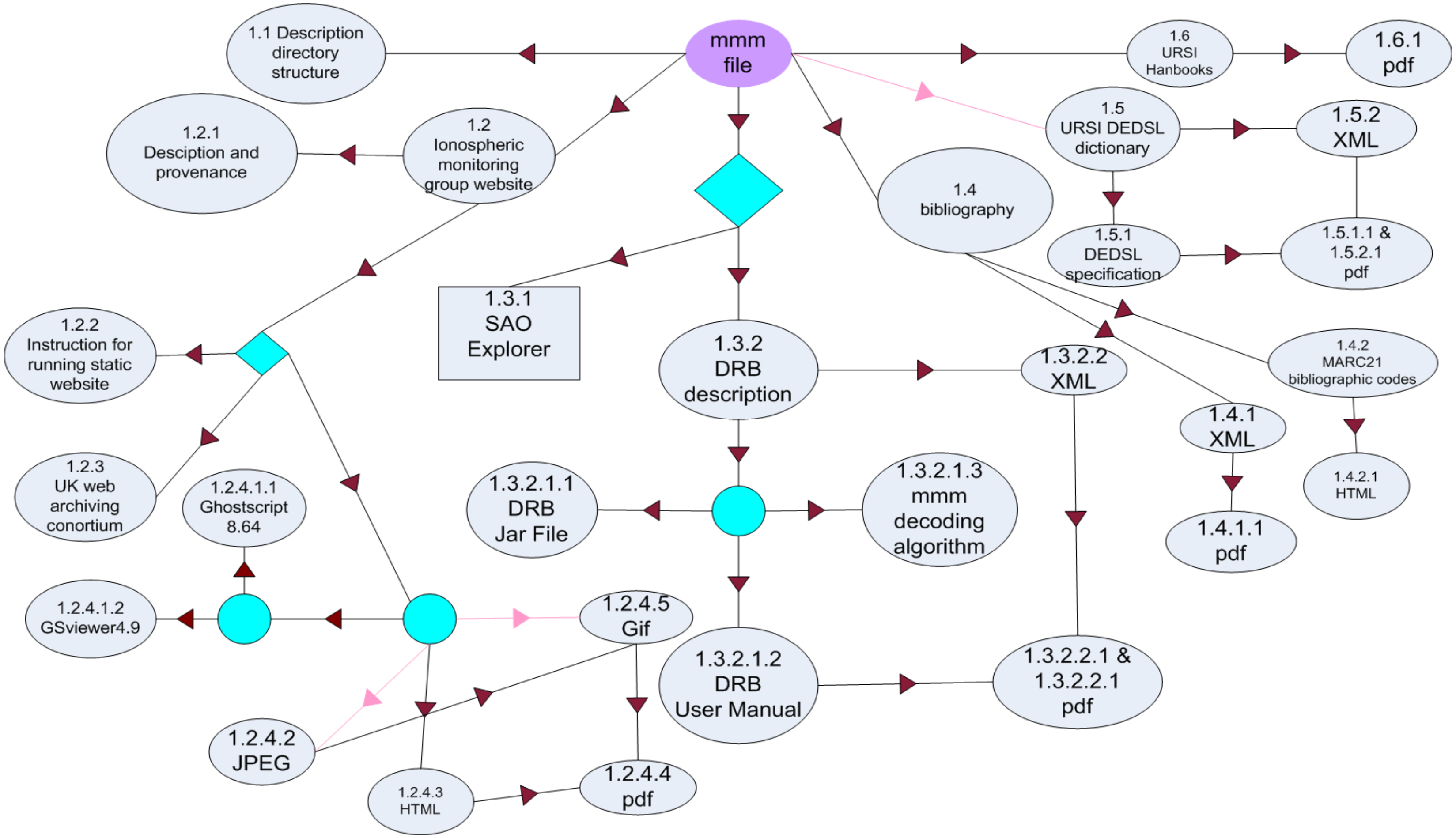
- **Information is a description of the key information contained by the digital object. This information should have been identified during preservation analysis as being the information required to satisfy the preservation objective for the designated user community.**
- **Location information is the information required by the end user to physically locate and retrieve the object. AIP's may be logical in construction with key digital object being distributed and managed within different information systems. This tends to be the case when data is in active use with resources evolving in dynamic environment.**
- **Physical State describes the form of the digital object. It should contain sufficient information relating to the version, variant, instance and dependencies.**
- **Risks most digital solutions will have inherent risks and a finite lifespan. Risks such interpretability of information, technical dependencies or loss designated community skill. Risks should be recorded against the appropriate object so they can be monitored and the implication of them being realised assessed.**
- **Termination of network occurs when a user requires no additional information or assistance to achieve, the defined preservation objective given the accepted risks will not be imminently realised.**

Relationships

Relationship captures how two objects are related to one another in order to fulfil the specified preservation objective whilst being utilized by a member of the designated user community.

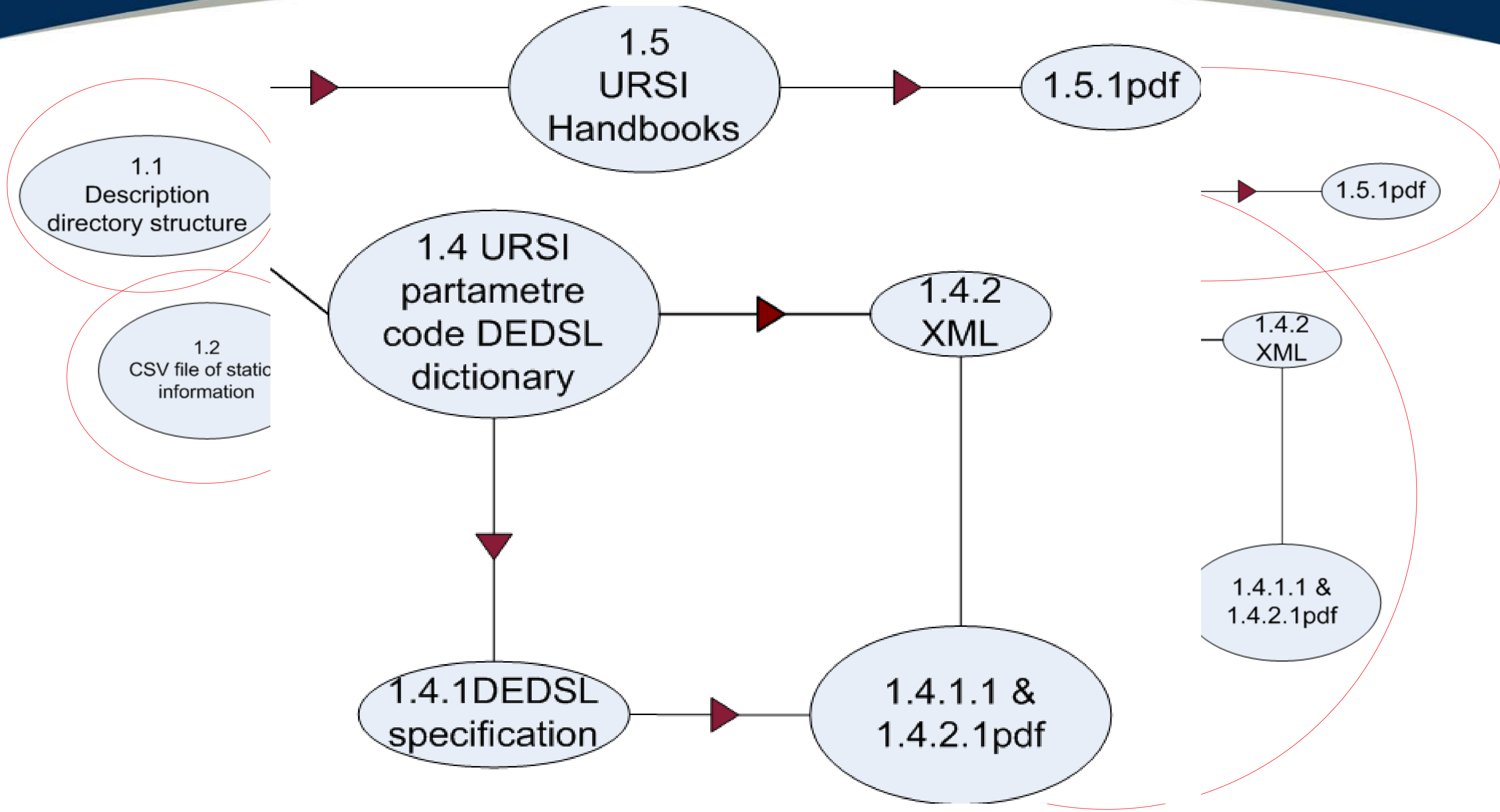
- **Function, in order to satisfy the preservation objective a digital object will perform a specific function for example the delivery of textual information or the extraction and graphical visualisation of specific parameters**
- **Tolerance, not every function is critical for the fulfilment of the preservation objective with some digital objects included as they enhance the quality of the solution or ease of use. The loss of this function is denoted in the model as a tolerance.**
- **Quality assurance and testing, The ability of an object to perform the specified function may have been subjected to quality assurance and testing which may be recorded against the relationship.**
- **Alternate and Composite relationships can be thought of as logical "And" (denoted in diagrams by circle) or "Or" (denoted in diagrams by diamond) relationships. Where either all relationships must function in order to fulfil the required objective or in the case of the later only one relationship needs to function in order to fulfil the specified objective.**

Preservation Network Models



What are the benefits of this approach?

- Maximizing Return on Investment
- Measurable and Testable Solutions
- Stability and Review
- Informing preservation activities in the wider institutional environment


1.5
URSI
Handbooks
1.5.1pdf
1.1
Description
directory structure
1.5.1pdf
1.4 URSI
partametre
code DEDSL
dictionary
1.4.2
XML
1.2
CSV file of static
information
1.4.2
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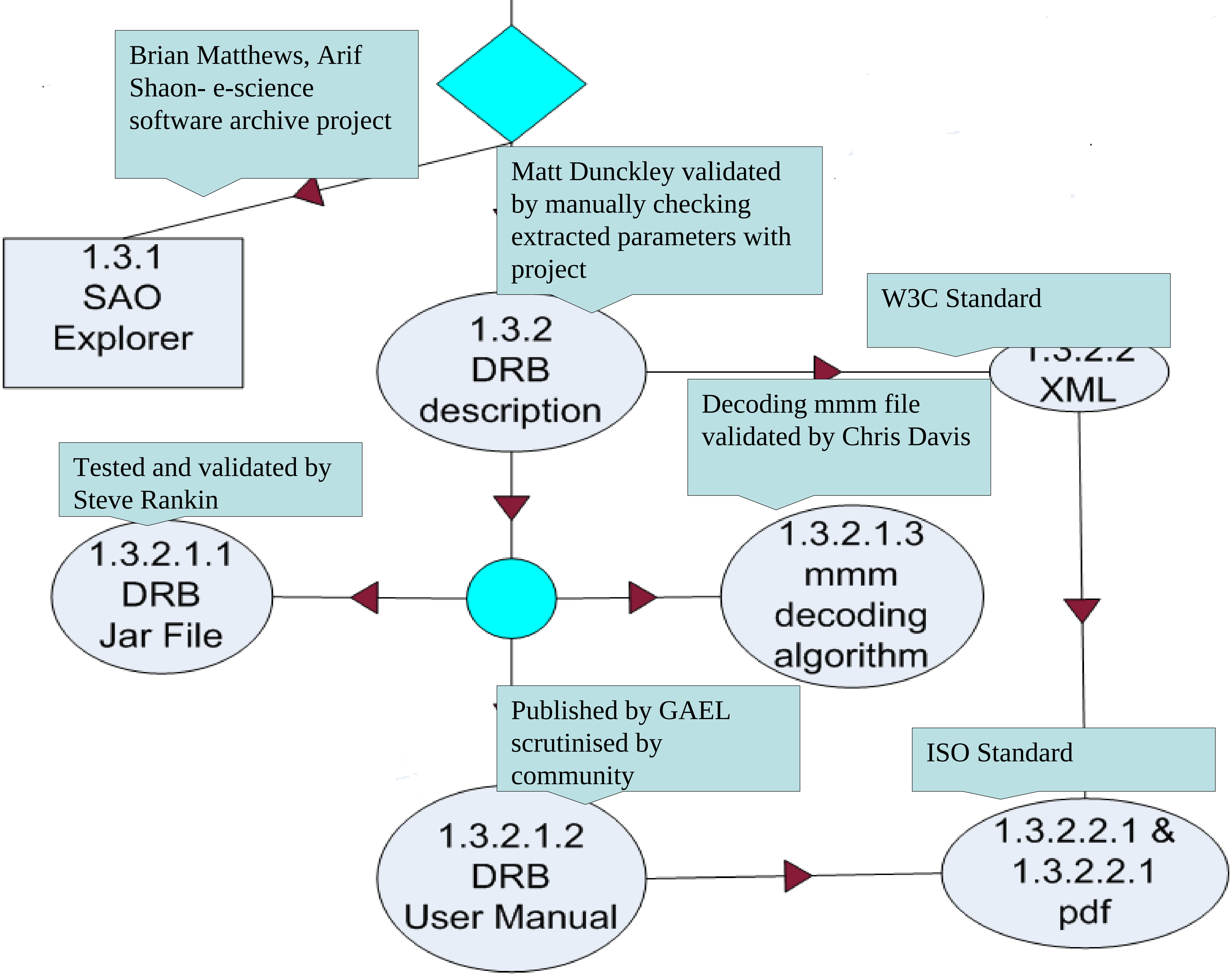
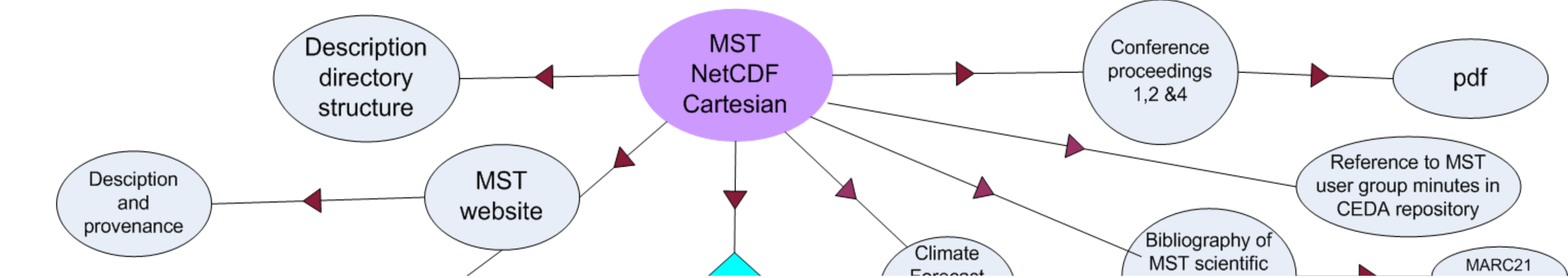
1.4.1.1 &
1.4.2.1pdf


Brian Matthews, Arif Shaon- e-science software archive project
1.3.1 SAO Explorer
Matt Dunckley validated by manually checking extracted parameters with project
1.3.2 DRB description
W3C Standard
XML
Decoding mmm file validated by Chris Davis
Tested and validated by Steve Rankin
1.3.2.1.1 DRB Jar File
1.3.2.1.3 mmm decoding algorithm
Published by GAEL scrutinised by community
ISO Standard
1.3.2.1.2 DRB User Manual
1.3.2.2.1 & 1.3.2.2.1 pdf

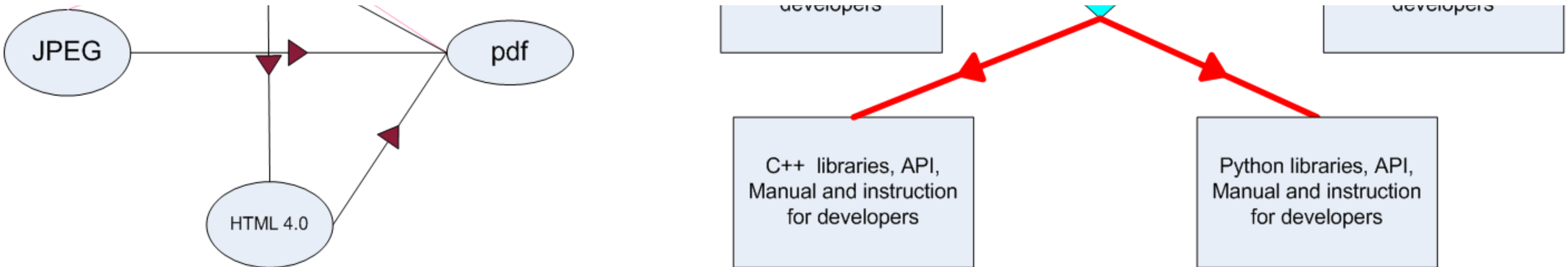


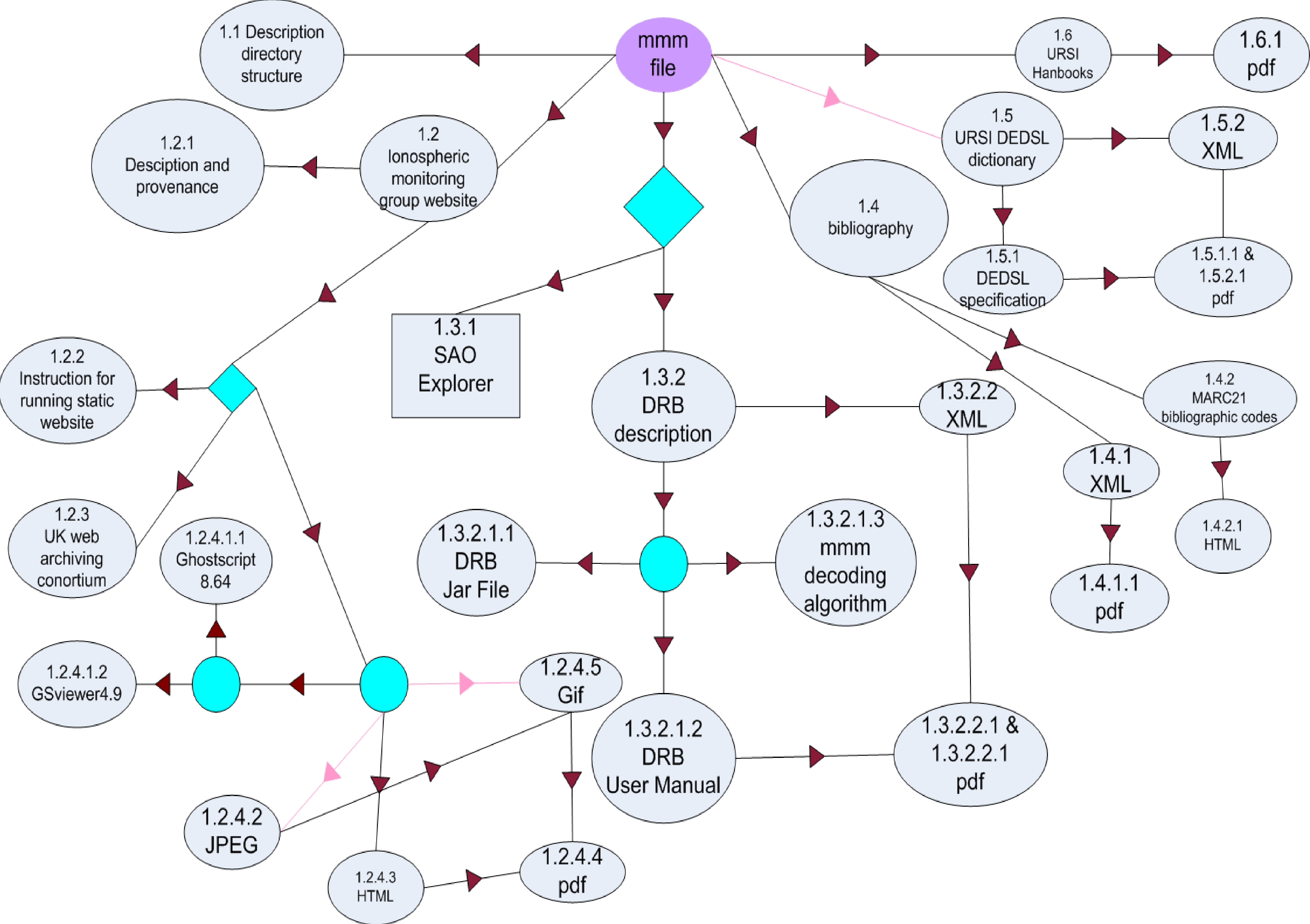
Quality assurance and testing of MST simple solution

Overall all solution validated by

Sam Pepler: Sam is Curation Manager at the British Atmospheric Data Centre and the NERC Earth Observation Data Centre. His role is to oversee the operations of the data centres ensuring that they are trusted repositories that deliver data efficiently to users. He has a particular interest in data publication issues. He is also the facility manager for the NERC MST radar facility.

David Hooper: David is the NERC MST radar facility project scientist and is part of the committee for the MST radar international workshop. The international workshop on MST radar, held about every 2-3 years, is a major event gathering together experts from all over the world, engaged in research and development of radar techniques to study the mesosphere, stratosphere, troposphere (MST).





mmm file
1.1 Description directory structure
1.2 Ionospheric monitoring group website
1.2.1 Desciption and provenance
1.2.2 Instruction for running static website
1.2.3 UK web archiving conortium
1.2.4.1.1 Ghostscript 8.64
1.2.4.1.2 GSviewer4.9
1.2.4.5 Gif
1.2.4.2 JPEG
1.2.4.3 HTML
1.2.4.4 pdf
1.3.1 SAO Explorer
1.3.2 DRB description
1.3.2.2 XML
1.3.2.1.1 DRB Jar File
1.3.2.1.3 mmm decoding algorithm
1.3.2.1.2 DRB User Manual
1.3.2.2.1 & 1.3.2.2.1 pdf
1.4 bibliography
1.4.1 XML
1.4.1.1 pdf
1.4.2 MARC21 bibliographic codes
1.4.2.1 HTML
1.5 URSI DEDSL dictionary
1.5.1 DEDSL specification
1.5.2 XML
1.5.1.1 & 1.5.2.1 pdf
1.6 URSI Hanbooks
1.6.1 pdf

Questions ?