Impacts on research communities

Training and Exploitation (WP5)

Stefano Salon

Bologna, 25 June 2024

TeRABIT Conference

Target and plan: users training and exploitation of federated RIs

Case studies

Enhancement of the **HPC-TRES (HPC Training and Research for Earth Sciences) network** coordinated by OGS with Cineca and the participation of research groups from CNR, INGV, CMCC, Politecnico Torino, ICTP

=> FIRST **USE CASE** proposed by OGS: “Urgent computing for seismic risk assessment” => next presentation

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Training of young researchers technologists

Organization of **2 workshops** with lessons on computing technologies, discussions and practical sessions
=> FIRST **WORKSHOP TOMORROW** in Room 216 (~40 participants, including 3 from Spoke0 of ICSC)
Organization of **1 hackathon** => the TeRABIT federated services will be tested and demonstrated by use cases proposed by the participants => end of project (2025)

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Master HPC and PhDs

Higher education: PhD and master HPC students who will become users of TeRABIT services
=> **GRANTS** co-funded in agreement with Univ. Trieste, Univ. Bologna, Univ. Milano-Bicocca, Univ. Firenze, Univ. Brescia, PolitecnicoMI, PolitecnicoTO, CNR-ISAC, CNR-ISMAR, SISSA

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Students

Next generations: lessons in national High Schools to present the TeRABIT project
=> Train young researchers and technologists of the **future**

Users training and exploitation plans: measuring impacts

Case studies

Key Performance Indicators (KPIs): n. of selected use cases, n. of applications deployed and tested on the Tier-1 system and on the HPC-Bubbles ecosystem, n. of applications testing federated services, results of applications performance tests, n. of relative ISCRA projects awarded and related node-hours allocated

Training of young researchers technologists

KPIs: n. of training events, n. of participants of training events, survey metrics

Master HPC and PhDs

KPIs: n. of master HPC fees awarded, n. of PhD grants awarded

Students

KPIs: n. of dissemination events (schools and other events for general public), n. of participants of workshops and hackathon, n. of accesses to the web page, social media statistics, n. of use cases presented at scientific events

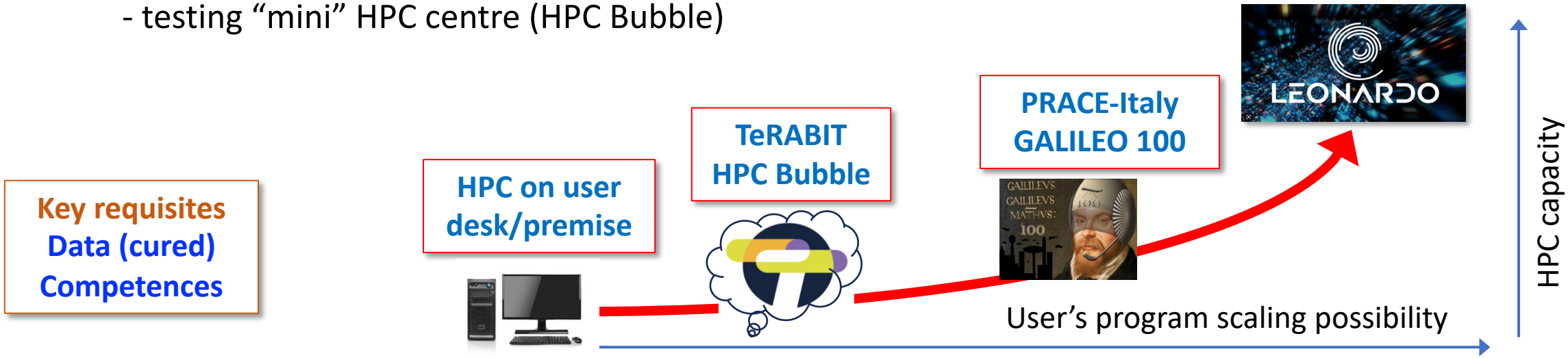
Training and exploitation activities (WP5) in short

- WP5 main outcome = **demonstration of project achievements through training and exploitation activities**
- **Training activities:**
  - benefit from the vast multi-disciplinary network covered by INFN, OGS, GARR and Cineca: diversity of user requests (researchers and technologists, PhD students, Master HPC students)
- **Exploitation activities:**
  - focus on selected use cases related to pilot users' research applications to exploit new federation capabilities of TeRABIT provided through the synergy of the 3 upgraded IRs
- **Dissemination** to potential users and general public (e.g. schools) is a strategic action of WP5 plans

Planned impact of the project: the user view

A **trained, unlimited, distributed access to HPC resources**:

- from lab, to PRACE-Italy, to ICSC-Leonardo (EuroHPC)
- testing cloud-HPC interaction
- testing “mini” HPC centre (HPC Bubble)



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A **new access mode to services**: HPC, VMs, urgent computing, analytics, ML, python notebooks, data storage, user support…

⇒ services can be made **available and customized** according to discipline, privacy/security level, data amount, computingand or storage request…

⇒ PRACE-Italy and INFN users will be among the first to exploit the new services and perspective **services composition**

⇒ Training and dissemination **in synergy with ICSC**

Planned impact of the project: the user view

- NOW: user logs in on PRACE-Italy Tier-1 (Galileo100) => AFTER: user will log in on the “federated marketplace” to exploit resources and services, hiding the complexity of the infrastructure behind
- TeRABIT is building up knowledge support (workshops, hackathons, training events, use cases…)
- **Project legacy:**
  - **Training and exploitation material: will remain after TeRABIT (open science)**
  - **Services built on Research Infrastructures: will remain after TeRABIT**

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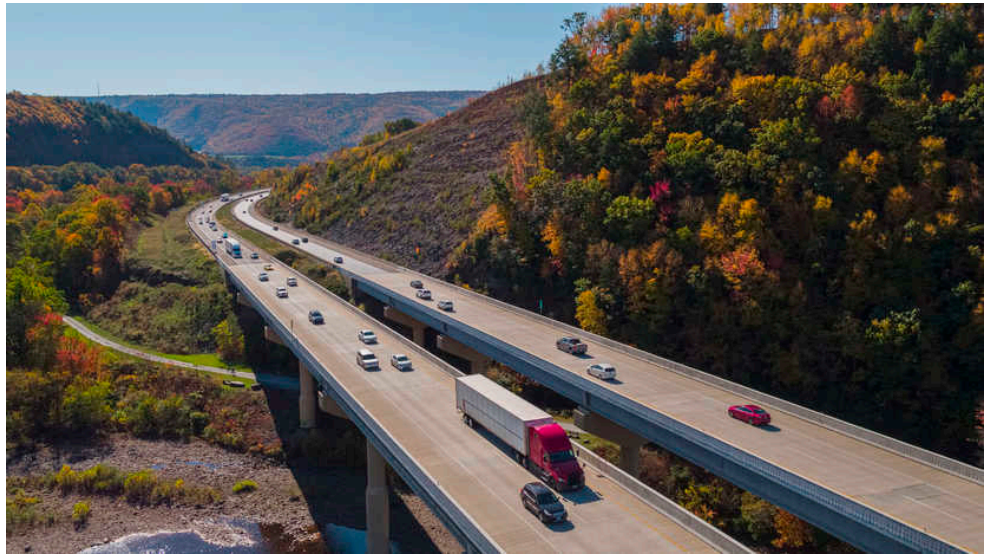

The highway is GARR-T

VANS are VMs on Cloud

BIG TRUCKS are INFN HPC Bubbles

FERRARI is Cineca HPC High-End

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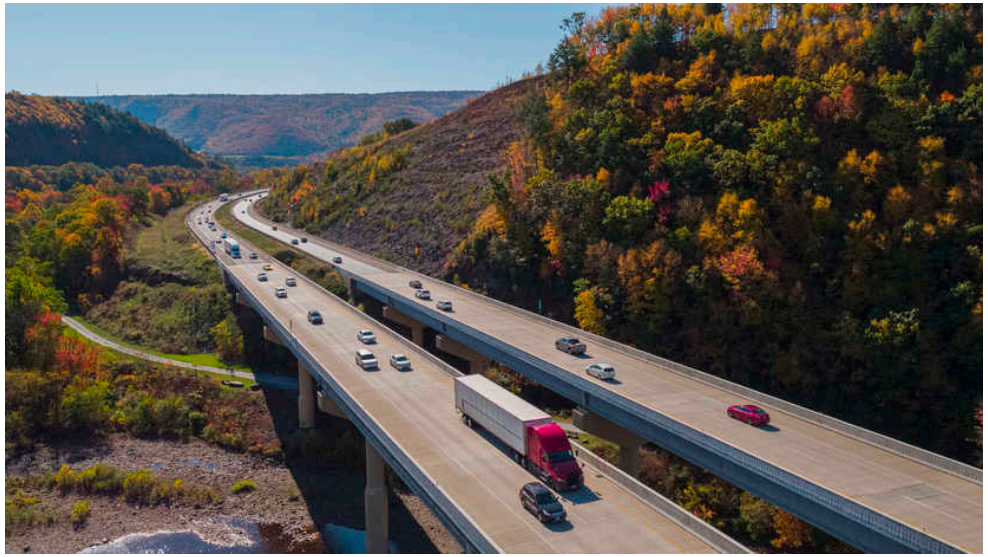

The highway is GAR

VANS are VMs on C

BIG TRUCKS are INF

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Thanks for your attention

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