# Deliverable D2.1.4
Interim online community engagement report

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Executive summary

This deliverable summarizes the most important activities targeting the development and support of a community of adopters and collaborators around EUCLID using online communication channels. The aim of our online community engagement plan is to use a wide variety of Web and social media mechanisms in order to make sure that the results of the projects are promoted to the relevant audiences, but also, and most importantly, that our curriculum development activities reflect the real needs of Linked Data practitioners, and that they rely on state-of-the-art learning materials and delivery methods to do so. This deliverable will provide a summary of the community engagement activities undertaken across specific channels, and discuss their impact. This latter aspect is enabled by a monitoring tool, whose implementation was initiated in the first year of the project. The tool gives an overview of the most relevant topics the Linked Data community is interested in, thus allowing EUCLID to adjust its message and update its outcomes to reflect these demands in due time. In the context of the overall EUCLID work plan, the deliverable is related to D2.1.3, which outlined the plans for community engagement, and to D3.4.1, in which we further discussed our dissemination and exploitation approach from a management-strategic point of view. This deliverable explains how these plans have been implemented in the first half of the project.
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Abbreviations

DL – Description Logic
FOAF – Friend of a Friend
HTTP – Hypertext Transfer Protocol
KIT – Karlsruhe Institute of Technology
KMi – Knowledge Media Institute
LD - Linked Data
OA – Ontotext AD
ONTO – Ontotext AD
OU – Open University
OWL – Ontology Web Language
OWL-S – OWL for Services/ OWL-based Web Service Ontology (formerly DAML-S)
RDF/S – Resource Description Framework / Schema
SPARQL – SPARQL Protocol and RDF Query Language
URI – Uniform Resource Identifier
URL – Uniform Resource Locator
WP – Work package
XML - Extensible Markup Language
Online community engagement: plan and purpose revisited

The aim of our online community engagement plan was to set up and use a combination of online dissemination and interaction channels, feasible within the project’s duration and resource constraints, that will allow the consortium to promote the main outcomes of EUCLID, gather feedback, and facilitate take-up by other trainers and professional education institutions. In order to address this aim we use both broadcast and responsive channels. The former are used to announce core activities and results of the project, in the first year of the project we have successfully used mailing lists, Twitter, LinkedIn, SlideShare, Vimeo, iTunesU, and the project Web site for this purpose. The latter are specific to the Linked Data community and target specific content topics, to which the project is seeking input, or, though to a lesser extent, to the functionality of the channels used, in particular commenting, rating, likes, followers etc. The initial list of channels has been revised based on the experiences made in the early stage of the project. We decided not to use Facebook, as the audiences reached through the social network are already covered by Twitter, LinkedIn, and mailing lists. Further on, YouTube was replaced with Vimeo due to limitations in the size of uploads of the former. A collaboration with Videolectures.net is planned for the second half of the project in the context of the ESWC summer school, which will be based on our curriculum. Finally, with a critical share of the curriculum already in place, we will pursue our plans to engage with question answering sites such as answers.semanticweb.org, monitoring topics related to the project and responding to specific questions and pointing to our learning materials for further information. This activity will be facilitated by our monitoring platform, a first version of which is already available for trial by the project consortium.

1 http://summerschool2013.eswc-conferences.org
Channels and activities

Our dissemination and community building includes both promotional and engagement activities; the second serve two purposes: first, and foremost, the nature of the project relies on the availability of an active community of students and potential collaborators who will ensure that our training activities reach their audiences and are taken up by other initiatives; second, the community of scientists and developers to which this project is affiliated promotes a lively discussion and early feedback culture, which we would like to leverage in order to gather input for our learning materials and training activities, and to find potential collaborators and users who might be interested in organizing joint events or using the resources developed in the project, possibly in customized form, for their own courses and tutorials.

Broadcast channels

Web site

The project Web site gives a broad and comprehensive overview of all activities undertaken and planned in the project. This includes a repository of our learning materials (see Figure 1), clustered according to the structure of the syllabus and by type of content (textbook, course, quizzes and exercises, screencasts, slide decks, webinar recordings), as well as an overview of the events to which the project is associated. First and foremost, these events are of training nature (see Figure 2, items 1 and 2), both online (webinars) and offline (tutorials and on-demand training, as well as summer schools); however, the project is also involved in a range of more general events oriented towards the development of a curriculum for data science, such as the session organized at this year’s European Data Forum under EUCLID’s moderation. These activities are documented on a dedicated page summarizing the general principles and guidelines derived from the experience of the individual partners in producing and delivering curricula for practitioners and management executives, within and complementarily to the project. Last, but not least, the Web site offers pointers to the other community engagement channels used in the project (see Figure 2, item 3) and to related training programs and pointers to further reading (see Figure 3). In this way the visitor is offered an overview of the most important initiatives in the data science field, and the activities driven by the consortium are put in a broader context. D1.1.2 explains the relationship between EUCLID and these initiatives.
Figure 1: Project Web site as means to promote learning materials and other engagement channels

Figure 2: Project Web site as means to promote EUCLID-related events (1, 2)

Figure 3: Overview of related resources and training activities

Twitter\(^3\)
The project Twitter account is used to promote EUCLID specific activities, but also as a means to inform the interested audience on a broad range of topics related to the area in which the project operates, including content-specific themes such as Linked Data, semantic technologies, Big Data management and analytics, and

\(^3\) http://www.twitter.com/euclid_project
eLearning and training topics such as MOOCs, eLearning platforms, curriculum development resources, as well as related training programs and events. Our promotional efforts focus on the materials produced by the project and on the events we are involved in. The release of a new type of material on the Web site, SlideShare and Vimeo is announced via Twitter (as well as mailing lists and LinkedIn, see below). Similarly, we tweet about the dates of webinars, tutorials and other activities we are involved in, including reminders as the events are approaching. The project has posted over 400 tweets (including re-tweets), and has as of end of April 2013 over 170 followers, which an average weekly growth rate so far of around 10 followers (more around webinars). The followers include members of the Linked Data community, but also a fair share of eLearning and software developers and consultants, otherwise difficult to reach out to using more traditional dissemination mechanisms such as Linked Data and Semantic Web-related mailing lists. Figure 4 depicts our Twitter account and a selection of tweets authored by us or members of the community.

**LinkedIn**

In late March 2013 set up an open discussion group on LinkedIn about education and training around semantic technologies (see Figure 5). The group’s primary purpose is to support the development of a community of professionals interested to discuss training-related issues, in particular the definition of joined syllabi and curricula for the field of Linked Data, but also in the broader context of an emerging data science disciplines, to initiate training programs, run tutorials and other forms of training, and exchange experiences and ideas.

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4 All stats in this deliverable are of 30.04.2013. Figures may differ from other deliverables, depending on when the measurements were undertaken during the editing of the reports.


6 Due to LinkedIn policies we were not allowed to use the term ‘Linked Data’ in the name of the group, as LinkedIn bans the use of the term 'link*' from any non-LinkedIn-driven activities.
about the most appropriate delivery methods to inform and educate a growing audience of IT practitioners, data architects, and executives willing to learn about Linked Data and its application potential. As of today, the group has over 120 members, including eLearning professionals and IT developers and consultants interested to learn about potential training offers in the Linked Data field (see Figure 6). EUCLID leverages the discussion group to announce its main activities, but also to exchange ideas and gather feedback on more general topics such as best practices and design guidelines for running effective professional training programs. The group is run and administered by the project coordinator. We decided against using a dedicated project account in order to avoid cold start problems related to the lack of a critical mass of connections within the LinkedIn network, which would delay the actual community building activities planned by the project. The group is, nevertheless, unambiguously EUCLID-branded through the use of the project logo as pictorial identifier; furthermore, the textual description of the group clearly mentions EUCLID as principal driver of the activity. In this initial stage, the group uses an approval-only membership policy. Members can freely post items, as well as share, comments and rate existing entries. EUCLID-related posts on our education group are taken up by members of the community in other discussion groups on LinkedIn. Figure 5 shows a post advertising the first part of our curriculum in the Semantic Web discussion group with over 13,000 members.

Figure 5: LinkedIn group on education and training on semantic technologies
EUCLID uses SlideShare to publish and promote the slide decks used in the online webinars. Each part of the curriculum is associated to one core slide deck, which is uploaded to the project account in various versions before the corresponding webinar takes place. In addition, the account hosts presentations from the data science curriculum organized by the project at EDF2013, as well as a general introduction to the project. Figure 7 shows an overview of the account. As of April 2013 there are 8 presentations uploaded to the site.

The project uses a dedicated account, branded using the project logo. As Figure 7 illustrates, the project SlideShare presence refers to the project Web site and the project Twitter account, and gives a short description of EUCLID’s aims and objectives. Unlike LinkedIn, SlideShare is used primarily as a means to openly publish and distribute content, and less for its social networking features. As such, the set-up of a new, project-specific account was preferred to the use of an existing account of a member of the project team. Figure 8 gives insight into the impact of the community engagement activities run via this channel, as provided by SlideShare; as demonstrated by the figures, the project succeeds, one year in its operation, to reach an audience of more than 1,500 users, which is a significant size for a project of this scope and budget, promoting a very specific set of technologies.

Figure 6: High-level membership statistics, courtesy of LinkedIn

Figure 7: SlideShare as primary channel for the publication and distribution of slide decks

http://www.slideshare.net/EUCLIDproject
The project has set up a Vimeo account to publish its video-based learning materials. These consist of recordings of the webinars, as well as screencasts of a broad choice of tools used as examples in the curriculum. As of April 2013 the project has published 22 items. Just as for SlideShare, we use a dedicated project account, which had to be upgraded to the professional version with cost as the size of the videos exceeds the constraints of the default, cost-free version. More concretely, a Vimeo PRO account allows up to 500GB storage, 250,000 plays, and advanced analytics, which will also be exploited in the monitoring platform.

The video materials bring in additional viewers to the real-time attendants of the webinars. So far, viewing figures range from 10 (for videos published in the second half of April 2013) to 50 (for videos that are approximately one month old). Figure 10 shows statistics for one of the video screencasts produced by EUCLID.

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8 [http://vimeo.com/user15631788](http://vimeo.com/user15631788)
EUCLID courses provide an integrated overview, structured according learning paths, of all materials produced in the project. They are available published on the project Web site in HTML format and on iTunes U as iPad and iPhone downloads. Two of the six chapters are currently released using this prestigious channel; there is a latency in the publication process compared to the other types of eLearning materials due to the actual course production process, defined in WP1, and to Apple iTunesU quality assurance procedures. Figure 11 should give an impression of the online appearance on the courses.
Mailing lists
As laid out in the online community engagement plan, our broadcasting activities primarily target semantic-web@w3.org, public-lod@w3.org, community@sti2.org as well as a number of internal or project-specific mailing lists to which the individual partners are subscribed. Most of these channels are primarily oriented towards announcements, with public-lod@w3.org being probably the only exception – experience has shown that interactions on this mailing list often turn into multiple threads of intricate technical and sometimes deeply philosophical discussions and altercations, which are sometimes challenging to translate into direct feedback. Mailing lists are addressed by individual members of the project team, as a general email account was eventually considered too ‘artificial’ for the informal and individualistic culture of most of the mailing lists.

We now turn to a description of the responsive channels used so far in the project. Some of the channels introduced so far also include features, which are more appropriate to collect feedback and interact with the community.

Responsive channels

Web site
The project Web site is equipped with comment functionality in order to allow interested visitors to provide ideas and feedback on every line of activity in the project (see Figure 12). This is provided by a Drupal plug-in. In addition, changes to the Web site can be monitored via RSS.

Twitter
Twitter is used as a responsive channel to individual requests, in particular to support the interactive parts of our training events, most notably webinars. Additional information about feedback collection and interaction with students via webinars are available in D2.2.2.

LinkedIn
LinkedIn discussion groups include rating and commenting features, which we leverage in order to collect additional feedback on our activities. However, the actual goal of the discussion group initiated by EUCLID is broader than merely engaging with the community on a yet another channel. The effort has a formative role, aiming at providing a forum for education and training-related discussions on a platform that specifically targets professionals from various sectors. So far, this role is yet to be achieved – the group was started late March 2013, and by the nature of the social media channel, it will require at least several months of constant activity to reach its objectives.
Webinars
Webinars allow us to reach out to a wide community of practitioners interested in Linked Data technologies and how these can be applied to solve specific data management and integration problems. Promoted via mailing lists, Twitter, LinkedIn and the business networks of the individual partners (for instance, meet-ups proved to be an excellent source of additional webinar attendants, see D2.3.2), they reach an international audience of hundreds of students (see Figure 13). Following up the announcement of the webinars, the project has attracted high interest from various institutions in Europe and around the world, some of which we have already initiated more substantial collaborations. This includes not only the associate partners of the project, but also other projects and organizations, some of which have been described in D2.3.2, which reports on our real-world community engagement activities.

Figure 13: Geographic distribution of the webinar attendants

SlideShare and Vimeo
Indirect feedback on the quality of our materials and the way they are used within the broader community can be derived from an analysis of the responsive functionality provided by our main content distribution channels, in particular SlideShare and Vimeo. While the feedback collected via these platforms could still be more substantial – in fact, one of our aims in the second half of the project will be to increase our community engagement efforts on these channels by exploiting their social networking features (likes, subscriptions, followers) – they are already indicative for a positive trend, and match the responses received via more active channels such as Twitter. Figure 14 shows an excerpt of the most recent activities on Vimeo.

Figure 14: Recent activities of EUCLID users on Vimeo
Mailing lists
EUCLID has solicited feedback on its curriculum development materials in the second part of the curriculum starting from March 2013. Inline with the discussion culture of the Linked Data mailing list, the consortium decided to ask for comments and inputs solely for those topics that are less established in the community. Core topics such as SPARQL or the provisioning of Linked Data are already well covered through existing sources, which were used as a starting point for the learning materials produced in the project; this was the main rationale for initiating our mailing lists-based feedback collection only later in the project. In addition, in order to ensure that a significant amount of comments are received, these feedback solicitation requests are scheduled at specific time intervals, as the community might react negatively to too frequent messages.

In March 2013 we have presented to the community our plans to create training materials about the visualization of Linked Data sets. The structure of the very extensive discussions and the list of participants is illustrated in Figure 15. We plan to use the same mechanism for several other topics in our curriculum, including mining and analytics and large-scale distributed processing.

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9 http://lists.w3.org/Archives/Public/public-lod/2013Mar/0152.html
Figure 15: Reactions to feedback solicitation on mailing lists
Measuring engagement effectiveness

In addition to the statistics provided by the individual engagement channels, some of which have been presented earlier in this document for illustrative purposes, the project is developing a custom monitoring platform to ensure that all project decisions are informed by the effect of our dissemination and community building activities. Due to the scarcity of online feedback on delivered content (as Deliverable 2.3.2 discusses, real-world training has been a much richer source of feedback than webinars - even though online feedback, via Twitter has been solicited in webinars and physical training events; anecdotally one participant at the UK Parliament spotted an error in the slides and even providing the slide number and his report by email after the event was not enough to get him to tweet the correction), the monitoring platform has been adapted to rather fulfill the primary purpose of monitoring the fitness of the curriculum, and its balance of topics, to those being discussed in the community.

The first two EUCLID modules cover material well-exercised and developed by the project participants in previous training, over a number of years. However, as noted earlier, in March 2013 W3C mailing lists were approached with a solicitation for feedback on the curriculum. Since this point the lists public-lod@w3.org and semantic-web@w3.org have been monitored both for feedback on this post and for general discussions of EUCLID topics. Technically the RSS feed from these lists have been transformed into RDF and exposed as a public SPARQL endpoint (euclid.sti2.org:8080/openrdf-sesame/repositories/platform). The EUCLID curriculum has been encoded as a SKOS taxonomy and its labels used in text mining over the harvested messages.

In the next reporting period the platform will be extended in three major ways. First, a front end will be built, and demonstrated at the review, by our subcontracting partners fluid Operations. They will also carry out an impact analysis by factoring in the reputation of posters. Secondly, the complete EUCLID curriculum, as well as those of other training efforts in the Linked Data and Data Science domain, will be encoded to compare the prominence of the topics considered within and outside our curriculum. Finally our prototypical application to monitor answers.semanticweb.com and other channels (LinkedIn, for instance, has become a more active source of discussion than our Twitter, SlideShare and Vimeo channels where we had first solicited feedback) will be included; technically there have been problems with deprecated RSS feeds and authentication but these are in hand.

The software is based on the Information Workbench from fluid Operations. The Information Workbench operates on an OWLIM RDF database that is populated by the partner Ontotext with data automatically crawled from social media. The social media sources include Twitter, W3C Mailing Lists, Slideshare, LinkedIn, KLOUT, Vimeo. The main features provided by the Information Workbench are the effective visualization and analysis of this data through monitoring dashboards as well as the implementation of the involved workflows. The current preliminary version of the platform is accessible at http://euclid.fluidops.net/

Monitoring Dashboards

The monitoring dashboards provide end-user friendly overview pages for the gathered social media data and associated entities. In particular, this includes the visualization of relevant data to support analytical tasks. Visualization is based on various widgets, including charts, maps, pivot views, timelines, etc. Further, we provide custom search interfaces for the involved entities to support hybrid queries such as: “Show me the tweets mentioning Euclid from influencers in the social network, on a map as well as a timeline.”

The dashboards are implemented with template pages in the Information Workbench, with templates for the main relevant concepts (users, tweets, forum posts, requests/queries, etc.). The content objects are modelled via the SIOC ontology. For impact analysis, the KLOUT service is to be integrated.

Topics, forums and posts form the basis of our analysis. Each of those concepts has its own wiki page allowing a comprehensive overview of information. The concept pages list general information about available instances. Each instance page is automatically populated through the template mechanism. On forum pages, hot topics are displayed in a tag cloud, while a timeline provides extensive information about all posts
available in the respective forum. Topic pages list posts revolving around the current topic. Post pages, besides providing information about the post itself, show posts of the same topic and by the same author. Figure 16 illustrates the look-and-feel of the current prototype.

**Engagement processes & workflow**

Based on the analysis of events in the community, users of the portal have the ability to respond / take actions depending on the type and state of the respective event. Further, the system can trigger actions automatically for defined events. For this purpose, we defined a simple state-/event-based workflow for the relevant entities involved. The workflow is as follows: PotentiallyInteresting -> (Uninteresting | (ToRespond -> Responded -> Monitor replies))

The implementation will be based on the workflow support in the Information Workbench, including the StatusChangeWidget, ActionableResultWidget and CodeExecutionWidget.
Conclusion

In this deliverable we revisited our plans for online community engagement and provided a summary of the activities undertaken by the EUCLID consortium in the first year of the project using different online and social media channels. We distinguish between broadcast and responsive channels, and tailor our activities on each of these two categories in accordance with the practices and conduct informally established in the Linked Data community. Acknowledging the importance of informed measurements and learning analytics, we are building a customized monitoring platform, which gives an overview of the topics trending in the main online discussion forums and interaction channels popular in the community, and of the impact of our own activities.

A number of aspects foreseen in the original strategy were adjusted based on experiences made in social media engagement. In particular, we streamlined the list of broadcast channels, achieving good impact with a combination of high-quality learning materials and webinars, and sustained promotion via Twitter, SlideShare, Vimeo, LinkedIn and mailing lists. In the second half of the project we will strengthen our presence on responsive channels, and, with a fully functional version of the monitoring platform close to being released, use it to inform our overall promotion strategy online.