

REPORT FROM SOCIAL NETWORK ACTIVITIES, DISSEMINATION AND IPR ISSUES

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DELIVERABLE

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D8.4 REPORT FROM SOCIAL NETWORK ACTIVITIES, DISSEMINATION AND IPR ISSUES

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This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

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EXECUTIVE SUMMARY

The document describes activities on Social media, IPR issues and dissemination activities during project. Social media was one from most important channels to promote SDI4Apps results. IPR for data and tools are key question for future sustainability. Last part of document is focused on dissemination activities during project.

1 INTRODUCTION

Dissemination and IPR issue were some from the key aspects for successful implementation and long-time sustainability of SDI4Apps project. We allocated large effort for dissemination, both using Social Media, but also direct dissemination using publications and participation on conferences. This report gives overview of these activities. Important part of project was IPR strategy, it include both, data and software tools.

2 SOCIAL NETWORKS ACTIVITIES

2.1 LinkedIn

LinkedIn is a social networking site designed specifically for the business/professionals community. The goal of the site is to allow registered members to establish and document networks of people they know and trust professionally.

LinkedIn Groups, specifically, provide a place for professionals in the same industry or with similar interests to share content, find answers, post and view jobs, make business contacts, and establish themselves as industry experts.

Users can find groups to join by using the search feature at the top of the LinkedIn homepage or viewing suggestions of groups they may like. All users can also create a new group focused on a particular topic or industry.

The SDI4Apps Consortium has established a LinkedIn group (<https://www.linkedin.com/groups/3516067>) from the beginning of the project which currently has 1,027 members which exceeds initially set target for 800 members in D8.3. Definition of promotion campaign. LinkedIn is by far the most used and known Social Media tool of the Consortium.

All Website content are posted to the LinkedIn group, where many users interact with the news items, such as like them, comment, or share them in their newsfeeds.

Up until mid-2016, LinkedIn offered Group owners the ability to get insight into group growth, demographics, and interactions through visually appealing charts and graphs. This data helped the group owner's measure and improve marketing strategies that help build LinkedIn reach, member activity, and ultimately—leads.

Since, May 2016 however LinkedIn shut down its group API access and disabled the Analytics page. SDI4Apps' Social media manager, RTD TALOS, has contacted LinkedIn in multiple occasions, in order to ask the feature has been disabled or if any recommended alternative exist, but got no response.

2.2 Facebook

A Facebook page is a public profile specifically created for businesses, brands, celebrities, causes, and other organizations. Unlike personal profiles, pages do not gain "friends," but "fans" - which are people who choose to "like" a page. Pages can gain an unlimited number of fans, differing from personal profiles, which has had a 5,000 friend maximum put on it by Facebook. Pages work similarly to profiles, updating users with things such as statuses, links, events, photos and videos. This information appears on the page itself, as well as in its fans' personal news feeds.

SDI4Apps has 2 Facebook pages under its "umbrella". The official SDI4Apps page was launched on 14 December 2015 and as of 21 March 2017, numbers 387 members or "fans" (<https://www.facebook.com/SDI4Apps/>).

Any posts that are published in the project's website (<http://sdi4apps.eu>) are automatically posted in the official Facebook project page.

The below picture show the activity over the last 4 weeks of the page (Feb 22, 2017 - Mar 21, 2017)

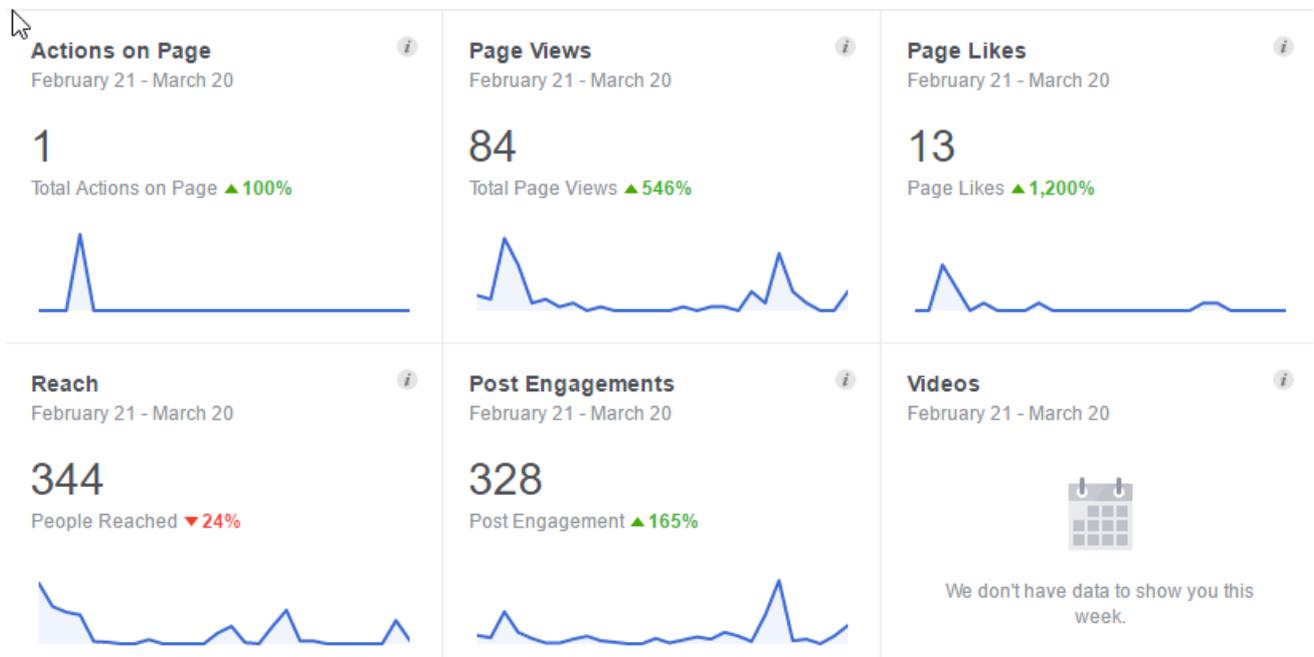


Figure 1: Activity over the last 4 weeks of the page (Feb 22, 2017 - Mar 21, 2017)

Actions on Page: The number of click to your page Contact Info

Page Views: The number of times people viewed your page and its sections

Page Likes: The number of times people liked your page

Reach: The number of people who saw any of your page posts

Posts Engagements: The number of times people have engaged with your posts through likes, comments, shares etc.

The picture below shows the 5 most recent posts made to the website and the interaction with the people that saw them.

Your 5 Most Recent Posts						
Published	Post	Type	Targeting	Reach	Engagement	Promote
03/21/2017 2:51 pm	 Call for Members Plan4all Association			3	1 0	Boost Post
03/19/2017 7:49 pm	 Geospatial catalogue Micka is now Open Source II			69	1 0	Boost Post
03/11/2017 12:17 am	 Streaming from the Final SDI4Apps Conference SDI4APPS			132	6 2	Boost Post
03/07/2017 8:08 am	 Our LinkedIn group Open Transport Net (OTN) tonight reach 500			69	2 0	Boost Post
02/24/2017 4:27 am	 SDI4Apps shared Martin Tuchyn's photo.			73	7 4	Boost Post

Figure 2: The most recent posts made to the website and the interaction

The page below compares the performance of the posts on SDI4Apps page and posts with relevant Pages on Facebook:

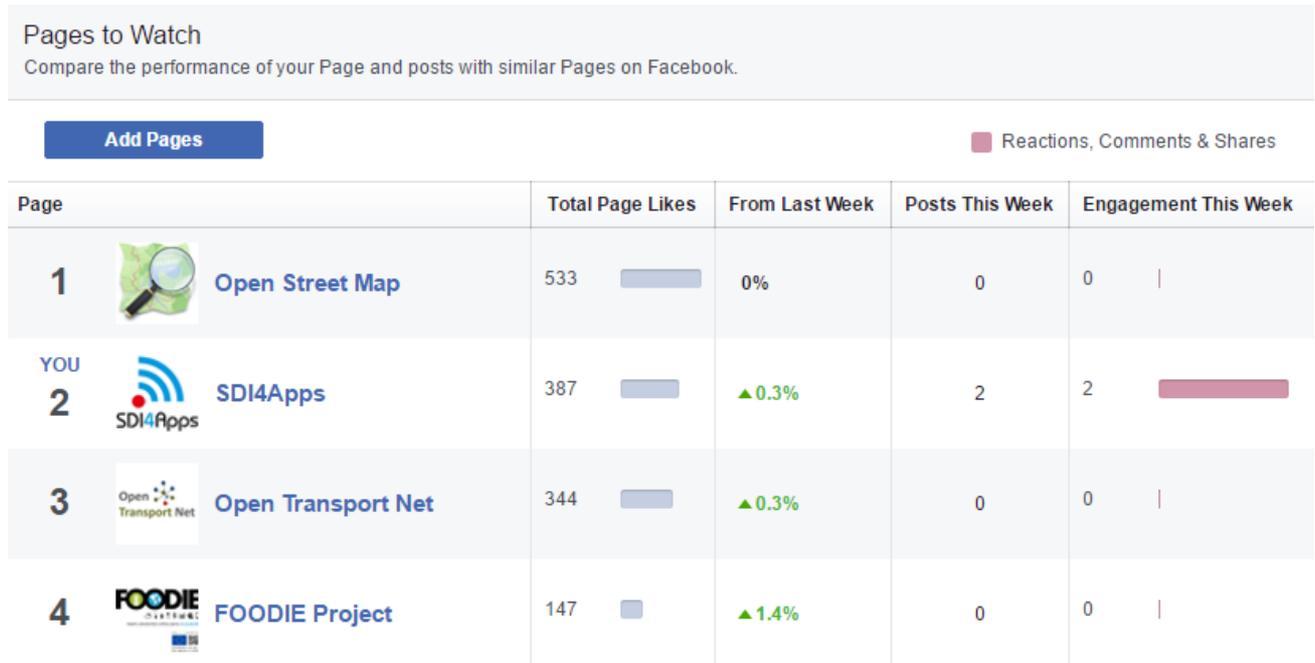


Figure 3: Comparison the performance of the posts

The pictures below shows how exactly did the fan base of the SDI4Apps page built up during the course of the 14 months of existence



Figure 4: Fan base of the SDI4Apps

Post Reach

The number of people your posts were served to.



Figure 5: Fan base of the SDI4Apps

Reactions, Comments, and Shares

These actions will help you reach more people.

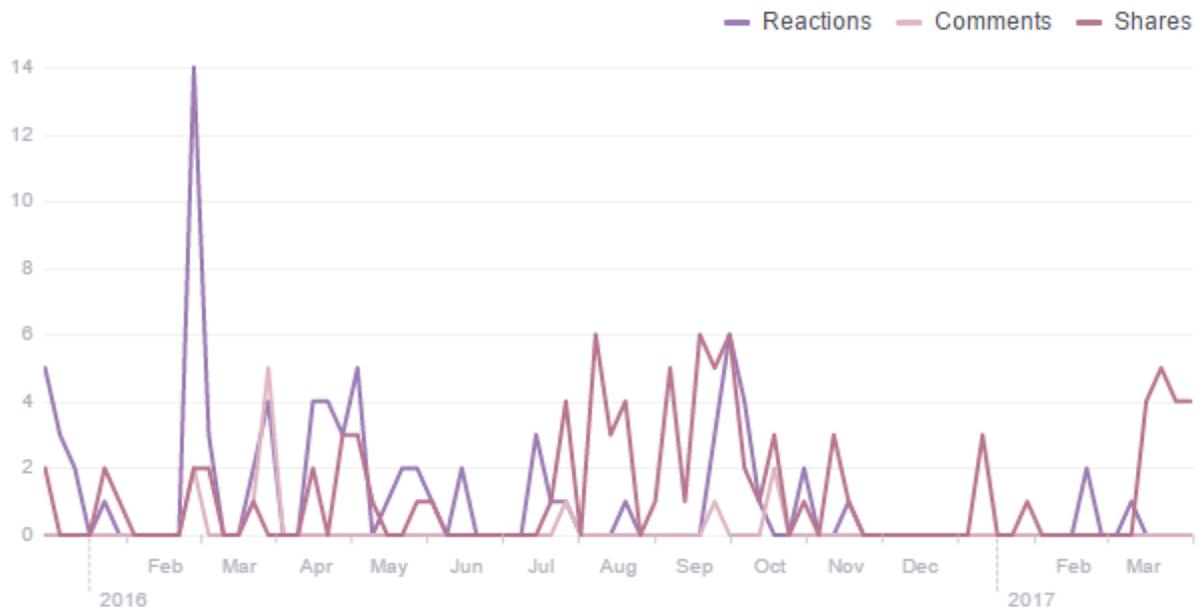


Figure 6: Fan base of the SDI4Apps

Total Reach

The number of people who were served any activity from your Page including your posts, posts to your Page by other mentions and checkins.



Figure 7: Fan base of the SDI4Apps

The picture below shows the average reach and engagement of the different types of posts in the SDI4Apps page:

The success of different post types based on average reach and engagement.

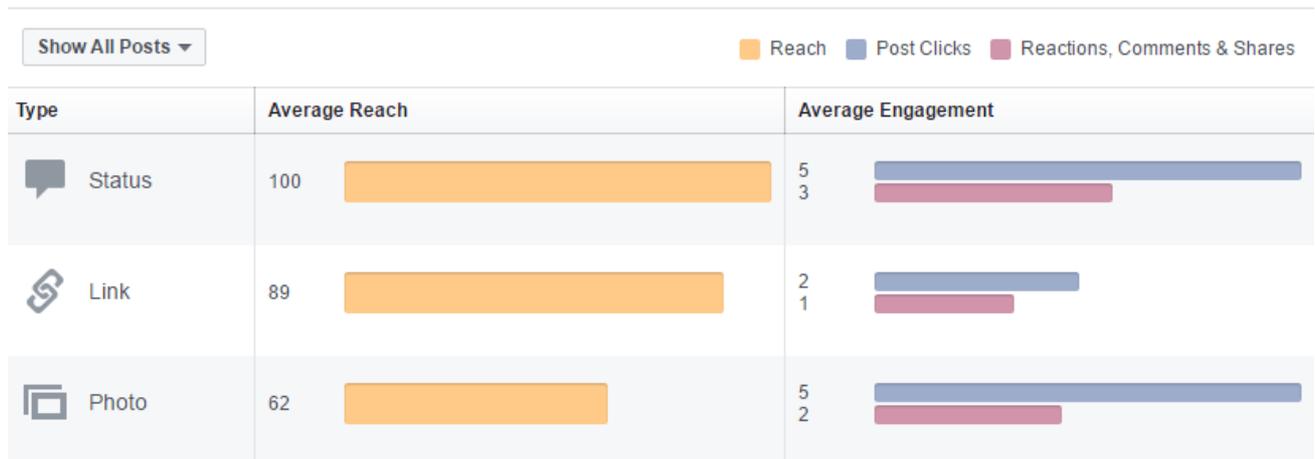


Figure 8: Average reach and engagement of the different types of posts

The Demographics of the page’s fans appear in the following diagrams:

The people who like your Page

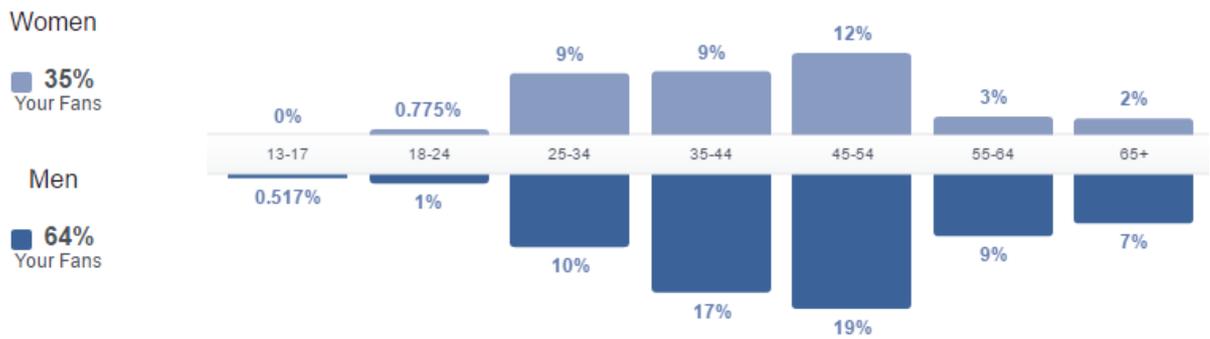


Figure 9: Demographics of the page’s fans

Country	Your Fans	City	Your Fans	Language	Your Fans
Cyprus	139	Nicosia, Lefkoşa Distric...	89	English (US)	127
Italy	40	Prague, Czech Republic	12	Greek	73
Greece	39	Limassol, Limassol Dis...	12	English (UK)	63
Czech Republic	37	Athens, Attica (region), ...	9	Italian	33
Latvia	28	Riga, Kurzeme Region...	9	Czech	31
Slovakia	9	Pisa, Tuscany, Italy	9	Latvian	13
Norway	9	Brno, South Moravian ...	9	Slovak	8
United States of America	7	Cesis, Vidzeme, Latvia	8	French (France)	7
India	7	Larnaca, Larnaca Distr...	8	Norwegian (Bokmal)	6
Germany	6	Patras, Western Greec...	4	Spanish	4

Figure 10: Demographics of the page’s fans

Except the project’s main Facebook page, the Consortium has created a second Facebook page, specific to the Pilot 5: Inspire4Youth (<https://www.facebook.com/INSPIRE4Youth/>). Open INSPIRE4Youth supports creativity, technical capabilities, skills, knowledge and also relations, through the sharing of spatial based content and educational materials around environment. Using new methods of digital cartography enables to go beyond linguistic barriers. Using principles of Linked Open Data INSPIRE4Youth offer new possibilities of analysing relation among different types of objects.

As of 21 March 2017, the Facebook page for Inspire4Youth counts a total of 26 members or “fans”. The page was created on 1 July 2016 and targets specifically the activities covered on Pilot 5 of the SDI4Apps projects.

Performing a detailed analysis like we did on the main SDI4Apps Facebook page, does not add value to the overall page, given the much smaller size of audience.

A total of 33 posts have been made to the page, with a rough estimation of its views are appearing in the screenshot below:

All Posts Published

■ Reach ■ Post Clicks ■ Reactions, Comm

Published ▾	Post	Type	Targeting	Reach	Engagement
02/17/2017 8:50 am	 INSPIRE4Youth shared SDI4Apps's post.			12 ■	0 0
10/15/2016 10:12 am	Implementation of Map composition into Moodle started SDI4APP			6 ■	0 0
09/26/2016 1:38 pm	 SDI4Apps Contribution to the INSPIRE Hack SDI4APPS			6 ■	0 0
09/26/2016 12:51 pm	 Opening Speech of the INSPIRE Hackathon SDI4APPS			5 ■	1 0
09/25/2016 6:23 pm	 MOOLE is ready for testing SDI4APPS			9 ■	0 0
09/23/2016 4:32 pm	We are looking for Moodle experts. Try to join us remotely in Barcelona			11 ■	2 0
09/23/2016 6:41 am	 Registration to the INSPIRE Hack 2016 is open! SDI4APPS			4 ■	0 0
09/21/2016 3:57 pm	Join us on INSPIRE Hack Remotely SDI4APPS			4 ■	0 0
09/21/2016 3:31 pm	 INSPIRE4Youth shared Bente Lijaja Bye's photo.			6 ■	0 1
09/20/2016 12:53 pm	 Novinka – workshop Využití map a prostorových dat ve výuce V rá			5 ■	0 0
09/20/2016 9:48 am	 What could be the role of digital maps in education?			6 ■	0 0

Figure 11: Posts have been made to the page

09/20/2016 9:22 am		https://www.researchgate.net/publication/308325606_Geospatial_			9		0 0	
09/16/2016 5:34 pm		"Google Docs for Maps": collaborative whiteboard for drawing on			3		0 0	
09/15/2016 1:54 am		Great News for all friends of SDI4Apps Mobile Thematic Viewer is			3		0 0	
09/14/2016 6:44 pm		Enhanced JSON schema for interchangeable Map Compositions			6		0 0	
09/13/2016 4:19 pm		Workshop: Open Data for Macro-Regional Development. How to			33		1 2	
09/13/2016 11:29 am		Where is it again? Mobile redlining map creation and sharing app			4		0 0	
09/04/2016 9:26 pm		Citizen Observatories on INSPIRE'2016 Barcelona, Monday Sept			4		0 0	
08/31/2016 1:02 pm		INSPIRE4Youth - Use Our Maps on Mobiles I			3		0 0	
08/31/2016 12:17 pm		MedHack presentation SDI4AP PS			14		0 1	
08/29/2016 9:44 am		INSPIRE4Youth – cooperate with us, some information for techni			16		0 3	
08/28/2016 10:55 am		INSPIRE4Youth – cooperate with us, some information for techni			8		0 1	

Figure 12: Posts have been made to the page

08/27/2016 11:52 am		INSPIRE4Youth – use our maps SDI4APPS			4		0 0	
08/26/2016 8:45 am		INSPIRE4Youth - Introduction			3		0 0	
07/20/2016 11:38 pm		Athens Museum Planner MedHack Result http://sdi4apps.eu/athens			8		0 1	
07/13/2016 11:58 am		Create Maps - OTN Data Portal			5		0 1	
07/07/2016 11:17 am		Participate at the MedHackathon Remotely SDI4APPS			3		0 0	
07/04/2016 7:57 am		Join us in Plan4all.			0		0 1	
07/03/2016 9:18 am		Create Maps - OTN Data Portal			6		0 1	
07/02/2016 9:59 am		Go on Open Transport Net Portal and Play with traffic volume in P			3		0 1	
07/01/2016 6:06 pm		http://www.medhackathon.eu/index.php/blog/item/82-test-on-med			38		0 2	
07/01/2016 9:31 am		INSPIRE4Youth updated their profile picture.			1		14 4	
07/01/2016 9:05 am		INSPIRE4Youth			0		11 3	

Figure 13: Posts have been made to the page

2.3 Twitter

Twitter is a free social networking microblogging service that allows registered members to broadcast short posts called tweets. Twitter members can broadcast tweets and follow other users' tweets by using multiple platforms and devices. Tweets and replies to tweets can be sent by cell phone text message, desktop client or by posting at the Twitter.com website.

The SDI4Apps Twitter account was established on July 1st, 2016 can be found at <https://twitter.com/sdi4apps>.

The Twitter account counts, so far (at the time of the writing March 22, 2017) counts 28 followers and 74 published tweets.

All Website News posts are automatically posted in Twitter and any person that follows can see its updates. The graph below shows the impressions that our tweeted posts had in the past 4 weeks (22/2/2017 - 22/3/2017):

Your Tweets earned **417 impressions** over this **28 day** period

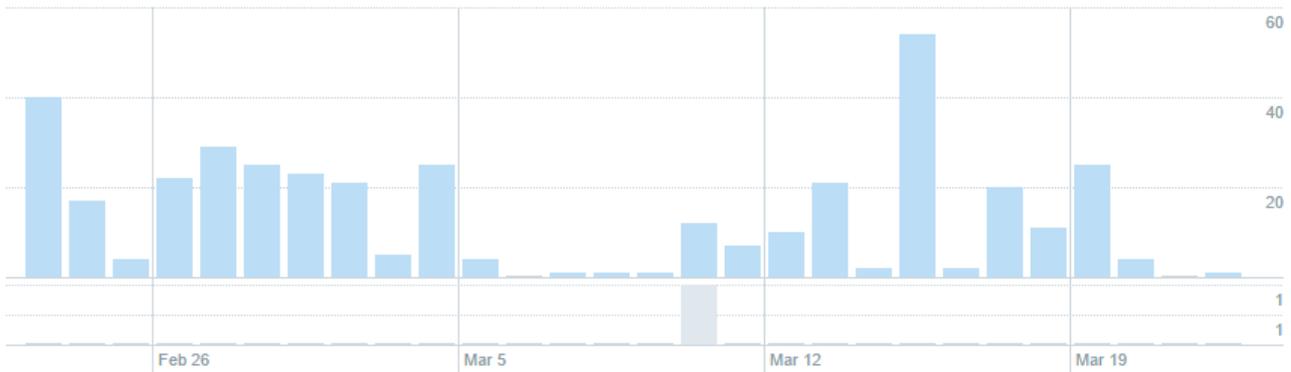


Figure 14: Impressions of tweeted posts in the past 4 weeks

Our tweets appeared 417 times over the past 28 days, which translates to approximately 15 appearances per day.

The below graph shows the total impressions from 1 Dec 2016 to 28 Feb 2017

Your Tweets earned **3.0K impressions** over this **91 day** period

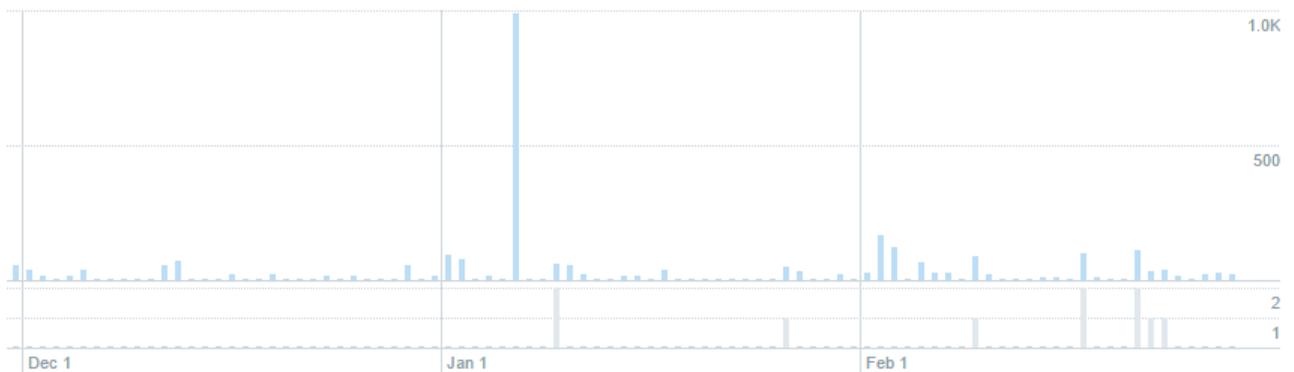


Figure 15: Total impressions over 91 day period

Our tweets appeared a total of 3,000 times, over that 91 day period, which translates in approximate on 33 impressions per day.

The figure below shows the top 5 tweets for that period of time alongside its impressions, engagements and engagement rate.

Tweets	Top Tweets	Tweets and replies	Promoted	Impressions	Engagements	Engagement rate
	SDI4Apps @sdi4apps · Feb 21	New Post: SDI4Apps featured prominently in Latvian Open Technology Association conference - sdi4apps.eu/2017/02/sdi4ap... pic.twitter.com/dNETvxkOul		168	5	3.0%
		View Tweet activity				Promote
	SDI4Apps @sdi4apps · Jan 9	New Post: CodeCamp a Hackathon in Prague - sdi4apps.eu/2017/01/codeca...		167	1	0.6%
		View Tweet activity				Promote
	SDI4Apps @sdi4apps · Feb 9	New Post: Data Infrastructures in Support of Macro-Regional Development - sdi4apps.eu/2017/02/data-i... pic.twitter.com/3lydkJQwrG		125	7	5.6%
		View Tweet activity				Promote
	SDI4Apps @sdi4apps · Feb 17	SDI4Apps asks you to participate in the ongoing Stakeholder Management Survey of the @sdi4apps project #OpenData #EU #OpenData #EU		106	4	3.8%
		View Tweet activity				Promote
	SDI4Apps @sdi4apps · Jan 9	New Post: Workshop on Open Data and Open Software, Prague, 23 Jan 2017 - sdi4apps.eu/2017/01/worksh...		57	4	7.0%
		View Tweet activity				Promote

Figure 16: Top 5 tweets for period

The tables below shows the monthly statistics of the SDI4Apps account from July 1st 2016 to today.

JUL 2016 SUMMARY		AUG 2016 SUMMARY	
Tweets	Tweet impressions	Tweets	Tweet impressions
11	517	8	379
Profile visits	New followers	Profile visits	New followers
19	4	6	3

SEP 2016 SUMMARY

Tweets
26

Tweet impressions
1,094

Profile visits
33

Mentions
2

New followers
9

OCT 2016 SUMMARY

Tweets
3

Tweet impressions
325

Profile visits
6

Mentions
1

New followers
2

NOV 2016 SUMMARY

Tweets
1

Tweet impressions
355

Profile visits
3

Mentions
1

New followers
3

DEC 2016 SUMMARY

Tweet impressions
408

Profile visits
3

Mentions
1

New followers
0

JAN 2017 SUMMARY

Tweets
3

Tweet impressions
1,515

Profile visits
2

Mentions
2

New followers
0

FEB 2017 SUMMARY

Tweets
7

Tweet impressions
987

Profile visits
21

Mentions
3

New followers
4

MAR 2017 SUMMARY

Tweets
1

Tweet impressions
249

Profile visits
7

Mentions
1

New followers
1

Table 1: Monthly statistics of the SDI4Apps account from July 1st 2016 to today

3 IPR ISSUES IN SDI4APPS

This section elaborates an Intellectual Property Rights (IPR) management statement in relation to the business plans given in deliverable D8.5.2 “Business Model - Final Version”, in order to share future benefit, respecting always the previous background and existing IPR of each of the participants. It also defines a strategy for the management of the IPR with the purpose of the future commercialization of project’s results and the management of the benefits generated.

The project consortium agreed the following key decisions regarding IPR that have a positive impact on the take-up of the platform by a wider external community, within and beyond the project lifetime:

- Open sourcing of the SDI4Apps codebase on GitHub using an Apache license and transferring it to the Plan4All Association [1] to encourage the engagement of a wider development community who can assist with the maintenance and development of the codebase.
- An open source, automated script for deploying the cloud platform to new servers, making the task of setting up new instances of the SDI4Apps cloud platform considerably easier, both for internal and external stakeholders.

Although knowledge and Intellectual Property (IP) generated by the SDI4Apps project is the property of the parties generating it, the default position is that such knowledge is made available under a permissive licence. The project focused also on IPR issues like security of data and data models while encouraging and facilitating public Open Data sharing, and the use of data from special planning for environmental development and for protection of citizens. SDI4Apps explored models to encourage and reward the use and reuse of the data by stakeholders while supporting data rights in business models when necessary and without affecting or constraining innovative local public sector applications and the participation of citizens in the decision making process.

Open Data is facilitated increasingly by sharing under public terms (Creative Commons licenses, Public Domain dedication or Open Data Commons licenses) to manage copyright restrictions that might otherwise limit dissemination or reuse of data. SDI4Apps researched how to deal with CC licenses for copyrighted databases at different levels (database mode, data entry, field names and data), facilitating other initiatives in the adaptation to Open Data through clear and easy paths while preserving the interests of institutions through statutory public domain, private-law waiver of rights or common-use licenses use.

Innovation by SMEs is a key driver for royalty-free open standards, allowing access to data not just in formats that have been agreed through a consensus-building process, but via APIs and following best practices that make such access easy. All participants have the rights to use the results produced by SDI4Apps for their internal use and promotional purposes, and are committed to maintain the software tools and documents delivered visible and accessible through the project web portal. In addition to the general project obligations set out in the EC Grant Agreement, the participants executed their own Consortium Agreement, which sets out their mutual project responsibilities and the agreed mechanisms relating to IPR, confidentiality and exploitation.

3.1 IPR in the SDI4Apps project

The SDI4Apps Consortium Agreement (CA) defines the following Intellectual Property Rights (IPR) within the project:

- Intellectual Property Rights or IPR means any intellectual property rights, including, but not limited to, patents, utility models and utility certificates, industrial design rights, copyrights, software, trade secrets, database rights, trademarks, topographies of semiconductor products’ rights, as well as any registrations, applications, divisions, continuations, re-examinations, renewals or reissues of any of the foregoing, excluding Confidential Information.
- Background means Background Information and Background IPR. In respect of this Project, the Partners listed their Background of which it expected that Access Rights would have to be granted or excluded in accordance with the terms and conditions of the CA. The Partners agreed that all Background not listed was to be explicitly excluded from Access Rights.

- Foreground means Foreground Information and Foreground IPRs and means any IPRs and Information that are generated as a result of the activities conducted within the framework of the Project as specified in the Consortium Agreement.

Foreground is owned by the Partner which conducted the work from which it resulted. In case of joint ownership of Foreground, and where no joint ownership agreement had yet been concluded, each of the joint owners were entitled to use the joint Foreground as it sees fit, and to grant non-exclusive licenses, without obtaining any consent from, paying compensation to, or otherwise accounting to any other joint owner, unless otherwise agreed between the joint owners.

Except when joint ownership is concerned, each Partner was responsible for ensuring the protection and maintenance of their own Foreground (and Background) and the IPR related to it.

Each Partner was entitled to transfer ownership of its own Foreground in all or in part following the procedures of the Grant Agreement and as defined in the CA.

3.2 Management of IPR in the SDI4Apps project

As described in the Description of Work (DoW) the management of knowledge, intellectual property rights (IPR) and innovation, including exploitation of results, was jointly handled by the WP leaders, led by MAC as leader of WP8 and task T8.5 “IPR Issues Management “in particular.

The handling of IPR issues followed the established guidelines and processes provided in the DoW, Grant Agreement and CA. WP leaders gave recommendations to the Project Coordinator and the Project Board on the handling of the assessed IPR issues. Each participant, who brought in an IPR into the project or developed some IPR within the project, gave a statement on this IPR on an electronic form provided by the Coordinator. Such statements included any special requirement for the use of this IPR in addition to or deviating from the standard IPR rules of the Consortium Agreement. Within one month the other participants were able to raise objections against such a statement. If no objections were raised within this month, the statement was deemed accepted. Any objections would have been dealt with by the WP leaders without undue delay, though none arose during the project.

3.3 IP Management in SDI4Apps

As SDI4Apps is part of the Competitiveness and Innovation Framework Programme (CIP) it abides by the rules on Intellectual Property (IP) and Intellectual Property Rights (IPR) applicable in CIP [2].

CIP is intended to contribute to the competitiveness and innovation capability of the European Union. With a particular focus on SMEs, it supports innovation activities (including eco-innovation), promotes the development of a competitive information society, as well as energy sufficiency and renewable energy. By focusing on the downstream parts of the research process, CIP contributes to closing the gap between research and innovation. As in other EU funding programmes such as Horizon 2020 and the Seventh Framework Programme (FP7), Intellectual Property (IP) and its proper management are essential for the success of the projects funded through CIP and for the exploitation of results created within these projects. Thus, SDI4Apps followed the rules on IP and Intellectual Property Rights (IPR) applicable in CIP.

Turning SDI4Apps’s products and services into commercially viable value depends on effective management of IP commercialisation, and the success of this process depends on several internal and external factors such as business objectives, type of IP as well as economic and intellectual resources. In addition, since IP can be commercialised either directly by its owner, through an assignment or by building up business partnerships, the selection of the most appropriate tool is often challenging, especially for SMEs [3]. The process is outlined as follows [4]:

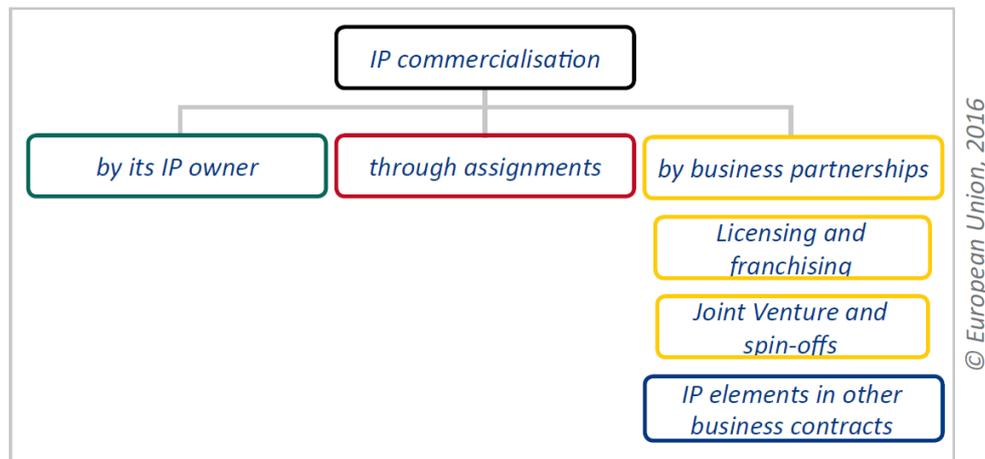


Figure 17: IP Commercialisation issues

The various issues are discussed in the IPR Helpdesk Guide (as referenced) so are not repeated here.

3.4 IP generated by SDI4Apps

The key exploitable results from the SDI4Apps project (as defined in deliverable D8.5.2 “Business Model - Final Version) are:

Open Land Use, Open datasets including Smart Points of Interest and Open Transport Map.

1. SDI4Apps put significant resources into data integration which resulted in three core datasets used across the pilot applications and shared with other EU projects including OpenTransportNet, FOODIE and ECIM. These datasets include Open Land Use Map [5], Smart Points of Interest [6] and OpenTransportMap [7] which are displayed below in the same order.

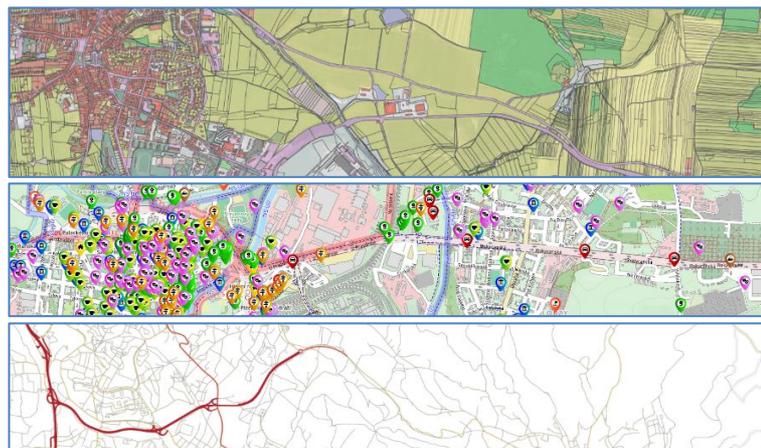


Figure 18: SDI4Apps Open Data Sets

2. Service platform - the SDI4Apps platform - a cloud based platform that can be deployed on any cloud environment using an open YAML script and including key tools for managing and sharing open geographic information.

SDI4Apps adapted and integrated several existing open software components and JavaScript libraries such as Liferay, GeoServer, Virtuoso, Micka, HSLayers NG and PostGIS that serve as a basis of the SDI4Apps platform. An installation script that builds the SDI4Apps platform from scratch can be deployed for newly launched virtual machines at a cloud environment. The installation script is maintained at GitHub [8].

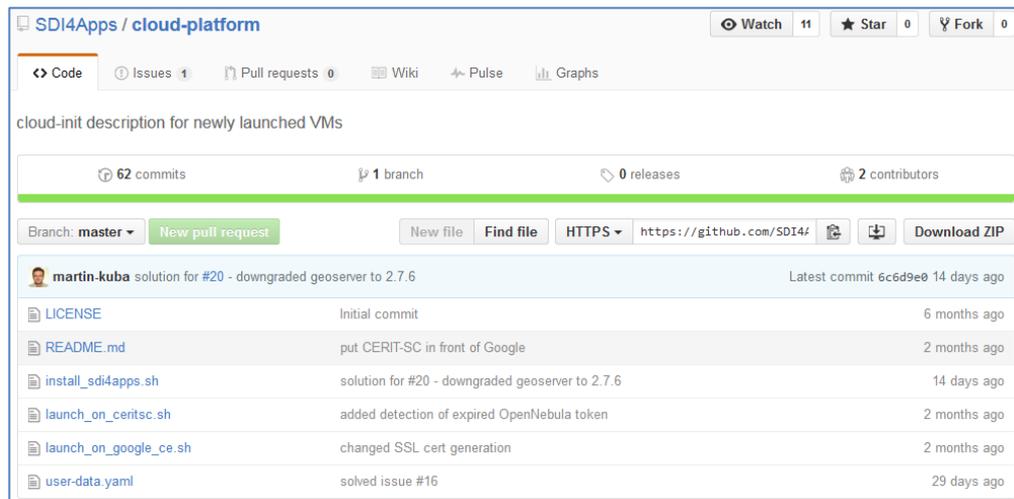


Figure 19: SDI4Apps Service Platform

These exploitable results from the SDI4Apps project are summarised in the following table [9]:

Exploitable foreground (description)	Exploitable product(s) or measure(s)	Sector(s) of application	Timetable, commercial or any other use	Patents or other IPR exploitation (licences)	Owner and Other Beneficiary(s) involved
1. SDI4Apps Service platform.	API Webservice and SDK at http://sdi4apps.eu	GI, OD & LOD	12 months	FRAND and OSS Apache2[10]	Plan4All Association & all SDI4Apps Partners
2. Open Land Use, dataset	Webservice at http://sdi4apps.eu/open_land_use	GI, OD & LOD	6 months	ODC BY, FRAND and OSS Apache2	Plan4All Association & all SDI4Apps Partners
3. Open Smart Points of Interest dataset	Webservice at http://sdi4apps.eu/spoi	GI, OD & LOD	6 months	ODC BY, FRAND and OSS Apache2	Plan4All Association & all SDI4Apps Partners
4. Open Transport Map dataset	Webservice at http://opentransportmap.info	GI, OD & LOD	6 months	ODC BY, FRAND and OSS Apache2	Plan4All Association & all SDI4Apps Partners

Table 2: SDI4Apps exploitable results

These results and their IP exploitation are summarised in the following table:

Exploitable foreground	Purpose	How, when and by whom will be exploited	IPR exploitable measures	Further research	Potential/expected impact
1. SDI4Apps Service platform	Open platform on any cloud including key tools for managing and sharing open geographic information	Open source available on www.SDI4Apps.eu and https://github.com/SDI4Apps/cloud-platform	Promoted as part of the project. FRAND policy and Apache2	Yes, to extend to further services and users.	Open services for publishing OD, GI and LOD.
2. Open Land Use dataset	Open Land Use dataset and tools	Dataset and Webservice tools at http://sdi4apps.eu/open_land_use and https://github.com/SDI4Apps	Openly available with an ODC BY and FRAND policy.	Yes, to enhance and extend based on further content and scenarios.	Open dataset and services in open land use.
3. Open Smart Points of Interest dataset	Open comprehensive Points of Interest dataset and tools	Dataset and Webservice tools at http://sdi4apps.eu/spoi and https://github.com/SDI4Apps	Openly available with an ODC BY and FRAND policy	Yes, to enhance and extend based on further content and scenarios.	Open dataset and services in open POI use in tourism and other applications.
4. Open Transport Map dataset	Open Transport Map dataset and tool.	Dataset and Webservice tools at http://opentransportmap.info and https://github.com/SDI4Apps	Openly available with an ODC BY and FRAND policy.	Yes, to enhance and extend based on further content and scenarios.	Open dataset and services in open transport analysis, mapping and management.

Table 3: Exploitation of SDI4Apps results

3.5 Software, Data and Documents IPR

3.5.1 SDI4Apps Apache 2 Open Source Software license

The SDI4Apps project aimed to create an open-source platform, tools and datasets and proactively acted to attract open-source communities and software developers by publishing them under a solid, proven but permissive open source license.

There are many open source licenses [11] but the Partners agreed that 3 were most appropriate to meet the SDI4Apps objectives, as compared and contrasted in the following table:

License	Author	Latest version	Publication date	Linking	Distribution	Modification	Private use	Sublicensing
Apache License [12]	Apache Software Foundation	2.0	2004	Permissive	Permissive	Permissive ²	Yes	Permissive
EUPL [13]	European Commission	1.1	2009	Limited	?	With an explicit compatibility list	?	?
GNU General Public License [14]	Free Software Foundation	3.0	2007	GPLv3 compatible only	Copylefted [15]	Copylefted	Yes ¹	Copylefted

Table 4: Comparison of possible SDI4Apps Open Source Licenses

The Partners agreed to provide the open reference implementation of the SDI4Apps infrastructure under the Apache-2 license, as it:

- explicitly grants rights where necessary to operate, modify and distribute the software;
- permits code that it covers to be subsumed into closed source projects;
- is suitable for safeguarding the IPR of project results as well as EC investments
- Apache License 2.0 is compatible with EUPL and GNU General Public License (GPL) version 3, (EUPL or GPLv3) and Apache 2.0 licensed code can be combined - resulting in EUPL or GPLv3 licensed software

However the SDI4Apps licensing remains flexible enough to be compatible with the exploitation plans of the Partners of the consortium.

- So a dual licencing model could be used for some SDI4Apps modules, such as value added features.
- The originator/owner of the software can license and use their code as both Proprietary and Open Source - e.g. for commercial exploitation.

The Apache 2.0 License

- Requires preservation of the copyright notice and disclaimer.
- Allows the user the freedom to use the software for any purpose, to distribute it, to modify it, and to distribute modified versions of the software, under the terms of the license, with no royalties.
- Does not require a derivative work of the software, or modifications to the original, to be distributed using the same license

The following text is included in the header of all SDI4Apps open source code files to indicate their Apache 2 license

`<license>`

`<name> Apache License, Version 2.0 </name>`

`<url> http://www.apache.org/licenses/LICENSE-2.0 </url>`

`<comments>`

The work represented by this file is partially funded by the SDI4Apps project through the European Commission's ICT Policy Support Programme as part of the Competitiveness and Innovation Programme (Grant no.: 621129)

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See the License for the specific language governing permissions and limitations under the License.

`</comments>`

`</license>`

The SDI4Apps software is available to the wider Open Source Community on GitHub at <https://github.com/SDI4Apps> and the Developers Blog at <http://sdi4apps.eu/updates/dev-blog/>, which also provide documentation, development coordination and issue tracking of its components.

The image shows two parts of the SDI4Apps project's online presence. The top part is a screenshot of the SDI4Apps GitHub organization page. It features the organization's name, a description: "Uptake of open geographic information through innovative services based on linked data", and a list of repositories including 'cloud-platform', 'documentation', 'whiteboard', and 'openapi'. Each repository has a brief description and a small activity chart. To the right, there are sidebars for 'Top languages' (JavaScript, Java, Shell, PHP, HTML) and 'People' (eirikcsak, klimeto, martin-kuba). The bottom part is a screenshot of a developers blog post from January 15, 2016, titled 'LayMan and CKAN', which discusses the integration of the CKAN REST API into the LayMan system. A second post titled 'LayMan - The Layer Manager' is also visible, describing the process of uploading and publishing geodata.

Figure 20: SDI4Apps Open Source Software on GitHub & Developers Blog

3.5.2 SDI4Apps Software Dual Licensing

While the main SDI4Apps services and system is available as Open Source and thus take up and maintenance of the system by a community of developers will be central to the long-term deployment of SDI4Apps, many of the SDI4Apps value-added services (as in some of the pilots) could be produced as proprietary software, and their providers may decide to deploy them on a commercial license-fee profit basis after the project ends. So elements of SDI4Apps may be deployed on a Dual License or Hybrid License, similar to the successful best practice products such as MySQL [16] and OpenOffice. [17]

The software owner can offer the same software under two different licenses. One license is an Apache 2 open source license, permitting the free modification, distribution and use of the software. The other license is a non-open source license which allows licensees to deploy and develop the software under standard commercial terms. The details of the proprietary license can vary. In most cases it includes a change in the redistribution conditions of the software. This limits the ability of the proprietary version of the software to compete with software licensed under the open source license.

3.5.3 SDI4Apps Data IPR

Open Data is facilitated increasingly by sharing it under public terms (Creative Commons licenses [18], Public Domain dedication [19] or Open Data Commons licenses [20]) to manage copyright restrictions that might otherwise limit dissemination or reuse of data [21].

As SDI4Apps is very data intensive the Partners considered the following protection instruments for its various data assets, which are mapped in the following table [22]:

- Instance Data: all kinds of facts that can be represented in digital code and thus made available for further machine processing.
- Metadata: all kinds of symbolic artefacts that provide information about data.
- Ontology: are used to organize metadata - description of the metadata schemas themselves.
- Content: additional background information.
- Database Right protects a collection of independent works, data or other
- An Unfair Practices Act protects rights holders against certain trade practices, which are
- considered unfair.
- Patenting does not directly impact the protection of semantic metadata

	Copyright	Database Right	Unfair Practice	Patents
Instance Data	Yes	Yes	yes	partly
Metadata	No	Yes	yes	no
Ontology	Yes	Yes	yes	partly
Content	Yes	No	yes	no

Table 5: Data protection instruments

In keeping with the SDI4Apps open access approach, the Partners agreed that the project’s public data and datasets would be published under an Open Data Commons Attribution (ODC BY)) license having considered the following options [23]

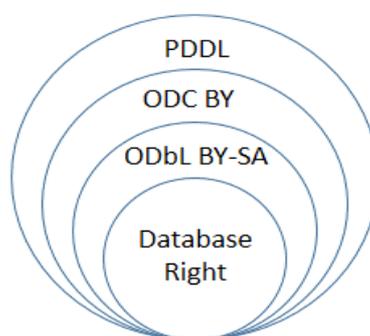


Figure 21: Open Data options

As indicated in the following table:

License	Description
ODC Public Domain Dedication and License (PDDL)	<ul style="list-style-type: none"> Allows users to share, create and adapt the database. No restrictions on your use of the database.
Open Data Commons Attribution License (ODC BY)	<ul style="list-style-type: none"> Allows users to share, create and adapt the database. Must attribute any public use of the database, or works produced from it, as specified in the license
Open Data Commons Open Database License (ODbL BY-SA)	<ul style="list-style-type: none"> Allows users to share, create and adapt the database. Must attribute any public use of the database, or works produced from it, as specified in the license May use technological measures that restrict the work (such as DRM) but must also redistribute a version without such measures.

Table 6: Comparison of ODC options

3.5.4 SDI4Apps Documents IPR

All of the SDI4Apps documents are protected by normal copyright, but as specified in the standard CIP Grant Agreement, all published documents and deliverable contain the following Legal Notice and Disclaimer:

The SDI4Apps project has received funding from the European Union's ICT Policy Support Programme as part of the Competitiveness and Innovation Framework Programme under Grant Agreement No. 621129. The views and conclusions contained here are those of the authors and should not be interpreted as necessarily representing the official policies or endorsements, either expressed or implied, of the SDI4Apps project or the European Commission. The European Commission is not liable for any use that may be made of the information contained therein.

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While all SDI4Apps website content, papers, leaflets, press releases, displays etc. - include the following notice

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The Partners agreed that all of the SDI4Apps public documents would be openly available under the Creative Commons Attribution Copyright (CC-BY) latest version 4 licenses [24] that allows free use of the content but requires attribution to the original author and Project.

In coming to this decision the Partners considered the following Creative Commons options [25].

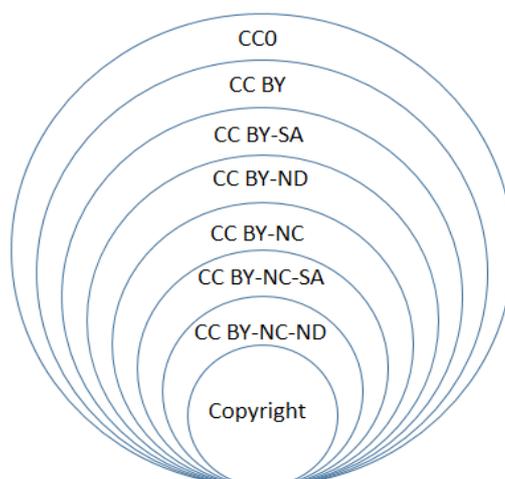


Figure 22: Creative Commons Copyright options

While the core right allows redistribution for non-commercial purposes without modification, the 4 major condition modules are:

1. Attribution (BY), requiring attribution to the original author;
2. Share Alike (SA), allowing derivative works under the same or a similar license
3. Non-Commercial (NC), requiring the work not to be used for commercial purposes;
4. No Derivative Works (ND), allowing only the original work, without derivatives.

These modules are combined to form the 6 major licenses of the Creative Commons.

1. Attribution (CC BY),
2. Attribution Share Alike (CC BY-SA),
3. Attribution No Derivatives (CC BY-ND),
4. Attribution Non-Commercial (CC BY-NC),
5. Attribution Non-Commercial Share Alike (CC BY-NC-SA)
6. Attribution Non-Commercial No Derivatives (CC BY-NC-ND)

3.6 SDI4Apps Platform User Data and Terms of Use

The IPR of the users' data used in the services of the SDI4apps platform will depend on the source owners and originators of the data. However the Partners agreed that the SDI4Apps platform supports all of the Open Data Commons (ODC) licences and Intellectual Property Rights (IPR) of the content that it will process and hold. The SDI4Apps platform does not provide any functionality to organise payment or tracking of its users' non-open data.

The Partners agreed that the SDI4Apps Platform should include a consent form for users who publish data on the platform, so as to protect the pilots and users that will include data from various sources. This state that the preferred license is CC-BY V4.0, and that the existing licenses must be respected when they merge and store datasets on the platform, but otherwise the platform will not enforce these nor have any responsibility to do so.

The SDI4Apps Terms of Use statement, which users accept by using it, is as follows:

SDI4Apps encourages open data sharing and the following GEOSS Data Sharing Principles (as defined at www.earthobservations.org/dswg.php):

- data, metadata and products will be shared as Open Data by default without charge or restrictions on reuse, subject to the conditions of registration and attribution when the data are reused;

- where international instruments, national policies or legislation preclude the sharing of data as Open Data, data should be made available with minimal restrictions on use and at no more than the cost of reproduction and distribution; and
- all shared data, products and metadata will be made available with minimum time delay

Users, who publish data on the SDI4Apps Platform, agree to the following Terms of Use when they register on the Platform:

1. *You retain any and all rights you may possess to data you input and host on the SDI4Apps Platform or data collected from others by the SDI4Apps Platform, or Services running on it, on your behalf. As a policy, SDI4Apps does not examine any of your data or enforce any of its license conditions.*
2. *You will respect all existing licenses when you merge and store datasets on the SDI4Apps Platform. The SDI4Apps Platform will not monitor nor enforce your's or any existing data licenses.*
3. *The preferred license for your published data on the SDI4Apps Platform is CC-BY V4.0 (as defined at <https://creativecommons.org/licenses/by/4.0/>). You will clearly indicate in the metadata of your datasets if it is not so.*
4. *You undertake to make all due allowance for generally recognized principles for data protection and data security and to comply with all obligations in connection with data protection. You will not include personally identifiable information in any data which is provided by you in connection with your use of the SDI4Apps Platform or Services that use it.*
5. *You will inform SDI4Apps immediately of any unauthorized use of your access data or of any failure on your part to comply with data protection regulations. You bear sole personal responsibility for the confidentiality of your login name and password, and vis-à-vis both SDI4Apps and all third parties for all activities occurring under your login name.*
6. *You accept that the SDI4Apps platform and the services that use it, are provided "as is" and on an "as available basis" "with all faults" and without warranty of any kind.*
7. *If a third party makes a claim against SDI4Apps or any of its Service Providers for infringement of its intellectual property rights based on your use of the platform or the Services that use it, in connection with your data or information, then you will indemnify and hold SDI4Apps and its Service Providers harmless from and against any and all claims, losses, damages, liabilities and expenses (including reasonable legal fees and other costs of defending and/or settling any action) that SDI4Apps or its service providers may have to pay as a result of the claim.*
8. *If you provide the results of your use of the SDI4Apps Platform or Services to third parties, then you (i) will be responsible, as between you and SDI4Apps, for such third parties' use of those results in compliance with these Terms of Use and (ii) will defend, indemnify and hold SDI4Apps harmless from and against any and all claims, losses, damages, liabilities and expenses (including reasonable legal fees and other costs of defending and/or settling any action) that SDI4Apps may have to pay as a result of or arising from such third parties' use of such results.*

3.7 SDI4Apps Service Providers FRAND Approach

The SDI4Apps data and tools can only operate and have value, as long as the SDI4Apps online services and datasets are available. So the IPR management of the Services must balance

1. Availability of the services and datasets, to reassure and encourage users and the Open User Community to use them in their services.
2. Enable the Plan4All Association [26] Service Providers to earn revenues to continue to provide, maintain and scale-up those online services into the future.

To achieve this balance the Plan4All Association and providers of the SDI4Apps Services have agreed to provide the following services with a FRAND (Fair, Reasonable, And Non-Discriminatory) policy to encourage the Open User Community to use the SDI4Apps services and datasets in their applications:

1. SDI4Apps Service platform

2. Open Land Use, dataset
3. Open Smart Points of Interest dataset
4. Open Transport Map dataset

FRAND is a voluntary commitment between the Service Provider and each User of the service. It is based on the reasonable and non-discriminatory licensing concept used by standards organizations who often request from the owner of an IPR (usually a patent) that is, or may become, essential to practice a technical standard [27]. In that context the terms have the following meanings:

- Fair relates mainly to the underlying licensing terms. Drawing from anti-trust/competition law; fair terms mean terms which are not anti-competitive and that would not be considered unlawful if imposed by a dominant firm in their relative market. Examples of terms that would breach this commitment are; requiring licensees to buy licenses for products that they do not want in order to get a license for the products they do want, or requiring licensees to take licenses to certain unwanted or unneeded patents to obtain licenses to other desired patents (bundling), requiring licensees to license their own IP to the licensor for free (free grant backs) and including restrictive conditions on licensees' dealings with competitors (mandatory exclusivity).
- Reasonable refers mainly to the licensing rates. According to some, a reasonable licensing rate is a rate charged on licenses which would not result in an unreasonable aggregate rate if all licensees were charged a similar rate. According to this view, aggregate rates that would significantly increase the cost to the industry and make the industry uncompetitive are unreasonable. Similarly, a reasonable licensing rate must reward the licensor with adequate compensation for contributing its essential patents to a standard. Compensation is adequate if it provides the licensor with the incentive to continue investing and contributing to the standard in future time periods.
- Non-discriminatory relates to both the terms and the rates included in licensing agreements. As the name suggests this commitment requires that licensors treat each individual licensee in a similar manner. This does not mean that the rates and payment terms can't change dependent on the volume and creditworthiness of the licensee. However it does mean that the underlying licensing condition included in a licensing agreement must be the same regardless of the licensee. This obligation is included in order to maintain a level playing field with respect to existing competitors and to ensure that potential new entrants are free to enter the market on the same basis.

These concepts, and the evolving (and sometimes controversial [28]) FRAND approach, have been adapted to the SDI4Apps services by the following FRAND policy adopted by the Service Providers.

Third-party beneficiaries of the SDI4Apps FRAND policy are entitled to expect that each SDI4Apps Service:

- Is provided and used only on an "As Is" basis, without warranties or conditions of any kind, either express or implied, unless required by applicable law or agreed to in writing.
- Will continue to be thus provided for at least 2 years after the SDI4Apps project ends.
- Is provided on a fair, reasonable and non-discriminatory basis to all users who wish to use it.
- The service is available free for Partners' research, training and private use.
- Commercial and external research users' fees for use of the service will be based on rates that:
- Provide the Service Provider with an adequate incentive to be able to continue investing and contributing to the service in future time periods.
- Are based on a common approach,
- Are not anti-competitive and are reasonable even if no other alternative similar service exists.
- Documentation, support and communications with the Service Provider is through <http://www.SDI4Apps.eu> only.

In the same way that FRAND licensing has strong implications for innovation and barriers in standards and patent IPRs, the SDI4Apps FRAND policy is intended to balance the interest between different stakeholders, foster Innovation and overcome barriers in the wide take-up and use of the SDI4Apps services and applications to access and more fully participate and contribute to the European Digital Single Market [29].

4 DISSEMINATION ACTIVITIES

4.1 Events

INSPIRE Implementation in the Danube Region Zagreb

29-30 April 2014

A workshop organised by the European Commission Joint Research Centre. Tomas Mildorf as a representative of SDI4Apps project was invited to give a presentation on the project contribution to the Danube Region, focusing on data and services.

8th INSPIRE Conference Aalborg

16 - 20 June 2014

SDI4Apps was co-organiser of workshop Open Data for Stimulation of SME Businesses in Agriculture, Transport, Tourism and Environment

Open and Linked Open Data for Agriculture, Forestry, Environment, Transport and Rural Development

The workshop was organised as a part of 18th International Conference on Information Systems for Agriculture and Forestry from 16th till 17th September 2014 at the Latvia University of Agriculture, 2 Liela Street, LV-3001 Jelgava, Latvia. The purposes of the workshop were:

- To present existing activities focused on open and linked open data in agriculture, forestry, environment and transport.
- To exchange experience and knowledge between teams and projects developing platforms for open and linked open data.
- To introduce the open and linked open data principles and activities towards a broader community.
- To present the results of the OPEN DATA HACKATHON

INSPIRE Conference 2015 Lisbon

25 - 29 June 2015

SDI4Apps had a joint workshop together with the Smart Open Data project.

19th International Conference on Information Systems for Agriculture and Forestry

16th - 17th September 2014

SDI4Apps co organised conference and organised workshop around Open Data

Geomatics in projects 2015

07 - 08 October 2015

A conference was co-organised by the SDI4Apps and OpenTransportNet projects.

Danube Open (Geo) Data Hackathon - Developers' Workshop Bratislava

16 - 17 October 2015

SDI4Apps was co-organising a Danube Open (Geo) Data Hackathon - Developers' Workshop

ICT-2015 Lisbon

20/10/2015

SDI4Apps was organising workshop Building Apps Based on Open (Spatial) Data. The objective of the session was to exchange experience with the commercialisation and long-term sustainability of such applications.

GEO-XII-GEOSS AIP-8 Mexico City

09 - 10 November 2015

SDI4Apps was presented at this GEO summit in the frame of the GEOSS AIP-8 side event. The work during project was presented

Roadshow Prague

18 January 2016

Workshop “Otevřená data jako příležitost pro komerční sektor” was organised together with OTN and FOODIE projects



Figure 23: Roadshow Prague

Latvian Workshops

26 - 27 January 2016

On 26th of January Zemgale planning region organised Workshop in Jēkabpils about Open data and possibilities to use Open data. It was held in Krustpils county council building and more than 20 people, mainly representatives of different municipalities, participated.

The workshop was opened by Toms Ceļmillers, who is senior consultant at Digital Administration Department of Information Society policy at Ministry of Environmental Protection and Regional Development. He began with informative presentation about what is open data and what is the legislation regarding open data. Terms as information, open data, reuse of information, metadata, and dataset were explained. This section was very useful for the beginning of workshop, because most of the representatives of municipalities had no previous experience with term “open data” and idea under the term.

Roadshow Klatovy

17 February 2016

This is a Czech workshop prepared in cooperation with the FOODIE and OTN projects. Topics:

1. Tourism
2. Education
3. Transport

4. Agriculture
5. Territorial planning and decision



Figure 24: Klatovy Roadshow

Conference and MedHackathon Patras

13 - 15 July 2016

Events organised by SDI4Apps in cooperation with University Patras, FOODIE, OTN and Capsela project



Figure 25: Patras MedHack

INSPIRE Conference Barcelona

26 - 30 September 2016

SDI4Apps participate on organisation of workshop Citizens observatories and VGI

JRC Ispra MIG-T

26 October 2016

Presentation of projects SDI4Apps, FOODIE and OTN on MIG - T meeting

SDI4Apps Stakeholder conference Vidzeme

8, December 2016

Conference presented project results to community stakeholders from national, regional and local level in Latvia. The aim of the conference was to present SDI4Apps results, promote the possibilities of creating and using open data, demonstrate practical data use cases in different domains, including tourism, transport, spatial planning, education and agriculture from Latvia and from other European countries. The main target audience were potential users of SDI4Apps platform and pilot applications - Local Municipalities in Vidzeme region, representatives from national level public organizations, academia, students, tourism specialists and SME's. More than 50 people attended conference. Nine different presentations, a networking and practical SDI4Apps platform hands-on demonstrations formed the conference content. Many specialists from municipalities acknowledged that there is lack in practical skills and specific knowledge in public sector, that hampers the faster uptake and usage of various open data solutions and praised the initiatives, such as this conference, that showcase various use cases for open data solutions.

After the conference an evaluation survey was issued to the participants and 18 attendees provide their feedback (~ 35% of all attendees). Most of the attendees praised the conference and said that the information they gained will be valuable in their professional lives. Most of the surveyed said that most important open data and solutions or services for them would be in the areas of spatial planning, tourism management and promotion, transport management and navigation.

Roadshow and FOODIE Hackathon Prague

23. January 2017

Common Czech Workshop with projects FOODIE and OTN

Conference-Open Technologies for Growth Riga

02. February 2017

SDI4Apps featured prominently in Latvian Open Technology Association conference:

This February Latvian Open Technology Association held their annual award giving ceremony, celebrating the institutions that promote the usage of open data in Latvia, where one of the nominees was SDI4Apps partner from Latvia - Vidzeme Planning Region (VPR). VPR received certificate of recognition for its involvement in the SDI4Apps project. VPR has led the social validation work package and promoted the usage of open data to a broader public on the regional level, by organising the conference "Open Data for Regional Development".

The award ceremony was organised within the Latvian Open Technology Association conference "Open Technology for Growth", that included a key speaker who also represented SDI4Apps consortium - Dr John O'Flaherty, Technical Director of MAC Ltd (Ireland), one of the project SDI4Apps partners. He shared the Ireland's experience in geospatial linked open data business opportunities and introduced one of the SDI4Apps pilot applications - Easy Data Access.

Stakeholder workshop 1: Open data use cases in tourism and SPOI promotion in Vidzeme Planning Region

08. March 2017

Workshop was attended by tourism specialists and tourism SMEs from 6 Vidzeme region municipalities - Valmiera, Cēsis, Amata, Pārgauja, Kocēni, Burtnieki.

Raitis Bērziņš, BOSC, presented the SDI4Apps project, its activities related to tourism. Raitis Bērziņš promoted the use of open data and the possibilities that it offers. He also introduced audience with the hackathon results that worked with tourism solutions. His main focus was the Smart Points of Interest Application. He presented the App's functionality and how tourism specialists and entrepreneurs can use it for their needs.

Stakeholder workshop 2 open data use cases in tourism and SPOI promotion Vidzeme Latvia

13 March 2017

Following the first workshop in Valmiera on 13.03.2017., the second workshop in Cēsis was focused on further exploring data use case possibilities for tourism promotion, and educating local municipalities specialists - a potential users of SDI4Apps cloud framework and pilot services, about available tools, data sets and use cases for tourism promotion in digital environments. Visvaldis Gercāns, ICT expert from Mapping agency "Jāņa Sēta" introduced the audience with several characteristics of different types, classification and characteristics of various spatial data and open and linked spatial data and their practical use cases, including linking points of interest with other types of data, such as land use, road infrastructure, vegetation, event locations etc. and use cases of data usage together with augmented reality solutions, thus providing added services and features, that could enrich user experience and make such solutions more attractive to tourists and data providers. Continued discussion on various ICT tools for tourism points of interest promotion, led by Reinis Zitmanis, further showcased the need for fully developed and upgradable web based and mobile based data solutions. In discussions, specialists agreed that pure web-based applications and services are not enough, and all SPOI promotion should happen on equal levels both in web-based platforms and mobile devices. The trend in tourism industry is that tourists go to their destinations less-prepared, and rely on mapping services at places, which means that necessities for mobile solutions and solutions that can work off-line are becoming more requested. Inclusion of various linked open data with SPOI, such as environmental data, road and transport information, information in event locations, land use data is seen by municipalities as a very beneficial features and functionalities. However, the main concerns are regarding the complexity of such apps that offer wider linked data solutions together with simpler SPOI promotion. Such functionality, especially on mobile and using augmented reality solutions, certainly could be seen as a very attractive for users, such as tourists, however it would require a larger input and coordination from data providers and those responsible for data relevance updating (such as municipal agencies), both from resource and technological skills perspective. Also, concerns about smooth running and speed of such linked data and functionality services, were raised. From user perspective added, linked functionality and services are favourable, but only if sufficient ease of use and speeds of services are ensured.

Final conference Sicily

14 - 15 March 2017

Final presentation of SDI4Apps

*09:30 - 12:30 Final conference with policy makers and students

- 9:30 - Introduction
- 09:40 - greetings from local Authorities
- 10:10 - SDI4Apps)
- 10:25 - Irish pilot

- 10:45 - ESS pilot
- 11:05 - OLU, SPOI, OTM
- 11:20 - SPOI app demo
- 11:25 - INSPIRE4Youth
- 11:45 -discussion
- 12:30 Conclusions

Stakeholder meeting Jelgava Zemgale

22. March 2017

On 22nd of March Zemgale planning region organised Workshop in Jelgava about Open data - tourism, education, land management - Sdi4Apps Project results with focus to explore and introduce municipalities and interests about open data possibilities, cooperation and Information databases in Zemgale region. Workshop was targeted mainly to representatives of municipalities - development planners and other interested parties.

Presentation were made about all the project pilots to show different possibilities and potential of the data usage case by case depending on the pilots readiness level. The questions and discussion were mainly about data reliability, functionality options and editing information without crowdsourcing options so it can really be used in the municipalities' homepages by assuring correctness of information provided. The most interesting and big discussion raised about pilot were Pilot I, II as tourism data and about pilot V (new QUIZZ) as great opportunity to make questionnaires in educational sphere. Also a lot of interest raised about possibilities to merge and analyse those pilots - for example, brownfields potential in tourism sphere or transport as great not explored tool in the development of local and regional analyses.

In the end of the workshop, participants were informed and decided to collect database of the tourism objects in Zemgale region with updating once in a year from all region's municipalities.

Stakeholder workshop 3 open data use cases in tourism and SPOI promotion Vidzeme Latvia

22. March 2017

The closing workshop on SPOI promotion and open data use cases in tourism, for stakeholders in Vidzeme region built upon acquired knowledge in previous two workshops, was focused in SPOI promotion in mobile environments, and introduced audience with advanced satellite gathered spatial open data and their application and integration possibilities. Agris Brauns from the Institute for Environmental Solutions introduced local stakeholders with the COPERNICUS satellite data use possibilities for tourism promotion. Since the end of 2016. The Institute for Environmental Solutions (IES) has received the European Commission's Copernicus Relay status, which makes IES the national ambassador of the Earth's most ambitious observation programme. In 2016 the European Commission opened an application for volunteering institutions (Copernicus Relays) that can help to increase the uptake of the freely available Copernicus data, promote the benefits and opportunities of Copernicus, as well as coordinate domestic activities related to the programme. The Institute for Environmental Solutions (IES) has received the European Commission's Copernicus Relay status, which makes IES the national ambassador of the Earth's most ambitious observation programme.

4.2 Hackathons

Jelgava Hackathon

16th - 17th September 2014

The Open Data Hackathon was co-organised by the SDI4Apps project within the frame of the ISAF conference (<http://isaf2014.info/>)

Open Data Hackathon Dresden

14-16 September 2015

SDI4Apps co-organised an open data hackathon in the frame of the 19th International Conference on Information Systems for Agriculture and Forestry

Danube Open (Geo) Data Hackathon - Developers' Workshop Bratislava

16 - 17 October 2015

SDI4Apps was co-organising a Danube Open (Geo) Data Hackathon - Developers' Workshop

Baltic Open Data Hackathon in Latvia

16. - 18. March 2016

The Hackathon organised by SDI4Apps was focused on

- Tourism routes for e-vehicles.
- Heritage tourism routes.
- Land use: investment attraction for brownfield areas, mapping of brownfield connectedness to major communications and TEN-T networks, models of using OULU as a map for investment attractiveness

Conference and MedHackathon Patras

13 - 15 July 2016

Events organised by SDI4Apps in cooperation with University Patras, FOODIE, OTN and Capsela project

Hackathon on INSPIRE Conference Barcelona

26 - 30 September 2016

SDI4Apps co organise this event together with projects from Citizens observatories, DG JRC, DG Envi and DG RTD.

Hackathon Conference Pilsen

3 - 6 October 2016

The Open Data Hackathon was a part of a Joint conference focused on geo-sciences applications. The best hackathon projects was presented and awarded during the conference.

Hackathon Kosice

26-27 November 2016

SDI4Apps project contributed to the event with the dedicated workshop, presenting the main outcomes of the project to the T-systems Hackathon 2016 participants and providing the mentoring support during the event.

Workshop details: http://hackathon.myt-systems.sk/#hackathon_workshop

Content of the workshop:
https://docs.google.com/presentation/d/1dD1YVYQKbRzT5XfOvVda09jmRBprhjuHc57Z7B4IE8/edit#slide=id.g19845dc268_1_6

Danube HAcK

12 - 13 December 2016

Danube HAcK was focused on

- collection of the evidence about the possible added value generated on top of open (geo) data , related application programming interfaces (APIs) and software tools, identified within the Danube region,
- explore the potential of citizen science and participation in creating and using value added services and applications,
- and test the requirements and benefits of INSPIRE, creating and re-using related data and services, including apps demonstrating the possibilities of INSPIRE infrastructure and where possible with use of open Data.

Roadshow and FOODIE Hackathon Prague

24.- 25. January 2017

HAcKathon organised by FOODIE with SDI4Apps cooperation

4.3 Publications

Mildorf, T. & Charvát, K., 2013. Inovativní služby založené na propojených datech - projekt SDI4Apps (Innovative services based on linked data - the SDI4Apps project). Geobusiness. Available at: <http://www.geobusiness.cz/2013/11/inovativni-sluzby-zalozene-na-propojenych-datech-projekt-sdi4apps/> [Accessed May 31, 2014].

Charvát, K. et al., 2014. SDI4Apps. In P. Cunningham & M. Cunningham, eds. IST-Africa 2014 Conference Proceedings. IST-Africa 2014. IIMC International Information Management Corporation.

Cerba, O., Prezentace z projektu SDI4apps (Presentation from the SDI4Apps project). <http://prostudenty.blogspot.cz>. Available at: <http://prostudenty.blogspot.cz/2014/04/prezentace-z-projektu-sdi4apps.html> [Accessed August 25, 2014].

Vohnout, P., Cerba, O., Kafka, S., Fryml, J., Krivanek, Z., & Holy, S. (2014, May). SmartTouristData approach for connecting local and global tourist information systems. In IST-Africa Conference Proceedings, 2014 (pp. 1-6). IEEE.

Mildorf, T. et al., 2014. Open Data Platform for Data Integration, Visualisation and Map Design. In T. Bandrova, M. Konecny, & S. Zlatanova, eds. Thematic Cartography for the Society. Lecture Notes in Geoinformation and Cartography. Springer International Publishing, pp. 3-11. Available at: http://link.springer.com/chapter/10.1007/978-3-319-08180-9_1 [Accessed July 11, 2014].

Mildorf, T. et al., 2014. Open Land Use Map. Agris on-line Papers of Economics and Informatics, 6(4), pp.81-88.

M. Tuchyna, T. Kliment, P. Pastorek, B. Krsak, Z. Okanikova, 2015. 15th International Multidisciplinary Scientific GeoConference SGEM 2015, www.sgem.org, SGEM2015 Conference Proceedings, ISBN 978-619-7105-34-6 / ISSN 1314-2704, June 18-24, 2015, Book2 Vol. 1, 525-532 pp

Čerba, O., Mildorf, T. & Berzins, R., 2015. Designing SDI4Apps POI Base. In Joint Proceedings of SSN-TC and OrdRing 2015. 14th International Semantic Web Conference. Bethlehem, Pennsylvania, United States: Sun SITE Central Europe, pp. 43-56. Available at: <http://ceur-ws.org/Vol-1488/paper-05.pdf> [Accessed December 14, 2015].

O'Flaherty, J. "Community Co-design of a Geospatial Linked Open Data Platform for Environmental Management." AGRIS On-line Papers in Economics and Informatics 7.2 (2015): 55.

Čerba, O. et al., 2015. Integration and Visualization of Tourism Data. In 27th International Cartographic Conference. Rio de Janeiro, Brasil: International Cartographic Association. Available at: http://icaci.org/files/documents/ICC_proceedings/ICC2015/papers/4/436.html [Accessed December 14, 2015].

Matyska, Ludek. "The Czech e-Infrastructure and the European Grid Infrastructure Perspective." International Symposium on Environmental Software Systems. Springer International Publishing, 2015.

KRŠÁK, Branislav - SIDOR, Csaba - ŠTRBA, Lubomír - MITTERPÁK, Marek: Usage of linked open data for the measurement of mining tourism POIs' impact on the competitiveness of a destination: Research notes part 1 / Branislav Kršák ... [et al.] - 2016. In: Acta Montanistica Slovaca. Roč. 21, č. 2 (2016), s. 162-169. - ISSN 1335-1788 Available at: <http://actamont.tuke.sk/pdf/2016/n2/10krsak.pdf>

Čerba, Otakar, et al. "SDI4Apps Points of Interest Knowledge Base." Progress in Cartography. Springer International Publishing, 2016. 229-237.

Tuchyňa, Martin, et al. "Cloud based geospatial support for ecosystem services evaluation in Slovakia-A study case of SDI4APPS project." Conference: SGEM Multidisciplinary Scientific Conference.[online] Available at. 2016.

Charvat, K., Cerba, O., Kozuch, D., & Splichal, M. (2017). Geospatial Data Based Environment in INSPIRE4Youth. Procedia Computer Science, 104, 183-189.

Fotopoulou, E., Zafeiropoulos, A., Papaspyros, D., Hasapis, P., Tsiolis, G., Bouras, T., ... & Zanetti, N. (2016). Linked data analytics in interdisciplinary studies: The health impact of air pollution in urban areas. IEEE Access, 4, 149-164

5 CONCLUSION

SDI4Apps project reached very good visibility for all communities outlined in the initially defined promotion campaign in Y1 D8.3.:

- tourist SME's;
- urban and regional development agencies/institutions;
- public administrations;
- scientists;
- IGOs/INGOS/NGOs/National governments;
- public agencies concerned, related or affected in any issue surrounding aggregation, processing and analysis of spatial and tourist data in the context of the regional development;
- developers;
- society.

Project dissemination activities engaged scientific community, policy makers, local and regional stakeholders other organizations and other EU projects. We use mix of dissemination tools, with biggest focus on in situ meetings direct discussion, but also on hackathons. Project dissemination activities and channels ensured that structured and targeted information about project activities, results, generated added value and innovations are reaching not only limited expert audiences, but a much broader target audiences from app developers to the end users of open data solutions. Moreover, the implemented promotion campaign ensured that two-way communication is taking place, closely engaging target audiences, and generating feedback that allowed for constant improvement of project results and their accessibility to users. Important part was also question of IPR, which is important for future business models. We combine openness with possibilities to generate future business. The promotion activities helped to achieve the project's goal to bridge the gap between the top-down managed world of INSPIRE, Copernicus and GEOSS and the bottom-up mobile world of voluntary initiatives and thousands of micro SMEs and individuals developing applications based on GI.

REFERENCES

- [1] www.plan4all.eu
- [2] See “IP Management in the Competitiveness and Innovation Framework Programme” Fact Sheet, European IPR Helpdesk, October 2012, available at <https://www.iprhelpdesk.eu/sites/default/files/newsdocuments/Fact-Sheet-IP-Management-in-CIP.pdf>
- [3] From “Your Guide to IP Commercialisation”, The European IPR Helpdesk, available at www.iprhelpdesk.eu/sites/default/files/documents/EU_IPR_Guide_Commercialisation.pdf
- [4] From “Your Guide to IP Commercialisation”, The European IPR Helpdesk, available at www.iprhelpdesk.eu/sites/default/files/documents/EU_IPR_Guide_Commercialisation.pdf
- [5] http://sdi4apps.eu/open_land_use
- [6] <http://sdi4apps.eu/spoi>
- [7] <http://opentransportmap.info>
- [8] <https://github.com/SDI4Apps/cloud-platform>
- [9] Using the Commission’s Final Report format template B.2, available at ftp://ftp.cordis.europa.eu/pub/fp7/docs/final-report_en.doc
- [10] These terms are defined later in this section.
- [11] https://en.wikipedia.org/wiki/Comparison_of_free_and_open-source_software_licenses
- [12] https://en.wikipedia.org/wiki/Apache_License
- [13] https://en.wikipedia.org/wiki/European_Union_Public_Licence
- [14] https://en.wikipedia.org/wiki/GNU_General_Public_License
- [15] Copyleft means can be used, modified, and distributed freely on condition that anything derived from it is bound by the same conditions, <https://en.wikipedia.org/wiki/Copyleft>
- [16] <http://www.mysql.com/company/legal/licensing/>
- [17] <http://www.openoffice.org/license.html>
- [18] <http://creativecommons.org/licenses>
- [19] <http://wiki.creativecommons.org/CC0>
- [20] <http://opendatacommons.org>
- [21] <http://wiki.creativecommons.org/Data>
- [22] Adapted from <http://www.wipo.int/export/sites/www/about-ip/en/iprm/pdf/ch2.pdf>
- [23] Adapted from <http://opendatacommons.org/licenses/>
- [24] <https://creativecommons.org/licenses/by/4.0/>
- [25] <https://creativecommons.org/licenses/>
- [26] www.plan4all.eu
- [27] https://en.wikipedia.org/wiki/Reasonable_and_non-discriminatory_licensing
- [28] “Fair, Reasonable and Non-Discriminatory (FRAND) Licensing Terms - Research Analysis of a Controversial Concept”, JRC Science and Policy Report, European Commission Joint Research Centre Institute for Prospective Technological Studies, 2015, <https://ec.europa.eu/jrc/en/publication/european-scientific-and-technical-research-reports/fair-reasonable-and-non-discriminatory-frand-licensing-terms-research-analysis-controversial>
- [29] http://ec.europa.eu/priorities/digital-single-market_en