KC STV - important player in Slovenian Smart Specialization
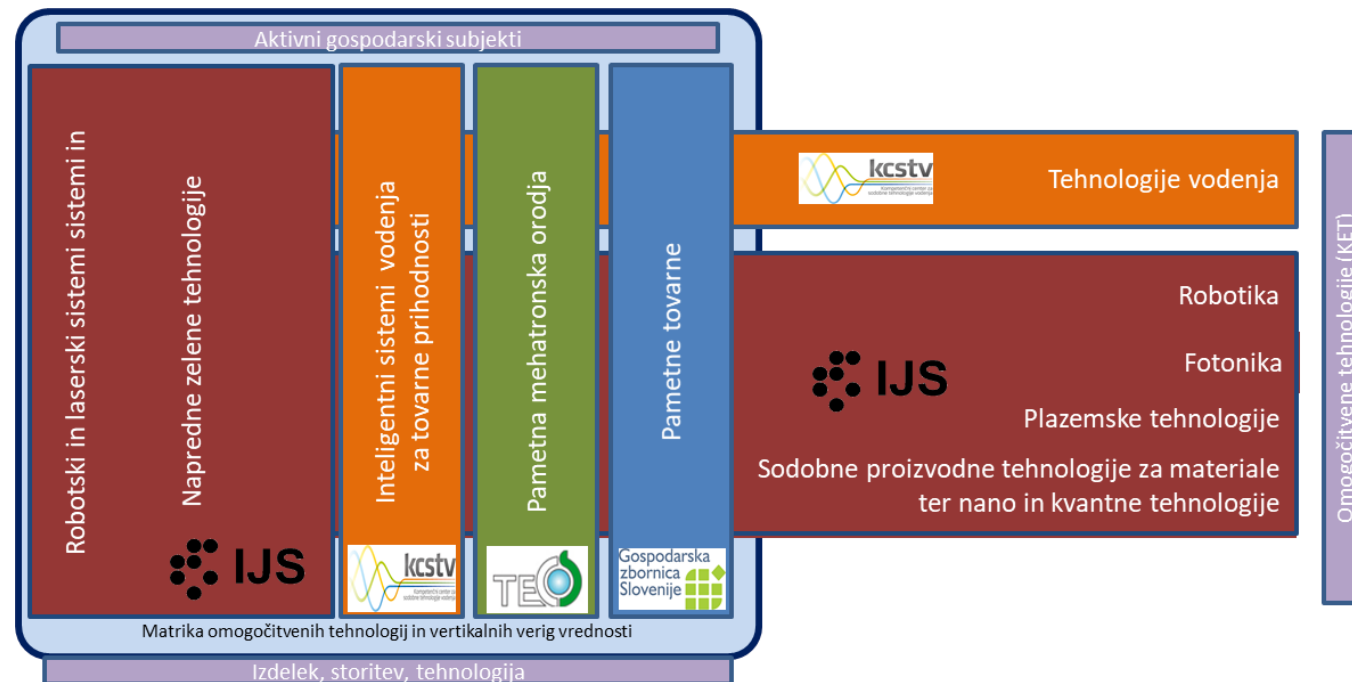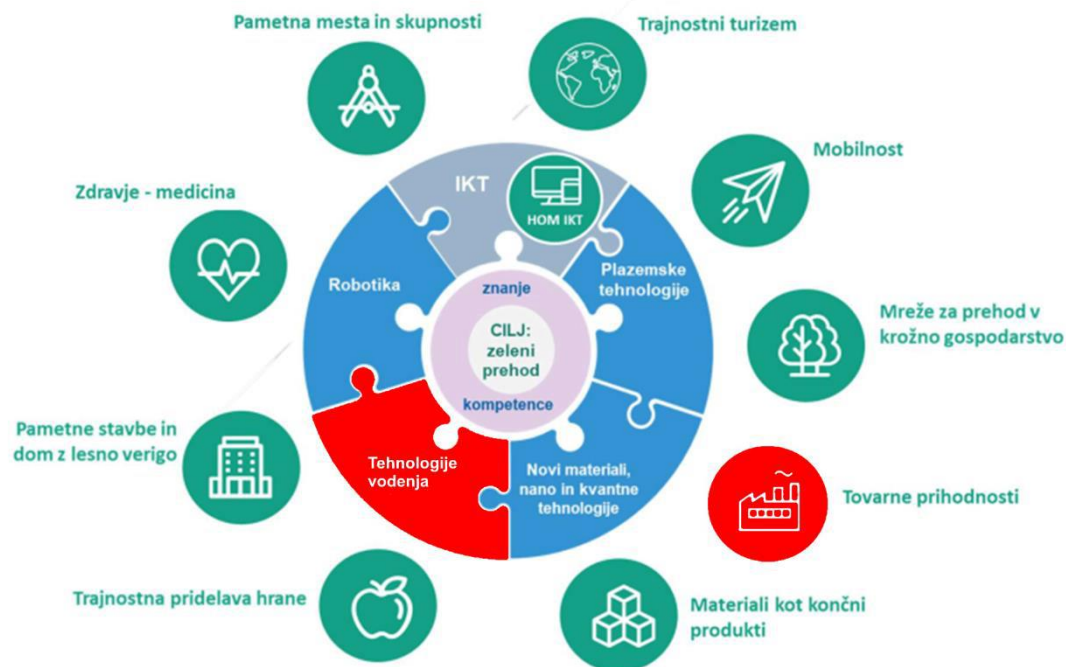
Rudi Panjtar

Mission of KC STV

KC STV is **connecting** members in the field of control technology in various projects that enable the joint development of new products, procedures and processes and the implementation of the results of these projects in various **cross-sectional** domains with **integration** knowledge of academic institutions and industrial development groups.

KC STV and S5

Vertical value chain (VVC) Intelligent control systems in factories of the future

VVC is devided to several strategic priority areas containing product directions

Horizontal network (HON) Control technology

Control Technology as key enabled technology in SRIP FoF cros – cuts VVC and is available also in other S5 domains.

Priority technological areas

kcstv
kompetenčni center za
sodobne tehnologije vodenja

INDUSTRY AND ENERGY

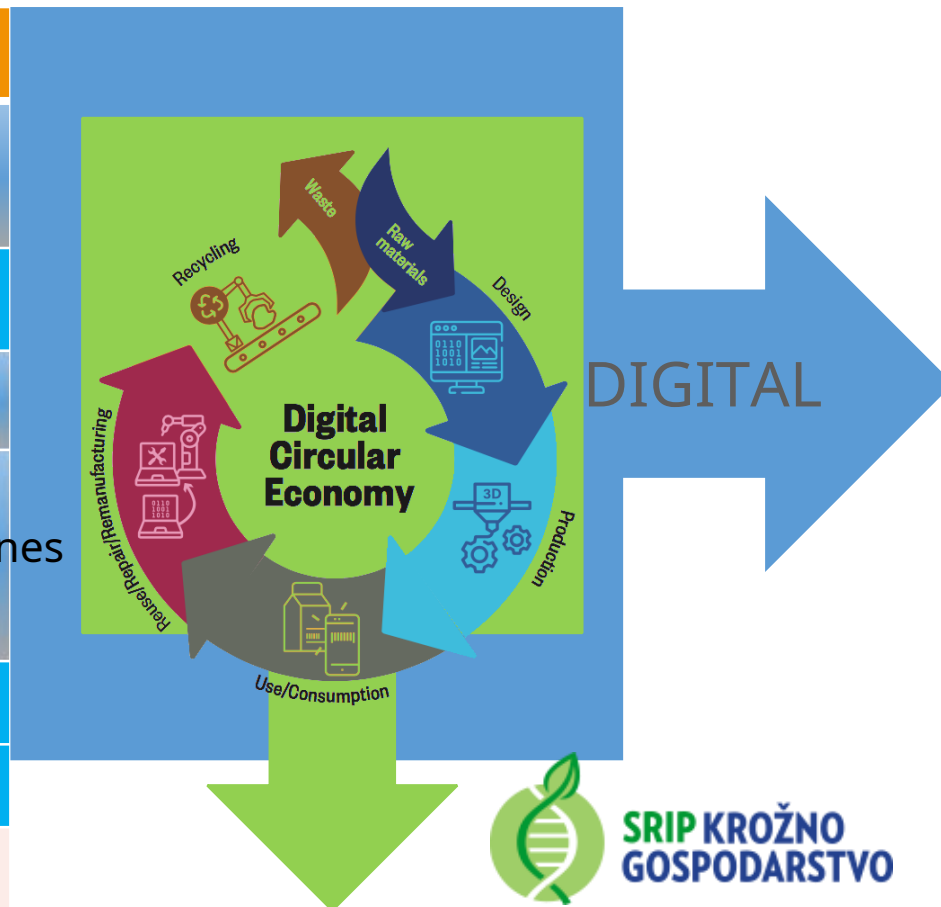| Priority (technological) area |
|---|
| Artificial intelligence for control and optimizing systems |
| Digital twins in technical processes |
| Energetics in complex systems |
| Predictive maintenance – prognostication and assessment of the condition of production machines and devices |
| Industrial Internet of Things |
| Integrated MES |
| **Autonomous mobile systems** |

SRIPTOP

SRIP PMiS

SRIPACS+

SRIP Pametne stavbe in dom z lesno verigo

SRIP KROŽNO GOSPODARSTVO

Members interest in Strategic Technological Areas

kcstv
kompetenčni center za
sodobne tehnologije vodenja

Strategic Priority Areas

LEGEND

1 Artificial intelligence for control and optimizing systems
2 Digital twins in technical processes
3 Energetics in complex systems
4 Predictive maintenance – prognostication and assessment of the condition of production machines and devices
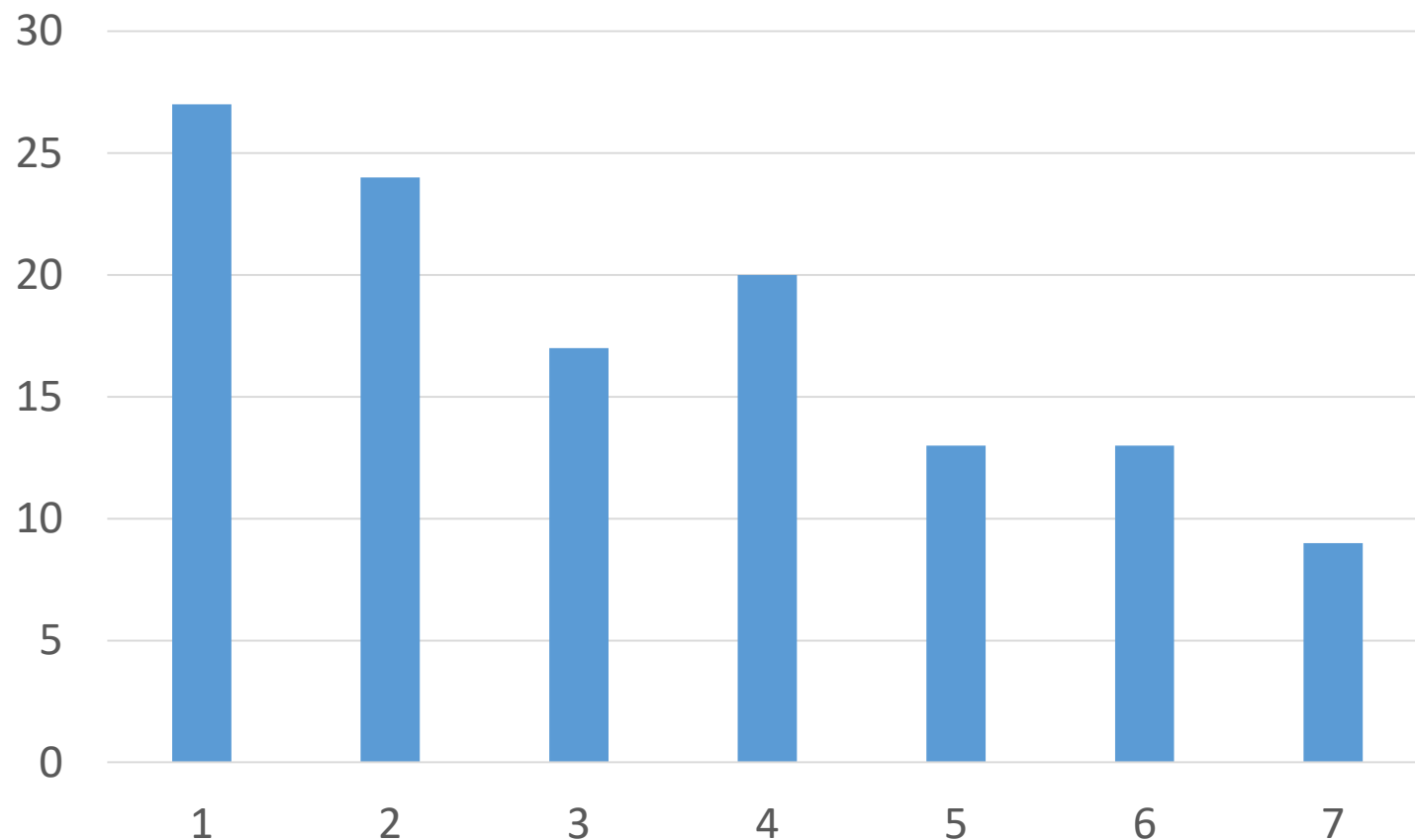5 Industrial Internet of Things
6 Integrated MES
7 Autonomous mobile systems

Development directions of Control Technology

New building blocks for Integration physical and digital world in factories of the future

Development of new procedures with real-time supervision and managed production processes

Control technology In Green Energy solutions

- A new generation of sensors (AIOT)
- New generation of communication interfaces (5G)
- A new generation of software agents
- Production data spaces
- Data infrastructure - GAIA-X

- Development of agents for insight into non-measurable (hidden) states of the process
- Algorithms and hardware and software components for new generations of self-validating machines and processes
- within Industry 4.0
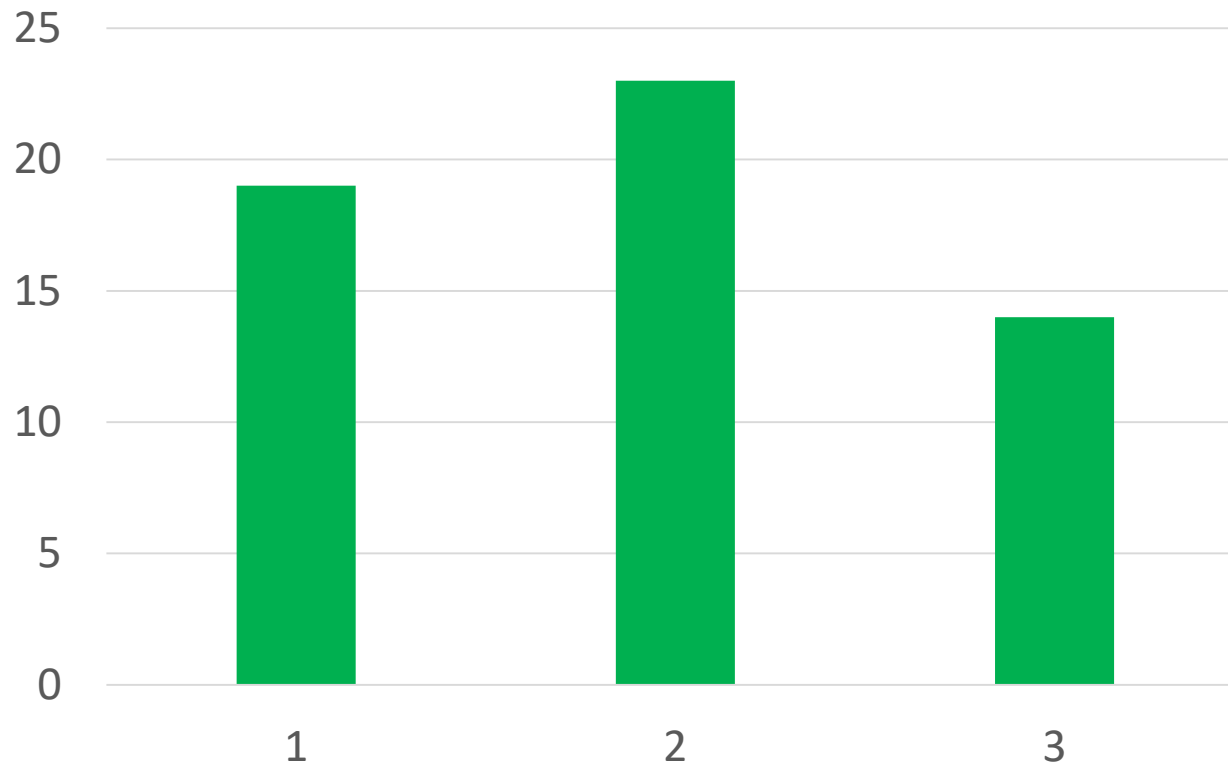- Procedures for diagnostics and prognostic of production processe using digital twins

- Building blocks for low-carbon technologies
- Clean energy supply (green hydrogen)
- Energy management procedures

Intensive use of artificial intelligence, big data and cyber security!

Members interest in Development Direction

Development Directions

LEGEND

1 New building blocks for Integration physical and digital world in factories of the future
2 Development of new procedures with real-time supervision and managed production processes
3 Control technology In Green Energy solutions

Associations and PPP partnerships

EFFRA & MiE

We are EFFRA member, represented in MiE members board.

A.SPIRE & Processes4Planet

Represented by our member, Jožef Stefan institute. We are members of digital working group.

Hydrogen EUROPE & CLEAN Hydrogen Partnership

Represented by our member, Offset Energy d.o.o. We are active in the area of green hydrogen.
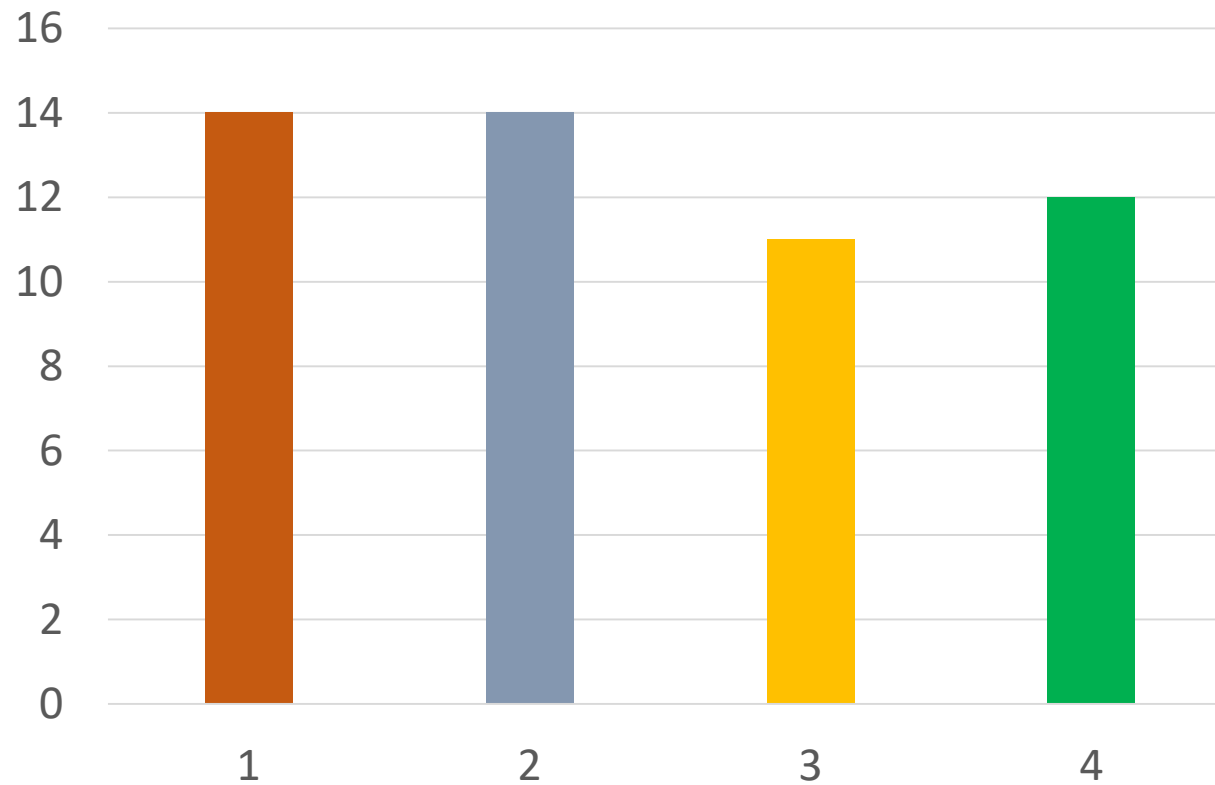
Vanguard Initiative

We are member od AI Pilot.

Other

UNIDO AIIM Global Aliance, CIRP

Members interest in internationalization

Internationalization
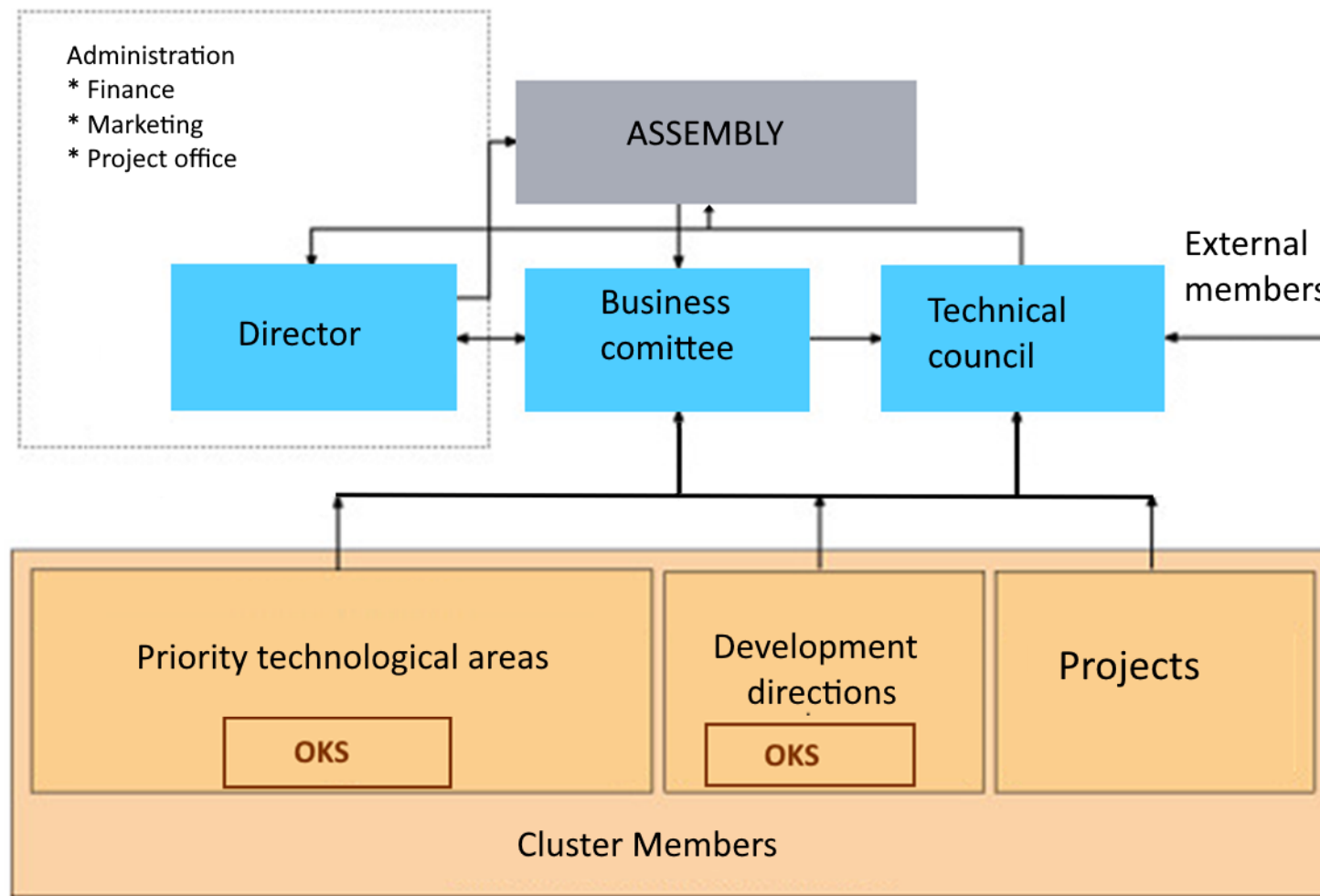

LEGEND

1 VANGUARD

2 A.SPIRE

3 EFFRA

4 HYDROGEN EUROPE

KC STV registered research group

❑ A registered research group is a formal condition for the participation of KC STV in tenders.

❑ It is aimed at connecting and integrating technological trends and trends in the development of advanced control technology:

- ✓ Complementarity and intersection with the orientations of RO research groups.
- ✓ Support for development directions in the priority technological areas of KC STV.
- ✓ Cooperation in different domains of smart specialization (transversality of controlt technology).
- ✓ Acquaintance and acceleration of the transfer of basic knowledge (TRL 1-2) to higher TRL with early participation of companies through joint projects and pilots.

❑ It enables part-time, shared (and also full-time) employment of researchers.

❑ **It must not represents competition to research groups of members in companies or members in research organizations.**

Organization of the cluster

Our main Services

- Analyzes and expertise (intervention by external experts in priority technological areas).
- Project office (search, preparation, cooperation, management of domestic and EU projects, search for consortium partners... according to priority technological areas and directions of development).
- Coordination, promotion and direction of the development of priority technological areas of advanced control technologies in the Slovenian area.
- Education - topics of priority technological areas (targeted development of competences of members' employees).
- Consulting in the internationalization of companies in priority technological areas.
- Organization of events (webinars, conferences...) on the topic of priority technological areas.
- Lobbying domestic and foreign decision-makers

Thank you for your attention!

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