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Backing visionary entrepreneurs

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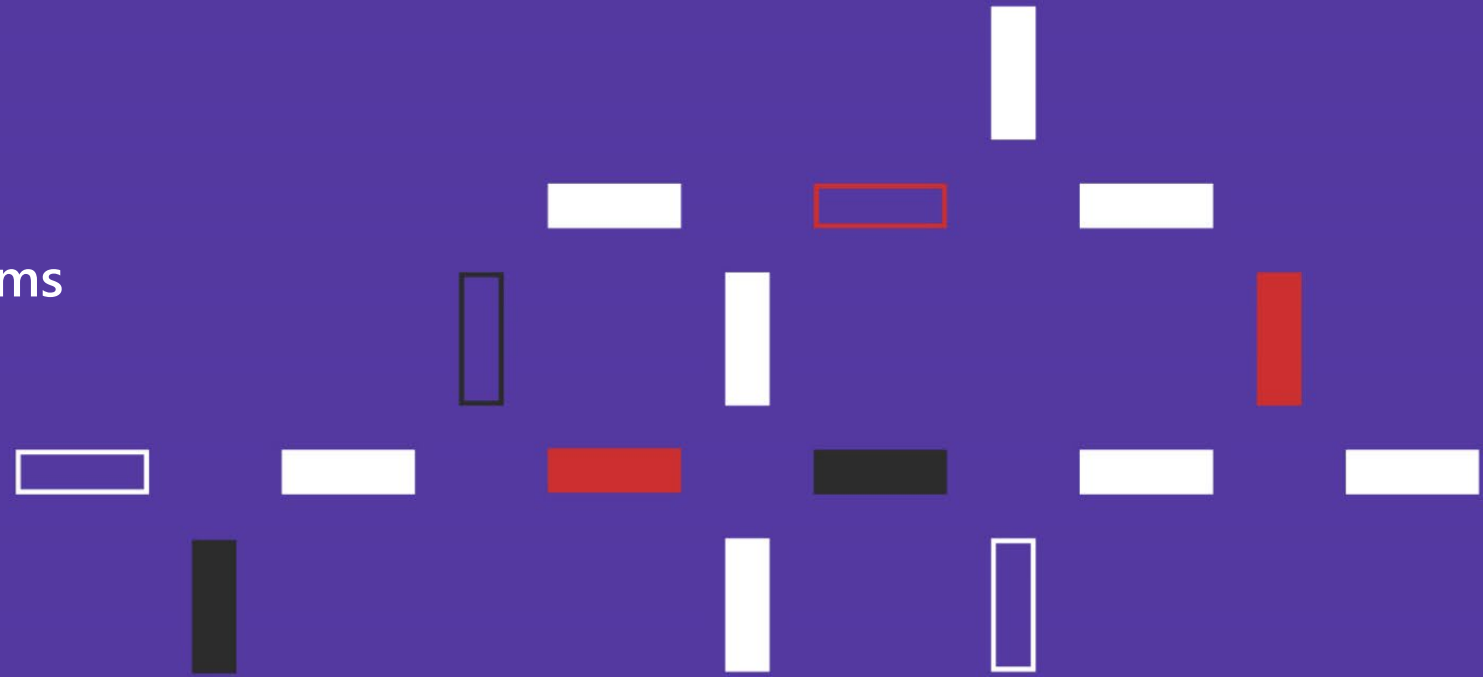
European Innovation Council and SME Agency



Introduction

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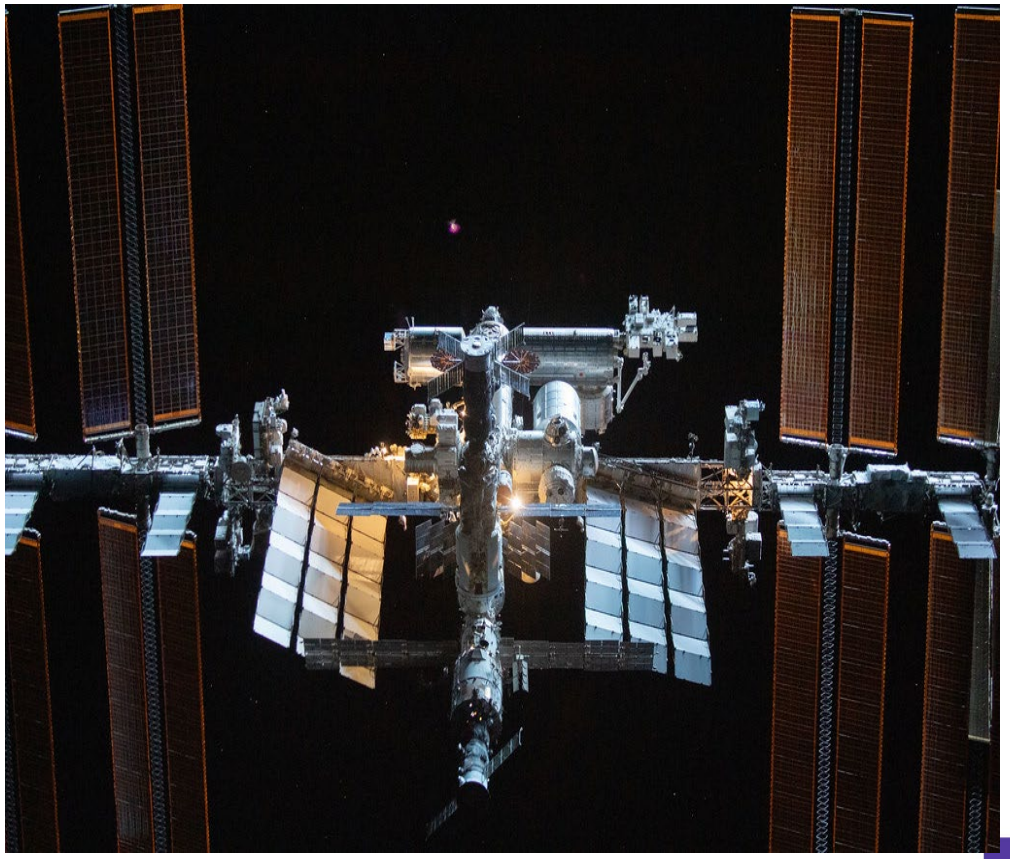

Courtesy: ESA

Horizon Europe Structure

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* The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme

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Europe's most ambitious innovation initiative

- **€10 billion** programme to identify, develop and scale up breakthrough technologies and disruptive innovations in Europe
- **Unique** in the world to combine research on emerging technologies with Accelerator for start-ups, SMEs and scale-ups
- EIC set to become **largest deep-tech investor** in Europe (over €3 billion)
- Enhances the **European innovation ecosystem** (partnerships with EIT, ERC, etc)
- **First work Programme** adopted 18 March 2021, €1.5 billion
- **Second Work Programme** adopted 7 February 2022, **€1.7 billion**

Impacts of the pilot: EIC Pathfinder projects and Accelerator companies in all main fields of breakthrough

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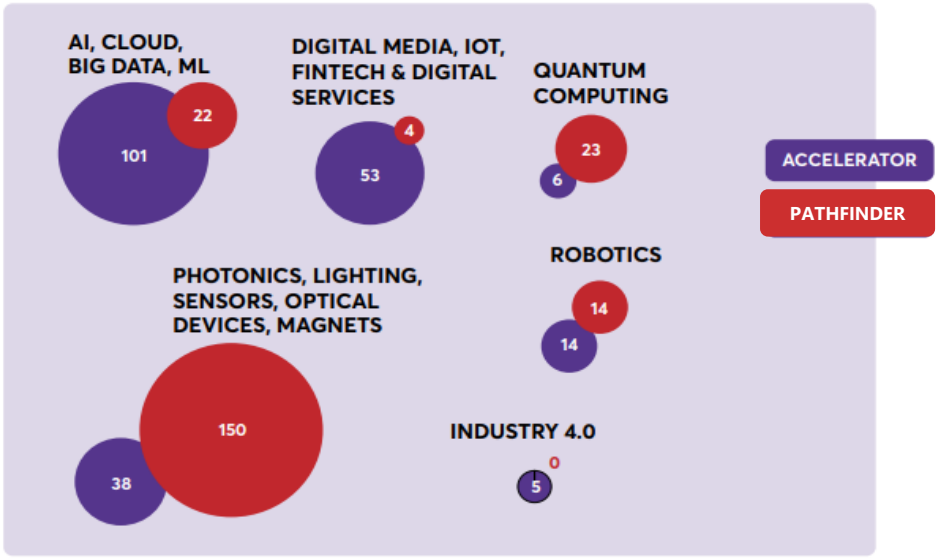
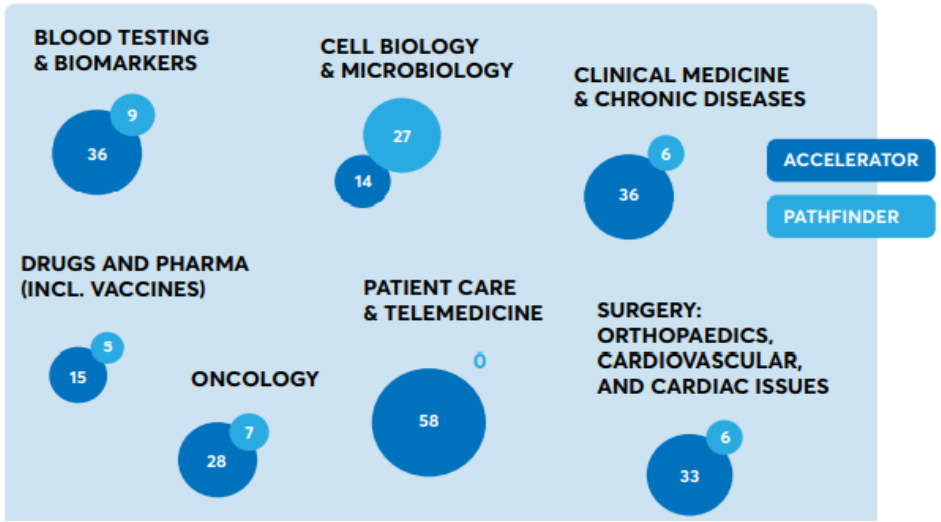
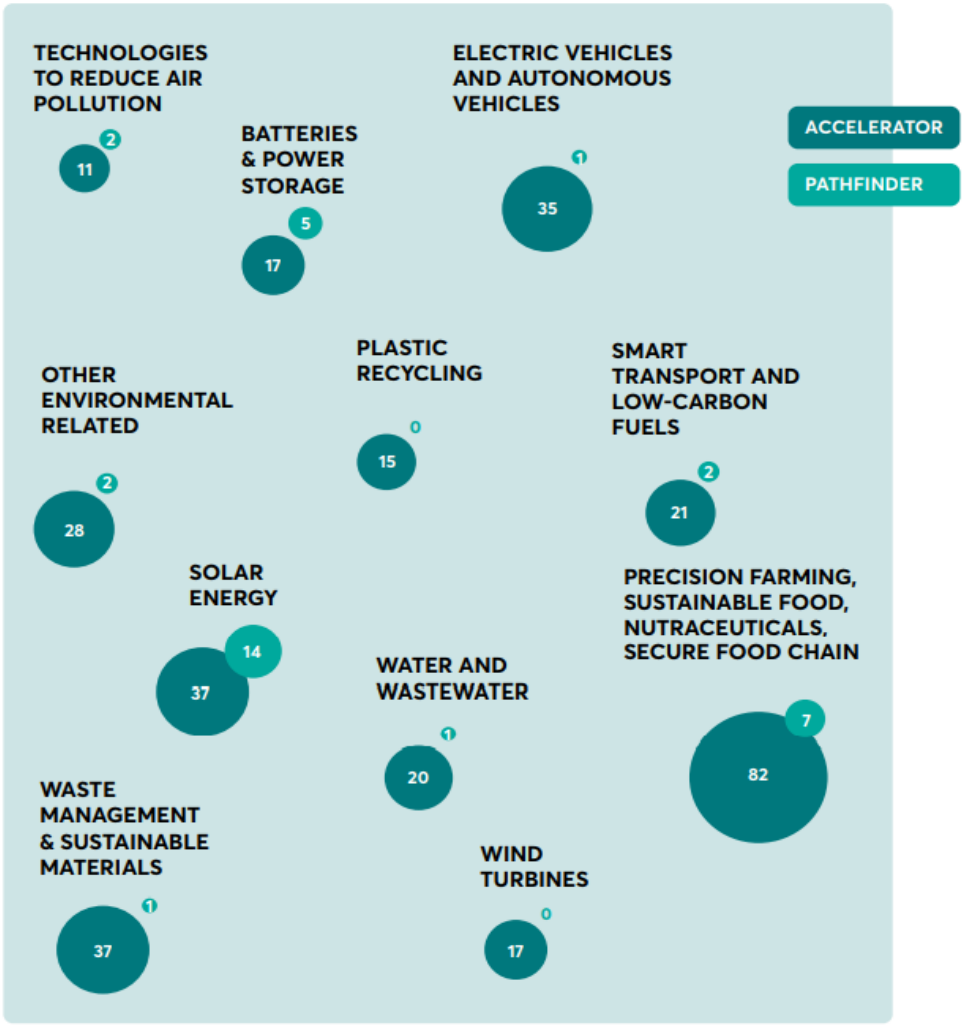
For Digital and Industry 5.0



For Health

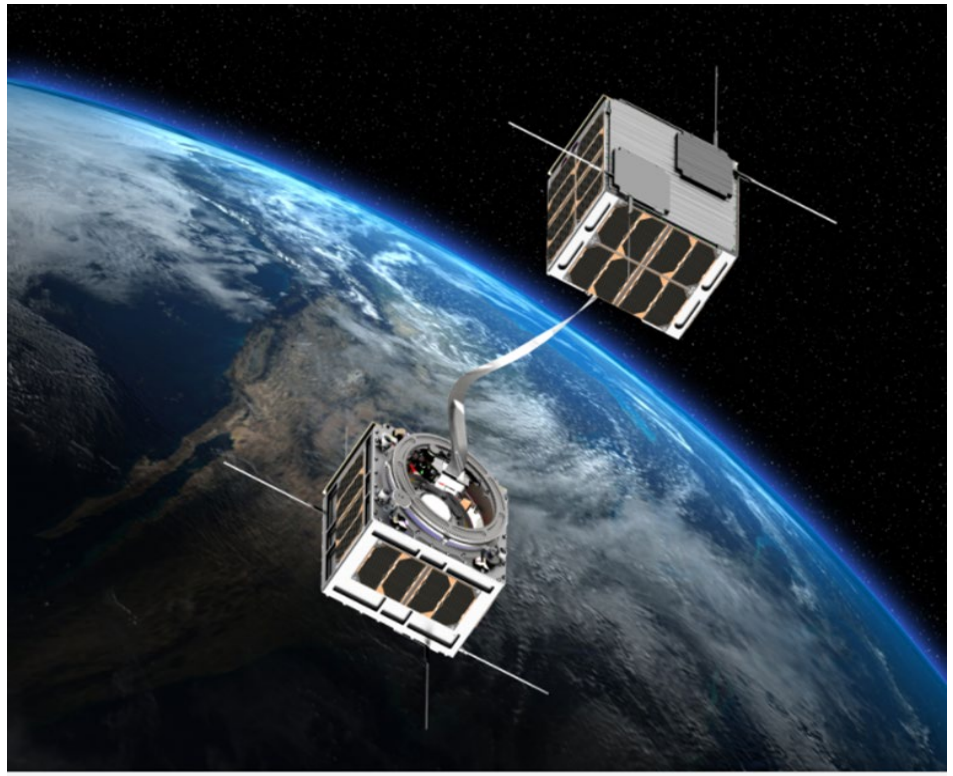


For Green



EIC Role in the EU Space eco-system

- EIC objective is to identify, develop and deploy high risk innovations with a focus on breakthrough market creation and deep tech innovations
- The EIC supports breakthrough technologies and game changing innovations for space SMEs and start-ups
- Funding their disruptive/high-risk ideas and supporting them in the process of disruptive innovation, demonstration and commercialization with transversal EIC Pathfinder, Transition and Accelerator programs



Courtesy: E.T.Pack project – EIC Transition

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EIC Programs

Pathfinder (TRL1-4)
- **For consortia**
- Early stage research on breakthrough technologies
- **Grants up to €3/4 million**

Transition (TRL 4-6)
- **For consortia and single entities**
- Technology maturation from proof of concept to validation
- Business & market readiness
- **Grants up to €2.5 million**

Accelerator (TRL 6-9)
- **For individual SMEs**
- Development & scale up of deep-tech/ disruptive innovations by startups/ SMEs
- Blended finance (**grants up to €2.5 million; equity investment up to €15 million or above**)

- Focus on **breakthrough, game-changing, market-creating, deep-tech**
- **Mainly bottom up** complemented by targeted funding on strategic technologies/ challenges
- Steered by **EIC Board** of leading innovators (entrepreneurs, investors, researchers, ecosystem)
- **Business Acceleration Services** (coaches/ mentors, corporates, investors, ecosystem)
- **Pro-active management** (roadmaps, reviews, re-orientations, etc) with EIC Programme Managers
- **Fast track access** to Accelerator for results from EIT, EIC Pathfinder,

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What's holding back the European space innovation?

Innovation **performance**	• **Strong research performance not often translated** into commercialisation
Innovation **funding**	Financing gaps (2 "valleys of death") in • **Transition** from lab to enterprise • **Scaling up** for high-risk innovative start-ups • **Limited** VC in EU Newspace SMEs & start-ups
Innovation **ecosystem**	• Newspace SME & start-ups companies emerging in all EU member states • Need to **include all EU regions and all talent** (especially female)

Emerging Space Industry Trends

- In-Orbit Satellite servicing, Active Debris Removal, In Space Manufacturing and Assembly
- Innovative propulsion technologies, emergence of “space tugs” for satellite servicing, modular satellite concepts and “plug & play” architectures
- Increased demand for fast track flight qualification and launch of satellites and payloads create new opportunities/challenges
- Increased need for innovative and affordable solutions and services for upstream/downstream applications
- Disruptive space technologies are of ***critical importance*** to the growth the EU Space Economy

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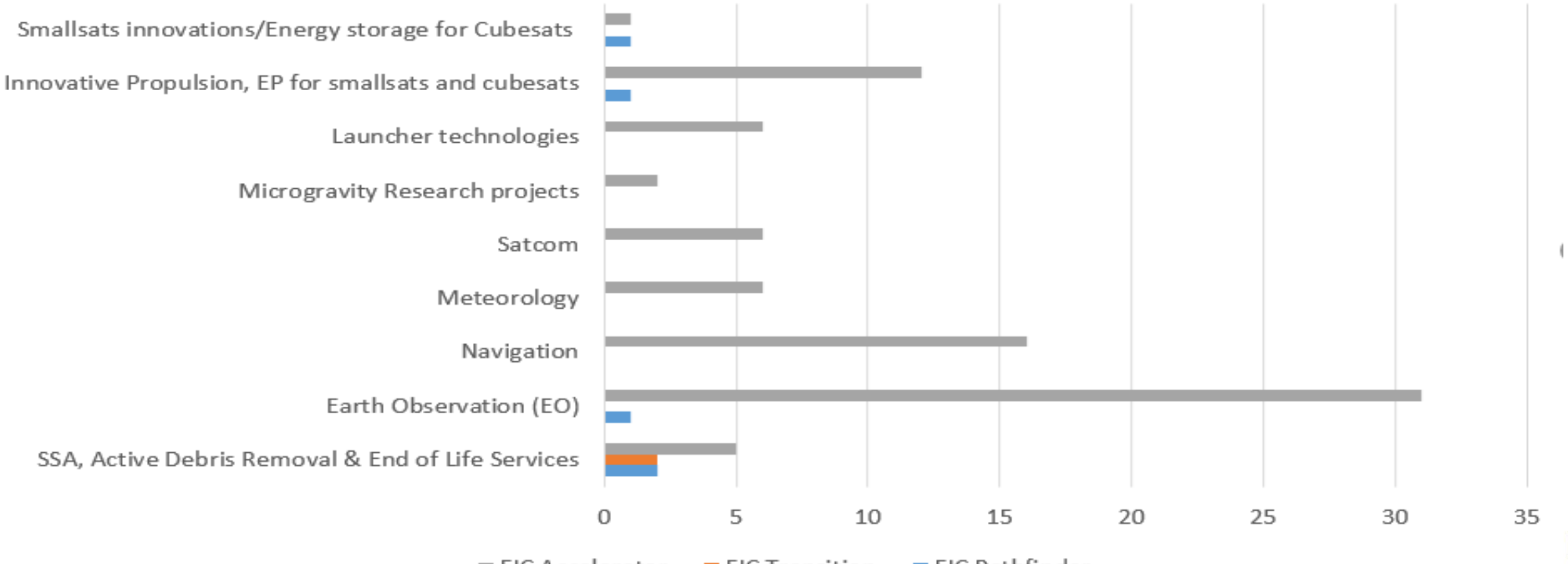
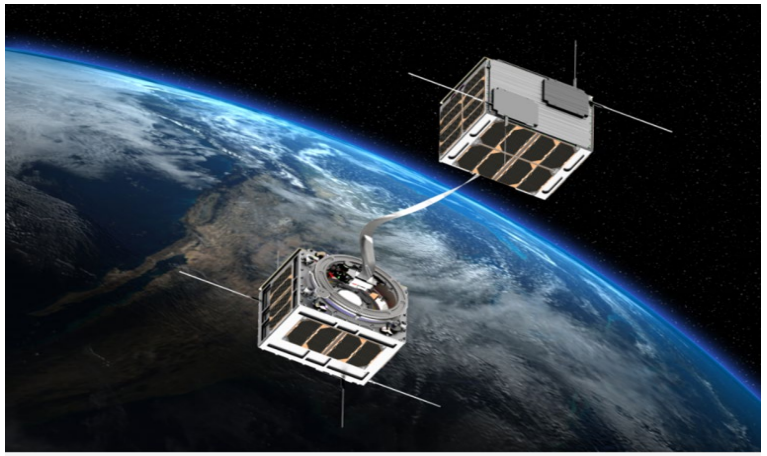
EIC Space projects portfolio June 2022



EIC Space Projects Examples

EIC Pathfinder (TRL1-TRL4)

- E. T. PACK - free passive de-orbiting device for space debris removal based on a eletrodynamic tether (e.g. Low Work-function Tether (LWT)). On the 7th June 2022- E.T.PACK project was invited to present at the 65th Session of COPUOS 2022 at United Nations headquarter in Vienna.



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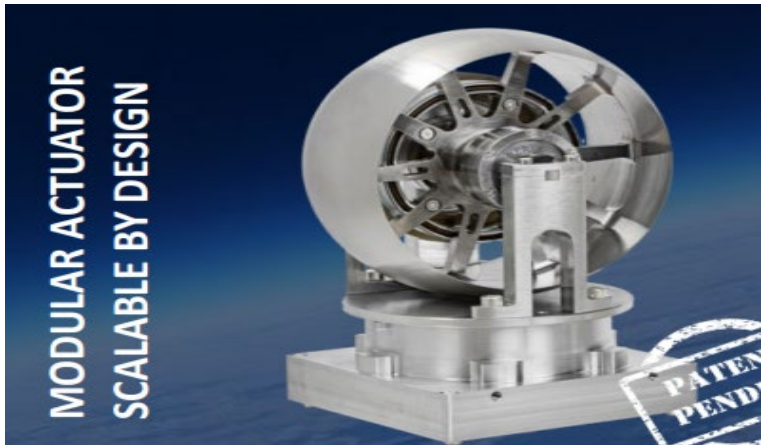
EIC Accelerator (TRL6-TRL9)

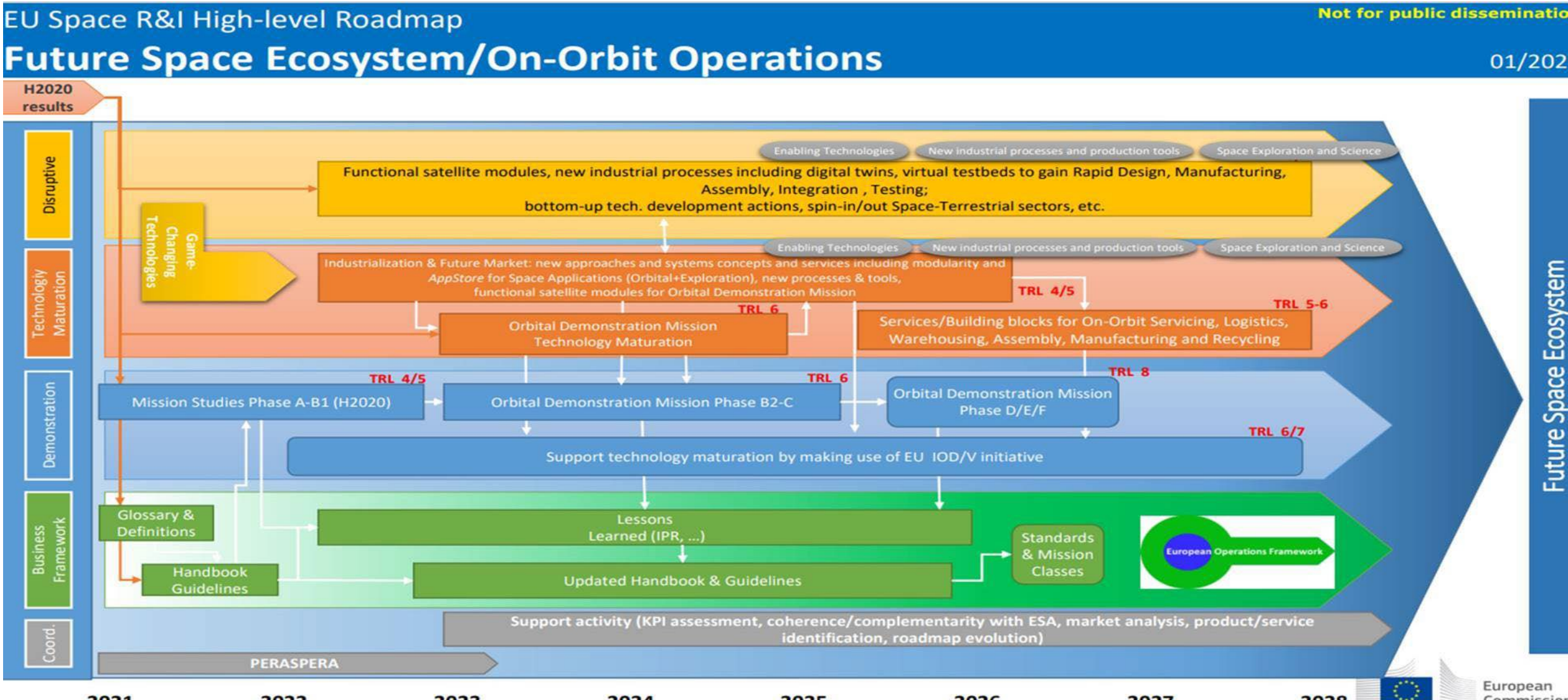
- SATAGILITY-GO2MARKET- innovative next-gen space actuator technology enabling satellites to maneuver 10 times faster to boost their effectiveness
- EMBRACE II - groundbreaking alternative propellant iodine which can be stored unpressurized as a solid and is almost 100x cheaper than xenon for CubeSats
- CASSIOPEE - optical observation stations using collision prediction algorithms. offering an independent catalogue of more than 100,000 space debris smaller than 10 cm
- CroupCloud – use of Earth observation data and AI algorithm for precision agriculture.



Courtesy: Veoware

Courtesy: THRUST ME

EU R&I High Level Roadmap/On-orbit Operations



Hypothetical Future Drivers for ISAM – Part I

Challenges

- Current satellites are built so that they ***cannot be easily serviced***
- Lack of cost-effective and affordable commercial IOS/ADR/ISAM in Europe
- Diverse market drivers, market complexity and business models will influence satellite owners choices for ISAM mission scenarios
- Unknown direct/indirect benefits from ISAM activities
- ***Increased international competition*** in the domain of In Space Servicing, Assembly and Manufacturing (ISAM)

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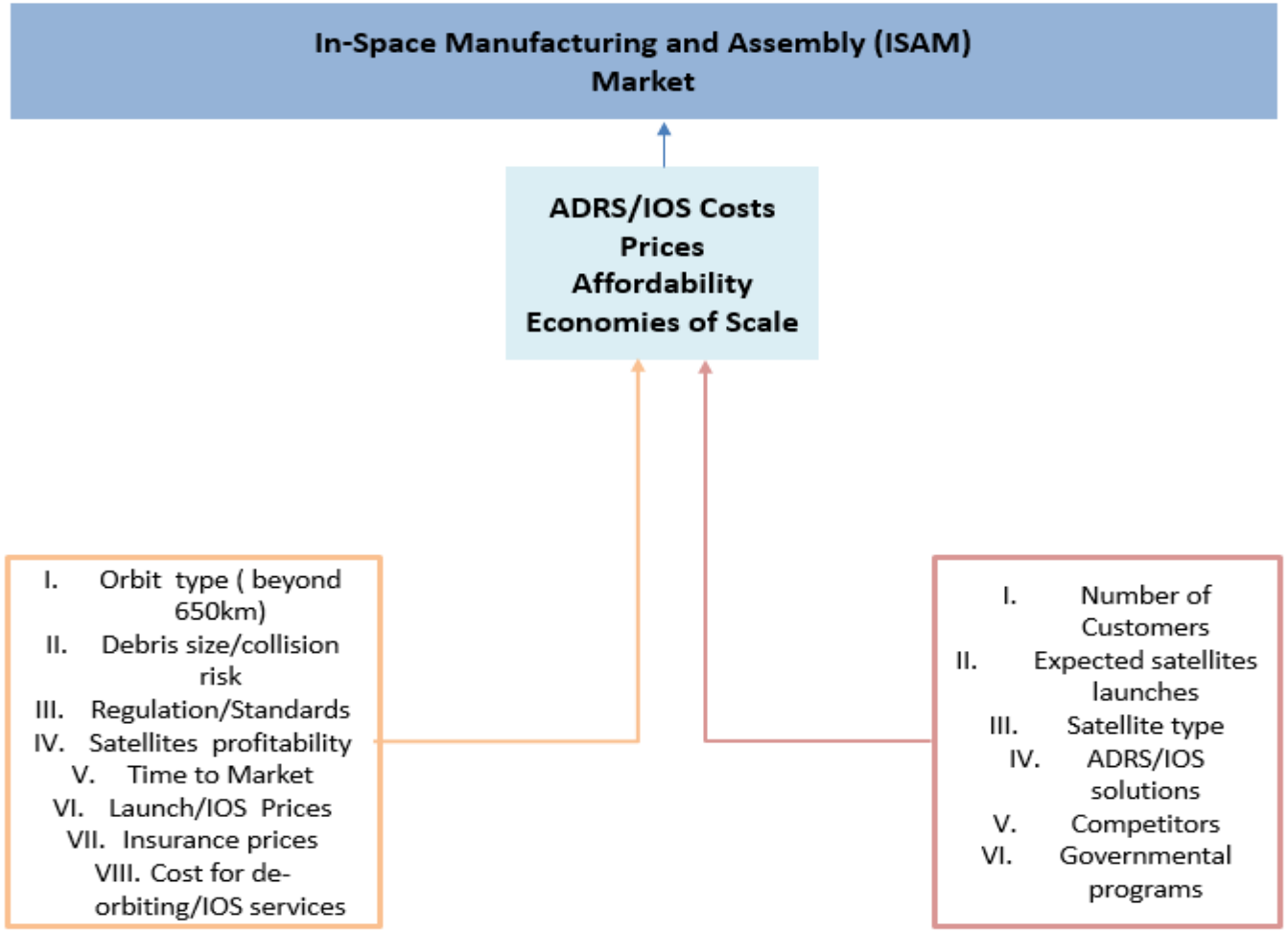
Hypothetical Future Needs of ISAM Stakeholders– Part II

Space Agencies	Satellite Operators	IOS/ADR/ISAM Service Providers	Insurance companies
Safety& Contingency Cost savings Technology innovation Space debris protection & reduction Job creation, economic and industry spillovers	Sustaining customers Technology innovation from new satellite technologies Profitability, due to new customers Cost savings Reduced launch and insurance costs Job creation	Technology innovation Interoperability & scalability Safety & Contingency Space Infrastructure Evolution International partnerships &new markets Revenue Growth & profitability Job creation	International partnerships & new markets Revenue growth & profitability Cost savings

Hypothetical Future Drivers for ISAM – Part III



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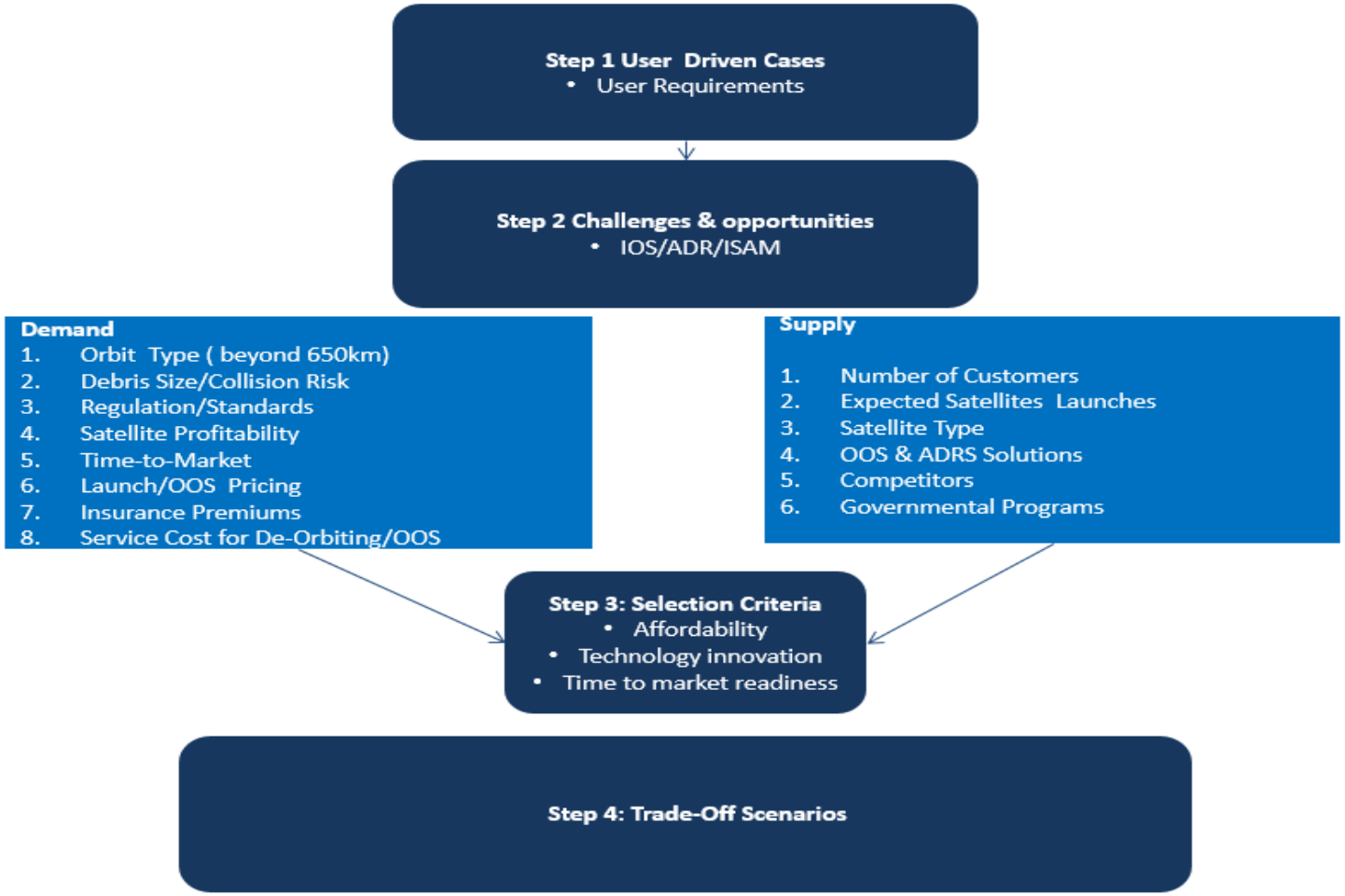
Hypothetical Future Framework – Part IV



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Conclusions

- ***Will ISAM services evolve to offer scalable solutions that fit in the business models and trade-off scenarios of end users?***
- Developing ***affordable*** trade-off mission scenarios for ISAM services is influenced by a number of technology innovation, market and business drivers
- Diverse technologies, market complexity and business models will influence satellite owners choices for ISAM affordable mission scenarios
- Developing interoperable, scalable and cost-effective future ISAM activities is important for the ISAM future success

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Thank you!

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