



*Visual Analysis for **E**xtrremely **L**arge-**S**cale
Scientific **C**omputing*

D6.2 – Dissemination Activities

Version #2.1

Deliverable Information

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| Author/s | Tomas Pariente |
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Approvals

| | Name | Institution | Date | OK |
|--------------------|---------------------------------|--------------|--------------------------|----|
| Author | Tomás Pariente Belén Gallego | ATOS | 09/05/2016 29/12/2015 | OK |
| Task Leader | Tomás Pariente | ATOS | 09/05/2016 29/12/2015 | OK |
| WP Leader | Tomás Pariente | ATOS | 09/05/2016 29/12/2015 | OK |
| Coordinator | Abel Coll | CIMNE | 16/05/2016 31/12/2015 | OK |

Change Log

| Version | Description of Change |
|---------|-----------------------------------------------------------------------------|
| 0.1 | Update based on D6.1 |
| 0.2 | Contributions from all partners included in the tables |
| 0.3 | Dissemination strategy revisited, input from tables updated and homogenized |
| 1.0 | Final version sent to the coordinator |
| 1.1 | Review and minor corrections from coordinator |
| 2.0 | Recommendations from reviewers included |

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1 Introduction

This deliverable aims at providing an update as per M24 of the dissemination of VELaSSCo, (included some recommendations from the project reviewers panel covering until M28). Dissemination refers to a series of activities that results on the exposition of the project results to as many relevant people as possible. This document presents therefore an update of the previous dissemination deliverable D6.1. All partners participate on these activities, disseminating the results among interested audience (simulation on engineering community, academia, industry, big data and HPC researchers and practitioners, general public, etc.). The actions included on these activities have been detailed through a dissemination plan, defined on the previous deliverable D6.1 and revisited in this document. This intermediate version details and updates the plan and strategy to be adopted throughout the project lifetime. The effort in the dissemination activities will gradually increase as the project evolves and all these activities will be agreed by the consortium.

1.1 Project description

The main goal of VELaSSCo is to develop a new idea of integrated post-processing algorithms for engineering modelling applications and advanced management with end-user visual analysis methods, scalable for real-time petabyte level simulations. The end-user visualizations will generate crucial information for analysis, making use for that of real-time examination and processing of the data obtained in simulations. The problems that VELaSSCo aims to solve are how to:

- Handle a huge amount of a very specific kind of data, intrinsically tied to geometrical properties, which is highly distributed;
- Access, store, manipulate and simplify a huge amount of records, to obtain the proper information.
- Represents information in a feasible and elastic way;
- Visualize and inspect, interactively, the enormous amount of information produced, prioritizing end-users needs.

In order to tackle these aims, VELaSSCO puts together experts with relevant background in Big Data handling, advanced visualization techniques, simulations on engineering fields, and a User Panel including research centers, SMEs and companies from key European industrial sectors such as aerospace, household products, chemical, pharmaceutical and civil engineering.

1.2 Dissemination objectives

The dissemination program of VELaSSCo aims to bring the project's outcomes to as many relevant stakeholders and people as possible. Communication about European research projects should aim to demonstrate the ways in which research is contributing to a Europe's leadership in innovation, science and technology. At the same time, it is a useful tool to account for public spending, by providing tangible

proof that collaborative research EU-funded project contribute to relevant results solving scientific and societal challenges.

The project has been planning and executing dissemination activities for specialized constituencies and general public, in particular for awareness and educational purposes and to the industry.

The following table summarizes some of the reasons why dissemination activities are important for successful completion of VELaSSCo.

| WHY ARE DISSEMINATION ACTIVITIES IMPORTANT IN VELaSSCo? |
|----------------------------------------------------------------------------------------------------------------------------------|
| To make visible scientific progress |
| To get feedback for future improvements and directions, define priorities attending to end users and other research works |
| To share knowledge and results and take better profit from third party's results |
| To attract industrial partners and investment |
| To match common needs with potential solutions |
| To have better knowledge of the potential market |
| To maintain and improve international reputation |
| To facilitate exploitation through awareness |
| To increase market demand (surveys about trends, etc.) |
| To ensure continuity of the research line (importance in a timeline and within an international context) |

2 Dissemination plan specification

2.1 Dissemination strategy

Dissemination aims at spreading the word of the project aims and outcomes as they appear. A clear dissemination strategy is a must in order ensure the communication to the right audience, while making possible to get an interactive user feedback. This interconnectivity between the VELaSSCo consortium and potential end users will help to provide feedback and suggestions regarding the current status of the VELaSSCo technology.

On the other hand, in contrast with the previous year, VELaSSCo is now in a more mature development phase. Especially by the end of the reporting period several components, queries and visualizations are taking shapes. This enables the possibility of going a step forward in dissemination and show results to the public.

In VELaSSCo the dissemination is mainly twofold: scientific and industrial. Both scientific and industrial dissemination need of a set of related activities and tools specifically targeted to the different audience.

2.1.1 Communication to scientific audiences

Scientific achievement is being disseminated using the standardized communication tools used in science and technology, such as attendance and participation in scientific and technical conferences, forums and workshops by scientist and researchers. The conferences and workshops are selected according the availability and type of results. Project partners also aim at publishing scientific and technical papers in relevant scientific journals. The publication of the project outcomes in peer-reviewed journal is also a way to give confidence to potential users and to demonstrate the soundness of the work, supported by the scientific community.

In particular the project is using the presence of some of the partners in specific events, such as:

- Communication to international conferences organized by Scientific Societies on Numerical methods, to which the groups of CIMNE regularly contribute.
- Contributions to Scientific Conferences related to Isogeometric Analysis where SINTEF regularly contributes.
- Organization of a specific session on Data Analytics and visualization for HPC simulations in the framework of the ECCOMAS-European Research Community of Computational Methods in Applied Sciences (CIMNE belongs to the organizing committee of these conferences), in which some of the partners belong to the organization committees. It will represent an opportunity to put together a think-tank on this field with the involvement of world-class experts.

2.1.2 Communication to non-scientific audiences

General communication of the project results to a more industrial audience has been pursued by adapting the contents to the audience towards it is intended. This dissemination is especially useful to ensure the exploitation and sustainability of the results, and therefore is linked to the exploitation prospects. Some of the envisaged actions, especially dedicated to the uptake of the outcomes of the project by the industrial sector, are the following:

- Public presentation events to potential users and industries. The consortium will organize public events where the new tools will be presented, mainly in charge the SME and industrial partners;
- Publications in trade press and presentations in industrial fairs;
- Market-oriented publications in magazines and marketing material produced by the FRAUNHOFER press office;
- Contact with Administrations and policy-makers (either at regional / national / European levels) involved in decision-making related to the efforts carried out to implement and exploit HPC infrastructures;
- Contacts with potential customers (some of the partners have already customers interested in this) that have needs related to engineering simulation in order to create awareness of the expected results.

2.1.3 Social Network strategy

At the end of the first year of the project, we decided to create accounts in Twitter and LinkedIn for VELaSSCo in order to ensure a best spreading and tuning of the outputs of the project. The idea was to create extra channels to disseminate the project results to a wider audience. In the first quarter of 2016 a YouTube channel was also added:

- **Twitter** account (@VELaSSCoProject): The idea is to tweet relevant news and content from the project or related topics of interest in order to enlarge the audience of the project. Three people of the project are in charge of doing so on a regular basis.
- **LinkedIn group**: VELaSSCo created a group in LinkedIn targeting a more professional audience. The idea is posting interesting content from the project but also initiating discussions to engage the community.
- **YouTube channel**: Recently created in the last project year, this channel will be used to disseminate videos of the project results, with especial emphasis on the visualization software produced within the project (i.e. GiT or iFX plugings).

The original idea was to entrust to at least three people of the project with the task of tweeting and posting in LinkedIn news about the project. The strategy did not go well, mainly because none of project partners were active tweeters before, and that lead to a poor amount of followers of our Twitter account. However, we managed to have a substantial amount of followers in our LinkedIn group.

During the second year of the projects several strategies to increase our social media presence were tried (i.e. emails to the User Panel members encouraging to follow our accounts, following key accounts, etc.). However, these strategies have not been as successful as we expected.

In the first quarter of 2016 we gave a new push to our social media following a twofold strategy:

- **Promotion of our social channels**: In collaboration with WP1, we have a continuous communication with the User Panel members. We ask periodically to them to subscribe to our channels and to advertise our content as much as possible. In Twitter we are starting to cross-mention and follow interesting initiative and relevant community members in the scope of our field, therefore expecting more followers and retweet of our content from their side. The strategy is slowly but steadily increasing our reach.
- **Promotion of our web content via social channels**: This is the main strategy. It is based in promoting the content of our web site through our social networks channels. As it will be explained in section 2.4.4, the project web site has been revamped, more content and technical details have been provided, and there are plans to add fresh content to it. The strategy for social media is therefore to promote this new content in the different social channels we have, by tweeting and linking to the web site and by advertising the content in LinkedIn. Cross-linking between the YouTube channels, the web site and the other social networks are also in place.
- **More aggressive Twitter and LinkedIn publication strategy**: To this extent, partners have been instructed to provide content to WP6 representatives in

order to promote it via all our channels. More tweets and LinkedIn publications are expected in the next period.

2.1.4 Dissemination strategy summary

As hinted in previous subsections, the dissemination in VELaSSCo is based on the following pillars:

The VELaSSCo Web site: The project web site is considered as the cornerstone of our dissemination, as it is the most powerful and known showcase of the project results. Therefore, plans are under way to improve it and add more content. The rest of the dissemination channels will be echoing the content provided in the web site in the quest to attract and keep interested people and organizations. More information about the web site updates is provided in section 2.4.4.

Social Media: As mentioned before VELaSSCo is present in Twitter, LinkedIn and YouTube. A strategy to improve our publications in social media has been started. The video and news from the web site will be posted on social networks and discussions about scientific papers will be generated by project partners in LinkedIn. WP leaders are proposing new material for news and interesting people or initiatives to follow. The YouTube channel has been created recently, and linked from the menu options of the web site. Video production is on its way. Instructions on how to produce videos have been provided from WP6 to all partners in order to facilitate the video production and give a similar look and feel.

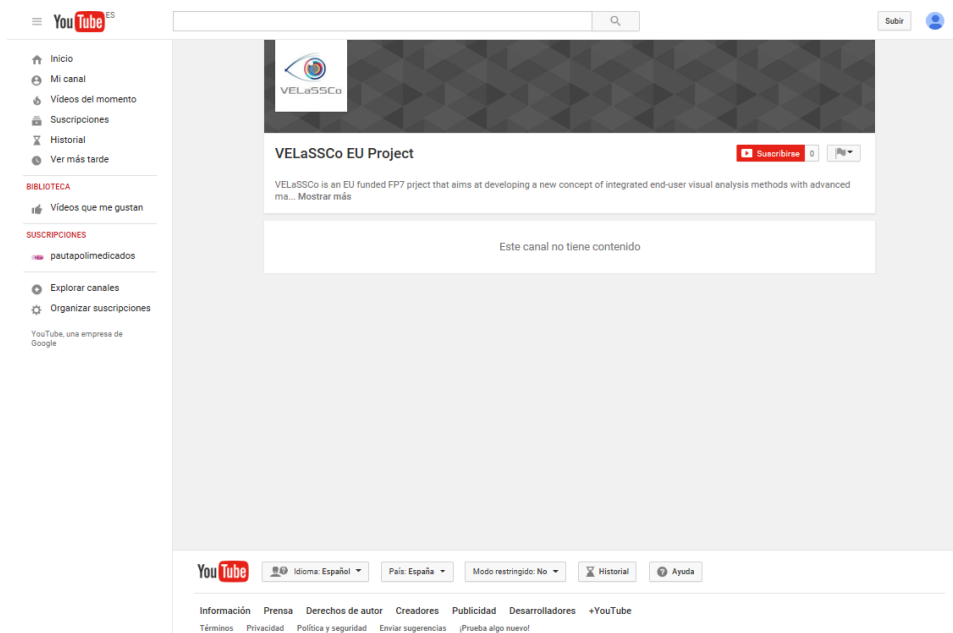


Figure 1: YouTube Channel

Scientific publications: In previous years the scientific dissemination has been not a top priority of the project, as there were still many technical issues to solve. However, during the final project year (as has been requested by the project reviewers), we plan to boost our publication record. Dedicated sessions in meetings and several conference calls have been discussing this issue. As a conclusion, WP leaders have

identified conferences or journals where to deliver our results. Articles, papers and presentations have been prepared or are in preparation. Some of the papers under discussion and/or preparation are the following:

- mesh simplification (CIMNE)
- “Mathematical modelling of volumetric scalar and vector fields using locally refined B-splines”, “LR-spline approximation of big FEM datasets” and “Semitransparent volumetric LR-spline visualization”: papers about spline simplification and visualization (SINTEF)
- volumetric spline approximation (SINTEF)
- A Query Framework Implementation in a Big Data Architecture for Visualization of Large-Scale Simulation Results: a paper about the Vquery approach (CIMNE)
- Geometric parallelization in the Cloud (SINTEF)
- “Comparing Hadoop Map/Reduce and Flink in the VELaSSCo context” comparison of the two versions: hadoop/yarn-based, or Spark vs Flink (after the end of the project) (INRIA)
- GPU format/compression to reduce bandwidth between QM and VC

Besides the pure strategy, some extra material and recommendations to partners for dissemination have been done recently:

- More content uploaded to the web site: Project Presentation, open articles, etc.
- Two posters and more dissemination material have been delivered for the upcoming presentations and conferences.

Project partners have been encouraged to proactively contribute to the dissemination. Once a dissemination action related to the VELaSSCo project is activated (published paper, conference attendance, etc.), partners should inform the dissemination leader (ATOS) to publish the news in the web site. If the news is especially relevant for the partners they should also publish them in their own web sites or social media channels and provide the links to the dissemination leader to cross-linking. The news will be also populated by the dissemination leader to the VELaSSCo LinkedIn and Twitter accounts, or other available media channels.

Additionally, the website will be linked to any open-source release available of VELaSSCo (e.g. on Github) and will act as a portal for potential users to get information about the platform.

2.2 Collaboration with other initiatives

The VELaSSCo consortium will also collaborate as much as possible with other on-going projects to identify cross-fertilization and exploit opportunities for knowledge exchange, and for improving dissemination among target audience. The table below shows these collaborations:

Table 1 - VELaSSCo collaboration table

| Contact | Purpose / Justification / Outcomes | Type of audience | Partner in charge of contact | Follow up activities |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| T-MAPPP | Audience interested on big data and its applications Synergies established. Kick-off results: http://www.t-mapp.eu/ | Scientific community and industry. Stakeholder engagement | UEDIN CIMNE | UEDIN and CIMNE continue to exchange ideas |
| NUMEXAS consortium | HPC. Synergies established and experiments done | EU Project | CIMNE | |
| Fortissimo consortium | HPC/Cloud. CIMNE is participating in some Fortissimo experiments | EU Project | UEDIN (CIMNE) | |
| CloudFlow consortium | HPC/Cloud Overlap in consortium partners. Initial contacts CIMNE is participating in one CloudFlow experiment (January 2016) | EU Project | SINTEF Fraunhofer Jotne (CIMNE) | Organized a mini-symposium at GDSPM15 conference on Geometrical Big Data Sciences /cloud computing in cooperation with Iqmulus, CloudFlow |
| IQmulus | Big data Overlap in consortium partners Initial contacts | GIS community | SINTEF Fraunhofer | Same as for CloudFlow |
| COEGSS | Center of Excellence for Global System Science: Developing evidence and understanding concerning Global Systems and related policies. H2020 project | EU project | ATOS | Just started project. Collaboration with VELaSSCo started |
| CAXMan | Additive manufacturing. Overlap in consortium partners. Use of VELaSSCo results. | EU Project | SINTEF, CIMNE, Fraunhofer IGD, Jotne | Participation at the World Manufacturing Forum 2016; several partners are in both projects with their tools |
| eeEmbedded | Big data. Collaborative Holistic Design Laboratory and Methodology for Energy-Efficient Embedded Buildings. Use of VELaSSCo results. | EU Project | Jotne | Jotne is in both projects with their EDM tools |

2.3 Community building and outreach

This section is focused on the identification of target groups that can potentially benefit from and utilize VELaSSCo results.

One of the most important aspects of dissemination is the possibility of creating a community of interest around VELaSSCo, or joining existing related communities where the voice of the project can be heard. This community building goes beyond the efforts of WP6, as it is also achieved via the interactions of the project partners in their daily work: user panel, requirements gathering, use case definition, validation, etc. Therefore, WP6 should facilitate proactively the building of a community around VELaSSCo not only from the dissemination and exploitation perspective. From the very beginning the project partners are aware that community building, outreach and exploitation is a joint project effort.

To this extent, the communication with the VELaSSCo User Panel members done in the scope of WP1 is essential. The members of the User Panel are active members of the simulation community and can act as a catalyzer to spread the word of VELaSSCo among their peers. Besides the User Panel, VELaSSCo members engaged several projects and initiatives (T-MAPPP, COEGSS, etc.) in order to let them know of our research and results. In collaboration with WP1, we have a continuous communication with the User Panel members. We ask periodically to them to subscribe to our channels and to advertise our content as much as possible.

Besides the obvious choices of the User Panel and the T-MAPP project, the targeted audiences include:

- Specific HPC scientific community (researchers in different fields requiring large computing resources and researchers involved in PRACE)
- Other scientific community, non HPC experts (end-users and application people, such as biomedical researchers, climate change researchers and so on)
- Industry (potential customers and end-users, such as aeronautic companies, civil engineering companies, etc.)
- Universities (for training purposes, talented students and scientists, talking about what universities are doing in simulation and the growing interest of this field, how CAD/CAE is gaining weight in teaching)
- Government and decision-maker agents. Due to the strategic intrinsic character that the High Performance Computing field has in the framework of the European Digital Agenda, it is important to make decision-makers aware of the outcomes of VELaSSCo to ensure follow-up and better use of the results. (Crucial to adopt software-based solutions for climate change related problems, etc.)
- General Public. Communication to a lay audience should also be accomplished, mostly through communication of the main results of the project and its societal implications.

In 2016 the web site has been reshaped to attract more people to our community. A more prominent content has been provided to encourage interested parties to become part of the VELaSSCo community. A new section asking visitors to become an expert on the VELaSSCo platform and a clear link to contact us has been provided, as it is depicted in Figure 8.

2.4 Dissemination material and channels

2.4.1 Project logo

The nature of the VELaSSCo project implies intense interaction with a multitude of internal and external audiences, be it through personal contacts in the workshops, final conferences or project team work. In the interest of promoting a unified image of the project, all dissemination and communication activities should carry the logo and clearly state that the project is funded under EC FP7.



Figure 2 - VELaSSCo logo

2.4.2 Project flyers and posters

The project produced also a flyer to be handed out at conferences and events with presence of project partners. The flyer can be seen below in Figure 3:

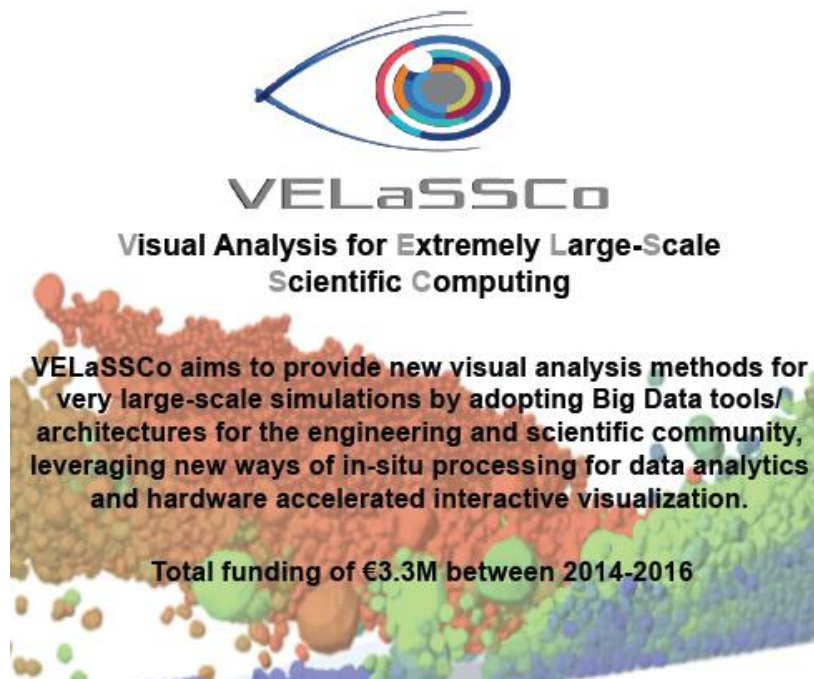


Figure 3 - VELaSSCo flyer

Besides the flyer, the project prepared extra dissemination material such as a leaflet, including more details than the flyer. The leaflet can be seen in Figure 4.



Figure 4 - VELAaSSCo leaflet (front and back)

Two posters and more dissemination material have been delivered in 2016 for the upcoming presentations and conferences. Figure 5 shows the poster presented in the PARTEC 2016 (April 2016, Nuremberg) recently.



The VELaSSCo framework: a software platform for end-user analytics and visualization of large simulation datasets

G. Filippone^{1*}, A. Janda^{1*}, P. Toto¹, J.P. Morrissey¹, K.J. Hanley¹, S. Papanicolopoulos¹, J.Y. Ooi¹, A. Coll², M.A. Pasenau de Riera², J. Mora², J. Pérez², B. Lange^{3*}, B. Raffin³, I. Cores³, T. Nguyen^{3*}, A. Dietrich⁴, F. Michel⁴, T. Gierlinger⁴, H. Dahl⁵, O. Barrowclough⁵, I. Martínez Rodríguez⁶, T. Pariente Lobo⁶, M.A. Tinte García⁶, C. Pumar García⁶, J. Haenisch⁷, K. Bengtsson⁷, O. Liestol⁷

- ¹ Institute for Infrastructure and Environment, School of Engineering, The University of Edinburgh, Edinburgh, UK
 - ² Edificio C1 Campus Nord, UPC, calle Gran Capitán s/n, 08034 Barcelona, Spain
 - ³ Inria Grenoble Rhône-Alpes, 655 Avenue de l'Europe, 38330 Montbonnot-Saint-Martin, France
 - ⁴ Fraunhofer IGD, Fraunhoferstraße 5, 64283 Darmstadt, Germany
 - ⁵ SINTEF, Forskningsveien 1, 0314 Oslo, Norway
 - ⁶ Atos Spain SA, C/ Albarracín 25, 28037 Madrid, Spain
 - ⁷ Jotne EPM Technology AS, Grenseveien 107, 0663 Oslo, Norway
- * indicates former affiliation

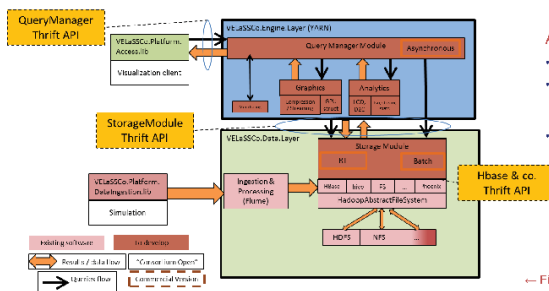


THE VELASSCO PROJECT

- VELaSSCo (Visual Analysis for Extremely Large-Scale Scientific Computing) is an EC FP7 project involving a consortium of seven European partners (Fig. 1).
- VELaSSCo aims to provide new visual analysis methods for large-scale simulations serving the petabyte era.
- The main output of the project is the VELaSSCo platform which has been designed and developed to perform distributed post-processing and visualisation of the results of very large engineering simulations.
- The VELaSSCo platform exists in two versions: a fully open-source version and a proprietary version which use Apache HBase and EXPRESS Data Manager™ (EDM) as database systems, respectively.

Fig. 1 →

The 7 European partners comprising the VELaSSCo consortium



ARCHITECTURE OF THE VELASSCO PLATFORM

- The open-source version of the platform is shown in Fig. 2.
- The architecture of the VELaSSCo platform is based on the open-source Hadoop software stack, a Java-based framework for distributed storage and processing of Big Data.
- It is composed of two main layers:
 1. Data Layer: responsible for storing, accessing and translating the simulation data. It is composed of both standard tools such as Hadoop with HDFS, Apache Flume and HBase, and a bespoke Storage module which is based on a HBase Thrift server.
 2. Query Engine Layer: in charge of receiving the user queries from the visualisation client, extracting and/or analysing the simulation data and returning the results in a GPU-friendly format for fast visualisation.

← Fig. 2

The VELaSSCo architecture used for the open-source platform

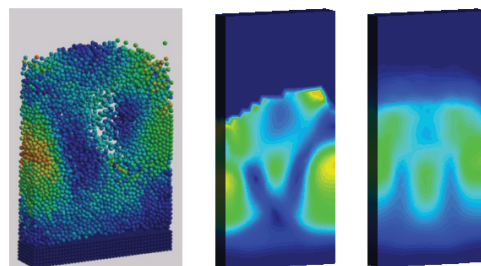
PRELIMINARY EVALUATION OF THE PLATFORM

- A first evaluation of the platform was held in February 2016.
- Fig. 3 shows one of the evaluation examples: a fluidised bed simulated using the discrete element method (DEM) coupled with computational fluid dynamics (CFD).
- The model contained around 40,000 time-steps, 12,000 particles per time-step and more than 3,000 particle-particle and particle-wall contacts per time-step.
- Participants in the evaluation were able to compute the *discrete-to-continuum* transformation which applies temporal and spatial coarse graining methods (Goldhirsch, 2010; Labra et al., 2013) to DEM simulation data in order to compute bulk quantities that are projected onto an underlying continuum mesh.
- This first Hadoop implementation of the discrete-to-continuum transformation has shown excellent results in terms of its scalability and normalised speedup.

REFERENCES

• Goldhirsch, I. (2010). Stress, stress asymmetry and couple stress: from discrete particles to continuum fields. *Granular Matter*, 12: 239–256

• Labra, G., Ooi, J.Y. & Sun, J. (2013). Spatial and temporal coarse-graining for DEM analysis. *AIP Conference Proc.*, 1542: 1258–1261, *Powders and Grains 2013*, Sydney, Australia



↑ Fig. 3

Example of the discrete-to-continuum transformation applied to fluidised bed data. The colours indicate modulus of velocity. The leftmost image shows discrete particle data at one time-step. The central image shows the result of spatial averaging only. The rightmost image shows spatial and temporal averaging over multiple time-steps.

The development of the VELaSSCo platform is funded by the European Union's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 519439.

Figure 5 - VELaSSCo poster for the PARTEC 2016 conference

Figure 6 shows the layout of the official VELaSSCo poster that will be used in most of the conferences and presentations, such as the GiT convention (June 2016, Barcelona) or the NAFEMS conferences where the project plans to attend in 2016, among others. It has a simple and clean design aiming at attracting the attention of the people to get more face to face information about the project.

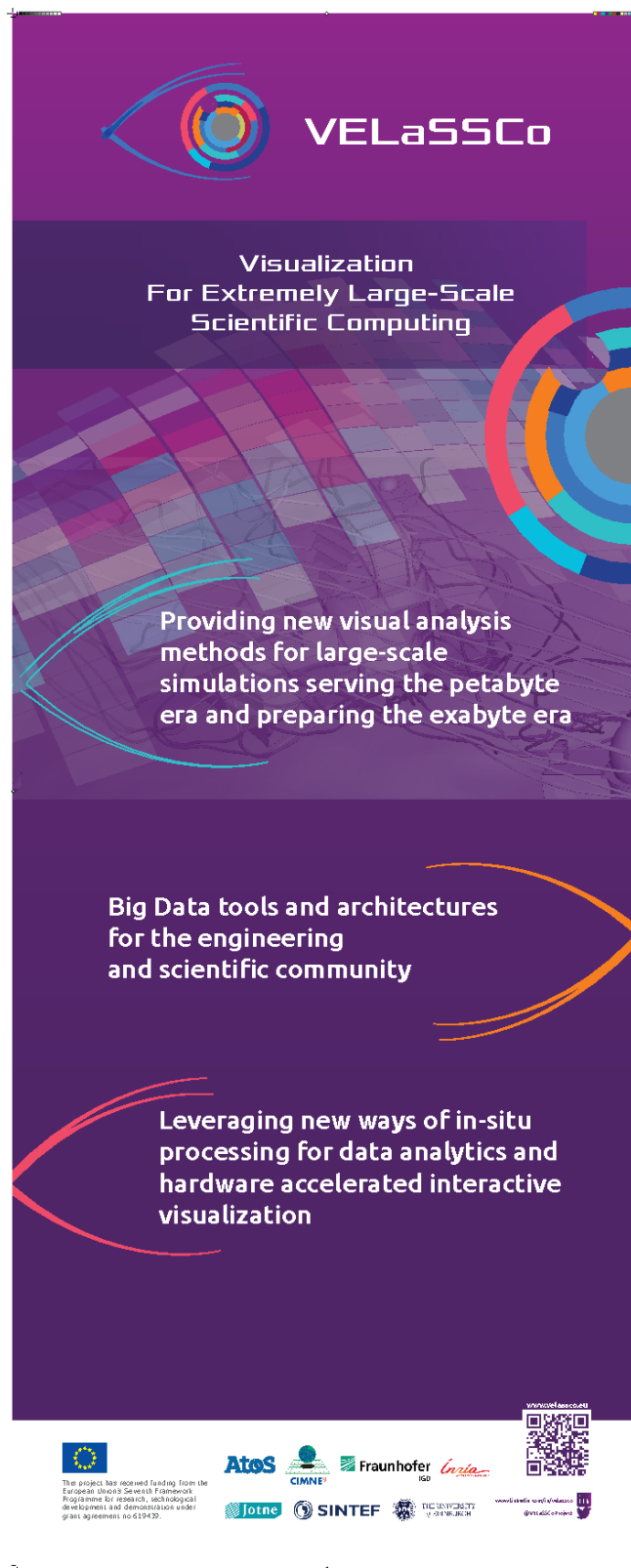


Figure 6 - VELaSSCo official poster

2.4.3 Project presentation

VELaSSCo has also delivered a Project Presentation targeted to stakeholders and technical people describing the research objectives, challenges, technical details and tangible results and benefits. The presentation can be [downloaded](#) from the web site.

2.4.4 Project web site

Webs exposure is guaranteed via a dedicated domain name (<http://velasco.eu/>), and an active cross-referencing from all partner web sites, social networks and search engines. The web site facilitates the full dissemination of the results. The web site is a flexible and dynamic tool enriched with information as the work evolves. The web site is divided into a public and a 'members only' private area to allow the sharing of developed solutions, data and information among project partners. The project also has a dedicated Content Management System (Alfresco) for internal document sharing and management of the consortium.

The main elements in the public website are: Information about the project, Information about the ICT solutions developed, Information and outputs of events, News and links, Contact details, site map and terms of use, Members, Documents and Publications. The VELaSSCo project website has been set up right since the beginning of the project and will be continuously updated. The website will sustain at least two further years after the end of the co-funded period.

The project website includes the following main pages and functionalities:

- Flexible look & feel adapted to the project image, logo and connections to the social networks where VELaSSCo is present as well as to the FP7 logo and links as contractually required.
- Home page, which have been recently redesigned and adapted to the project needs.. Figure 7 shows the welcome page of the web site, including a section of latest news and actions on the right column which is being frequently updated. This new distribution allows to show the main content at first glance in most resolutions and devices,

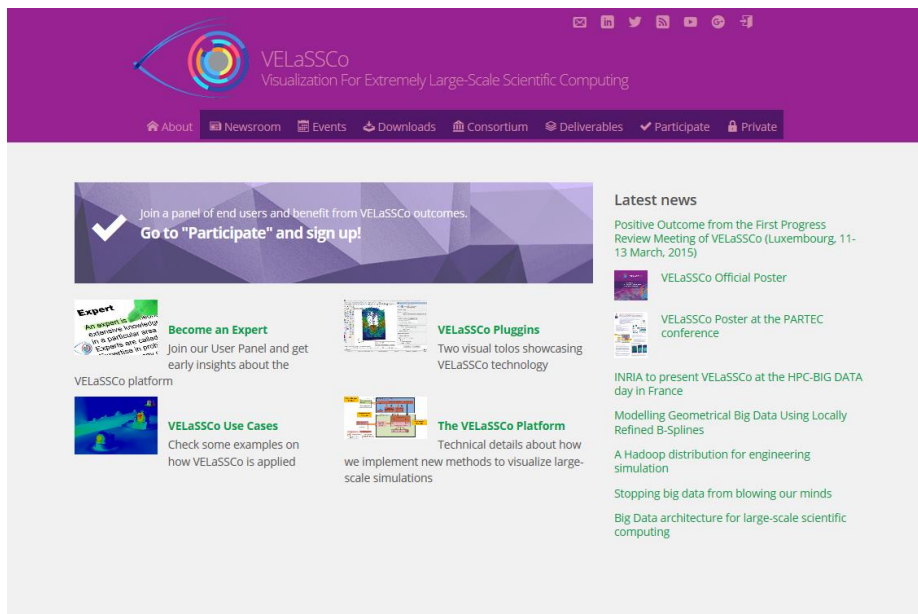


Figure 7 - VELaSSCo Home Page

Four main options in the new front page show now links to the project content:

Become an Expert: New link to access to the User Panel info. This content is key to our community building strategy. The idea is to make visible the way to become a member and the benefits to do it. We debated the possibility of adding info about the current members of the User Panel in order to attract new people, but we decided otherwise for privacy issues (the consortium agreed we would need written consent from them). However, enough detail, an updated number of panelists and some affiliations have been given.

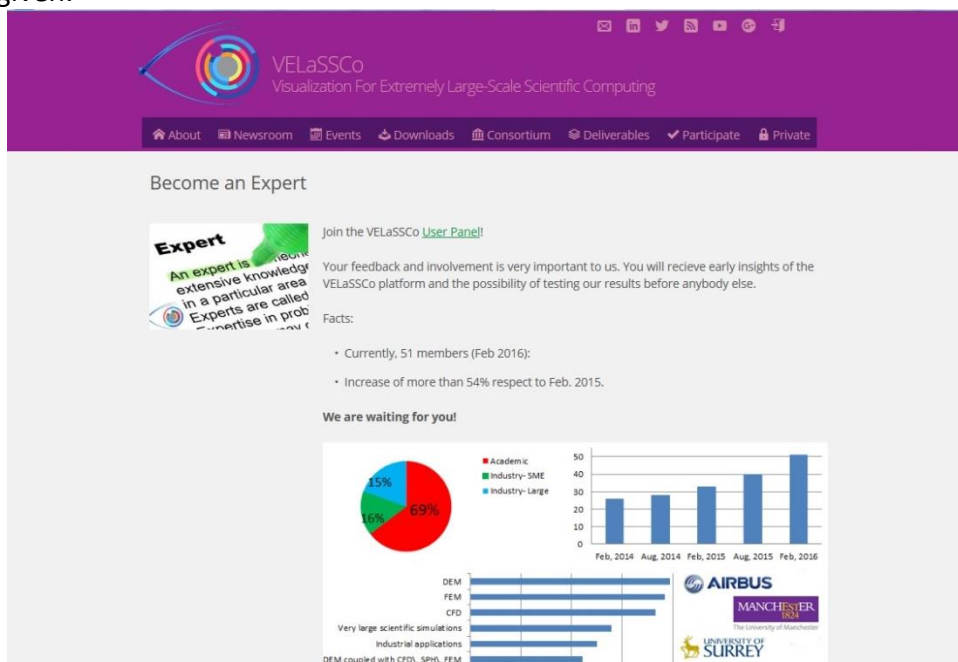


Figure 8: Become an Expert section

The VELaSSCo use cases: This section will provide content about the different use cases we are targeting in VELaSSCo. It will be populated with videos, screenshots and material of the use cases. At the time of writing this document, the content is under production and will be available soon.

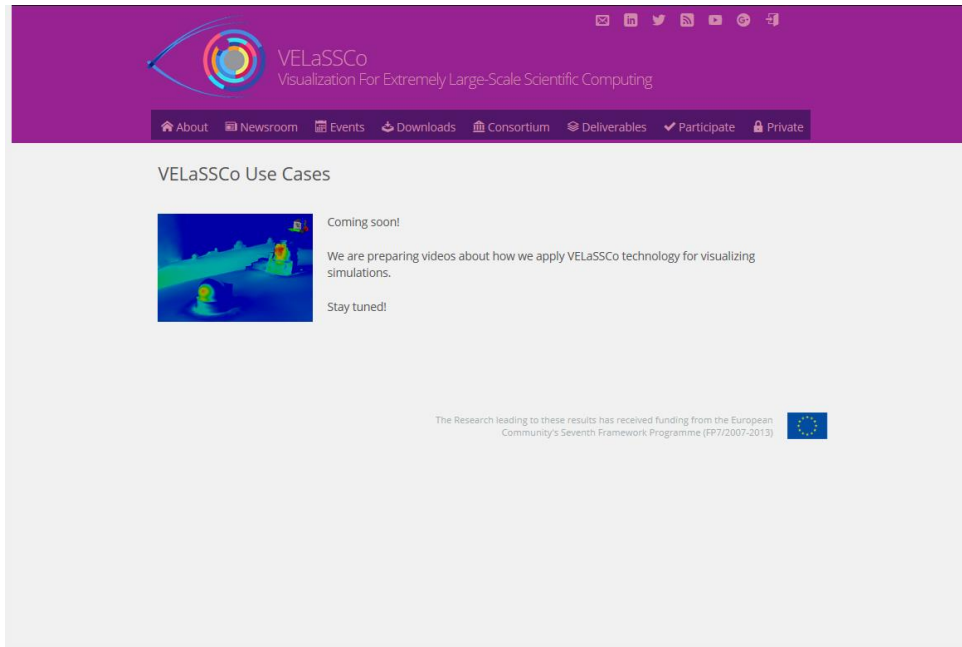
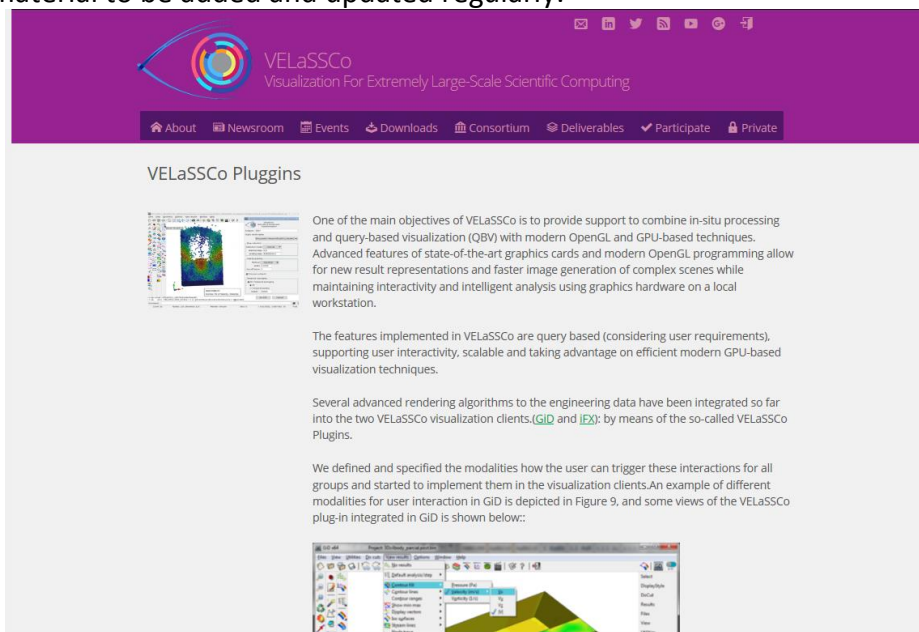


Figure 9: VELaSSCo uses cases screenshot

The VELaSSCo plugins: Brief examples of the main visualization outcomes, including GiT and iFX plugins. Initial content is provided, and it is expected more content and media material to be added and updated regularly.



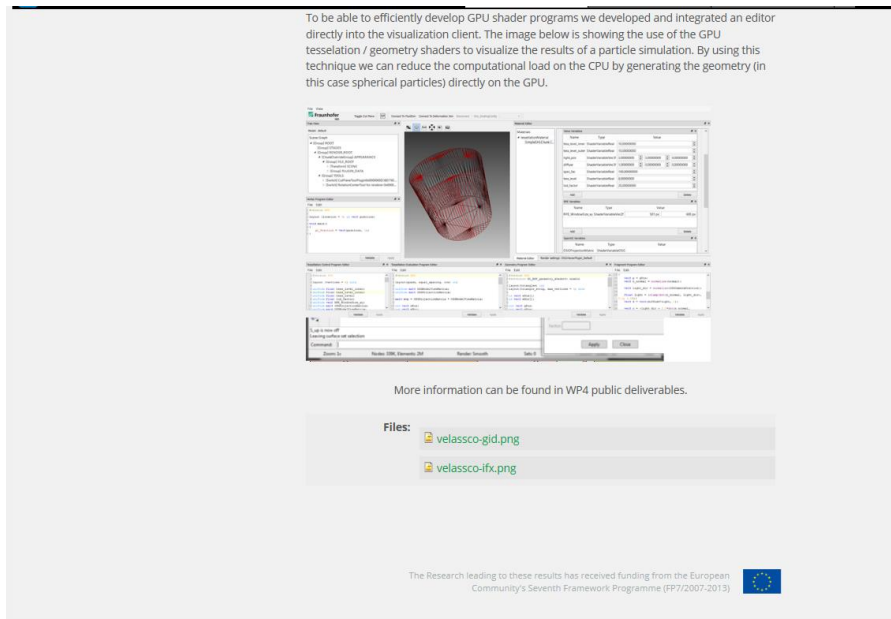


Figure 10: VELA SCo plugins screenshots

The VELA SCo platform: This section provides a description of the VELA SCo platform, a link to a technical presentation, architecture diagrams and pointers to the main deliverables dealing with the platform.

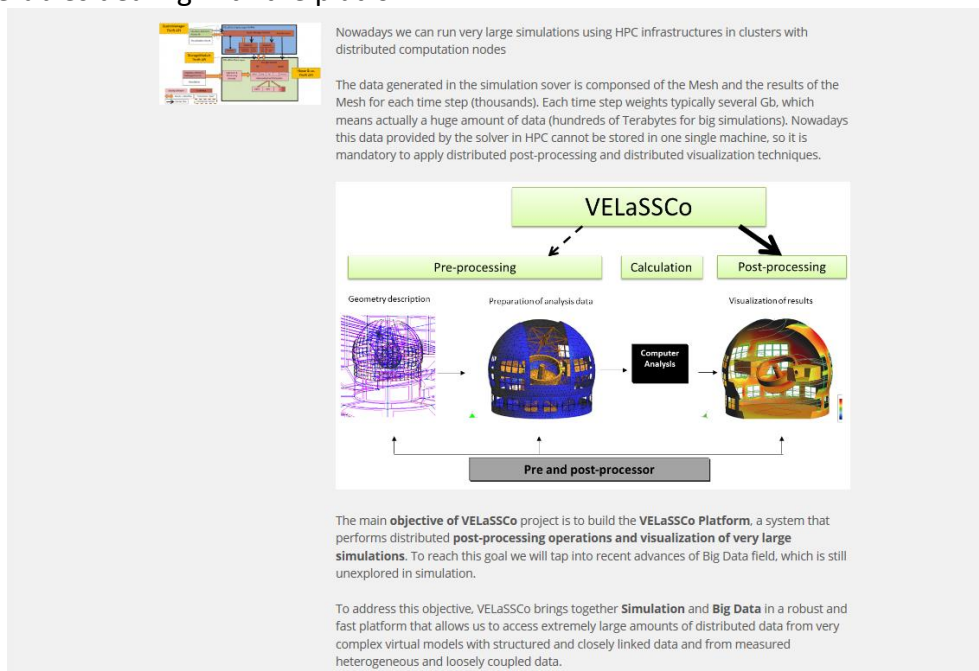


Figure 11: VELA SCo platform screenshot

Besides the four main links, the web site point to more content:

- Links to social networks: Along with the previously existing connections to the social networks enabled for VELA SCo (LinkedIn and Twitter), additionally a new option in the upper menu to link to the YouTube channel has been added.

- The “Consortium” option leads to the project partners’ information and links as shown below:

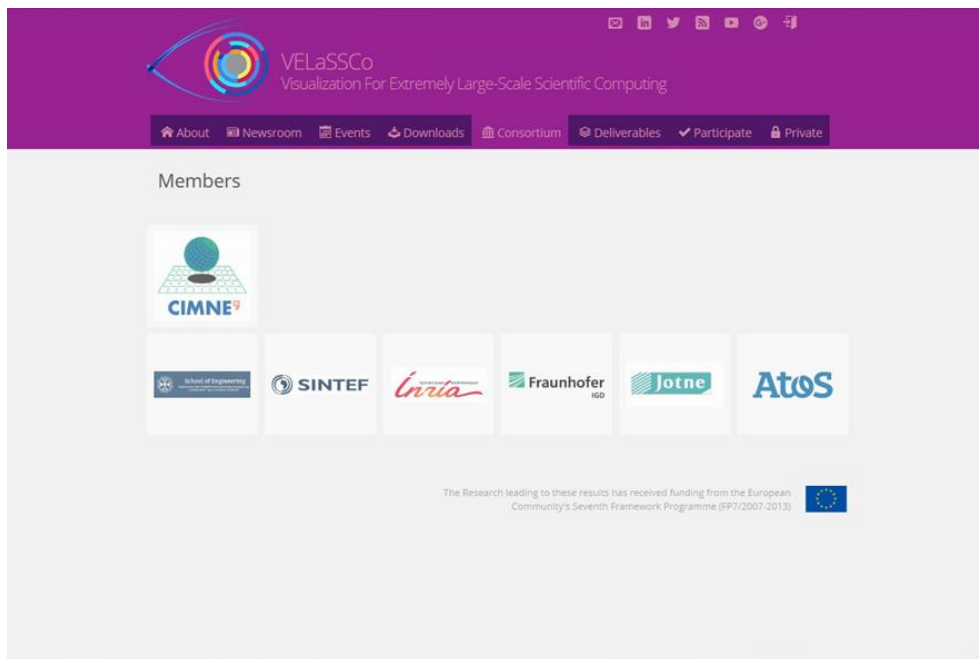


Figure 12 - VELaSSCo Partners logos

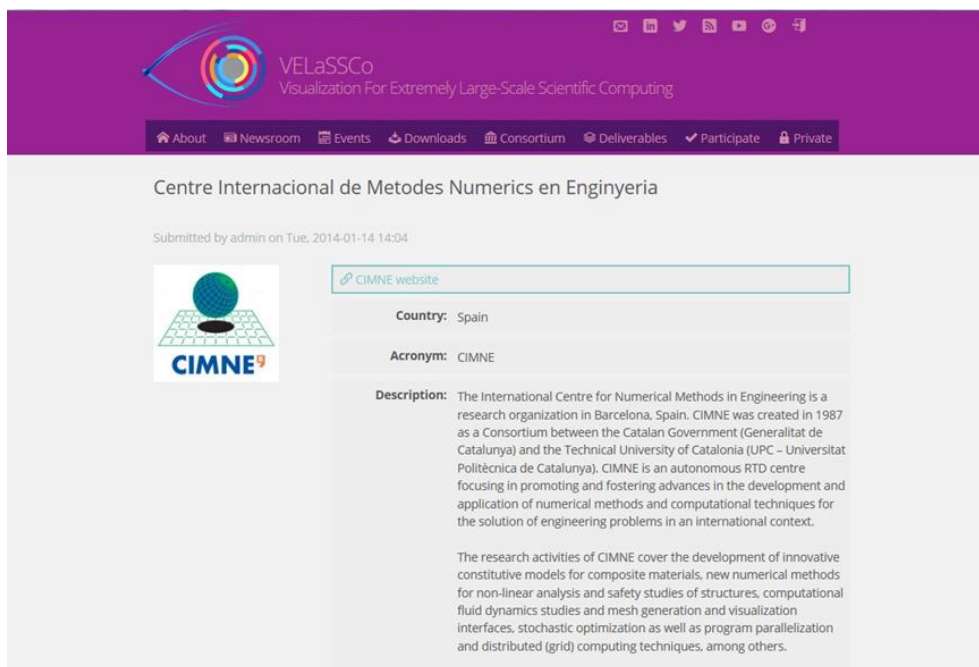


Figure 13 - VELaSSCo Partners information

- **Newsroom** and **Events** sections publishing the latest news, meetings, workshops or events related to the project as shown in the figure below

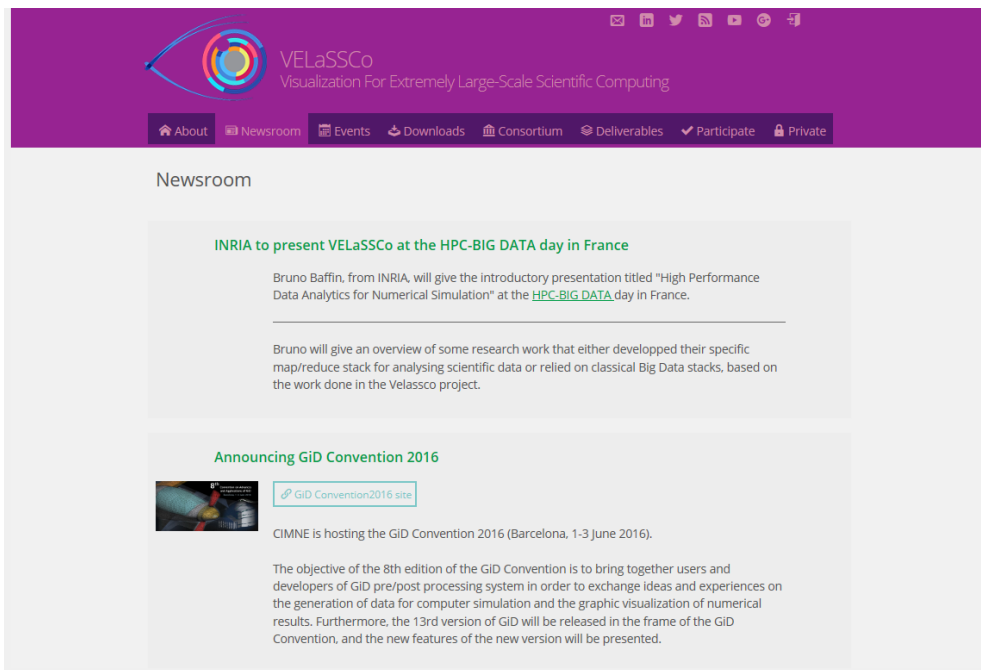
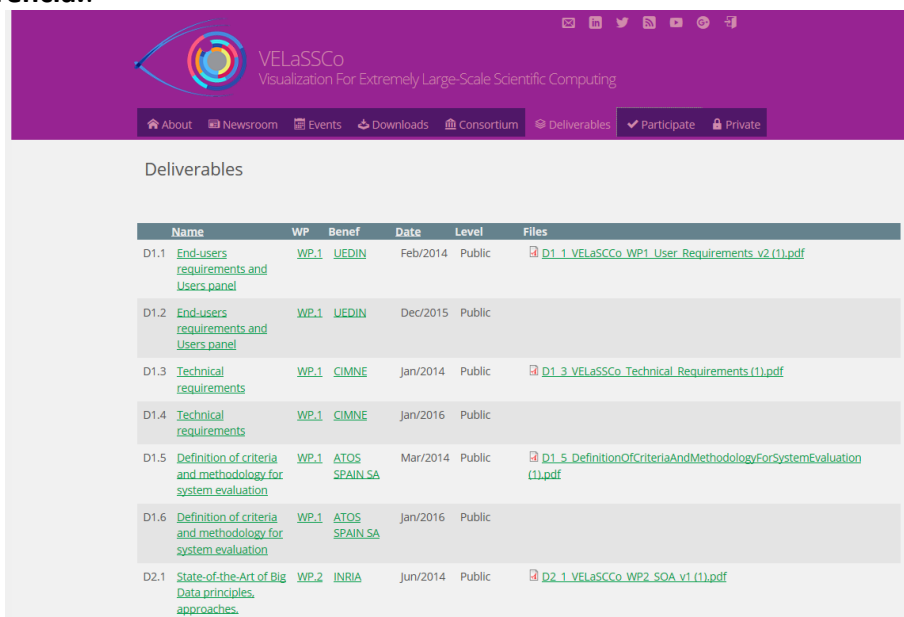


Figure 14 - VELA S S C o newsroom section

- Deliverables** section, showing the full extent of deliverables of the project and providing links to the public deliverables already submitted and internally approved. In order to maximize and anticipate impact of the project research results, an editorial process has been put into place in order to publish the deliverables in the web site. Public deliverables are published as soon as they are approved by the coordinator and submitted to the EC including a warning stating that the deliverable is not approved yet by the EC. When the deliverables are approved by the EC, they are substituted by the final versions. The deliverables page is shown in **¡Error! No se encuentra el origen de la referencia..**



| Name | WP | Benef | Date | Level | Files |
|-----------------------------------------------------------------------------------|----------------------|-------------------------------|----------|--------|-----------------------------------------------------------------------------------|
| D1.1 End-users requirements and Users panel | WP.1 | UEDIN | Feb/2014 | Public | D1_1_VELaSSCo_WP1_User_Requirements_v2(1).pdf |
| D1.2 End-users requirements and Users panel | WP.1 | UEDIN | Dec/2015 | Public | |
| D1.3 Technical requirements | WP.1 | CIMNE | Jan/2014 | Public | D1_3_VELaSSCo_Technical_Requirements(1).pdf |
| D1.4 Technical requirements | WP.1 | CIMNE | Jan/2016 | Public | |
| D1.5 Definition of criteria and methodology for system evaluation | WP.1 | ATOS SPAIN SA | Mar/2014 | Public | D1_5_DefinitionOfCriteriaAndMethodologyForSystemEvaluation(1).pdf |
| D1.6 Definition of criteria and methodology for system evaluation | WP.1 | ATOS SPAIN SA | Jan/2016 | Public | |
| D2.1 State-of-the-Art of Big Data principles approaches | WP.2 | INRIA | Jun/2014 | Public | D2_1_VELaSSCo_WP2_SOA_v1(1).pdf |

Figure 15 - VELaSSCo Deliverables section

- **Download** section, including links to papers published by the project partners, brochures, posters project presentations, etc.

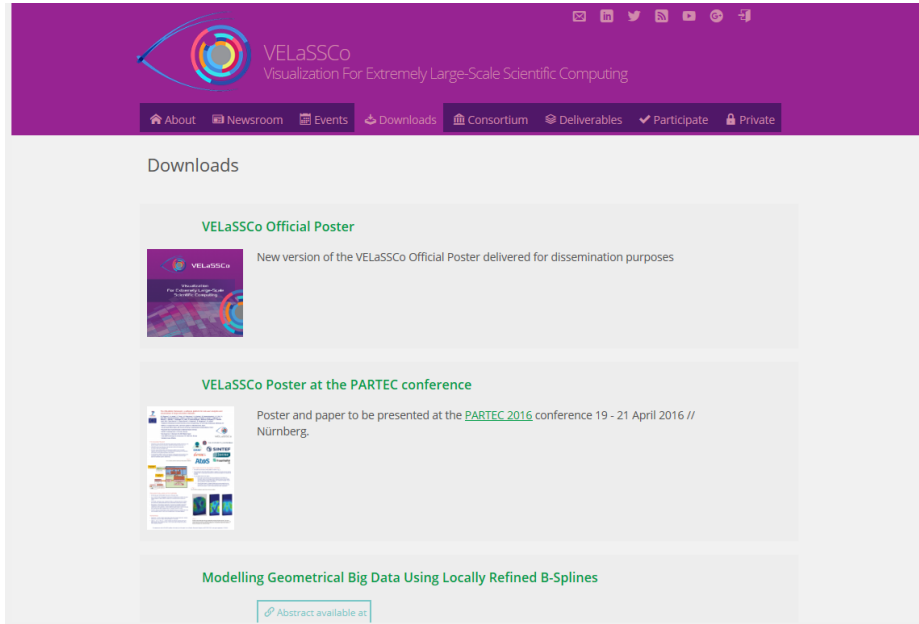


Figure 16 – VELaSSCo Downloads section

- And finally a **Participate** section where stakeholders are asked to register to the project and participate on the different activities promoted by the project, as shown in Figure 17.

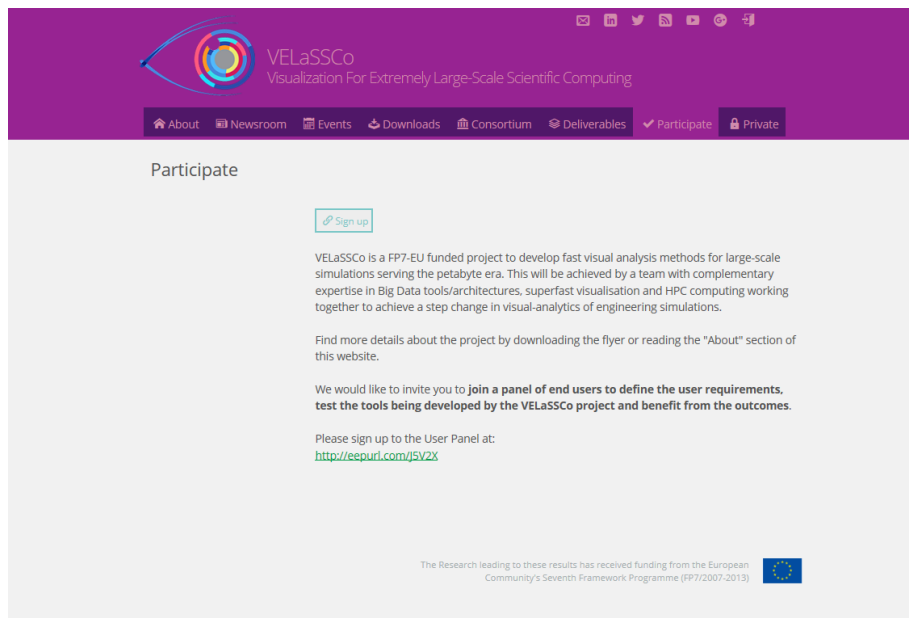


Figure 17 – VELaSSCo Participation section

As explained in section 2.1 in the scope of the dissemination strategy, project partners have been encouraged to proactively contribute to the dissemination on the web site,

by communicating to the WP6 leader any dissemination action planned or carried out related to VELAASSCo. This news will be duly noted for tracking and published in the web site and in the social media channels. If the news is especially relevant for the partners they should also publish them in their own web sites or social media channels and provide the links to the dissemination leader to cross-linking.

Additionally, the website will be linked to any open-source release available of VELAASSCo (e.g. on Github) and will act as a portal for potential users to get information about the platform. This section will be available soon.

Web Site Statistics

The figures below show the main statistics of use of the web site.

Figure 15 shows the monthly story of unique visitors, visits, page visited and hits. It shows a constant flux of new visitors, with peaks coinciding with the presence of VELAASSCo partners in particular dissemination events.

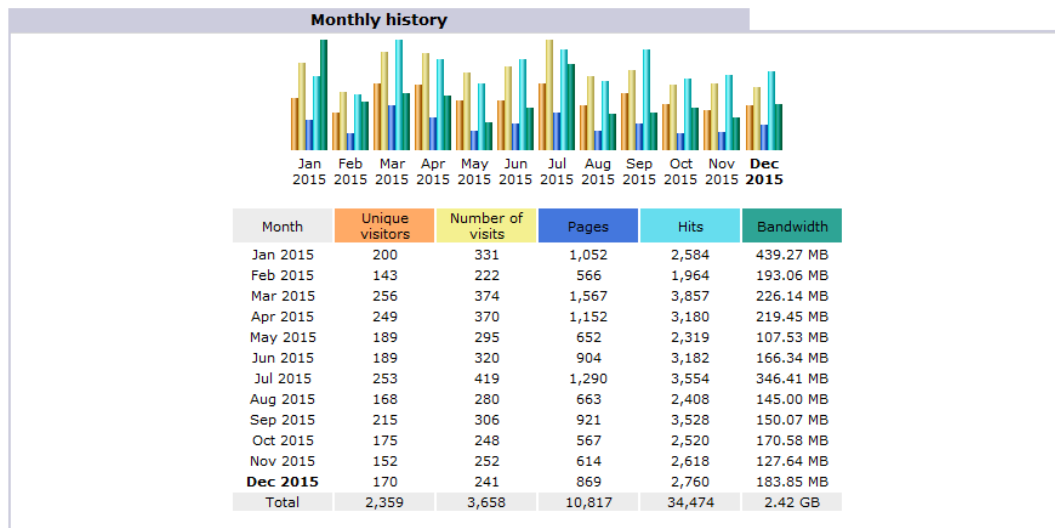


Figure 18 - VELAASSCo Web Site statistics

An update of the statistics until May 6th 2016 can be seen below:

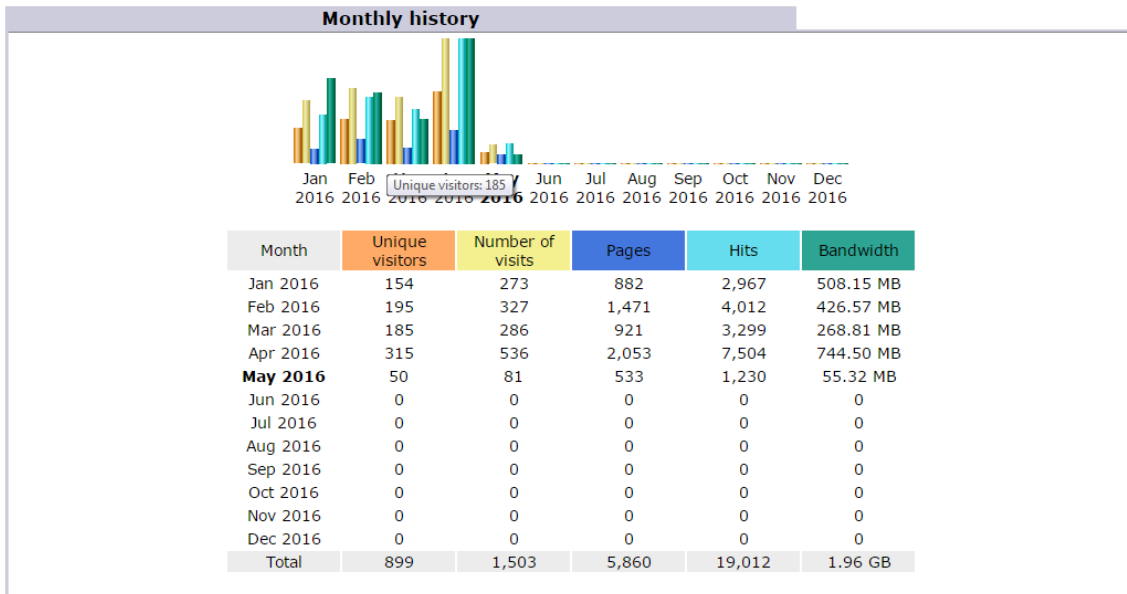


Figure 19 – Update of VELaSSCo Web Site statistics for 2016

Figure 19 shows that after the revamp of the web site that took place in March and April 2016, the statistics are showing a great improvement.

Figure 16 shows the audience overview in a time line fashion, showing similar trends as in the previous figures, for the period of 2015 until end of April 2016.

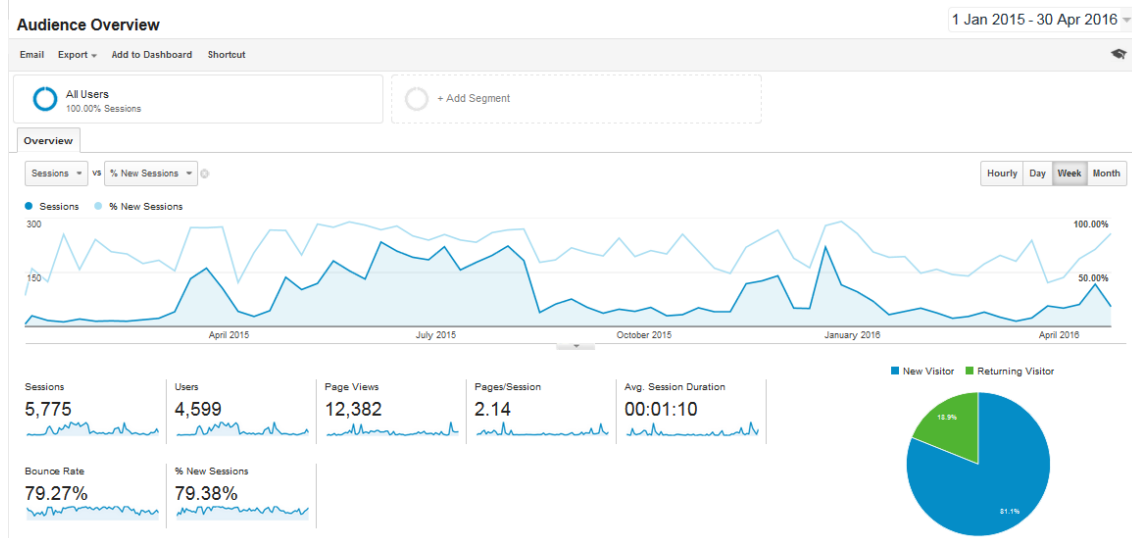


Figure 20 - VELaSSCo Web Site statistics – Audience overview (sessions vs. new sessions)

Figure 17 shows the timeline of page views along with the average time spent in the pages. It is worth noticing that it appears that at the end of the year the visitors tend to stay longer in the pages, which is a good sign.

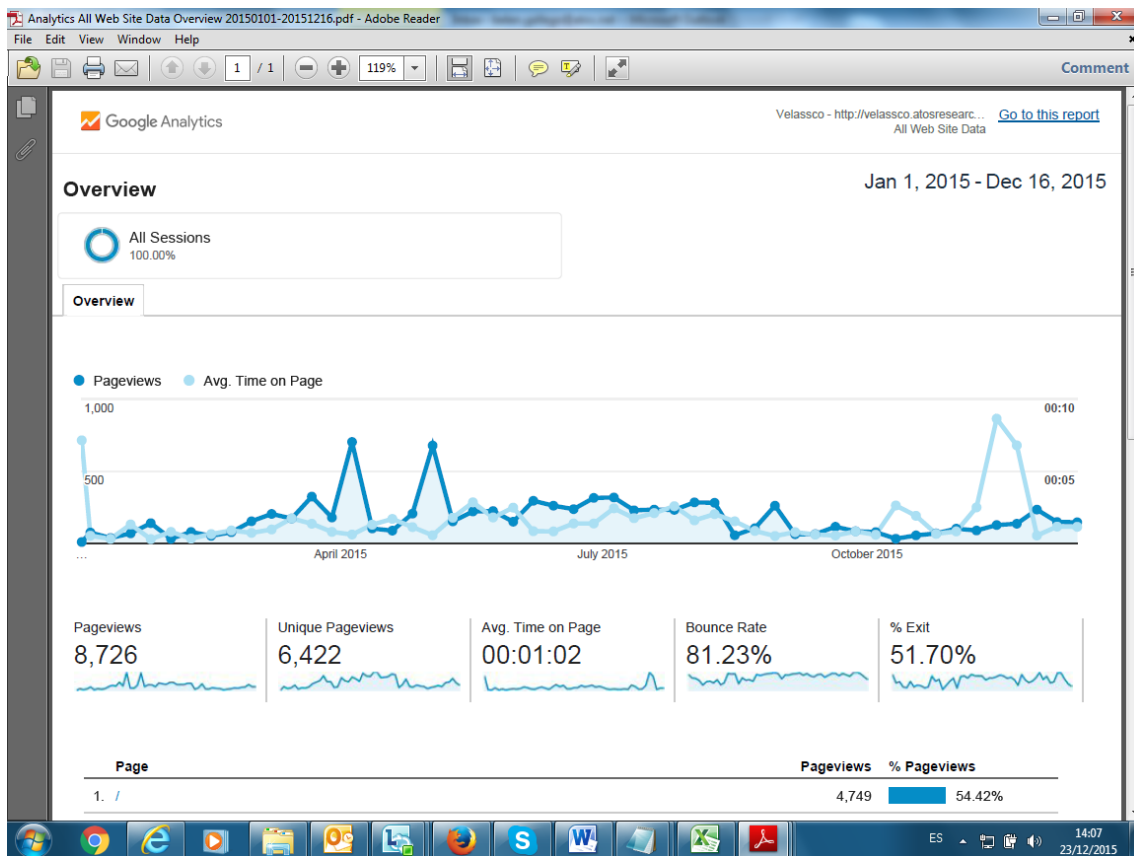


Figure 21 - VElLaSSCo Web Site statistics – Timeline of page views

3 Dissemination activities and indicators

3.1 Planning activities

The first two years of the project have been devoted to set the foundations of the design and development of a first working prototype of the VElLaSSCo platform. Bringing HPC simulations into a Big Data environment for post-processing, analyzing and enabling local visualizations represents a new paradigm that should be informed to both the industry and the academic communities. In order to show the results of these efforts, VElLaSSCo partners will increase the dissemination efforts in 2016 with respect to what was done in previous years.

For the sake of promoting project results, project partners agreed to attend to the series of events associated to NAFEMS 2016 (<http://www.nafems.org/2016/>). Abstracts were sent and accepted in the NAFEMS Nordic conference (Jotne and SINTEF), and in the NAFEMS UK conference (UEDIN). This dissemination effort is aimed to help the exploitation of the VElLaSSCo platform.

Another remarkable opportunity for dissemination will take place at the ESA SECESA event in Madrid October 5-7 as one of our potential conferences.

VELaSSCo will be also represented and give a talk in the Oslo Innovation week by Jotne.

Besides the abovementioned key dissemination events, we have been monitoring several events where VELaSSCo partners could potentially disseminate our results. Table 2 shows the list of potential dissemination activities, type of contribution expected and where possible candidate partners to attend/contribute.

Table 2 - VELaSSCo Dissemination Planning Activities

| Type of activity | Who is going? (Partner) | Title / Name of the event | Date | Place | Type of Audience: Scientific community | Purpose / Justification / Outcomes |
|------------------|-------------------------|--------------------------------------------------------------|-----------------|---------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seminar | | NAFEMS | 10/02/2016 | Manchester UK | Industry | Seminar of interest to all users of engineering simulation, especially practitioners wanting to "out compete" their competitors through the adoption of high performance computing for engineering analysis. |
| Conference | | Subsea Valley Conference | 5-7 April 2016 | Fornebu, Oslo | Scientific community (higher education, Research) | http://ssvconference.com/terms-and-conditions/ The deadline for submission is January 15th 2016. |
| Conference | Jotne | Vision+2016 | 08/04/2016 | Stavanger | Scientific community (higher education, Research) | http://vision-aeam.com/ Email : info@vision-aeam.com |
| Conference | | NIST - MBE Summit | 12-14 /04/2016 | Gaithersburg | Scientific community (higher education, Research) | Important dates not yet available: http://www.nist.gov/el/msid/mbesummit_2014.cfm |
| Conference | UEDIN | PARTEC 2016 - International Congress on Particle Technology" | 19 -21 /04/2016 | Nuremberg (Germany) | Researchers, industry | Attending+ Poster presentation (accepted) "The VELaSSCo |

| Type of activity | Who is going? (Partner) | Title / Name of the event | Date | Place | Type of Audience: Scientific community | Purpose / Justification / Outcomes |
|------------------|-------------------------|---------------------------------------------------------------|-------------------|-------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | https://www.partec.info | | | | framework: a software platform for end user analytics and visualization of large simulation datasets” Deadline abstract - Call for papers: 22 January 2016 |
| Conference | FRAUNHOFER | NAFEMS Germany | 25-27 /04/2016 | Bamberg | Industry | Workshop with presentations / Exhibition http://www.nafems.org/2016/dach/ Deadline abstract - Call for papers: 22 January 2016 |
| Exhibition | FRAUNHOFER | Hannover Messe 2016 (HMI) | 25-29. April 2016 | Hannover, Germany | Industry | Part of exhibition at Fraunhofer Simulation Booth |
| Conference | SINTEF | HPC-BIG DATA day | 26/04/2016 | France | Scientific community (higher education, Research) | Overview of some research work that either developed their specific map/reduce stack for analysing scientific data or relied on classical Big Data stacks like the Velasco project. Attempts to reduce data movements and data storage. https://bigdata.hpc2016.scienceconf.org/resource/page/id/2 |
| Workshop | CIMNE | Computer | May 2, | Barcelona, | Scientific | VELaSSCo |

| Type of activity | Who is going? (Partner) | Title / Name of the event | Date | Place | Type of Audience: Scientific community | Purpose / Justification / Outcomes |
|------------------|-------------------------|---------------------------------------------------------------------------------------------------------------|----------------------|------------------|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | Aided Technologies for Additive Manufacturing (CAxMan) | 2016 | Spain | community (higher education, Research) | presentation previous to the WMF http://www.caxman.eu/ |
| Conference | SINTEF, Jotne | World manufacturing forum | 3-4 /05/2016 | Barcelona, Spain | Policy makers | Exhibition, http://www.worldmanufacturingforum.org/ |
| Conference | FRAUNHOFER | Eurographics 2016 | 9-13 /05/2016 | Lisbon, Portugal | Scientific community (higher education, Research) | |
| Conference | SINTEF, JOTNE | NAFEMS Nordic 2016 | 10-11 /05/2016 | Göteborg, Sweden | Industry | "Workshop with presentations / Exhibition" http://www.nafems.org/2016/nordic/ |
| Workshop | JOTNE EPM | ISO/TC 184/SC 4 (STEP) | 2016-05-22/27 | Sapporo | Industry | Standardization |
| Conference | | CCGRID 2016 ACM International Symposium on High-Performance Parallel and Distributed Computing | May 31- June 4, 2016 | Kyoto, JAPAN | Scientific community (higher education, Research) | Abstract Submission Deadline: Jan 11, 2016 http://www.hpdc.org/2016/papers/call-for-papers/ |
| Conference | CIMNE, UEDIN, SINTEF | ECCOMAS: European Community on Computational Methods in Applied Science | 5-10 /06/2016 | Crete, Greece | Scientific community (higher education, Research) | SINTEF will present the LR-Spline visualisation results Attending + Presentation + Conference journal |
| Conference | CIMNE | Session on Data Analytics and visualization for HPC simulations in the ECCOMAS-European Research Community of | 5-10 /06/2016 | Crete, Greece | Scientific community (higher education, Research) | Organization of a specific session on Data Analytics and visualization for HPC simulations in the framework of the ECCOMAS- An opportunity |

| Type of activity | Who is going? (Partner) | Title / Name of the event | Date | Place | Type of Audience: Scientific community | Purpose / Justification / Outcomes |
|------------------|-------------------------|----------------------------------------------------------------------------------|----------------|----------------------------|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | Computational Methods in Applied Sciences | | | | to put together a think-tank on this field with the involvement of world-class experts. |
| Conference | UEDIN | DisCoTec: International Federated Conference on Distributed Computing Techniques | 6-9 /06/ 2016 | Crete, Greece | Scientific community (higher education, Research) | Attending + Presentation + Conference journal |
| Conference | Fraunhofer | EuroVis 2016 18th EG/VGTC Conference on Data Visualization | 6-10 /06/ 2016 | Groningen, the Netherlands | Scientific community (higher education, Research) | Attending + Presentation + Paper |
| Conference | | NAFEMS America | 07-09 /06/2016 | Seattle, US | Industry | Workshop with presentations / Exhibition http://www.nafems.org/2016/americas/ Deadline abstract - Call for papers: 31 January 2016 |
| Conference | INRIA | NAFEMS France | 08-09 /06/2016 | Paris | Industry | Workshop with presentations / Exhibition http://www.nafems.org/2016/france/ Deadline abstract - Call for papers: 26 February 2016 |
| Conference | UEDIN | NAFEMS UK | 15-16 /06/2016 | Telford, UK | Industry | Workshop with presentations / Exhibition http://www.nafems.org/2016/uk/ Deadline abstract - Call for papers: 18 January 2016 |
| Conference | | Big Data World Congress | 21-22 /06/2016 | Olympia, London | Scientific community (higher | http://analyticsandbigdatacongress.com/about- |

| Type of activity | Who is going? (Partner) | Title / Name of the event | Date | Place | Type of Audience: Scientific community | Purpose / Justification / Outcomes |
|------------------|-------------------------|------------------------------------------------------------------------------|----------------|----------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | education, Research) | the-conference/ |
| Conference | SINTEF, JOTNE | 9th International Conference on Mathematical Methods for Curves and Surfaces | 23-28 /06/2016 | Tønsberg, Norway | Scientific community (higher education, Research) | Co-chairing of a mini-symposium on Big Data. |
| Conference | ATOS | EDF 2016: European Data Forum | 29-30 /06/2016 | Eindhoven, the Netherlands | Scientific community (higher education, Research) | The IQmulus project is arranging a workshop and Heidi Dahl will present VELaSSCo results there http://2016.dataforum.eu/conference-venue |
| Conference | | NAFEMS INDIA | 21-23 /07/2015 | Bangalore | Industry | http://www.nafems.org/2016/india/ Deadline abstract - Call for papers: Contact elangovan.kariappan@nafems.org (Tel: +91 80 6559 2501) |
| Conference | | KDD2016 | 13-17 /08/2016 | San Francisco, CA | Scientific community (higher education, Research) | http://kdd.org/search/results/9e0e57075896f47ba6c5581519f730ab/ |
| Conference | | VLDB 2016 | 5-9 /09/2016 | New Delhi, India | Scientific community (higher education, Research) | Paper submission February 4, 2016 (Industrial track), or 20th of each month (research track) http://vldb2016.persistent.com/important_dates.html |
| Conference | JOTNE | SECESA | 05-07/10/2016 | Madrid | Industry | Attending (poss. pres) Paper |

| Type of activity | Who is going? (Partner) | Title / Name of the event | Date | Place | Type of Audience: Scientific community | Purpose / Justification / Outcomes |
|------------------|-------------------------|-----------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | | submission ideas before 15 January 2016. |
| Conference | | ISWC2016: 15th International Semantic Web Conference | 16-20 /10/2016 | Kobe, Japan | Scientific community (higher education, Research) | http://swsa.semanticweb.org/content/iswc-2016-will-be-held-kobe-japan |
| Conference | JOTNE, SINTEF | NAFEMS Nordic 2016 | 05-10 /11/2016 | Gothenburg | Industry | Workshop with presentations / Exhibition |
| Workshop | JOTNE EPM | CERN | 2016 | | Scientific community (higher education, Research) | Sales presentation |
| Workshop | JOTNE EPM | ESS (https://europenspallationsource.se/) | 2016 | | Scientific community (higher education, Research) | Sales presentation |
| Conference | UEDIN | Dealing with Data 2015 | 31/08/2015 | Edinburgh | Scientific community (higher education, Research) | Attending + Presentation |
| Conference | CIMNE | ERCOFTAC (European Research Community in Flow, Turbulence and Combustion). | TBD | | Scientific community (higher education, Research) | Aims to provide a bridge between researchers and practitioners in Flow, Turbulence and Combustion by reporting progress in the predominantly applied, industrially-oriented areas of turbulence research |
| Conference | SINTEF | 9th International Conference on Mathematical Methods for Curves and Surfaces (The | Jun 23, 2016 - Jun 28, 2016 | Quality Hotel, Tønsberg, Norway | Scientific community (higher education, Research) | A talk about SINTEF's results VELaSSCo http://www.mn.uio.no/math/english/research/groups/cm/eve |

| Type of activity | Who is going? (Partner) | Title / Name of the event | Date | Place | Type of Audience: Scientific community | Purpose / Justification / Outcomes |
|------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------|------|-------|---------------------------------------------------|------------------------------------------------------------------------------|
| | | bi-annual series on French Norwegian conferences) | | | | nts/conferences /ninth-curves-and-surfaces/ |
| Publication | CIMNE | A Query Framework Implementation in a Big Data Architecture for Visualization of Large-Scale Simulation Results | TBD | | Scientific community (higher education, Research) | Tentative title of a publication about the VQuery approach. To be determined |
| Publication | SINTEF | Geometric parallelization in the Cloud | TBD | | Scientific community (higher education, Research) | |
| Publication | SINTEF | Mathematical modelling of volumetric scalar and vector fields using locally refined B-splines | TBD | | Scientific community (higher education, Research) | |
| Publication | SINTEF | LR-spline approximation of big FEM datasets | TBD | | Scientific community (higher education, Research) | |
| Publication | SINTEF | Semitransparent volumetric LR-spline visualization | TBD | | Scientific community (higher education, Research) | |
| Publication | INRIA | Comparing Hadoop Map/Reduce and Flink in the VELaSSCo context | TBD | | Scientific community (higher education, Research) | |
| Conference | SINTEF | Oslo Innovation Week | TBD | | Scientific community (higher education, | |

| Type of activity | Who is going? (Partner) | Title / Name of the event | Date | Place | Type of Audience: Scientific community | Purpose / Justification / Outcomes |
|------------------|-------------------------|-------------------------------------------------------------------------------------------------------------|------|-------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Publication | FRAUNHOFER | "Interactive Analysis and Visualization of Large-Scale Simulation Results in the context of Big Data/Cloud" | TBD | Journal (possibly CG&A) | Scientific community | Tentative title for a journal submission focussing on the computer graphics aspects applied in VELAASSCo and how they are used to achieve the envisioned application. |

3.2 Activities carried out

The dissemination activities carried out up to now can be seen on the table below:

Table 3 - VELAASSCo Dissemination Activities carried out

| Type of activity | Who is going? (Partner) | Title / Name of the event | Date | Place | Type of Audience | Purpose / Justification / Outcomes |
|--------------------------|-------------------------|---------------------------------------------------------------------------------------------------|----------------|----------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| 2014 | | | | | | |
| T-MAPPP Project Kick-off | UDEDIN CIMNE | T-MAPPP Kick-off meeting | 18-19 /03/2014 | Edinburgh, UK | Academic and many industry | Main initial event to create the stakeholders communities, engage industrial partners and get requirements |
| Conference | ATOS, CIMNE | European Data Forum (EDF) (http://2014.data-forum.eu/) | 19-21 /03/2014 | Athens, Greece | Scientific community (higher education, Research) | |
| Conference | CIMNE | GiD Convention | 17-18/07/2014 | Barcelona | Industry and Academia | meeting of GiD community to share experiences, present new features and, within VELAASSCo, what could be future |

| Type of activity | Who is going? (Partner) | Title / Name of the event | Date | Place | Type of Audience | Purpose / Justification / Outcomes |
|------------------|-------------------------|-------------------------------------------------------------------------------------------------------------|----------------|----------------------|---------------------------------------------------|-----------------------------------------------------------------------------|
| | | | | | | features |
| Conference | CIMNE | IACM (Internat. Association for Computational Mechanics) | 20-25 /07/2014 | Barcelona | Scientific community (higher education, Research) | details about VELaSSCo through the leaflet in the GiD Stand of the congress |
| Conference | CIMNE | ECCOMAS (European Community on Computational Methods in Applied Sciences), | 20-25 /07/2014 | Barcelona | Scientific community (higher education, Research) | details about VELaSSCo through the leaflet in the GiD Stand of the congress |
| Conference | CIMNE | SEMNI (Spanish Association for Numerical Methods in Engineering), | 20-25 /07/2014 | Barcelona | Scientific community (higher education, Research) | details about VELaSSCo through the leaflet in the GiD Stand of the congress |
| Conference | INRIA | 11 th . World Congress on Computational Mechanics 2014 | 20-25 /07/2014 | Barcelona | Scientific community (higher education, Research) | Invited speaker |
| Conference | INRIA | The 2014 International Conference on Advances in Big Data Analytics (ABDA'14) | 21-24 /07/2014 | Las Vegas | Scientific community (higher education, Research) | Accepted short paper |
| Conference | FRAUNHOFER | ISC BIG DATA'14 (http://www.isc-events.com/bigdata14/) | 01-02 /10/2014 | Heidelberg , Germany | Scientific community (higher education, Research) | Attending |
| Conference | Jotne | MBSE | 16-18 /12/2014 | Gaithersburg | Scientific community (higher education, Research) | Attending |
| 2015 | | | | | | |
| Conference | Jotne | Subsea Valley Conference | 15-16 /04/2015 | Oslo | Industry | Attending |
| Conference | Jotne | NATO NIAG | Apr/2015 | Switzerland | Industry | Attending |
| Conference | Jotne | ISO SC4 | Abr/2015 | Vico Equense | Industry | Attending |

| Type of activity | Who is going? (Partner) | Title / Name of the event | Date | Place | Type of Audience | Purpose / Justification / Outcomes |
|------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conference | Jotne | Vision+2015 | 28 /04/2015 | Stavanger | Scientific community (higher education, Research) | Presentation |
| Conference | Jotne | ProSTEP | 5-6 /05/2015 | Stuttgart | Industry | Exhibition (presentation) |
| Conference | SINTEF | The third International Conference on Isogeometric Analysis (IGA 2015) (http://congress.cimne.com/iga2015/frontal/Objectives.asp) | 1-3 /6/2015 | Trondheim , Norway | Scientific community (higher education, Research) | Attending |
| Conference | Jotne | NAFEMS world congress | 21 /06/2015 | San Diego | Scientific community (higher education, Research) | Attending |
| Conference | UEDIN | Dealing with Data 2015 | 31 /08/2015 | Edinburgh | Scientific community (higher education, Research) | Attending + Presentation |
| Conference | Jotne | Leverandørseminar og Fsi-messe/Fsi Exhibition Akershus festning | 9-10 /09/2015 | Oslo | Industry | Exhibition |
| Conference | SINTEF | The bi-annual series of SIAM conference on Geometric and Physical Modeling (GDSPM15) (http://www.siam.org/meetings/gdspm15/) | 12-14 /10/2015 | Salt Lake City, Utah, USA | Scientific community (higher education, Research) | Organizing a mini-symposium on Geometrical Big Data Sciences /cloud computing in cooperation with Iqmulus, CloudFlow, ... Good attendance, considering the amount of parallel sessions. |

| Type of activity | Who is going? (Partner) | Title / Name of the event | Date | Place | Type of Audience | Purpose / Justification / Outcomes |
|-------------------|-------------------------|---------------------------|------------------|------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conference | SINTEF | ICT 2015 | 20-22 /10/2015 | Lisbon | Scientific community (higher education, Research) Policy makers, Industry | VELaSSCo distributed leaflets in the CloudFlow/I4M S stand. |
| Conference | Jotne | CEAS -SCAD | Nov 2015 | Toulouse | Industry | Attending (poss. pres) |
| Conference | ATOS | EDF 2015 | 16-17 /11/2015 | Luxembourg | Researchers, industry | Attending, relations with other Big Data and HPC practitioners, Big Data PPP |
| Internal workshop | CIMNE | CIMNE Café | 02/12/2015 | Barcelona | Researchers, Industry | Presentation from Miguel Passenau: VELaSSCo Big Data For Computational Engineering |
| 2016 | | | | | | |
| Conference | SINTEF | ARCADES Workshop | 25-28 April 2016 | Wien, Austria | Scientific community (higher education, Research) | Presentations of what SINTEf is doing with VELaSSCo http://arcades-network.eu/index.php/event/arcades-kickoff-event/ |
| Conference | INRIA | HPC-BIG DATA day | 26 April 2016 | Grenoble, France | Scientific community (higher education, Research) | Overview of some research work that either developed their specific map/reduce stack for analysing scientific data or relied on classical Big Data stacks like the Velasco project. Attempts to reduce data movements and data |

| Type of activity | Who is going? (Partner) | Title / Name of the event | Date | Place | Type of Audience | Purpose / Justification / Outcomes |
|------------------|-------------------------|-----------------------------------------------------------------|-------------------|-------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | | storage. https://bigdatahpc2016.sciencesconf.org/resource/page/id/2 |
| Exhibition | FRAUNHOFER | Hannover Messe 2016 (HMI) | 25-29. April 2016 | Hannover, Germany | Industry | Part of exhibition at Fraunhofer Simulation Booth |
| Workshop | CIMNE | Computer Aided Technologies for Additive Manufacturing (CAxMan) | May 2, 2016 | Barcelona, Spain | Scientific community (higher education, Research) | VELaSSCo presentation previous to the WMF http://www.caxman.eu/ |
| Conference | SINTEF, JOTNE | NAFEMS Nordic 2016 | 10-11 /05/2016 | Göteborg, Sweden | Industry | "Workshop with presentations / Exhibition |

3.3 Publications

VELaSSCo publications can be seen on below:

Table 4 - VELaSSCo Publications

| Title of publication | Type | Authors | Date | Details |
|------------------------------------------------------------------------------------------------------|------------|--------------------------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Resolving Vulnerability Identification Errors using Security Requirements on Business Process Models | Journal | S. Taubenberger, J. Jürjens (Fraunhofer), Y. Yu, B. Nuseibeh | 2013 | Journal on Information Management and Computer Security (IMCS) 2013 Volume 21, Issue 3, relevant pages 202-233 Published by Emerald Group Publishing Limited DOI: http://dx.doi.org/10.1108/IMCS-09-2012-0054 |
| Big Data architecture for large-scale scientific computing | Conference | B. Lange and T. Nguyen (INRIA) | 2014 | Open Access: https://hal.archives-ouvertes.fr/hal-01061641 HAL Id: hal-01061641 |
| Stopping big data from blowing our minds | Article | Damien Pearse, interview to project partners | 2014 | HORIZON - the EU Research & Innovation Magazine http://horizon- |

| Title of publication | Type | Authors | Date | Details |
|-------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | magazine.eu/article/stopping-big-data-blowing-our-minds_en.html |
| A Hadoop distribution for engineering simulation | Article | B. Lange and T. Nguyen | 2015 | Open Access: https://hal.inria.fr/hal-01130630/document HAL Id: hal-01130630 |
| A Hadoop use case for engineering data | Article | B. Lange and T. Nguyen | 2015 | Open Access: https://hal.inria.fr/hal-01167510/document HAL Id: hal-01167510 |
| Une distribution Hadoop pour la visualisation de données de simulation massives | Article | B. Lange and T. Nguyen | 2015 | Open Access: https://hal.inria.fr/hal-01130633/document HAL Id: hal-01167510 |
| Modelling Geometrical Big Data Using Locally Refined B-Splines | Present ation | H. Dahl | 2015 | Presentation at the Geometrical Big Data Sciences micro-workshop at GDSPM15 Abstract available at: http://meetings.siam.org/sess/dsp_talk.cfm?p=73037 |
| The VELaSSCo framework: a software platform for end user analytics and visualization of large simulation datasets | Oral Present ation | G. Filippone, A. Janda, K.J. Hanley, S. Papanicolopoulos and J.Y. Ooi | 2015 | VELaSSCo Big Data For Computational Engineering http://datablog.is.ed.ac.uk/2015/08/07/dealing-with-data-2015-programme/ |
| VELaSSCo Big Data For Computational Engineering | Oral Present ation | M. Passenau | 2015 | Oral Presentation at the CIMNE Café 02/12/2015. Available at: http://velassco.atosresearch.eu/sites/default/files/velassco/files/content-files/articles/VELaSSCo%20BigData%20For%20Computational%20Engineering%20%28CIMNE%20Cafe%202015-12-02%29.pdf |
| Paper | Oral present ation | O. Barrowclough, H. Dahl, F. Fuchs, J. Hjelmervik, J. Nygaard (Sintef ICT, NOR); K. Bengtsson, J. Haenisch (Jotne EPM Technology, NOR) | 2016 | Oral presentation an paper accepted in Session 9 Materials/Methods https://www.nafems.org/downloads/2016_nordic_conference/2016-nordic-rc-invitation.pdf/ |

Some more publications, even with members of the User Panel and about Big Data Architecture for Simulation Purposes are currently in progress for 2016.

Besides those results, Fraunhofer HHI has submitted 2 papers that have been rejected in 2016 (i.e. Eurographics 2016, Lisbon Portugal, May 9th-13th).

3.4 Dissemination indicators

The following table gives an overview of the VELaSSCo project's dissemination indicators:

Table 5 - VELaSSCo Dissemination Indicators

| Component | Metrics | Indicator Y1 | | Y2 | | Y3 |
|-----------------------------------------|---------------------------------------------------|--------------|------------------------|--------|------------------------|--------|
| | | Target | Achieved | Target | Achieved | Target |
| Publications (journals, books) | Number of published / submitted | 1 | 1 | 2 | 0 | 2 |
| Papers and presentations in conferences | Number of papers and presentation in conferences | 3 | Papers: 2 Press.: 1 | 12 | Papers: 3 Press.: 3 | 15 |
| Articles | Number of articles about the project in the press | 1 | 1 | 2 | 0 | 3 |
| SN followers | Number of followers in Twitter and LinkedIn | 20 | T: 16 L: 10 | 75 | T: 27 L: 16 | 150 |

4 Conclusions

This deliverable is the second dissemination document of the VELaSSCo project. It presents an update of the dissemination strategy, plans and outcomes of the second year of the project. It has been revisited after the recommendations from the reviewers of the project in order to explain better the dissemination strategy and some actions taken until M28.

Several dissemination channels have been set up (Web site, social networks, YouTube channel, etc.) and various dissemination activities have taken place. Furthermore, several dissemination indicators to measure the success of the activities have been specified. The Web site have been redesigned in the last period and more content is now available from it.

It is important to be aware of the fact that all project partners need to be involved and maintain an open dialogue in order for dissemination and exploitation activities to be successful. Furthermore, the dissemination strategy is subject to constant change, corresponding to the development of the results of the project, the demands of interest groups and the state-of-the-art technology and software solutions. Thus, the dissemination is being developed in a continuous process, which will be reflected by changes made to this document throughout the life-cycle of the project. In this sense, the document presents an update of the dissemination strategy up to M28.

Last but not least, it is worth mentioning that so far project partners devoted most of their time to set up the technical foundations of the project, leading to a better understanding about how to take the best of two worlds (HPC and Big Data) for the visualization of larger simulations. The second year had witnessed the first working prototypes of the VELaSSCo framework, giving now the possibility of focusing on dissemination of the results achieved and the ones to come in the third year. Therefore, project partners expect to boost their dissemination in the final year of the project. To this purpose partners committed to attend to the series of NAFEMS conferences in several countries in Europe during 2016 and to issue more scientific publications.

Several dissemination actions has been strengthened during the first quarter of 2016, such as more frequent updates of the web site, more content, including videos (a YouTube channel) and a more active presence in social media.