

Labex UnivEarthS

DANTE:
a **MULTI DATA ANALYSIS AND COMPUTING**
ENVIRONMENT FOR SCIENCE

Scientific Committee

9 November 2017

IPGP, Paris

✓ Context:

- ✓ Moving out of the FACe
- ✓ LabEx UnivEarthS partners: APC/IPGP
- ✓ USPC ComUE's platforms: Campus Spatial PRG, CIRRUS/S-CAPAD, P2IDS
- ✓ SESAME call of 2017: 2 years funding

- ✓ A scientific instrument
- ✓ A center of innovative and multidisciplinary expertise



✓ Goals:

- ✓ Numerical laboratory: explore volume and variety of data (simulation and observation)
- ✓ Center of expertise, software and knowledge: machine shop/MarketPlace
- ✓ Applicative sprints

✓ Challenges:

- ✓ Federated then mutualised computing resources of APC and IPGP @IPGP
- ✓ Upgrade of APC and IPGP clusters

✓ Joint skills of APC and IPGP:

✓ Earth-Planet-Univearth research

✓ Observation: space missions, instruments, observatories

✓ Numerical simulation, data analysis and treatment

✓ Joint skills of FACe and S-CAPAD:

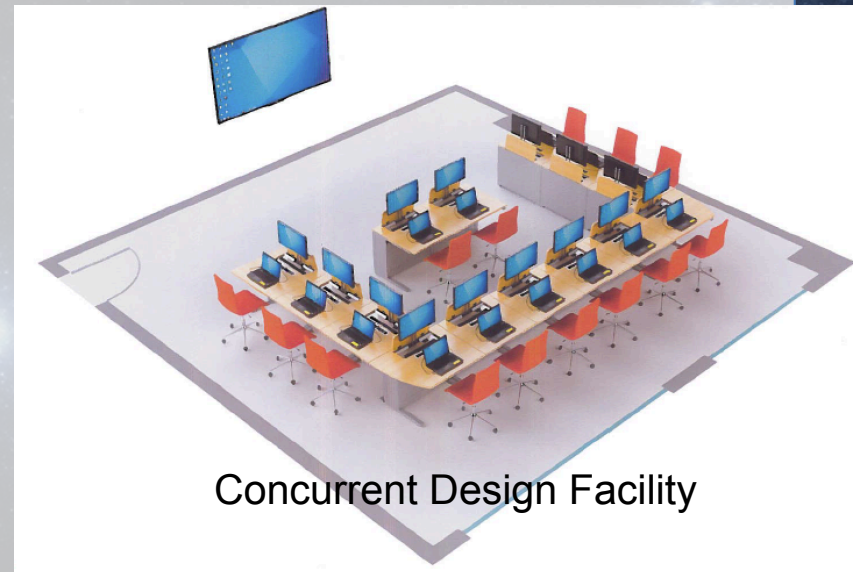
✓ Data-intensive architecture: Big Data (Hadoop, Map/Reduce), Data Science (Machine Learning)

✓ Virtualisation: cloud, container

✓ Software quality: CI platform

FACE (FRANCOIS ARAGO CENTER)

- ✓ APC data analysis center for space missions.
- ✓ Since 2010.
- ✓ Location: Biopark but moving to Condorcet and IPGP in 2018.
- ✓ Strong link with the **CC-IN2P3**.
- ✓ **Ressources:**
 - ✓ Offices, meeting rooms, video-conference rooms, computing room, CDF.
- ✓ **Projects:** LISAPathfinder, LISA, Euclid, SVOM...





- ✓ Since 2013
- ✓ Computing and data analysis platform:
 - ✓ Mesocenter (HPC)
 - ✓ Node of CIRRUS
- ✓ Projects: SWARM, InSight, EPOS-IP
- ✓ Activities: numerical simulation, Big Data



PARTNERS: USPC COMUE

✓ CIRRUS

<http://cirrus.uspc.fr/>

✓ Activities:

- HPC/data storage

✓ 3 platforms:

- S-CAPAD (IPGP): parallel cluster
- MAGI (P13): parallel cluster
- CUMULUS (P5): cloud

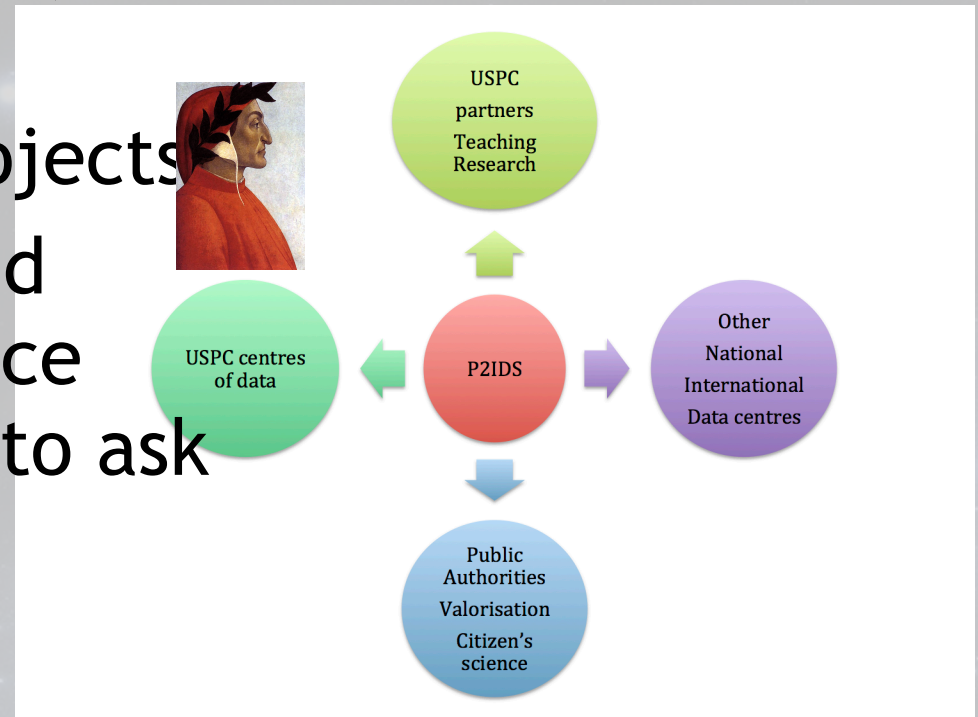
✓ Ressources: 4500 cores, 2 PB of secure storage, 500 VM

✓ Training of users



PARTNERS: USPC COMUE

- ✓ P2IDS (Paris Interdisciplinary Institute for Data Sciences)
- ✓ a centre of expertise accelerating digital projects
- ✓ a place of exchange and experimentation, a place where users will come to ask questions and share solutions.



CONCLUSION

- ✓ **A scientific instrument**
 - ✓ joint skills of FAcE/IPGP
 - ✓ an upgrade of existing platforms

- ✓ **A center of innovative and multidisciplinary expertise**
 - ✓ a hub for sharing information
 - ✓ Machine shop/MarketPlace

