

IT4Innovations: Successful design of parallel H2020-ESIF project funding

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



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Importance of supercomputing for European industry and excellent research

Hospitals in Germany use HPC to avoid last-minute decisions during childbirth, while analysis of [3D brain imaging through HPC](#) has allowed much earlier diagnosis of disease.

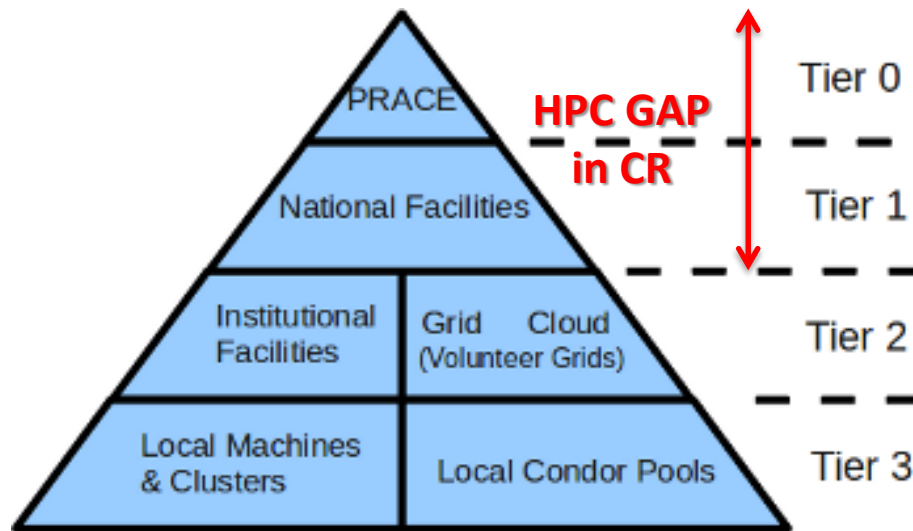
HPC has enabled car makers to develop new vehicle platforms in 2 years rather than 5 years, saving the European car industry up to €40 billion.

97 % of the industrial companies that employ HPC [consider it indispensable](#) for their ability to innovate, compete and survive.



http://europa.eu/rapid/press-release_IP-12-139_en.htm

Supercomputing gap in the Czech Republic: missing Tier-1 system and Tier-0 participation



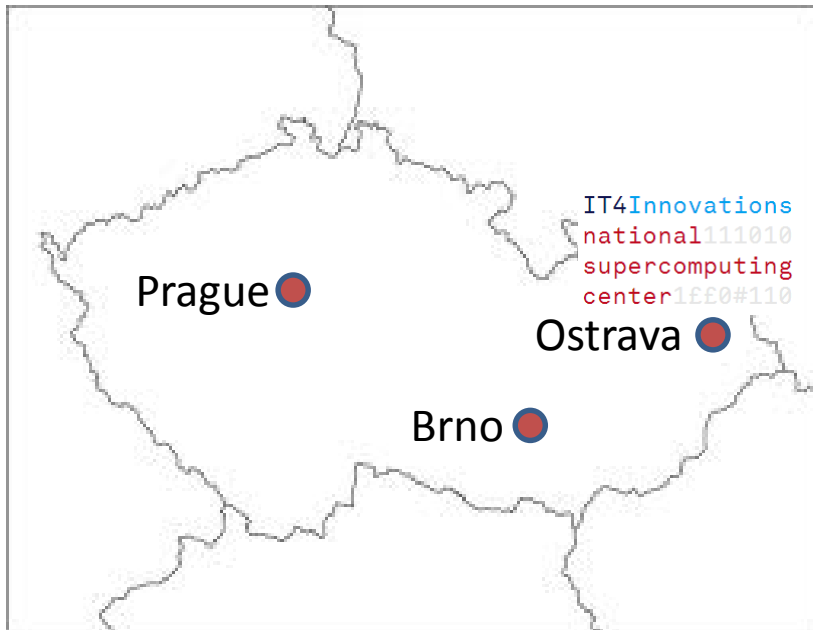
Existing National Research and Education Network (NREN) – CESNET
- covering network (GEANT link), data storage and grid infrastructure (EGI link)

Only Tier-2 (institutional) HPC resources, no link to PRACE

National supercomputing center financed from the ESIF - IT4Innovations project

- Implementation phase – 2011-2015
- Funding - 73 mil EUR (85% EU, 15%CR) – eligible cost
- Investments to infrastructure: 53 mil EUR
- Non-investments: 20 mil EUR
- Part of non-investments - start up grants (SUG) covering only ~50% of salaries
- The rest has to be covered by national (GA CR, TA CR) and international projects (FP7, H2020), cooperation with industry – non-eligible costs
- At the end of the project - Largest supercomputer in Czech republic and 200 FTEs in 8 research programmes

The infrastructure of IT4Innovations national supercomputing center



2013



2014

80 TFLOPs system – most powerful supercomputer in Czech Republic, #6 in Central Europe (June 2013), operational since June 2013, 1.5 PFLOPs system planned for 2015



2015

IT4Innovations
national
supercomputing
center

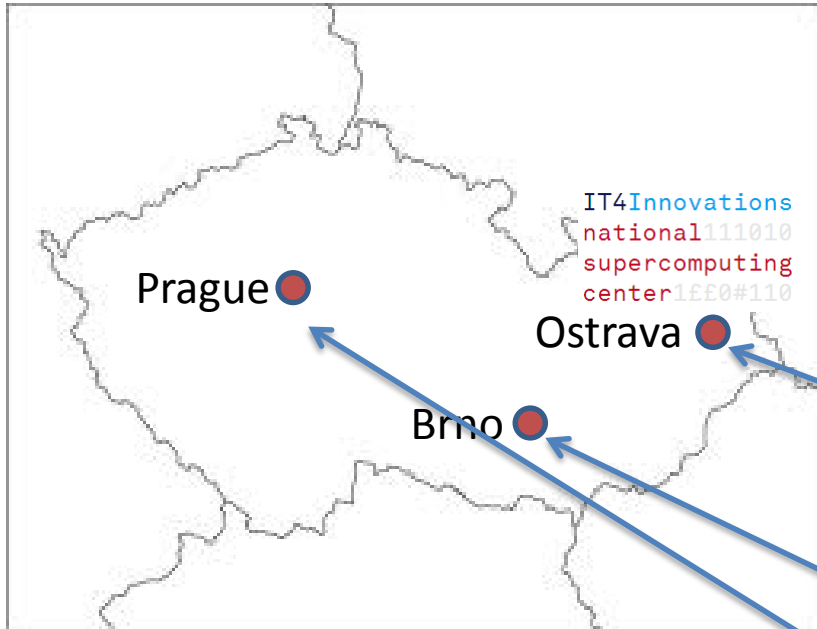


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OP Research and
Development for Innovation

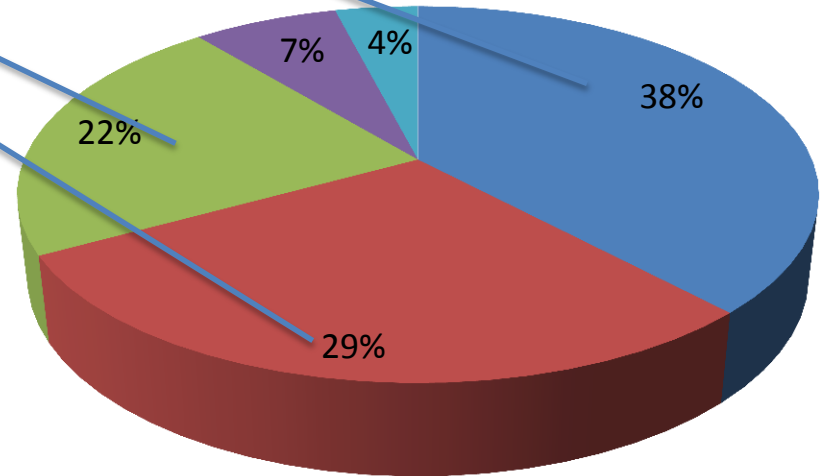
The infrastructure supports Czech and European excellent science and industry



Allocated IT4I resources since 6/2013

Allocated IT4I resources:
37 mil corehours allocated
(1.85 mil EUR CZ VAT incl.)

- Ostrava
- Praha
- Brno
- Other EU
- Other CR



ESFRI roadmap and PRACE 1-2-3 IP FP7 projects - important parts to achieve synergy

PRACE Research Infrastructure
(Partnership for Advanced
Computing in Europe)

<http://www.prace-ri.eu>

IT4Innovations (since 2011):

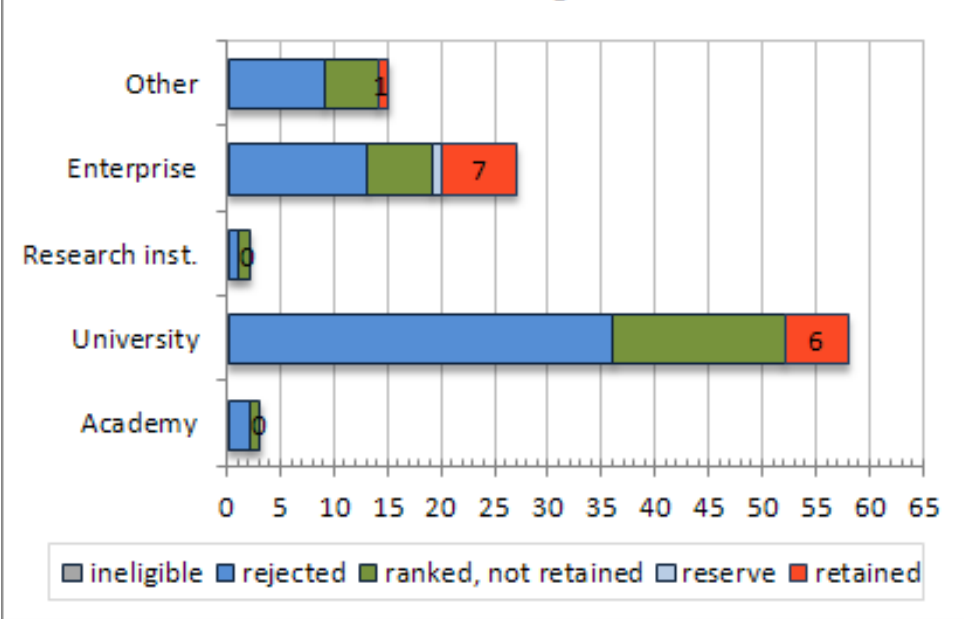
- Helps to access EU HPC resources for researchers in Czech Republic
- Contributes to EU HPC roadmap
- Commits to reserve 10% of IT4I resources for EU researchers (>DECI-9 calls)



IT4Innovations as most successful CZ org. in FP7 ICT Call 10 and entering H2020



FP7 ICT Call 10: CZ Organizations



Submitted several H2020, e.g.:
 H2020-EINFRA-2014-2
 Preparing for:
 H2020-FETHPC1-2014
 EINFRA-5-2015 – CoEs



IT4Innovations as national e-infrastructure is on the roadmap and in RIS3 regional strategy

Roadmap for Large Research, Development and Innovation Infrastructures in the Czech Republic

May 2011 Update

Ministry of Education, Youth and Sports

Informatics/
e-Infrastructure **6**



Name of the large infrastructure	Brief description	Infrastructure type	Year of completion
CESNET	Communication e-Infrastructure and National Grid Infrastructure	Czech part of the European projects (GÉANT, EGI)	Existing; renovation – 2015
CE IT4Innovations	Supercomputer centre	Czech part of the European project (PRACE)	New; completion – 2014
CERIT – SC	Flexible cloud computing centre and the main node of the national grid	Czech part with a direct connection to EGI	Existing prototype expanded under the RDI OP; renovation – 2014

What are the key elements for building successful synergies

- Find a gap that is meaningful for national and EU research (supercomputing at national level in the Czech Republic)
- Use the ESIF to tender top infrastructure (note strict public procurement law in the Czech Republic)
- Use the ESIF to partly pay top people - highly educated, highly motivated (mostly top local people or expats – reverse brain-drain)
- Motivate the people to benchmark with the best and go for top international and national projects
- Once this is done, do not stop - continuously improve on infrastructure and people (national support also needed)
- Note that top infrastructure and top people is not sufficient, you need to have international research network and visibility!!!