



UNIVERSITÀ DEGLI STUDI
DI NAPOLI "FEDERICO II"



Finanziato
dall'Unione europea
NextGenerationEU

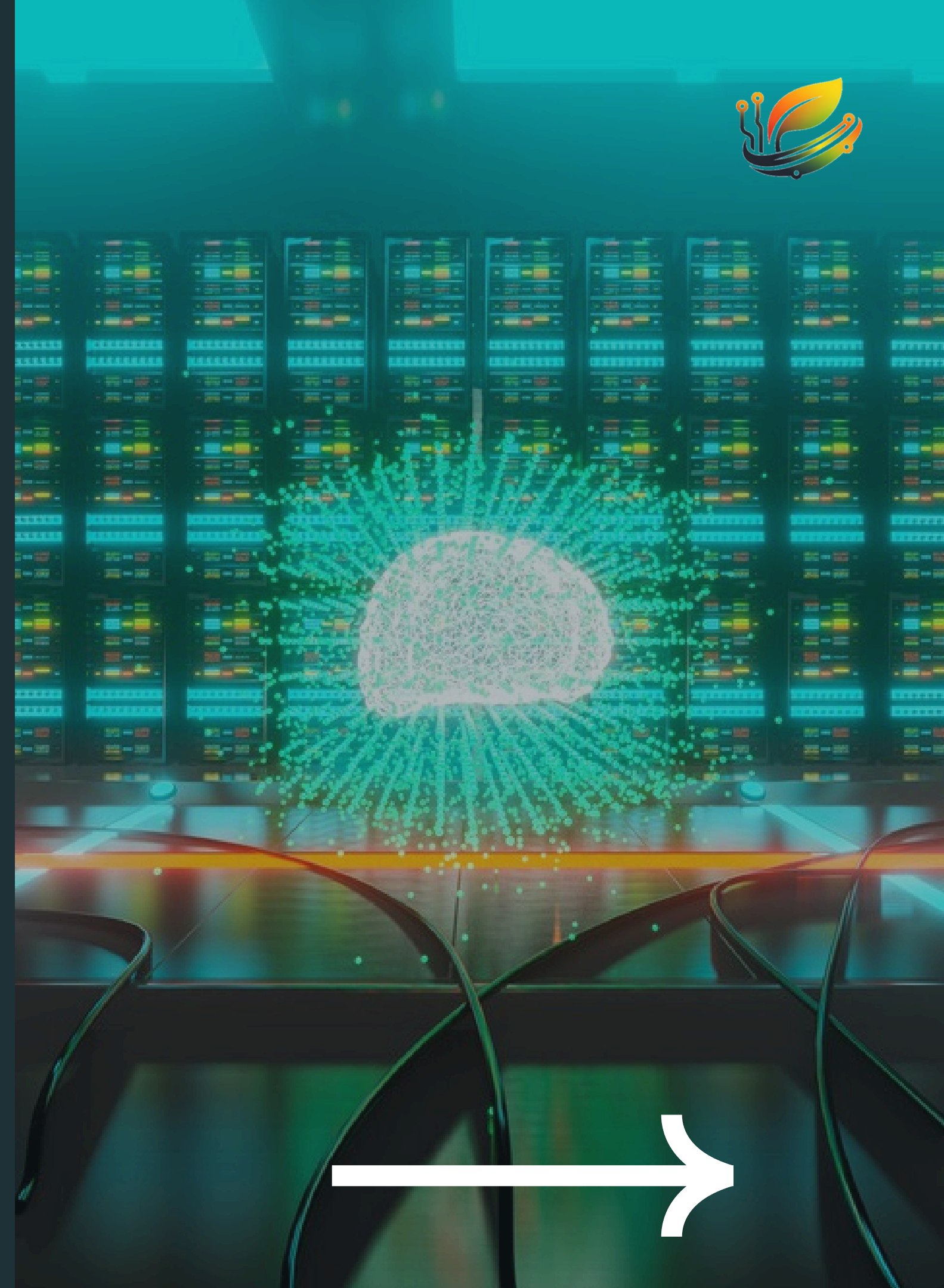
GAINS

Generative AI for Networks and Sustainability



GAINS
Generative AI for Network Sustainability

Italian applied research
to bring Generative AI
to Telco and Cloud
network operations
with measurable
sustainability KPIs and
replicable results in
industrial contexts.



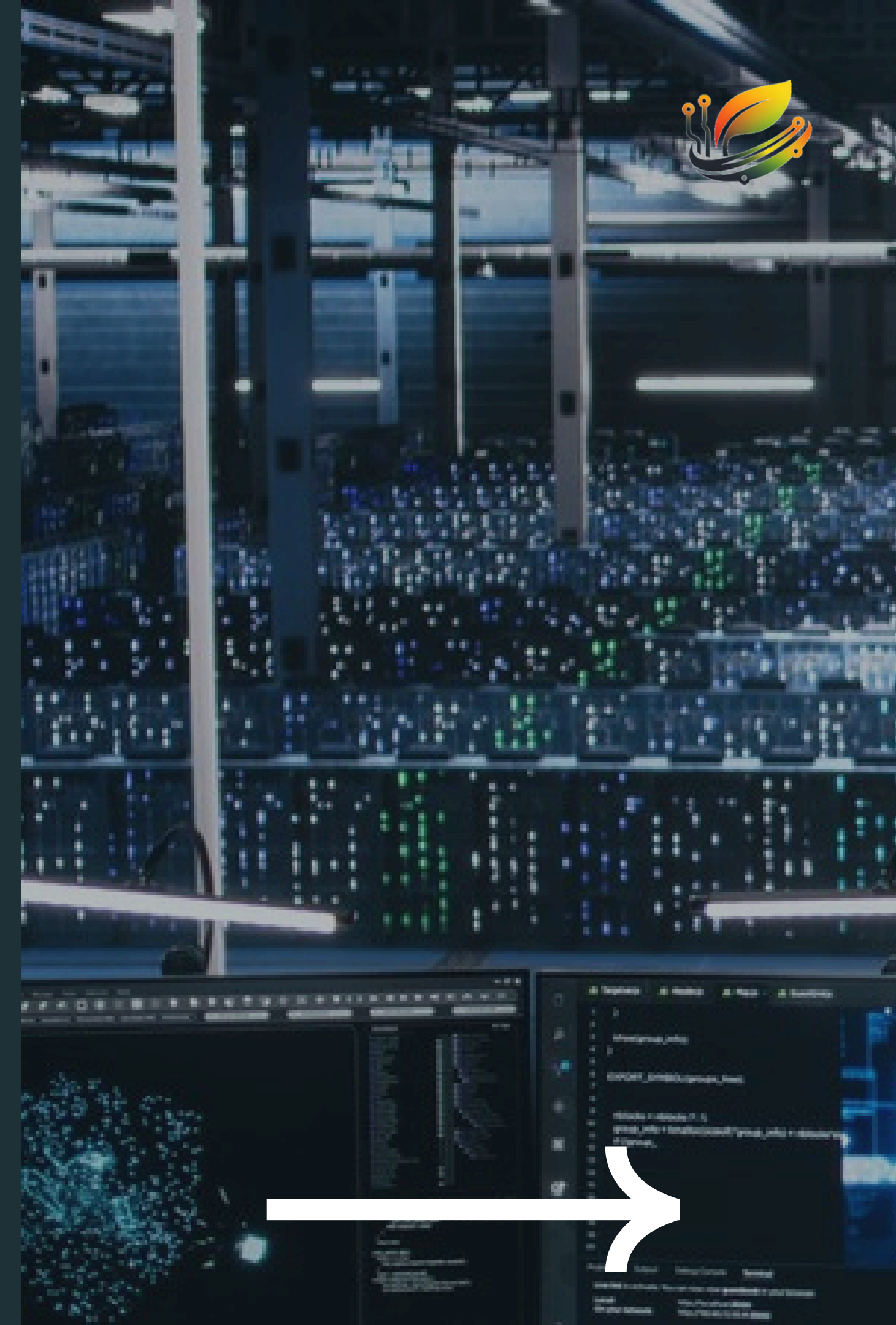


- SCIENTIFIC OBJECTIVE
- LA NOSTRA PROOF OF CONCEPT
- INDUSTRIAL REPLICABILITY BY DESIGN
- PROJECT DATA IN SUMMARY
- RESULTS AND MATERIALS



Scientific objective

Build an AI-based automation and decision support system that integrates heterogeneous sources and telemetry to generate standardized and sustainability-optimized deployments, complete with documentation and predictive monitoring.





Our Proof of Concept

Agent-based Control Plane with Augmented Generation Retrieval and human control over sensitive actions, structured on three agents:

1

Network Monitor:
anomalies, efficiency
KPIs, predictive trends
on consumption and
emissions

2

Network
Orchestrator:
Policy-aware
configurations and
deployment
procedures,
reducing manual
errors

3

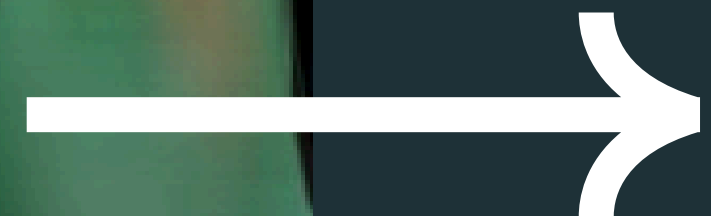
Knowledge
Manager: self-
updating technical
and procedural
documentation,
consistent with
processes and
SLAs





Industrial replicability by design

Modularity and separation of duties for independent upgrades, easy integration with existing infrastructures, validation on realistic model scenarios with functional and stress tests.



Project data in summary

Programma RESTART, Spoke 7 Green and
Smart Environments, finanziato
NextGenerationEU



Output 10 deliverables and 4 milestones
up to end-to-end evaluation of the proof
of concept

Core team of 8 researchers
RESTART ecosystem with 135
partners from industry and
research

Stakeholders and academic impact:
AI, networking, and sustainability
researchers and groups, the RESTART
community, and telco and cloud providers
interested in reproducible evaluation
protocols, attributable metrics, and real-
world technology transfer.

Duration:
8 months, TRL 1 to 4



Results and materials

gains.warian.net



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