



INSPIRE

Infrastructure for Spatial Information in Europe

Action 2016.3 Validation and Conformity Testing – Status and suggested way forward

Type	Document for discussion
Creator	JRC
Date/status/version	29/05/2017 / DRAFT / version 1.0
Addressee	MIG (for discussion and possible endorsement of suggested follow-up)
Identifier	[DOC5]
Description	<p>Action MIWP-5 of the MIWP 2014-2016 addressed the topic of validation and conformity testing. The action was carried out by a temporary sub-group and was supported by contractors for the development of Abstract Test Suites and a common validator (i.e. the Executable Test Suites and the INSPIRE testing framework). The MIG agreed in December 2016 to carry over this action into the new MIWP 2016-2020 as action 2016.3.</p> <p>This document summarises the work carried out since November 2014 and makes suggestions for a revised mandate for this action under the current work programme. To guarantee continuity for this action, it is proposed to endorse the revised action mandate (with any comments taken into consideration) by written procedure by September 2017.</p>

Requested actions:	<p>The members of the MIG are invited to:</p> <ul style="list-style-type: none">• Endorse the successful completion of action MIWP-5.• Take note of the document and discuss it at the meeting;• Provide feedback on suggested updated mandate;• Endorse the revised action mandate (with any comments taken into consideration) by written procedure by September 2017.
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1 MIWP-5: Validation and conformity testing

Action MIWP-5 has been addressed through a temporary sub-group¹ proposed to be active from 2014-11-15 to 2015-12-31. The development of ATS was supported by several expert contracts. The development of the common validator (i.e. the ETS and the INSPIRE testing framework) is carried out through a specific contract with PwC and interactive instruments (PwC/ii) under the ABC III Framework Contract, funded through the ARE3NA ISA action².

1.1 Progress

The MIWP-5 action has revised its time schedule with respect to the original planning after the feedback from the MIG-T meeting during the Lisbon INSPIRE Conference 2015, where a lack of resources was recognised in most of the MIWP actions. We have also identified that some tasks or sub-tasks may need to be kept open until the end of MIWP-5, although having finished great part of their work.

#	Task	Status	Comment
1.1	Scope of validation and testing	completed	
1.2	Process and governance of validation and conformity testing	completed	Version 1.0b of Change Management Process document has been published and could be considered a stable version
1.3	Investigate feasibility of setting up a compliance certification	on hold	A workshop on this topic was organised during the 2015 INSPIRE Conference together with OGC to identify the user requirements or needs for a certification process. The main conclusions of the workshop were that, while this is an important issue, the priority of the action should be to get the ATS & ETS up and running.
1.4	Establish INSPIRE testing maintenance	completed	The maintenance of the INSPIRE testing infrastructure and artefacts should be guaranteed by the revised action mandate.
2.1	Define use cases for (a) commonly agreed validator(s)	completed	Use cases have been proposed by the MIWP-5 sub-group and discussed with PwC/ii for the development of the common validator at the kick-off meeting for that activity in December 2015.
2.2	Specification of (functional and non-functional) requirements based on use cases	completed	The identified requirements are documented in the Design Report for the Common validator developed by PwC/ii ³ .
2.3	Existing validation tools/platforms	completed	Existing tools and platforms have been documented on the MIG collaboration platform ⁴ . This list can be updated or further extended if relevant.

¹ The terms of reference of the sub-group are available at <https://ies-svn.jrc.ec.europa.eu/attachments/download/703/INSPIRE%20MIG%20ToR%20Validation%20and%20conformity%20testing%20final.docx>

² <https://joinup.ec.europa.eu/community/are3na/description>

³ <https://ies-svn.jrc.ec.europa.eu/projects/validation-and-conformity-testing>

⁴ <https://ies-svn.jrc.ec.europa.eu/projects/validation-and-conformity-testing>

2.4	Evaluate existing tools/platforms and approaches on how they meet the requirements defined in 2.2.	completed	Documented in the Design Report for the Common validator developed by PwC/ii.
2.5	Derive software/test development requirements based on results of 2.4	completed	Documented in the Design Report for the Common validator developed by PwC/ii.
2.6	Collect schema and schematron existing examples from Thematic Clusters and proposed in MIWP-14	completed	Examples have been collected in collaboration with MIWP-14 on the Thematic Clusters platform.
3.x.1	Analyse requirements in the TGs and develop ATS	partially completed	<p>Draft ATS were developed and documented on Github⁵ with support from several expert contracts. The ATS were submitted to MIG-T for review and comments in spring 2016. The received comments were resolved and the ATS updated with support from the contract with PwC/ii.</p> <p>Currently ATS are available for the TGs for</p> <ul style="list-style-type: none"> • Metadata (v1.3) • Download services (Atom, WFS) • View services • Discovery Services • Data specifications (common requirements and theme-specific requirements for Annex I themes) • Spatial data services
3.x.2	Compare existing implementations of IR requirements	not yet applicable	This task has not been carried out. It is assumed that providers of alternative implementations will identify differences with the common validator once this is available. These should then be discussed and resolved based on the agreed maintenance process.
3.x.3	Map requirements in IR to requirements in TG (and identify gaps and inconsistencies)	completed	Some issues were identified during the ATS development process. The relevant issues have been highlighted. Also, some of the parallel work (e.g. in MIWP-8) has identified IR-TG consistency issues.
3.x.4	Develop ETS based on 3.x.1 and 3.x.2	partially completed	A first release of the ETS (including Annex I data specifications, download services and metadata) and testing framework has been developed by PwC/ii under the ARE3NA ISA action. The development version is available at http://35.157.17.37/etf-webapp/ (username: inspire, password: me). The ETS and application have been tested by 19 experts from CZ, DE, IT, FR, EE, NL, PT, UK, CH, DK, SK, FI, AT, BE and EEA. Issues are being documented on Github ⁶

⁵ <https://github.com/inspire-eu-validation>

⁶ Issues with the software: <https://github.com/interactive-instruments/etf-webapp/issues>
Issues with the ETSs: <https://github.com/inspire-eu-validation/ets-repository/issues>

3.5	Investigate feasibility of testing INSPIRE data sets	completed	After some initial results from the eENVplus project, this task has been integrated in the contract with PwC/ii. The common validator will also cover data validation (see 3.x.4 above).
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1.2 Outlook and planning

The MIG agreed to carry over this action into the new MIWP 2016-2020 as action 2016.3. The development and testing of the common validator and ETS will continue until June 2017, when a first release of the validator will be published at JRC, covering tests for the TGs for

- Metadata (v1.3)
- Download services (Atom, WFS)
- Data specifications (common requirements and theme-specific requirements for Annex I themes)

In order to provide a complete test framework, the following components would still need to be added to the INSPIRE validator:

- Metadata v2.0 (ATS and TS)
- Annex II data specifications (ATS, ETS)
- Annex III data specifications (ATS, ETS)
- View Services, WMS (ETS)
- View Services, WMTS (ETS)
- Download Services, SOS (ATS, ETS)
- Download Services, WCS (ATS, ETS)
- Discovery Services (ETS)

How to prioritise these work items should be discussed. It was agreed at the MIG-T meeting to launch a simple questionnaire⁷ to collect feedback on this for Member States.

Some budget is foreseen in the 2017 work programme of the ELISE ISA² action for further developments on the validator. However, this will likely have to be complemented with additional contributions from Member States (either through funding or experts) and/or the Commission. It should be discussed how to coordinate the further development and its funding between all parties interested to contribute.

Furthermore, with increasing use, it is expected that there will also be an increasing number of change proposals and bug reports for the software and the implemented tests. These may also affect the underlying Abstract Test Suites or even lead to change proposals to the requirements in the TGs. In the MIG-T meeting in March 2017, a proposal for a renewed governance structure for managing feedback on the common validator, was presented and discussed:

- All issues to be submitted via a common helpdesk, ideally as part of the INSPIRE Knowledge Base
- Initial assessment and classification by JRC (triage), potentially supported by contractors
- Minor issues/bugs to be fixed directly
- Notable issues to be discussed in a MIG sub-group on validation (continuation of MIWP-5) and either fixed directly or submitted to MIG
- Any changes with major impacts on the validator, or impacting on the TGs, would be discussed with the MIG
- Clear and timely communication and release planning on changes/developments is crucial

⁷ <https://ec.europa.eu/eusurvey/runner/INSPIRE-validator-development-priorities>

Finally, also the discussions around the maturity level concept in action 2016.1 may have an impact on the structure, implementation and/or presentation of the tests in the common validator.

In order to adjust action 2016.3 to these challenges, its scope and mandate of action 2016.3 should be revised. The main aims of the revised action would be to:

- coordinate the maintenance of the existing framework, ATS and ETS and the development of the missing ATS and ETS, including coordination of co-funding, release planning and clear communication of changes between releases,
- discuss how the maturity level concept can be reflected in the common validator,
- coordinate the funding of the maintenance and further developments,
- promote the usage of the validator in the MS,
- advise the EC on different scenarios for the long-term sustainability of the test framework.

A proposal for a revised mandate for this action is included in the Annex.

The members of the MIG are invited to provide feedback on suggested updated mandate and endorse the revised action mandate (with any comments taken into consideration) by written procedure by September 2017 (to guarantee continuity for this action).

Annex – Revised Action mandate

Title	Validation and conformity testing			
ID	2016.3			
Status	<input checked="" type="checkbox"/> Proposed	<input type="checkbox"/> Endorsed	<input type="checkbox"/> In Progress	<input type="checkbox"/> Completed
Issue	<p>As INSPIRE is coming into a practical implementation phase there is a great need of tools for validation of INSPIRE metadata, network services and data. To meet this need and to overcome issues with different interpretations in existing validator implementations at EU level, in MS or projects (e.g. in the EU geoportal, the Netherlands, Germany and the eENVplus project), common Abstract and Executable Test Suites (ATS and ETS) and a common validator (the INSPIRE test framework) have been developed under action MIWP-5 of the MIWP 2014-2016.</p> <p>The work under this action resulted in the following ATS and ETS for the following TGs:</p> <ul style="list-style-type: none"> • Metadata (v1.3) (ATS, ETS) • Download services (Atom, WFS) (ATS , ETS) • View services (ATS) • Discovery Services (ATS) • Data specifications (common requirements and theme-specific requirements for Annex I themes) (ATS, ETS) • Spatial data services (ATS) <p>In order to provide a complete test framework, the following components would still need to be added to the INSPIRE validator:</p> <ul style="list-style-type: none"> • Metadata v2.0 (ATS andETS) • Annex II data specifications (ATS, ETS) • Annex III data specifications (ATS, ETS) • View Services, WMS (ETS) • View Services, WMTS (ETS) • Download Services, SOS (ATS, ETS) • Download Services, WCS (ATS, ETS) • Discovery Services (ETS) <p>Some budget is foreseen in the 2017 work programme of the ELISE ISA² action for further developments on the validator. However, this will likely have to be complemented with additional contributions from Member States (either through funding or experts) and/or the Commission. It should be discussed how to coordinate the further development and its funding between all parties interested to contribute.</p> <p>Furthermore, with increasing use, it is expected that there will also be an increasing number of change proposals and bug reports for the software and the implemented tests. These may also affect the underlying Abstract Test Suites or even lead to change proposals to the requirements in the TGs.</p> <p>Finally, also the discussions around the maturity level concept in action 2016.1 may have an impact on the structure, implementation and/or presentation of the tests in the common validator.</p>			
Proposed action	<p>Refocus the aims of action 2016.3 to</p> <ul style="list-style-type: none"> • coordinate the maintenance of the existing framework, ATS and ETS and the development of the missing ATS and ETS, including coordination of funding 			

	<p>and release planning and clear communication of changes between releases,</p> <ul style="list-style-type: none"> • discuss how the maturity level concept can be reflected in the common validator, • coordinate the funding of the maintenance and further developments, • promote the usage of the validator in the MS, • advise the EC on different scenarios for the long-term sustainability of the test framework <p>For the managing feedback on the common validator, ATS and ETS, the following governance framework is proposed:</p> <ul style="list-style-type: none"> • All issues should be submitted via a common helpdesk, ideally as part of the INSPIRE Knowledge Base. • An initial assessment and classification (triage) will be carried out by JRC, potentially supported by contractors • Minor issues/bugs will be fixed directly. • Notable issues will be discussed in a MIG sub-group on validation (see organisational set-up below) and either fixed directly or submitted to MIG. • Any changes with major impacts on the validator, or impacting on the TGs, will be discussed with the MIG.
<p>Link to REFIT evaluation</p>	<p>Specific proposed actions on "assisting Member States in applying and implementing the INSPIRE Directive set out in Recommendations" (page 12 of COM(2016)478).</p>
<p>Links & dependencies</p>	<p>Dependencies:</p> <ul style="list-style-type: none"> • The action may be affected by updates to TGs carried out by other actions under the MIWP. • Vice versa, feedback on the common validator may also affect the underlying Abstract Test Suites or even lead to change proposals to the requirements in the TGs. • The action will discuss how the maturity level concept can be reflected in the common validator. <p>Links</p> <ul style="list-style-type: none"> • The common validator could be used by MS to support the monitoring of the conformity of metadata, network services and data. • The common validator will be used for metadata and service validation in the EU geoportal.
<p>Organisational set-up</p>	<p>This action will be carried out by JRC, with support from</p> <ul style="list-style-type: none"> • external contractors (and potentially MS experts) for the development and maintenance of the test framework, ATS and ETS, and • a temporary MIG sub-group including MIG representatives and experts from the pool of experts, that will <ul style="list-style-type: none"> ○ support the resolution of notable comments received on the validator, ETS and ATS and, where relevant, the formulation of change requests to TGs and/or IRs, ○ discuss and provide recommendations of how the maturity level concept can be reflected in the common validator, ○ promote the usage of the validator in the MS, ○ advise the EC on different scenarios for the long-term sustainability of the test framework.

Lead	<ul style="list-style-type: none"> JRC 	
Scope	<ul style="list-style-type: none"> Validation of data, network services and metadata based on requirements in the TGs Validation against the requirements in the IRs is out of scope 	
Tasks	<ul style="list-style-type: none"> Coordinate the maintenance of the existing framework, ATS and ETS and the development of the missing ATS and ETS, including coordination of funding and release planning and clear communication of changes between releases, Discuss how the maturity level concept can be reflected in the common validator, Coordinate the funding of the maintenance and further developments, Promote the usage of the validator in the MS, Advise the EC on different scenarios for the long-term sustainability of the test framework 	
Outcomes	<ul style="list-style-type: none"> Complete and operational common validator Recommendations of how the maturity level concept can be reflected in the common validator Operational change management process Report on scenarios for the long-term sustainability of the test framework 	
Timeline	Date of Kick-off: Oct 2017	
	Proposed Date of Completion: 30/12/2019	
Required human resources and expertise	<p>The members of the temporary sub-group should have expertise in one or several of the following areas:</p> <ul style="list-style-type: none"> Specification and implementation of validation rules for metadata, network services and/or data interoperability Coordination of the development of validation software (for metadata, network services and/or data) at national level Implementing Rules and Technical Guidelines for metadata, network services and/or data interoperability and their implementation. <p>The implementation of the commonly agreed validator requires expertise in software development for distributed information architectures.</p>	
Required financial resources	<ul style="list-style-type: none"> Workshop reimbursement Contracts for development and maintenance of the test framework, ETS and ATS Hosting and operation of operational service <p>Some budget is foreseen in the 2017 work programme of the ELISE ISA2 action for further developments on the validator.</p> <p>Additional resources should be sought from Member States (either through funding or experts) and/or the Commission.</p>	
Risk factors	<p>Overall risk level of the action</p> <p><input type="checkbox"/> High</p> <p><input checked="" type="checkbox"/> Medium</p> <p><input type="checkbox"/> Low</p>	<p>Risk factors to be considered</p> <p><input checked="" type="checkbox"/> Missing Resources</p> <p><input checked="" type="checkbox"/> High Complexity</p> <p><input checked="" type="checkbox"/> Interdependencies with other Actions</p> <p>Others:</p>
Possible funding	<ul style="list-style-type: none"> ELISE ISA² action DG ENV funding MS funding / in-kind contributions 	