SUSTAIN-6G

SUSTainability Advanced and Innovative Networking with 6G

The European Lighthouse project

Facts & Figures

Call

- [EU HORIZON-JU-SNS-2024-STREAM-B-01-07 Sustainability Lighthouse]

Project Management

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

Timeline

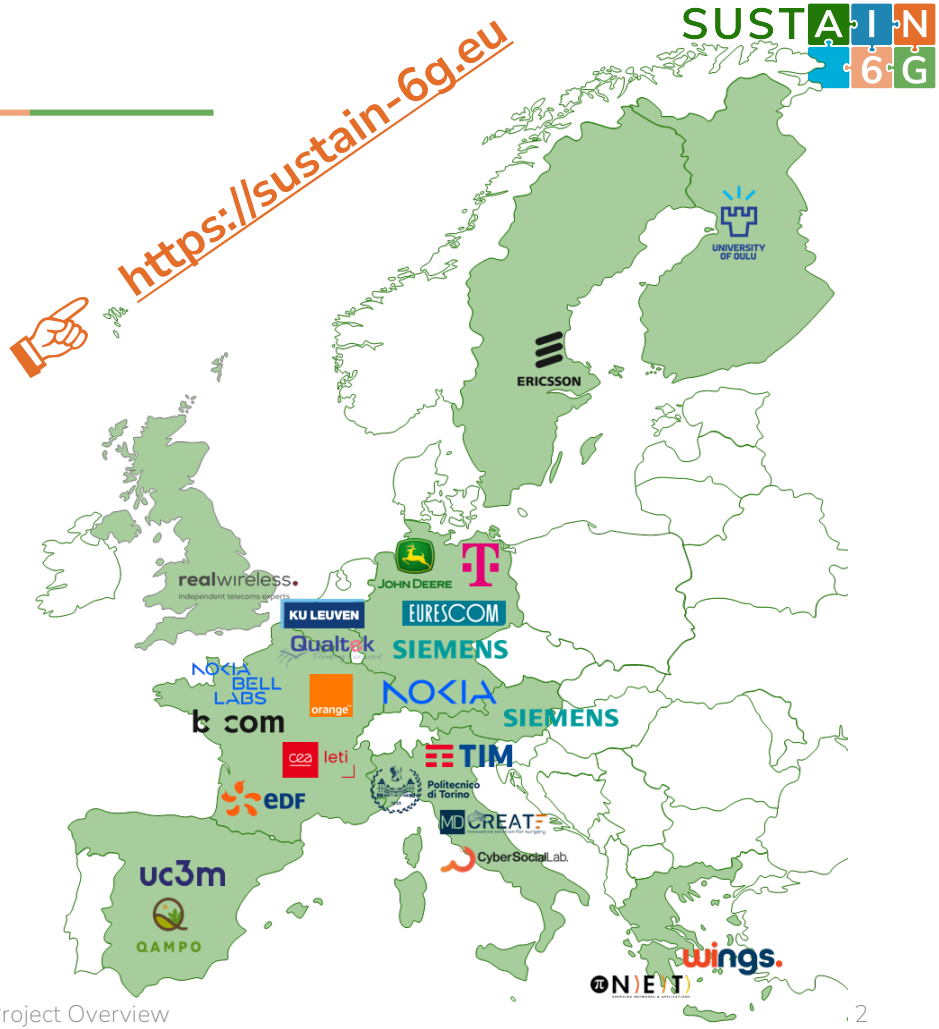
- Project start: 1.1.2025
- Project runtime: 2.5 years (– 30.6.2027)

Consortium

- 24 partners (7 Telco, 4 Industry, 5 academia, 8 SME)

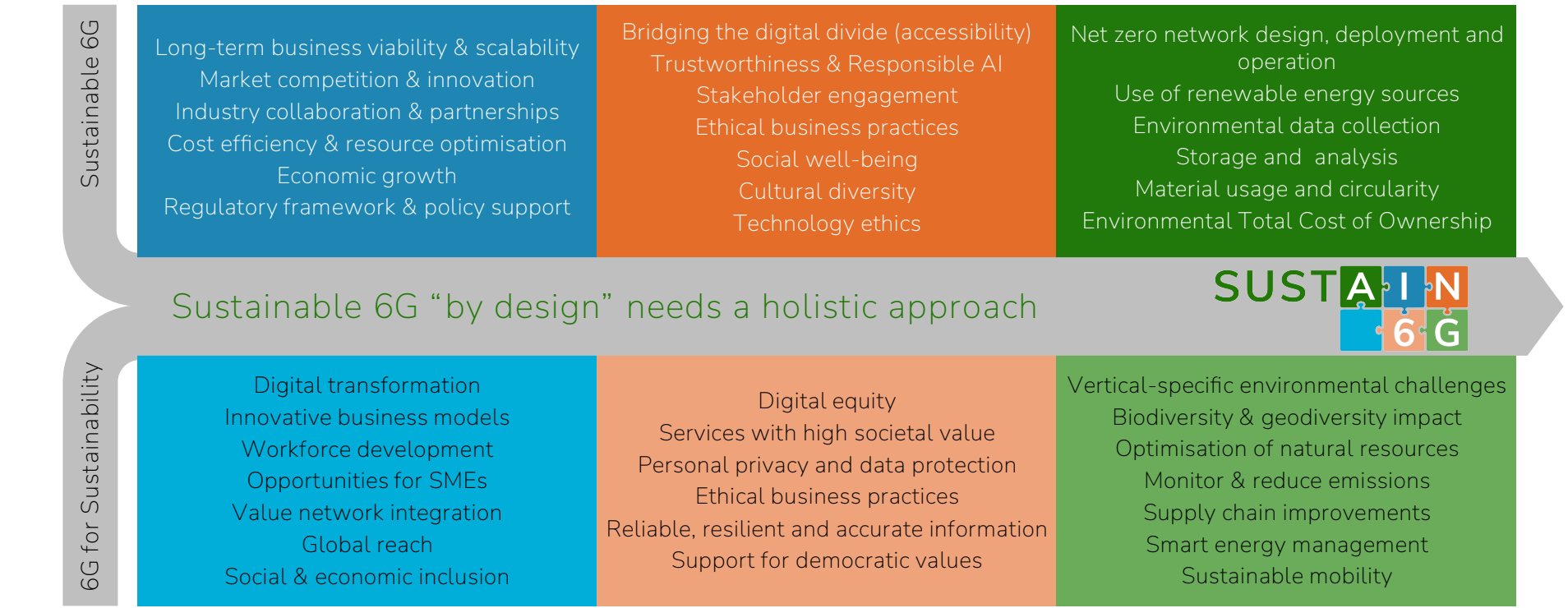
Budget & Effort

- Total funding: 13 M€
- Total effort: ~40 full-time contributors over runtime



Approach

The “Six Dimensions” of Sustainability in the context of 6G



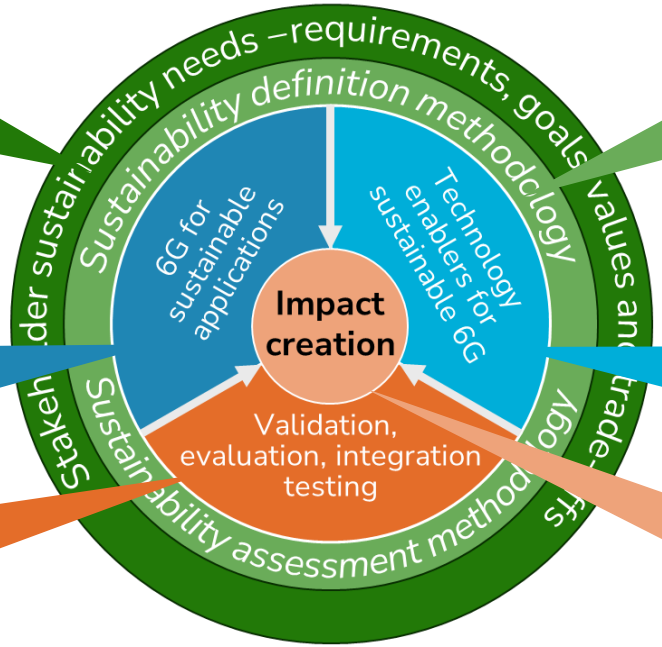
Objectives & expected outcome

Sustainable 6G "by design" needs to look at the whole ecosystem

Sustainability needs: address environmental, societal, economic goals and values of stakeholders

6G for Sustainability E2E ICT – Vertical interworking: e-health, agriculture, smart grid

Guidelines + best practice recommendations for 6G design & implementation



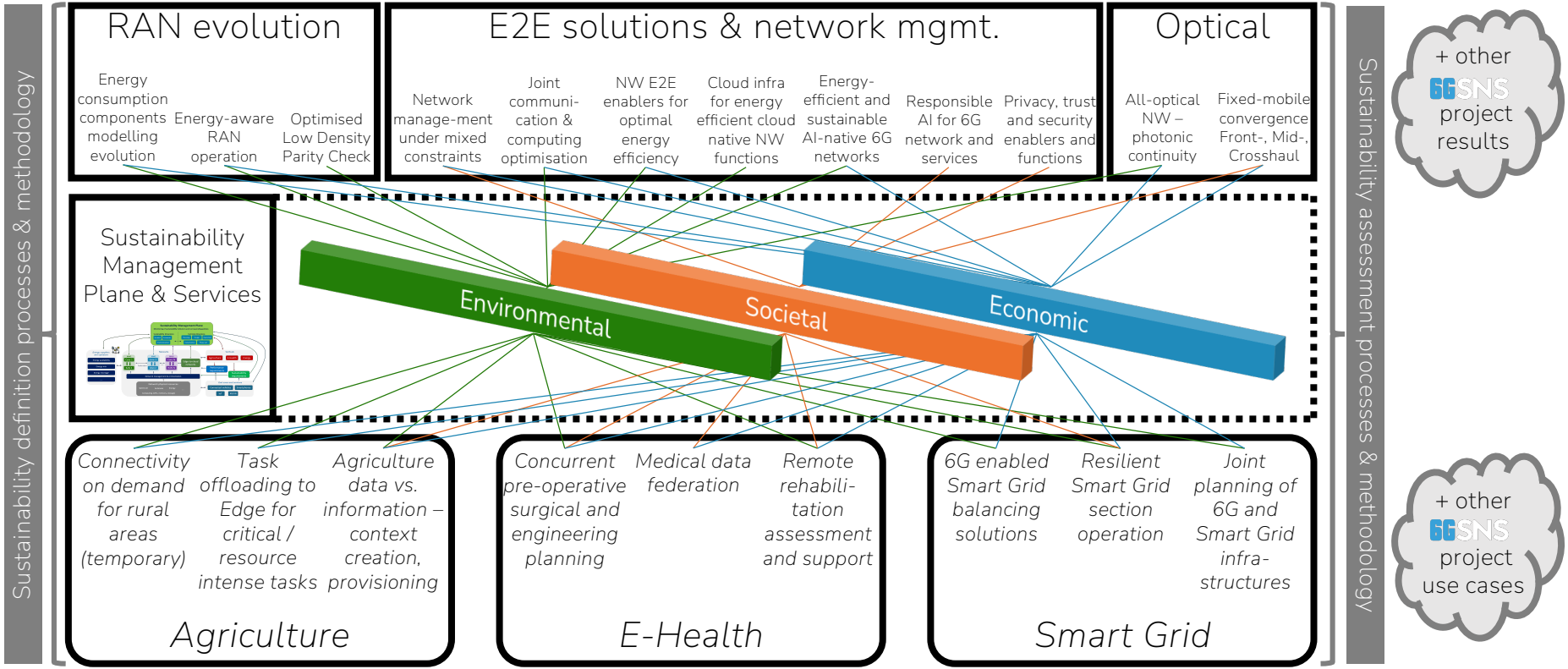
Standardised definition and assessment of *sustainability metrics* quantification

Sustainable 6G RAN energy saving, AI/ML, OAM, Core/Cloud arch., Optical, Security

Strategic roadmap for regulation, policies, standardisation towards 6G sustainability by design

Technology domains & vertical scenarios

Key interrelations with sustainability dimensions



Work Package Structure

In relation to project objectives

PoC integration testing, validation, evaluation

Request to SNS projcts

SUSTAIN-6G Objectives:

- PoC Integration testing, evaluation, E2E evaluation of key technical solutions and use cases with sustainability impact – including promising SNS Phase 1+2 technologies with targeted sustainability objectives / values
- Developing synergies towards a set of best practice recommendations and guidelines

→ SUSTAIN-6G will reach out to other projects (or already has) to get baseline information, reference to documentation, and contacts

→ Follow-up actions (e.g., detail questionnaire, or a dedicated workshop) will be planned based on the acquired input / information

Please support SUSTAIN-6G to consolidate SNS sustainability efforts!

Contacts: Olivier Bouchet (TM, Orange) & Albert Banchs (UC3M, PoC lead)

SUSTAIN 6G

https://sustain-6g.eu

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

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

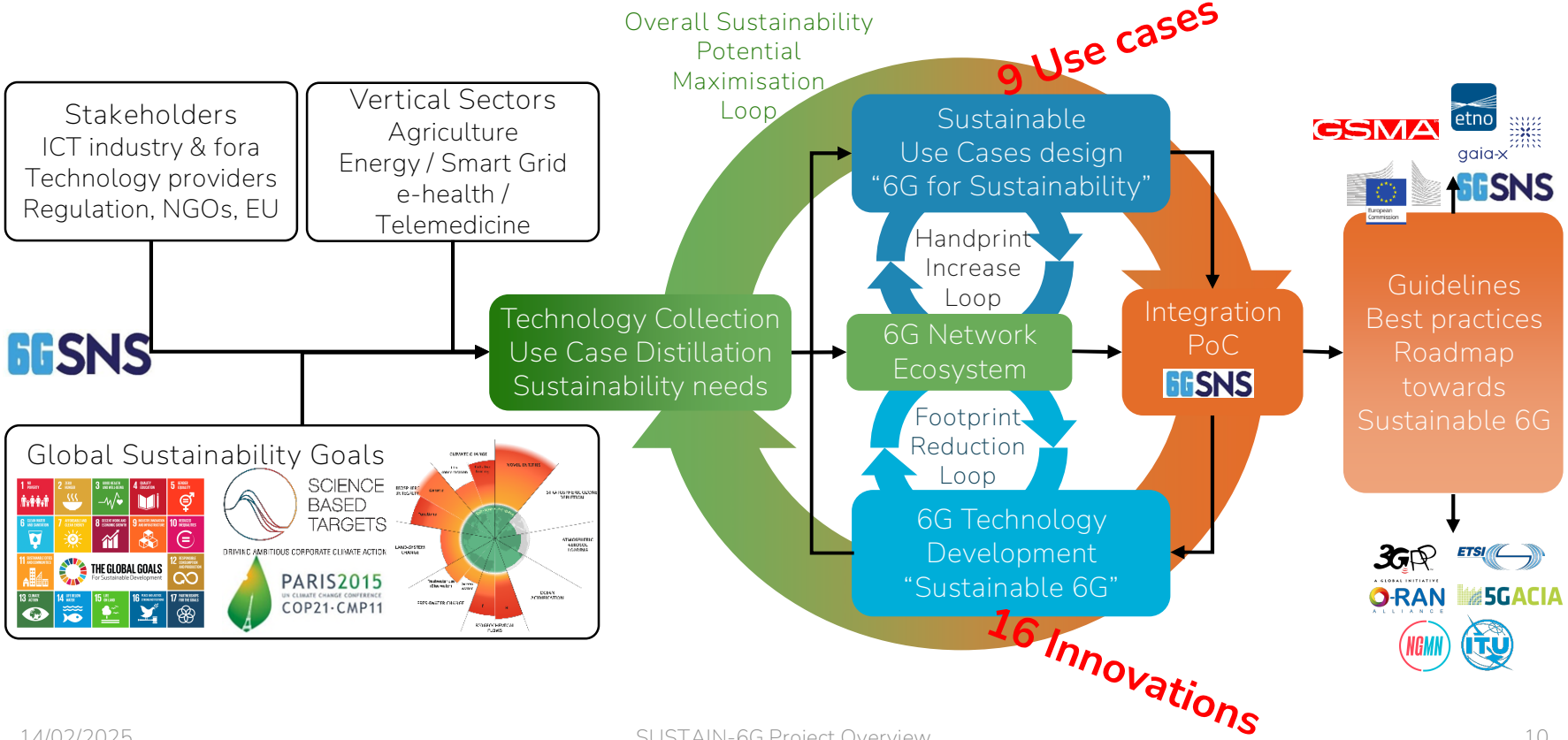
https://cordis.europa.eu/project/id/101191936

Objectives

1. **Identify and understand sustainability needs and values**
   Review, consolidate and define sustainability goals, values, indicators based on stakeholder requirements
   Build a comprehensive inventory of 6G and relevant vertical UCs' concepts, technologies, components including their relevant KPIs and sustainability indicators
2. **Define methodologies for sustainability definition and assessment**
   Review and enhance concepts, processes, methodologies, and tools for holistically defining and assessing sustainability
3. **Enhance integration of vertical UCs with 6G to jointly reduce footprint and maximise handprint**
   Analyse, develop and deliver vertical UCs integrating 6G and enabling technologies to improve sustainability values
   Develop and deliver Sustainability Management Plane (SMP) to enable E2E integrated sustainability-driven operation across network and vertical domains
4. **Enhance 6G technologies to reduce footprint and increase handprint**
   Develop and deliver solutions and enhancements for selected 6G technologies and components towards sustainability improvements, by reducing 6G footprint and increase handprint in vertical sectors
5. **Validate, evaluate, and demonstrate sustainability value**
   Validate 6G technologies on their impact to sustainability (positive / negative)
   Evaluate and demonstrate methodologies, concepts, and solutions on applicability, implementability, and wrt. sustainability impact
6. **Impact generation, sustainability guidelines and strategic roadmap**
   Create impact through dissemination, standardisation, exploitation, by consolidating outcomes towards guidelines, best practices, business models and a strategic (standardisation and regulation) roadmap, to drive the development of 6G in a sustainability-integrated direction

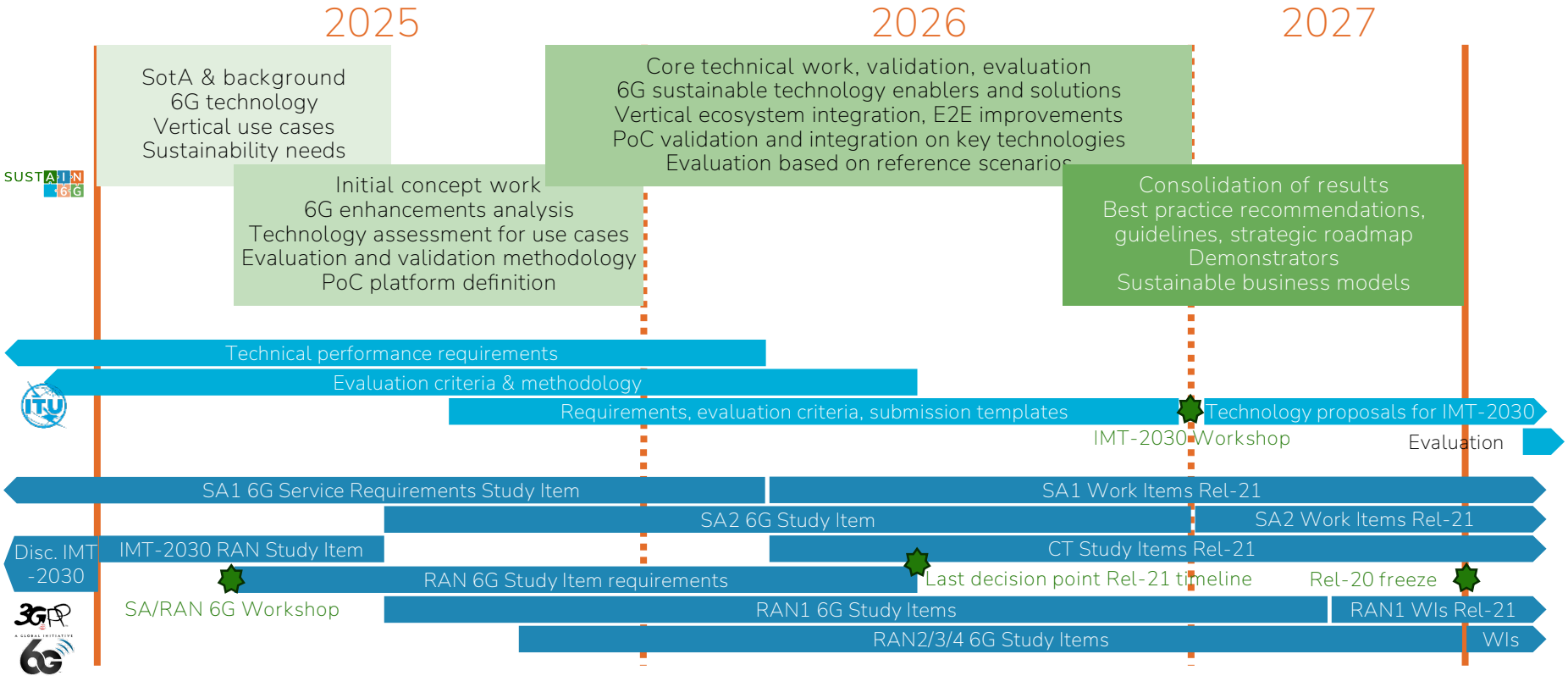
Methodology

Implementing the approach



Timeline

Project phases & Standards timeline (ITU and 3GPP)



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.