

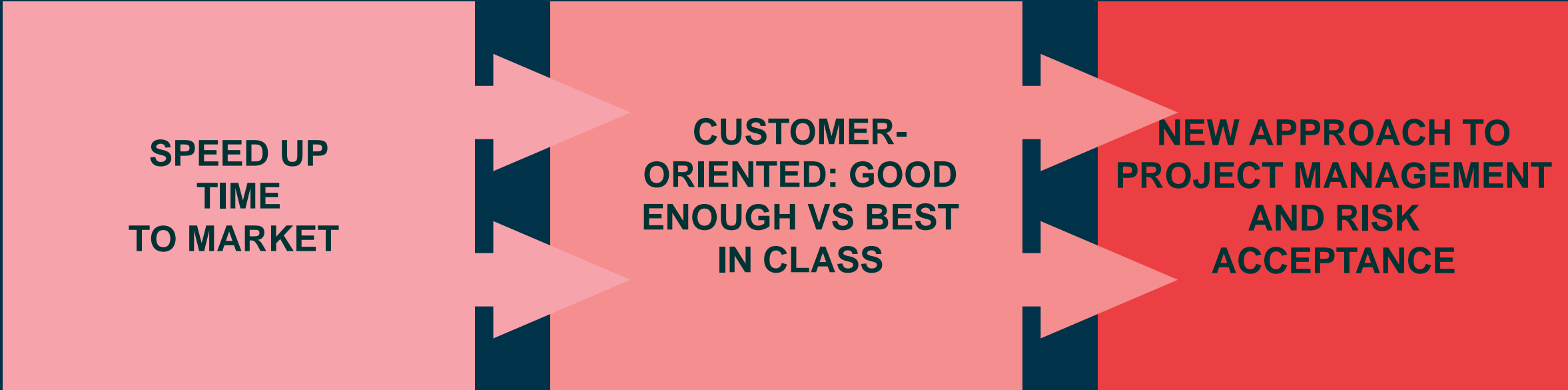
Commercialisation for exploration

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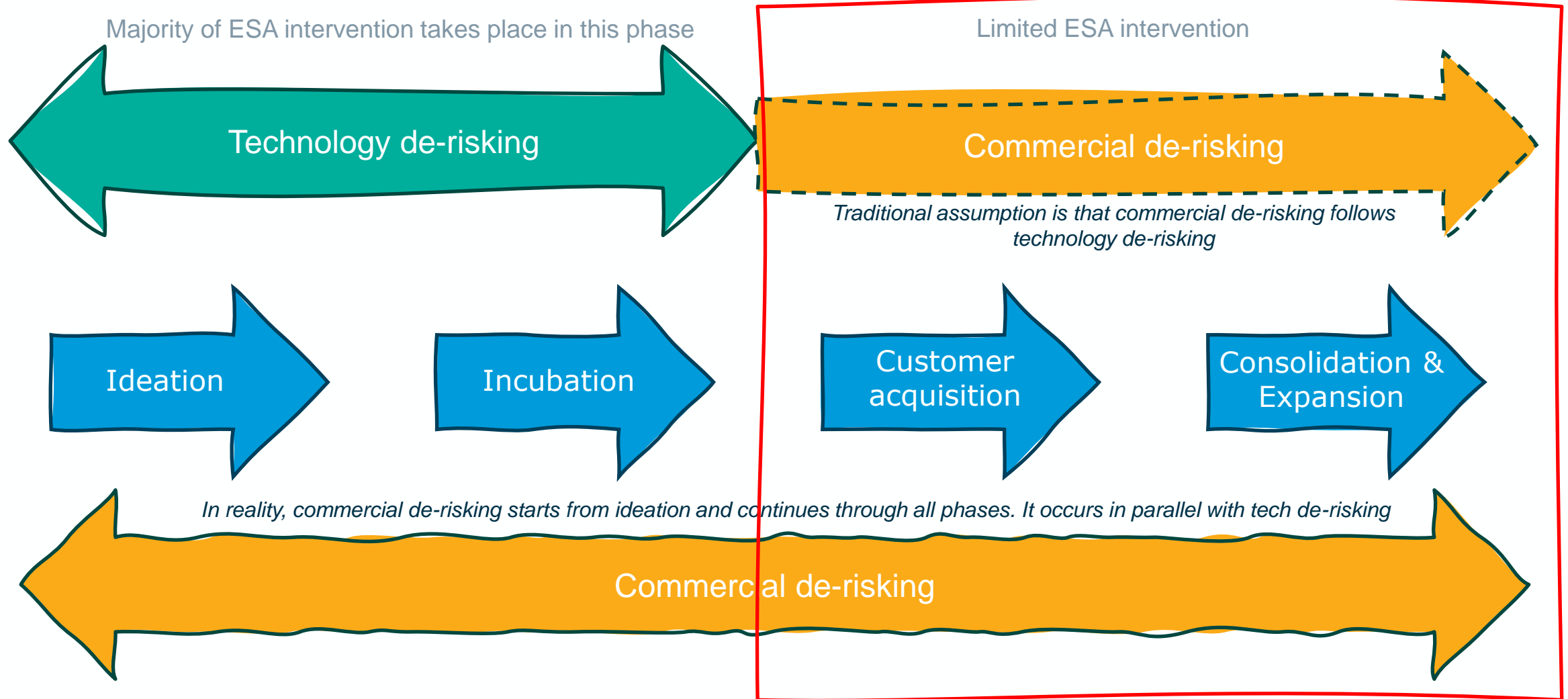




ESA AND NEW SPACE

For ESA, there are no “New Space companies”, but a New Space approach which can be observed from large well-established companies to small newcomer entities. This approach implies a business mindset based on private investments leveraging on speed, customer focus and new risk acceptance culture.

Commercialisation Frame of reference



Opportunity space for commercialisation in CM25

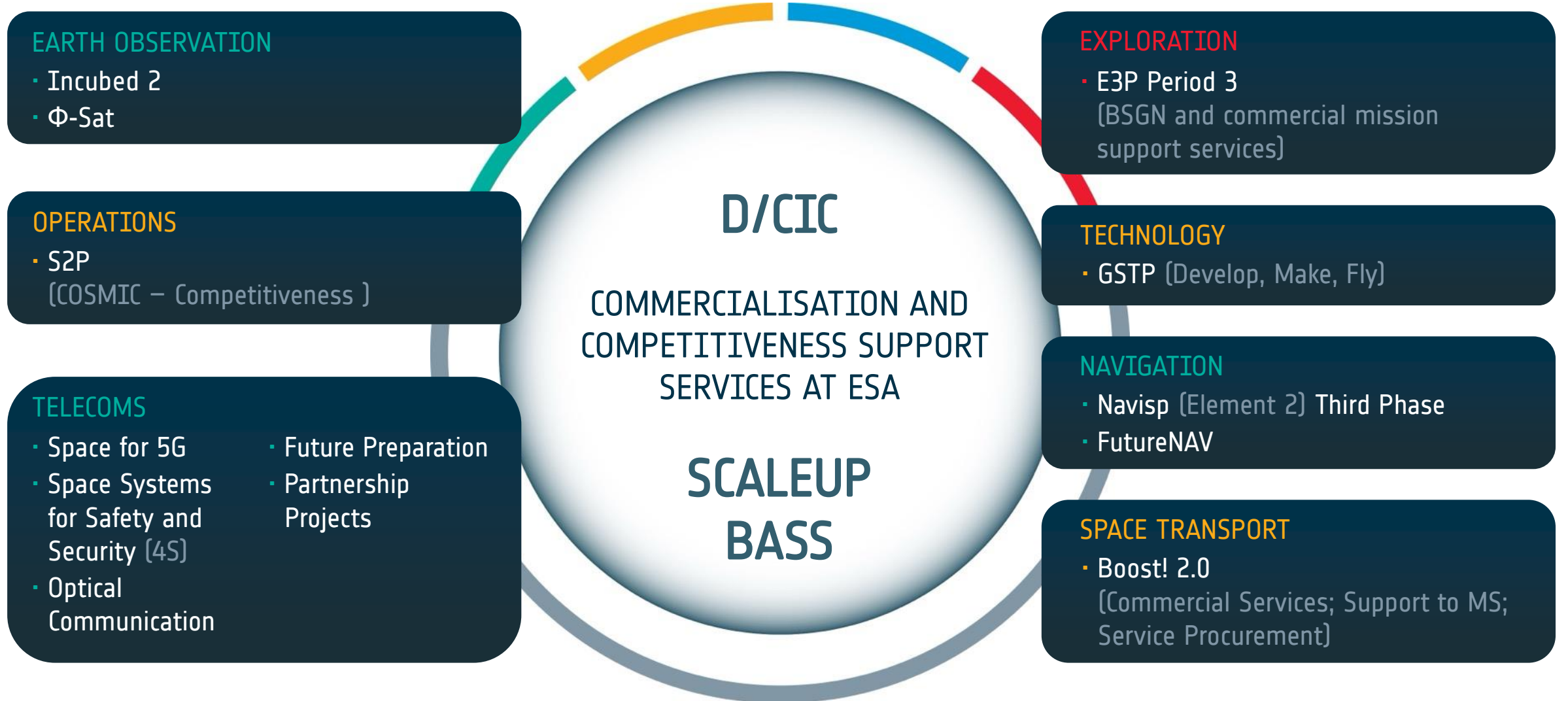
Roles of Institutions in Commercialisation: a new policy is needed

Objectives

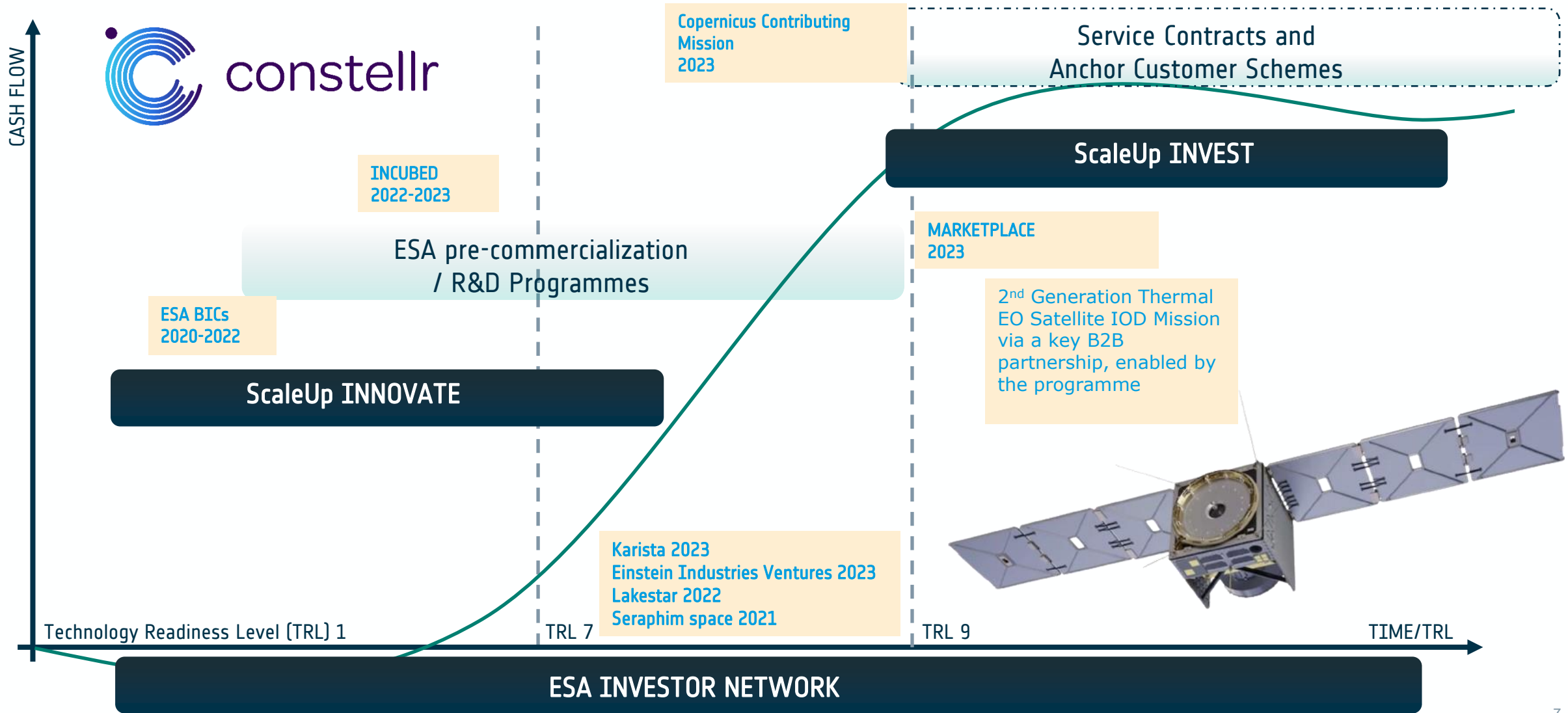
Establish a consistent and coherent Agency-wide framework for engaging with the commercial space sector

Establish specific principles, and recognise the different roles and responsibilities of the Agency supporting the activities targeting emerging markets and established commercial markets, namely

- **ENABLER** of the development of a sustainable commercial space sector
- **PARTNER** in the development of new and emerging space markets
- **CUSTOMER** of products and services



A company within esa: example of CONSTELLR



...looking across the pond...

Commercial Orbital Transportation Services (COTS): CONTRACT DETAILS (PHASE 1)

Main innovative aspects of COTS contract for development and demonstration phase.

Milestone-based fixed-price payments

Commercial Partners received the money only after each milestone was completed

Investor Mindset

Because C3PO considering COTS an investment in commercial capabilities, it hired a venture capitalist to assist NASA. To bid on COTS, companies had to furnish business plans as well as traditional technical proposals. NASA would then conduct “due diligence” as in a traditional investment.

Limited Government Investment

NASA's contributions were fixed to the milestone payments negotiated in the COTS SAAs. **Any cost overruns were the partner's responsibility.**

Goal-driven evaluation

NASA didn't dictate the vehicle's requirements. They evaluated the proposals based on the goal of providing reliable cargo service to the ISS, but they didn't specify the technical means that participants could use to achieve that goal.

Shared development costs

The companies selected was expected to pay part of its own development costs. This ensured that the companies were building something useful they could go on to commercialize — they would not have agreed to share costs to build something they knew was inefficient.



When to use this approach? - Key requirements & risks



The products and services must fulfil market needs beyond those of an agency to attract more customers and private capital and thus truly commercialise.



A robust legal structure needs to be present to ensure easy termination of contracts and flexibility in the development process to enable innovation



The program budget needs to be guaranteed and a clear payment horizon during the development phase (dependent on milestone achievement) and procurement phase needs to be provided to investors

When to use this approach? - Key requirements & risks



The budget must be high enough to attract investors and show agency determination but simultaneously low enough to ensure maximum innovation



In case of a open competition phase 2, failure to secure the procurement contract could have devastating impact on the program and ecosystem



In the realistic scenario that contracts are terminated throughout the process, detrimental delays can be expected to crucial services or products

KEY TAKEAWAYS FROM NASA'S APPROACH TO COMMERCIALISATION

Key aspects that characterized NASA's approach to privatisation and that allowed the agency to limit risks and reduce costs while maintaining control over the product development.



Act as a **client and partner** rather than a developer to reduce costs and enhance competition among emerging key players



Always stay up to date with the ecosystem to ensure new players are given the right share of attention



Act as a partner to make the contracts attractive for companies (share knowhow, infrastructure eg. launching platforms, feedback)



Contracts with an evaluation period and annual renewal to ensure the quality and evaluation of vendors






Embrace flexibility allowing for objectives revision while maintaining a fixed budget



Consider the financial performance of commercial partners and act as a broker to raise funds through networking and purchase of services

Lessons learned from the COTS Program

COTS demonstrated the importance of a commercial focus in Public Private Partnerships (PPP)

Item	Description	Illustration
 <p>Technical capabilities do not guarantee success</p>	<ul style="list-style-type: none">• A firm that is technically able but commercially not viable <u>has no future</u>• An agency must be <u>harsh in its commercial assessment</u> even if agency needs are met	<ul style="list-style-type: none">• RpK's contract was terminated since it could <u>not find sufficient private funding</u>, something that could have been prevented
 <p>It is critical to strategically adopt an investor perspective</p>	<ul style="list-style-type: none">• Outside investment experts can <u>advise, train, ensure buy-in, and bridge gaps</u> between stakeholders• This business perspective should have significant <u>voting authority</u> for the approach to truly work	<ul style="list-style-type: none">• <u>Venture Capitalist</u> Alan Marty assisted NASA following his VC philosophy was based on the book "The innovator's dilemma"
 <p>Procurement processes should not adapt</p>	<ul style="list-style-type: none">• Outside customers will focus mainly on <u>technical requirements and capabilities</u>• Hence, the final procurement should mirror this approach to <u>prepare program participants</u>	<ul style="list-style-type: none">• The CRS procurement was done in <u>full and open competition</u> with <u>traditional</u> procurement processes and contracts

THANK YOU FOR YOUR ATTENTION

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