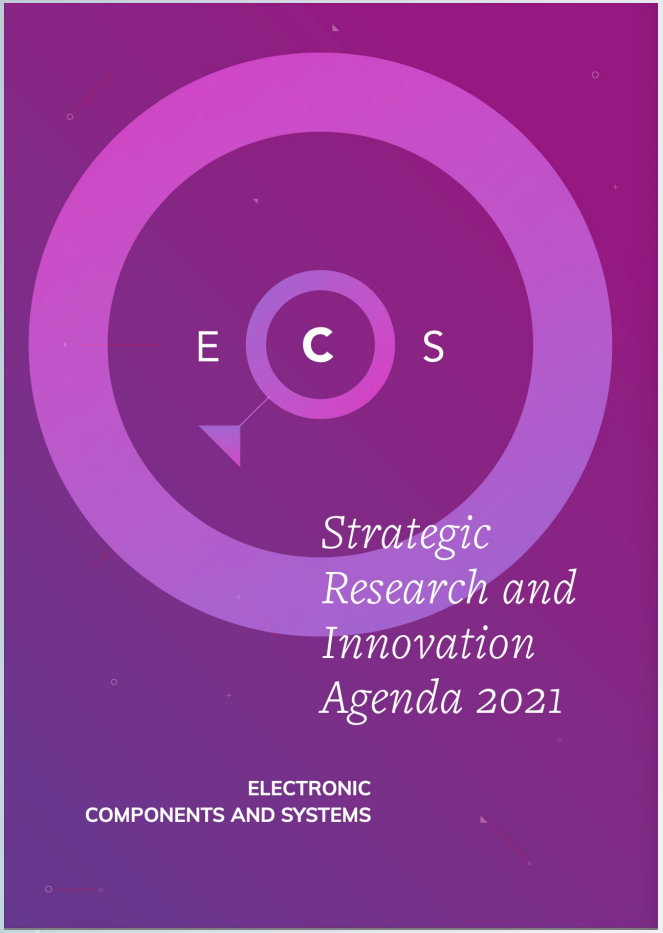


E C S

Electronic Components and Systems

ECS-SRIA 2021

OVERVIEW

ECS Brokerage Event

18 January 2022, online meeting

Paolo Azzoni
Chairman of ECS-SRIA 2022

The ECS-SRIA

ECS
Electronic Components and Systems

The ECS Strategic Research and Innovation Agenda (ECS-SRIA):

- describes the major challenges and priorities,
- and the necessary R&D&I efforts to tackle them,
- in the area of the electronics components and systems, and systems of systems
- spanning the entire ECS value chain, from foundational and cross-sectional technologies to application domains.

Joint effort of the 3 Industry Associations

- AENEAS, EPOSS and Inside-IA,
- with a core team of 12 members, 53 chapter leaders,
- and the involvement of more than 300 experts from the ECS community.

Aeneas EPoSS European Technology Platform on Smart Systems Integration Inside Industry Association

Funding-programme agnostic document looking 15 years ahead.

The ECS-SRIA is the reference document for:

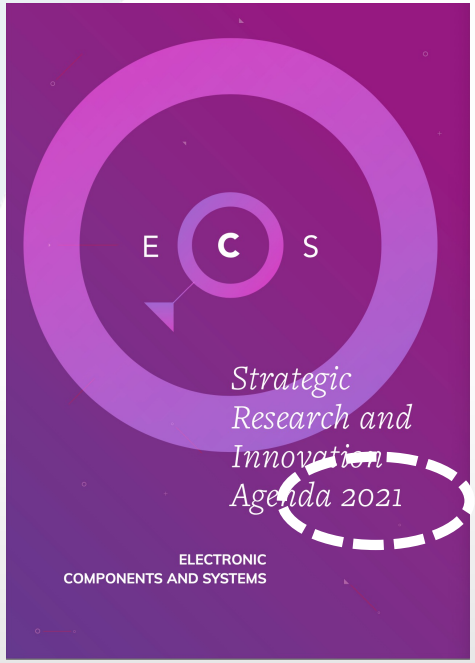
- KDT (previously ECSEL), the KDT JU adopts the ECS-SRIA as the KDT-SRIA,
- EUREKA Clusters (e.g. Xecs).

ECS COLLABORATION TOOL

https://ecscollaborationtool.eu/news-overview/news-ecs-sria-final.html

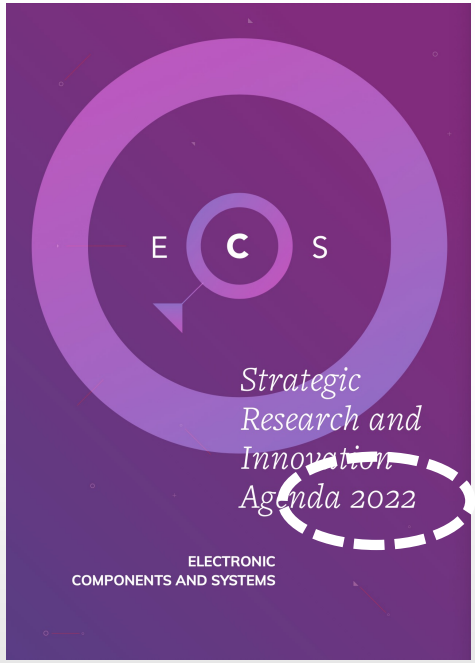
ECS-SRIA 2021 vs 2022

- Edited in 2020
- Published in January 2021



KDT-SRIA 2021

KDT Call 1 (16/12/2021)

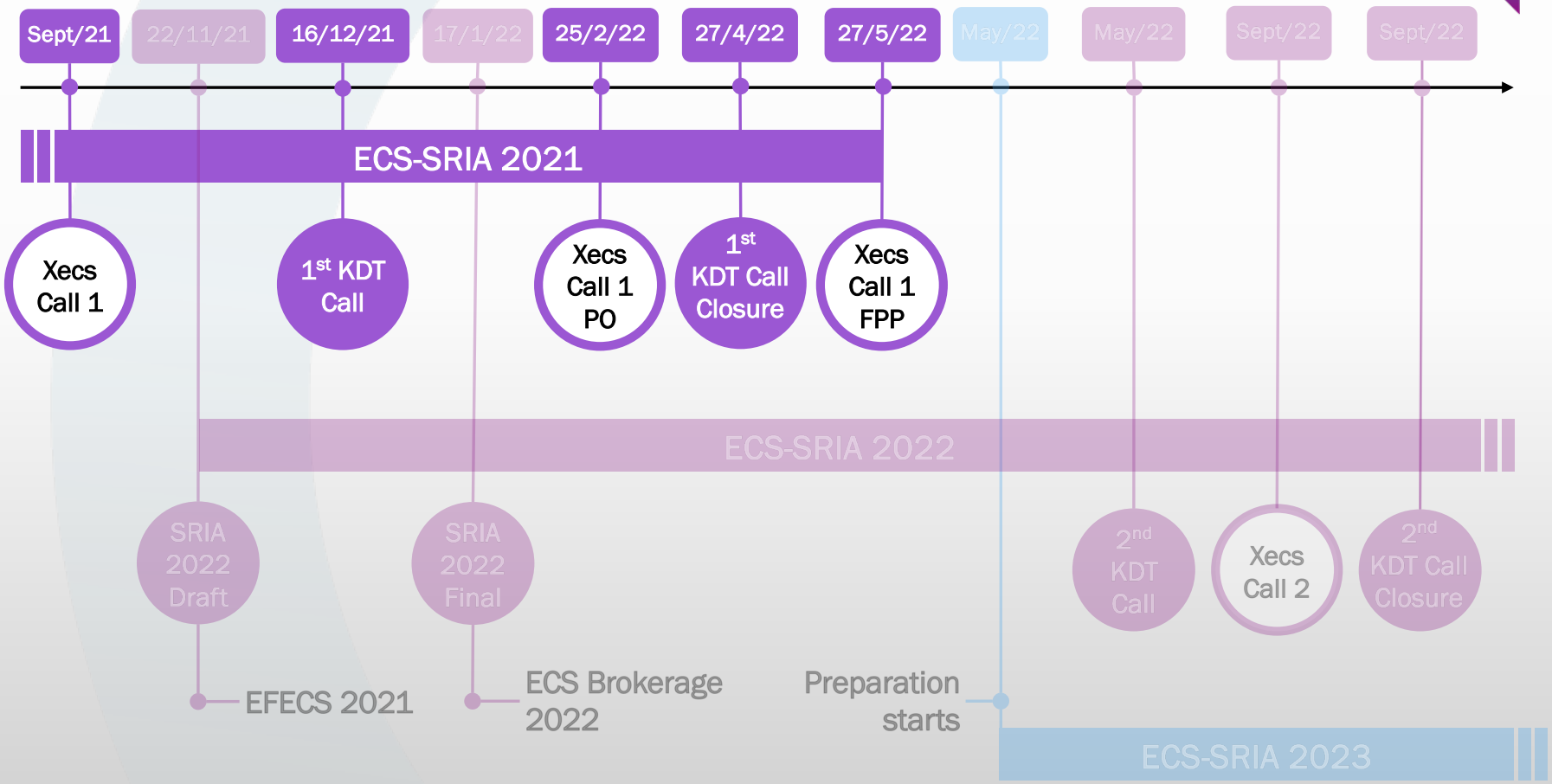


- Edited in 2021
- Published in January 2022

KDT-SRIA 2022

KDT Call 2 (05/2022)

ECS-SRIA 2021 Timeline



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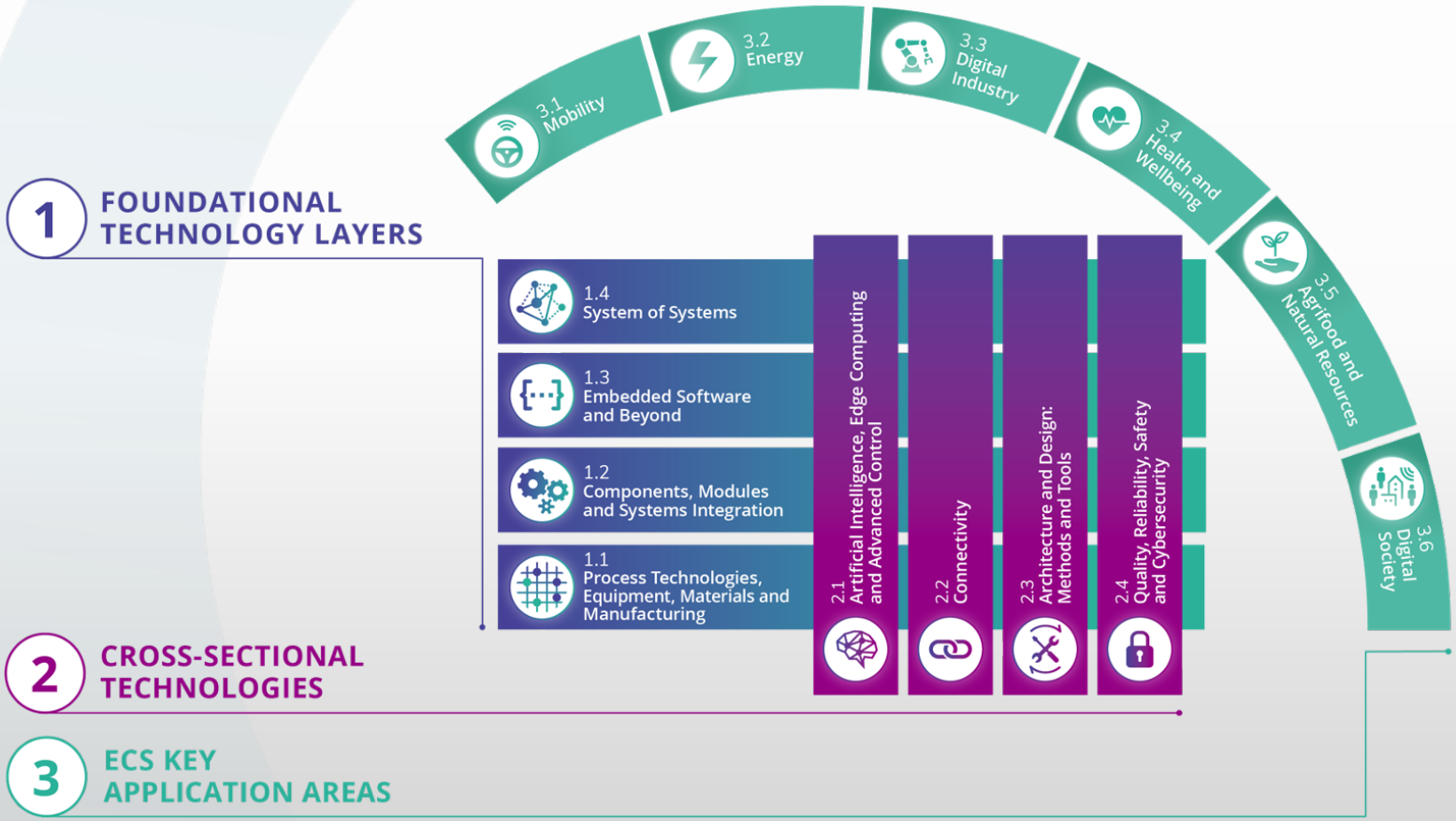
ECS-SRIA 2021: what is new?

- New Structure
- Analysis of all Major Challenges allowed identification of 5 Main Objectives
- Global Timelines (short term, mid term and long term)
- Broadened Scope (Integrated photonics; flexible electronics topics; higher layers of software)
- New introduction, that guides the reader through the SRIA
- Updated Long Term Vision Chapter
- Common Glossary (SRIA definitions of specific terms)

ECS-SRIA structure



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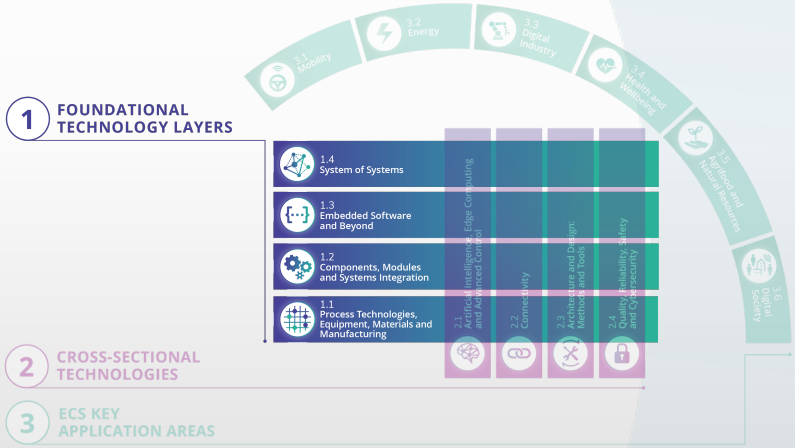
Foundational technologies

The **Foundational Technology Layers** cover the **technology stack** of a typical digitalization solution based on ECS.

They have **hierarchical dependencies**, due to the inherent nature of ECS and the way they compose and integrate in complex entities.

Essential to creating the main components of a digitalization solution.

Represent a very **fertile ground** where new **interdisciplinary** technologies, products and solutions can grow.



Cross sectional technologies

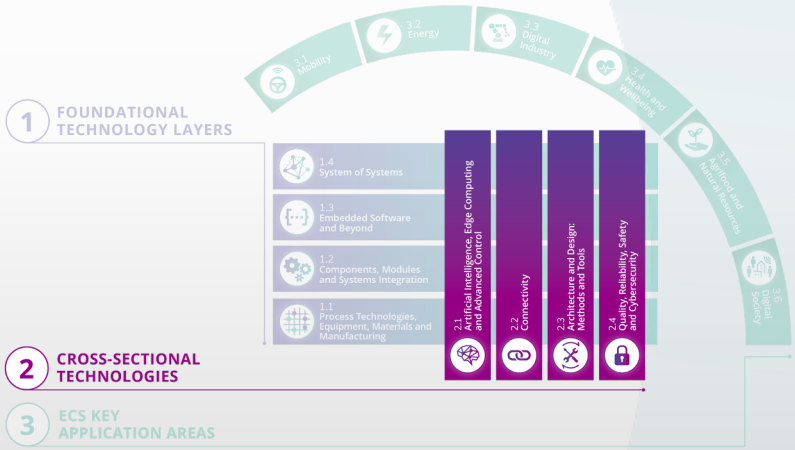
Electronic Components and Systems

Four **Cross-Sectional Technology** chapters focus on **transversal** areas, where innovative results emerge from the **interdisciplinary** contribution of the foundational layers.

E.g.: embedded intelligence on the edge requires

- new integrated circuits
- to develop innovative electronic components
- that can be used to develop smarter and more connected components, modules and entire systems,
- running smart software that will offer new functionalities and capabilities
- that will allow these systems to interact, cooperate and merge in larger Systems of Systems.

The innovation generated by cross-sectional technologies influences foundational layers and **amplifies the effect** of innovation also in the application domains.

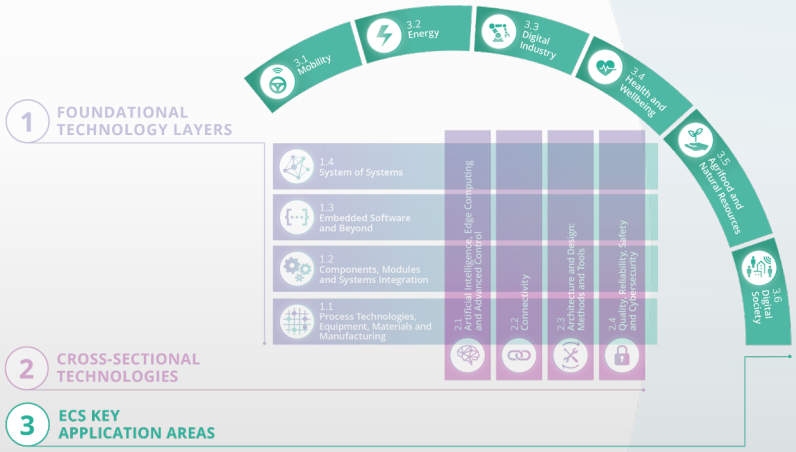


Application chapters and LTV

Six **Application chapters** describe the challenges of specific ECS application domains, that are key for Europe, and identify the required R&D&I efforts.

Finally, the **Long-Term Vision** chapter illustrates our vision of the ECS beyond the time horizon covered by the other chapters:

- it seeks to identify the research subjects that must be addressed at low TRL levels
- and help the research programs in the continuous improvement of European digital technology



EU Main Objectives covered by SRIA

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1

Boost industrial competitiveness through interdisciplinary technology innovations

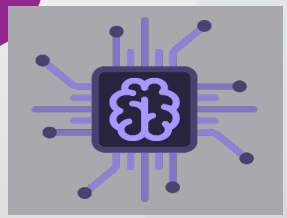
2

Ensure European digital autonomy through secure, safe and reliable ECS supporting key European application domains

3

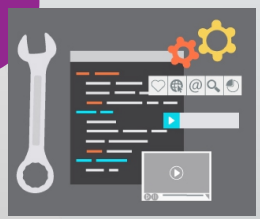
Establish and strengthen sustainable and resilient ECS value chains the Green Deal

4



Unleash the full potential of intelligent and autonomous ECS-based systems for the European Digital Age

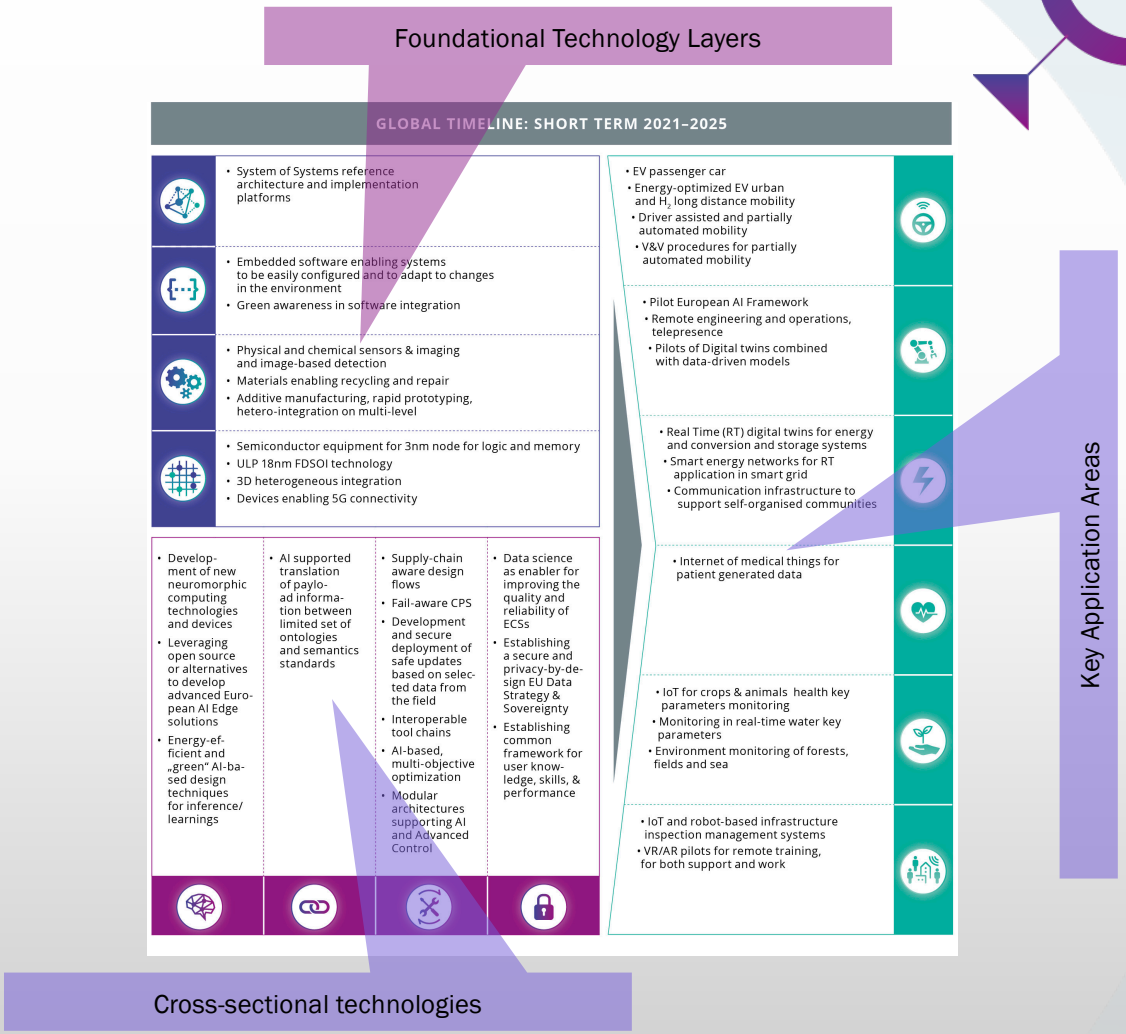
X



Ensure engineering support across the entire lifecycle of complex ECS-based systems

Global Timelines
Short-term example

- Global timelines provide a compact and structured view of the main milestones foreseen in the next 10 years.
- Three period:
  - Short term (2021–2025):
    The industry has a **precise idea** of what must be achieved during that timeframe.
  - Medium term (2026–2030):
    Reasonably good knowledge of what can possibly be achieved.
  - Long term (2031 and beyond):
    Expected achievements are more of a **prospective nature**.
- Described features expected to be available as ECS at TRL levels 8–9 (prototype or early commercialisation) within that timeframe
- Detailed timelines available in each technology or application section



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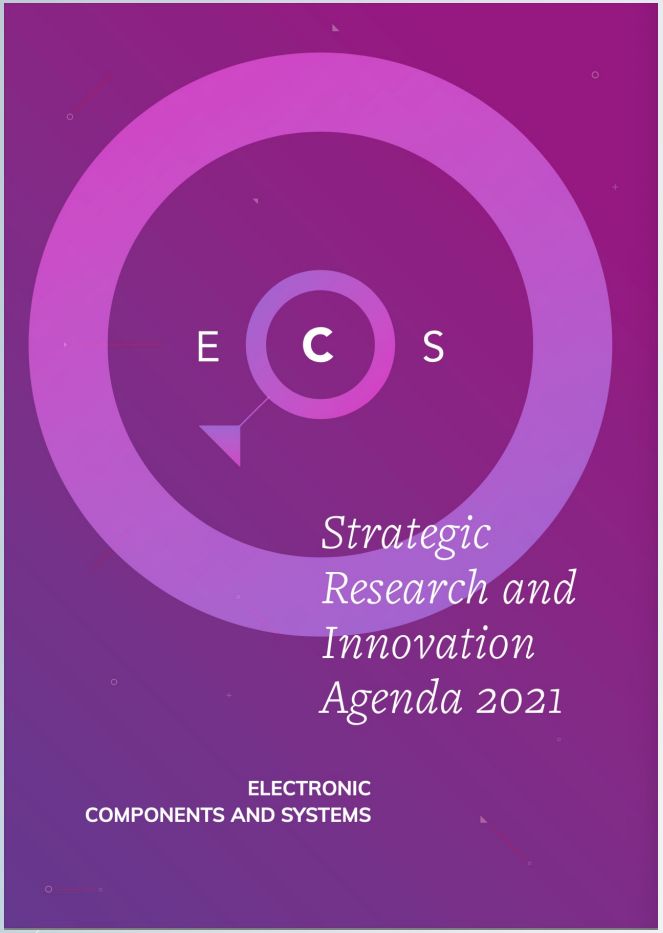

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ECS-SRIA 2021

Thanks for the attention.

Any question?