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VI-SEEM

VRE for regional Interdisciplinary communities in Southeast Europe and the Eastern Mediterranean

Deliverable D2.3

Dissemination and marketing plan

Author(s): A. Karaivanova (editor)

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Abstract: Deliverable D3.2 “Dissemination and marketing plan” presents a comprehensive marketing and dissemination plan for the project, based on the overall project strategy and objectives, the expected project results and innovations, and the specifics of the region of South Eastern Europe and the Eastern Mediterranean.

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January 15th, 2016	a	Aneta Karaivanova	Initial version of ToC.
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February 16th, 2016	b	O. Prnjat, C. Lazarou, D. Vudragovic, I. Marton, A. Misev, A. Karaivanova	Description of services, editorial remarks
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Preface

In the last decade, a number of initiatives were crucial for enabling high-quality research - by providing e-Infrastructure resources, application support and training - in both South East Europe (SEE) and Eastern Mediterranean (EM). They helped reduce the digital divide and brain drain in Europe, by ensuring access to regional e-Infrastructures to new member states, states on path to ascension, and states in European Neighborhood Policy area – in total 14 countries in SEE and 6 in EM.

This VI-SEEM project brings together these e-Infrastructures to build capacity and better utilize synergies, for an improved service provision within a unified Virtual Research Environment (VRE) for the inter-disciplinary scientific user communities in the combined SEE and EM regions (SEEM). The overall objective is to provide user-friendly integrated e-Infrastructure platform for regional cross-border Scientific Communities in Climatology, Life Sciences, and Cultural Heritage for the SEEM region; by linking compute, data, and visualization resources, as well as services, models, software and tools. This VRE aspires to provide the scientists and researchers with the support in full lifecycle of collaborative research: accessing and sharing relevant research data, using it with provided codes and tools to carry out new experiments and simulations on large-scale e-Infrastructures, and producing new knowledge and data - which can be stored and shared in the same VRE. Climatology and Life Science communities are directly relevant for Societal Challenges.

The driving ambition of this proposal is to maintain leadership in enabling e-Infrastructure based research and innovation in the region for the 3 strategic regional user communities: supporting multidisciplinary solutions, advancing their research, and bridging the development gap with the rest of Europe. The VI-SEEM consortium brings together e-Infrastructure operators and Scientific Communities in a common endeavor.

The overall objective is to provide user-friendly integrated e-Infrastructure platform for Scientific Communities in Climatology, Life Sciences, and Cultural Heritage for the SEEM region; by linking compute, data, and visualization resources, as well as services, software and tools.

The detailed objectives of the VI-SEEM project are:

1. Provide scientists with access to state of the art e-Infrastructure - computing, storage and connectivity resources - available in the region; and promote additional resources across the region.
2. Integrate the underlying e-Infrastructure layers with generic/standardised as well as domain-specific services for the region. The latter are leveraging on existing tools (including visualization) with additional features being co-developed and co-operated by the Scientific Communities and the e-Infrastructure providers, thus proving integrated VRE environments.
3. Promote capacity building in the region and foster interdisciplinary approaches.

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4. Provide functions allowing for data management for the selected Scientific Communities, engage the full data management lifecycle, link data across the region, provide data interoperability across disciplines.
5. Provide adequate user support and training programmes for the user communities in the SEEM region.
6. Bring high level expertise in e-Infrastructure utilization to enable research activities of international standing in the selected fields of Climatology, Life Sciences and Cultural Heritage.

The VI-SEEM project kicked-off in October 2015 and is planned to be completed by September 2018. It is coordinated by GRNET with 15 contractors from Cyprus, Bulgaria, Serbia, Hungary, Romania, Albania, Bosnia-Herzegovina, FYR of Macedonia, Montenegro, Moldova (Republic of), Armenia, Georgia, Egypt, Israel, Jordan. The total budget is 3.300.000 €. The project is funded by the European Commission's Horizon 2020 Programme for Excellence in Science, e-Infrastructure.

The project plans to issue the following deliverables:

Del. no.	Deliverable name	Nature	Security	Planned Delivery
D1.1	Project management information system and “grant agreement” relationships	R	CO	M01
D1.2	3-Monthly progress report	R	CO	M03n *
D1.3a	First period progress reports	R	CO	M18
D1.3b	Final period progress reports	R	CO	M36
D2.1	Internal and external communication platform, docs repository and mailing lists	DEC	PU	M02
D2.2	Promotional package	DEC	PU	M04
D2.3	Dissemination and marketing plan	R	PU	M05
D2.4	Training plan	R	PU	M06
D2.5	Promotional package with updates	R	PU	M16
D2.6	1st Dissemination, training and marketing report	DEC	PU	M18
D2.7	2nd Dissemination, training and marketing report	R	PU	M35
D3.1	Infrastructure and services deployment plan	R	PU	M04
D3.2	Service registry, operational and service level monitoring	R	PU	M12
D3.3	Infrastructure overview, assessment and refinement plan	R	PU	M18
D3.4	VRE AAI Model and compatibility with other eInfrastructures	R	PU	M27

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D3.5	Final infrastructure overview and assessment report	R	PU	M36
D4.1	Data sources and services deployment plan	R	PU	M06
D4.2	Description of the initial deployed data services	R	PU	M11
D4.3	Description of the final data platform available to VRE users	R	PU	M23
D4.4	Final report on data, services, availability and usage	R	PU	M35
D5.1	Detailed technical implementation plan for VRE services and tools	R	PU	M04
D5.2	Data management plans	R	PU	M06
D5.3	User-oriented documentation and training material for VRE services	R	PU	M13
D5.4	Report on integrated services and the VRE platform	R	PU	M14
D5.5	Final report on integrated services and the VRE platform	R	PU	M36
D6.1	Framework for VRE resource and service provision	R	PU	M09
D6.2	1st Report of open calls and integration support	R	PU	M20
D6.3	Sustainability and business model	R	PU	M24
D6.4	2nd Report of open calls and integration support	R	PU	M36

Legend: R = Document, report, DEC = Websites, patent fillings, videos, etc., PU = Public, CO = Confidential, only for members of the consortium (including the Commission Services).

**n=1,2,3,…12*

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Table of contents

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References

[1] Project VI-SEEM-675121 - Annex I - Description of the Action

[2] Project VI-SEEM-675121 – D2.1 “Internal and external communication platform, docs repository and mailing lists”

[3] Project VI-SEEM-675121 – D2.2 “Promotional package”

[4] Project VI-SEEM-675121 – D5.1 “Detailed technical implementation plan for VRE services and tools”

[5] VI-SEEM official website http://www.vi-seem.eu/

[6] VI-SEEM Agenda System https://events.hpc.grnet.gr/

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List of Tables

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Glossary

AAI	Authentication and Authorization Infrastructure
CC	Climate Community
CH	Cultural Heritage
CUDA	Compute Unified Device Architecture
EM	Eastern Mediterranean
EGI-Engage	Engaging the Research Community towards an Open Science Commons
EU	European Union
EUDAT	EUropean DATa infrastructure
GIS	Geographic Information System
GPGPU	General Purpose computing on Graphics Processing Units
GPUs	Graphics processing Units
HPC	High Performance Computing
IT	Information Technology
LS	Life Science
MECCA	Module Efficiently Calculating the Chemistry of the Atmosphere
MPI	Message Passing Interface
OpenMP	Open Multi-Processing
PRACE	Partnership for Advanced Computing in Europe
SEE	South East European
SEEM	South East Europe and Eastern Mediterranean
SESAME-NET	Supercomputing Expertise for Small and Medium Enterprise Network
SMEs	Small and Medium-sized Enterprises
VI-SEEM	VRE for regional Interdisciplinary communities in Southeast and the Eastern Mediterranean
VRE	Virtual Research Environment

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Executive summary

What is the focus of this Deliverable?

The deliverable D2.3 “Dissemination and marketing plan” presents a comprehensive marketing and dissemination plan of the project. The planned activities are based on the overall project strategy and objectives, the expected project results and innovations, and the specifics of the region.

What is next in the process to deliver the VI-SEEM results?

The deliverable and the workflow progress is described in the project Annex-I – Description of the Action [1].

What are the deliverable contents?

This deliverable starts with an introduction, explaining that the dissemination and marketing activities based on the project strategic goals and objectives. Dissemination and marketing objectives and portfolio of services to be marketed are briefly introduced in Chapters 2 and 3. Chapter 4 presents innovation strategy concluding with actions and recommendations. The main target audiences are highlighted in Chapter 5 and clear top-line messages that VI-SEEM project will send out to each of the target groups are defined. In Chapter 6 the marketing activities are explained. Description of the dissemination and training activities is given in Chapter 7. The deliverable finally presents with quality metrics and conclusion.

Conclusions and recommendations

The dissemination and marketing activities are an indispensable ingredient for the successful implementation of the project objectives. In this deliverable we describe our plan and strategy in order to successfully reach our target audience and deliver the main project messages. This document gives a general framework for the partners to implement locally, while we define quality metrics to follow-up on the actions taken and to measure the results achieved. The project innovation strategy is presented with the aim to streamline the innovation activities of the project and to foster the capacity to innovate and ensure impact. The dissemination and marketing plan offers enough flexibility for the partners to shape their message to the specifics of their country, while at the same time ensuring consistency in the overall presentation of the project’s unified platform.

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1 Introduction

The “Dissemination and Marketing Plan” is the third deliverable in the framework of the VI-SEEM activity (WP2) “Communication, Marketing, Training and Innovation”. This project activity has to provide true platform for networking, collaboration and training for the users from the three target communities. It deals with the project and its VRE services, dissemination and marketing functions, organises and delivers dissemination and training events, and supports innovation management functions. The work started from the first day of project lifetime and some of the accomplishments are already documented in the D2.1 “Internal and external communication platform, docs repository and mailing lists” [2] and D2.2 “Promotional package” [3].

The overall ambition of this activity is to stimulate the VRE services take-up and ease of end-user access to the services through broad range of training, dissemination, marketing, and outreach communication activities. The activity will strengthen the international and national human networks, foster culture of cooperation, liaise with the VRE user communities, other related projects’ human networking activities and major infrastructure and VRE stakeholders, and prospective partners beyond the R&E environment. Our strategic targets of dissemination and outreach will go beyond researchers and scientist, starting from the general public and specifically including government officials / policy makers, university/ academic senior staff, industries/SMEs, and other key players, even reaching out to schools. Our aim is to speed up significantly the learning (or incubation) process of new users and application developers, raise the regional expertise and end-user adoption, and manage the innovative project and community developments. We will finally develop and implement a comprehensive training program for Virtual Research Environment (VRE), aiming to enable end-users to seamlessly and efficiently use the underlying data, resources and services.

Together with the dissemination and marketing plan, we present in this deliverable the project innovation strategy. The strategy has been developed in order to streamline the whole process of creating, developing and exploiting scientific results and innovations within the project. The innovation strategy is based on the analysis of the key strategic strengths of the project consortium and the needs it is addressing and is closely intertwined with our marketing strategy. It builds upon a realistic assessment of our position with the landscape of European e-Science infrastructures and services, our current and potential users and the expected developments in information technology. Because of the relatively short time period of the project the goals that we set and the actions that we plan aim to achieve tangible results mostly within short and medium time-frame. First of all, we point out that strong marketing and innovation in our case are necessary because of the defined goals of the project, the technical challenges that we are facing, the nature of IT and are also part of the mission of the institutions that form our consortium. We are also committed to support innovative scientific applications that come from our target user communities, where they face their own specific challenges in using our e-Infrastructure capabilities in their research.

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Our main innovative product that has to be developed, disseminated and marketed, is the VRE that we are going to establish for the scientific communities of Life Sciences, Climatology and Digital Cultural Heritage. However, while we are establishing this integrated platform, we can expect that many of its building blocks – tools, services, etc., will require innovative solutions and some of them will have substantial innovative value on their own. The specific challenges coming from the target user communities will require specific solutions that will have to be developed and then marketed using processes and channels that are established within the corresponding scientific user community. We have to keep in mind however, two main ways of broadening the impact of project innovations. First of all, the VRE that we are going to develop should be usable to sufficient degree outside of the target scientific communities, so that some core part of the VRE can attract scientific users from adjacent disciplines, fields of research and geographical areas. On the other hand, the potential of our core scientific communities is big enough and we should consider actions and measures that can increase the value of our proposition for them. Having in mind the main technological trends that are happening right now, especially the establishment of Cloud Computing as de-facto standard in the industry, we should aim to make sure our services are following these trends. However, considering the technical excellence of the participating teams, we can expect some disruptive, breakthrough innovations that do not conform to the established ways of doing things. In the present document we outline measures and actions that will allow project innovations to realize their true potential.

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2 Project dissemination and marketing objectives

The objectives addressed in VI-SEEM expand on the unique expertise developed and demonstrated in the previous e-Infrastructure initiatives in the region. The specific e-Infrastructure developments carried out in these previous initiatives will provide an integrated platform upon which specific Virtual Research Environment (VRE) is being built. The integrated platform will encompass all layers including the networking and computing resources, and adding the specific data (and related data management services), software and tools relevant for the regional multi–disciplinary communities.

Overall VI-SEEM objective: Provide user-friendly integrated e-Infrastructure platform for Scientific Communities in Climatology, Life Sciences, and Cultural Heritage for the SEEM region; by linking compute, data, and visualization resources, as well as services, software and tools.

The project dissemination and marketing activities are intended to go beyond the standard dissemination. The goal is to provide platform for networking, collaboration and training for the users from three target communities and to support a wide marketing campaign and deal with innovation management. A special emphasis will be given to cross-disciplinary activities such that different user communities can benefit from existing competences in the VRE. Outreach will be focused on specific existing and new user communities in order to reach a critical mass of VRE users. A set of dissemination and training events will seek to cover the wider spectrum of the VRE community, with significant regional events, thus fostering broad cooperation and knowledge exchange.

Specific dissemination objectives are:

- Design, develop and maintain a content-rich platform for the communications within the VRE community and beyond: including research and dissemination processes, results and information; training activities;
- Communication, dissemination and marketing of information about VI-SEEM project and services;
- Promote the widespread use of the VI-SEEM infrastructure and services;
- Survey the needs, plan and carry out training and dissemination events at regional and national levels;
- Support innovation management: keep track of innovative project developments, react to innovation opportunities, and assess potential market opportunities for innovative developments.

Specific objectives of marketing plan are the following:

- Promote the results of project innovative activities;
- Promote the VI-SEEM technological achievements;

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- Promote use of the VI-SEEM infrastructure, services and solutions in the SEEM community;
- Promote the VI-SEEM created unique Virtual Research Environment for regional interdisciplinary collaboration;
- Attract new user communities;
- Promote the documentation, guidelines, best practice guides and training materials for HPC, Cloud, Grid, data, services and tools, for application developers and technical staff;
- Promote scientific results of the VI-SEEM community;
- Raise general public awareness of importance of the unification of existing e-Infrastructures to better utilise synergies and its impact on scientific research, technological and industrial advance, and society in general;
- Be a role model for developing other regions.

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3 Catalogue of project services to be marketed

The project’s service catalogue will provide scientists access to state of the art e-Infrastructure, i.e. computing, storage and connectivity resources. The project aims at integrating these resources with generic and domain specific services and create a unique Virtual Research Environment (VRE), which will facilitate cross-disciplinary collaboration and research in Climate, Life Sciences and Digital Cultural Heritage. The VRE platform will be offering to scientists a set of services, as defined and described in Deliverable D5.1 “Detailed technical implementation plan for VRE services and tools” [4]. Here we provide an overview of these services.

3.1 e-Infrastructure and data management services

3.1.1 e-Infrastructure services

Currently, within the WP3 the project is working on implementation of a comprehensive plan for the deployment of available HPC, Cloud, Grid and Storage resources, as well as development of services and management solutions for operation of this e-Infrastructure. The plan was elaborated in the first three months of the project, and described in detail in the deliverable D3.1 – "Infrastructure and services deployment plan". According to it, the following e-Infrastructure services will be provided to the scientific communities: access to Grid resources, access to Cloud resources, access to HPC resources, code repository, and operational user support. Technically, access to these services will be provided through the authentication and authorization layer that will enable a uniform management of users' permissions.

Access to HPC resources allows usage of clusters with low-latency interconnection or supercomputers. Currently two of them, Avitohol from Bulgaria and Leo from Hungary, are at the November 2015 Top 500 list of supercomputers (at 389th and 402nd place), while another one, ARIS from Greece, was present in the June 2015 list (at 468th place). Most of the systems are based on CPUs with x86_64 instruction set, some of them equipped with accelerators, but there are BlueGene/P systems, as well as one based on the Cell processor (PS3 cluster IMAN1-Booster/King). In total, 18.8 million CPU hours, 371.6 million GPU hours, 16.0 million Xeon Phi hours, and 5.3 million IBM Cell CPU hours per year will be made available to the three scientific communities via the agreements among the partners of the consortium in the context of the VI-SEEM project. This regional HPC infrastructure extends national capabilities in terms of capability and capacity, as countries with smaller HPC systems or no HPC systems at all have access to large supercomputers, as well as in terms of access to technology as not all countries have access to all different HPC technologies at the local level.

Access to Grid resources allows usage of smaller clusters, distributed across the region, that have installed Grid middleware layer. The resources are organized around VI-SEEM

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Virtual Organization (vo.vi-seem.eu), and integrated via a set of core Grid services deployed by the project. In total, 3100 CPU cores and 1.6 million CPU hours per year will be made available to the scientific communities through this channel. The project builds on the national Grid resources by offering VO specific services to enable their usage.

Access to Cloud resources provides the ability to launch Virtual Machines equipped with specific services required by the three Virtual Research Communities (their main or backup/fail-over instances), but also for distributed data processing and analysis. In total, 14,100 VM CPU cores and 4 million VM CPU hours per year will be made available to the scientific communities through this access channel, that provides a shared compute cloud offering for the SEEM region.

Code repository (https://code.vi-seem.eu/) hosts all source code of applications and services produced during the project lifetime. A chosen solution supports distributed and non-linear development with an emphasis on data integrity and traceability of versions.

Operational user support is established through a set of operational tools. Direct user support is provided mainly through the Helpdesk system, as well as via a technical mailing list, to enable flexibility for end users. Indirect support includes efficient management of the available computing and storage resources, monitoring of these resources, accurate measurement of utilization of different types of e-Infrastructures, technical documentation, know-hows, best practices, guidelines, as well as training material.

3.1.2 Data management services

The WP4 aims to provide a suitable set of generic and community specific storage services to support the requirements of data lifecycle management of every scientific project that will be accessing the project’s resources and services. In collaboration with the other work-packages, WP4 performed a detailed survey to identify the overall as well as detailed user needs in terms of data management. A set of generic services to be deployed has been identified. The detailed result of this survey will be presented in the upcoming project deliverable D4.1 – “Data sources and services deployment plan.”

For the purposes of the marketing plan we provide in this deliverable a summary of the envisaged six types of generic data services: simple data sharing service, data repositories, long term data archiving, work/scratch area in compute systems, data search and catalogue services and data analytics.

Simple data sharing service enables quick and easy data sharing among researchers and allows them to share files with third parties. Preferably such service should allow the use of common protocols providing the option to operate without the need to install any specific software neither on the sender’s nor the addressee’s computer.

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Data repositories are live searchable and accessible storage services for datasets where the data can be uploaded, indexed search, having scientific metadata to allow practical processing for the collaborators. The services have to be able to handle proper right management and a long-term persistence of data.

Long-term data archiving services provide a way to store reliably large volumes of data, comprising of results or unprocessed/preprocessed/processed input data, on a robust, safe and highly-available way. The main goal of this service is to provide resilience to failures and data availability in the long term, whereas access speed is of secondary importance. The geographical dispersion of the data centres of the VI-SEEM infrastructure provides additional resilience guarantees.

Working/scratch area service provides quasi-local storage spaces that are "close'' to the computing resources and can be used for short-term storage while performing the computations. The technical implementation of working/scratch area depends on the tools that are used for processing the data. These work storage spaces usually utilize SSD or hard-drive-based storage medium. The main goal of this service is to provide enough capacity for performing the required computations, avoiding bottlenecks. For many applications the local hard drives of the compute nodes are not sufficient and thus additional techniques from the domains of HPC and Cloud are used, e.g., parallel filesystems, network-attached/virtualized storage, etc.

Data search and catalogue service provides capabilities to organize and publish the various datasets, according to their metadata. One of the main features of this service is to help disseminate the results of the supported scientific projects by providing citable and identifiable data resources for publications.

Data analytics service is planned to provide tools and services, based on the best-practices in the area, enabling data mining and processing of huge amount of data online. It frees users of the burden to operate separate data analytics services by themselves.

Beyond these generic services, following the user needs, specific services are going to be also identified, implemented and deployed in the later phases of the project.

3.2 Generic services, models and tools

The three generic services offered by VI-SEEM are the following:

- **VI-SEEM scientific application environment:** This service provides several modules such as optimized applications, codes, libraries, and list of available codes, relevant for the work of the regional scientific communities of interest. Such modules are preinstalled in the compute resources of the infrastructure or are provided as VM images. Examples of such modules include codes for Climate models, production

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programs for Life Sciences applications, and data management tools for Digital Culture Heritage.

- **Workflow, pipeline and software tools repository:** This service provides several modules such as documents containing best practice procedures and workflows for the production of scientific results relevant to the application categories identified in the SEEM region. Examples are the workflows for simulating a protein with NAMD or with GROMACS (Life Sciences), and the MECCA atmospheric chemistry module on accelerator technology (Climate).
- **Regional community datasets:** This service provides datasets of regional importance for the scientific communities of interest. Examples of such datasets are the RTI dataset of ancient Cypriot coinage (Digital Culture Heritage) and datasets with data for thermodynamic stability of RNA/DNA and DNA/DNA duplexes (Life Sciences).

3.3 Domain specific services, models and tools

An domain-specific services category will offer to scientists web-based services providing easy access to underlying workflows, applications, resources and visualisation. Examples of such services are:

- ChemBioServer: a web-based pipeline for filtering, clustering and visualization of chemical compounds used in drug discovery,
- Live Access Server: a web server designed to provide flexible access to geo-referenced scientific data, offering visualization and post-processing capabilities for climate data,
- Clowder: a Digital Culture Heritage repository which also offers integrated interactive visualization tools.

3.4 Scientific applications and data sets

The generic and domain-specific services will be co-developed by the applications selected through a regional survey conducted by WP5. The development and integration of these services and service modules will be facilitated through a continuous access scheme. The scheme will provide access to the VI-SEEM infrastructure to application developers in order to develop and integrate codes, tools, datasets and domain-specific application services to the platform.

The applications selected cover almost all use cases identified in the DoA [1]. In particular, for each of the three scientific communities the applications cover the following topics:

- **Climate:** Regional climate modelling, global climate modelling, weather forecasting, air pollution and air quality, and atmospheric model development.
- **Life Sciences:** Modeling and molecular dynamics study of identified drug targets, computer-aided drug design, analysis of next generation DNA sequencing data and RNA profiling data, data mining to identify prevalent diseases/mutations in the SEEM

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region, image processing for biological applications, computational simulation of DNA and RNA, and synchrotron data analysis.

- **Digital Culture Heritage:** Digital libraries, interactive visualization tools, semantic referencing, image classification, modelling of built environments and advanced representation techniques, scientific simulation of materiality and systems' properties and geo-referencing tools.

In addition to the services developed from these applications, datasets that are generated from production access projects will also be integrated to the VI-SEEM services portfolio.

3.5 Training services

VI-SEEMS leverages the power of the integrated regional e-Infrastructure to serve target VRE scientific communities, for which it necessities a series of national and regional trainings. The training plan will be described in detail in the Deliverable 2.4 “Training plan”, but it is being continuously adapted to accommodate the needs of research communities from scientific, R&D and industrial domains. Because of the versatile type of resources and services that we offer, our portfolio of training services is also very broad. The main target groups of the VI-SEEM trainings are users and application developers from the three core scientific communities, but we are flexible to a certain level and can accommodate anyone interested in intensive use of HPC, Grid, Cloud or Data. Depending on the targeted audience, VI-SEEM training services cover the following topics:

- Application developers: general techniques and methods of programming for HPC and distributed (Grid, Cloud) environments, debugging tools, performance analysis, code optimization, architecture-specific designs;
- Application users: access to e-Infrastructure resources, application-specific training for the end-users, data analysis and visualization.

The VI-SEEM training services will also provide a way for disseminating the innovation results of the project, fostering the initial user take-up.

The calendar of upcoming and past VI-SEEM training events is available at the official project web site [5]. Detailed agendas along with presentation slides and other supporting material is provided for each VI-SEEM organized event at the VI-SEEM Agenda System [6].

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4 Project innovation strategy

VI-SEEM innovative potential can be summarized in the following key areas:

- The Virtual Research Environment as an integrated platform,
- Modules of the platform as generic services with broad applications,
- Services, tools and applications, serving specific needs of a target scientific community,
- New processes and models of usage of the infrastructure, including new business models.

One of our key strengths is that the consortium integrates all types of e-Infrastructure capabilities – HPC, Grid, Cloud, Storage, as well as substantial knowledge and capabilities with respect to networking. The innovative way of integrating these components can produce high-quality results. In order to maximise the benefit from these developments, we should focus on usability, where we can expect that our integrated approach will be most advantageous. The large experience of the consortium in providing similar types of services and established processes with respect to monitoring and assessing the quality of the provided resources is a key point in ensuring the reliability of the services. The fact that the resource centers are geographically distributed provides ways to ensure failure and redundancy in a natural way. Although many European consortia provide distributed resources, here we have unique combination of strength in both distributed computing and storage, but also in HPC computing and especially in the use of accelerators like Xeon Phi or NVIDIA GPGPU devices. The combined use of these types of technologies has large innovative potential, since such applications are seen as one of the key trends in the IT in general. The ever-increasing energy requirements and costs make it unfeasible for scientific institutions to create, develop and maintain their own facilities. This is especially difficult in the region of South Eastern Europe and the Mediterranean, where there are whole countries that cannot afford to build a state-of-the-art computing or data storage facility.

The leading roles of the consortium members within their countries in the domain of development and provision of e-Science services gives us leverage to establish our services and tools as a de-facto standard, once we achieve sufficient levels of usability and reliability.

In general access to computing services from the scientific community is oversubscribed, i.e., there is always demand for raw computing capacity. However, in the region of South Eastern Europe and Mediterranean, due to the relative scarcity of large compute and storage resources, there is substantial lack of expertise in using computing and storage resources for large-scale simulations. That is why it is important to ensure our services are coupled with sufficient training services and documentation. Nevertheless, this is our key selling point and we should exploit our unique position in the area. The target scientific areas where our platform will be used have been selected carefully, with their relevance in the region and relative strength at European level taken into account. Thus we should

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expect that our achievements useful for these areas of science will achieve easier European impact.

Now let's consider the areas where are the main difficulties and relative weaknesses that we should be careful about. They can also define key areas for innovation and improvement. First of all, the brain drain that the region suffers for a long time has led to a situation where strong teams of scientists are relatively sparse. Our approach would be to strive and find these teams, making them our best promoters. To maximize the benefit of this approach, it will be useful to establish the notion of “champions” of the project and provide some resources for promotion of the success stories of the project at scientific conferences and other events.

Due to the economic situation in the region it is also important to avoid introducing any kind of payment, even in perspective, because this will alienate our potential users and limit our impact.

Since strong science and education, especially taking into account their funding, are an important advantage of the region and its economy, we should work with policy makers and strive to deliver the message of the value that we provide to advanced scientific research and thus, indirectly, to the economic development of the region.

We should be aware that the regional ecosystem of small and medium enterprises in IT is not as strong as in some Western European countries and the transfer of knowledge to SMEs is hindered by the general lack of financial strength that is necessary to fund some sort of joint activities by the SMEs. However, there is an alternative course of action. We should consider the increased presence of industry leaders in the domain of IT and more importantly, the fact that they establish their research arms in the region. Working with such large industry players is administratively more challenging, but strategically more rewarding. In this respect it is important to consider the question of protecting our intellectual property. In general we have accepted that open-sourcing the software is the right thing to do and we are committed to do that. However, there are different variants of open-source licenses and they do provide protection of the developed software. We should also be aware that the Software-As-A-Service model is better suited for us and give priority to developments that enable such kind of packaging of our innovations.

Nevertheless, the technical board of the project should constantly follow-up the developments in open-source software licenses and if necessary, propose new types of open-source licenses to be adopted for current or new software projects.

We have also to stress that with this project our resources are limited and thus we cannot afford to concentrate on a few long-term innovation projects, since this will endanger the goals of the project and has bad risk/reward profile. On the contrary, we should strive to establish our services as reliable, easy-to-use yet with advanced features, and make them open to broadest possible audience.

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That is why we cannot choose the centralized model where innovation is concentrated at one physical location and generally isolated from day-to-day operations. Our necessary choice is to incorporate innovative actions in a distributed manner, where many small teams organize dynamically. The main challenge in such case would be to detect innovative developments as they happen and to foster them so that their value is maximized and not lost in the daily problems. It is obvious that in each of the areas of development the responsible work-package leaders would have to gather information about what has been achieved and its potential, while the task leaders would be involved in the team organization, planning and reporting.

Since we do not have much flexibility in how we use the resources of the project, we should incorporate those actions that are important for innovation in our regular operations. For example, we should try and involve scientists and researchers that wish to contribute and have potential for innovation. Our main tool for this will be the open calls, where we must incorporate the innovation potential and value of the proposals in the decision process. We should also be open to some proposals that may look unfit for our infrastructure at the first sight, but actually may reveal or provide opportunities for innovation, e.g., by indicating areas where our infrastructure needs to be improved.

That is why it will be advisable to have an examination of the projects that failed due to technical requirements, in order to detect such problematic areas and to outline new courses of action. We should point out that in the area of e-Infrastructure there are some established standards, but also traditions, that in fact present a challenge and even a hindrance to innovation. For example, the issue of authentication and authorization is solved in many different ways, all following some kind of standard, but adding many cumbersome administrative steps for the scientists to obtain access and actually use resources.

In general, we should consider our main opportunity in the perceived disjoint efforts in distributed computing, high performance computing, storage, big data, etc., which introduces incompatibilities and hindrances for the scientists to actually use all that available power. The single point of contact that the project can provide is an obvious advantage and will be strengthened by organizing all kinds of support services around it. Providing good authentication and authorization framework that encompasses all our services is an important goal and in itself may prove to be a successful innovation.

It is also well-known that the transfer of large amounts of data is difficult when accessing traditional HPC centers. By large amounts of data we do not mean necessarily Big Data, although this is also important point, but even the routine transfer of amounts of data in order of Terabytes can be problematic, especially when adding some requirements that are specific to the scientific area. Something even more challenging is providing data indexing, validation, encryption, anonymization and similar services, where standards and practices are not so established in the area of e-Infrastructure. For the project it will be important to recognize any significant progress that we make in these areas and try to leverage it.

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The next part of our innovation strategy is about the threats that we are facing and how we are dealing with them through innovation. Perhaps as the main threat we should consider to be locked into outdated equipment, services and models of their provisioning, when other competing approaches gain traction. To address this threat we must observe very closely how the IT industry is developing and react to any important new developments. It is especially important to become early adopters of some of the newly emerging technologies in the area of virtualization, where we believe to see the biggest opportunity but also threat. Namely, there is significant pressure at national level in the various countries to accept cloud computing as the main way of provisioning access for scientific computing and to outsource this provisioning to some private enterprises. The great danger in this approach is that cloud providers are always under pressure to deliver services at the lowest cost and thus it is possible that after some public procurement procedure the scientists will be locked into using outdated equipment without advanced features and capabilities. On the other hand, because academic institutions have in their mission to develop new methods, technologies and services, their services are more cost effective in the end, since they offer better opportunities for the most demanding but also most rewarding types of computations or data storage. Here the strategic action of the consortium is to leverage the fact that more advanced hardware is acquired at different times in the different countries and thus even the most demanding needs can be served. On the other hand we are to actually adopt the most advanced new technologies in this domain and to make use of the fact that we have large enough hardware infrastructure. This means that we can dedicate parts of the resources for development works and to do testing at scale of our new inventions, speeding up the delivery of advanced services, which is the ultimate goal.

We also should incorporate energy efficiency as an important consideration, because most of the new developments in IT are related to that. This means that our accounting for resources should eventually accommodate some information about the energy costs.

Now based on this assessment we outline some concrete steps and actions that should improve our innovation capacity. First of all, since our services portfolio is not that big, we should be very strong in the launching of our services. During the Technical Boards meeting we should assess the success in launching any new service, its quality and observed vs. expected usage, so that any problems in the launch process itself are detected early and resolved for subsequent launches. We should also assess at appropriate times the amount of traction our various services get and phase out or redefine those that are not that much utilized. In order to detect innovation opportunities, we should find out what kind of users we are effectively rejecting and what kind of usage patterns are unusual, looking like a kludge, since from these we can infer what kind of changes to our services maybe beneficial. This action can be formalized through feedback forms.

We should also observe and investigate situations where our hardware or software capabilities are stretched to their limits, because fixing such problems may yield innovative solutions. This can be accomplished by having dedicated sections in the corresponding

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documents, where major failures or bottlenecks have to be detailed and mitigation strategies to be proposed.

One successful approach to innovation in the industry is to work with start-ups, either by acquiring them or developing a start-up culture within the company. The project consortium does not have the required amount of resources for full-scale implementation of such a strategy. However, fostering a start-up culture within the project can be accomplished by forming small teams that work for limited periods of time with some operational freedom and using sandboxes and testbeds within the infrastructure, where new ideas can be implemented and tested.

Since our position as providers of e-Infrastructure services is well established in the region and the target scientific communities have potential for expansion beyond the region, we should strive to maximize the impact of our innovation effort by marketing our capabilities in relevant, high-profile events and through collaboration with organizations and projects that are not competitors but rather consider themselves as users of IT technologies for research. The formalization of such collaboration will be important part of the work. Joint development of services may be slightly out of the scope of our current project, but offering early access and obtaining feedback may give us substantial advantages.

To maximise the use of our human potential we can envisage actions that can take place once our platform is operational and stable to a sufficient degree, at which point scientists and students can be given preparatory access, so that they can test some innovative ideas that we can later adopt.

In order to be successful in our innovation efforts, we must also take some measured risks. It seems that after our platform becomes operational and we assess its take-up, we will be able to aggressively eliminate parts of the service portfolio that require substantive maintenance efforts but do not see much use and use the freed-up resources to introduce new services that are in demand. From the initial survey we already see possibilities in this direction, but it will be wise to perform thorough formal review in this direction in the middle of the project and act accordingly.

In summary, the following recommendation and activities are proposed in **Table 1**.

Main Action	Responsible	Implementation Date
1. Establish project innovation register *The register will be created by WP2 team by M12 and the WP3, WP4 and WP5 leaders will gather and regularly provide*	Technical Board	M12 for creating of the register

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information about the project achievements.		
2. Involve scientists with potential for innovations in the project work *This recommendation will be achieved within the open calls which are planned to happen at M18, M24 and M30.*	All Partners	Project duration
3. Discover innovation opportunities: *3.1. Collect feedback from rejected applications* *3.2. Analyze the major failures or bottlenecks and propose solutions for fix them*	All Partners	Project duration
4. Work with IT industry leaders *Establish contacts with key persons from development arms of big IT industry companies with presence in the region, present project results and discuss possible joint work.*	All Partners	Project duration
5. Follow up developments in open source licenses *Observe developments in open source licenses and regularly notify partners if interesting new trends appear in the protection of intellectual property when open-source licenses are used.*	Technical board	Project duration
6. Collaborate with other EU projects in innovation *Discuss possible joint actions to promote innovation results with other EU projects, formalize in MoUs if advisable.*	Project Manager, All partners	Project duration

Table 1: Innovation activities

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5 Target audience

VI-SEEM dissemination and marketing activities aim to reach as wide a range of audience as possible, targeting efficiently each audience group. VI-SEEM project aims to have large impact in the South Eastern Europe and Eastern Mediterranean region, benefiting from scientific and R&D communities in the project context. Project also foresees impact outside the borders of the SEEM region through collaboration with related projects and by acting as a role-model for regional collaboration in less-resourced countries world-wide.

Main target audience groups, within and outside the SEEM region, are presented in **Table 2**, along with the top line messages that VI-SEEM is passing through its marketing and dissemination activities.

Target Audience		Top Line Messages
ALL		VI-SEEM integrated e-Infrastructure platform enables new science discoveries, technological advances and innovations in products and services.
SEEM region	User communities (Climate, Life Sciences, and Cultural Heritage)	VI-SEEM training and user support makes access to and usage of computing, data, and visualization resources, as well as services, software and tools easier.
	New user communities from the scientific and R&D domain	VI-SEEM has excellent e-Infrastructure resources and services which can be used. VI-SEEM enables and provides high level of expertise in the region.
	Students and academic staff	There are job career and learning opportunities in HPC, Big Data, Cloud and Grid domains. VI-SEEM provides excellent trainings.
	General public, schools and educators	HPC, Big Data, Cloud and Grid positively affects and improves everyday life. Combined use of VI-SEEM advanced computing and data services achieves high impact.
	Decision makers, governmental representatives, policy makers and stakeholders	Advanced computing and data infrastructures are of high strategic importance for European society, SEEM region, and each country in the region. VI-SEEM is helping the participating countries to bridge the gap with the advanced countries. Establishing integrated e-Infrastructure platform is of particular societal, economic, educational, and political importance to the region and the

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		individual countries as well.
Outside SEEM region	Other e-Infrastructure projects (PRACE, EUDAT, SESAME-NET, EGI-Engage, etc.) as well as other VRE projects.	Sharing of computing and storage e-Infrastructures, knowledge, expertise and scientific results beyond national and regional scopes further strengthens the human network and accelerates the development of scientific research, technological and industrial advance, modernization and innovation. VI-SEEM builds a competence in provision of unified virtual Research Environment to three scientific communities in the SEEM region that can be complementary to the competence being built by the other initiatives. VI-SEEM is open for collaboration.
	Standardization and policy bodies at EU and other levels	VI-SEEM contributes to unify existing e-Infrastructures to better utilise synergies, for an improved service provision within a unified Virtual Research Environment to be provided to the scientific user communities. This is a contribution at European level towards RI priorities, in particular e-Infrastructure commons (as stated in the new WP 2017-2018) and socio-economic impacts that bridging the digital divide brings.
	Other less-resourced regions and countries interested in setting up federated platform	Collaboration and partnership brings the region on a technological par with rest of Europe, overcoming the fragmentation and digital divide. VI-SEEM provides proven models, policies and experience for long-lasting international collaboration based on sharing resources and knowledge.

Table 2: VI-SEEM top-line messages to different audiences

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6 Dissemination and training activities

This chapter briefly describes the planned dissemination and training activities and dissemination channels within the VI-SEEM project.

6.1 Dissemination

VI-SEEM plans to communicate all relevant information about the project objectives, activities, events, available computing and storage resources, data, applications, tools and services developed and maintained by the project. A set of focused dissemination events will be held in order to raise awareness about VRE services within the R&E community but also to policy-makers and society at large. In this context, actions will be taken to organize and participate in local and international events and conferences. The project will also support the scientists in publishing the work achieved by using VRE services, and maintain a publications and paper repository, thus further raising awareness in the regional and global community.

VI-SEEM dissemination events are divided in the following categories:

- **VI-SEEM organized events**: 1 large regional dissemination event will be organized – targeted to be collated with a major external international conference for a bigger impact. 16 country-level disseminations are envisaged - 1 per country targeting the buy-in of the local community (see Table 3 for the planned events).
- **Events with VI-SEEM participation**: Project and its services are expected to be presented in at least 50 external events.
- **Scientific conferences**: Based on experience of previous activities, at least 70 publications are expected in the project lifetime, and 30 afterwards.

Partners are responsible for the choice of the most important VI-SEEM related events where the project has to be disseminated. We have adopted the following procedure:

- In the beginning of each quarter each partner fills the table (presented here in Annex A) and sends the table to WP2 leader.
- WP2 team posts the upcoming events announcements in the project website (in News).
- After the event, the partner sends a short report to WP2 leader.
- WP2 team posts the report in Events under the appropriate sub-category.

In this way, all the relevant information will be available through the project website.

VI-SEEM dissemination tools are designed and developed within the first three months of the project in order to fulfill the dissemination objectives. They include the following:

- *VI-SEEM web site* [5]. The website of the project is already developed and is accessible via https://vi-seem.eu. The website constitutes an integral part of the VI-SEEM communication infrastructure and will be used in the project lifetime to

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disseminate the project objectives, activities, events, available infrastructure - networking, computing and storage resources, VRE services, applications, etc.

- *Document sharing system.* VI-SEEM BOX has been established in order to facilitate communication and collaboration among the members of the project consortium via the secure storage and sharing of folders and files. The repository allows for adding folders, uploading files, updating folders and files, adding descriptions, deleting folders and files, as well as adding and changing user and group file permissions. The system provides activity updates and notifications.
- *The Agenda tool* (http://events.vi-seem.eu/) [6] is used to schedule and organize events, from simple meetings to complex workshops and conferences with sessions and contributions. The following event categories have been implemented in the VI-SEEM Agenda tool: Conference and Dissemination events; Training events; Meetings.
- *VI-SEEM social media*. VI-SEEM utilizes Twitter and LinkedIn to continuously broadcast updates and project information, to disseminate the project scope and objectives, to introduce the VI-SEEM infrastructure and services to new users, and to maintain communication with the Virtual Research Communities.
- *VI-SEEM promotional package*. The first version of the package is already produced – it contains the VI-SEEM brochure, poster and presentation. The material is built on a common graphic style that reflects an effective visual brand identity. The brochure provides an overview of the project, the technology context and the impact on the Climate, Life Sciences and Cultural Heritage scientific communities. The VI-SEEM poster enhances and further promotes the project brand identity. The presentation provides detailed information on the project background, objectives, methodology approach, resources and expected results.

Project Month	Organizer [partner]	Country	Framework [national/regional]
M25	01-GRNET	GR	Regional
M15	01-GRNET	GR	National
M14	02-CyL	CY	National
M14	03-IICT-BAS	BG	National
M04	04-IPB	RS	National
M18	05-NIIFI	HU	National
M24	06-UVT	RO	National
M18	07-UPT	AL	National

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M08	08-UoBL	BA	National
M09	09-UKIM	MK	National
M17	10-UOM	ME	National
M10	11-RENAM	MD	National
M12	12-IIAP-NAS-RA	AM	National
M24	13-GRENA	GE	National
M21	14-BA	EG	National
M22	15-IUCC	IL	National
M14	16-SESAME	JO	National

Table 3: VI-SEEM plan for dissemination events

6.2 Training

Regarding training, VI-SEEM will build upon the solid trainer community already existing in the region, built during the previous initiatives. A brief survey of training needs and requirements for the three user communities is already performed, and based on this a detailed training plan will be prepared and described in D3.4 in M06. The core-targeted audience are the application developers and end-users, which will be targeted through generic and specialized developer training events closely related to the needs of the three research communities. Overall quality of trainings will be assured by strict training policies, the standardisation of training materials and constant monitoring of the training events through reports and questionnaires. A special emphasis will be given to cross disciplinary activities: workshops will be designed such that different user communities can benefit from existing competences in the VRE. Outreach will be focused on specific existing and new user communities in order to reach a critical mass of VRE users. The project will deliver 5 regional end-user training events, both community-specific and cross-disciplinary. This will be complemented with 8 country-level training events throughout the project duration for local user communities.

The planned 5 regional end-user training events are scheduled as listed in **Table 4**.

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Project Month / Month, Year	Place	Organizer	Type of Training
M08 / May 2016	Belgrade, RS	04-IPB	Training for developers
M13 / October 2016	Cairo/Alexandria, EG	14-BA	Training for CH community
M17 / February 2017	Belgrade, RS	04-IPB	Training for CC community
M20 / May 2017	Nicosia, CY	02-CyL	Cross disciplinary training
M25 / October 2017	Sofia, BG	03-IICT-BAS	Training for LS community

Table 4: Regional VI-SEEM training events for end-users

The global analysis of the survey of training needs and requirements has provided a set of initial conclusions on the topics that need to be covered during the regional and national training events. The results have shown that the training events need to include introduction to the technology together with initial training for ways to access and use the available infrastructure. The best approach would be to apply the webinar concept with recording and thus also maintain a video tutorials library that can be re-accessed at any time allowing further dissemination of the training material. The most needed general training topics should cover HPC, Hadoop and using Big Data and cloud tools, as well as adequate user support for MPI applications.

In addition to the general introductory training, specific trainings for the different Scientific Communities must cover the topics that have been highlighted in the survey responses. In this context, it is important to cover topics like: GPU training combined with CUDA, MPI and OpenMP as well as R language and advanced LAS training for visualization - for the users belonging to the Climate Scientific Community. The Life Science Scientific Community have also requested advanced GPU training with MPI and OpenMP, but also requires advanced data mining and big data training as well as GROMACS training. CUDA and GPUs are important for the cultural heritage Scientific Community as well, where Grid training is also requested. The most specific requests for this Scientific Community include statistical analysis and MEDICI, SOL and 3DINV training.

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7 Marketing activities

VI-SEEM team is carrying out a set of activities aimed towards the fulfilment of the dissemination tasks described in Chapter 6 and in deliverables D2.1 and D2.2. This chapter will outline the plan for complementary actions that will improve the existing dissemination plan and bring it to the next level of proactive marketing, making the services offered by VI-SEEM more attractive to the scientific communities. It will also put stronger emphasis on reaching out to schools and universities, general public, etc. The envisaged activities are:

- Support leading scientists in presenting and publishing the work achieved by using VRE services at high-profile conferences in the domains of Cultural Heritage, Life Sciences and Climate.
- Update regularly the project web site to give visibility of project results through dynamic and attractive manner.
- Regularly improve the training material collection reflecting changes in the infrastructure and users feedback.
- Promote technical documentation and porting guidelines to researchers of the region and beyond.
- Promote open calls for applications and access among the 3 target communities.
- Ensure VI-SEEM presence (presentation, poster, brochures) at various scientific conferences to promote the scientific results.
- Organize dissemination and introductory training events with emphasis on VI-SEEM services of interest to target audience and possibilities of obtaining access to computing and storage infrastructure. These events should be broadly advertised to the research institutions and academic staff.
- Organize presentations targeting schools, universities and general public, emphasising the importance of unified e-Infrastructure platform and impact on scientific research, R&D, industry development and society in general under the VI-SEEM framework.
- Promote the VI-SEEM platform and results, through local media such as printed or online popular science magazines or daily journals targeting different audience – schools, universities, general public, industry and SMEs.
- Encourage visits of students to the e-Infrastructure centres.
- Encourage and promote undergraduate internship programmes at e-Infrastructure centres for both system administrators and application developers' positions.
- Advertise job opportunities for developers and system administrators through VI-SEEM communication channels.
- Establishing contacts with potential industrial partners and SMEs and discuss their eventual needs and search for possibilities for future collaboration.
- Establishing contacts and collaborations with other e-Infrastructure related projects.
- Bring the activities of the VI-SEEM project to the attention of government and politicians and try to gain long-term support towards sustainability of national e-Infrastructures.

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List of actions and steps for the implementation of marketing strategy and achievement of marketing objectives targeting other audience groups within region is given in **Table 5**.

Target Audience	Main Actions	Implementing Date
New user communities (scientific, R&D)	**1.1. Organize one dissemination event at national level** *This event will be advertised to wide range of Institutions, research groups or SMEs/industry through personal invitations, mailing lists, bulletin board, regular mail, etc.*	
	Partner: All partners	Date: project duration
	1.2. Investigate the possibility to offer resources to new scientific communities *The project intends to open calls for proposals, for access to VI-SEEM resources intended for scientists of the SEEM region in the fields of Cultural Heritage, Life Sciences and Climatology. We also will consider the option to help the new user communities.*	
	Partner: All partners	Date: project duration
	1.3. Create a concise and effective list with all VI-SEEM services clearly listed and distribute it electronically to existing VI-SEEM users and other interested parties	
	Partner: All partners	Date: project duration
General public, high school students and educators	**2.1. Publish a popular article about VI-SEEM results in a magazine or journal** (printed or online edition) *The article will be provided in English and needs to be translated in local language. If necessary, article will be adapted for the young audience. Please specify candidate magazine/s and potential dates of publication*	
	Partner: All partners	Date: project duration
	2.2. VI-SEEM presence possibilities in a "popular science" events targeting schools and general wide public such as science fair, science competitions and science festival will be explored	
	Partner: All partners	Date: project duration
Students and academic staff	**3.1. Organize presentations of the VI-SEEM integrated platform and results to local universities** *These presentations can be part of lectures or seminars at local universities, or independent presentation at universities.*	
	Partner: All partners	Date: project duration
	3.2. Organize a short e-Infrastructure centre tour for a group of students	
	Partner: All partners	Date: project duration
	3.3 Offering an internship position(s) at local e-Infrastructure	

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	centres to a student in suitable field	
	Partner: All partners	Date: project duration
Industry and SMEs	**4.1. Organize targeted meetings with SMEs and industry and discuss their view of e-Infrastructure topics and search for possibilities for future collaboration.**	
	Partner: All partners	Date: project duration
	4.2. Present VI-SEEM services and benefits of e-Infrastructures for R&D, industry and SMEs at related events	
	Partner: All partners	Date: project duration
	4.3. Explore and specify other possibilities of reaching out to SMEs and industry and establishing contacts	
	Partner: All partners	Date: project duration

Table 5: VI-SEEM marketing plan

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8 Quality metrics

The specific quality metrics related to VI-SEEM marketing activities are listed below:

- Number of organized dissemination and training events targeted at SEEM user communities:
  - 1 large regional and 16 country-level dissemination events organized by the project with total of 1000 persons targeted.
  - 12 training events (4 regional and 8 national) organized by the project with 300 persons targeted.
- Number of external events with VI-SEEM presentation:
  - At least 50 external events.
- Number of scientific papers with VI-SEEM acknowledgement:
  - 100 publications: 70 publications in project lifetime and 30 afterwards.
- Number of applications to project calls.
- Number of published popular articles.
- Number of "popular science" events targeting schools and general wide public with VI-SEEM presence.
- Number of presentations at universities with reference to VI-SEEM.
- Number of contacts with SMEs and industry.

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9 Conclusions

The dissemination and marketing activities are an indispensable ingredient for successful implementation of the project objectives. In this deliverable we describe our plan and strategy in order to successfully reach our target audience and deliver the main project messages. This document gives a general framework for the partners to implement locally, while we define quality metrics to follow-up on the actions taken and to measure the achieved results. The project innovation strategy is presented with the aim to facilitate the innovation activities of the project, to coordinate them and to foster the capacity to innovate. Because of the limited timeframe of the project the planned activities aim to obtain maximum benefit from the project’s innovations. The dissemination and marketing plan offers enough flexibility to the partners to shape their message to the specifics of their country, while at the same time ensuring consistency in the overall presentation of the project’s unified platform. Although the project’s funding for dissemination is limited, the partners have excellent position within their countries and will be able to achieve high impact while reaching the diverse target audiences. The planned activities are based on the specific conditions of the region, it strengths in science and innovation, and are in-line with the European priorities.

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Appendix A VI-SEEM 3-monthly dissemination form

Event information

Details needed, per upcoming event: Date, Location, Title, Organizer, VI-SEEM project Participant, Title of VI-SEEM presentation, URL. Please, send us short report after the event.

	Upcoming Events	
1.	VI-SEEM dissemination events organized by your institution	
2.	VI-SEEM trainings organized by your institution	
3.	Scientific conferences/workshops where you present the project results (technical or scientific)	
4.	Relevant related events where you present the project results (technical or scientific)	

NEWS

	News	
5.	News to share through social media	
6.	VI-SEEM related news/popular articles published in local newspapers and other media	
7.	Concrete suggestions concerning the content of the next press release/newsletter	

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PUBLICATONS

List all scientific publications (with acknowledgement to VI-SEEM), (for details please see the example in the table below).

Type of publication (journal/proceedings/Book chapter, IF/SJR)	Details: (author(s), publication title, journal title, volume/issue, publisher, pages, date, doi/ ISSN/ISBN)
Journal publication, IF=1.697 (2014)	*Atanassov E., Gurov T., Karaivanova A., Energy Aware Performance Study for a Class of Computationally Intensive Monte Carlo Algorithms, J. Computers & Mathematics with Applications, Volume 70, Issue 11, pp. 2719–2725, 2015, doi:10.1016/j.camwa.2015.07.014.*

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