



ETP 4 HPC

**THE EUROPEAN TECHNOLOGY PLATFORM
FOR HIGH PERFORMANCE COMPUTING**

www.etp4hpc.eu

The European HPC Ecosystem Towards a European Leadership

ISC14 BOF Session

Tuesday, June 24th, 2014

12:00 pm - 01:00 pm

Hall 4 - CCL



Agenda

- **Welcome and introduction**
ETP4HPC positioning and activities
Jean-François Lavignon, Chair of ETP4HPC
- **EC HPC vision and H2020 calls**
Augusto Burgueño-Arjona, EC/DG-CONNECT
- **PRACE contribution to the HPC Strategy**
Sanzio Bassini, CINECA & PRACE Chair
- **Centres of Excellence for Computing Applications**
Jean Gonnord, CEA & ETP4HPC Vice-Chair; Thomas Lippert, FZJ and ETP4HPC Steering Board
- **Ecosystem actions**
Jean-Philippe Nominé, ETP4HPC Office
- **SMEs**
David Lecomber, Allinea & ETP4HPC Vice-Chair for Industry
- **Discussion**





ETP4HPC positioning and activities

Jean-François Lavignon

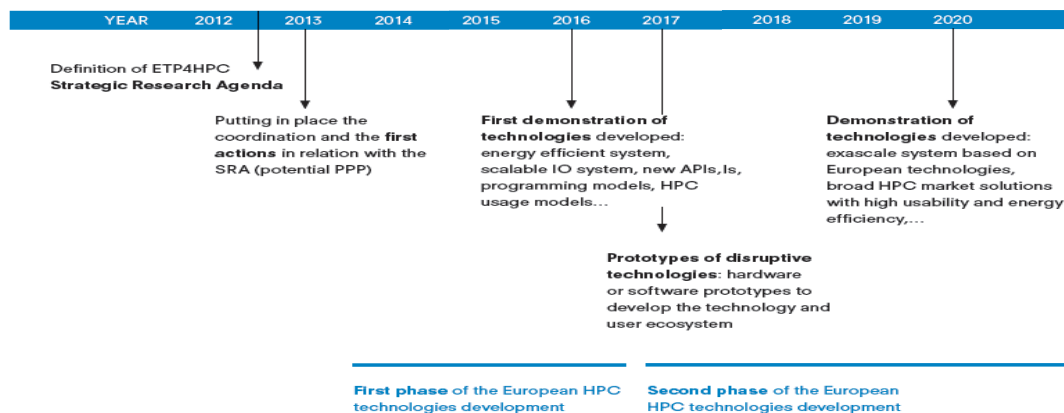
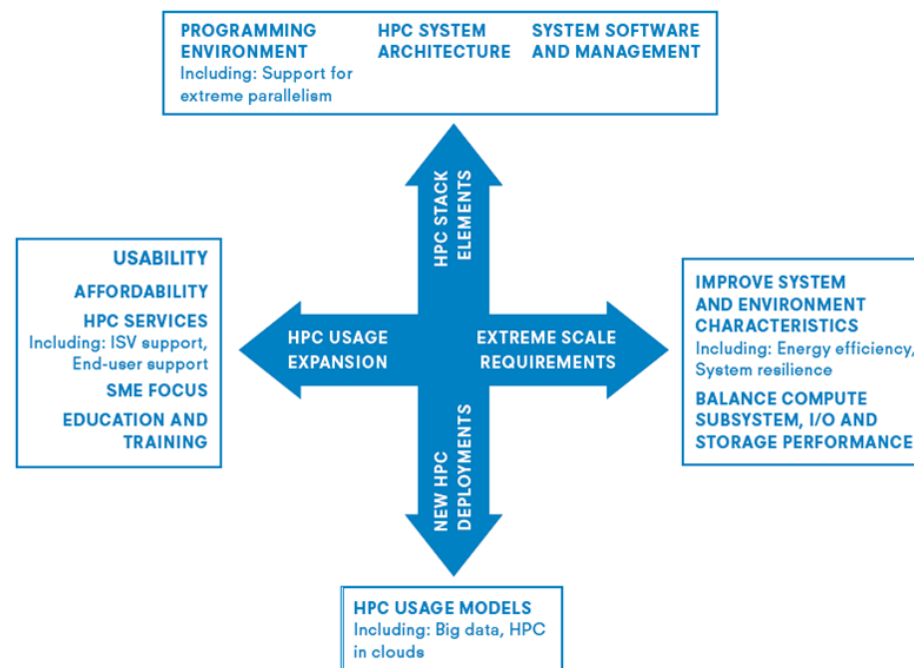
Bull & ETP4HPC Chair



SRA: Strategic multi-dimensional vision



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What is in it for European HPC?

CPPP

Contractual Public-Private Partnership December 2013

Done in duplicate at Brussels on 17 December 2013.

FOR ETP4HPC ASSOCIATION

FOR THE EUROPEAN COMMISSION


Philippe VANNIER
Board Representative


Neelie KROES
Vice-President in charge
of Digital Agenda

Sanzio BASSINI
Board Representative





Brussels, 17 December 2013

EU industrial leadership gets boost through eight new research partnerships

The European Commission today launched eight contractual Public-Private Partnerships (CPPPs) of strategic importance for European industry. The partnerships will leverage more than 4.6 billion of investments to be allocated through calls for proposals under Horizon 2020, the new EU programme for research and innovation. Each euro of public funding is expected to trigger additional investments of between three and 10 euro to develop new technologies, products and services which will give European industry a leading position on world markets ([Link to fact sheet](#)).

European Commissioner for Research, Innovation and Science Miroslav Kozak said: "Europe needs industry to innovate to create income and jobs. New technologies and products, such as green cars, energy efficient buildings and cleaner manufacturing processes, are essential to address societal challenges such as climate change, energy and resource efficiency. We want these contractual PPPs to have a substantial impact on the competitiveness of the EU industry, on sustainable economic growth and the creation of new high-skilled jobs in Europe."

Vice President Neelie Kroes, Commissioner responsible for the Digital Agenda, said: "This is a great opportunity for Europe. These PPPs will maintain our global lead in robotics, photonics, high performance computing, telecoms and give us a head start in smart cities, intelligent transport, education, entertainment, media and other promising markets. Combined with a comprehensive industrial strategy, the PPPs will ensure vigorous European leadership and a better future for all."

The eight contractual Public-Private Partnerships are:

- **Factories of the Future (FoF)**, to support the manufacturing industry through the development of sustainable production technologies and systems ([Link to fact sheet](#))
- **Energy-efficient Buildings (EeB)**, to increase the competitiveness and energy efficiency of the construction industry ([Link to fact sheet](#))
- **European Green Vehicles Initiative (EGVI)**, to develop a competitive and resource efficient transport system with significantly less CO2 emissions ([Link to fact sheet](#))
- **Sustainable Process Industry (SPIRE)**, to make the process industry more resource- and energy-efficient ([Link to fact sheet](#))
- **Photonics**, one of the key enabling technologies for our future prosperity and an essential element of many sectors from energy and health to everyday products like DVD players and mobile phones ([Link to fact sheet](#))
- **Robotics**, a key driver of industrial competitiveness and essential to address key societal challenges in areas such as demographic change, health and well-being, food production, transport and security ([Link to fact sheet](#))
- **High Performance Computing (HPC)**, which plays a pivotal role in stimulating Europe's economic growth and advancing European science ([Link to fact sheet](#))
- **Advanced 5G networks for the Future Internet (5G)**, to stimulate the development of network internet infrastructure to ensure advanced ICT services for all sectors and users ([Link to fact sheet](#))

The contracts setting up the PPPs were signed today by the Commission and chairpersons of specially-created industrial research and innovation associations, representing more than 1,000 large and small enterprises across Europe.

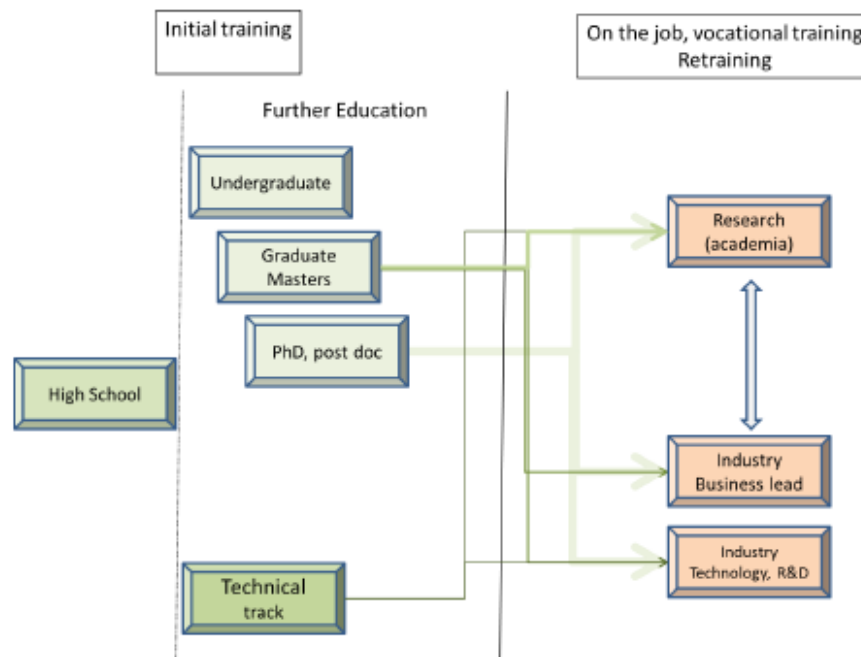


cPPP governance

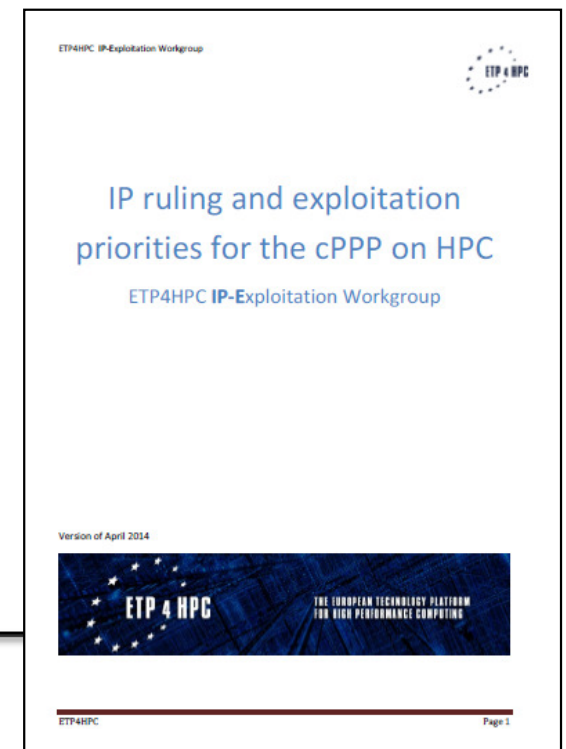
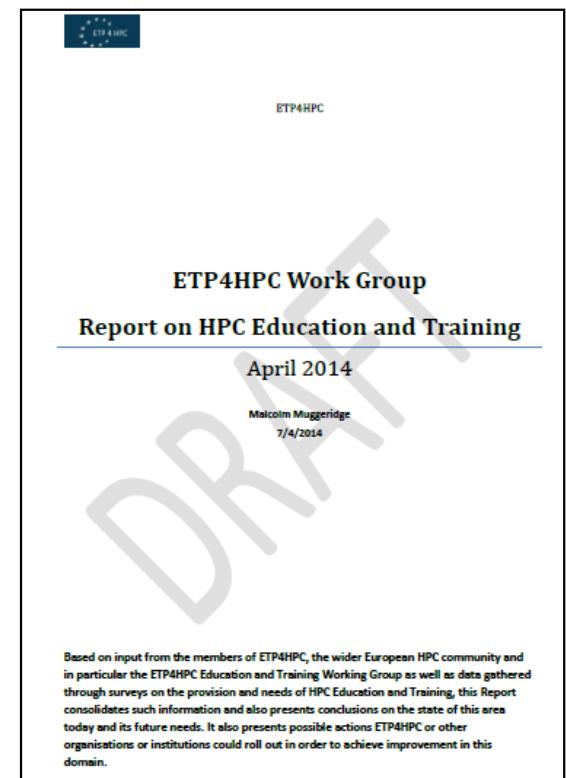
- Participation in the Partnership Board
 - Representative of the whole ecosystem
 - Open and accountable to the stakeholders
- Committed to advise the European Commission
 - Open working groups for preparation
 - Preparation of roadmaps to propose a vision

Other achievements

- Education and Training Work Group
 - A draft report already discussed with the EC

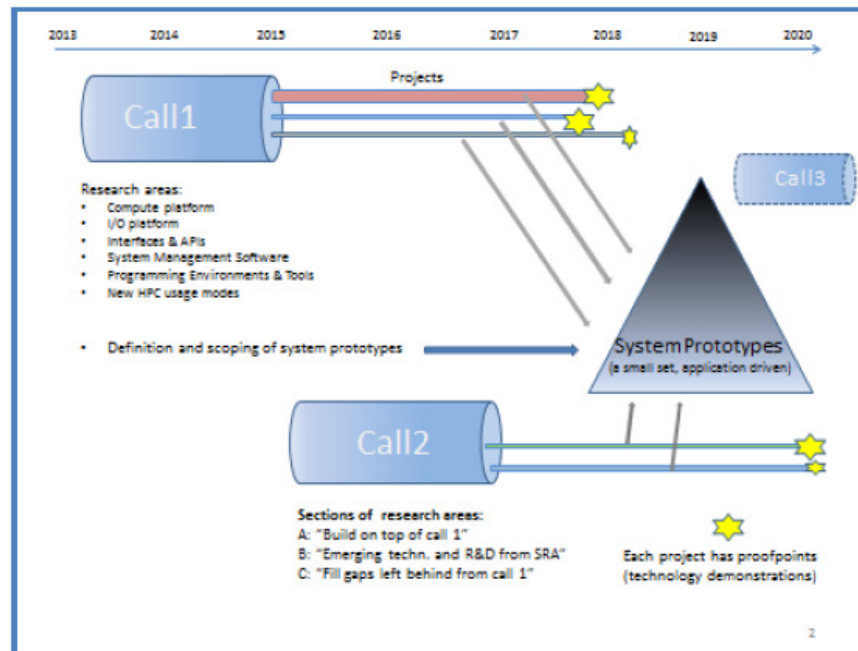


- IP Work Group
 - Recommendations: report sent to the EC



Future actions

- Work Programme 2016-2017



ETP4HPC Proposal for the Contents of the 2016-17 FETHPC Call

May 2014



- SRA update in 2015
- Ecosystem animation





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Augusto BURGUEÑO ARJONA

European Commission/DG CONNECT
Head of Unit e-Infrastructures



An integrated HPC approach

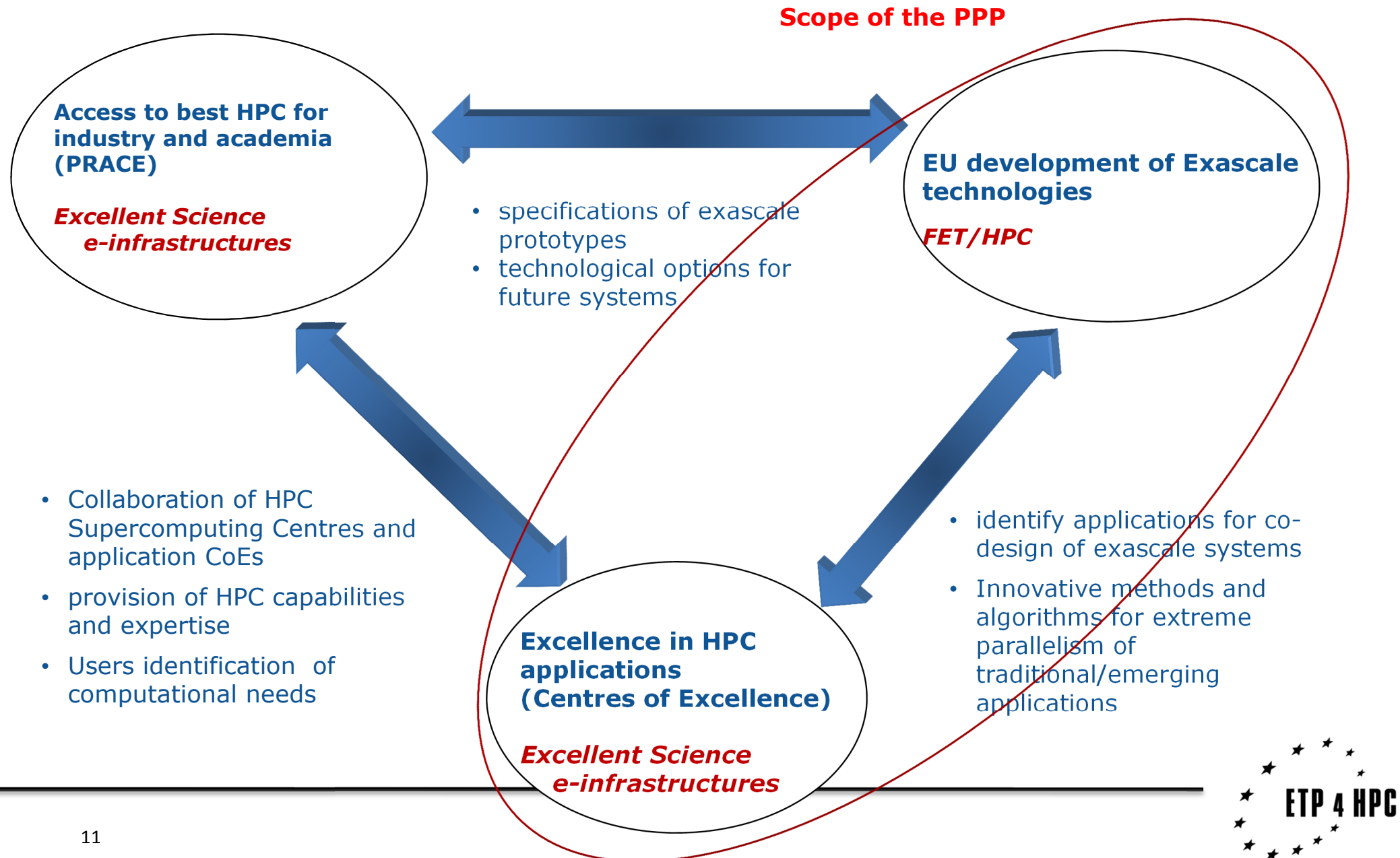
HPC strategy combining three elements:

- (a) Computer Science: towards **exascale** HPC; *A special FET initiative focussing on the next generations of exascale computing as a key horizontal enabler for advanced modelling, simulation and big-data applications* [HPC in Future and Emerging Technologies (FET)]
- (b) providing **access** to the best supercomputing facilities and services for both industry and academia; *PRACE - world-class HPC infrastructure for the best research* [HPC in e-infrastructures]
- (c) achieving excellence in HPC **applications**; *Centres of Excellence for scientific/industrial HPC applications in (new) domains that are most important for Europe* [HPC in e-infrastructures]
- complemented with training, education and skills development in HPC

(a) and (c) will be implemented in the context of the HPC Public-Private Partnership



Interrelation between the three elements



HPC related Calls WP 2014-2015

	2014 EUR million	2015 EUR million	Call Deadline
EINFRA-4-2014 - Pan-European HPC infrastructure and services	15		02/09/2014 - 17:00 Brussels time
EINFRA-5-2015 - Centres of Excellence (CoE) for computing applications		40 (<i>tbc</i>)	2015 (<i>date tbc</i>)
EINFRA-6-2014 - Network of HPC Competence Centres for SMEs	2		02/09/2014 - 17:00 Brussels time
FETHPC1-2014 HPC Core Technologies, Programming Environments and Algorithms for Extreme Parallelism and Extreme Data Applications	93,4		25/11/2014 at 17.00.00 Brussels time
FETHPC 2 - 2014: HPC Ecosystem Development	4		25/11/2014 at 17.00.00 Brussels time



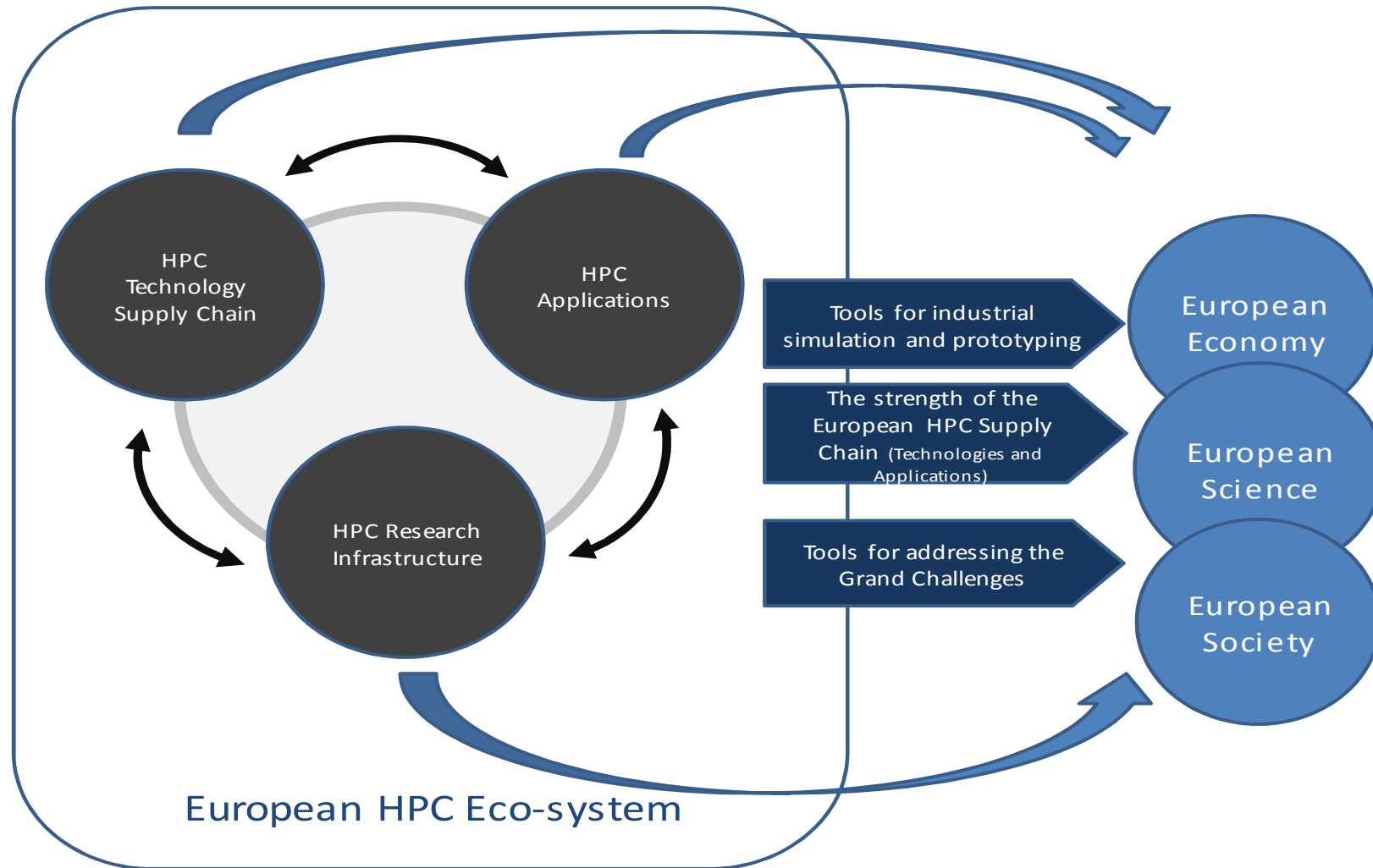
PRACE contribution to the HPC Strategy

Sanzio Bassini

CINECA & PRACE Chair



HPC cPPP – Building a European HPC Ecosystem





PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE

PRACE → *the* European HPC Research Infrastructure

- Enabling **world-class science** through large scale simulations
- Providing **HPC services** on **leading edge capability** systems
- Operating as a **single entity** to give access to **world-class supercomputers**
- **Attract, train and retain** competences
- **Lead** the **integration** of a highly effective **HPC ecosystem**
- Offering its resources through a **single** and **fair** pan-European **peer review process to academia and industry**



- **25** members, since 2010
- **6** supercomputers in **4** hosting countries, nearly **15 Pflop/s**
- Common operation procedure between **35** centers in Europe
- **22** prototypes evaluated
- **169** white papers produced
- **1500** communications from our users
- **166** Thesis
- HPC Community building: **183** events

- **8 billion** hours granted since 2010 (a system with 900k cores for 1 year)
- **303** scientific projects enabled from **38** countries
- More than **20 SME** and **industries** access in first year
- **360** PATC Training days
- **2734** Trained people
- **170** applications enabled



PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE

- PRACE has delivered
 - 303 projects from academia and industry provided with 8 billion core hours
 - Tier-0 Infrastructure
 - Tier-1 Coordination
 - User Support
 - Application enabling
 - Training
 - Community Building
 - Technology assessment



PRACE can bring its expertise and resources to provide support to and cooperate with the other major players in the Ecosystem



Centres of Excellence for Computing Applications

Jean Gonnord

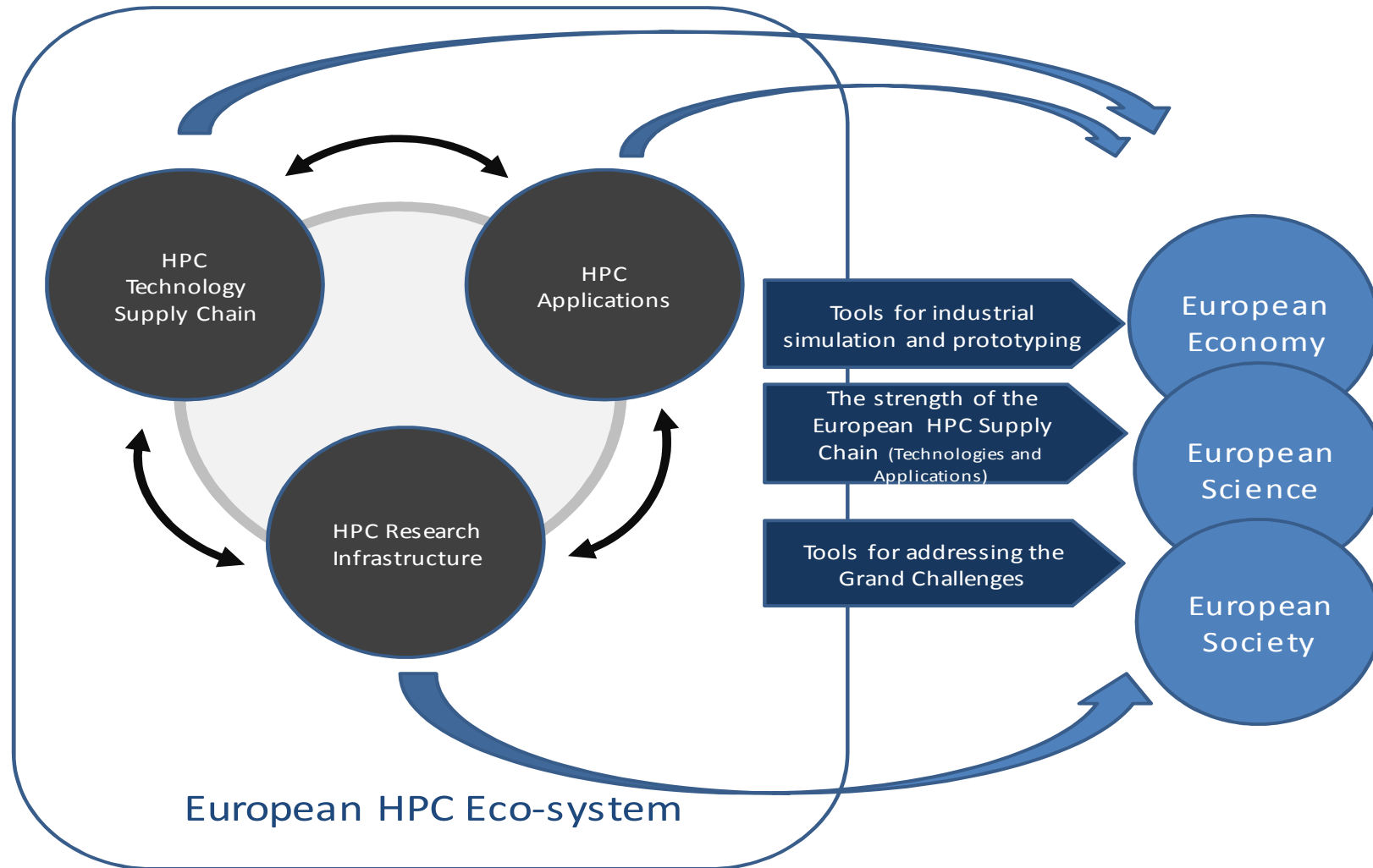
CEA & ETP4HPC Vice-Chair

Thomas Lippert

FZJ & ETP4HPC Steering Board



HPC cPPP – Building a European HPC Ecosystem





Ecosystem actions

Jean-Philippe Nominé

CEA & ETP4HPC Office

Marcin Ostasz

BSC & ETP4HPC Office

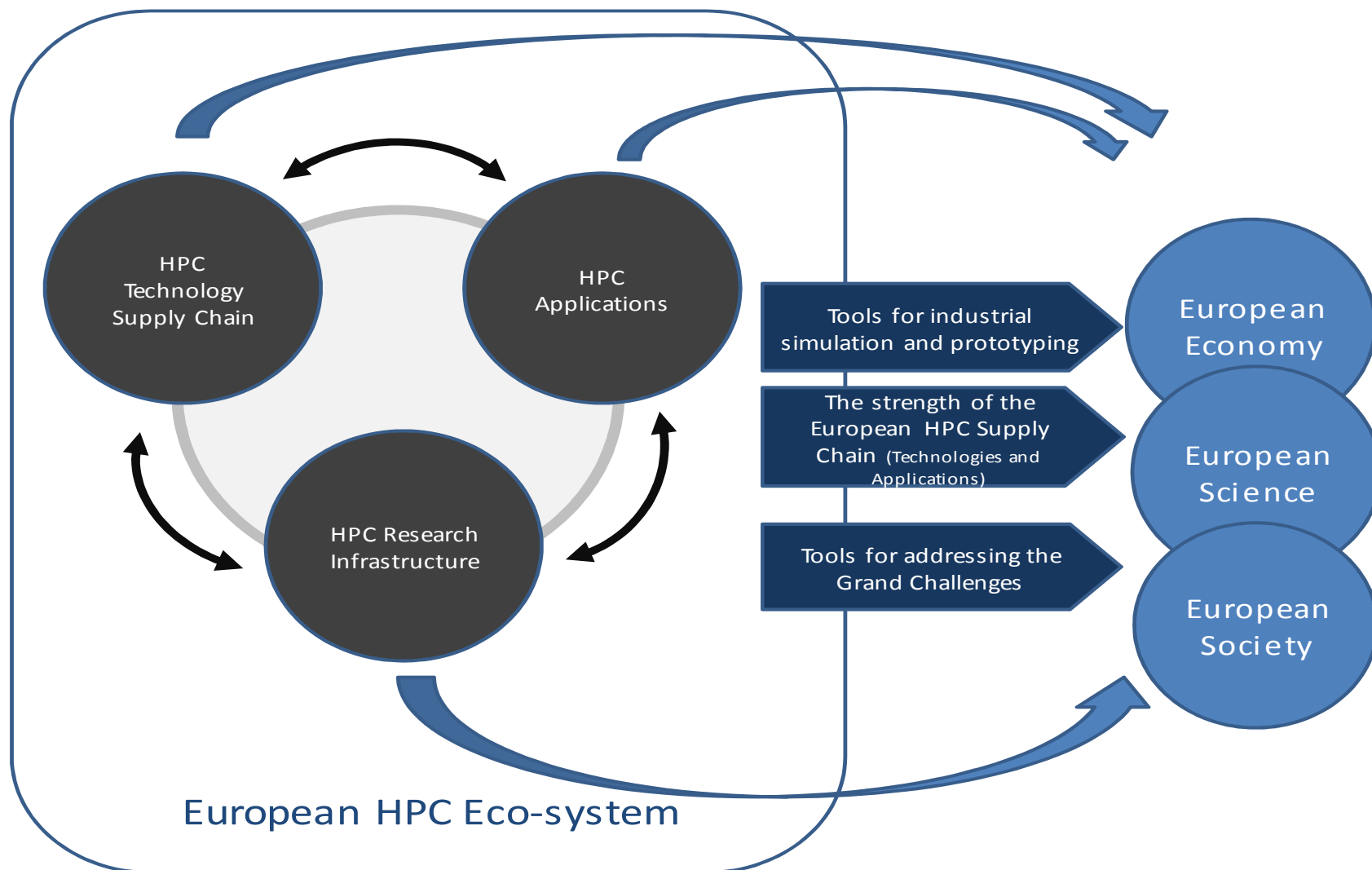


Animation of the ecosystem

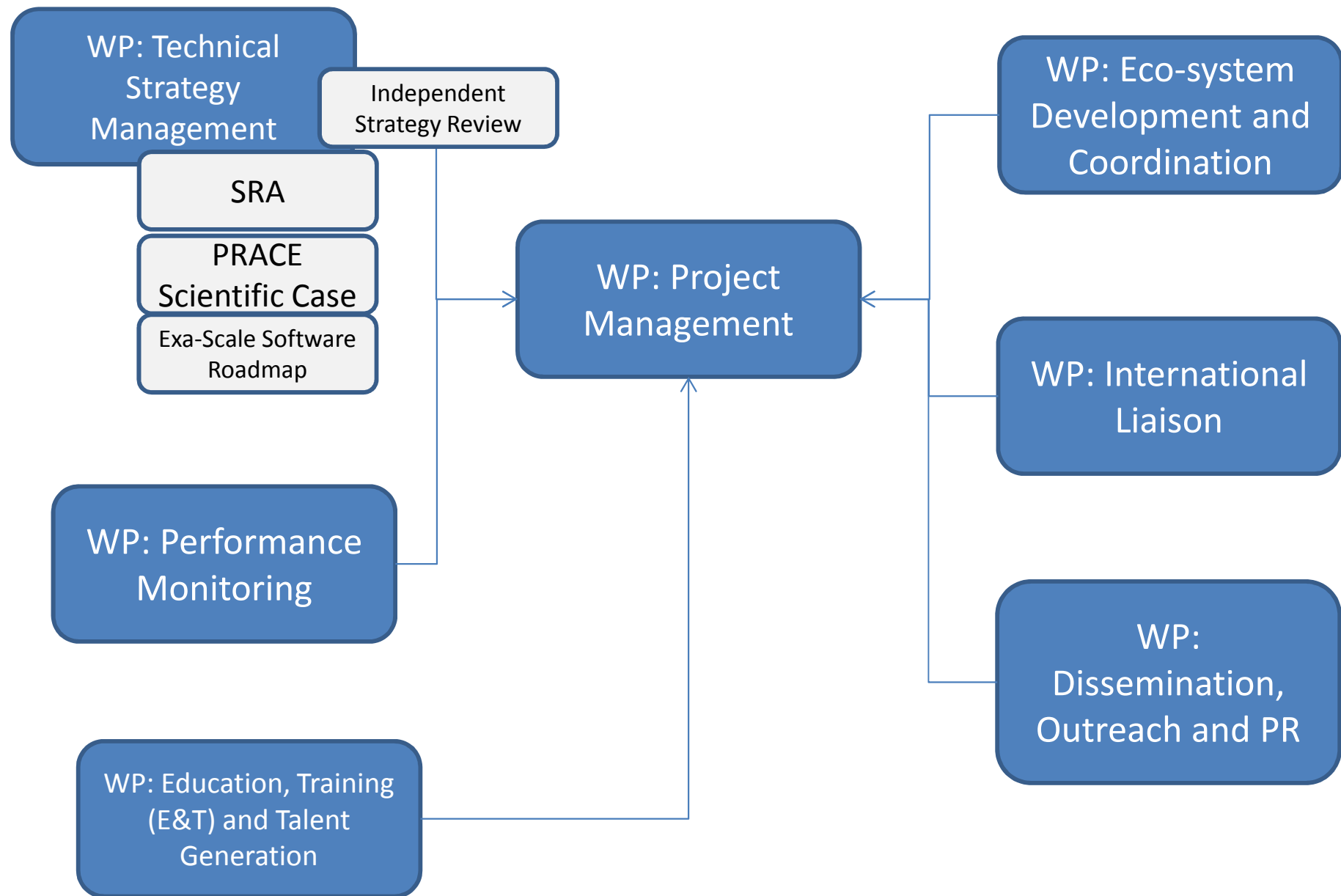
- Events
 - April Infoday
 - Prace days
 - ISC, Teratec
 - ...
- Communication gateway
 - Look at our web site <http://www.etp4hpc.eu>
 - We relay members' information
- Monitoring of the progress of HPC in Europe
 - KPIs
 - Exchange of information
- Preparation of a Coordination and Support Action FET HPC 2 a) – with other stakeholders



'Making the Ecosystem Work!'



HPC Strategy Coordination – How could it work?





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SMEs

David Lecomber

Allinea & ETP4HPC Industry Vice-Chair



ETP4HPC Members

- 56 members as of May 2014
 - Companies
 - SME
 - ISVs
 - Service providers
 - Research Centres...
- 23 SMEs !





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Discussion





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THANK YOU!

For more information visit

www.etp4hpc.eu

contact: office@etp4hpc.eu

