Deliverable

Final Report

Open data priorities and engagement – identifying data sets for publication

Standards for Open Data and Public Sector Information

Contents

1 Introduction

The Share-PSI network brought together government departments responsible for implementing the (Revised) PSI Directive across Europe along with standards bodies, academic institutions, commercial organisations, trade associations and interest groups. A series of five workshops in 2014 and 2015 identified what does and doesn't work, what is and isn't practical, what can and can't be expected of different stakeholders. The primary output is a set of Best Practices[1] that can help the public sector share its information most effectively and efficiently. Each Best Practice is based on experience in multiple contexts, and backed up by ample reference material. This work is closely allied to the W3C's more technical Data on the Web Best Practices[2].

But Best Practices only get you so far.

In order to be able to follow them you need to bear in mind the local context: the technical, legal and organisational infrastructure in which PSI is generated. To meet this need, many organisations create their own guidelines, handbooks or knowledge banks. Share-PSI has curated a set of 40 such local guides[3] that cover 24 countries plus a number of cross-border guides tailored to specific domains of interest. They vary in style and target audience but they all offer advice that is consistent with some or all of the Share-PSI and W3C BPs and, in many cases, cite them directly.

In this way, the project offers a route to local guidance for implementing the (Revised) PSI Directive based on international Best Practice, increasing the value of Public Sector Information by making it more interoperable, more discoverable and more readily used by others.

1.1 Primary Outputs

The project's outputs – 21 Best Practices and links to 40 Local Guides, as well as the workshop reports and much of the text in this document, form the Share-PSI website at https://www.w3.org/2013/share-psi/. The site provides a set of materials that offer substantial advice to staff within public authorities at all levels charged with implementing the (Revised) PSI Directive. It is optimised for discovery by search engines and, as it is hosted under the W3C domain name, is persistent. The data concerning the BPs and LGs is contained in JSON files hosted on the project's GitHub repository so that additions can be made with relative ease (changes in the data files are automatically reflected on the project's website).

1.2 Project Type and Timing

Share-PSI 2.0 was a Thematic Network that ran from February 2014 to July 2016. Each partner received a small lump sum to cover attendance at project events and to carry out associated work. The Thematic Network instrument is designed to facilitate cooperation between organisations already undertaking

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[1] https://www.w3.org/2013/share-psi/bp/
[2] https://www.w3.org/TR/dwbp/
[3] https://www.w3.org/2013/share-psi/lg/

similar activities rather than to promote new ones. Over the course of the project, most partners were represented by the same individuals most of the time, creating a well-connected network of expertise across Europe through which collaborations were established spontaneously outside the immediate confines of the project. A list of those individuals is provided in the appendix.

1.3 Primary Objectives and How They Were Met

The project's primary objectives, as set out in its Description of Work, are as follows.

1. **To identify best practice and provide guidance on technical standards to European Member States implementing an open data policy.**

Share-PSI was closely associated with the W3C's Data on the Web Best Practices Working Group. By the end of the Share-PSI project, the DWBP group's primary document[4] reached Candidate Recommendation stage in W3C's standardisation process, meaning that it had undergone wide review and was stable. Further progression to its final status as a formal standard is dependent on the gathering of sufficient evidence of implementation and the approval of W3C Members.

2. **To identify best practice and offer guidance on technical standards particularly in the implementation of the revised PSI Directive, to improve harmonisation and interoperability.**

The Best Practices developed by Share-PSI are all linked to specific elements of the (revised) PSI Directive. A mapping is also provided so that the W3C BPs, written for a general technical audience within and beyond Europe, can also be seen to be relevant to specific elements of the Directive.

3. **To ensure that globally agreed guidance and best practice on technical standards can be implemented by Member States within their own legal and cultural framework.**

This is the purpose of the Local Guides of which 40 were curated during the project.

4. **To ensure that the commercial interests around the technical provision and use of PSI are given due regard as well as those of the public sector, in particular offering guidance on the calculation and charging of marginal cost.**

This objective was partially met through the Best Practice *Provide PSI at zero charge*[5]. The partners found that, as yet, no consistent model of charging, or not charging, has been developed in Europe. There were no proposals for sessions on this topic during any f the workshops although it should be noted that the event in Krems included many sessions that discussed commercial use of PSI.

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[4] https://www.w3.org/TR/2016/CR-dwbp-20160830/
[5] https://www.w3.org/2013/share-psi/bp/zero/

5. To inform the development of relevant technical standards to best meet the needs of Member States, i.e. communicate demand for standards from the MSs to the relevant standards body, whether they are members of the network or not.

The project provided evidence of the need for a number of standardisation efforts that began during its life time. These included:

- The Spatial Data on the Web Working Group[6], a collaboration between W3C and OGC, initiated under the EU-funded Smart Open Data project[7].

- The W3C Permissions & Obligations Expression Working Group[8] that is developing a method of encoding licences, terms of use, rights etc. for machine interpretation, initiated under the Big Data Europe project[9].

- The Smart Descriptions & Smarter Vocabularies workshop[10], set for 30 November – 1 December in Amsterdam

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[6] https://www.w3.org/2015/spatial/
[7] http://www.smartopendata.eu
[8] https://www.w3.org/2016/poe/
[9] https://www.big-data-europe.eu
[10] https://www.w3.org/2016/11/sdsvoc/

2 Reaching the Target Market

The project sought to inform and guide staff working within the public sector across Europe as they implemented the (Revised) PSI Directive. The project partners themselves constituted a significant and important part of this target group with 14 government agencies at national, regional and city levels. All other partners are involved directly in supporting public sector bodies in one way or another. For example, AMI Consult and PwC carry out extensive contracts with the European Commission's DG DIGIT, universities such as those in Prague, Krems and the Aegean are exactly the centres of expertise that their governments turn to for advice.

The workshops attracted significant interest from other agencies not involved in the project directly. Notable non-partner attendees at Share-PSI events included:

- Toms Celmillers, Electronic Government Department, Latvia

- Joonas Dukpa, City of Tampere

- Dietmar Gattwinkel, Staatsbetrieb Sächsische Informatikdienste

- Aki Hietanen, Ministry of Justice, Finland

- Christian Horn, GovData - das Datenportal für Deutschland

- Athanasios Karalopoulos, European Commission/ISA Programme

- Jakub Klímek, OpenData.cz

- Benedikt Kotmel, Ministry of Finance, Czech Republic

- Joachim-Martin Mehlitz, Berliner Beauftragter für Datenschutz und Informationsfreiheit

- Hans Overbeek, Publication Office of the Netherlands

- Lutz Rabe, Koordinierungsstelle für IT-Standards

- Oliver Rack, IOX Institute / Open Data Rhein-Neckar

- Marco Sieber, Open Data Zürich

- Frank Steimke, KoSIT / Senatorin für Finanzen. Bremen

- Jacek Wolszczak, Ministry of Administration and Digitization

- Julia Hoxha and Aranita Brahaj, Albanian Institute of Science

- Philippe Mussi, Open Data France

It is notable that on every occasion that the partners met, whether for a project meeting or at the 5 workshops, local senior people responsible for implementing the PSI Directive were engaged. As examples, the Secretary of State took part in the whole workshop in Timişoara, Croatia's Chief Information Commissioner joined us in Zagreb and so on. Away from the public sector, the project aimed to attract commercial interests, that is, commercial organisations that make use of

PSI. Share-PSI was a little less successful in achieving this except at the Krems workshop where the topic was *A Self Sustaining Business Model for Open Data.* Thanks to input from the PSI Alliance, a project partner, the event benefitted from participation from companies that use PSI in their products, such as Eversport, MANZ and Kompany.

By the end of the project, there were only two Member States that had had no representation of any kind at a Share-PSI event: Cyprus and Denmark.

3 The Workshops

All materials related to the 5 workshops are published on the project website, which is persistent. These include the agendas, papers, presentations, attendee lists and reports. The target attendance figure was 80 per event, a number exceeded on all occasions. With very few exceptions, all partners attended all the workshops and each partner presented at least one paper throughout the series. Several partners presented multiple papers. In this way, the number of papers/sessions presented by the partners exceeded the target in the Description of Work, balancing the one target that was not met, namely the number of external papers submitted to the workshops. This is a reflection of the network's large size and that it comprises a large part of its own target market.

Workshop	Registrations (target 80 per event)	Partners attending (target 40)	Internal papers (target 44)	External papers (target 100)
Samos	85	38	20	5
Lisbon	237	40	13	11
Timisoara	83	36	8	5
Krems	87	40	10	16
Berlin	144	39	17	17
Totals			68	54

Table 1 KPIs for the 5 workshops

Figure 1 The attendees at the first workshop, collocated with the Samos Summit, July 2014.

The first workshop was held as part of the Samos Summit and took *Uses of open data within government for innovation and efficiency* as its theme. This highlighted that for any PSI sharing programme to be successful there needs to be a strategy that coordinates the efforts of multiple agencies. As an example of how workshop outputs are captured as best practices, this particular conclusion is codified as the Share-PSI Best Practice Cross Agency Strategy. The most popular sessions at Samos were not the paper presentations but the bar camp sessions. Held at the end of the two-day event, individuals were able to pitch ideas for discussions among the group. The success and popularity of these sessions lead to the agenda for the second event including two bar camp sessions and only two short plenary presentation sessions, a pattern repeated in all subsequent workshops.

AMA's João Vasconcelos at the Lisbon workshop

The topic for Lisbon was *Encouraging open data usage by commercial developers*. The report shows that a key theme for the event was the need for engagement with the community of potential re-users. Making a series of spreadsheets available on a portal is not sufficient. A lot of effort is required to understand, clean up and transform data before it is usable in a commercial setting, effort that depends on there being a strong foundation in both legal and organisational commitments.

Secretary of State from the Chancellery of the Romanian Prime Minister, Radu Puchiu, addressing the workshop in Timişoara

The Lisbon workshop was the first of its kind in Portugal and attracted many people from across the Portuguese public sector. In Timişoara too, senior officials from the Romanian government participated, as did individuals from the public and private sectors in neighbouring Serbia, Bulgaria and Hungary. The topic there was *Engagement and identifying datasets for publication*. The report emphasises the need to elicit and act upon feedback from the broader community and also provided support for development of two vocabularies in the W3C Data on the Web Best Practices Working Group. These will facilitate the provision of information about the quality and usage of a dataset. Finally, Timişoara was a trigger for the establishment of a new Working Group at W3C, the Permissions and Obligations Expression WG, that will enable publishers to be explicit about the rights that consumers have in accessing and reusing data.

The fourth Share-PSI workshop was collocated with the annual CeDEM conference at the Danube University in Krems. Under the theme *A Self Sustaining Business Model for Open Data*, the workshop included many sessions and presentations by entrepreneurs making use of PSI. As reported, that event was quick to point out that the business perspective of PSI is very different from the public sector's or the open data evangelist's. Business starts with an idea for a service. Data is a necessary resource but so are many other things. Unusually for an event centred on PSI and open data, the point was made repeatedly that having to pay for data is no bad thing. It gives businesses a lever to pull for greater quality and continuation of service, as well as for providers to make the more valuable data available.

The panel session at the end of day 1. From left to right: Alon Peled (Hebrew University of Jerusalem), Gregor Eibil (Austrian Federal Chancellery), Wendy Carerra (CapGemini/European Data Portal), DI Dieter Zoubek CMC (Austrian Economic Chamber), Toon Vanagt (data.be), Phil Archer (W3C)

The final workshop in the series was hosted by Fraunhofer FOKUS in Berlin with the theme *Maximising interoperability — core vocabularies, location-aware data and more*. Share-PSI worked with the European Data Portal that had been launched the previous week and the discussion ns were more technical than had been the case in the previous workshops. The focus was on topics such as the important role of the portal beyond simply providing a catalogue of datasets, the importance of persistent, dereferenceable URIs as identifiers for locations, the value of simple tools and, not just the use of common standards, but profiles of standards.

3.1 Developing the Best Practices

Each workshop comprised two very full days of discussion and debate among enthusiastic and knowledgeable people. In addition, the project partners met for half a day before and after each event. Identifying a set of best practices from such a rich variety of inputs is challenging. A subset of partners committed time over the summer of 2015 to identifying and collating Best Practices on the project wiki. In each case, a session from a workshop was written up as a story and associated with an element of the PSI Directive. A task force member then reviewed the stories associated with a specific element and created a set of best practices according to an agreed template. Through an online poll, the partners were asked which of the following applied for each Best Practice:

Nancy Routzouni leading the plenary session on the Share-PSI 2.0 Best Practices in Berlin

1. I agree this is a good practice
2. I agree this is good practice and we already offer advice consistent with it.
3. I agree this is good practice and will cite it directly in our guide.
4. I do not think this is good practice but am open to persuasion.
5. I do not think this is a good practice
6. I have some other comment

Using a simple arithmetic model that gave slightly more weight to option 3 than option 2, BPs with 80% or more support were published on the project website while others were classed as 'Candidate Best Practices.' All the Best Practices were presented briefly at the Berlin workshop and further feedback received. In the weeks following Berlin, the template was amended and each BP amended to match. The Candidate Best Practices were revisited during the project's final meeting in Zagreb in March 2016 and, through a consensus, the final set of BPs was agreed. A second round of voting with the same questions as round 1 led to some content in some Candidate BPs being merged into already published ones and the final texts being drafted.

Each Best Practice includes:

- **Outline** (a short statement of what the best practice is about).
- **Links to the PSI Directive** (which elements of the Directive does the BP relate to).
- **The Challenge and the Solution** (short statements about what issue is addressed)
- **How do I implement this Best Practice?** (Guidance on how to proceed).
- **Where has this Best Practice been implemented?** (Links to examples of the BP in practice)

- **References** (links to relevant workshop sessions, the origin of the BP, further reading etc.)
- **Localised guidance** (links to specific sections of localised guides that include the BP in their advice).
- **A contact point for further information about the BP** (links to the primary author of the BP, including e-mail address).
- A link to an **open issue on GitHub** where the BP can be discussed, lessons learnt can be shared etc.

The W3C Data on the Web Best Practices Working Group has completed its work in drafting technical Best Practices, with its primary document now at an advanced stage in W3C's standardisation process. Those BPs are offered alongside the Share-PSI BPs as a single package so that the project offers a full range of advice for sharing Public Sector Information.

4 The Local Guides

The (Revised) PSI Directive offers a high level vision of citizens having access to public sector information. The best practices developed by the Share-PSI 2.0 network are an attempt to turn those high level ideas into something more tangible. Going one step further, actually offering direct guidance on what to do can only be determined in a local context. Factors such as the relevant legislation in a particular country or region, the established organisational and technical infrastructure, and the political view on issues such as transparency and budgetary priorities, are all relevant. This final step, the contextualised guidance, is provided in a series of guides, or collections of documents, that either apply to a specific geographic region or to a domain of interest.

Some partners in the network already had such guides in place, others have created them as a result of their participation in Share-PSI. They vary in style and presentation and, of course, are written in many different languages. This variety is appropriate, however, a lot of the advice offered in the guides is anchored in commonly agreed best practice and is therefore consistent.

The complete list is maintained dynamically on the project website at https://www.w3.org/2013/share-psi/lg/ from which all guides are linked directly.

4.1   Grounds for inclusion

The local guides have each been produced to serve a particular audience and, as noted already, some of them pre-date the project. Several of those are updated on a regular cycle, others not. To account for this variety, and for the project to be as unrestrictive as possible, Best Practices are deemed to be included if either:

- they are cited directly, or;
- a particular guideline is consistent with one or more BPs.

For example, the Serbian guide is presented as a series of Web pages that include direct links to all of the Share-PSI BPs. In contrast, the main Swedish guide includes 5 specific pieces of advice that are consistent with Share-PSI but there are no links or references from the document to those BPs.

4.2   Maintenance

The Share-PSI Web site is engineered to facilitate updates as easily as possible with the core data concerning the BPs and the local guides held in JSON files in the project's GitHub repository. As new versions of the guides are published, updating the links between them and the BPs is very straightforward.

5 Impact

When asked to reflect on the impact of Share-PSI on their own activities, partners offered the following statements.

	Tasked with the implementation of the commitments agreed for Open Government Partnership, we (the Chancellery of the Romanian Prime Minister) find the work of Share-PSI 2.0 project extremely relevant and helpful for our efforts. More specifically, it provided us with the clear benefits of open data, with best practices from other EU member states and inspiring workshops, all these helping us promoting and implementing open data policies in Romania. The broad variety of stakeholders around the table and the variety of contexts addressed by Share-PSI work helped us shape the policies, the methodology and the techniques to manage and publish data produced by public administration bodies in Romania. *Angela Benga, OGP Unit, Chancellery of Prime Minister, Romanian Government*
	Share-PSI best practices have been incorporated into the "Open Government Vorgehensmodell." This Model is endorsed and proposed by Cooperation OGD Austria, the steering committee concerning Open Government Data in Austria. *Johann Höchtl, Danube University, Krems*
	European Legislation Identifier implementation methodology: Good practices and guidelines, promoted by EU Publications Office. DCAT-AP – being updated with topics related to organisation and legal aspects that will take into account the Share-PSI Best Practices on relevant issues. *Makx Dekkers, AMI Consult*
	We consider the manual to serve as an essential guide for the public institutions on how to approach opening up data and what steps do they have to follow in order to reach the goal – enabling simple and costless re-use of PSI. *Mateja Prešern, Ministry of Public Administration, Slovenia*

	The Finnish Open Data Guide is a part of the national open data portal. It includes Share PSI best practices and is used by governmental agencies and municipalities publishing open data. Also developers and trainers belong to the user groups. *Anne Kauhanen-Simanainen, Ministry of Finance, Finland*
	The local guide is used by all public sector entities; currently being updated. Open data guidelines also being revised. Many of the Share-PSI BPs are used and are referred to as a major input to the new version. *Heather Broomfield, Difi*
	The local guide is the official one used by Ministry of the Interior to develops skills in public sector. Prepared in 2015, under constant review/update. *Jan Kučera, University of Economics, Prague*
THE *Open* GROUP	Our guide is available (free) from Open Group bookstore, and is advertised as a resource for enterprise and IT architects. *Chris Harding, Director for Interoperability*
	The primary local guide is the result of the consensus of the coordination bodies on open data from the three administration levels in Spain; it is the most important work to guarantee a common way to implement open data in Spain. *Mª Dolores Hernández Maroto, Ministerio de Hacienda y Administraciones Públicas*
	Our guide was composed by different information layers, targeted to different Public Administration bodies. As a result of AMA's involvement in Share-PSI, most sections feature or cite Share-PSI Best Practices. *André Lapa, AMA*
	The Canary Island local guide is used in training civil servants and different companies that are beginning with an open data strategy. ULL supported an independent view of the complete process. Municipalities aided development, providing several use cases and new experiences that have been added to the guide. *José Luis Roda García, University de La Laguna*

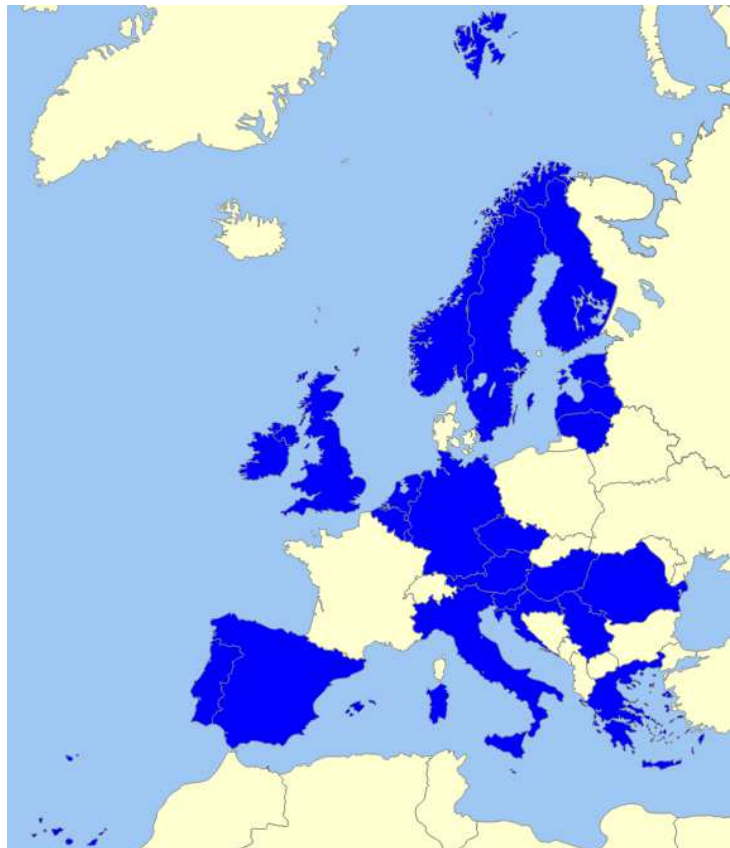|	The Latvian local guide is referred/linked to by VARAM - the ministry responsible for Open Data in Latvia. VARAM is in the process of establishing the government open data portal for Latvia. In this process they are taking into account both Share-PSI and W3C DWBP best practices. *Uldis Bojārs, Institute of Mathematics and Computer Science (Riga)*

6 Project achievements and challenges

The project brought together 40 organisations from 25 countries; it created a community that included government agencies, research institutes, consultants and developers, among whom experiences and approaches were shared leading to collaboration in identifying best practices, linking local guides and best practices. There were a number of challenges to overcome, notably the wide variety in national environments from centralised versus decentralised countries, and from established to emerging policies for PSI and open data. Not all EU countries were represented by formal partners in the project. Bulgaria, Cyprus, Denmark, Netherlands and Poland were absent, however, the network did include Norway and Serbia. During the project, representatives from Bulgaria, Netherlands and Poland took part in the workshops, as well as Albania and Switzerland.

The biggest challenge was that the workshop topics, broadly agreed between partners at proposal writing time, did not align well with the agreed approach for developing the best practices. The topics were mostly policy-orientated whereas the W3C Data on the Web Best Practices Working Group, originally envisaged as the creators of the best practices, was solely concerned with technical issues. This necessitated significant extra effort by some partners.

As well as the 21 Share-PSI Best Practices, users looking at the project website will find references to the 35 W3C BPs, all mapped to elements of the (Revised) PSI Directive. There are a total of 40 local guides curated by the project, 36 that cover specific countries or territories, and 4 that are international. Each guide cross references a selection of the Share-PSI best practices. These cross references are tabulated on the project website so that a reader can see at a glance those that are most widely implemented. Each of the BPs is cross referenced by at least 10 local guides, some by as many as 28.

The best practices and local guides do not offer complete coverage of all the issues surrounding the (Revised)

Countries covered by the local guides curated by Share-PSI

PSI Directive, rather, the material that was submitted during the 5 workshops. The BPs were identified through a process of informed consensus among the network partners rather than through a quantitative evaluation and the BPs take no account of local context – that is the role of the local guides.

7 The Network

An aspect of the project that has been important to the partners is the development of a genuine community of professionals from across Europe who know each other and who can draw on each other's expertise. The workshops and two additional face to face meetings at the beginning and end of the project included a degree of socialising at the end of long days that cemented relationships between many individuals.

There is a clear willingness among many partners to continue to work together in future related activities.

The Share-PSI partners at the final face to face meeting, 16-17 March 2016 at the University of Zagreb.

From left to right in the picture above, the Share-PSI network is as follows.

Davide Allavena, Politecnico di Torino, Italy, usually represented by Lorenzo Canova.

Raj Mack, City of Birmingham, UK, often represented by Heike Schuster-James.

Anne Kauhanen-Simanainen, Ministry of Finance, Finland.

Fatemeh Ahmadi Zeleti, Insight Centre for Data Analytics, Ireland.

Hannes Kiivet, Estonian Information Systems Authority.

Dino Girardi, University of Lapland/ODI. The Open Data Institute was most frequently represented by Amanda Smith. See also James Smith below.

José-Luis Roda Garcia, University of La Laguna, Spain.

Džiugas Tornau, UABLD/Graphity, Lithuania.

Livar Bergheim, Difi, Norway, usually represented by Heather Broomfield & Øystein Åsnes.

Chris Harding, The Open Group.

Emma Beer, Open Knowledge International.

Pekka Koponen, Forum Virium Helsinki.

James Smith, Open Data Institute.

Martin Alvarez-Espinar, CTIC, Spain.

Slim Turki, Luxembourg Institute of Science & Technology, also often represented my Muriel Foulonneau.

Jan Kučera, University of Economics, Prague,

Jens Klessmann, Fraunhofer FOKUS, Germany.

Martin Herzog,]init[, Germany, usually represented by Sebastian Sklarβ,

Joseph Azzopardi, Malta Information Technology Agency.

Georg Hittmair, Compass/PSI Alliance, Austria,

András Micsik, SZTAKI, Hungary.

Phil Archer, W3C.

Dolores Hernandez, Ministry of Finances and Public Administrations, Spain.

Uldis Bojārs, IMCS, University of Latvia,

Mateja Prešern, The Slovenian Ministry of the Interior and Public Administration.

Peter Winstanley, Government of Scotland.

Vjeran Strahonja & Neven Vrček, University of Zagreb, Faculty of Organization and Informatics.

Benedikt Kämpgen, Karlsruhe Institute of Technology.

Michiel de Keyzer, PwC, Belgium.

Valentina Janev, Institute Mihajlo Pupin, Serbia.

Johann Höchtl, Danube University Krems.

Ales Veršič, Ministry of Public Administration, Slovenia.

Miska Knapek, for Peter Krantz, Sweden.

Athina Trakas, Open Geospatial Consortium.

Not present in this picture but very much part of the Share-PSI group:

Harris Alexopoulos & Yannis Charalabidis, University of the Aegean.

André Lapa, Agência para a Modernização Administrativa, Portugal.

Giorgia Lodi & Gabriele Ciasullo, Agenzia per l'Italia Digitale.

Daniel Pop, West University of Timişoara.

Nancy Routzouni, The Hellenic Ministry of Administrative Reform and E-governance.

Makx Dekkers, AMI Consult.

Noël Van Herreweghe, Informatie Vlaanderen.

Any member of the network can be contacted via the coordinator (phila@w3.org).

8 Conclusion

The thematic network was developed as planned and achieved the goal of sharing and mutual understanding amongst many professionals working to implement the (Revised) PSI Directive. All the workshops were held as planned, largely sticking to the topics outlined in the Description of Work, with target participation achieved in all cases. External input for the workshops was below target but still substantial. The size and nature of the network itself meant that each workshop covered many topics with 4 parallel tracks across two days at all events after Samos.

The best practices were developed as planned but the topics covered were limited to what was contributed. The number of local guides created or curated by the project, 40, far exceeded the target of 15 and provided consistent advice grounded in agreed policy-oriented and technical best practices across a majority of European Member States and beyond.

Share-PSI 2.0 was a successful project.