

<b>Title</b>	<b>Improved client support for INSPIRE data</b>			
<b>ID</b>	MIWP-2017.3			
<b>Status</b>	<input type="checkbox"/> Proposed	<input checked="" type="checkbox"/> Endorsed	<input checked="" type="checkbox"/> In Progress	<input type="checkbox"/> Completed
<b>Date of last update</b>	2017-12-15			
<b>Issue</b>	<p>The current data specification TGs define (complex) xml schemas based on GML as the default encoding for all INSPIRE spatial data themes. Many existing (web, desktop and mobile) applications and tools have difficulties in consuming and/or fully making use of data shared according to these schemas.</p> <p>The INSPIRE xml schemas are complex because they are generated automatically from the conceptual UML model (according to the normative UML-to-GML encoding rules described in the GML standard and INSPIRE Technical Guidelines <i>D2.7 Encoding Guidelines</i>) and therefore reflect all the complex structures present in the conceptual model. In contrast, most existing clients, including the popular GDAL/OGR open source library (that is underlying most OS and proprietary client solutions) consumes and writes flat data structures, where e.g. each attribute can only have at most one value and attributes can have only simple types (e.g. integer, string, boolean). This means that, while INSPIRE data encoded according to the current schemas can be downloaded and viewed, simple use of the data (cartographic visualisation, simple joins, visual overlays, spatial search, ...) is difficult in standard GIS clients.</p> <p>One way to address this gap is to encourage better support by vendors for the current (GML-based) INSPIRE encoding<sup>1</sup>.</p> <p>Some vendors and projects have already started to improve the support for GML. However, different projects/vendors implement different (arbitrary subsets) of GML/XML. In addition, there is no analysis of the subset of XML schema (and GML) that is required in INSPIRE, including for specific INSPIRE themes that may need to deal with this complexity.</p>			
<b>Proposed change or action</b>	<ol style="list-style-type: none"> <li>1) In collaboration with thematic communities (through the Thematic Clusters platform and the MIG-T), investigate use cases and requirements for <b>improved client support</b>. These can be based on existing solutions<sup>2</sup> and/or on specific use cases and requirements. The proposals can be cross-cutting (i.e. cover all INSPIRE themes) or specific for one or several related themes.</li> <li>2) Collect examples of INSPIRE data representing the possible complexity that can be used by tool/client developers as reference material for testing their solutions.</li> <li>3) Discuss with the open source community and commercial vendors how to improve support for INSPIRE data, in client (web, desktop and mobile) software.</li> <li>4) Investigate means for consumption of INSPIRE data directly from National and European discovery services</li> </ol>			

<sup>1</sup> Another one is to create alternative simplified schemas for basic data exchange and direct visualisation in standard GI tools– this solution will be investigated in action 2017.2.

<sup>2</sup> A list of tools that can be used by INSPIRE implementers is available within the JRC “INSPIRE in Practice” platform <https://inspire-reference.jrc.ec.europa.eu/>

<b>Link to REFIT evaluation</b>	Specific proposed action to "assist the Member States in applying and implementing the INSPIRE Directive (simplification of use), e.g. by the use of common tools, and promote priority setting together with the Member States " (page 12 of COM(2016)478).
<b>Links &amp; dependencies</b>	Dependencies: <ul style="list-style-type: none"> <li>• 2016.4: Discussions in the Thematic Clusters on use cases and requirements for improved client support</li> <li>• 2017.2: The alternative encodings agreed in action 2017.2 should also be considered by this action.</li> </ul>
<b>Organisational set-up</b>	The work will be coordinated by JRC and supported by a contractor (mainly for tasks 2 and 3).  Several events will be organised with the INSPIRE stakeholder community, in particular potential users, open source developers and commercial vendors, either stand-alone or in conjunction with other events or conferences (e.g. FOSS4G or INSPIRE conferences).
<b>Lead</b>	JRC
<b>Scope</b>	This action will only address particular tools and complexities that is introduced by the encoding. Discussions about changes in the conceptual models are out of scope.
<b>Tasks</b>	<ol style="list-style-type: none"> <li>1) In collaboration with thematic communities (through the Thematic Clusters platform and the MIG-T), identify test datasets available in INSPIRE encodings (GML-based or alternative encodings discussed in action 2017.2) and relevant use cases.</li> <li>2) Conduct a study on the usability of the test INSPIRE datasets identified in Task 1 in different libraries (OGR/GDAL), desktop and web clients (e.g. Quantum GIS, ESRI ArcGIS for Desktop, LeafletJS, OpenLayers) and analytical or ETL tools for data processing (e.g. HALE, FME, R). Depending on the selected use cases, the study could also investigate the usability in other client tools or applications outside of the GI domain that could make use of INSPIRE data.</li> <li>3) Organise, together with the open source community and commercial vendors, events to discuss the findings of the study and identify the way forward to improve the client support for INSPIRE data (and, if appropriate, possible follow-up actions for the MIWP in 2019).</li> <li>4) Prioritise tools and specific functionalities that should be improved or developed, including the proposal for an approach for stakeholder collaboration (potentially including co-funding) for tool improvements.</li> <li>5) Investigate good practices for the implementation of the publish – find – bind paradigm (e.g. direct use of data based on its metadata) for national and EU INSPIRE metadata and catalogues.</li> </ol>
<b>Outcomes</b>	<ul style="list-style-type: none"> <li>• Study on the usability of INSPIRE datasets and metadata in different software products</li> <li>• List of priority tools and specific functionalities that should be improved or developed</li> <li>• Approach to tool improvement</li> </ul>
<b>Proposed Impact</b>	<input type="checkbox"/> Technical Adjustment / Bug Fixing  <input type="checkbox"/> Technical Improvement / Development

	<input checked="" type="checkbox"/> Practical Support for Implementing Process <input type="checkbox"/> Cost Reducing Effect for Implementing Process <input checked="" type="checkbox"/> Direct Support on Policy-Making / - Activities	
<b>Timeline</b>	Date of kick-off: January 2018	
	Proposed Date of Completion: 31/12/2018	
<b>Required human resources and expertise</b>	<ul style="list-style-type: none"> <li>Volunteers from the MIG-T and INSPIRE “Thematic Clusters”</li> </ul>	
<b>Required financial resources</b>	<ul style="list-style-type: none"> <li>Meeting reimbursement</li> <li>Expert contract(s) for supporting tasks 2 and 3</li> </ul>	
<b>Risk factors</b>	Overall risk level of the action	Risk factors to be considered
	<input type="checkbox"/> High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low	<input checked="" type="checkbox"/> Missing Resources <input checked="" type="checkbox"/> High Complexity <input type="checkbox"/> Interdependencies with other Actions Others: There is a strong dependency of this activity with MIWP2017.2 so a close collaboration (and/or) joint tasks should be ensured.
<b>Possible funding</b>	<ul style="list-style-type: none"> <li>DG ENV funding (through Administrative Arrangement)</li> <li>MS funding / in-kind contributions</li> </ul>	