EUROPEAN UNION OVERVIEW

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European Commission President Jean-Claude Juncker

"Our ambition is for Europe to become one of the top 3 world leaders in high-performance computing by 2020"

French-German Conference on Digital;
Paris, 27 October 2015

The Political Priorities

European Cloud Initiative [COM(2016) 178 of 19/4/2016]

- **European Open Science Cloud (EOSC)**
  - Integration and consolidation of e-infrastructures
  - Federation of existing research infrastructures and scientific clouds
  - Development of cloud-based services for Open Science
  - Connection of ESFRIs to the EOSC
- **European Data Infrastructure (EDI)**
  - Development and deployment of large-scale European HPC, data and network infrastructures
- **Widening access**
  - SMEs, Industry at large, Government

"Building a European Data Economy" [COM in Jan 2017]

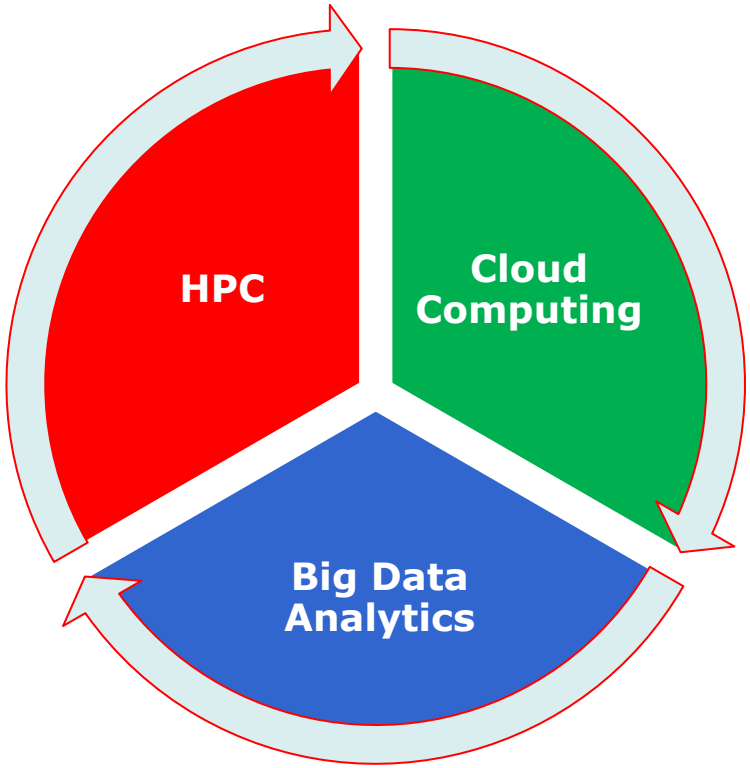
HPC/EDI Objectives (1)

- **Acquisition** (in 2020-2021) of 2 operational **pre-exascale** and (in 2022-2023) two full **exascale** machines (of which one based on European technology)
- **Interconnection and federation** of national and European HPC resources and creation of an HPC and Big Data service infrastructure facility
- **Demonstrating and testing** technology performance towards exascale through scientific & industrial compute-intensive applications

HPC/EDI Objectives (2)

Build a world-class European High Performance Computing (HPC), Big Data and Cloud Ecosystem

Enabled by the Convergence of 3 big technologies



- Major investments so far both at MS and EU level [FP7, H2020]
- Numerous research players (academia and industry)
- HPC and Big Data PPPs, PRACE, GEANT, etc.

HPC/EDI strategy – An outlook

- **Tighter coordination of national strategies for upgrading computing, data and network infrastructures including:**
  - EU-wide access to federated computing and data resources
  - Pooling of investments (EU, national) to reach critical mass needed for accelerating the move to exascale
  - Building on achievements in PRACE-2 and GEANT
- **Establishing as quickly as possible a partnership with industry and Member States to offer:**
  - HPC as a service to a wide range of data and compute intensive applications in key sectors (health, industrie 4.0, finance, agriculture, etc.)
  - Build up HPC industrial strengths in Europe across the technology chain
  - Build on progress in IPCEI
- **Challenge ➔ make the two tracks converge and ensure "co-design" as early as possible**

HPC/EDI – Funding needs
[COM(2016) 178 of 19/4/2016]

- **1.5 B€** for 2 pre-exascale and 2 exascale machines
- **1.7 B€** for the interconnection and federation of supercomputing infrastructures
- **0.5 B€** for processor and for wider access to HPC facilities for SMEs
- **1.0-1.5 B€** for demo and testing of industrial applications

Total: 4.7 – 5.2 B€

PRACE update: PRACE-2

- **PRACE-2 established through 2020**
- **5 countries providing computing resources to European research community. 4 founding countries + 1**
  - France, Germany, Italy, Spain
  - Switzerland
- **75+ Million/node_hour/year**
- **5 High Level Support teams, HLST**
  - Applications support (porting, tuning, modification)

THANK YOU!