



VRE4EIC

**A Europe-wide Interoperable Virtual Research Environment
to Empower Multidisciplinary Research Communities
and Accelerate Innovation and Collaboration**

Deliverable D7.4

Dissemination Plan – Second Version

VRE4EIC DELIVERABLE

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What is VRE4EIC?

VRE4EIC develops a reference architecture and software components for VREs (Virtual Research Environments). This e-VRE bridges across existing e-RIs (e-Research Infrastructures) such as EPOS and ENVRIplus, both represented in the project, themselves supported by e-Is (e-Infrastructures) such as GEANT, EUDAT, PRACE, EGI, OpenAIRE. The e-VRE provides a comfortable homogeneous interface for users by virtualising access to the heterogeneous datasets, software services, resources of the e-RIs and also provides collaboration/communication facilities for users to improve research communication. Finally it provides access to research management /administrative facilities so that the end-user has a complete research environment.

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1 Introduction

The VRE4EIC project aims at making it easier for researchers to reuse heterogeneous scientific datasets from multiple disciplines. The project will deliver a VRE reference architecture, a reference implementation, and prototypes for two VREs (EPOS and ENVRI), removing barriers of existing VREs and providing a single point of homogeneous access to heterogeneous data and tools that support data reuse.

VRE4EIC covers all European Union member states and European Free Trade Association countries, with a potential reach of 70,000 researchers all over Europe.

In order to maximize its impact, VRE4EIC is carrying out a number of dissemination and communication activities.

This deliverable provides the second version of the VRE4EIC dissemination plan. It is an update of the first version delivered at M06 (D7.2), considering the recommendations produced at the mid-project review meeting.

The activities that are reported or planned in this document are related to external communication about the VRE4EIC project (and do not include the intra-project communication mechanisms). For each type of planned activities, the specific responsibilities of project partners have been very clearly defined.

This plan has been strongly inspired by the Guide¹ published by the European Commission about Communicating EU Research & Innovation.

¹ Communicating EU Research & Innovation, A guide for project participants, European Commission, Directorate-General for Research and Innovation, Unit A1 – External & Internal Communication, 2012, ISBN 978-92-79-25639-4.

2 Dissemination strategy

2.1 Objectives

The objectives of the dissemination activities are:

- Informing VRE stakeholders (users, architects, developers, researchers, data publishers) about the VRE4EIC project (intentions, activities, outcome);
- Spreading scientific outcomes towards the VRE researchers' communities;
- Ensuring uptake of project software results (e-VRE) by the Associated Users Group (AUG) members, VRE developers, researchers and users (thus in support of project exploitation strategy).

In order to be effective in these activities that will involve all project partners, it is very important to be very clear about "Who will do What, and When". It is the key outcome of this document to remove the uncertainties about those questions. In particular, this document defines the "owner" of each type of activity: the owner is the person that is responsible for organising and managing that specific activity.

Compared to the initial version of this document (see deliverable D7.2), it includes a comprehensive action plan to give access to and promote VRE4EIC results to wider communities, beyond the EPOS and ENVRIplus communities, including towards businesses (see in particular the plan for updating the web site in section 3.1 and the specific action plan to promote the VRE4EIC assets, see section 3.3). The synchronisation of this plan with the project exploitation plan (see deliverable D7.5) is also reinforced.

2.2 Target groups

Already in the VRE4EIC Description of Work, four target groups have been identified:

- **VRE users.** The main target group of the VRE4EIC project comprises researchers as VRE users. A wide variety of VRE user researchers are concerned, including academic and governmental researchers, research managers, educators, students, innovators, entrepreneurs, up to the interested citizens.
- **VRE architects and developers.** VRE architects and developers that will be targeted can be commercial (large IT companies, SMEs, entrepreneurs) and non-commercial (universities, not-for-profit organisations, foundations, VRE related projects).
- **Scientific VRE researchers.** This target group includes academics who conduct research on VREs, for instance on VRE components and VRE communities.
- **VRE data publishers.** This category encompasses publishers who wish their data to be available to VRE users. Data publishers include research institutions and archives, universities, governmental organisations, various researchers and other data publishers.

In addition, as defined within WP2 (Requirements, use cases and usability, and evaluation), there is a fifth category (identified as "Other") grouping media, journalists, and other wide audience not belonging to the other four target groups.

These target groups may overlap. For example, data publishers can also be VRE users.

The target groups are targeted especially in the domains of earth and environmental sciences related to other sciences (e.g. social sciences, humanities, life sciences, physics and other domains), as well as in the other domains.

Among these target groups, we have identified a specific sub-group of high interest: the Associated Users Group (AUG) that have already expressed interest in exploiting the project results (e-VRE).

Initially the AUG includes 4 SME, and is likely to constitute a focus group that will be a major target for the VRE4EIC dissemination activities.

At this stage of the project (M24), and as more information has been obtained about our specific target groups and some results already produced, we are able to make the dissemination strategy specific for each of them. As examples, we refer to the segmented approach that is being adopted for project asset promotion (see section 3.3) and the target audience identified for each workshop of the updated plan (see section 3.7).

As an important outcome of the project will be the e-VRE building blocks, we plan several mechanisms (see for example the new e-VRE section of the web site) targeted towards VRE architects and developers.

2.3 Dissemination approach

The VRE4EIC dissemination approach can be characterized as pragmatic and collective.

Pragmatic

This document describes the updated version of the dissemination plan, taking into account the experience obtained during the first two project years, the availability of the first project results (such as e-VRE building blocks) and the recommendations by the review panel.

The approach that is selected by the consortium is pragmatic: on the basis of the dissemination material, we realise a set of communication activities in order to give exposure to our work, to involve research communities and to provide access to project results (e-VRE) in support of project exploitation plan and sustainability of the technology (e-VRE).

Being pragmatic means that we must leverage as much as possible all contributions. Thus, in VRE4EIC:

- We have created and developed our own communication mechanisms, whenever it is relevant. This relates to the project web site, to the newsletter, to the production of press releases and other project news (e.g. via our Twitter account).
- But we also exploit existing third-party channels. For example, we believe there is little value in creating specific LinkedIn/Facebook groups, as this would be populated mainly by project participating members, so we use existing VRE-related groups to give larger exposure to our news or events.

Collective

As all VRE4EIC partners are involved in the dissemination activities (Task T7.1 of the project work plan), this document aims at federating the resources, aligning the efforts toward shared goals and defining responsibilities for maximizing the impact.

Synergies are being developed between the dissemination task (WP7) and the other project work packages. As examples, all academic partners and scientific work packages will be strongly involved in the academic dissemination activities (publications, conferences, workshops), and a specific coordination has been established with WP6 (in charge of community engagement and training activities) in order to communicate widely about the specific WP6 activities (e.g. by means of the project Twitter account, newsletter or press releases).

2.4 Dissemination on the agenda of PEB meetings

At each Project Executive Board meeting, a specific dissemination session is organised and at least the following two topics are discussed:

1. What is (are) the key message(s) we want to convey in upcoming dissemination activities (Newsletter, Social Network, Press Releases)?
2. What are the focused actions for the next project period?

In the agenda, this session is combined with the session about exploitation planning.

2.5 Project dissemination materials

2.5.1 Initial dissemination materials

A series of initial dissemination materials has been produced in the first 2 months of the project. These have been documented in the deliverable D7.1.

The initial dissemination materials include:

- A project visual identity guide, as well as a name and logo for the project software outcome (e-VRE);
- A project web site;
- An initial standard VRE4EIC presentation set;
- A project flyer;
- A project roll-up, that was produced in several copies, each partner having received its own one.

Additionally, the consortium defined a short standard paragraph (a kind of ‘elevator pitch’) to be included in all VRE4EIC deliverables and to guide the project high-level description. The text focuses on the expected outcome of the project:

“VRE4EIC develops a reference architecture and software components for VREs (Virtual Research Environments). This e-VRE bridges across existing e-RIs (e-Research Infrastructures) such as EPOS and ENVRplus, both represented in the project, themselves supported by e-Is (e-Infrastructures) such as GEANT, EUDAT, PRACE, EGI, OpenAIRE. The e-VRE provides a comfortable homogeneous interface for users by virtualising access to the heterogeneous datasets, software services, resources of the e-RIs and also provides collaboration/communication facilities for users to improve research communication. Finally it provides access to research management/administrative facilities so that the end-user has a complete research environment.”

2.5.2 e-VRE leaflet

This set of initial dissemination materials has been completed by an e-VRE leaflet (see section 6.6).

The leaflet (see Figure 1) is a folder that focuses on the promotion of the e-VRE software outcome of the project. In a first instance, it has been printed in 1000 copies, and guidelines have been given to all partners allowing for on-demand local re-prints.



Figure 1: e-VRE Leaflet

2.5.3 ERCIM News

In April 2017 (M19), the wide-audience ERCIM News publication offered VRE4EIC a large space in issue number 109 under Research & Society section, with 7 featured papers.

ERCIM News is widely distributed (4000 printed copies) and 7500 online subscriptions. It is usually considered that each printed copy (being distributed in research labs) is actually read by over 10 researchers.

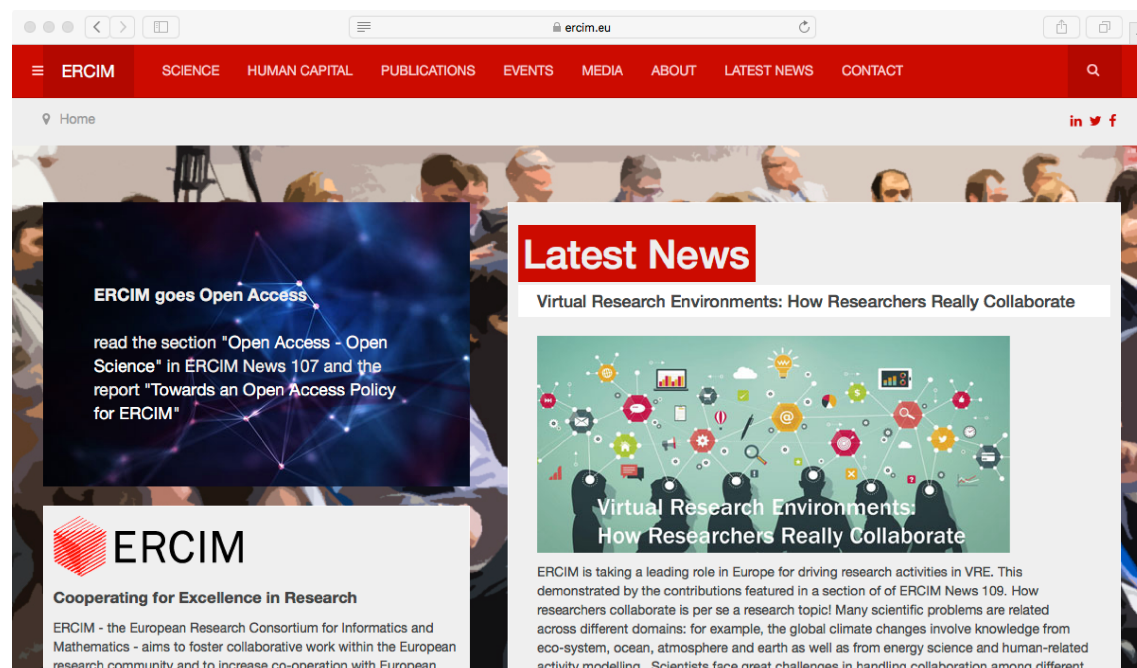


Figure 2: ERCIM News featuring VRE4EIC

The section was open to other VRE researchers. Six contribution were published in ERCIM News 109 (April 2017):

- Virtual Research Environments: How Researchers Really Collaborate, by Keith G. Jeffery and Pierre Guisset (ERCIM)

- VRE4EIC: A Europe-Wide Virtual Research Environment to Empower Multidisciplinary Research Communities and Accelerate Innovation and Collaboration, by Keith G Jeffery (ERCIM)
- Scientists' Fundamental Requirements to Deal with their Research Data in the Big Data Era, by Yi Yin and Anneke Zuiderwijk (Delft University of Technology)
- A Reference Architecture for Enhanced Virtual Research Environments, by Cesare Concordia and Carlo Meghini (ISTI-CNR)
- Smart Descriptions and Smarter Vocabularies by Phil Archer (W3C)
- Making the Development and Deployment of Virtual Research Environments Easy and Effective, by Leonardo Candela, Donatella Castelli and Pasquale Pagano (ISTICNR).

An additional contribution was included in ERCIM News 110 (July 2017):

- Use-cases Covered by an Enhanced Virtual Research Environment, by Valerie Brasse (IS4RI and euroCRIS).

Copies of the publication have been disseminated through all partners, and the electronic version is available from the VRE4EIC and ERCIM web sites.

2.5.4 Additional dissemination materials

Complementary with the project-wide dissemination materials, several partners have created ad-hoc materials, tuned to the need of specific events (e.g. posters to be presented at conferences and exhibitions).

3 Planned Dissemination activities

3.1 Networking

VRE4EIC partners are strongly involved in several research communities, where they informally and formally promote the project, the e-VRE Reference Architecture and software building blocks.

To support this activity, deliverable D3.1 (Architecture Design) has been made public on the VRE4EIC web site, and the e-VRE leaflet (see Figure 1) has been produced for project advertising.

Two examples of this action line are:

- VRE4EIC representatives (and in particular the Scientific Coordinator) are involved in several RDA Working Groups² and take all opportunities to present VRE4EIC in different group meetings, explaining its objectives and how it fits with e-Infrastructures, Research Infrastructures and user access to them³.
- VRE4EIC attended a Multi-stakeholder meeting on data interoperability for the Sustainable Development Goals at the United Nations⁴ in New York (USA) on 5th March 2017. The high-level meeting brought together national statistics agencies, geospatial technologists and open data advocates. VRE4EIC's Phil Archer gave a presentation about the future W3C Dataset Exchange Working Group that is the follow on to the project's SDSVoc workshop at the end of 2016.

These two examples highlight how VRE4EIC dissemination activities are working to enlarge the target research communities beyond EPOS and ENVRIplus and how the project addresses a wider audience, beyond research communities.

Owner: ERCIM (Keith Jeffery)

3.2 Web site

An initial web site (www.vre4eic.eu) has been developed in the first months of the project. The VRE4EIC web site is built upon the Joomla content management system (see <https://www.joomla.org/>). Joomla! has been selected since it is available under an open source licence, used and supported by a very wide community, and since it can be complemented by a large number of extension modules (see <http://extensions.joomla.org/> for the Joomla! extensions directory). Joomla! has also the advantage of producing mobile-friendly (responsive design) web sites. The ERCIM web team has an excellent and extensive experience with Joomla!. The VRE4EIC web site is continuously updated with the project news and events, as well as the publication of project major outcomes.

A major update happened around project month 6 in order to implement a professional visual identity (see section 6.1).

The web site includes a public section as well as a private section, whose access is restricted to project partners. The private section is an internal communication mechanism between project

² For example, at the RDA 7th WG/IG Collaboration Meeting (12-14 June 2017, Gothenburg, Sweden, see <https://www.rd-alliance.org/7th-wgig-collaboration-meeting-12-14-june-2017-göteborg-sweden>)

³ See <https://www.rd-alliance.org/group/virtual-research-environment-ig-vre-ig/case-statement/virtual-research-environments-ig>.

⁴ See <https://www.vre4eic.eu/publications/news/97-vre4eic-at-the-united-nations> and <https://unstats.un.org/unsd/statcom/48th-session/side-events/20170305-3A-data-interoperability-for-sdgs/>.

members ("wiki"), that is completed by a shared repository for project documents (BSCW⁵) and mailing lists.

Between M24 and M30, the web site will be extended with following objectives:

- Provide a much simpler and clearer non-technical explanation of the project, its potential, the expected outcome and impact to end-users. To this purpose, a new project presentation will be included in the 'About' section, that will be derived from the text that was created for the leaflet (more product-, more marketing-oriented).
- Give the users access to major project results (software building blocks, training materials, MOOC videos, e-VRE architecture, maturity level...) under a new section identified by the product name 'e-VRE'.
- Position VRE4EIC and its resulting product e-VRE in the landscape of related projects, by feeding additional information and a positioning diagram in the 'Related Projects' section.
- Give access to project public deliverables and project related public materials.

Additionally, all project partners will intensify VRE4EIC and e-VRE promotion when attending related events (such as workshops) and this will be actively advertised through the web site (sections 'Events' and 'Publications/Project News') and via the @VRE4EIC Twitter account.

The web site information will be maintained up to at least 5 years after project completion.

Owner: ERCIM (Pierre Guisset and Pascale Peyrol)

3.3 VRE4EIC Assets Promotion

As recommended at PM18 review meeting, a new action line has been started in order to promote the VRE4EIC assets towards targeted research communities. As this is strongly related to exploitation planning, the ownership of this action line has been given to UvA.

3.3.1 The VRE4EIC Assets

In the project, 8 groups of VRE4EIC exploitable assets have been defined in the first version of the Exploitation Plan (see deliverable D7.5):

1. **Methodologies and concepts of Virtual Research Environments.** The methodologies including Metadata/catalogue centric approach for modelling VREs, layered approach to model services/resources provided by VRE, e-RI and e-Infrastructures, and micro-service based architecture components.
2. **The reference architecture of e-VRE,** which is the result of work package 3. A reference architecture for virtual research environments that sits on top of different RIs and across domains of research is being promoted.
3. **Tools/Software/Services** developed in the project. Some key building blocks of a technical architecture implementing the reference architecture will be prototyped based on the available resources. Software modules will be delivered as open source, with related services such as integration in existing environments, assistance to IT teams, and training of IT teams and software end users also provided. Services also include the expertise gained during the project, which can be provided as consulting services to companies relying on such platforms or intending to move towards the use of VREs.
4. **Contribution to standards** in the form of setting up or contributing to existing working groups (e.g. W3C, euroCRIS and RDA) during the project, which should continue after the end of the project to reinforce the use of standards in other research or IT domains.

⁵ <https://bscw.ercim.eu/bscw/bscw.cgi/1062719>.

5. **Use cases collected in the project**, which cover different domains. These use cases include both high-level abstract cases and concrete technical cases. They cover the key steps in the lifecycle of the VRE, and provide characterisation of the VREs.
6. **Communities of users** of VREs enhanced during the project, and **training materials** (including MOOC videos) covering animation and further training, as well as organisation of workshops, which should continue after the end of the project.
7. **Data** used in the VRE will be exposed and shared as Linked Data so that it can also be used after the project ends. Unless there is a legal barrier, all third-party data processed and curated by the VREs will also be made available as Linked Open Data. Exposing data as Linked Data ensures that the project contributes to, and benefits from, the wider Linked Open Data Cloud. Standardisation work initiated by the project ensures long term sustainability of the methods and data structures used.
8. **Publications describing the research** made about the use of VREs, and the related analytics and analysis expertise generated during the project; these will be released in open access mode so that information and knowledge can be applied in similar contexts (e.g. other collaborative and community-based platforms).

In the VRE4EIC project, the e-VRE reference architecture and a set of building blocks are the core assets to be delivered. The prototype of a full e-VRE, or customized E-VRE instances are developed jointly with the EPOS and ENVRIplus communities.

The Figure 3 illustrates the potential adopters of the e-VRE architectural and software assets.

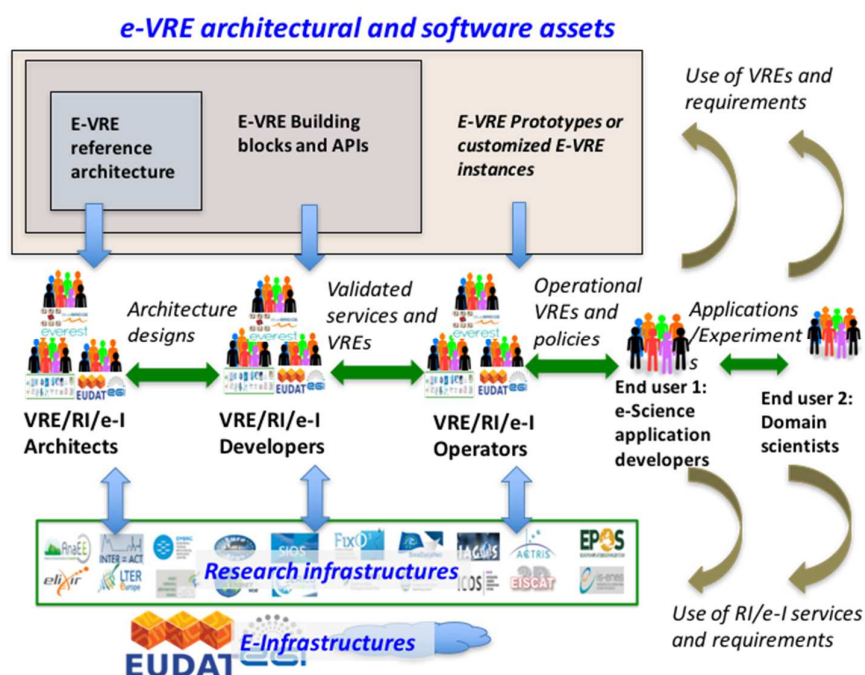


Figure 3: e-VRE architectural and software assets and their potential adopters

The e-VRE assets provide support for each different user group:

1. The **architects** of new VREs can follow the recommendation of the e-VRE reference architecture to make a new design, and the architects of RIs and e-Is can also follow the e-VRE reference architecture to tune the metadata standards and service interfaces of RIs and e-Is to enable future interaction with the VREs which are then compliant with the e-VRE reference architecture.
2. The **developers** of VREs can directly utilize the building blocks of e-VRE to realize key functionality such as metadata interoperability and AAAI etc. The developers of RI and e-Is can also deploy those building blocks in their service stack to enable interoperability of data

catalogues with other RIs or e-Is, or integration with future VREs which are compliant with e-VRE reference architecture.

3. The **operators** of VREs can adopt e-VRE prototypes and customized e-VRE instances to serve their user communities. Those operators can also include operators of data centres, research infrastructures, e-Infrastructures or interested SMEs.
4. The **end users** include e-Science developers and domain scientists. e-Science developers are supporters for domain scientists developing and performing experiments (including workflows). e-Science developers will be helped by the e-VRE prototypes or specific instances to discover and access resources from different infrastructures, and to automate the management of the workflow lifecycle. In some cases, they can also directly interact with the services provided by the RI or e-I.
5. Experienced **domain scientists** can also directly use the e-VRE prototype to develop and execute workflows and experiments by themselves. The feedback and requirements on the new VRE features can be fed back to the VRE developers indirectly via VRE operators.

In the VRE4EIC project, the e-VRE reference architecture and a set of building blocks are being delivered. The prototype of a full e-VRE, or customized E-VRE instances will be jointly implemented with the EPOS and ENVRIplus communities.

3.3.2 VRE4EIC Assets promotion activities

For each specific type of assets, the following promotion activities are planned:

VRE4EIC Assets	Promotion activities
Methodology and concepts of e-VRE	Training material (via videos, open access publications/documents) Tutorials/workshops Websites
Reference architecture of e-VRE	Training material (via videos, open access publications/documents) Tutorials/workshops Websites Developers' hackathon
Tools / Software / Services	Training material (via videos, open access publications/documents) Tutorials/workshops Websites Developers' hackathon
Contributions to standards	W3C/RDA/etc. working groups/BOF
Use cases	Tutorials/workshops Joint workshops with communities (via ENVRIplus/EPOS/EUDAT/etc.) Websites Developers' hackathon
Communities, training material	Initial training material (via videos, open access publications/documents)

	Joint workshops with communities (via ENVRIplus / EPOS / EUDAT/etc.) Tutorials/workshops Websites
Data	Websites Developers' hackathon
Publications	Academic conferences/workshops Websites

Specific efforts (such as developers' hackathon's) will be carried out in the last project year to reach potential commercial users and SMEs/companies (from the AUG and beyond), specifically with respect to the e-VRE reference architecture and software building blocks.

Owner: UvA (Zhiming Zhao)

3.4 Newsletter

VRE4EIC publishes a 6-monthly newsletter to a focused mailing list. The first issue of the newsletter has been sent to a wider audience (including ENVRIplus and EPOS mailing lists), recommending them to subscribe to the VRE4EIC mailing list.

A subscription box is included in the home page of the VRE4EIC web site, and former issues of the newsletter are available within the 'Publications' section.

After a review of possible newsletter tools by the ERCIM web team, the AcyMailing tool (see <https://www.acyba.com/>) had been selected. This tool is proposed as an appropriate extension for the Joomla CMS. This tool provides a wide range of functions, and benefits from excellent reviews within the community. The ERCIM web team tested the AcyMailing tool (January 2016) and confirmed that it fits project requirements.

An Editorial board is in place. Its role is to decide on the specific focus of each issue and review the contributions. The Editorial Board members are:

- Keith Jeffery (ERCIM, Scientific Coordinator)
- Carlo Meghini (CNR, leader of WP3-Architecture)
- Pierre Guisset (ERCIM, leader of WP7-Dissemination).

The standard content of each newsletter issue is:

- Project progresses summary and major news
- Events/Workshops – past & future
- Use cases information.

The upcoming newsletter issues will focus on the promotion of the project results that are already available to the communities. In particular, the 4th issue of the newsletter (NL04) will highlight the e-VRE reference architecture and the software building blocks.

Project partners attending to related events will gently advertise other participants to subscribe to the VRE4EIC newsletter, opening a path to access wider communities.

The information feeding the newsletter articles will be gathered thanks to intra-project communication (via email, web site, project meetings)

Owner: CNR (Anna Molino), with the operational support of ERCIM (Pascale Peyrol) for the integration within the web site and the use of the newsletter tool.

3.5 Social media

The VRE4EIC consortium has decided to focus its public social media activities on the Twitter media. The main reasons are the following:

- Facebook is not considered as a professional medium, as it is more restricted to the private area;
- From other project experiences, we have seen little success in project-related LinkedIn groups (very often, these groups include mainly the project partners' representatives, and therefore little value is experienced compared to the intra-project communication mechanisms).

The advantage of Twitter is that it is quick and easy, and relates to immediate news. It is also particularly easy to re-tweet news.

A specific @VRE4EIC account has been set up and is managed by ERCIM, and the following (basic) rules have been defined:

- @VRE4EIC sends messages when
 - New web content is issued
 - Any other news is issued (PR, workshops, new software component published...)
- Any partner can tweet with his/her private account with the hashtag #vre4eic
- Better if tweets refer to VRE4EIC web content

As the final project year will start, project concrete results start to become available (and will be disseminated on the VRE4EIC web site), which will be a strong support for boosting significantly the Twitter activity and the number of followers (currently 145) to @VRE4EIC.

Owner: ERCIM (Pascale Peyrol)

3.6 Press releases

VRE4EIC issues a series of press releases. These are aimed at advertising to a wider audience the major news related to the project. Initially, we have planned to produce 6 press releases, but depending on project progresses, more may possibly be issued.

An initial press release was published about the project launch, quickly followed by a second one announcing the online Open Government course (Massive Open Online Course taught by TU Delft).

Key messages that are worth a press release will be selected during PEB meetings.

The press releases are published in English in first instance, and disseminated through ERCIM channels (including ERCIM web site, and if appropriate ERCIM News) and the EC Cordis Wire channel. Whenever appropriate, VRE4EIC partners are invited to potentially translate the news in their national language, and to publish them through their own channels.

The plan for year 3 press releases is as follows:

- PR04: Promote outcome of workshops with EPOS & ENVRiplus (Rome, September 2017) and announce the publication of initial architecture (D3.1) and announcing first building blocks – September 2017
- PR05: Promote e-VRE software building blocks and use cases – December 2017.
- PR06: Advertise project completion, successes and provide a synthesis of project outcomes and sustainability plan – September 2018.

Owner: ERCIM (Pierre Guisset)

3.7 Workshops

VRE4EIC is carrying out a very ambitious plan for workshops. These are targeted to specific audiences of specialists.

During the first project year, workshops have focused on collecting requirements and input for e-VRE architecture. During the second project year, the focus has progressively moved towards requirement refinement, architecture validation and dissemination, and in the third project year, it will address training, dissemination and platform evaluation. Additionally, some workshops are intended to support the standardization activity (organised by ERCIM and endorsed by W3C).

Initially, the project ambitioned to organise 15 workshops (see initial KPIs). The workshop activity has been extremely intense in the project with the objective to involve the widest possible range of research communities and to make sure that the e-VRE architecture and components really address the most relevant requirements. The current workshops overview indicated in the table below reports a total of 25 events.

The tables below summarize the initial VRE4EIC workshop plan. This plan still includes of course several uncertainties that will be specified as the project progresses.

Owner: TUD (Anneke Zuiderwijk van Eijk)

 = confirmed by partners and/or completed.

VRE4EIC project year 1								
WS#	Aim of workshop	Workshop title/topic	Target audience	Partner(s) responsible	Co-organizers	Event	Specific (expected) outcome	Date
1	Requirement collection and specification / architecture proposal	EPOS/ENVRIplus inputs	VRE developers	INGV, UvA, CNR, euroCRIS, CWI	All other partners	VRE4EIC project meeting	Overview of architectural proposals, interoperability plans and security, privacy and licensing proposals	February 16-17, 2016
2	Requirement collection and specification / architecture proposal	Workshop with EPOS and ENVRIplus	VRE developers	TU Delft, INGV, UvA	CNR, euroCRIS, CWI, ERCIM	VRE4EIC meeting with involved partners	Refinement of architectural proposals, interoperability plans and security, privacy and licensing proposals	April 6-7, 2016
3	Requirement collection and specification / dissemination	Virtual Research Environments: Obtaining new Insights by sharing Open Data for interdisciplinary Research Purposes	VRE users (researchers)	TU Delft	INGV, ERCIM	Conference on e-Democracy and Open Government (CeDEM)	Elicitation and refinement of requirements for a multidisciplinary VRE that integrates Open Government Data and open research data	May 19, 2016
4	Use case specification / dissemination	Virtual Research Environments: Use cases to obtain new Insights in Open Data	VRE users (researchers)	TU Delft	-	Conference on E-Government (EGOV)	Elicitation and refinement of use cases for a multidisciplinary VRE that integrates Open Government Data and open research data	September 7, 2016

VRE4EIC project year 2								
WS#	Aim of workshop	Workshop title/topic	Target audience	Partner(s) responsible	Co-organizers	Event	Specific expected outcome	Tentative date
5	Use case specification/ architecture validation/ dissemination	Evaluation workshop	VRE users and VRE developers	ERCIM , CNR	TU Delft, CNR, CWI	Workshop endorsed by W3C	Group discussions, setting up working group	November 30/December 1, 2016
6	Evaluation of use cases (1st version) and architecture	Evaluation workshop	VRE developers	ERCIM, INGV	-	EPOS project meeting	Group discussions, SWOT analysis	December 19, 2016
7	Evaluation of architecture (1st version)	Evaluation workshop	VRE developers	All	-	VRE4EIC meeting with involved partners	Group discussions, SWOT analysis	January 11-12, 2017
8	Evaluation of use cases (1st version) and architecture	Evaluation workshop	VRE developers	ERCIM, UvA	-	ENVRIplus project meeting	Group discussions, SWOT analysis	January 26, 2017
9	Use case specification / architecture validation / dissemination	Evaluation workshop	VRE users and developers	ERCIM, CNR	TU Delft, CWI	VRE4EIC meeting with involved partners	Group discussions	March 6-7, 2017

10	Evaluation of use cases (1 st version)	VRE4EIC use case evaluation	Other (students)	TU Delft	-	Course on Governance in the Information and Communication domain	Feedback on use cases	March 20 2017
11	Requirement refinement / architecture validation/ dissemination	Virtual Research Environments: collaborating in analysing open research data	VRE researchers	TU Delft	-	Conference on e-Democracy and Open Government (CeDEM)	Refinement of requirements and informing VRE researchers about collaboration opportunities of the e-VRE	May 20, 2017
12	Use case specification / dissemination	VREs Vs RIs usage	VRE users and VRE developers	euroCRIS		EuroCRIS Dublin Membership Meeting	Feedback on use cases	May 30-31, 2017
13	Dataset Exchange WG input session	Seeking input from RDA WG and IG chairs to inform the W3C DXWG	Other (Research infrastructure managers)	ERCIM / W3C	-	7th WG/IG Collaboration Meeting, Gothenburg	Improved collaboration between closely related efforts around metadata at RDA and W3C	June 14, 2017
14	Dataset Exchange WG F2F input session	Seeking input from research community, particularly Elixir/bioCADDIE	VRE users (researchers)	ERCIM (W3C)	-	W3C DXWG F2F meeting, University of Oxford	Direct input from bioCADDIE, Elixir etc. to the standardisation work being driven by VRE4EIC	July 17-18, 2017

15	Interoperability and metadata mapping	X3ML - A mapping framework for information integration	VRE developers	FORTH	euroCRIS	VRE4EIC meeting with involved partners (including EPOS and ENVRIplus)	A walkthrough of the processes involved in data provisioning and aggregation, including familiarization with the associated data mappings components	September 10, 2017
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VRE4EIC project year 3								
WS#	Aim of workshop	Workshop title/topic	Target audience	Partner(s) responsible	Co-organizers	Event	Specific expected outcome	Tentative date
16	Evaluation of the use cases and prototypes	To be defined	VRE developers	ERCIM, INGV		EPOS project meeting	Group discussions, SWOT analysis	October 4, 2017
17	Evaluation of the use cases and prototypes	To be defined	VRE developers	ERCIM, UvA		ENVRiplus project meeting	Group discussions, SWOT analysis	November 8, 2017
18	Training / dissemination / evaluation Architecture dissemination	AAAI	VRE developers	CWI	UvA	In the context of IT4RIs 18	Community feedback	January 18, 2018
19	Training / dissemination / evaluation	To be defined	VRE users	ERCIM	TU Delft	Workshop endorsed by W3C		January 2018
20	Evaluation	Architecture and prototype evaluation	VRE developers	TU Delft	all	VRE4EIC meeting with involved partners	SWOT analysis	February 2018
21	Architecture validation/ dissemination / evaluation	Workshop with EPOS and ENVRiplus	VRE developers	INGV, UvA, TU Delft	CNR, euroCRIS, CWI, ERCIM	VRE4EIC meeting with involved partners	Refinement of architectural proposals, interoperability plans and security, privacy and licensing proposals	Spring 2018

22	Evaluation and training with real prototype users	Obtain information on the collaboration mechanisms of e-VRE	VRE users (researchers)	TU Delft	-		g data, user questionnaire/usability test (semi-structured interviews if needed)	April 2018
23	Training / dissemination / evaluation	Provide training and obtain feedback on e-VRE architecture, prototype and use cases	VRE users (researchers)	TU Delft	-	Dg.o conference	Group discussions, SWOT-analysis	May/June 2018
24	Training / dissemination / evaluation	Workshop with AUG	VRE users (SMEs)	CNR	euroCRIS	CRIS2018 (Umea, Sweden)	Obtain feedback on e-VRE architecture, prototype and use cases	May/June 2018
25	Training / dissemination / evaluation	Obtaining new insights with multidisciplinary open research data: Using Virtual Research Environments	VRE users (researchers)	TU Delft	-	Joint CeDEM and EGOV conferences	Training of potential users of the e-VRE	September 2018

3.8 Training activities

Training activities are an important dissemination channel for VRE4EIC and e-VRE. These activities are organised within the scope of WP6 (Communities engagement and training), of course in close interaction with WP7 (Dissemination, Exploitation and Sustainability).

The plan for training activities is documented in deliverables D6.1 (first version) and D6.2 (second version), and is therefore not duplicated here.

Specific training activities will be advertised by the communication mechanisms that are here described (web site, newsletter, press releases, social media...) and training material will be published via the VRE4EIC web site (under the new section 'e-VRE', see section 3.1).

Examples of training activities are:

- A MOOC about Open Government, including the use of (open) government data and research data analysis (see : <https://twitter.com/OpenDataX/status/709270401159970816> and <https://www.edx.org/course/open-government-delftx-og101x>), to which more than 3.000 participants from 147 countries have registered in 2016.
- Video recordings produced at the TU Delft Professional studio (e.g. videos by Keith Jeffery, Phil Archer and Valérie Brasse)

A detailed plan of training materials that will be produced is provided in deliverable D6.4 (Engagement and Training Plan – second version).

The following table shows the impact of the online education program:

	# learners	# countries	# learners passing the course
Open Government MOOC 2016	4,928	159	168
Open Data Governance and Use – online course	17	13	11
Open Government MOOC 2017	3,102	151	60
'Traditional' education @ TU Delft	~60	1	NA
Total	8,117		

The MOOC is offered through EdX. Our 2016 MOOC was one of the last to offer certificates to non-paying participants, which may explain why more people passed the course in 2016 than in 2017.

Owner: TUD (Anneke Zuiderwijk van Eijk)

3.9 Journals, conferences and other project presentations

Academic dissemination is a major objective of the research activities of VRE4EIC.

Mechanisms have been put in place to encourage publications and collect the information about publications being authored or submitted, under the private section of the web site. When a publication has been published, it appears under the public section of the web site, under the 'Publications' section.

All VRE4EIC scientific publications should include the following acknowledgement statement:

"This work has been carried out within the VRE4EIC project and has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 676247".

All academic partners are contributing to academic dissemination, and the identified owner role is to ensure that collaborative publications are encouraged and that the scientific production is properly identified and collected in the project repositories.

Owner: CWI (Jacco Van Ossenbruggen)

3.9.1 Open access publication plan

VRE4EIC has reserved a specific budget line for several journal publications to be provided under open access. It has been decided by the consortium to reserve this opportunity for joint publications co-authored by all project partners, following the plan shown on the following table (see next page).

Complementary to those joint publications, a series of contributions were openly published within the ERCIM News publication, in a special issue in April 2017 (see section 2.5.3).

These joint open access publications will be produced under the scientific management of Keith Jeffery, Project's scientific coordinator.

Owner: ERCIM (Keith Jeffery)

WP Lead	Subject / Title	(Target) Submission journal	Responsible	Target submission date	Target publication date
WP1	An Enhanced Virtual Research Environment: The VRE4EIC Concept	Data Science Journal (https://datasciencehub.net/)	ERCIM	Submitted June 2017	Autumn 2017
WP2	User Requirements for an enhanced Virtual Research Environment	Data Science Journal (https://datasciencehub.net/)	TUD	End 2017	Spring 2018
WP3	A Reference Architecture for Virtual Research Environments	15th International Symposium of Information Science (ISI 2017) and available in open access from CNR.	CNR	December 2016	March 2017
WP4	Mapping metadata of e-RI elements to a VRE catalog	Data Science Journal (https://datascience.codata.org/)	euroCRIS	End 2017	Spring 2018
WP5	Role of graph visualizations in transparent data cleaning	Semantic Web Journal	CWI	End 2017	Spring 2018
WP6	Open education, open science and open data: a case study into novel opportunities of open connections. VRE4EIC will be described as a case	OEG conference/ Open Praxis journal (http://www.openpraxis.org/index.php/OpenPraxis)	TUD	October 2017	Spring 2018
WP3	The VRE4EIC Final Architecture	To be confirmed	CNR	Spring 2018	Summer 2018
WP4	The benefits of metadata catalogs for e-RIs and a VRE	International Journal of Data Science and Analytics (under investigation)	euroCRIS	Spring 2018	Summer 2018
WP5	Executable notebooks meet reproducible work-flows	Data Science Journal (https://datasciencehub.net/)	CWI	Spring 2018	Summer 2018
WP1	The VRE4EIC Concept Evaluated	Journal of Organizational Computing and Electronic Commerce (JOCEC, http://www.tandfonline.com/toc/hoce20/current)	ERCIM/TUD	Summer 2018	Autumn 2018

3.9.2 Other scientific publications

Several channels are considered for VRE4EIC related publications:

Target journals

- Data Science: Methods, Infrastructure, and Applications (OA)
- Semantic Web: Interoperability, Usability, Applicability (OA)
- International Journal of Software Engineering and Knowledge Engineering
- Metadata and Semantics Research/Research Conference
- International Innovation, Research Media Ltd
- Procedia Computer Science
- Computers & Electrical Engineering
- Future generation computer system
- Information Systems Management
- Journal of Information Science
- Journal of Information Systems and Technology Management (open access)
- Information Systems Frontiers
- Library & Information Science Research
- Government Information Quarterly
- Information Polity
- Journal of eDemocracy and Open Government
- Journal of Theoretical and Applied E-Commerce Research (open access)
- Journal of the Association for Information Science and Technology
- EGU and AGU Conference proceedings
- Web Standards & Interfaces

Target conferences

- International Conference of Current Research Information Systems.
- International Conference on Dublin Core and Metadata Applications.
- European Semantic Web Conference.
- IEEE International Conference for High Performance Computing, Networking, Storage and Analysis.
- IEEE International Conference on Cloud Computing Technology and Science.
- IEEE International Conference on Data Science and Advanced Analytics
- European Conference on Information Systems
- International Semantic Web Conference.
- Special Interest Group on Information Retrieval
- The annual European Conference on Information Retrieval
- IFIP I3E (e-business, e-commerce, e-government)
- IEEE e-Science
- Conference on e-Democracy and Open Government (CeDEM)
- Conference on E-Government (EGOV)
- European Geophysical Union Assembly
- American Geophysical Union Assembly

4 Summary & responsibilities

The following table summarizes the major dissemination activities, responsibilities and Key Performance Indicators, as defined at project launch time:

Activity	Audience	Owner	Contributors	KPI
Networking	General	ERCIM	All	n/a
Web site	General	ERCIM	All	Up and running
VRE Assets Promotion	General, business focus	UvA	All	At least 1 Workshop with business representatives
Newsletter	Specific	CNR	All	6 issues published
Social media	General	ERCIM	All	Active, 100+ followers
Press releases	General	ERCIM	All	6 issues published
Workshops	Specific	TUD	All	15 workshops organised
Academic Dissemination	Specific	CWI	All	10 open access publications, 10 scientific papers

5 Conclusion & next steps

The VRE4EIC project has now reached its cruising altitude, and dissemination actions can become more targeted and effective, as project outcomes are being produced and made public (as for example, the e-VRE Reference architecture and software building blocks).

The VRE4EIC Dissemination plan has been updated along following lines:

- Considering the project lifetime, and the publication of the project results such as the e-VRE reference architecture and the software building blocks, dissemination activities are focusing on the uptake of project results by VRE architects and developers (including from businesses), to impact the widest possible research communities.
- Recommendations expressed at the PM18 project review meeting have been taken into account, such as:
 - o Make results available from the web site;
 - o Develop a clear and simple non-technical explanation of the project potential;
 - o Position VRE4EIC within the cluster of related EC-funded research projects;
 - o Inform about project status and give wide access to the training materials (incl. MOOC videos).

This updated plan is intended to advertise the project results towards new communities, beyond the EPOS and ENVRIplus communities, and potentially to reach businesses (SMEs and larger companies) as part of the exploitation plan.

Project Year 3 objective is thus to carry out the dissemination activities as planned in this document, in support of project results exploitation and sustainability.

6 Annexes

This annex demonstrates some of the dissemination activities being carried-out by VRE4EIC members.

6.1 Web site screen shot

The Figure 4 shows the web site as it appears during project month 24.

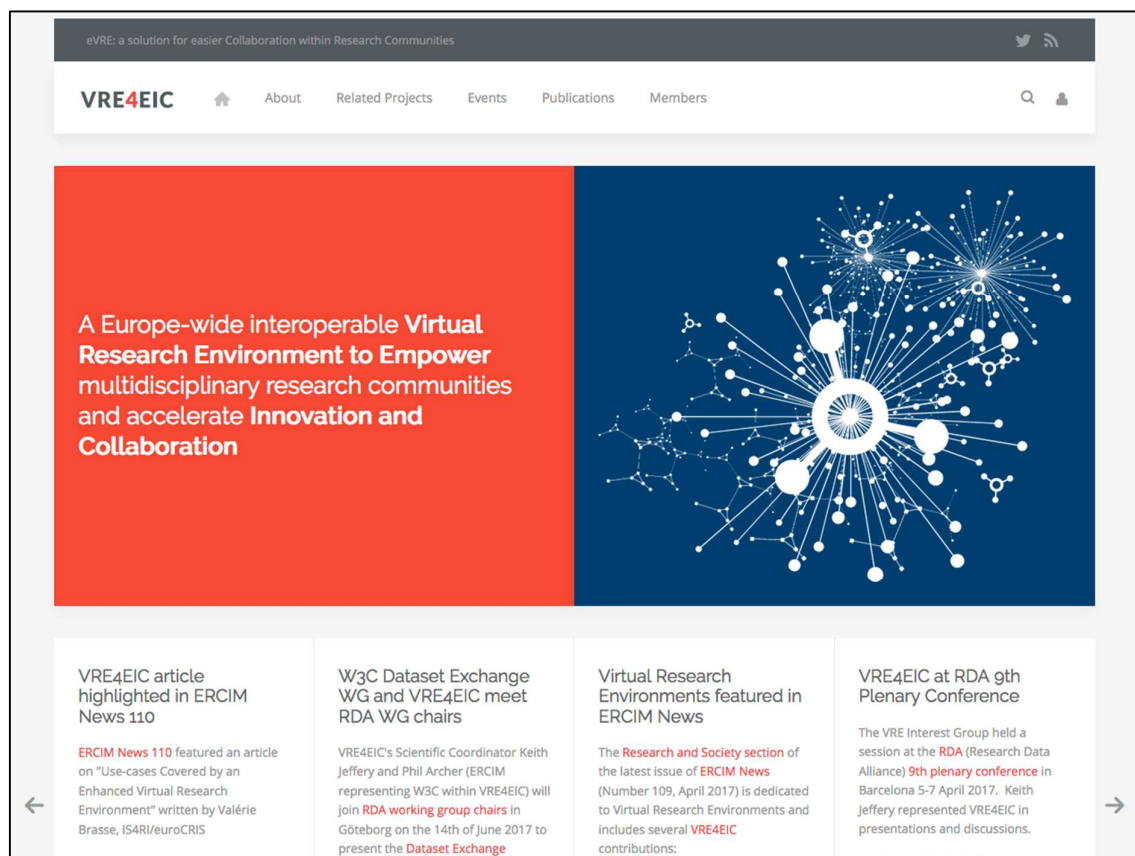


Figure 4: Web site VRE4EIC (september 2017)

6.2 Online education information



TU Delft FIND COURSES ABOUT OUR LEARNERS LOGIN

Open Data Governance: from Policy to Use

Home / Find courses / Open Data Governance: from Policy to Use

About this online course

OVERVIEW DETAILS QUALIFICATIONS ADMISSION CONTACT

JOIN FREE WEEK

This course empowers both policy makers and developers so they can produce better open data policies and make better use of open data.

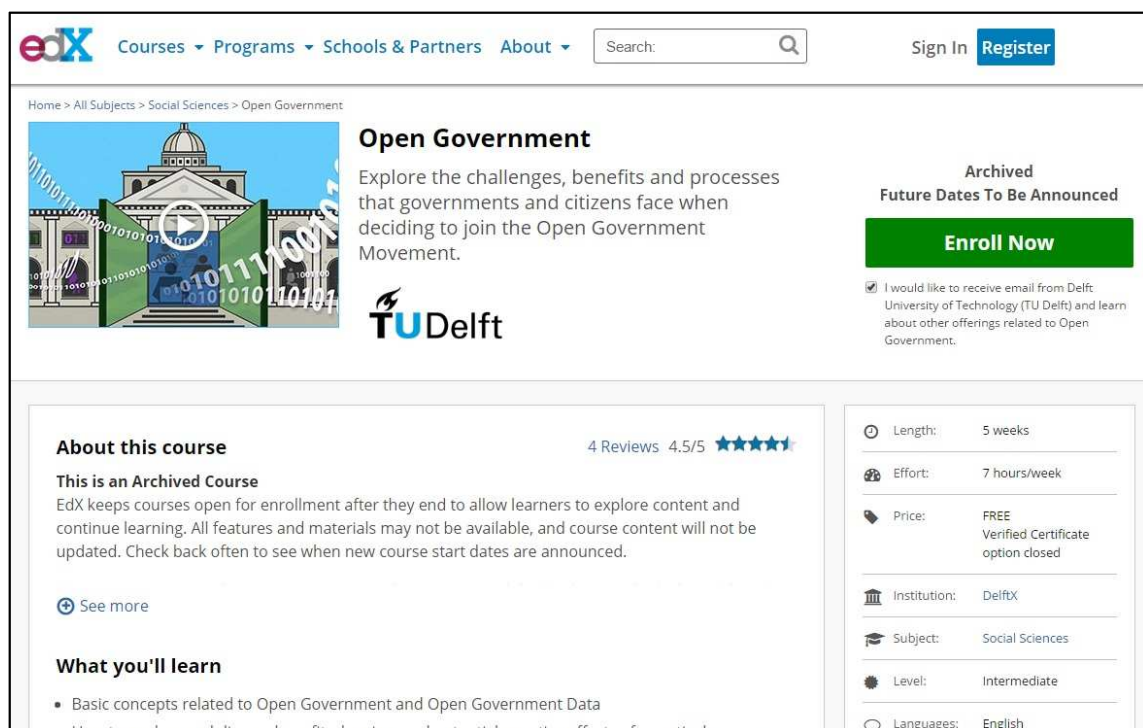
Despite the fact that more open data is available, its potential to generate benefits is often not fully realized. The governance and use of data is complex and challenging since data is derived from a wide variety of sources. How do we ensure that open data is used effectively? Which metadata should be opened up with the dataset? How should data providers and users treat privacy issues? How can we assess data quality? Which are the best tools with which to analyze data?

To harness the power of open data new approaches are required. In order to benefit from increased transparency, greater understanding of public and private problems (through advanced data analytics),

Start Date
Oct 31, 2017

Admission Deadline
Oct 24, 2017

Figure 5: Online education material - Open Data Governance (2017)



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Home > All Subjects > Social Sciences > Open Government

Open Government

Explore the challenges, benefits and processes that governments and citizens face when deciding to join the Open Government Movement.

Archived
Future Dates To Be Announced

Enroll Now

☒ I would like to receive email from Delft University of Technology (TU Delft) and learn about other offerings related to Open Government.

About this course

4 Reviews 4.5/5 ★★★★★

This is an Archived Course

EdX keeps courses open for enrollment after they end to allow learners to explore content and continue learning. All features and materials may not be available, and course content will not be updated. Check back often to see when new course start dates are announced.

[See more](#)

What you'll learn

- Basic concepts related to Open Government and Open Government Data
- How to analyze and discuss benefits, barriers and potential negative effects of a particular open

Length: 5 weeks

Effort: 7 hours/week

Price: FREE
Verified Certificate option closed

Institution: DelftX

Subject: Social Sciences

Level: Intermediate

Languages: English

Figure 6: Online education material - Open Government MOOC (2017)

6.3 Twitter activity

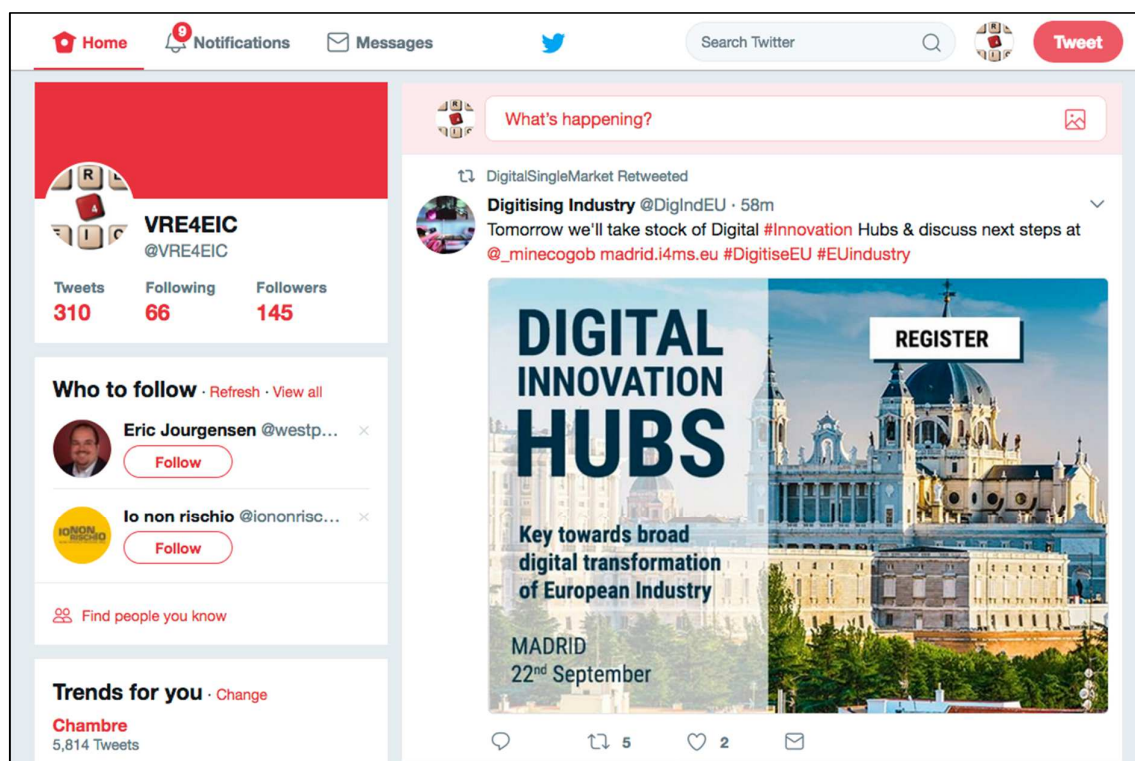


Figure 7: VRE4EIC Twitter account (September 2017)

6.4 Press releases

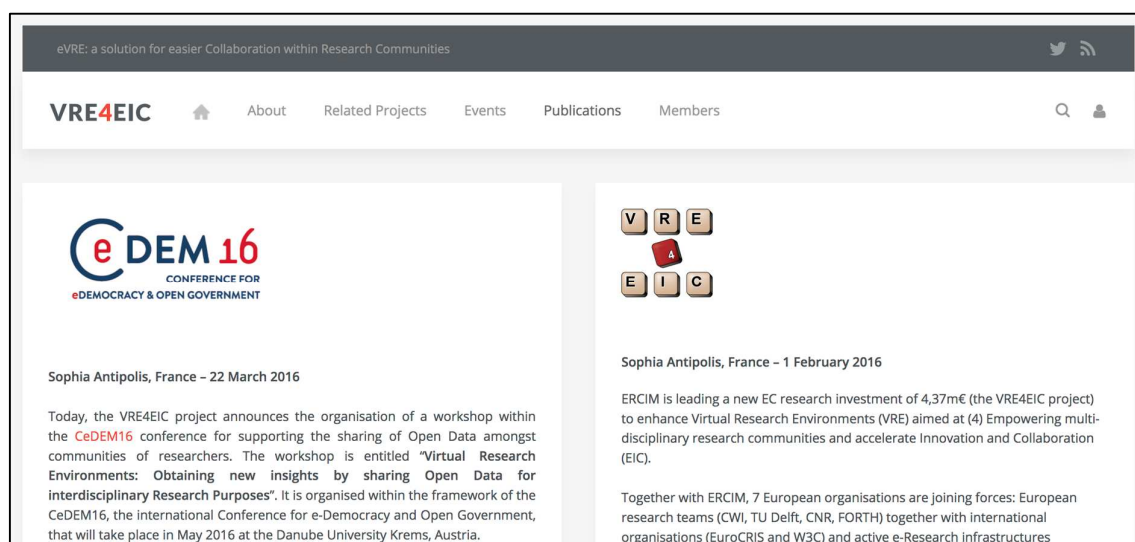


Figure 8: Example of a VRE4EIC Press Release

6.5 Newsletter



Figure 9: Example of the VRE4EIC Newsletter

6.6 e-VRE Leaflet

e-VRE key features

- Rich use-case and requirement collection and analysis from existing RIs and VREs
- Domain independent, 3-tier Reference Architecture for new VREs and an evolutionary target for existing VREs
- Micro-service based Technical Architecture for easy adoption of specific components
- Scalability and cross-RI interoperability by Design
- Handles multiple metadata schemas and profiles
- Trust, Security and Privacy aware
- Rich RI-Resource data model for widest adoption
- Existing VREs enhancement showcase
- Open source

About e-VRE

e-VRE stands for **enhanced VRE** and proposes a reference architecture structured along three logical tiers:

- The Application tier: functions to manage and expand the system.
- The Interoperability tier: functions to discover and use resources, to publish functionalities and enable applications to interact with each other.
- The Resource Access tier: functions to enable e-VRE components to interact with resources.

The origin of e-VRE

The e-VRE platform has been designed and developed by a consortium of 8 members within the Horizon 2020 research and innovation action VRE4EIC, under the leadership of ERCIM.

The VRE4EIC project is a cooperation of scientific research partners, that received research funding from the European Union's Horizon 2020 Programme under contract N° 676247.

Contact
 Mail: vre4eic-contact@ercim.eu
 Web: www.vre4eic.eu



A Reference Architecture,
a VRE prototype & Software
components for
**enhanced Virtual
Research Environments**

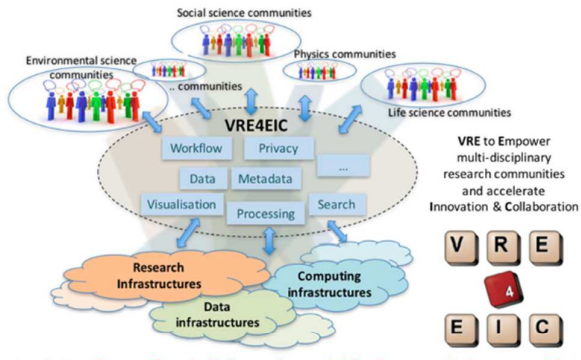


A Europe-wide interoperable
Virtual Research Environment
to Empower multidisciplinary
research communities
and accelerate
Innovation and Collaboration

www.vre4eic.eu

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Figure 10: Front page of the e-VRE leaflet



A solution for easier Collaboration within Research Communities

The context

Research has increasingly become specialised, although many phenomena can only be understood via a multidisciplinary approach. Recently, many communities have set research infrastructures (RIs) bringing together teams and assets for easing collaboration.

The pain

This collaboration comes with complications. Each community has developed its own methods, data formats and tools, leading to a great heterogeneity in scope, features, protocols and technologies...

The solution

One way to assist and encourage multidisciplinary research is to bring together the communities and assets of RIs.

The goal of a Virtual Research Environment (VRE) system is to decouple science from IT complexity, by providing research communities with a facility that takes care of IT, allowing them to focus on their work.

e-VRE has taken into account a considerable amount of requirements and characteristics of many RIs in the goal of assisting researchers.

Success stories

e-VRE for EPOS
 The European Plate Observing System (EPOS, www.epos-ip.org) aims at creating a pan-European infrastructure for solid Earth science to support a safe and sustainable society.

"The innovation impact of the e-VRE architecture is enormous, especially in the environmental data domain, where the integration of different types of data together with computational and collaborative tools, can help to monitor and unravel the dynamics and the complexity of the Earth system."
 Daniele Bairo, INGV, Italy

e-VRE for ENVRIplus
 The ENVRIplus (www.envriplus.eu) 'Data for Science' theme aims to design a suite of standard solutions based on the reference model of research infrastructures (ENVRI-RM) and the e-VRE architecture proposed by VRE4EIC.

"The e-VRE reference architecture in the VRE4EIC project is being used to guide the development of interfaces to access data and software resources from ENVRIPLUS RIs."
 Zhiming Zhao, Univ. of Amsterdam

For further learning about e-VRE functions and benefits, more information is available at www.vre4eic.eu.

Figure 11: Back page of the e-VRE leaflet