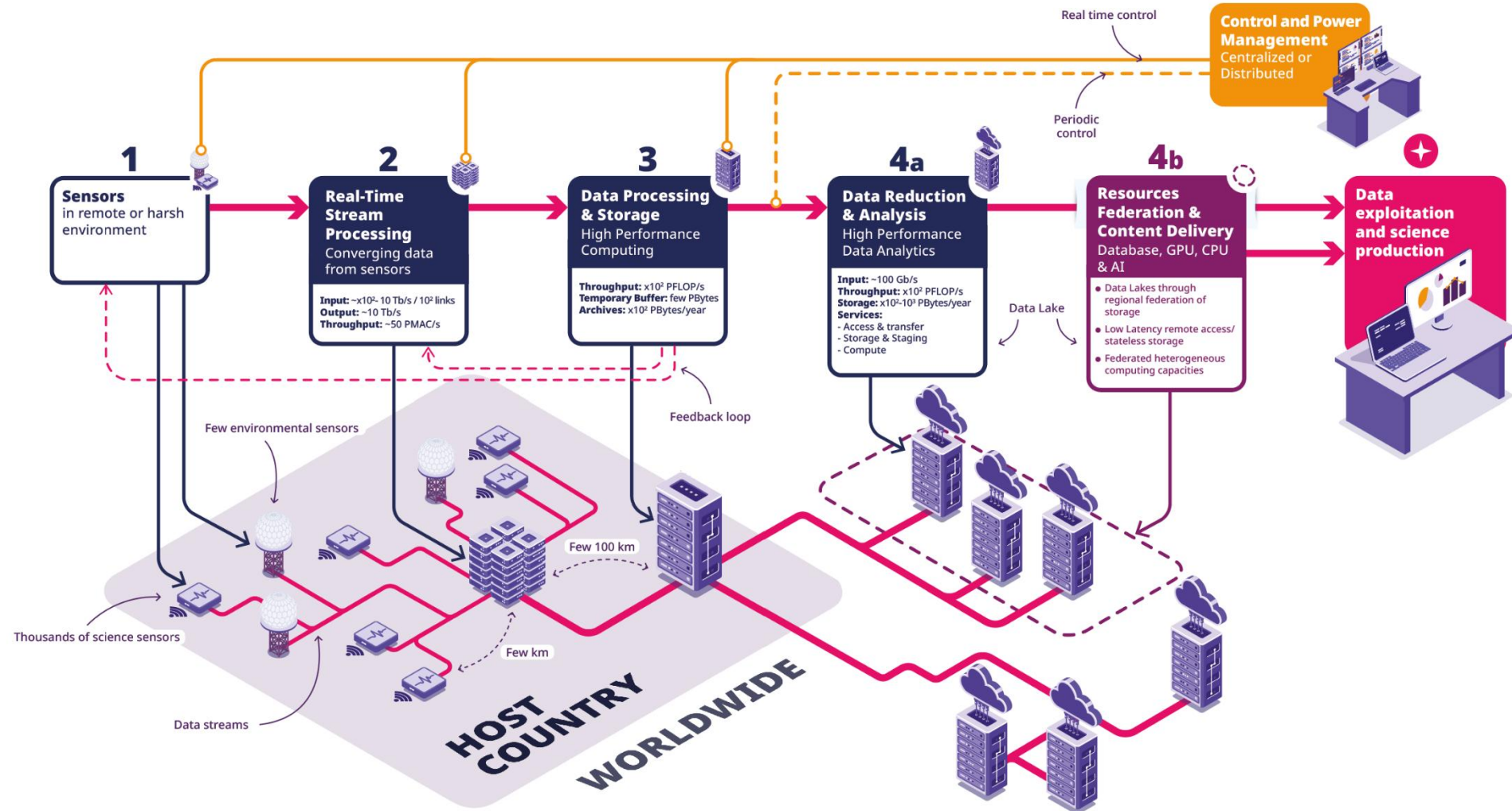


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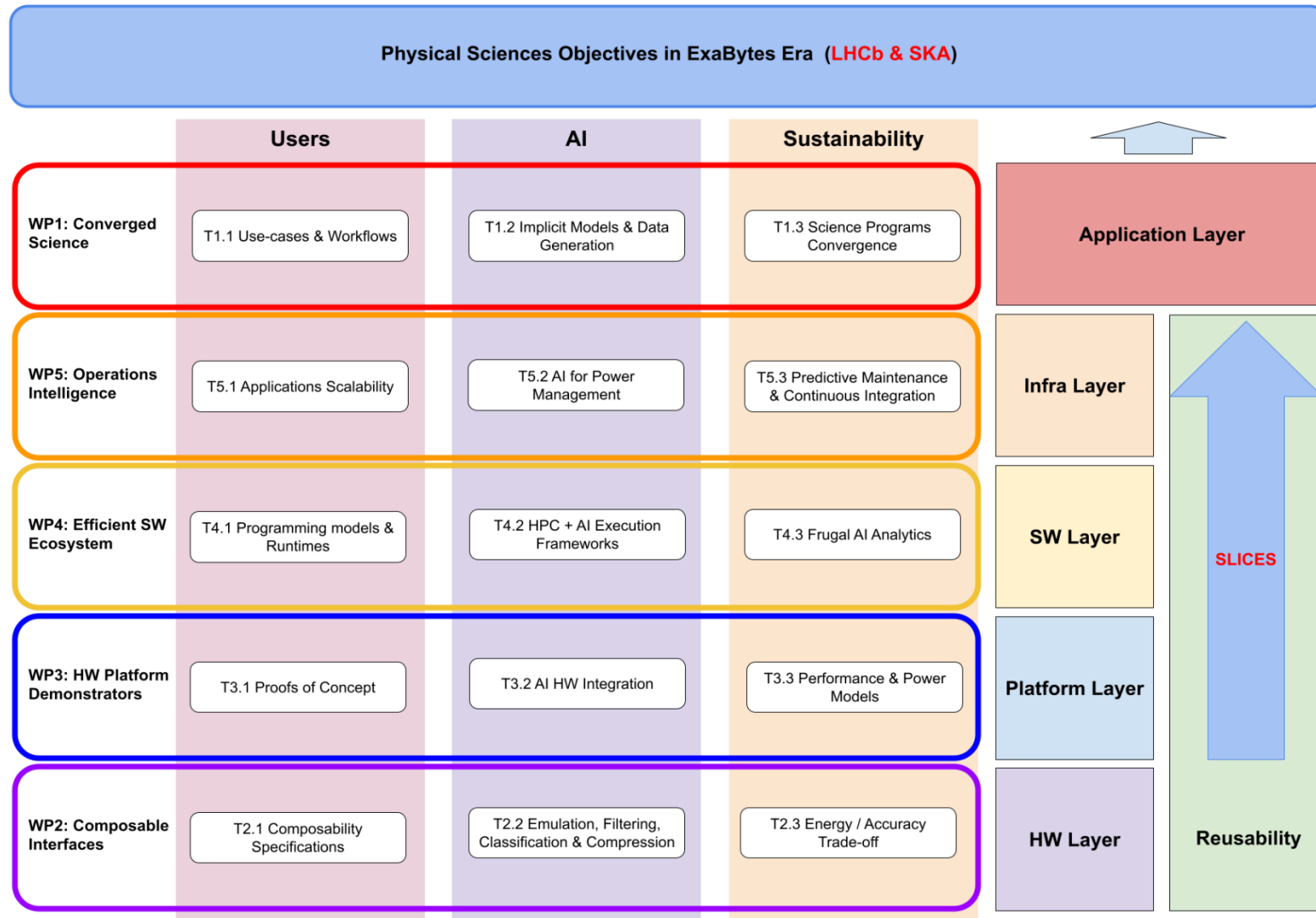
Damien Gratadour, CNRS

24/04/2026 – InPEX Meeting

Key Objective: Address multiple challenges across the continuum



Project Structure

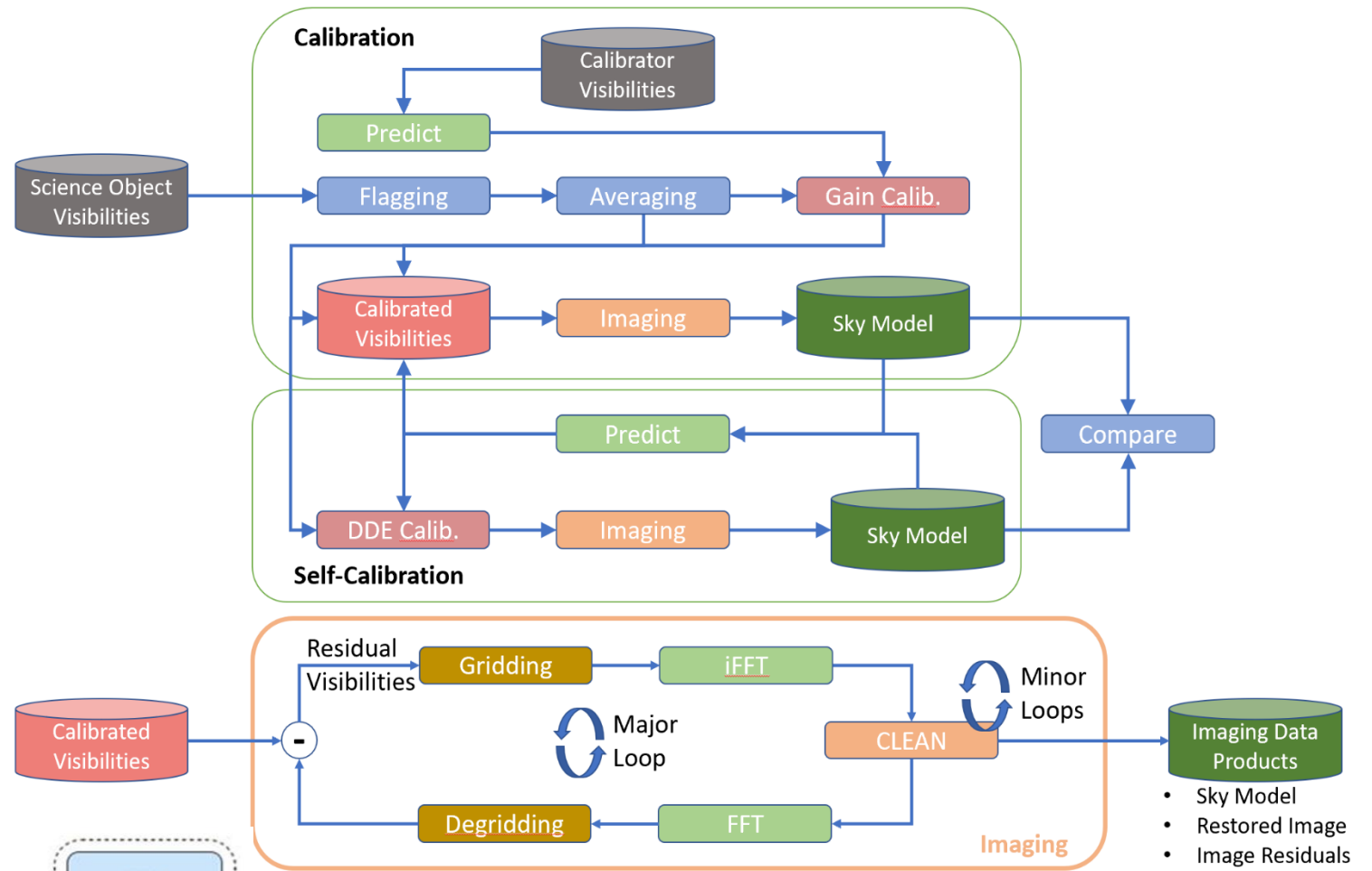
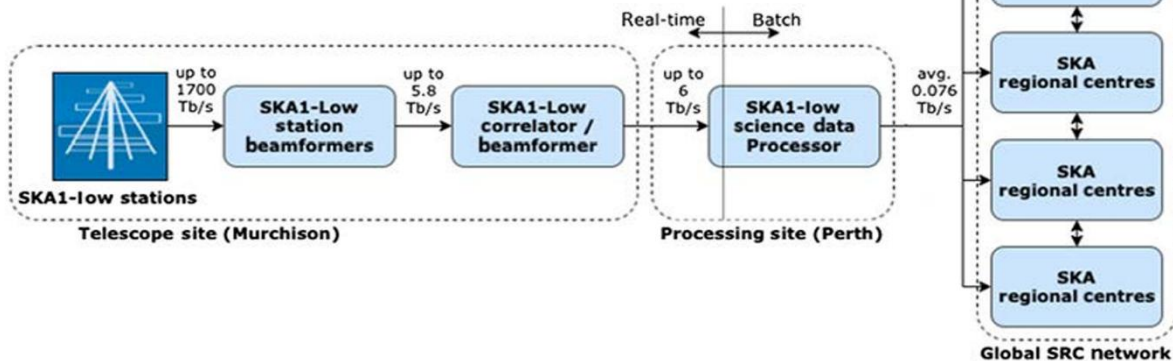
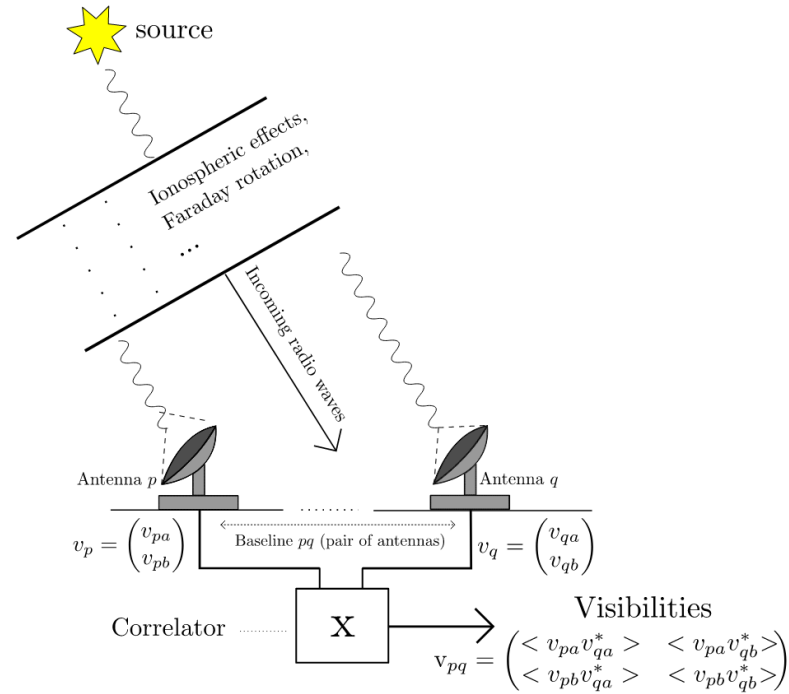


Partnership

Participant #	Short name	Participant organisation name	Type	Country
1 (Coord.)	OP	Observatoire de Paris	Academia	FR
2	CNRS	Centre National de la Recherche Scientifique	Academia	FR
3	CERN	Organisation Europeene pour la Recherche Nucleaire	Academia	CH
4	SKAO	The Square Kilometre Array Observatory	RI	UK
5	ASTRON	ASTRON the Netherlands Institute for Radio Astronomy	Academia	NL
6	INRIA	Institut Nat. de Recherche en Informatique & Automatique	Academia	FR
7	BSC	Barcelona Supercomputing Center	Academia	ES
8	Simula	Simula Research Laboratory AS	Academia	NO
9	SURF	SURF BV	Academia	NL
10	GENCI	GENCI	Academia	FR
11	EAS	Energy Aware Solutions S.L.	Industry	ES
12	SiPearl	SiPearl	Industry	FR
13	NextSilicon	NextSilicon	Industry	DE
14	NEOVIA	NEOVIA Innovation	Industry	FR
15	EPFL	Ecole Polytechnique Federale de Lausanne	Associate	CH
16	CSCS	ETH Zurich (Swiss National Supercomputing Centre)	Associate	CH

Use-cases overview (I)

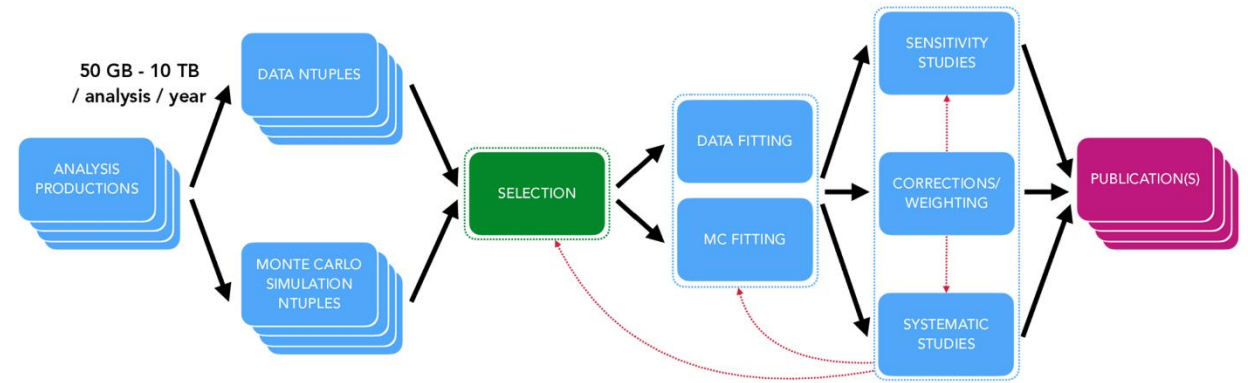
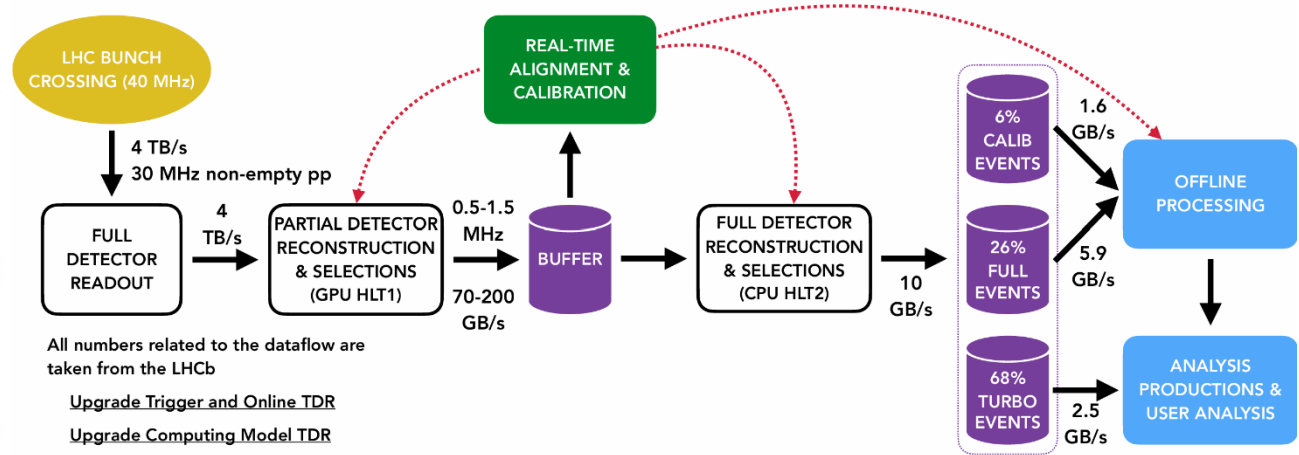
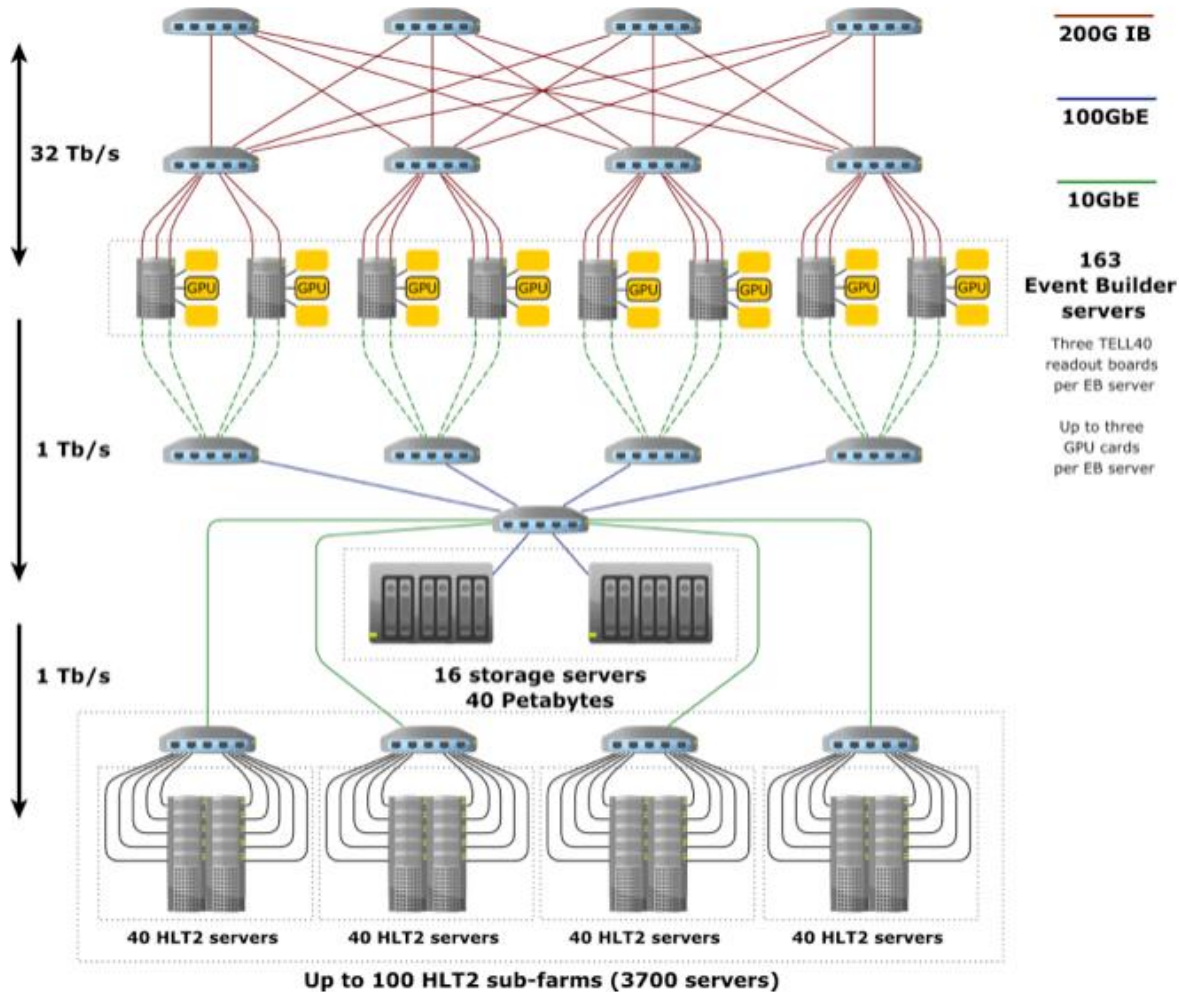
Radio-astronomy



- Batch processing with deadline constraints
- Complex data processing with scalability issues

Use-cases overview (II)

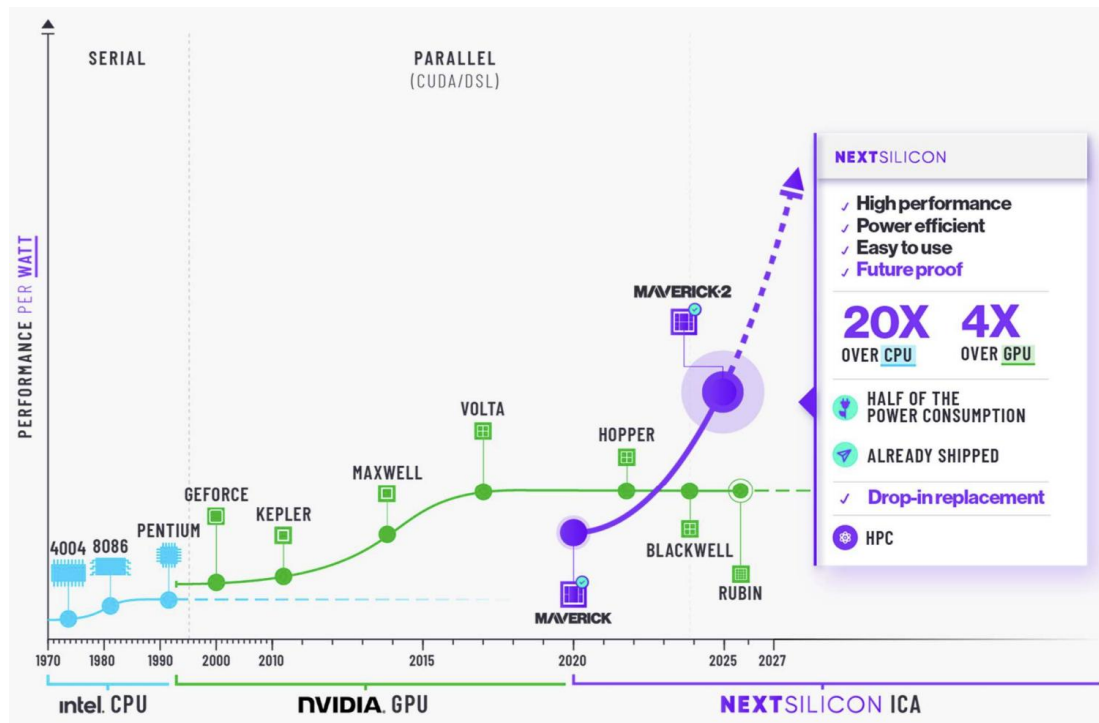
High Energy Physics



- Real-time classification for triggering
- Massive data volumes + need for more complex workflows (new physics)

PoC hardware demonstrations

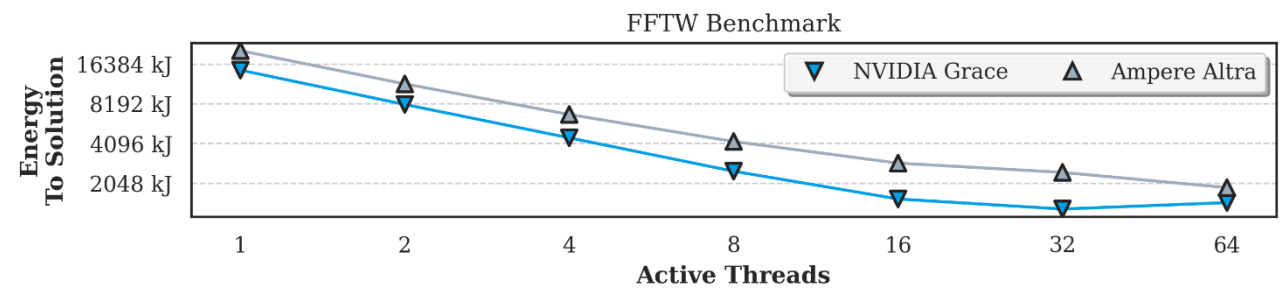
Multiple hardware solutions are being tested with energy profiling as a KPI



RHEA 1

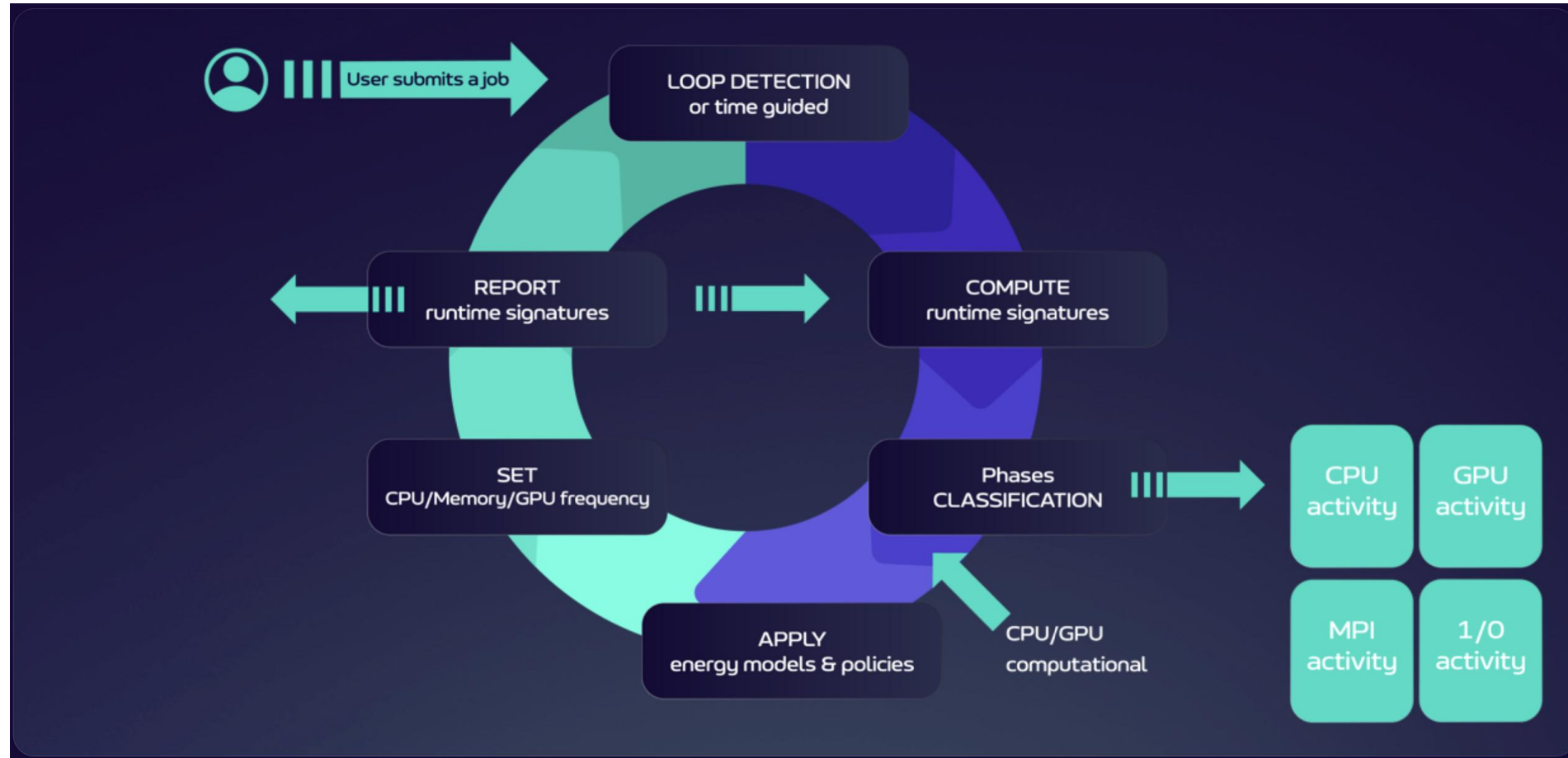
HPC and AI microprocessor

- 80 Arm® Neoverse V1 cores with 2 x 256 SVE each
- 4 x HBM2e
- 4 x DDR5 interfaces



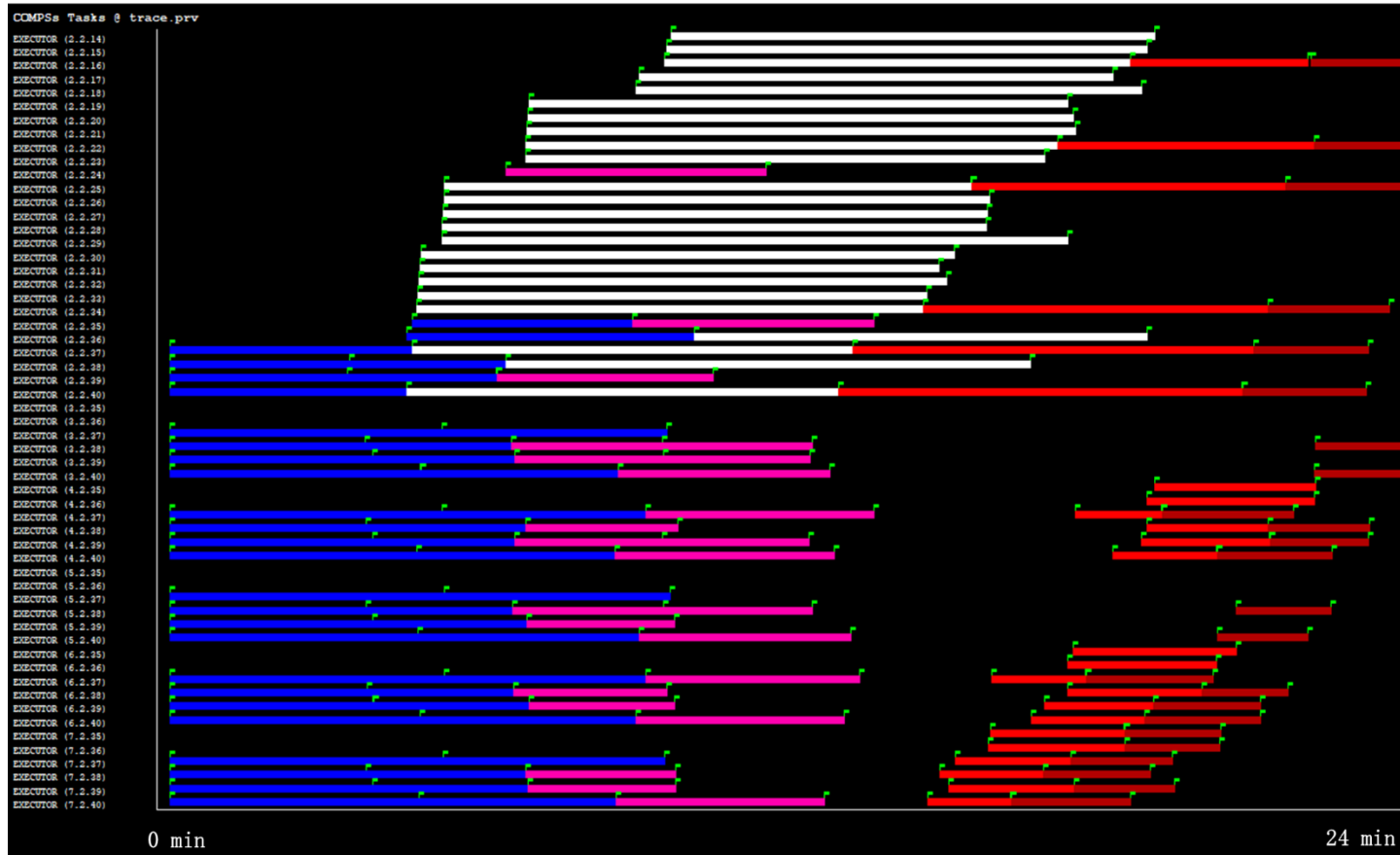
PoC hardware demonstrations

Using a EU solution for energy monitoring and optimization



Key demonstrations so far (1)

- ◉ Pipelining SKA-Low simulations & Direction Independent Cal. on multiple Jean Zay nodes: **real-time orchestration with PyCOMPSs**

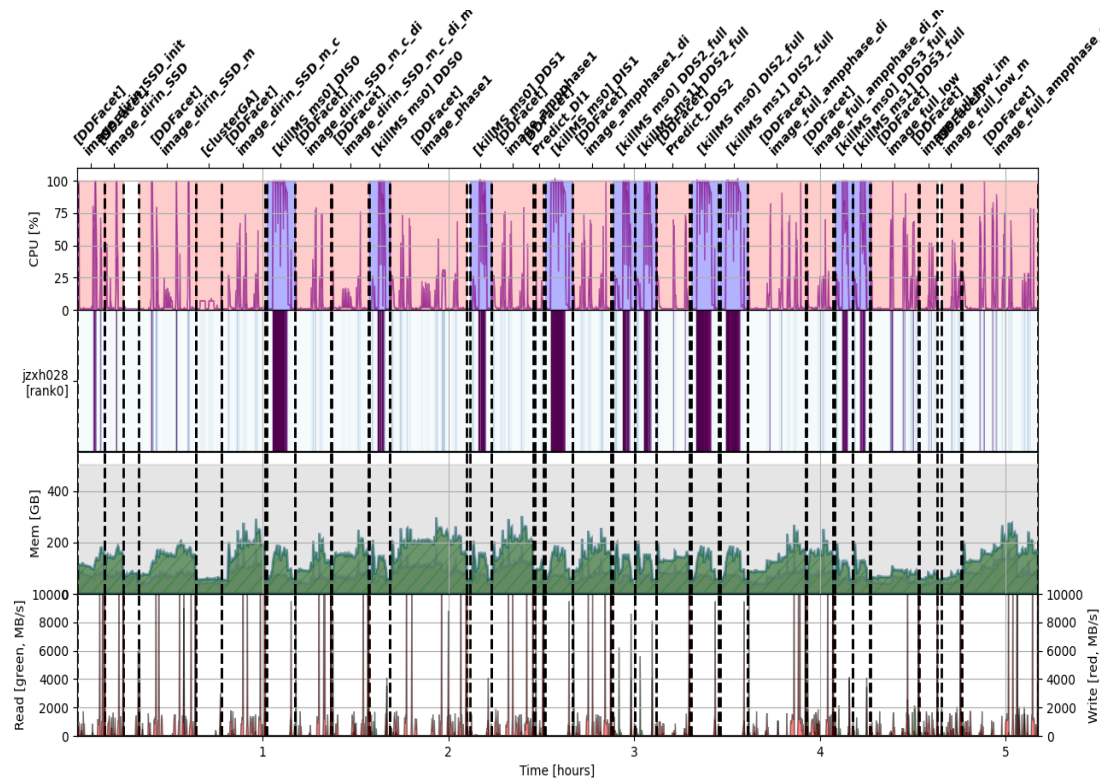


- make_simulation_channel_cal
- merge_vis
- calibration_cal
- make_simulation_channel_target
- calibration_target

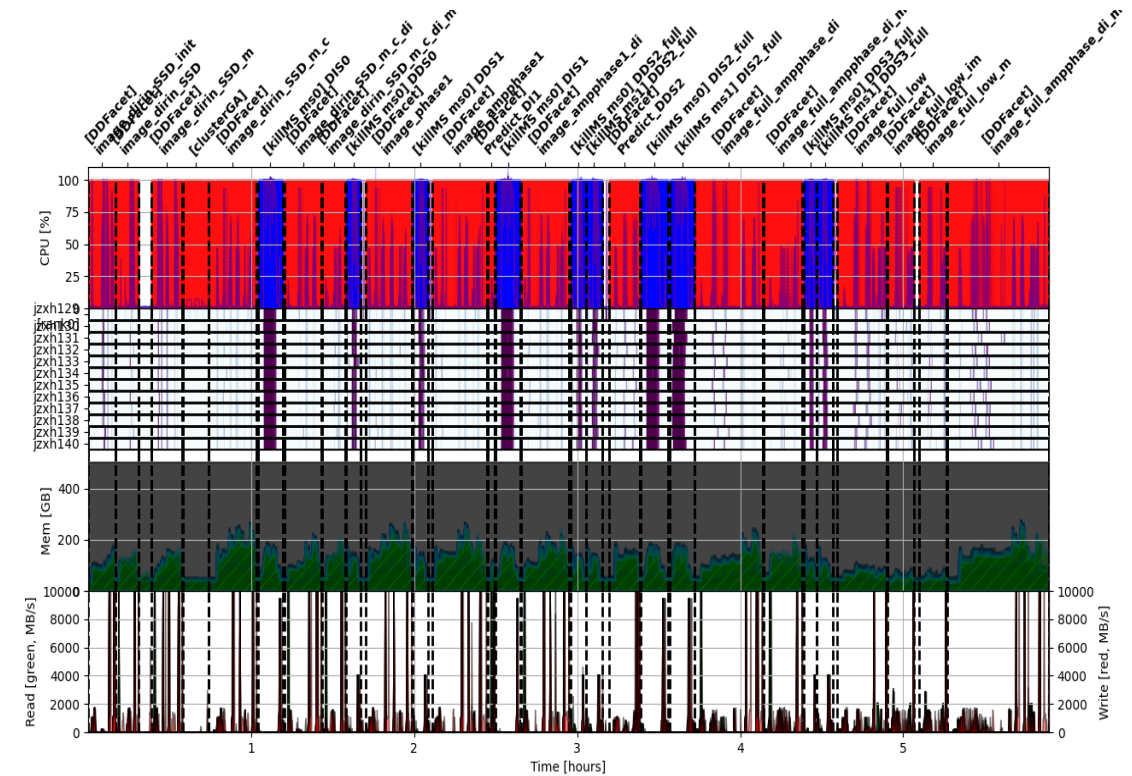
Key demonstrations so far (2)

Scalability of SelfCal & Imaging on simulated SKA-Low datasets on Jean Zay

1 Node

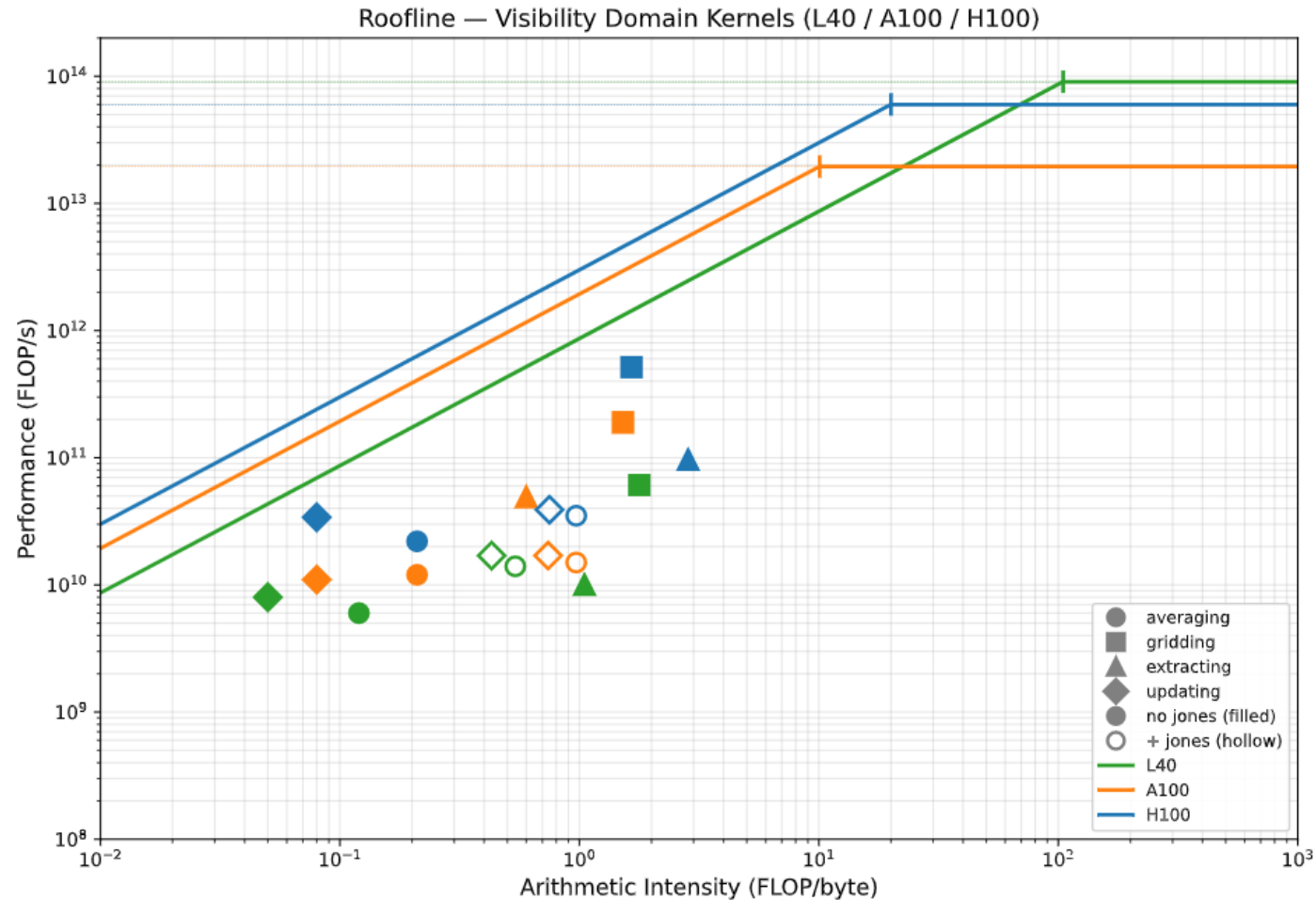


12 Nodes



Optimizing key components

Enabling composability and maximizing efficiency on individual components



Training and exploitation

🕒 Deliverable 6.1: Training Definition

🕒 First training session organized at BSC in March 2026



Work Package	WP6 – Training Strategy Definition document
Lead Authors (Org)	Damien Gratadour (OP & CNRS)
Contributing Author(s) (Org)	Brice-Edine Bellon (INRIA), Christian Perez (INRIA), James D. Trotter (SIMULA), Guillaume Lechantre (GENCI), Pablo Fernandez (CSCS), Michelle Pate (NextSilicon), Chris Broekema (ASTRON), Maria Girone (CERN), Andy Morris (CERN), Raymon Oonk (SURF), Rosa M. Badia (BSC)
Due Date	31.12.2025
Date	22.01.2026
Version	Final

🕒 Link with external projects:

- Building up on eFlows4HPC: PyCOMPSs
- Exchanges with SPECTRUM and RadioBLOCKS
- Joint webinar with RI-SCALE (and discussions on reusing iTwinAI solutions)
- Need more collaboration

Dissemination

- 2 public webinars (+1 to come)
- Several video interviews
- Open science workshop

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The ODISSEE project is pleased to invite the scientific and technical ...more

2026 ODISSEE Open Science Talks Agenda • 8 pages

ODISSEE Annual Consortium Meeting | CERN

20-21 January 2026

Join us online for our open science talks on dark matter, radio astronomy, and big data

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"Modern radio telescopes and modern particle physics experiments generate vast amounts of data and processing that data requires real-time systems, which is extremely challenging." — Dr. Andrew Siemion, SETI Institute, University of ...more

DR. ANDREW SIEMION
DIRECTOR AT UNIVERSITY OF CALIFORNIA, BERKELEY SETI RESEARCH CENTER

Modern radio telescopes, modern particle physics experiments generate vast amounts of data

is meeting - interview with Andrew, Matthieu and Maria

8 others

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"Today, power usage by CPUs, and especially GPUs, is reaching levels that can no longer be ignored." — Julita Corbalán, CTO at EAR. ...more

JULITA CORBALÁN
CTO OF EAR

0:59 1x

ODISSEE interview with Julita Corbalán, CTO at EAR

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Last week, the ODISSEE project consortium met at CERN for three intense and inspiring days devoted to discussions on #science, #collaboration, and planning the next steps of the project. ...more

Where data becomes knowledge
2026 ODISSEE All hands meeting at CERN

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- First all hands meeting @CERN
- Promotional video in the making
- ~500 LinkedIn followers
- 2 conference papers (+3 in prep.)

THE CERN DATA CENTRE - Where data becomes knowledge
LE CENTRE DE CALCUL - Des données à la connaissance

Where data becomes knowledge

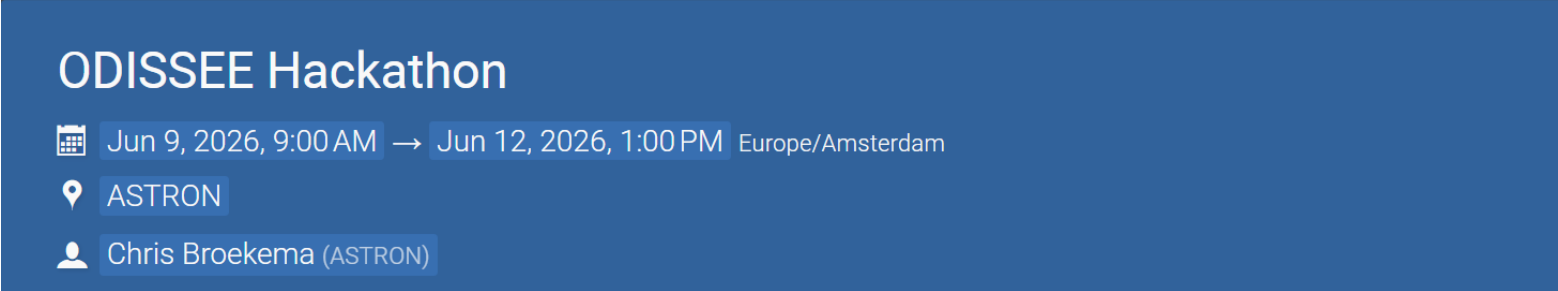
2026 ODISSEE All hands meeting at CERN

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Upcoming Events

○ Hackathon @ Astron (June 2026)



ODISSEE Hackathon
📅 Jun 9, 2026, 9:00 AM → Jun 12, 2026, 1:00 PM Europe/Amsterdam
📍 ASTRON
👤 Chris Broekema (ASTRON)

- GPU acceleration
- Integration of networking stack on NextSilicon technology

○ Hackathon @ Obs. Paris (Oct. 2026)

- Main focus on GPU acceleration
- Joint event with other initiatives (ECLAT lab, SEAMS Fr-CH project, Breakthrough Listen, SARA0)
- Fostering EU & international collaborations

○ 1-2 public webinars by end of year (TBC)

Conclusions & Next Steps

- Significant progresses
- First key demonstrations for radio-astronomy at scale
- EU technologies showcased through pilot experiments
- Accelerating developments through hackathons
- Training activities focused on sustainability goals
- Link with external projects to be consolidated
- More webinars / public events to come



ODISSEE

Online Data Intensive Solutions
for Science in the Exabytes Era

 [Odissee-project.eu](https://odissee-project.eu)

 [ODISSEE Project](#)

