D7.1 Detailed Dissemination Action Plan

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1 Executive summary

The COMPAT consortium strongly believes that both science, R&D, and innovation will be strengthened with a comprehensive dissemination plan and well-thought knowledge exploitation activities. Thus, dissemination and outreach play an important role in the COMPAT project, and will be a collaborative effort between the project partners. This document describes the COMPAT dissemination action plan, detailing tools, channels, tasks, target audiences and deliverables.

The focus of COMPAT's Work Package 7 (WP7) is to communicate the project's objectives and results, increasing the impact of COMPAT in the HPC community. WP7 will implement the project's impact objectives by organising two workshops, a Summer School, dedicated media work, participation in conferences, preparation and distribution of information material, event organization, and the establishment and nurturing of key media relations. COMPAT will employ leverage in dissemination wherever possible by harnessing already established dissemination channels.

2 Introduction

Exascale high performance systems offer tremendous opportunities for computational science and promise to transform computation from a quantitative tool supporting theory and experiment into a *predictive simulation science.* Fundamental technological and algorithmic challenges need to be addressed in order to realise the capabilities that fully exploit these emerging opportunities. Current approaches in high performance computing will not directly apply at the exascale to automatically deliver the envisioned step jump to scientific discoveries. COMPAT will contribute in this highly desirable paradigm shift, thus aiming at a strong impact on predictive simulation science that has to rely on huge multiscale simulations.

COMPAT will reduce significantly the effort and time needed to reach exascale performance, both in case of new application development and in adapting existing applications to new, heterogeneous, extremely parallel systems. We reach this impact through addressing several strategic sub-goals, such as those identified by the European Technology Platform for High Performance Computing (ETP4HPC) strategic research agenda and various standards bodies. The project will have an impact across the whole future HPC market (with a focus on extreme-scale systems), as well as in the theoretical foundations underpinning the emerging exascale applications and use cases.

Given this substantial impact, the stakeholders that will benefit from COMPAT's work are therefore a large and diverse set of people. These include: the scientific community, user communities, middleware developers, vendors, other industries, standardisation bodies, and related international projects. Through various dissemination actions, we will disseminate the project's outcomes to these stakeholders.

We will target the project stakeholders through the following channels:

- COMPAT website: www.compat-project.eu
- COMPAT Twitter account: @compatproject
- Online forums, e.g. The European Commission Digital4Science platform
- Scientific Events (conferences, workshops, seminars etc)
- National and international press, news forums, etc.
- Scientific Journals

In addition, we will be employing leverage in dissemination wherever possible by harnessing already established dissemination channels.

We will target the various stakeholder groups using the following dissemination materials detailed in the sections below:

- Leaflets
- Posters
- Scientific Papers
- Website content
- Social Media Content

In order to maximize the impact of COMPAT and ensure its lasting effects after the project ends, the software and tools created during the project will be made available and accessible to interested parties in an open manner.

3 Target Audiences

Given the substantial impact of COMPAT, the stakeholders that will benefit from COMPAT's work are a large and diverse set of people. These include: the scientific community, user communities, middleware developers, vendors, other industries, standardisation bodies, and related international projects. Through our dissemination actions, we will disseminate the project's outcomes (publications, software, best practice, etc) to these stakeholders.

A combination of dedicated media relations work, participation in conferences, preparation and distribution of information material, and event organization will implement our impact objectives, the following table outlines our target audiences and the channels we will use to reach them. In Sections 3.1-3.4 below, we discuss some of the target audiences in more detail.

COMPAT Output	**Target audience**	**Possible Measures/Channels**
Realisation of Exascale performance levels by applications developers worldwide		
Demonstrated Computing Patterns	Software and hardware developers, Exascale Labs	Web site, papers, conference presentations and demonstrations
Energy consumption optimisation service (ECOS)	Applications Developers, Facilities providers and users	COMPAT web site and Software partner web sites
Performance Toolkit for design of multiscale models for exascale execution	Applications software designers	Allinea products and services
Performance Prediction methodology	Application developers, S/H developers, exascale labs	Published models, embedded in open source software
Requirements for interoperability	Standardisation Bodies	White Papers, 1-on-1 meetings
Influencing next generation compute architectures (co-design)		
Understanding of bottlenecks on Experimental Execution Environment	Hardware companies	STFC/IBM Hartree Collaboration (see letter of support)
Benchmarks / test cases for evaluation of future systems	Hardware companies, exascale research labs	COMPAT web site
Influencing policies of funding organisations and service providers to create the infrastructure needed for exascale deployment and new use cases for HPC		
Demonstrations, popular articles written about COMPAT, White papers (project + contributions to others)	National and European bodies, HPC Centres, Media	Medial liaisons, Presence on advisory groups (list)
Scientific results arising from improved fidelity of simulations in applications areas		
Improved HPC algorithms for multiscale simulation	Domain scientists	Scientific literature, mature software
Coupled applications with demonstrated reliability	COMPAT Partners	Existing research programmes
	Industrial users	COMPAT meetings, Business development and outreach
	Academic Users	Scientific support services offered to academia
Enhanced skills in next generation of researchers		
COMPAT Courses/Workshops	PhD students, Postdocs, and other interested parties	Exascale course run by the project
On-line Training materials	PhD students, Postdocs, and other interested parties	Project web site

Public understanding of opportunities arising from exascale computing within Europe		
Popular articles in on-line forums	General audience	Web site, Social media, demonstrations, competitions

3.1 Targeting Academics

Targeting academics is naturally a major focus for COMPAT. Much of our event activities and dissemination channels (described in sections 5 and 6 below) will be used to target PhD students, postdoctoral research associates, and both junior and senior academics. Such activity will often also target Industry in parallel wherever possible.

3.2 Targeting Industry

In targeting industry, the table in section 6.1 shows the industrial audiences for COMPAT's various types of output. In particular, the HPC industry is one of the most important target audiences for COMPAT's contributions to improve innovation capacity. To get stronger involvement and more direct connection to industry, the External Expert Advisory Board should have at least one member from industry. A legal advisor at the UvA (the coordinating partner) will bring in knowledge on the legal aspects of knowledge use, exploitation (e.g. patents) and will be available to the consortium for questions of a legal nature. If appropriate, an independent third party (for instance a patent office or ethicist) can be consulted.

Hartree/STFC and Allinea focus many of their activities on industrial HPC use, and through them ComPat will have impact on industrial use of HPC. Allinea has a clear vision on how new knowledge emerging from ComPat, specifically on the tools (work package 4) can be integrated in their existing business, strengthening their competitiveness. The Hartree Centre, which handles industrial engagement within the STFC, has strong representation from European companies in its client base (ranging from SMEs to blue chip companies including Unilever and Rolls Royce), and as the technologies of ComPat are ready these can be deployed to develop industry solutions in a wide range of industry sectors.The Hartree Centre has also been recognised by the UK government's House of Commons as an exemplar of demonstrating how government capital investment can deliver real impact with industry.

CBK plays a main role in the dissemination of the results of this project, and as such will position itself as a main broker of High Performance Multiscale Computing knowledge between the project and

potential third party users (including industry), giving them a competitive advantage. Through their extensive links with industry across many sectors, STFC, PSNC, and BADW-LRZ are in a unique position to disseminating ComPat know-how as widely as possible within relevant sectors. Through ComPat, it is anticipated that our results will make their way to the industry and inform software and hardware design, thereby shaping the next generation of infrastructure. This will initially impact vendors that have the strongest links to the consortium, but will eventually spread to others. Thus, industry will be on our dissemination radar, but will also be involved in our conferences and training activities. We strongly believe that industry inclusion from the project's outset can only enhance our innovation ambitions.

3.3 Targeting the General Public

In targeting the public, we are considering several approaches. We will, for example, produce content for popular science magazines such as New Scientist, and participate in general public events such as the Royal Society Exhibition in London. We will consider seeking sponsorships or financial involvement from one of the consortium partners in order fund such activities.

3.4 Targeting Students from Secondary School to University

All partner universities in the COMPAT consortium are active in school engagement, which provides COMPAT with many pre-existing school programmes to exploit. UCL for instance lists a number of engagement programmes, which include Junior Conferences, Spring and Summer Schools, Masterclasses, Summer Challenges, Taster Courses, UCL visits to schools, and school visits to UCL.

4 Branding and Dissemination Materials

The COMPAT brand will be used in all of our dissemination materials, be it in the form of leaflets, posters, white papers etc. Templates will be created for each dissemination material type in order to encourage recognition of the COMPAT brand and therefore the project and its aims. The templates and brand files will be available on the COMPAT website's intranet by March 2016. Task 7.6 is concerned with the production of dissemination materials and runs throughout the 3 years. Below the dissemination types are described and our plans for each is detailed.

CBK will produce templates for each of these dissemination material types. Consortium members are required to inform CBK of content produced using these templates. Consortium members are

permitted to modify the templates but the final product must contain the COMPAT logo, the statement acknowledging the European Commission, and the European Flag.

4.1 Logo

The COMPAT logo has been designed to be clean, clear, and recognisable, with a strong image and style. Rather than attempting to be overly descriptive in itself, which can lead to too much detail and difficulty achieving good aesthetics, the logo aims for simplicity while subtly hinting at COMPAT's mission. The logo is shown below:

Figure 1: The COMPAT Project Logo

The logo is available in png and eps format in various resolutions, and also in black & white as well as colour. In full colour, the Teal shading is R;G;B 0;237;148, while the grey shading is R;G;B 154;153;154.

4.2 Leaflets

Leaflets will be made and handed out to stakeholders at various events (conferences, workshops, seminars etc), with the purpose of making them aware of the project or particular aspects of it. In particular, one leaflet will summarise COMPAT and its aims, and it will contain the following:

- COMPAT logo
- A URL to the COMPAT website
- A link to the COMPAT twitters account
- The funding line "This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 671564."
- An image of the European flag
- A summary of the COMPAT project
- The expected outcomes
- The expected impact

- Images of COMPAT research

4.3 Posters

COMPAT posters will be made to present at events such as conferences and workshops. These will display specific aspects of COMPAT research and outcomes and will require a COMPAT consortium member to explain further what appears on the poster, which will contain:

- The COMPAT logo
- A URL to the COMPAT website
- The funding line “This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 671564.”
- An image of the European flag
- Images of COMPAT research
- Summaries of COMPAT research and outcomes

4.4 Presentations

Members of the COMPAT consortium will attend and present talks at various conferences, workshops and seminars throughout the project. Where appropriate, the slides for such talks will contain a section or slide which summarises the COMPAT project, these will contain:

- COMPAT logo
- A URL to the COMPAT website
- The funding line “This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 671564.”
- An image of the European flag

In other cases, it will be appropriate to theme all of the talk slides as COMPAT related. In these instances, a template is available that displays the COMPAT logo on each page, and the rest of the slide aesthetic has been adjusted to match that of the logo, as shown below:

Figure 2: COMPAT Slide Template

4.5 Scientific Papers

Throughout the project, the COMPAT consortium will publish numerous scientific, peer-reviewed papers, conference proceedings, and chapters in books. Such publications will contain the following passage:

"This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 671564."

5 Dissemination Channels

In this section the various dissemination channels available to COMPAT are described. In general, we aim to make maximum use of already established partner, national, and European dissemination channels such as E-infrastructure specialist groups, thus maximising the impact to cost ratio of our activities in work package 7.

As a principle of practice we will employ leverage in dissemination wherever we find the opportunity – in engaging channels and mechanisms previously funded by EU investment, and/or already

established in the partner institutions and in professional associations and working groups where the key members of COMPAT are already present.

5.1 COMPAT Website

The COMPAT website is available at URL www.compat-project.eu. The website contains information about the project including a description of the project, its research, its partners and people, and contact information. It also contains a news and events page, a feed of the COMPAT Twitter account, and a calendar showing COMPAT events. The website also contains an intranet page, which will only be accessible to consortium members and will act as a storage service for COMPAT related documents such as reports, publications lists etc.

Task 7.2 is concerned with the set up and maintenance of the COMPAT website and runs across months 1-36. Milestone 1 is in the second month of the project and is the construction of the website and mailing lists.

Below is an image of the website in its current state, this is subject to change in the future:

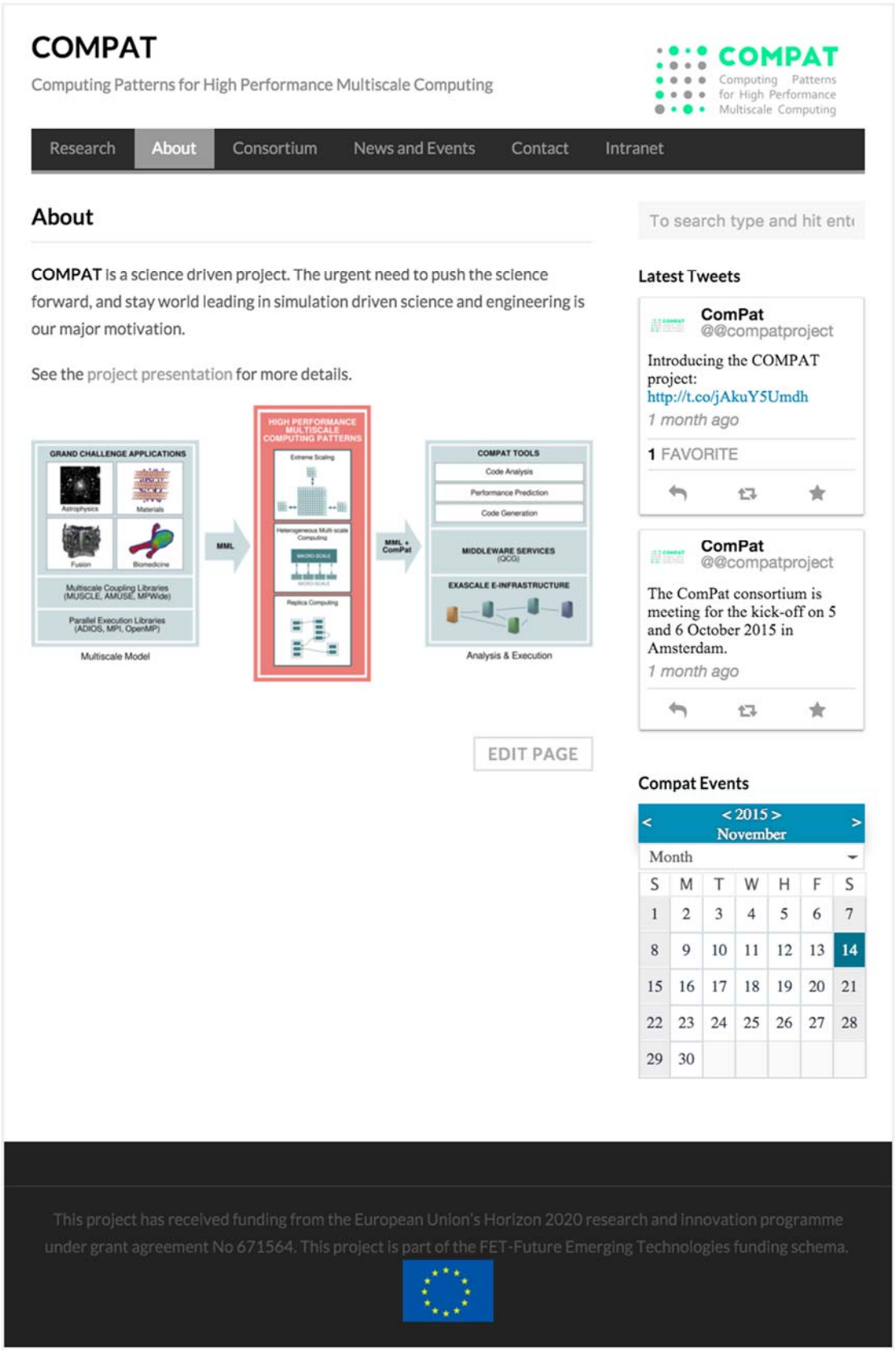

Figure 3: The COMPAT Project Website

5.2 Social Media Channels

COMPAT aims to have an effective social media presence. At the forefront of this is the COMPAT Twitter account, which can be found at @compatproject. We will explore other potential social media avenues such as LinkedIn and Youtube. Task 7.3 is concerned with maintaining a social media presence and runs across months 1-36.

5.3 Mailing Lists

COMPAT mailing lists have been set up to aid communication within the project, these allow communication to everyone in the consortium and to everyone within a particular work package. We will add additional mailing lists as required.

5.4 Other

We will leverage suitable online forums for dissemination where appropriate. One such example is the European Commission's Digital4Science platform, which can be found at the following URL: http://ec.europa.eu/futurium/en/digital4science. The Digital4Science platform was set up to stimulate conversations on Excellence in Science and its activities around the Open Science Cloud, e-infrastructures, High Performance Computing, Future & Emerging Technologies and the FET flagships, and to build bridges between the involved scientific communities, and so it aligns with the aims of COMPAT.

Several COMPAT members are involved with a COST Action titled "Open Multiscale Systems Medicine". COST Actions are Pan-European networking instruments that allow researchers, engineers or scholars from COST Member Countries and Cooperating State to develop jointly their ideas and new initiatives in a field or topic of common interest. "Open Multiscale Systems Medicine" aims to develop novel multiscale systems medicine concepts, methods and technologies that provide effective, efficient and economical solutions for emerging and future approaches to multiscale systems medicine. It also aims to develop a transdisciplinary multiscale systems medicine framework that integrates systems medicine, multiscale modelling, multiscale data science, and multiscale computing. COMPAT will explore collaborative opportunities with with this COST Action.

6 Events

COMPAT will organize and participate in many events throughout the project duration, including conferences, workshops, seminars, training events and more.

We will organise two workshops, which will have the objective to promote COMPAT results and success stories and to provide compelling use cases to interested audiences. One will be part of the International Conference of Computational Science (ICCS), which is a yearly conference alternating between Europe, Asia and the USA, this will take place in the first year of the project. The other workshop will be organised with the Lorentz Centre in Leiden in the second year the project. Additionally, COMPAT aims to provide training to students, post-doctoral researchers, or other interested parties through a Summer School in the third year of the project. The Summer School will be an interactive forum providing training in multiscale approaches, and will target both project members and external participants. This training event will include industry participation to demonstrate knowledge transfer capabilities. We will explore options to organize this workshop together with the Dutch eScience Center.

Task 7.4 is concerned with the organization of the training event and workshops and while it was originally intended to run from months 9-36, since ICCS 2016 workshop preparation had deadlines as early as October 2015, this task will actually run from month 1-36. There are three milestones in this task:

- Milestone 6 - COMPAT Workshop 1 (by month 14, targeting ICCS 2016)
- Milestone 9 - COMPAT Training Event (by month 20, targeting a partner institution)
- Milestone 15 - COMPAT Workshop 2 (by month 30, targeting the Lorentz Centre)

COMPAT will also be represented at international supercomputing conferences such as SC, ISC, and the PRACEdays. CBK will coordinate COMPAT's representation at such events, where COMPAT consortium members will give talks, present posters, hand out leaflets etc. One such event early on in the project is the Solvay Institute Workshop on "Multiscale Modelling at the PCB (Physics, Chemistry, Biology) interface", which takes place on 19 - 21 April 2016. COMPAT consortium member Peter Coveney is on the organising and scientific committee for the event, and Alfons Hoekstra is a confirmed speaker.

Task 7.5 is concerned with co-ordinating conference participation and runs from months 1-36.

7 Reporting

In executing COMPAT's dissemination plans there must be regular communication between all of the partners, in particular via CBK, to ensure that activity is correctly recorded. The following points define how this is implemented:

- In the first instance, key achievements, events, publications, media appearances, and any activities that should be disseminated, should be reported to CBK, directly via email to h.martin@cbkscicon.com.
- In order to monitor the above activity, CBK will use the monthly WP Leader Teleconferences to check on any unreported activity, allowing for it to be disseminated adequately.
- The monthly WP Leader Teleconferences will also be used for CBK to report all dissemination activity from that month to the principle investigator and project manager of COMPAT.
- The annual dissemination reports will document all COMPAT dissemination activity from that year, and will aid in the annual updating of this document, the COMPAT Dissemination Action Plan.

Work package leaders will arrange summaries of deliverables and research outcomes to be delivered to CBK for distribution on COMPAT's dissemination channels. CBK will produce a report template for this purpose, and will include a check-list of dissemination opportunities (e.g. target audiences and appropriate channels for dissemination).

8 After the Project

Aside from the dissemination activities conducted during the project, we will keep COMPAT 'alive' in the community after the project's termination. We will do so by publicising our training material and encouraging participation of the consortium in future educational events. The members of the COMPAT consortium will also be encouraged to present work conducted during the project at future conferences. Our publications and software tools will still benefit the community after the project ends, where the results will remain available on the website until 5 years after the project ends. The ICCS 2016 workshop is already a continuation of a series, we aim to continue this series after the project has ended.

9 Output Measurement

At the end of the project we will want to get an idea of how effective our dissemination output has been. To get key performance indicators, we will keep records of how many events we have participated in, who the audience was, how big the audience was, how big the audience was for our posters, how many took our leaflets, registered for our training events, how many white papers we produced, number of downloads of our software and publications, and gauge our influence in social media by tracking followers on the platforms we will participate in. We will also be able to track progress in attracting attendees to our workshops by benchmarking the second event against the first. The number of publications, their journal's impact factors, and the number of citations received will also give a measure of effectiveness. COMPAT intends to gather as much information to measure

impact as we can. We will continually research published best practice in impact measurement from Horizon 2020 projects and other sources to establish appropriate metrics for this measurement. For example, the European Commission lists the following as examples of output measurement:

- Evidence of debates in the media
- Evidence of new funders for your area
- Evidence of transfer of research and innovation into practice (patents, prototypes, licenses)
- Number and turnover of new products, practices or procedures developed, based on your research outcomes
- Number of articles in the press
- Number of people asking for feedback or more information
- Number of references in scientific publications
- Participation in project events and seminars
- Speaker evaluations from conference presentations
- Survey of end-users
- Trends in website visits

We will also consider using alternative metrics to gage the reach of our publications. Altmetric (www.altmetric.com) is a service that tracks non-citation impact, here a score is provided which acts as a quantitative measure of the attention that a publication has received. The impact is measured in terms of the articles being mentioned or linked to in social media, articles, blogs and websites, and adjusted according the significance and relevance of that source.

10 Conclusions

We believe that, through our dissemination activities, expected impacts will be accelerated and strengthened. Through the dissemination of COMPAT research findings and the evangelisation of its open-source software to academia and industry alike, we will contribute to the strength and leadership of the EU in HPC technologies, also having an impact on the emerging HPC markets. Through the building of networks between our scientific community and the encouragement of collaboration activities, in addition to our training agenda, we will accelerate European excellence in mathematics and algorithms in a multi-disciplinary fashion. Also, we believe that through the effective communication of our work to standardisation bodies, we will be able to jointly develop new standards where they do not exist.