ETP 4 HPC

THE EUROPEAN TECHNOLOGY PLATFORM FOR HIGH PERFORMANCE COMPUTING

www.etp4hpc.eu

ETP4HPC presentation

‘Building a Globally Competitive HPC Technology ecosystem in Europe’

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What is ETP4HPC?

- ETP4HPC, the **European Technology Platform (ETP)** for High-Performance Computing (HPC) (www.etp4hpc.eu) is an organisation **led by European HPC Technology providers** with an objective **to build a competitive HPC value chain in Europe.**
- ETP4HPC is one of the European Technology Platforms (ETPs) recognised by the European Commission
  - European Technology Platforms (ETPs) are **industry-led** stakeholder fora that develop short to long-term research and innovation agendas and roadmaps for action at EU and national level to be supported by both private and public funding.

Individual ETPs

Bio-based economy	Energy	Environment	ICT	Production and processes	Transport
EATIP	Biofuels	WssTP	ARTEMIS	ECTP	ACARE
ETPGAH	EU PV TP		EUROP	ESTEP	ERRAC
Food for Life	TPWind		ETP4HPC	EuMaT	ERTRAC
Forest-based	RHC		ENIAC	FTC	Logistics
Plants	SmartGrids		EPoSS	SusChem	Waterborne
FABRE TP	SNETP		ISI	Nanomedicine	
TP Organics	ZEP		Net!Works	ETP-SMR	
			NEM	Manufuture	
			NESSI		
			Photonics 21		

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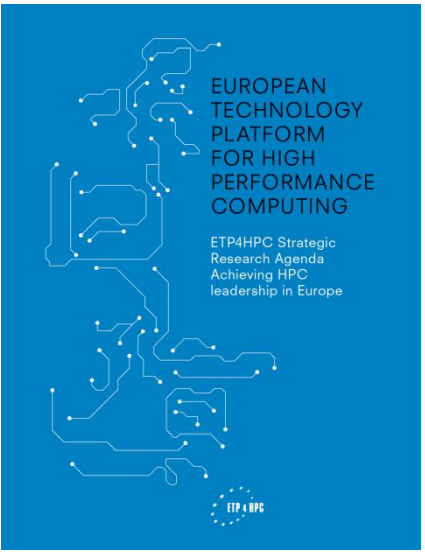
What will be introduced today?

- **ETP4HPC SRA** - a Strategic Research Agenda (SRA) which outlines the research priorities of European HPC on its way to achieve Exascale capabilities within the Horizon 2020 Programme.

- **cPPP HPC** – ETP4HPC is the private partner of the Contractual **Public-Private Partnership (cPPP) for HPC** (the European Commission is the) the aim of which is **building a competitive HPC Eco-system in Europe** based on the provision of Technologies, Infrastructure and Applications.

What is in it for European HPC?



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- **Purpose:** R&D roadmap to develop HPC technology in Europe within Horizon 2020

5.3.6 Milestones

Deadline	Milestones
2014	**M-PROG-API-1:** Develop benchmarks and mini-apps for new programming models/languages
2015	**M-PROG-API-2:** APIs and annotations for legacy codes[3]
	M-PROG-API-3: Advancements of MPI+X approaches (beyond current realisations)
	M-PROG-DC-1: Data race detection tools with user support for problem resolution
	M-PROG-LIB-1: Self-/auto-tuning libraries and components
	M-PROG-PT-1: Scalable trace collection and storage: sampling and folding
	M-PROG-RT-1: Runtime and compiler support for auto-tuning and self-adapting systems
	M-PROG-RT-2: Management and monitoring of runtime systems in dynamic environments
	M-PROG-RT-3: Runtime support for communication optimization: data-locality management, caching, and pre-fetching
2016	**M-PROG-API-4:** APIs for auto-tuning performance or energy
	M-PROG-LIB-2: Components/library interoperability APIs

- **Rationale:** A window of opportunity for a European HPC Technology Value Chain - European strengths meet global opportunities: e.g.: energy efficiency & power, data, concurrency & scale, resiliency
- **Europe's HPC consuming power is not matched by its share in HPC systems**

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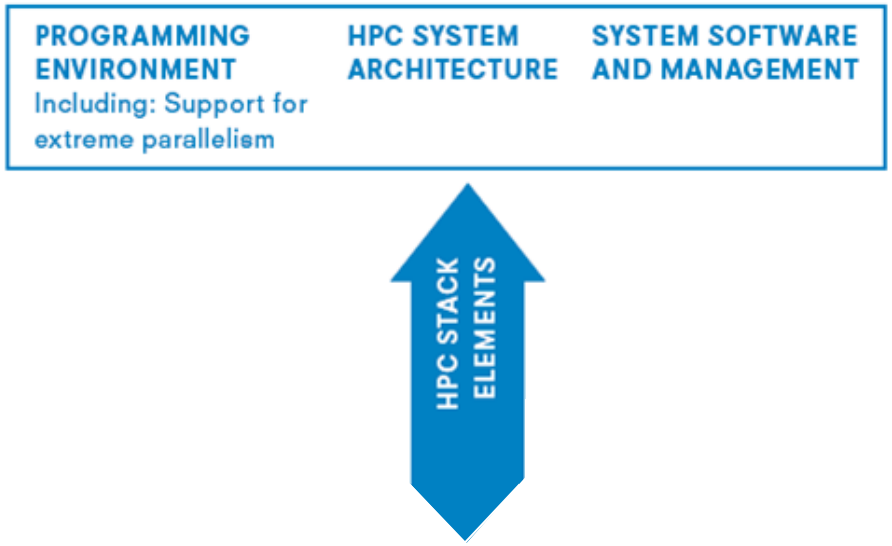
Strategic multi-dimensional vision



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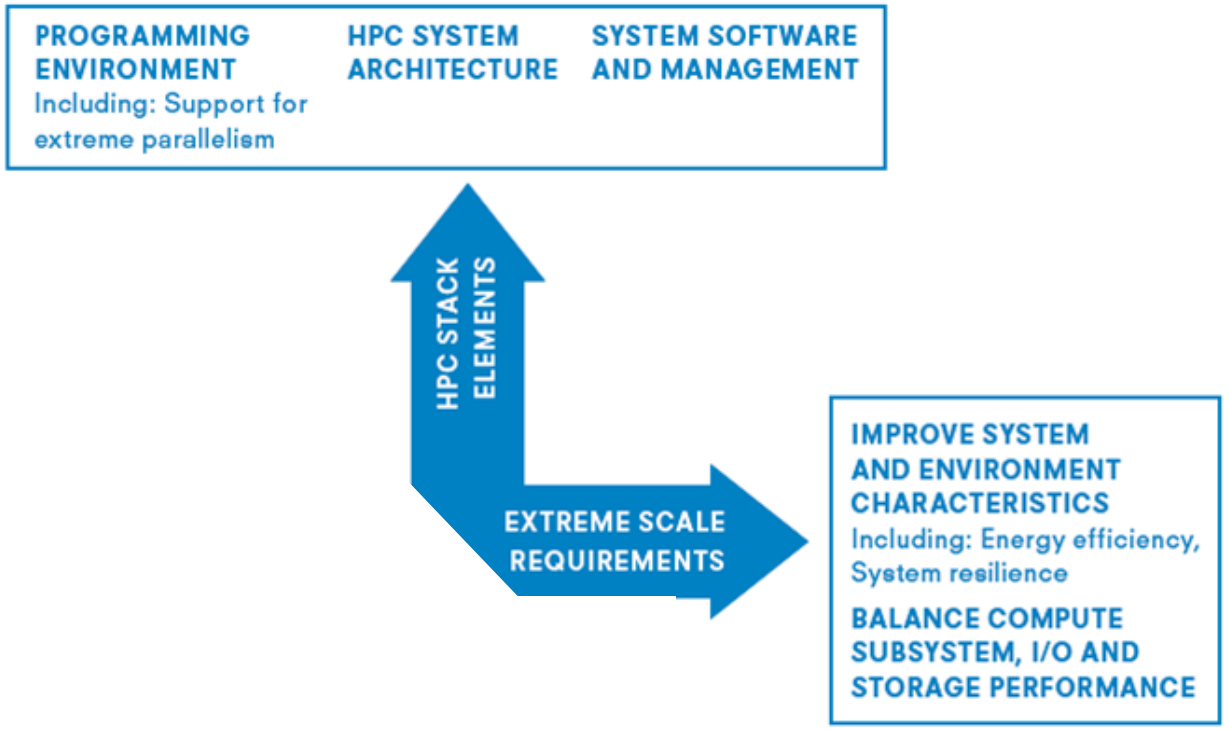
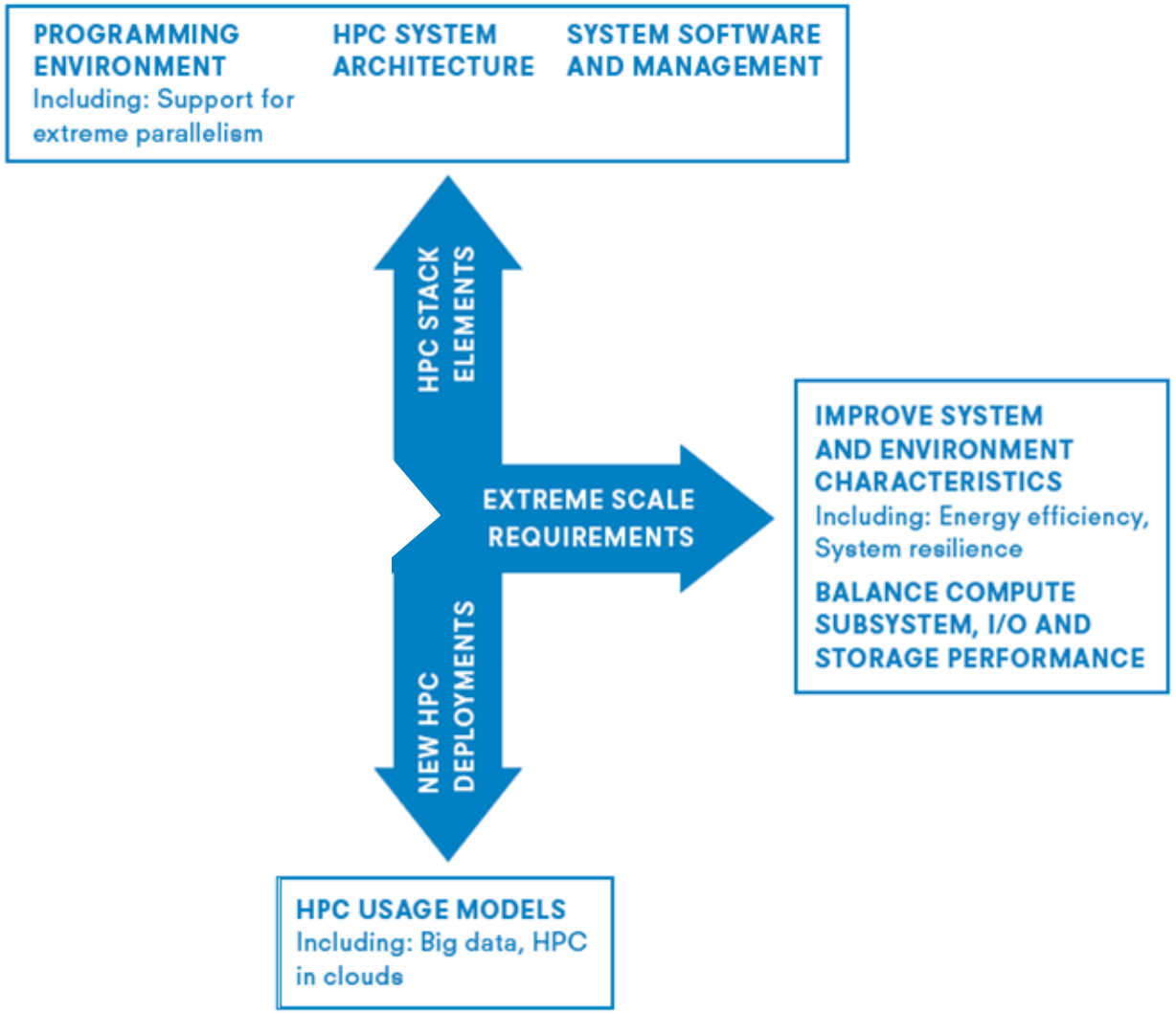
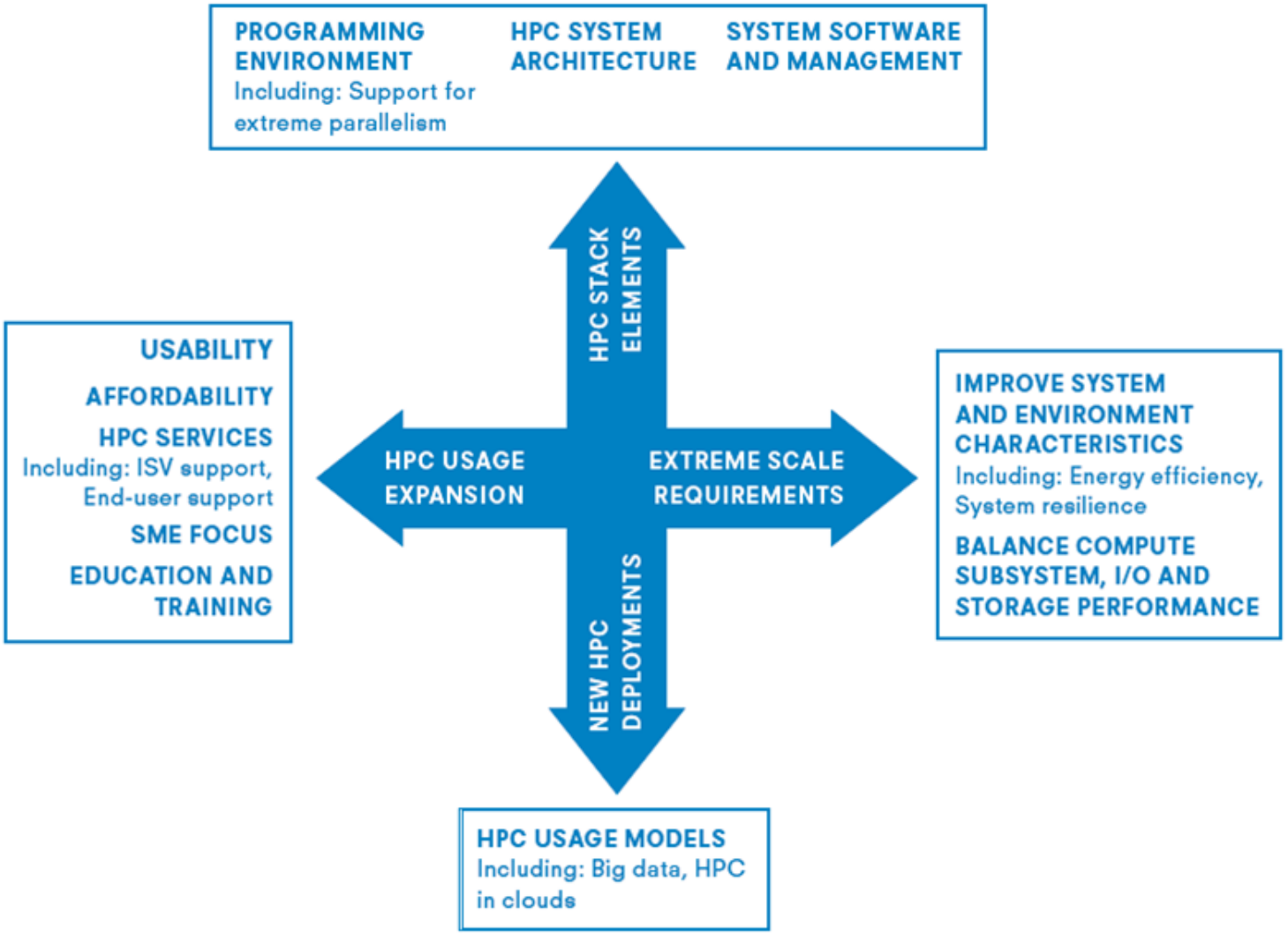
Strategic multi-dimensional vision



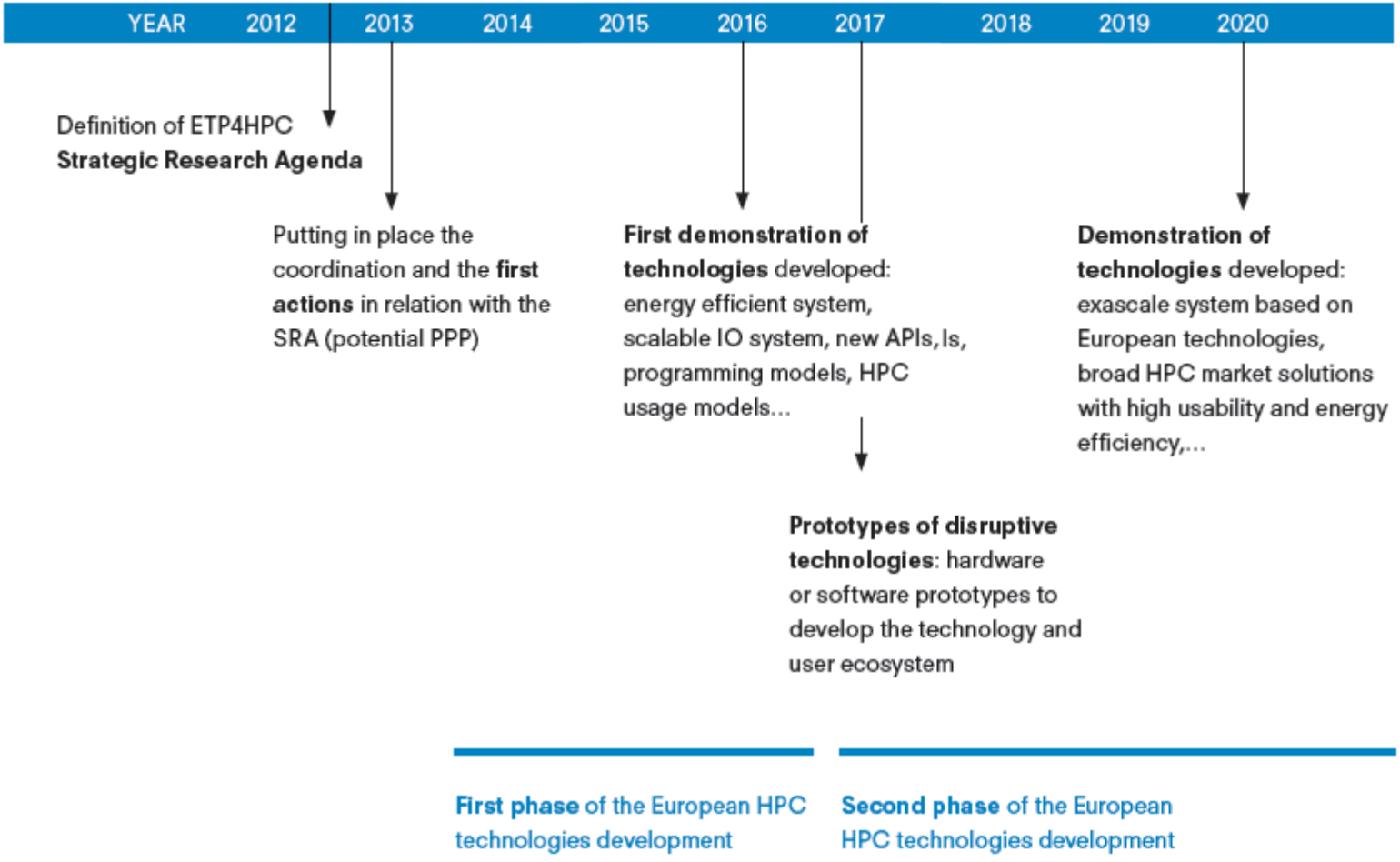
Strategic multi-dimensional vision



Strategic multi-dimensional vision



The timeline of the R&D program



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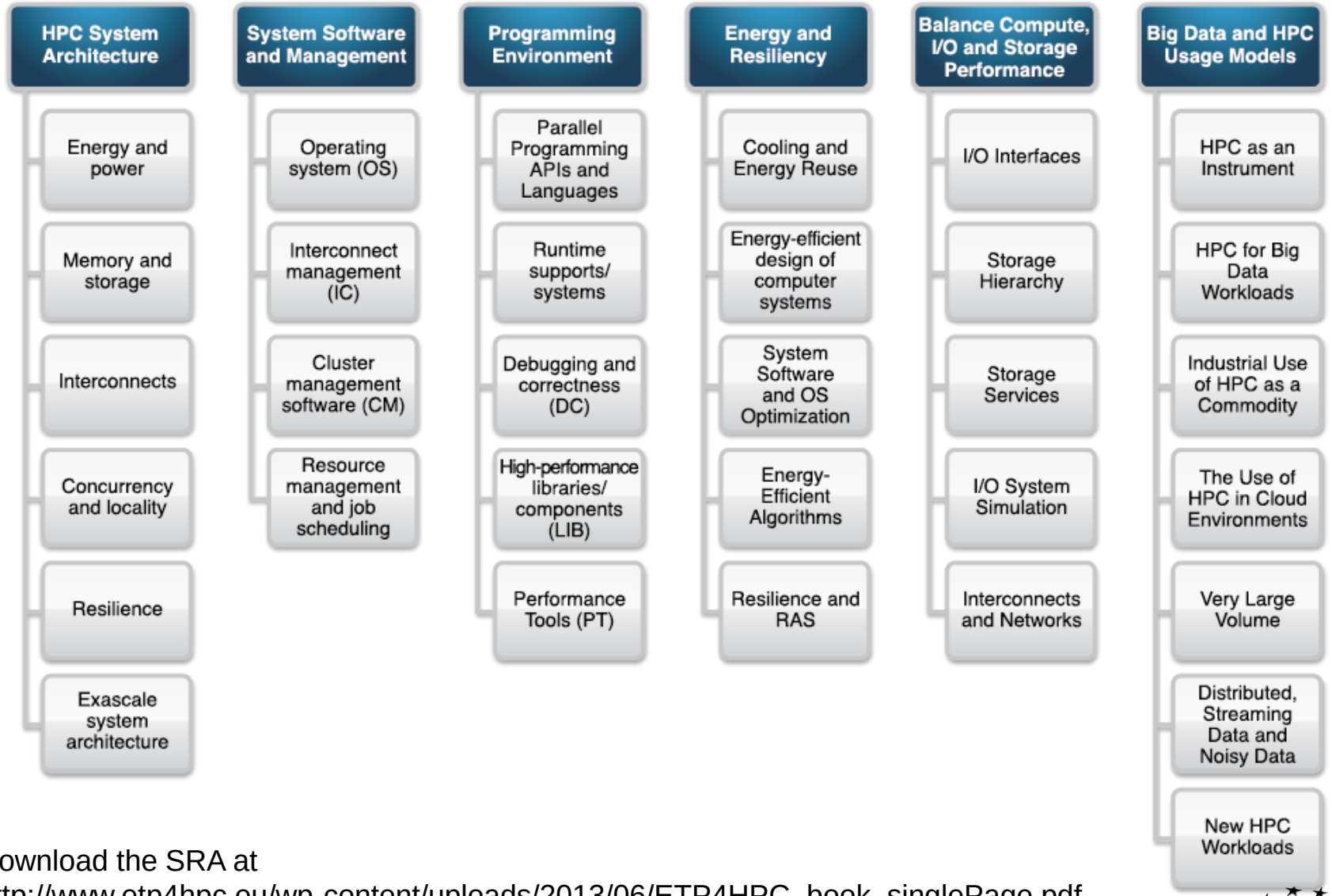
Research priorities



Download the SRA at
http://www.etp4hpc.eu/wp-content/uploads/2013/06/ETP4HPC_book_singlePage.pdf

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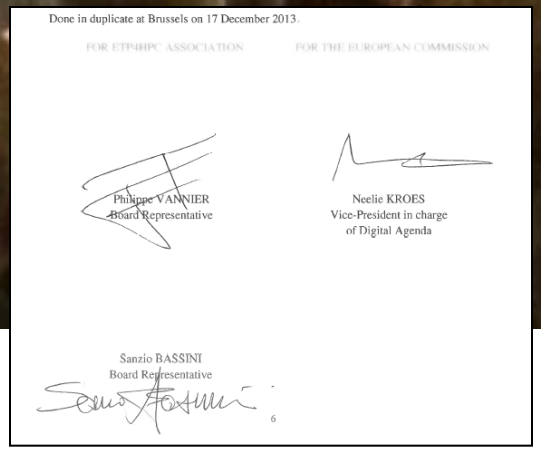
What is in it for European HPC?

cPPP

Contractual Public-Private Partnership



Done in duplicate at Brussels on 17 December 2013.

FOR ETP4HPC ASSOCIATION

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Board Representative

FOR THE EUROPEAN COMMISSION

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Vice-President in charge
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Sanzio BASSINI
Board Representative

EUROPEAN COMMISSION

PRESS RELEASE

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 €5 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 (MEMO/13/1159).

European Commissioner for Research, Innovation and Science Máire Geoghegan-Quinn 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 factsheet)
- **Energy-efficient Buildings (EeB)**, to increase the competitiveness and energy efficiency of the construction industry (Link to factsheet)
- **European Green Vehicles Initiative (EGVI)**, to develop a competitive and resource efficient transport system with significantly less CO2 emissions (Link to factsheet)
- **Sustainable Process Industry (SPIRE)**, to make the process industry more resource- and energy-efficient (Link to factsheet)
- **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 factsheet)
- **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 factsheet)
- **High Performance Computing (HPC)**, which plays a pivotal role in stimulating Europe's economic growth and advancing European science (Link to factsheet)
- **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 factsheet)

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.

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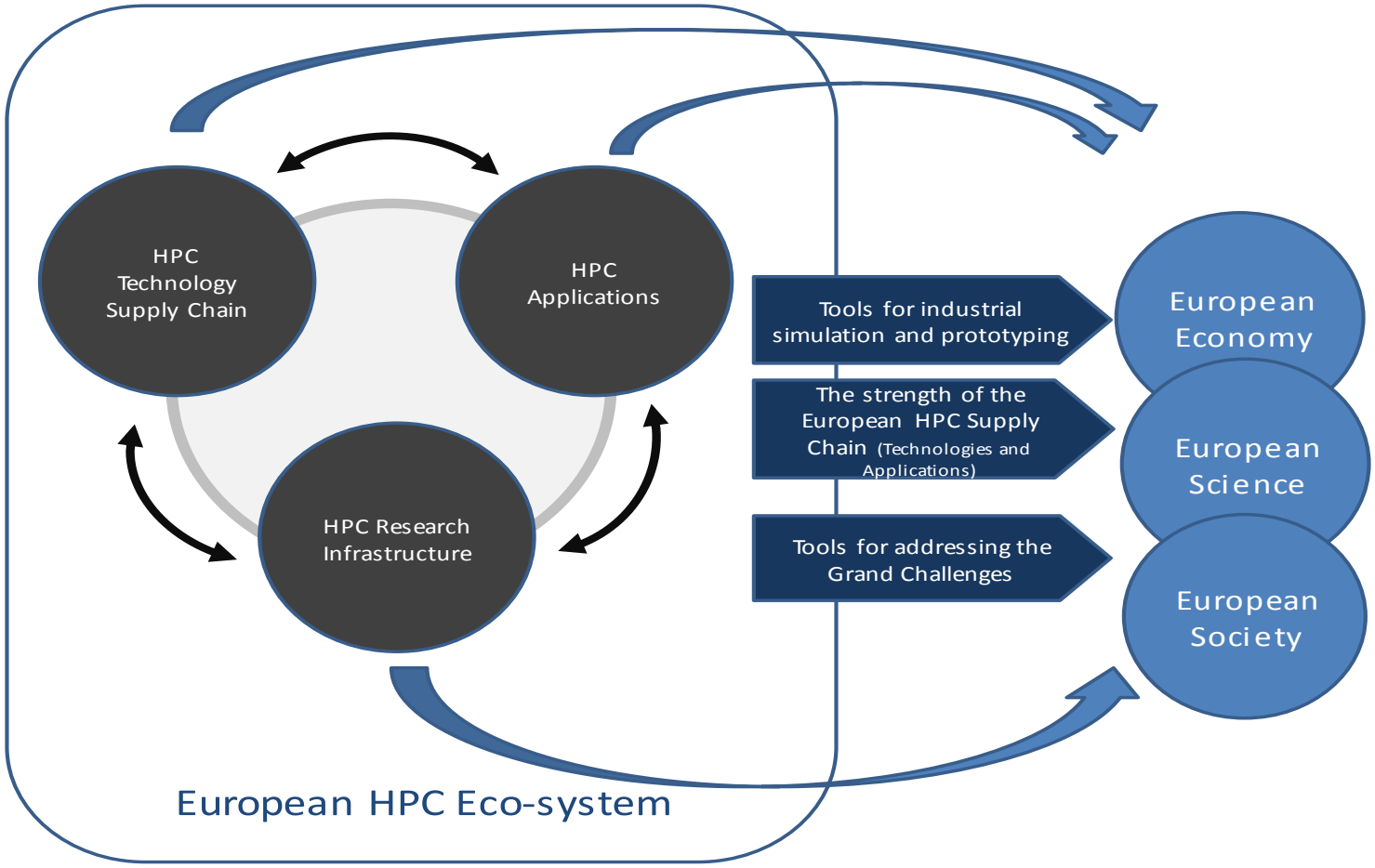
HPC cPPP – Building a European HPC Ecosystem



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- **What** is a **contractual Public Private Partnership** ?
  - Contractual agreement signed both by EC and private partner(s)
  - Defining:
    - Objective(s)
    - Governance
    - Commitment of the EC and of the private side
    - Monitoring of the agreement
- **Why** a cPPP for HPC ?
  - To highlight the importance of HPC for Europe
  - To put in place an ambitious plan for HPC development in Europe
  - To increase the coordination of stakeholders

ETP4HPC SIGNS AGREEMENT TO FORM A CONTRACTUAL PUBLIC-PRIVATE PARTNERSHIP FOR EUROPEAN HIGH-PERFORMANCE COMPUTING

Brussels, 17th of December 2013. ETP4HPC, the European Technology Platform (ETP) in the area of High-Performance Computing (HPC) signed an...

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cPPP's Objectives, commitments and KPI

- **Objecitves**
  - To build a European world-class High-Performance Computing (HPC IT) technology value chain that will be globally competitive.
  - To support a EU leadership and world-wide excellence in key application domains for industry, science and society that are most important for Europe,
- **Commitments**
  - EC Funds of 700 M€ for the Technology and Application pillars in order to implement the actions of the Strategic Research Agenda of ETP4HPC
  - Private
    - Matched by Industrial R&D Investment
    - A x4 leverage effect for global investment
- **KPIs**
  - Global market share of HPC systems, components and tools based on technologies developed and built in Europe
  - Direct, sustainable jobs out of HPC research programmes
  - Level of high-tech investment and private investment mobilised
  - Patent and invention-submissions – contributions to standards
  - Number of new SME start-up companies created out of HPC research programmes

Budget according to EC current plan

- 700 M€ budgeted for the cPPP
  - 500 M€ for technologies
  - 100 M€ for applications (Centre of Excellence)
  - 100 M€ for prototyping activities
- Timing for technology
  - Implemented with the Horizon 2020 Work Programme
  - (see presentation made by JY Berthou for first calls)
- Some actions to animate the ecosystem

ETP4HPC Members

- 16 Founding Members
- Steering Board = 15 members
- 48 members as of Jan. 2014,
  - Companies, SME, ISVs, service providers, Research Centres…

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THANK YOU!

For more information visit

www.etp4hpc.eu

contact: office@etp4hpc.eu

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