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Directorate B – Growth and Innovation
UNIT B06 - Digital Economy

INSPIRE Community Forum
on Facilities, Utilities and Public Services
Phase 3 - 2020 activity report (Deliverable – D3)

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1. State of play in the thematic domain

1.1. Overview / list of relevant EU Projects/technology/SW activities

In the D1 report it was highlighted that the Facilities, Utilities and Public Services thematic area is being affect by four key societal drivers and trends; decarbonization of the economy, smart cities, decentralized energy and future mobility services; the overarching of which is the decarbonization of the economy. This is key macro-level driver and that will dominate the sector going forward.

These trends are driving the need for cross domain system interoperability and data exchange. Some of these trends are realized as use cases identical to Inspire, some use cases are new and extend Inspire. However, the conversation has change significantly from 'why do we need cross-domain data exchange?', to 'how do we deliver cross-domain data exchange'?

Communities such as 'smart cities', 'smart energy grid', 'smart mobility' and BIM are utilizing their established standards development communities to create standards to meet the need for cross-domain data exchange. Whilst these communities are extending their scope outwards, new concepts such as 'digital twins' are looking at more holistic, unifying approaches to cross-domain data exchange. A joint ISO/IEC ad-hoc group is currently looking at a long-term home for standards development for digital twins.

Why this matters to Inspire is that if communities are having their standards development needs meet through established and responsive mechanisms under the auspices of ISO and CEN, the relevance of Inspire is called into question. This may seem like a threat to Inspire, but it is also an opportunity. Inspire has done much of the 'heavy lifting' to advance cross-domain data exchange. If the efforts and governance of Inspire was aligned with the emerging international standards activity around digital twins it could provide a mechanism to share efforts for some of the generic issues around data exchange (including service development) allowing more focus on the aspects of Inspire central to the EU legislation
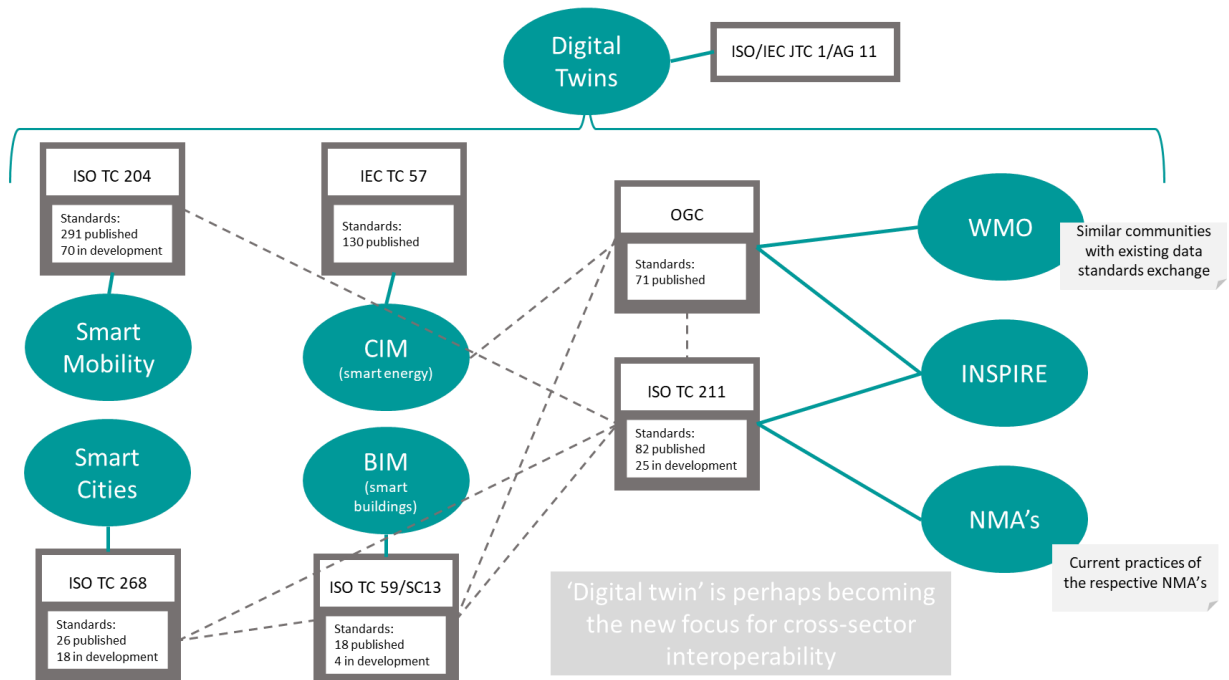

Figure 1   Key standards development communities looking at data exchange

1.2. Overview / list of selected good / highly visited / highly replied Forum contributions

In the period April-December 2020 there were five new postings to the discussion forum. I am highlighting the following as it relates to the discussion on 'theme duality' – where a dataset is covered by more than one theme.

Waste deposit sites covered by US or AM: Should waste deposit sites be considered by the US or AM theme. It is not clear from both the legislation and the technical guides. I have made a response to this topic.

Theme duality has been a regular topic in the Inspire discussion forums since its inception over 5 years ago, and the fact that it is still a topic now highlights the challenges and difficulties of multi-sector data harmonization. To advance Inspire, this is one of the key topics that needs a clear solution (see Recommendations)

In addition to the above, I'd also highlight these two discussions below. There are not about duality, but about how to use Inspire with existing data sets and approaches to data modelling. Considering how far along the Inspire implementation timetable we are, the fact that there is still debate on the fundementals of data modelling again highlight the challenges of those implementing Inspire 'on the ground'.

How to model ISCED values for schools: Modelling a government service (UG) to a building (BU)
Governmental Services Area Of Responsibility (Area Management): Is the 'health sector' in which a hospital is situated best model by UG, AU or AM

1.3. Overview and assessment of the availability of thematic domain data sets in the EU Geoportal

Table 1 gives an overview of the thematic domain data services (metadata, view and download) available via the EU geoportal. As commented in my D2 report (April 2020), the thematic viewing service is a huge improvement in being able to browser and discover Inspire datasets, making excellent use of the extensive data tagging that exists.

For this report we can compare the data now available from November 2019 (D1 report), April 2020 (D2 report) and now December 2020 (D3 report). The key change is the overall increase in data sets and services available across all the thematic areas in the cluster. In April 2020 there was a marked decrease in data sets due to data cleansing activities undertaken. The number of data services are now back to similar levels as November 2019; ratios of view and download data services as a percentage of metadata services has also remained largely consistent, which would indicate steady growth across metadata, view and download services which is a positive result.

There is a large disparity in the datasets published across MS for this cluster. This is illustrated by table 2 below. It shows that 50% of all data services were provided by just two MS and that just 3 member states (France, Germany and Italy) provide around 70% of all the data services in this cluster. It is not clear why there us such a large difference between these three MS and others.

Table 2   Contribution of data services by MS

Criteria	PF	AF	UG
Number of MS to reach 50%	2	2	2
% Records from top 3 MS	65%	66.98%	77.83%

Dec-20	M	D	V	Total	D:M	V:M		Change	D-M	D-D	D-V	D-Total	D-%	D-%2
AF	426	53	51	530	12.44%	11.97%		AF	216	400	401	165	0.06%	0.07%
UG	3417	495	526	4438	14.49%	15.39%		UG	1724	3232	3052	1174	3.56%	-6.17%
PF	789	190	137	1116	24.08%	17.36%		PF	387	725	714	248	8.16%	-1.29%

Apr-20	M	D	V	Total	D:M	V:M		Change	D-M	D-D	D-V	D-Total	D-%	D-%2
AF	210	26	25	261	12.38%	11.90%		AF	-167	-12	-54	-233	2.30%	-9.05%
UG	1693	185	365	2243	10.93%	21.56%		UG	-1605	-197	-282	-2084	-0.66%	1.94%
PF	402	64	75	541	15.92%	18.66%		PF	-338	-97	-86	-521	-5.84%	-3.10%

Nov-19	M	D	V	Total	D:M	V:M
AF	377	38	79	494	10.08%	20.95%
UG	3298	382	647	4327	11.58%	19.62%
PF	740	161	161	1062	21.76%	21.76%

M=Metadata service

D=Download service

V=View service

Table 1   **Assessment of Facilities, Utilities and Public Services data services in the EU Geoportal**

2. Overview of the facilitator's activity

My main activity this period as been twofold. First is general monitoring and responding to the forum posts, and participation in regular Inspire Expert meetings. Second, I have worked on the development of and presentation of material for the Inspire Community Forum Webinar in December 2020.

In my presentation I gave an overview of the standards development activities in communities such as energy, buildings and transport that are extending, reusing and duplicating some of the aspects of Inspire. This is important to the future of Inspire as communities with strong use-cases and requirements for system interoperability are actively creating standards in the governance mechanism established in the context of ISO/IEC and CEN/CENELEC. https://inspire.ec.europa.eu/sites/default/files/2-3_k.millard_inspire2020_decpresentation.pdf

3. Facilitator's suggestions for improvements

As this phase of Inspire implementation is concluded, I would make two recommendations of the future of Inspire going forward.

(i) Address semantic relationships in cross-domain data modelling.

Inspire devised a great framework for cross-domain data modelling. This included core components that all Inspire themes should use to allow for a minimum level of semantic equivalence across themes. What is perhaps missing, is an upper ontology that outlines how all the Inspire themes relate to one another, allowing an overall 'jigsaw' to be created and navigated. The many topics on the discussion forum on the topic of 'theme duality' would support the need for this. Creating such an ontology would also support revision of data models in each of themes, ensuring that data models were consistent and supported intra-theme dependencies.

(ii) Align Inspire standards development activities with CEN or ISO.

Developing and maintaining standards requires considerable time and resource. Those responsible for implementing the standards need confidence that the maintenance is responsive and accountable to their needs. As outlined in my summary, there are established standards development organizations now considering cross-domain data exchange. This trend will increase. This gives the EC an opportunity to consider its role in Inspire, e.g. does it want to a standards development organization or can it pass this responsibility (in whole or in part) to others.