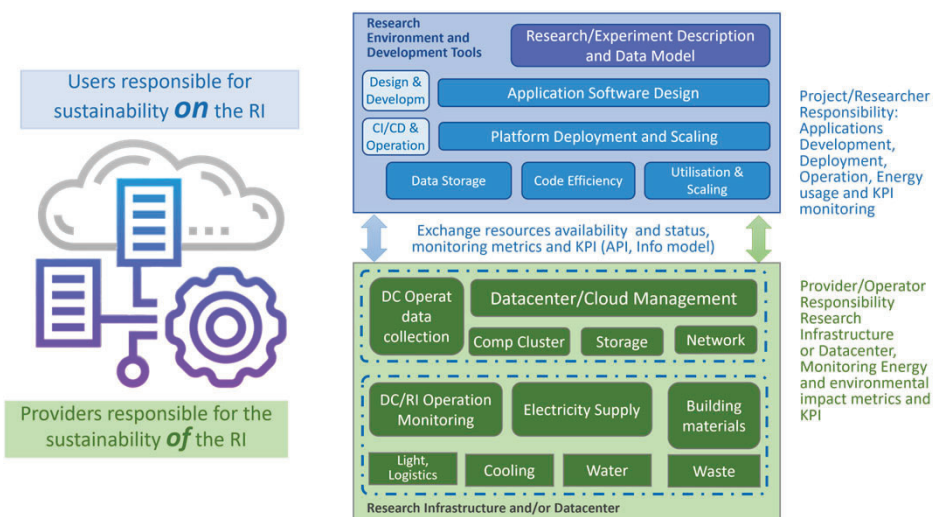


GreenDIGIT: Project and Initiative to Lower environmental Impact of the Future Digital Research Infrastructures

GreenDIGIT Consortium (GreenDIGIT Grant number 101131207)

GreenDIGIT Shared Responsibility Model



RI/Systems Sustainability by Design Aspects

Architecture for Sustainability by Design

Functional components, layers, API, Requirements
Software and application components that can be optimised during design and controlled during operation

Corresponding optimisation model to be proposed
Supported with VRE and IDE with sustainability awareness
Sustainability design patterns

Link and interaction between components via APIs

Green aware API including necessary energy, performance, environment information

Common information/data model and metadata (naming)

Including Requirements, KPI, Metrics
Verified with existing standards
Compliant with PUE and other KPI

Relations between the system/RI and software sustainability aspects to be defined

System related aspects: Lifecycle, Operation and Governance, metrics on energy and GHG

Sustainable RI and IT refers to the integration of environmental considerations into the design, manufacturing, use, and disposal of ITC products and services.

1. Software/Applications Sustainability: Building and using software applications in a manner activities that requires fewer resources

- Efficient coding practices that use less computational power.
- Cloud-based services that optimize server loads.
- Sustainable Architecture Design principles to ensure durable technical solutions

2. Energy Efficiency: Designing and using IT systems and infrastructures that consume less energy

- Energy-efficient data centers, Power-saving modes on devices.
- Energy-efficient cloud computing solutions.

3. Reducing Carbon Footprint: Minimizing the greenhouse gas emissions associated with IT

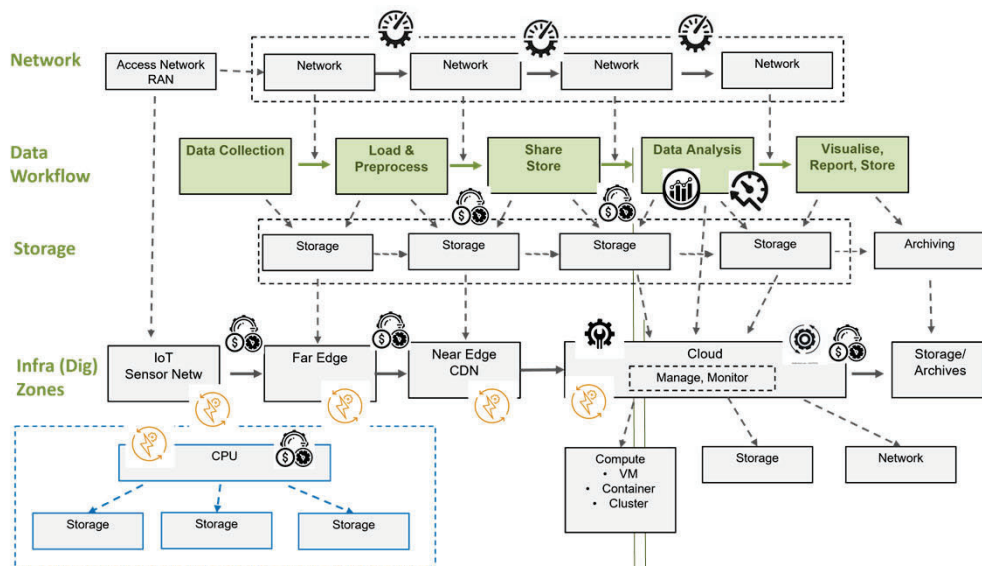
- The energy sources of data centers (e.g., transitioning to renewable energy).
- The carbon impact of IT supply chains.

5. Resource Management and Waste Reduction: Reducing the use of non-renewable resources in IT products and minimizing e-waste

6. Awareness, green practices and education and training

- GreenComp – Green competences framework for researchers published by EC in 2022

GreenDIGIT Digital Infrastructure Continuum and Optimisation Targets



GreenDIGIT Initiative: Community Engagement

Research Infrastructures Survey:

- The survey will collect information about practices, policies and solutions used by RIs to manage, monitor and optimise energy consumption, their sustainability policies and local conditions compliance.

Join: greenigit-survey@list.uva.nl

Embedding Sustainability aspects in Higher Education curricula:

- Identify and develop a set of curricula topics to support sustainable scientific application development and operation, facilitate effective use of energy saving technologies.

Join: greenigit-edu@list.uva.nl

GreenDIGIT Partners: European ESFRI Digital Research Infrastructure UvA (NL) - Coordinator

EGI (EU) and EGI Group

CESNET (CZ)
CNR (IT)
CNRS (FR)
CSIC (ES)
SZTAKI (HU)

SLICES-RI Group

SU (FR)
TUM (DE)
UTH (GR)
PSNC (PL)
MI (CH)

SoBigData Groups

CNIT (IT)
GSP (FR)

SOBIGDATA

EBRAINS EU

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