

# Unistra Datacenter

Xstra / November 2018

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Direction		du Numérique   DNum
<b>Département Infrastructures</b>		
	Université de Strasbourg	

# Datacenter: motivations

- ▶ Program part of the French *Operation Campus* Framework
- ▶ Strategical IT masterplan for Unistra: enforce infrastructure foundations.
  - Create and up-to-date secure environment
  - Provide a replacement existing computer rooms
  - Open to Unistra partners (CNRS, Inserm...)
- ▶ The project started in 2013. French ministry of Research approval came in 2015.



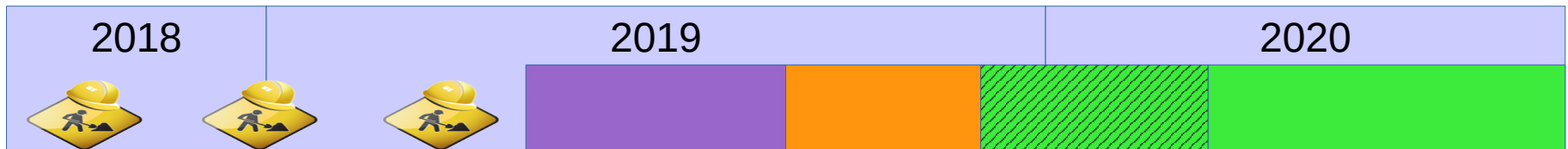
# Datacenter: facts

- ▶ Capacity: 450 m<sup>2</sup> for IT, 110 racks
- ▶ Power available for IT: 1200 kW
- ▶ Tier 3 level, 1.6 h annual downtime (statistical)
  - Two electrical main power stations, from different networks
  - Power Generator + UPS
- ▶ Energy Efficiency:
  - Geothermy or heat re-use
  - Target PUE : 1.2

# Datacenter: figures



# Datacenter: status



Building: end of construction phase



Racks installation and facilities safety checks



HPC and standard IT servers relocation

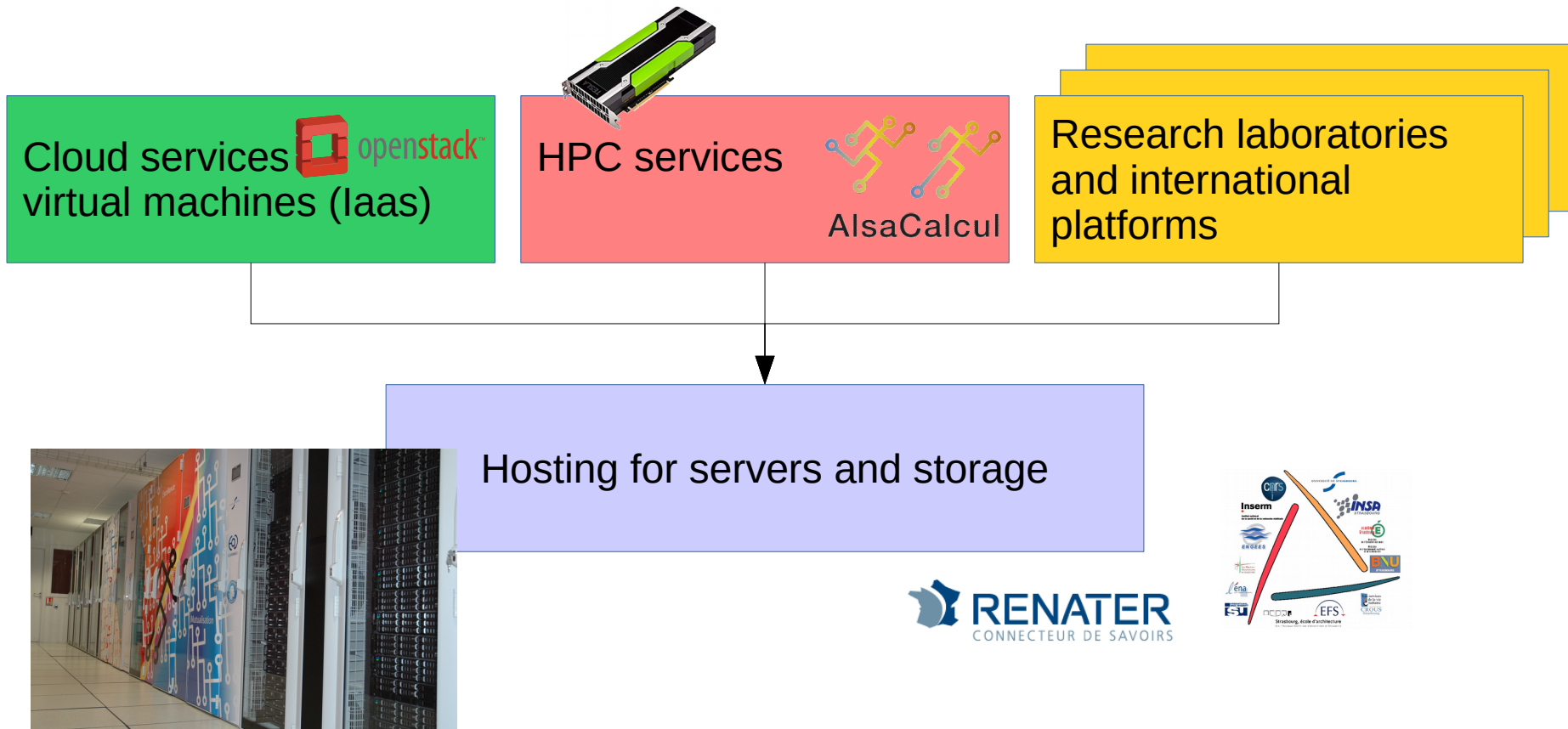


Procedures and service offering prooftesting (IT departement and test client)



Public opening : GO for research laboratories and platforms





# Datacenter : hosting services



# Datacenter: organization

- ▶ Integrated facility management (electricity, cooling) : outsourced
  - Contract with strong guaranteed availability requirements
  - Maintenance of all non-IT equipment
- ▶ Datacenter operations support team: Unistra IT team
  - Assistance for delivery of IT packages, third-party maintenance
  - Hands and eyes service
  - Access granting and visits
- ▶ System and network administration, applications management: Research laboratory IT team (e.g. CDS team)

# Datacenter: example of hostees

- ▶ Unistra core IT: finance applications, teaching (moodle)
- ▶ Unistra HPC Center (Equipex, CPER):
  - 572 servers, 176 GPUs, 1.6 Pflops overall compute power
  - 12 racks, ≈300 kw IT
- ▶ Renass national seismic observatory 
  - A few servers, but operations 24h/24
- ▶ Sertit (earth imaging service) and Alsace Aval Sentinelle program 
  - Workflow for the Sentinelle satellite constellation
- ▶ Engees (national engineers school) IT 



# Datacenter: certifications

- ▶ In Europe, the best practices for design and exploitation are certified European Commission *Code of Conduct* program

<https://ec.europa.eu/jrc/en/energy-efficiency/code-conduct/datacentres>

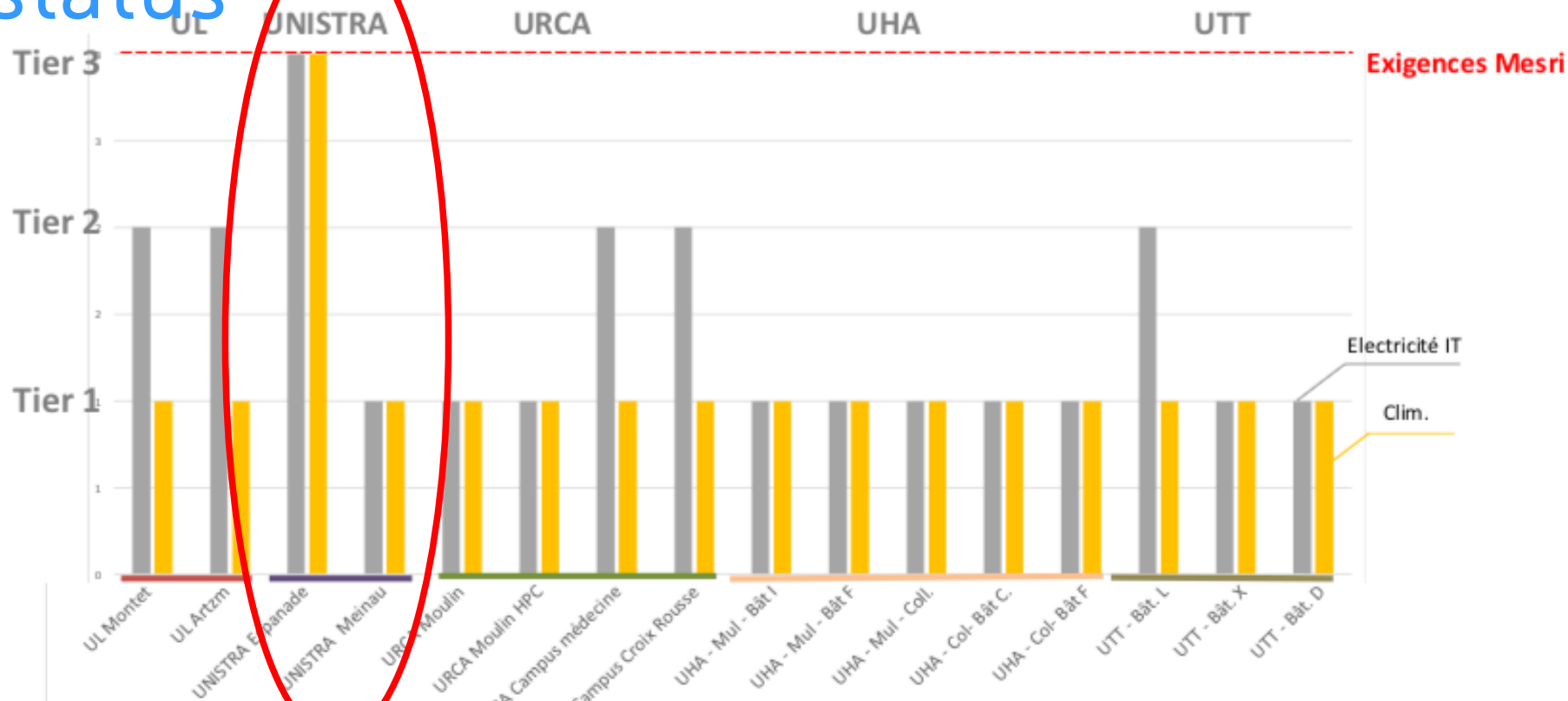
- ▶ This is a voluntary initiative which:
  - Implies a commitment from several services of the University
  - Consists in an in-depth self-audit about Datacenter practices
  - Annual review
- ▶ Unistra is currently certified at the participant level
- ▶ Other Datacenter certified in Europe: Air France, Equinix, IBM, Microsoft...



# National Datacenter Label in France: status

- ▶ French Ministry for Research aims at identifying one Datacenter for Research and Education per region: labelling program:
  - Strong requirements for this Datacenter: availability, network, safety, service, cooperation
  - IT funded by national programs has to be hosted in a labelled Datacenter
- ▶ **Consulting in progress** to help the Grand-Est Universities in preparing the 2018 call for tenders

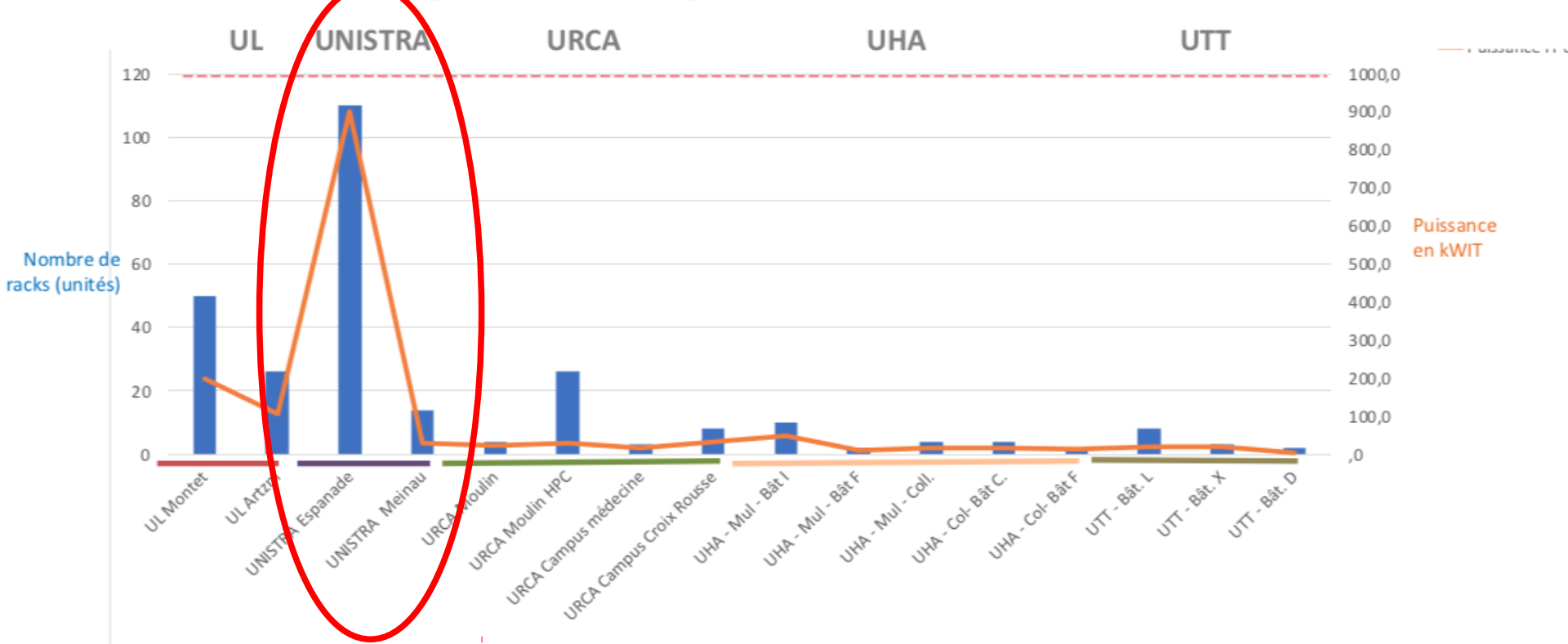
# National Datacenter Label in France: status



Results of the survey led in Q2 2018

# National Datacenter Label in France: status

✓ Courbe capacitaire disponible : Nombre de racks – Puissance IT



► We are still waiting for the call for tenders

# National Datacenter Label in France: Conclusion

- ▶ Survey of existing Datacenters is now finished
- ▶ The listing of existing services (hosting, network, cloud, HPC) is being completed
- ▶ We are working on a governance model including all stakeholders

# Datacenter: Conclusion

- ▶ Unistra Datacenter has been conceived in order to provide energy-efficient hosting services
- ▶ General opening is planned for January 2020
- ▶ The service offering for hosting is being prepared