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Enabling Exascale Fluid Dynamics Simulations
Project Number 671571

D4.6 – Dissemination and Communication - Initial Plan

WP4: Dissemination and Exploitation



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Executive Summary

This document describes the work to be done and results to be achieved during the project lifetime, with a special focus on the action points for the first 12 months.

The main objective of this workpackage is to create awareness of the solutions to problems arising when it comes to CFD simulation using exascale HPC technology. During the lifetime of the ExaFLOW project the dissemination activity will go through different phases. The first 12 months are driven by two specific goals:

- ✓ Create the brand of the ExaFLOW project and
- ✓ Support initial dissemination activities.

Besides the overall management task the activities of WP4 are divided into 4 different tasks. The main goals to be achieved by WP4 are:

- ✓ Creating the brand of the ExaFLOW project: logo, fonts, colours;
- ✓ Designing and developing a website;
- ✓ Create social media interfacing;
- ✓ Create dissemination materials: brochure, poster, presentations;
- ✓ Attend conferences and exhibitions;
- ✓ Transfer knowledge;
- ✓ Communicate with industry.

All core partners are involved in the Dissemination and Communication activities and will contribute to the work to be done in the first 12 months of the ExaFLOW project.

This document is mainly intended for internal reference and use, i.e. by all project participants; however it could also act as a reference for other projects to define their dissemination and communication plans.

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1 Introduction

In the ExaFLOW project both dissemination and communication will be managed as a continuum. This is because the two must be aligned around strategic timing, and targets, leverage social media, be monitored for success (with KPIs) and reported. Moreover, cross-fertilization of dissemination and communication is important and cost-effective (e.g. blogging or tweeting in parallel to publishing or presenting results) because although the means and audiences are distinct, the overall impact can be multiplied.

An overall dissemination strategy is drawn up in this document. We state the identified target groups, find the most appropriate means to target them and define the level of interaction that is necessary through time from awareness over understanding up to action/collaboration. This is of similar importance for the academic/scientific dissemination as well as for the supporting dissemination activities to the exploitation – communication with industry.

The remainder of this document is organized as follows:

- Section 2 specifies the target audiences for the messages we want to communicate through our project;
- Section 3 gives an overview of the tools to be used to communicate our messages;
- Section 4 mentions the dissemination and communication activities that have taken place so far and are planned to take place during the upcoming months of the project;
- Section 5 lists the Key Performance Indicators (KPIs) identified for the dissemination tasks;
- Section 6 gives a brief overview of the upcoming deliverables and their due dates.

2 Target Audiences

Before deciding on a dissemination plan first it is important to identify the dissemination target audiences for the ExaFLOW project. A well-defined audience is key to finding the best dissemination strategies to follow and messages to send.

The dissemination targets of the ExaFLOW project should include all sectors, institutions, organisations and people that:

- are interested in the research conducted in the ExaFLOW project;
- are interested in contributing to our work;
- are interested in learning about the project's findings;
- are or will be affected in the future by the outcomes of our research;

More precisely, the target groups the ExaFLOW project aims to influence directly and indirectly are listed below in Table 1 along with the message.

Target Group	Message
CFD-based research groups	The innovation of the ExaFLOW project in new algorithms and methods will allow new and larger problems to be simulated.
ISVs and academic application providers	The pilot implementations provided will allow a quick take-up of the algorithms and methods developed in both, commercial and academic CFD applications, contributing to the European application excellence.
HPC resource service providers	The improved performance and power efficiency of CFD methods and I/O will directly result in more efficient use of the HPC resources, both in terms of science throughput and energy consumption.
Automotive & Aerospace Industry	CFD is a key technology for the automotive and aerospace industries. The improvements made by the ExaFLOW project will allow them to use better simulation models contributing to their market competitiveness. The ExaFLOW project has included representatives in the consortium to ensure the developments are guided by industrial needs and industry will indeed be able to pick them up.
CFD User Community	CFD is used in many different disciplines as described above. The improvements made by the ExaFLOW project will provide means to produce faster and more efficient simulations having the potential for significant economical and societal impact.
HPC research and user community	New feature extraction and data-compression algorithms will benefit the wider HPC research and user community.
HPC research	The advancement of the state of the art in algorithm development for community improved scalability and efficiency will progress knowledge and thus benefit the wider HPC research community.
HPC hardware vendors	The increased use of large-scale simulations will stimulate the HPC market and the developments of the ExaFLOW project will contribute to making a case for exascale developments.

Table 1: The ExaFLOW project target groups and corresponding messages for dissemination and communication

3 Tools

3.1 Brand Establishment

The following branding items have been created, discussed and approved by the ExaFLOW project Dissemination team:

ExaFLOW Logo - The Logo has been developed to emphasize the name of the project. It is available in several versions with/without text, with normal or inverse text, or black and white to fit all different use cases.



Figure 1: Logos of ExaFLOW

ExaFLOW colour - Bright-blue has been chosen to be the corporate colour which will be used as background, for the logo, presentations and flyers.

ExaFLOW Font - The font “Cambria” has been chosen to be used for all public material such as brochures, presentations and other dissemination materials.

ExaFLOW presentation template - Templates for Microsoft PowerPoint have been created to be used for all project presentations.

ExaFLOW standard presentation - Based on the presentation template of ExaFLOW, a standard presentation has been created in PowerPoint to be used by project partners when presenting the project. The presentation can be edited and used as a starting point to develop specific presentations.

3.2 Website

To be represented on the internet as early as possible the dissemination management team decided to take a two stage approach to create a website. The first goal was to create a simple, rather static website that has the essential information about the ExaFLOW project available. That gave the project some more time to develop a more sophisticated website based on a content-management-system.

3.2.1 First website version

The first version of the ExaFLOW project website is based on the project branding developed in the first month of the project. It contains the essential project information and how to contact the project via email.

The welcome page includes a brief description of the project. Included on the welcome page are the logos of all partners and the EU, a statement showing the project was funded by the EU, and the Grant Agreement Number of the project. Finally, a special field allows visitors to subscribe to the project newsletter.

From that welcome page the visitor can navigate to several subpages to get more detailed information about the project:

Participants – The partners of the project are mentioned as well as contact information of the Project Coordinator.

Objectives – This menu leads to 5 submenus where project objectives are described in detail.

Workpackages – A brief description of each work package is given here. At a later stage links to Public deliverables will be provided for each workpackage.

News - Every past activity is listed here in reverse order new to old. Each visitor will get an easy overview of what has been done so far and where the ExaFLOW project is headed. Visitors who subscribe to the newsletter of the project at the welcome page, will receive each newly posted “News” item in their inbox. This section will work as a blog.

Use cases – Each use case is described on this page in a few words. Each short description of a use case links to a longer and more detailed description for those who are interested in learning more details.

Codes – A description of the codes used for the different use cases is given here.

Contact – The Contact page will contain links and means to all communication ways including general project email, and social media.

3.2.2 Final website version

The final version of the website will be based on a content management system and will be updated monthly. Additional subpages like “Trainings” and “Events” are planned and the addition of results of the project will enlarge the page substantially, especially in the blogging “News” section.

Website usage analytics will be collected and reported in the follow-up dissemination deliverables D4.6 and 4.7.

3.3 Blogging/ Newsletter

As described above, the “News” section of the website will act as a blog for the project. Each “news” item will be distributed to the newsletter subscribers once it is uploaded. The planned frequency of posts is monthly. This newsletter will continually inform interested parties on our project’s progress, while also allowing the dissemination team to build a database of stakeholders interested in project results.

3.4 Social Media

Concerning social media the ExaFLOW project is very closely cooperating with its project partners, to keep the content of the posts interesting and up-to-date and to create conversations around topics of interest to its community.

The project has set-up a Twitter account under the name @ExaFLOWproject and created a public list with Stakeholders of the project. The account is being handled using Tweetdeck and TweetCaster.

The dissemination team decided not to create a LinkedIn group, but to contribute to conversations taking place in already existing groups debating topics of interest to the project.

3.5 Press Releases

The initial press release is planned for month 6 and will introduce the project with all of its aspects and describe the use-cases in more detail. The website and

the info-email address of the project will also be introduced by the initial press release. The press release will be issued to several news channels like idw-online¹ and alphagalileo². A full list of postings will be given in the follow-up Dissemination deliverable D4.7. The second press release is planned to be released towards the end of the project, announcing final results and achievements.

3.6 Printed Materials

ExaFLOW brochure - During the first 3 months of the ExaFLOW project the first version of a project brochure has been created. This first version is mainly introducing the project. Later on, a second version will be created which will include updated information concerning the first results of the project. The first version of the brochure is printed and distributed to partners for dissemination events on demand. The brochure is also available in electronic format. The next revision of the project flyer is planned for Q2 of 2017 to be used in events starting in March 2017.

ExaFLOW poster – During project months 7 and 8, a project poster will be designed and produced to be used by the partners to present the ExaFLOW project while at conferences and exhibitions. The poster will be printed and distributed to partners involved in exhibitions on-demand.

ExaFLOW roll-up/banner - Depending on the budget and project needs, a banner (roll-up) will be possibly designed and produced to support the ExaFLOW project representations at events and exhibitions.

All dissemination materials are available electronically on the internal project server for download by all partners. Communication to all partners about availability of material and updates has taken place.

4 Activities

Dissemination is of clear importance to the impact generation, in particular with regards to uptake of open source project results. The project will present its work in the major journals and at top CFD, HPC, and computational science related conferences, as well as via self-organised workshops and trainings.

4.1 Publications and Whitepapers

Scientific publications are an important way to transfer knowledge thus, we will also follow this approach. Project results, outcomes, and innovations will be submitted for publication in scientific journals and conferences relevant to the topic of the research activity carried out during the project. The submission of papers jointly written by project partners will be encouraged. In particular, we will be targeting the following well-known conferences and journals:

- AIAA Journal
- Journal of Computer Physics Communications

¹ <http://idw-online.de/>

² <http://www.alphagalileo.org/>

- Journal of Computational Physics
- Computers & Fluids
- Journal of Scientific Computing
- SIAM Journal on Scientific Computing
- ECCOMAS
- ERCOFTAC
- EUROMECH
- ICOSAHOM
- ICCFD
- ACM Transactions on Architecture and Code Optimisation
- ACM Transactions on Computing Systems
- ACM Transactions on Parallel Computing
- ACM Transactions on Mathematical Software
- IEEE Transactions on Parallel and Distributed Systems
- IEEE Transactions on Computers
- Journal of Parallel and Distributed Computing
- Concurrency in Computation Practice and Experience
- Euro-PAR, PLDI, HPDC, IPDPS, eScience, Supercomputing, POPL, CF,
- ROSS, CCGrid, ICCS, PPOPP, CGO, PACT, OOPSLA, ICS, ICPP and HiPEAC, ISC
- ParCFD
- ICCFD

ExaFLOW will also release two whitepapers during the project lifetime to support knowledge transfer and exploit widely community efforts. These publications will not be exclusively aimed at academia and fellow research departments, as publications in scientific journals, but seek to ensure that knowledge is sufficiently transferred to the commercial arena. These will be used by the industrial partners, internally, but also by the consortium to address the commercial HPC and CFD arena in general.

4.2 Events: Conferences, Exhibitions, Workshops

4.2.1 Past and upcoming events

Already since before the official project start date and shortly after the Kick-off meeting, the dissemination team has represented the ExaFLOW project at several events with the goal to raise awareness and support for the project. The following table lists all events where the ExaFLOW project has been and will be represented.

Date	Event	Location	Partner covering
15.07.2015	ISC High Performance ³	Frankfurt, DE	KTH
15-20.11.2015	Supercomputing 2015 (SC15)	Austin, USA	HLRS, EPCC, KTH
23.02.2016	Workshop “Simulation Driven Design for CFD”	Stuttgart, DE	ASCS, IC, USTUTT

³ https://www.isc-events.com/isc15_ap/presentationdetails.htm?t=presentation&o=363&a=select&ra=personendetails

11.04.2016	Workshop “CAE Cloud Computing”	Stuttgart, DE	ASCS
12-13.04.2016	Workshop “The perfect crash: reality meets simulation”	Hanau, DE	ASCS
26-29.04.2016	Exascale Applications and Software Conference (EASC 2016)	Stockholm, SE	KTH
2nd half of October 2016	12th IEEE International Conference on e-Science, (eScience 2016)	Baltimore, Maryland, USA	To be decided
19-23.06.2016	ICS High Performance 2016	Frankfurt, DE	HLRS
13-18.11.2016	Supercomputing 2016 (SC16)	Salt Lake City, Utah, USA	KTH, EPCC, HLRS
5-10.06.2016	European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS CFD) 2016	Crete, GR	SOTON
27.06-01.07.2016	International Conference on Spectral and High Order Methods 2016 (ICOSAHOM)	Rio de Janeiro, BRA	IC, KTH
To be announced	EC ICT 2016	To be announced	HLRS

Table 2 – Events with ExaFLOW presence

Except for the first conference the set-up of all conferences will be the following:

- Partner displays the ExaFLOW project poster to identify oneself as an ExaFLOW project partner.
- Partner distributes project brochures to exhibition attendees.
- Partner mentions the ExaFLOW project and uses either project logo or project presentation template during presentations (if applicable).

The SC15 conference has been chosen to introduce the ExaFLOW project into the HPC community. The ExaFLOW project was represented by the partners attending SC15 (EPCC, KTH, HLRS).

Several appearances by the ExaFLOW project partners are planned at upcoming events. In the second phase of the project dissemination, where mainly the results of the experiments will be presented, the ExaFLOW project will possibly be participating with our own stand at selected events to intensify the ExaFLOW project visibility and messaging.

Moreover, we plan to participate in the EC ICT Conferences, and if agreed with the EC, demonstrate the project results at these events in the Exhibition area.

4.2.2 Workshops and Conferences

To concretely introduce our project results to interested parties, special attention will be given by partners of the project to the organisation of several workshops. In these workshops, we will present how our results can be applied to a wide variety of use cases. The ExaFLOW project will organise one workshop at SC17 and one at ISC18, promoting the ExaFLOW project results, ideally with hands on sessions, and inviting similar activities to present their results as well.

Moreover, for the upcoming 6 months the following workshops are planned:

Workshop “Simulation Driven Design for CFD” (February 23rd 2016), organised by project partner ASCS

The Workshop “Simulation Driven Design for Computational Fluid Dynamics” is focusing on the trend of embedding CFD software into the automotive design process. Is this trend only a part of the long-lasting frontloading process or is it a paradigm shift? Who are the key players to enable the change? How much methodological knowledge does an engineer need? How do we handle the conflict of objectives: the need of less system understanding by using a black box software and solving advanced problems by detailed understanding of solver algorithms? What are the most important aspects for industrial usage: real-time; automated; easy-to-use; CAD-embedded; bi-directional; multi-physics enabled? The workshop will give a state-of-the-art overview and offers space for discussions and new project ideas. The ExaFLOW project will be presented in the frame of the state-of-the-art overview during the workshop. Furthermore, Prof. Sherwin from Imperial College and Prof. Rist from USTUTT will give presentations on more specific topics.

Workshop “CAE Cloud Computing” (April 11, 2016), organised by project partner ASCS

The very fast growing global competitive pressure and new legal regulations (stricter guidelines for personnel leasing) during the last few years led to a complete rethink of Computer Aided Engineering - CAE and High Performance Computing - HPC processes. It is now a question of going further to flexible and easy to access / operate CAE work environments. Therefore cloud computing could be an opportunity for the overall European automotive, aerospace and engineering industry, especially for innovative small and medium enterprises – SMEs (e.g. suppliers, engineering service providers and independent software vendors). Their budget for CAE hard- and software is limited. A state-of-the-art overview of CAE simulation tools that are compatible with the use of Cloud Computing will be presented. The workshop will address challenges to be solved in order to fully integrate the use of Cloud Computing in the vehicle development process by means of the Computational Fluid Dynamics – CFD and Computation Structural Mechanics – CSM. At the final stage of the workshop a deep exchange of information between all participants is planned where potentials of the ExaFLOW project in the field of CFD will be exploited.

Workshop “The perfect crash: reality meets simulation” (April 12/13, 2016), booth of project partner ASCS

The ASCS workshop will take place during the CAE Grand Challenge in Hanau⁴, an important CAE conference with a large number of participants. The automotive CAE Grand Challenge stimulates the exchange between users, scientists and software developers in order to solve the CAE challenges. Annually the current challenges in automotive CAE are being identified through a survey among simulation experts of the automotive industry. In the conference one session will be dedicated to each of the most critical challenges, the “Grand Challenges”. ASCS has an own session and additionally will have a booth where

⁴ <https://www.carhs.de/en/grand-challenge-overview.html>

the ExaFLOW project print media (e.g. flyer) could be illustrated if it is available. Through personal contacts during the event the ExaFLOW project will be presented in detail to targeted parties.

Exascale Applications and Software Conference - EASC 2016⁵, (26-29 April 2016), organised by project partner KTH

Exascale computing power will likely be reached in the next decade. While the precise system architectures are still evolving, one can safely assume that they will be largely based on deep hierarchies of multicore CPUs with similarly-deep memory hierarchies, potentially also supported by accelerators. The challenge of designing and implementing applications running efficiently at large scale on exascale platforms involves developers of applications, libraries, programming models and system software. The aim of the EASC2016 conference is to bring together developers from different application fields to present the problems they face on the road to exascale, their approach to solve these challenges and to share their experience gained during the petascale period. The ExaFLOW project will be presented and discussed during the Conference

4.3 Training

Special training around the use of CFD on HPC and more precisely an Exascale machine are planned to be set up taking into account training activities in Europe such as the PATC or national activities and thus will be available on a demand base to everyone interested.

4.4 Communication with Industry

The results of the ExaFLOW project will be widely disseminated to industrial beneficiaries, both through the industrial links of the partner organisations and the ETP4HPC.

A database of important stakeholders, who may be interested in our project results is being formed through partner industrial contacts, through newsletter subscribers on the project website, and through the public “Stakeholders” list on Twitter.

Below we list the main industrial contacts of the project partners:

- KTH: SAAB, Scania, Vattenfall, Huawei
- IC and McLaren: Airbus, BP, British Gas
- SOTON: Airbus, Vestas
- UEDIN: Rolls Royce, ICON CFD, Prospect FS, BAE Systems
- HLRS: Porsche, Daimler, RECOM
- EPFL: HyperComp Inc (US)
- ASCS: Porsche, Daimler, Opel, TECOSIM

We will process the newsletter list frequently to identify further potential contacts. As for Twitter, we are already interacting with stakeholders identified through that communication channel.

⁵ <https://www.pdc.kth.se/easc2016>

ASCS is a partner who will further communicate project progress and results to the industrial community through their seminars and newsletters, as well as workshops, which are one of their main tools to spread know-how to the automotive industry and its supply chain.

Major work in this task will be done in the second phase of the project when the first wave of results will surface.

5 Key Performance Indicators (KPIs)

To monitor the project progress, a number of Key Performance Indicators (KPIs) have been identified, for the project overall (Table 3), and each partner in particular (Table 4). The EB will monitor the progress of the project against these KPIs on a monthly basis and this will be reported in the project reports.

KPI	Total
Journal papers	8
Conference proceedings	20
Conference presentations	25
Whitepapers	2
Press releases	2
Presence at events	2
Trainings	1
Website visits	3000 p.a., 40% spending more than 2 minutes on the site.
Social media	Twitter account with bi-weekly updates

Table 3 – Dissemination KPIs for the project

KPI	EPFL	KTH	EPCC	SOTON	IC	ASCS	McLaren	HLRS
Journal papers	3	3	1	2	2	-	-	2
Conference proceedings	-	3-5	2	3	2	-	-	1
Conference presentations	-	3-5	1	3	2+	3+	1	3
Whitepapers	-	-	-	-	-	1	1	-
Press releases	-	-	-	-	-	-	-	2
Presence at events	-	3	2	-	1	2	-	2
Trainings	-	-	-	-	-	-	-	1

Table 4 – Dissemination KPIs per partner

Some of the partners have indicated target numbers that are likely to change along the project. Above are indicated minimum goals which we will review for the second and third year of the project, aiming for an as ambitious result as possible.

6 Upcoming Deliverables

The Dissemination and Communication targets plan in the previous section lists a number of outputs and partners responsible for each. When an output has been reached, the partner responsible needs to inform the WP leader and provide sufficient documentation that proves that the work is complete. This documentation will subsequently be included in the next Dissemination deliverables.

Number	Title	Due	Status
D4.6	Dissemination and Communication – Initial Plan	PM3	Current document
D4.7	Dissemination and Communication - Activities and Results	PM18	To be submitted
D4.8	Dissemination and Communication - Activities and Results - Update 2	PM36	To be submitted

Table 5: Overview of upcoming deliverables