EuroHPC
Joint Undertaking

EUROHPC JOINT UNDERTAKING

PARTICIPATION AND OUTLOOK

VÍT VONDRÁK

IT4INNOVATIONS NATIONAL SUPERCOMPUTING CENTER

VSB – TECHNICAL UNIVERSITY OF OSTRAVA

OSTRAVA-PORUBA, CZECH REPUBLIC

WWW.IT4I.CZ

EUROHPC JOINT UNDERTAKING

29 EUROPEAN COUNTRIES

CZ MEMBER FROM JANUARY 2018

BUILD EUROPEAN HPC INFRASTRUCTURE

5 petascale supercomputers

Karolina (CZ)

Meluxina (LU)

Deucalion (**PT**, ES)

Vega (SI)

PetaSC (BG)

3 pre-exascale supercomputers

LUMI consortium (**FI**,SE,NO,DK,BE,PL,CH,**CZ**, EE, IS)

BSC (**ES**, ES, HR, PT, TR)
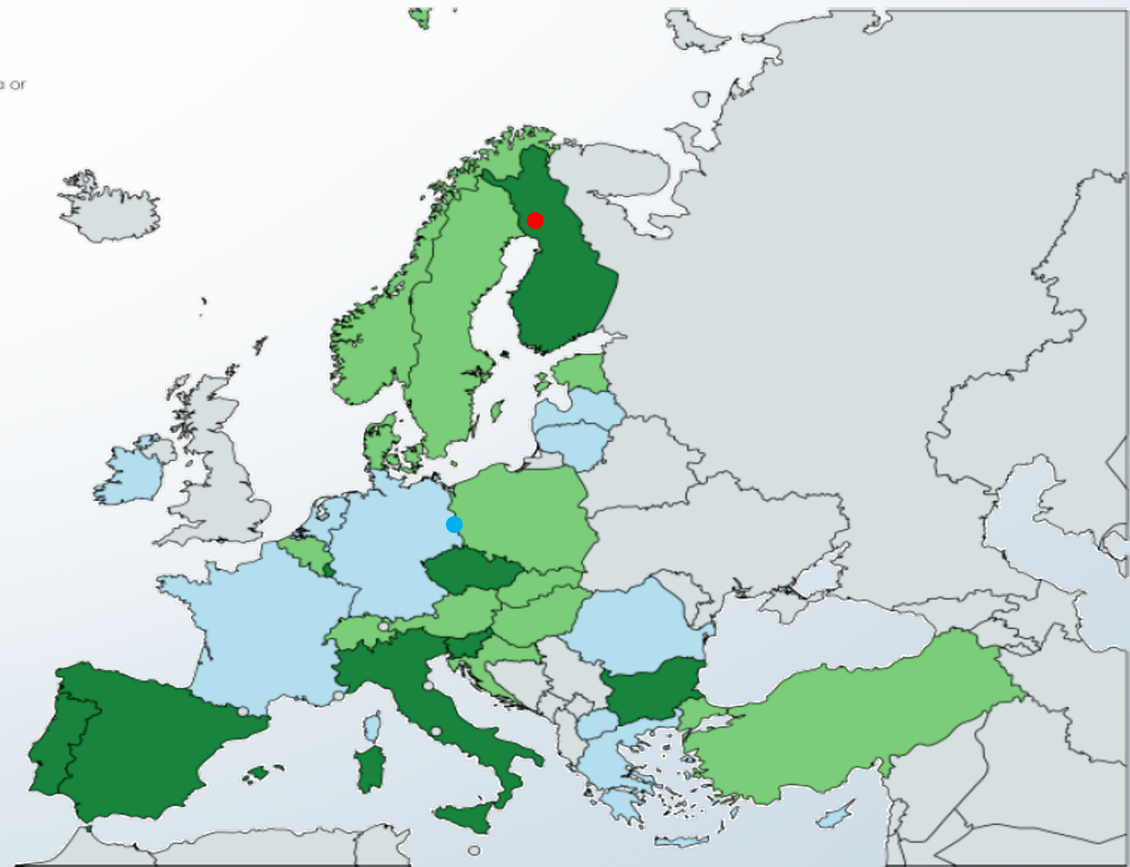
Leonardo (**IT**, SI, SK, AT, HU)

SUPPORT RESEARCH AND INNOVATION IN HPC

HPC Centers of Competence (EuroCC)

EuroHPC projects: LIGATE, ACROSS, IO-SEA, SCALABLE

EuroHPC supercomputers

- Consortium member (pre-exa or peta)
- Hosting Site (pre-exa or petascale)
- Other Participating State in EuroHPC JU

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- **Project title: IT4Innovations Center for European Science and Industry**

- Period of operation: 2021-2025

- Total acquisition cost: 15M€
  - 60% (9,00 M€) OP Research, Development and Education
  - 5% (0,75 M€) VSB-Technical University of Ostrava
  - 35% (5,25 M€) EuroHPC JU

- Total operating cost: 13,9M€
  - 8,3M€ operations and maintenance cost
  - 5,6M€ personnel costs
  - 100% funded by Large Research Infrastructures programme of MEYS

- 65% of the resources will be available to the Czech users

- 35% of the resources will be available to the EuroHPC users
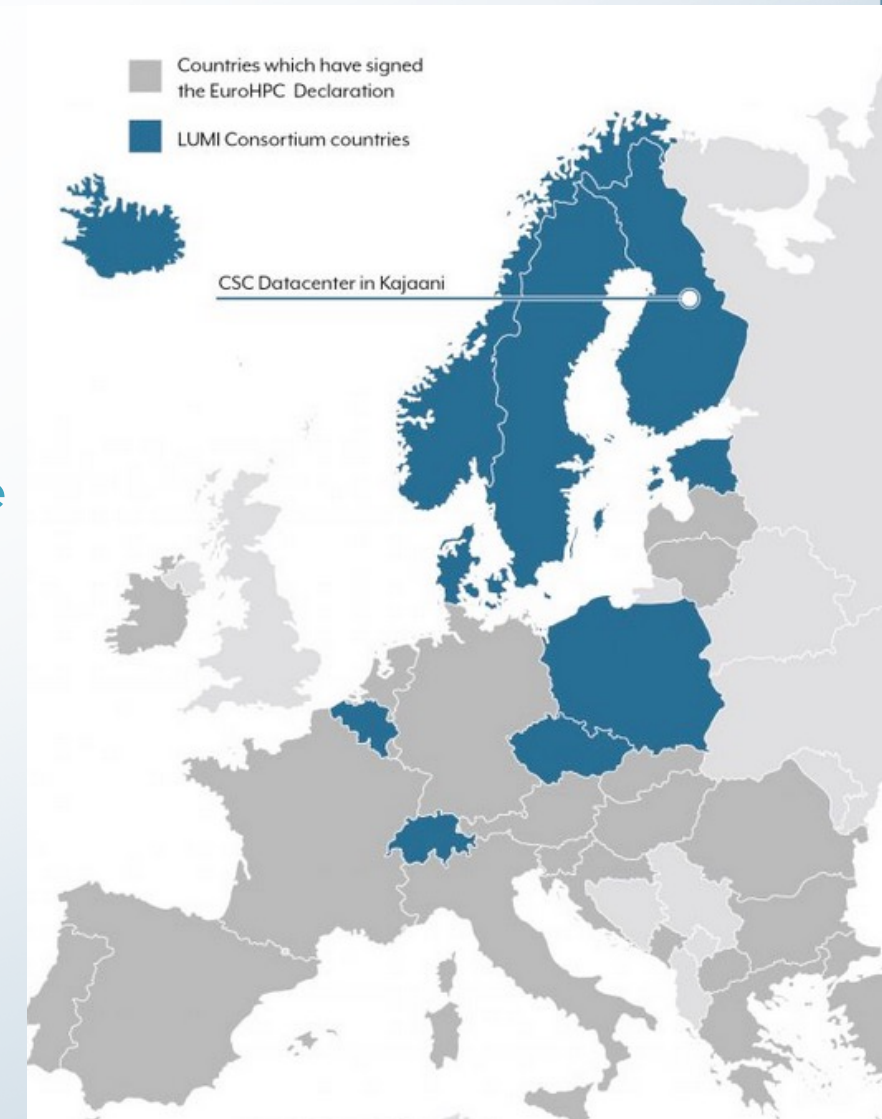
LUMI SUPERCOMPUTER

- **Project title: Large Unified Modern Infrastructure**

- Period of operation: 2021-2025

- Total budget: 207.1M€
  - 50% (103,6M€) LUMI consortium
  - 50% (103,6M€) EuroHPC JU

- Approx 3,5% of the resources will be available to the Czech users

- Performance to be installed in 2021/2022
  - LUMI-G 375PF (LINPACK)
  - LUMI-C 5PF (LINPACK)
  - More than 60PB of data storage

  TOP500 #1 FUGAKU 415PF (LINPACK) - June 2020

Countries which have signed the EuroHPC Declaration

LUMI Consortium countries

CSC Datacenter in Kajaani

CALLS FOR RESEARCH AND INNOVATION PROPOSALS

- *H2020-JTI-EuroHPC-2019-1:* Towards Extreme Scale Technologies and Applications
  - EuroHPC-01-2019: Extreme scale computing and data driven technologies (**IO-SEA)**
  - EuroHPC-02-2019: HPC and data centric environments and application platforms (**ACROSS)**
  - EuroHPC-03-2019: Industrial software codes for extreme scale computing environments and application (**LIGATE, SCALABLE)**

- *H2020-JTI-EuroHPC-2019-2:* Innovating and Widening the HPC use and skills base
  - EuroHPC-04-2019: HPC Competence Centres **(EUROCC)**
  - EuroHPC-05-2019: Stimulating the innovation potential of SMEs

- *H2020-JTI-EuroHPC-2020-01:* Advanced pilots towards the European exascale supercomputers
  - EuroHPC-2020-01-a: Advanced pilots towards the European supercomputers (**EUPEX)**
  - EuroHPC-2020-01-b: Pilot on quantum simulator

- *H2020-JTI-EuroHPC-2020-02:* Framework Partnership Agreement in European low-power microprocessor technologies (Phase 2)

- *H2020-JTI-EuroHPC-2020-03:* Training and Education on High Performance Computing (**HERCULES**)

- Council Regulation of 2021/1173 of 13 July 2021 stablishing EuroHPC JU and repealing the Regulation of 2018
- Acquisition and ownership of supercomputers
  - High-end supercomputers (exascale, post-exascale)
  - Quantum computers and quantum simulators
  - Industrial-grade EuroHPC supercomputers
  - Mid-range supercomputers
- Upgrading of supercomputers
- 1 administrative and 6 technical implementation pillars
- Funding sources
  - Horizon Europe
  - Digital Europe Programme
  - Connecting European Facilities
  - Participating states
  - Private members (ETP4HPC, DAIRO)

Skills and Usage

Applications

Infrastructure

Federated supercomputers

Technology

International Cooperation

Administration