

# IT4Innovations national supercomputing center and its experience in H2020

Martin Palkovič



IT4Innovations  
national  
supercomputing  
center

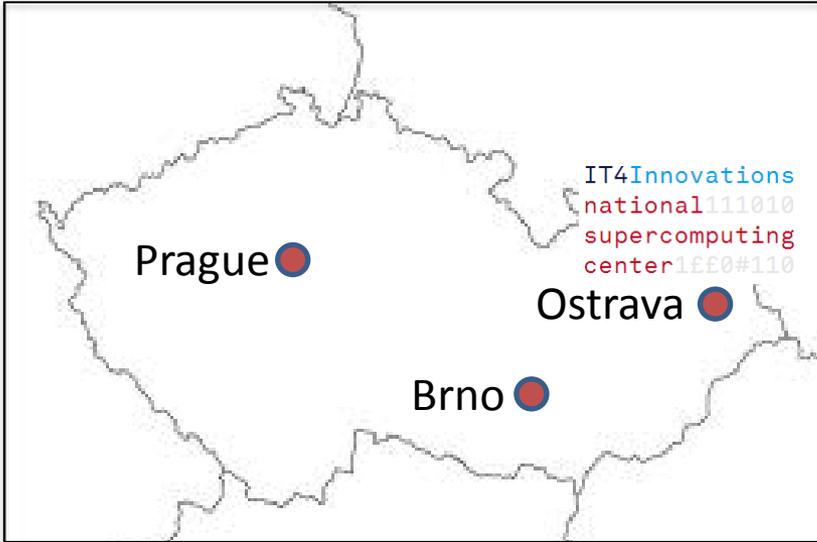


EUROPEAN UNION  
EUROPEAN REGIONAL DEVELOPMENT FUND  
INVESTING IN YOUR FUTURE



OP Research and  
Development for Innovation

# IT4Innovations is the national super-computing center of the Czech Republic



## Mission of IT4Innovations:

Our mission is to deliver scientifically excellent and industry relevant research in the fields of high performance computing and embedded systems.

We are providing state-of-the-art technology and expertise in high performance computing and embedded systems and make it available for Czech and international research teams from academia and industry.

supercomputing  
center

# Over 3 years we put into operation 2 most powerful supercomputers in Czech Rep.



Rmax 0.08 PFLOPS  
209x16x24x365=  
~30 mil corehours/year



Rmax 1.46 PFLOPS  
1008x24x24x365=  
~200 mil corehours/year

100 mil corehours granted over 2 years!

IT4Innovations  
national  
supercomputing  
center



# TOP 500 CERTIFICATE

The List.

Salomon - SGI ICE X, Xeon E5-2680v3 12C 2.5GHz, Infiniband FDR, Intel Xeon Phi 7120P  
IT4Innovations National Supercomputing Center, VSB-Technical University of Ostrava,  
Czech Republic

is ranked

**No. 40**

among the World's TOP500 Supercomputers

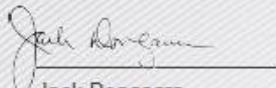
with 1.46 Pflop/s Linpack Performance

in the 45<sup>th</sup> TOP500 List published at ISC15 in Frankfurt, Germany, July 13th, 2015.

Congratulations from the TOP500 Editors



Erich Strohmaier  
NERSC/Berkeley Lab



Jack Dongarra  
University of Tennessee



Horst Simon  
NERSC/Berkeley Lab



Martin Meuer  
Prometeus

IT4Innovations  
national01\$#&0  
supercomputing  
center@#01%101

# The supporting infrastructure for our supercomputers is unique in Czech Rep.



IT4I  
nati  
super computing  
center@#01%101



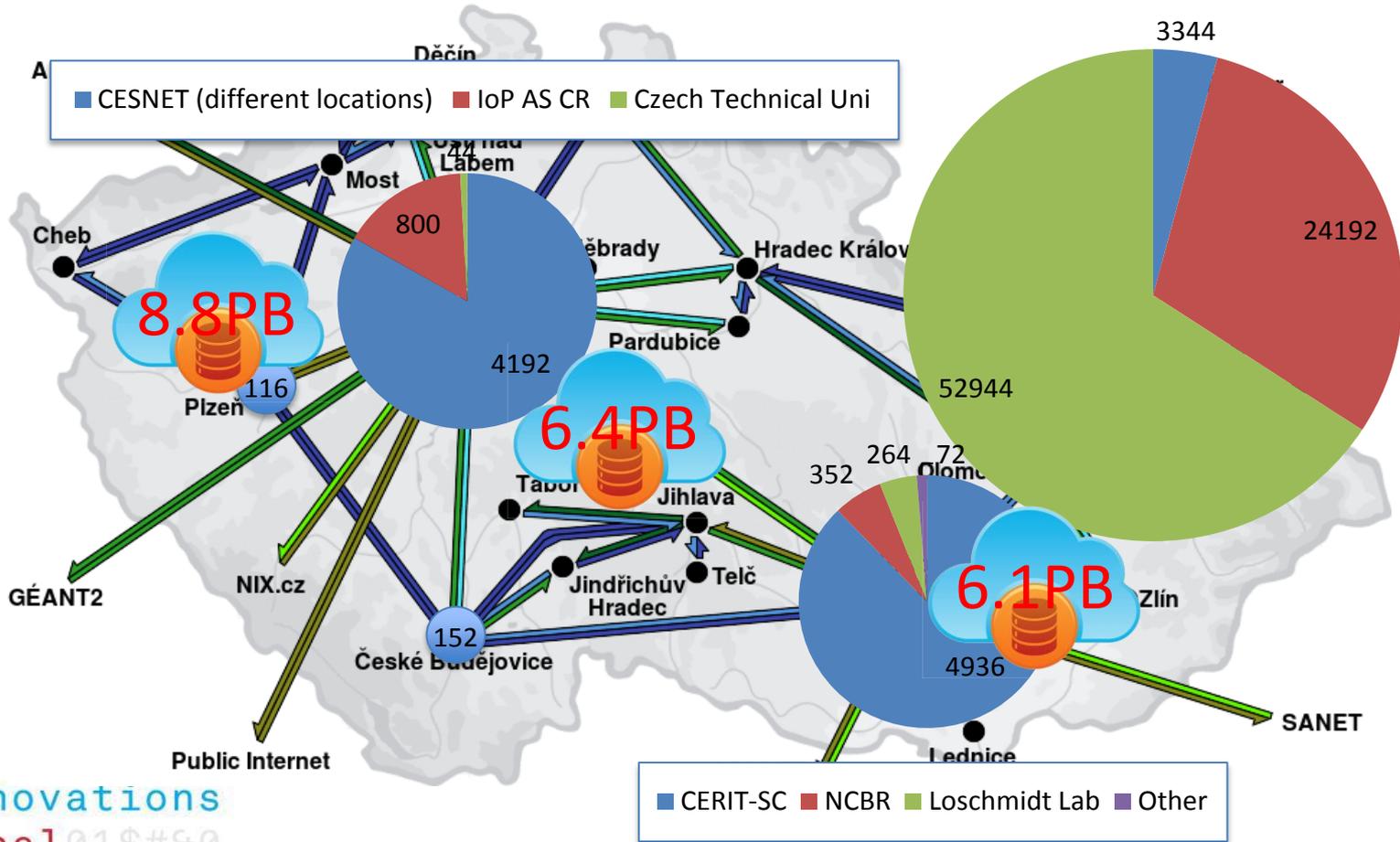
EUROPEAN UNION  
EUROPEAN REGIONAL DEVELOPMENT FUND  
INVESTING IN YOUR FUTURE



OP Research and  
Development for Innovation

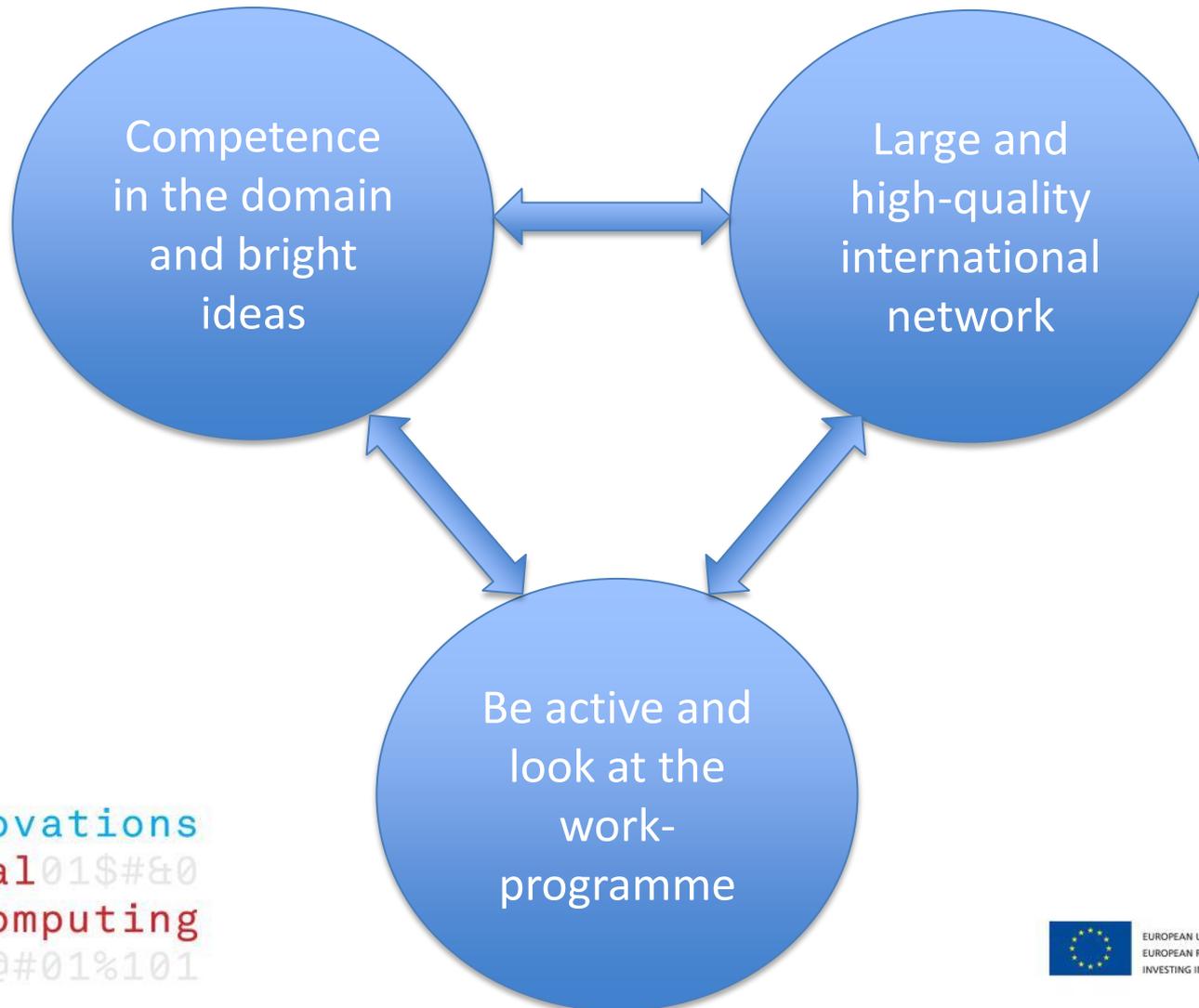
# Czech e-infrastructure landscape – network, storage, grid and HPC

■ SandyBridge ■ Haswell ■ Xeon Phi

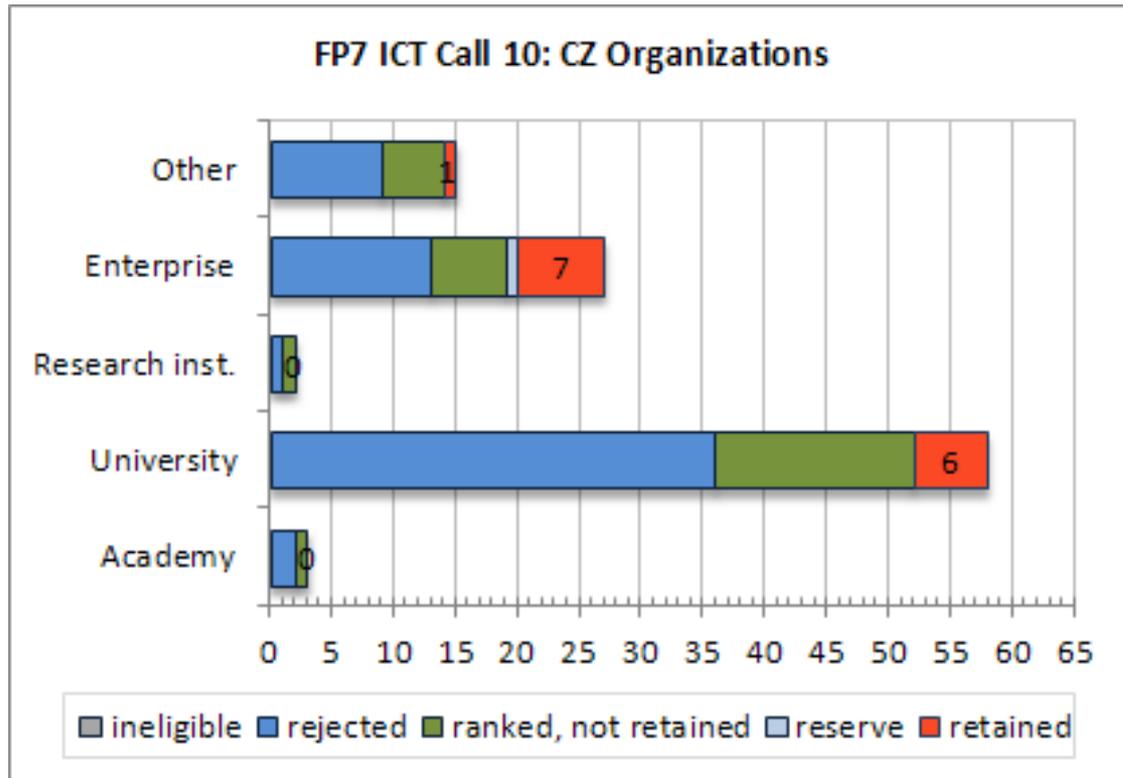


IT4Innovations  
national  
supercomputing  
center

# Top infrastructure has to come hand in hand with top research



# IT4Innovations is from the start in 2011 active in European projects



IT4Innovations  
national  
supercomputing  
center



EMAST

9

inria.org

# IT4Innovations is successful and active member of PRACE since 2011



- Helps to access EU HPC resources for researchers in Czech Republic
- Contributes to EU HPC roadmap
- Commits 5-10% of IT4I resources for EU researchers (>DECI-9)



2013:

Niki Loppi - Best Visualization Award

2014:

Nicola Luminari - Best Student Prize

IT4Innovation  
national  
supercomputing  
center@#01%101

**PRACE**  
**SUMMER SCHOOL 2013**  
17-21 June  
Ostrava, Czech Republic

**PRACE**  
**SPRING SCHOOL 2014**  
15 - 17 April 2014  
Castle of Hagenberg  
Austria

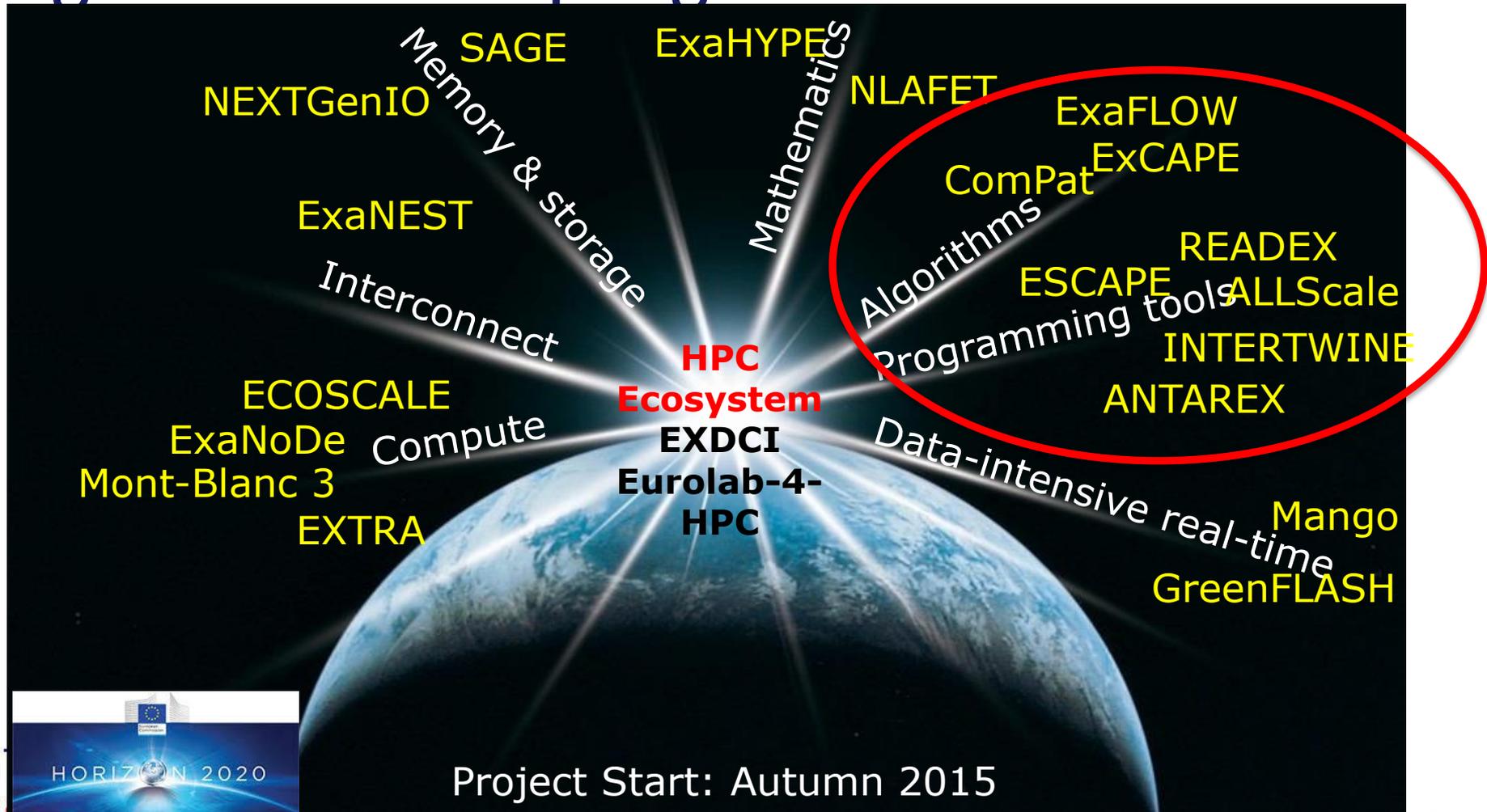
**PRACE**  
**WINTER SCHOOL 2015**  
12 - 15 January  
Ostrava, Czech Republic



EUROPEAN UNION  
EUROPEAN REGIONAL DEVELOPMENT FUND  
INVESTING IN YOUR FUTURE



# IT4Innovations is active in 3/8 projects of algorithms and prog. tools in FET-HPC-1



Project Start: Autumn 2015

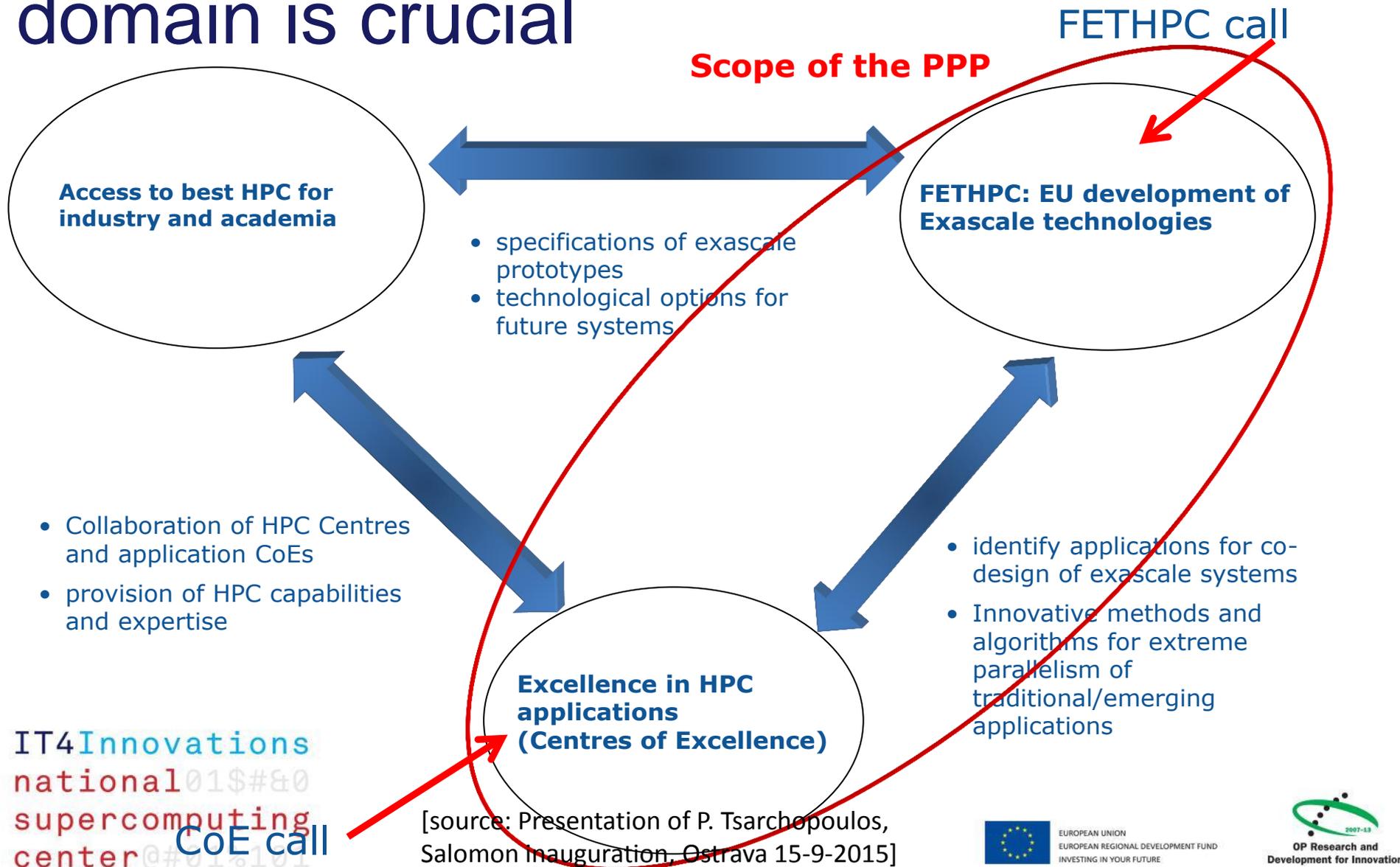


supercomputing  
center@#01%101

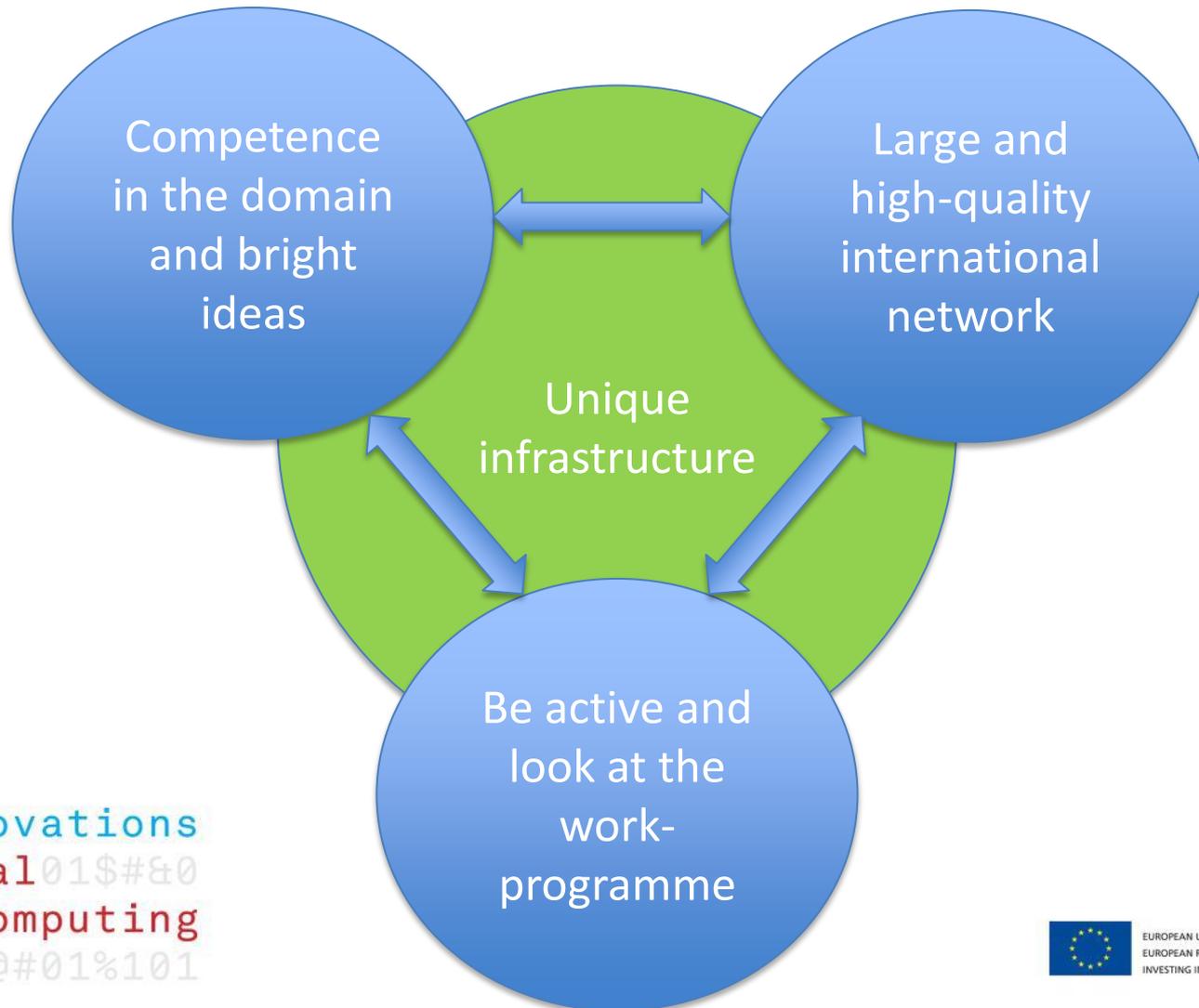
[source: Presentation of P. Tsarchopoulos,  
Salomon inauguration, Ostrava 15-9-2015]



# Knowing the EU landscape in your domain is crucial

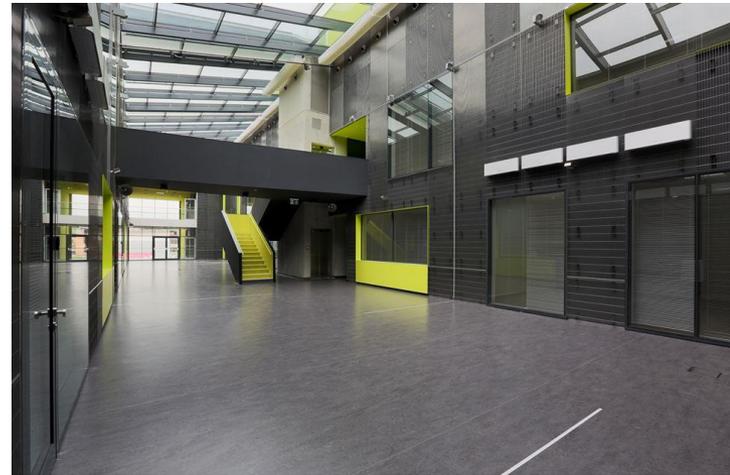


# Top infrastructure has to come hand in hand with top research





# THANK YOU FOR YOUR ATTENTION



IT4Innovations  
national  
supercomputing  
center



EUROPEAN UNION  
EUROPEAN REGIONAL DEVELOPMENT FUND  
INVESTING IN YOUR FUTURE



OP Research and  
Development for Innovation