



SUSTAIN-6G

Holistically integrating sustainability into the 6G ecosystem

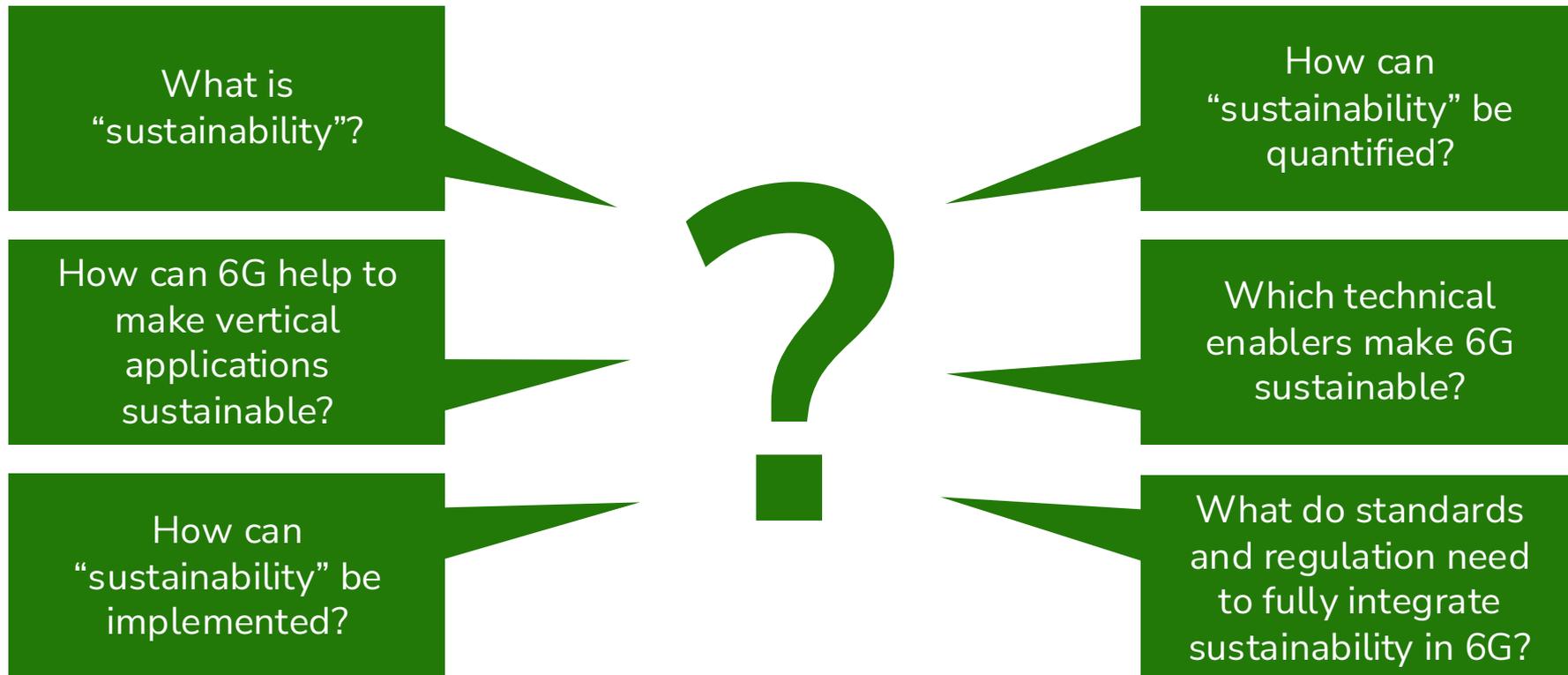
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Nokia

SUSTAIN-6G Coordinator

Motivation

Key questions on sustainability in the context of 6G



Defining sustainability

What is
“sustainability”?

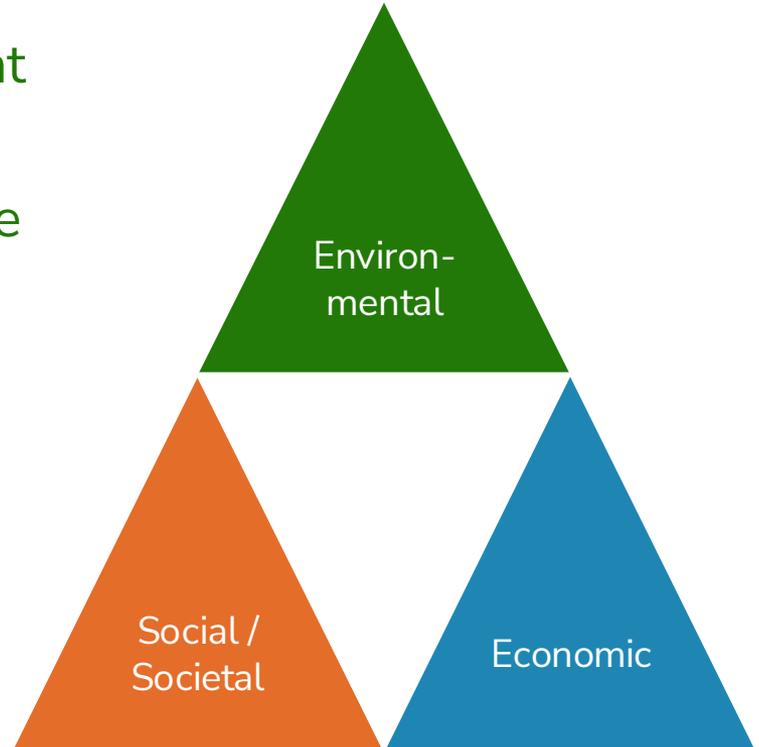
“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

United Nations

World Commission on Environment and Development

(Brundtland Commission)

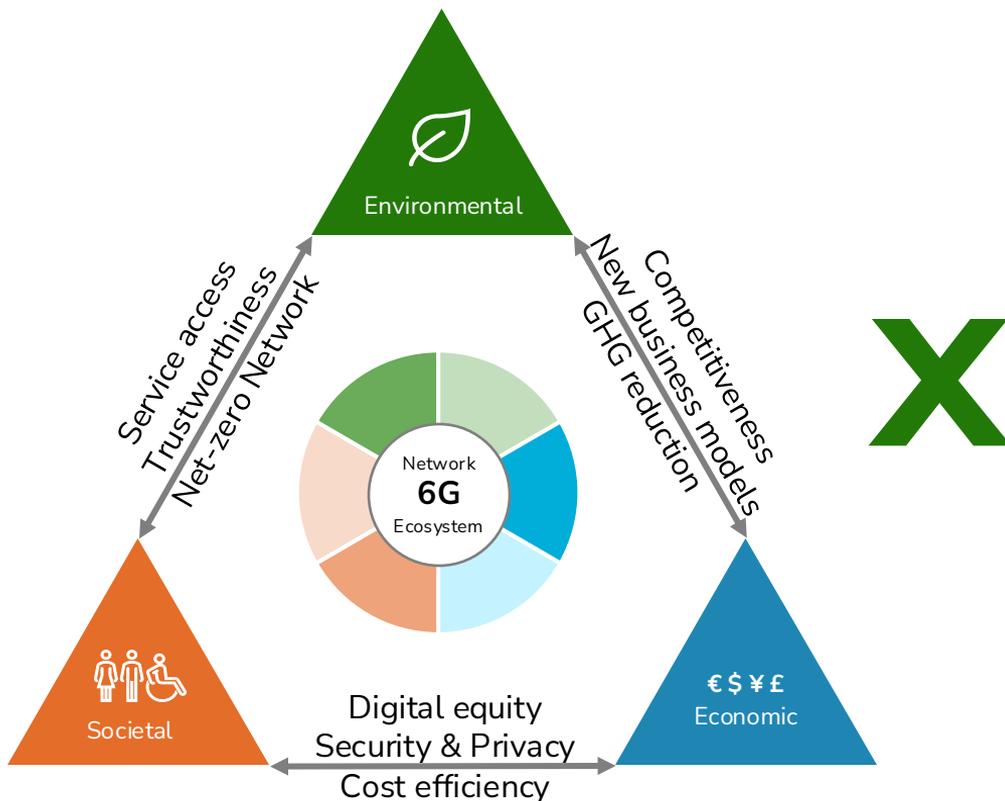
1987



Holistically addressing sustainability

The “Six Dimensions” in the context of 6G

How can 6G help to make vertical applications sustainable?
Which technical enablers make 6G sustainable?



“1st order” effect

- Sustainable 6G Technology
- Associated with the existence of an ICT based solution

“2nd order” effect

- 6G for Sustainable Applications
- Induced by the use and application of ICT based solutions

Sustainability by design

How can 6G help to make vertical applications sustainable?
Which technical enablers make 6G sustainable?

Sustainability must be intentionally embedded into the 6G design process from Day 1 to ensure that:

- 6G is a sustainable technology, and
- That it enables other industries to become more sustainable.

Energy efficiency & GHG efficiency



Reduce net GHG emissions & energy consumption for networks and UE

AI sustainability



Ensure AI-native in a responsible way, including governance and resources i.e. sustainability of AI for network

Hardware efficiency



Promote hardware efficiency through flexibility and adaptability, including resources sharing

Resilience and climate change adaptation



Make networks resilient to climate & natural disasters and volatile geo-political events

Value-oriented design and operations



Deliver technology enablers that benefit industries, people and the planet through ubiquitous access and digital inclusion

Sustainability Values

KVI framework

Process to define, analyse, assess sustainability in ICT

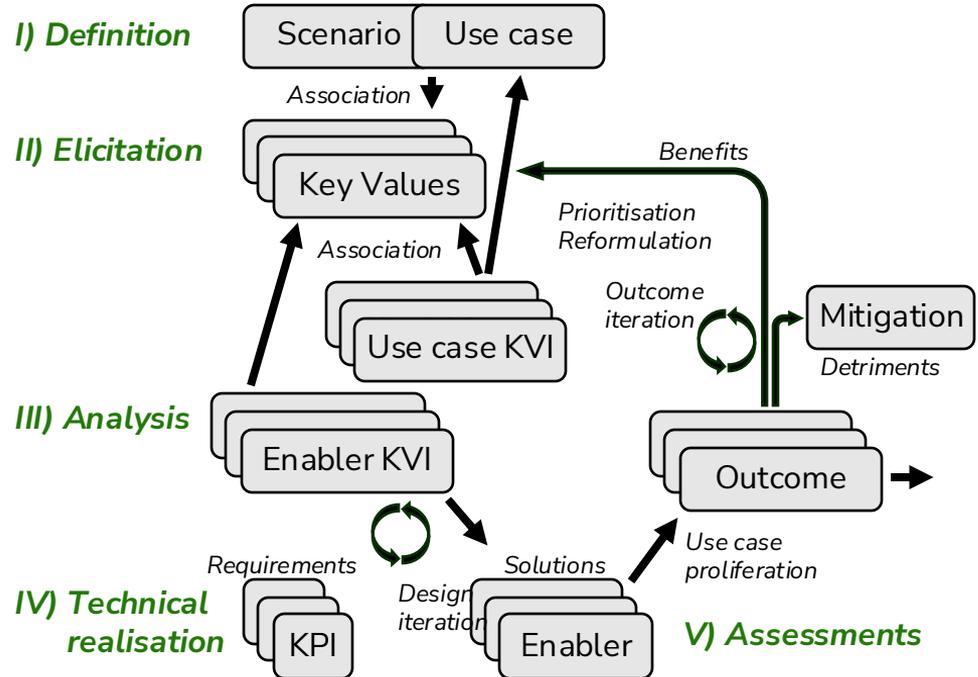
How can
"sustainability"
be quantified?

Key Values (KV):

- Principles or qualities that individuals or groups deem important, desirable, ...

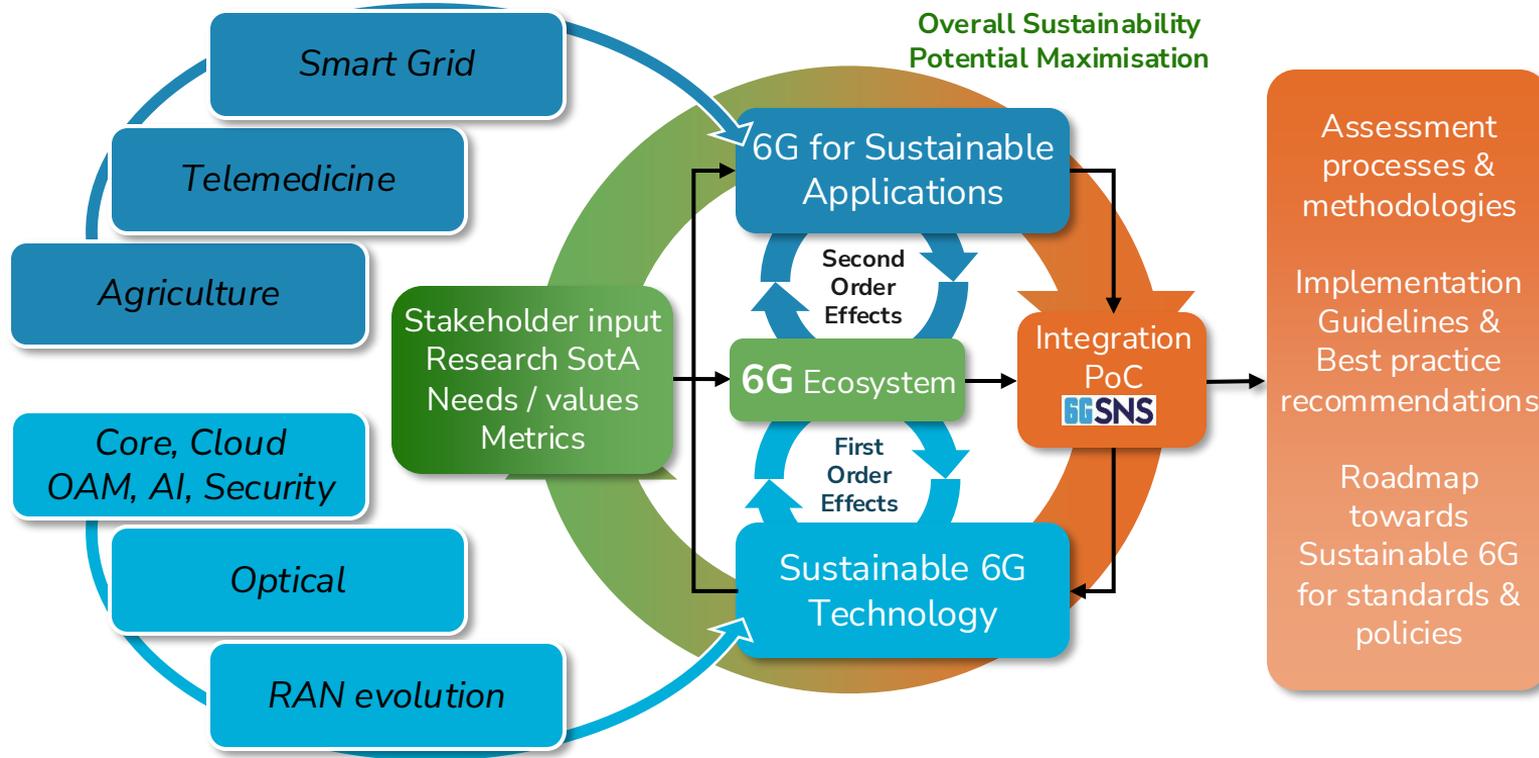
Key Value Indicators (KVIs):

- Qualitative / quantitative indicators for KVs
- To align outcome and impact against objectives



Project approach

How can sustainability be implemented?
What do standards and regulation need to fully integrate sustainability in 6G?



Facts & Figures

SUSustainability Advanced and Innovative Networking with 6G

Project Management

- **Coordinator: Christoph Schmelz, Nokia, DE**
- Technical Manager: Olivier Bouchet, Orange, FR
- Innovation Manager: Anastasius Gavras, Eurescom, DE

Timeline

- 01.01.2025 – 30.06.2027 (2.5 years)

Consortium

- 24 partners from 10 European countries
- 7 telecommunication (operators and manufacturers), 4 large vertical industry, 5 academia (universities and research institutes), 8 SME (vertical and telecommunication sectors)

More

- EU Call: [SNS-2024-STREAM-B-01-07 Sustainability Lighthouse](#)

-  <https://sustain-6g.eu>

-  <https://www.linkedin.com/company/sustain-6g/>

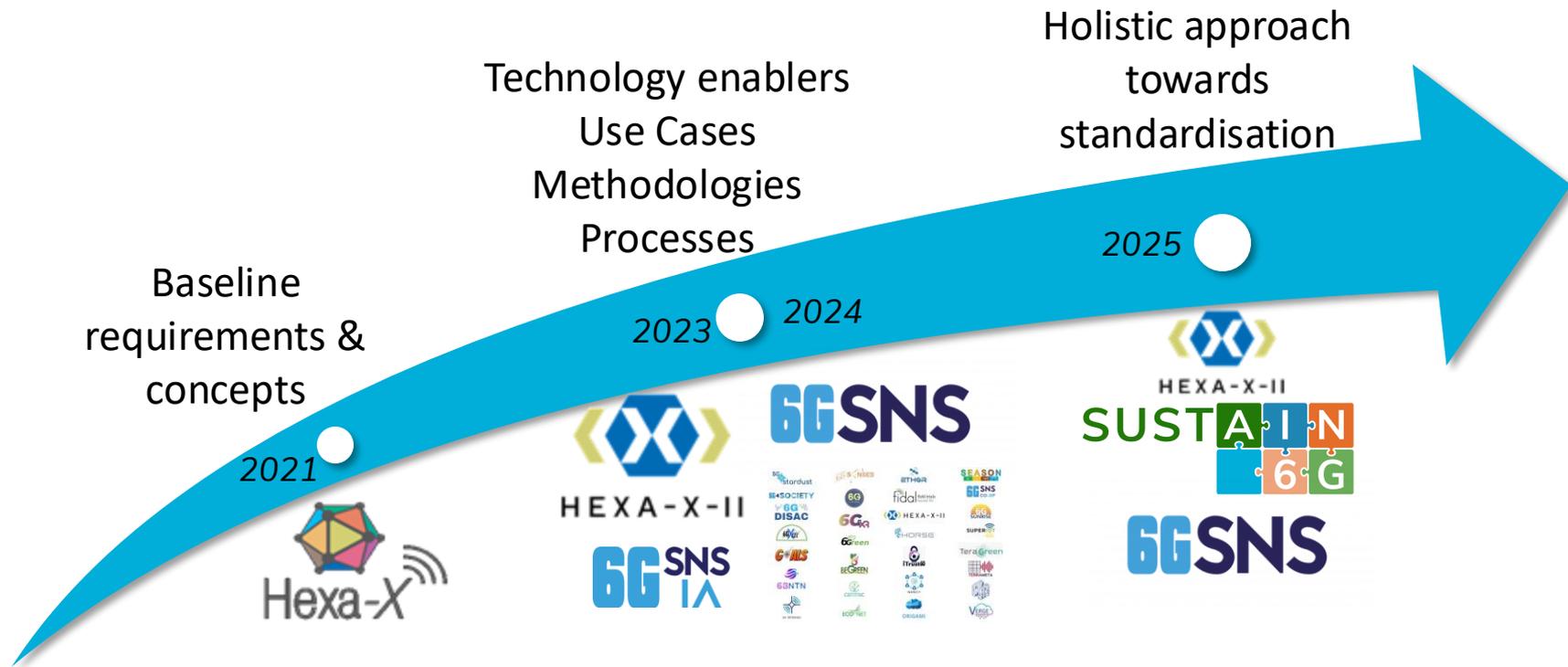
-  <https://www.youtube.com/@SUSTAIN-6GProject>

-  <https://cordis.europa.eu/project/id/101191936>



From EU Horizon 2020 to SNS JU

Sustainability



Sustainability is much more than energy efficiency
But includes topics from 6 dimensions that ICT can address

Sustainability requires interdisciplinary expertise
From ICT, vertical sectors, social & economic sciences, ...

Sustainability goes beyond standards
But requires implementation efforts & policy support

Register to the SUSTAIN-6G Newsletter!

<https://sustain-6g.eu/contact/>

SUSTAIN 6G



Disclaimer: This work is Co-funded by the European Union under Grant Agreement 101191936. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of all SUSTAIN-6G consortium parties nor those of the European Union or the SNS JU (granting authority). Neither the European Union nor the granting authority can be held responsible for them.

