

## **RTOs' Spin-offs: Untapped Potential of Tech-Transfer**

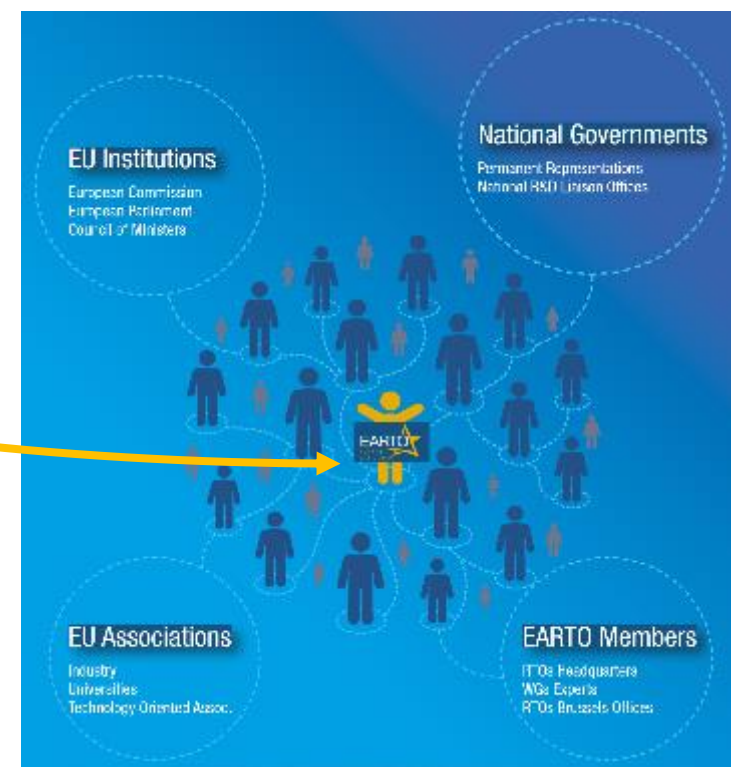


**Sophie Viscido, Policy Officer**  
**8 November 2017, OECD Workshop, Lisbon**

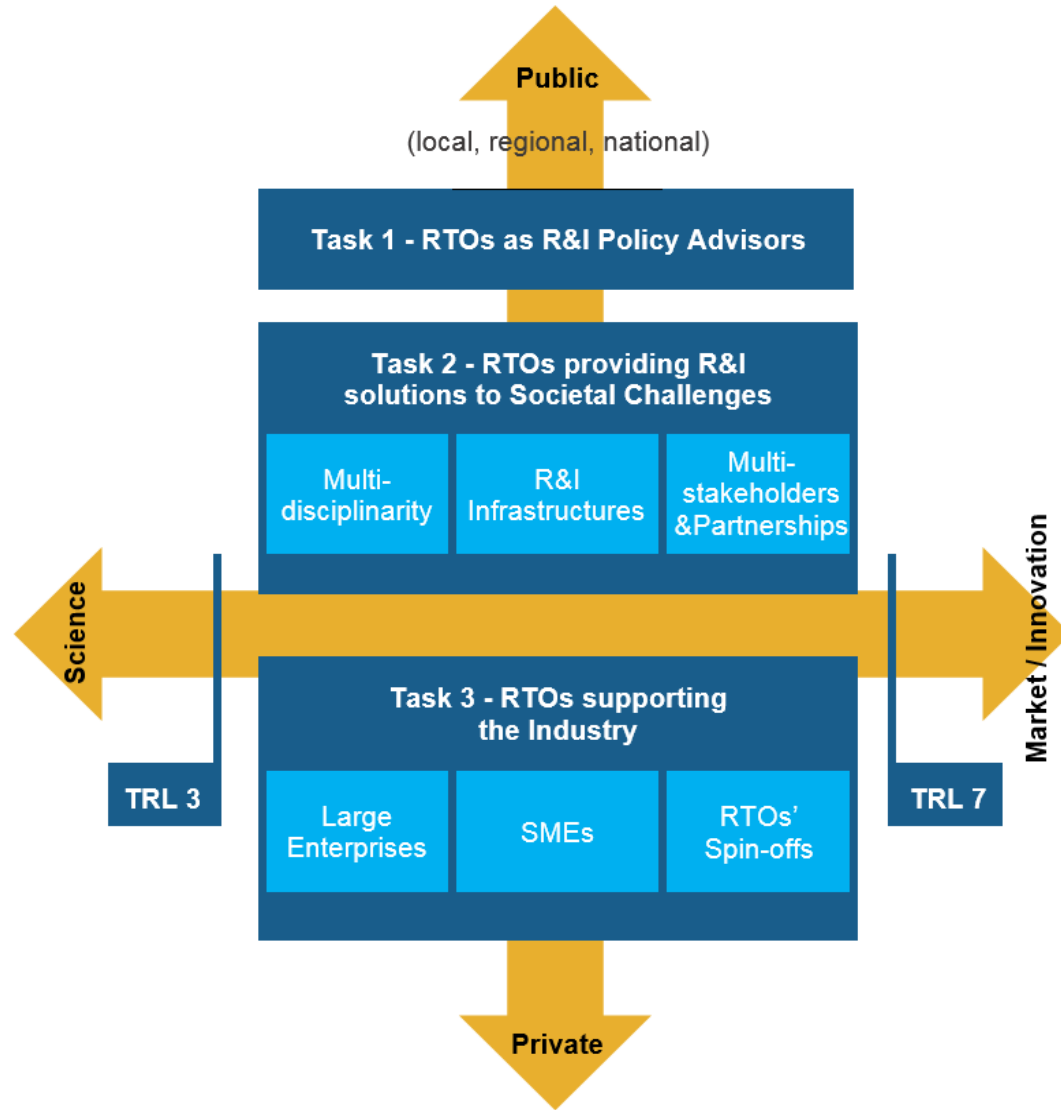


# EARTO Moto: **Impact Delivered!**

## EARTO Vision: **Technology for a Better World**



# Understanding European RTOs



**RTOs are key players in the innovation chain at local, national and European level**

1. RTOs have **high skilled staff conducting world class R&I** offering professional skills to EU industry
2. RTOs secure innovation with strong IP
3. RTOs house various research **infrastructures & demonstration facilities benefitting many stakeholders**

⇒ **RTOs are best positioned to transfer technology to Industry to develop their global competitiveness with concrete impact**

# RTOs' core mission: adding value through technology maturation



- System operation
- System test and demo
- System prototype



- **Prototype**
- **Validation in relevant environment**
- **Validation in laboratory environment**



- Analytical/Experimental proof
- Technology concept
- Basic principle



TRL

9 **System Test, Launch and Operations and System Development**

8

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**Technology Maturation**

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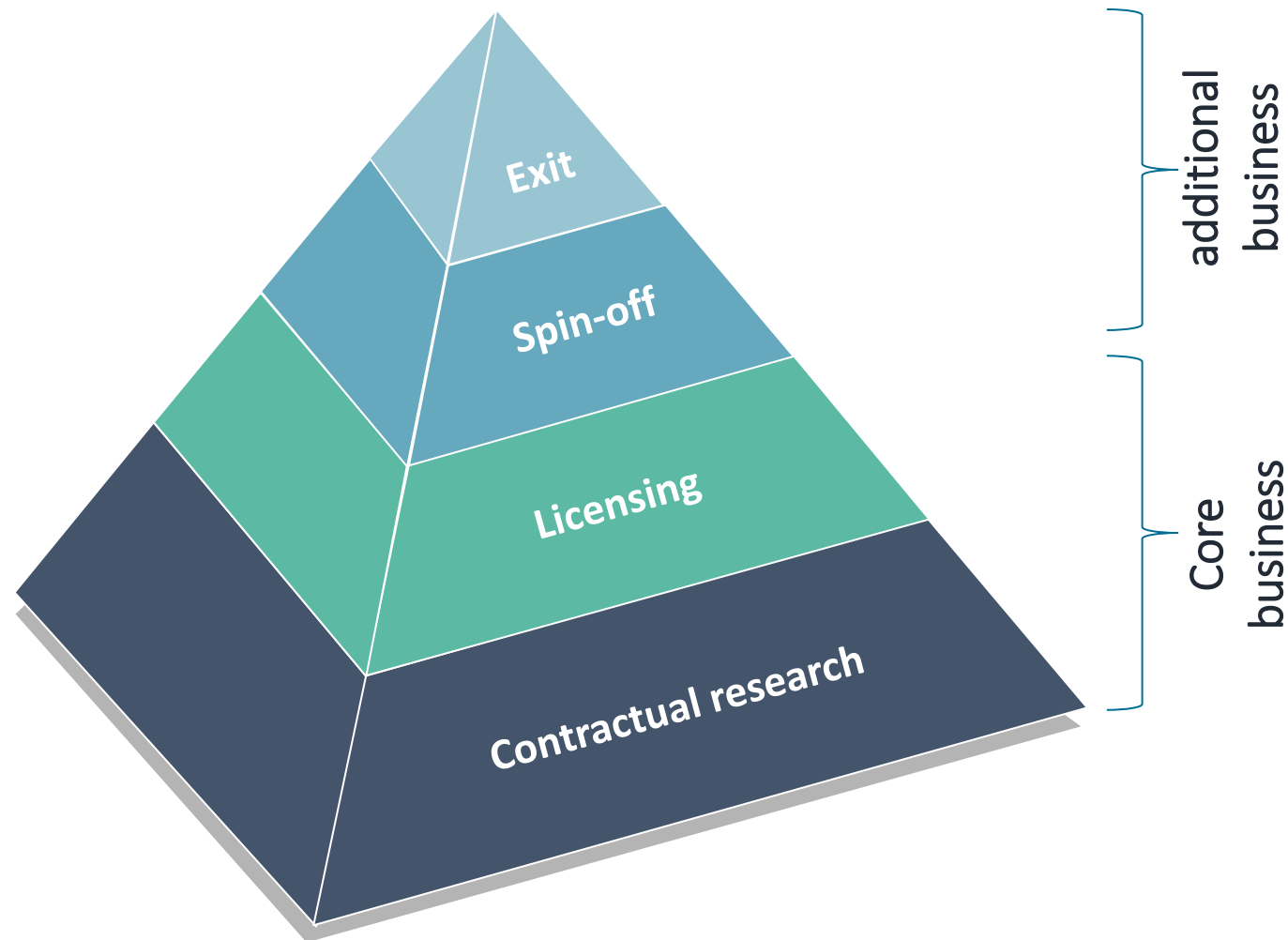
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**Basic research and technological feasibility**

# RTOs' core mission: transfer technology to the market with high impact for society

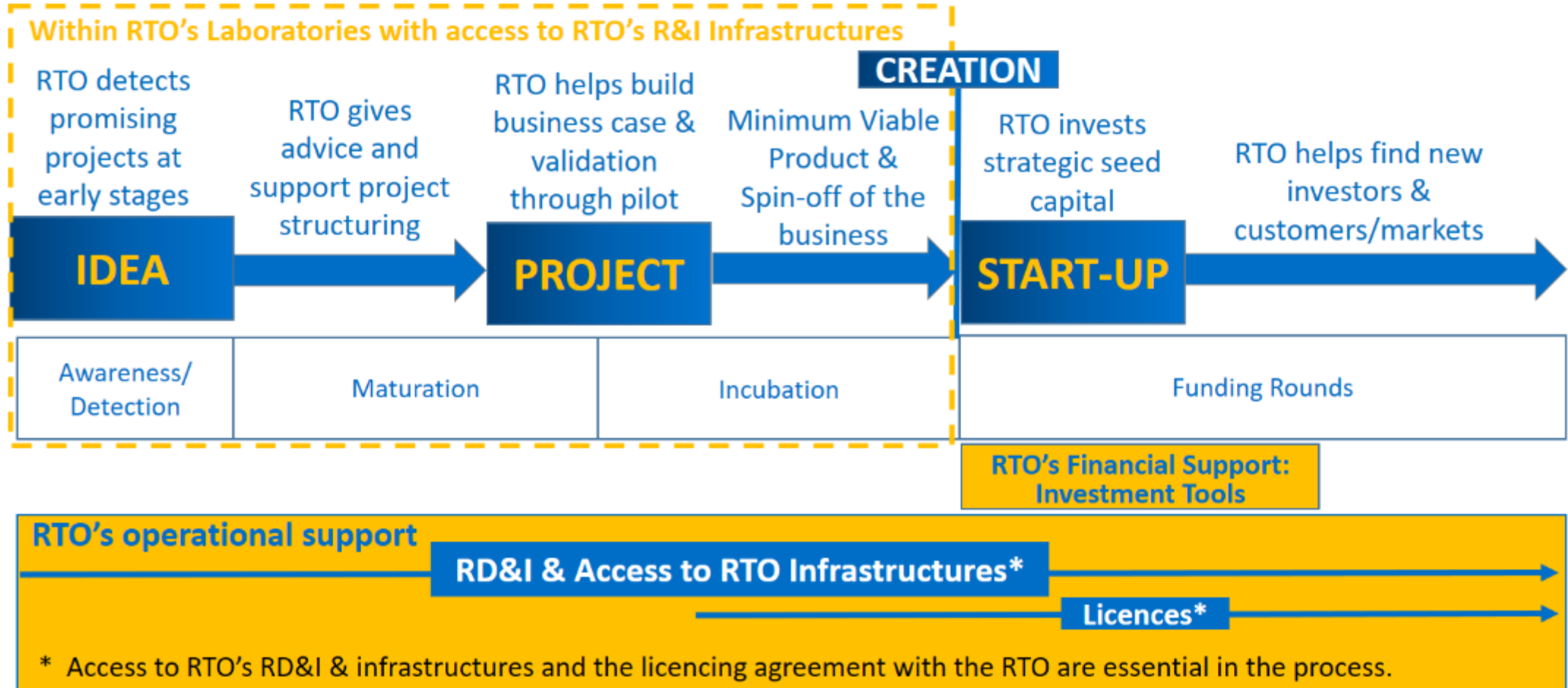


- **RTOs develop new, sometimes game-changing technologies, with a market-oriented approach** and the objective to develop strong IP and to transfer their technology to the market
- **RTOs' undertake additional effort to have a commercial approach themselves** or sustain a pool of entrepreneurs via spin-off creation
- **Public authorities could play a role to support this type of activity** which helps make innovations investment-ready

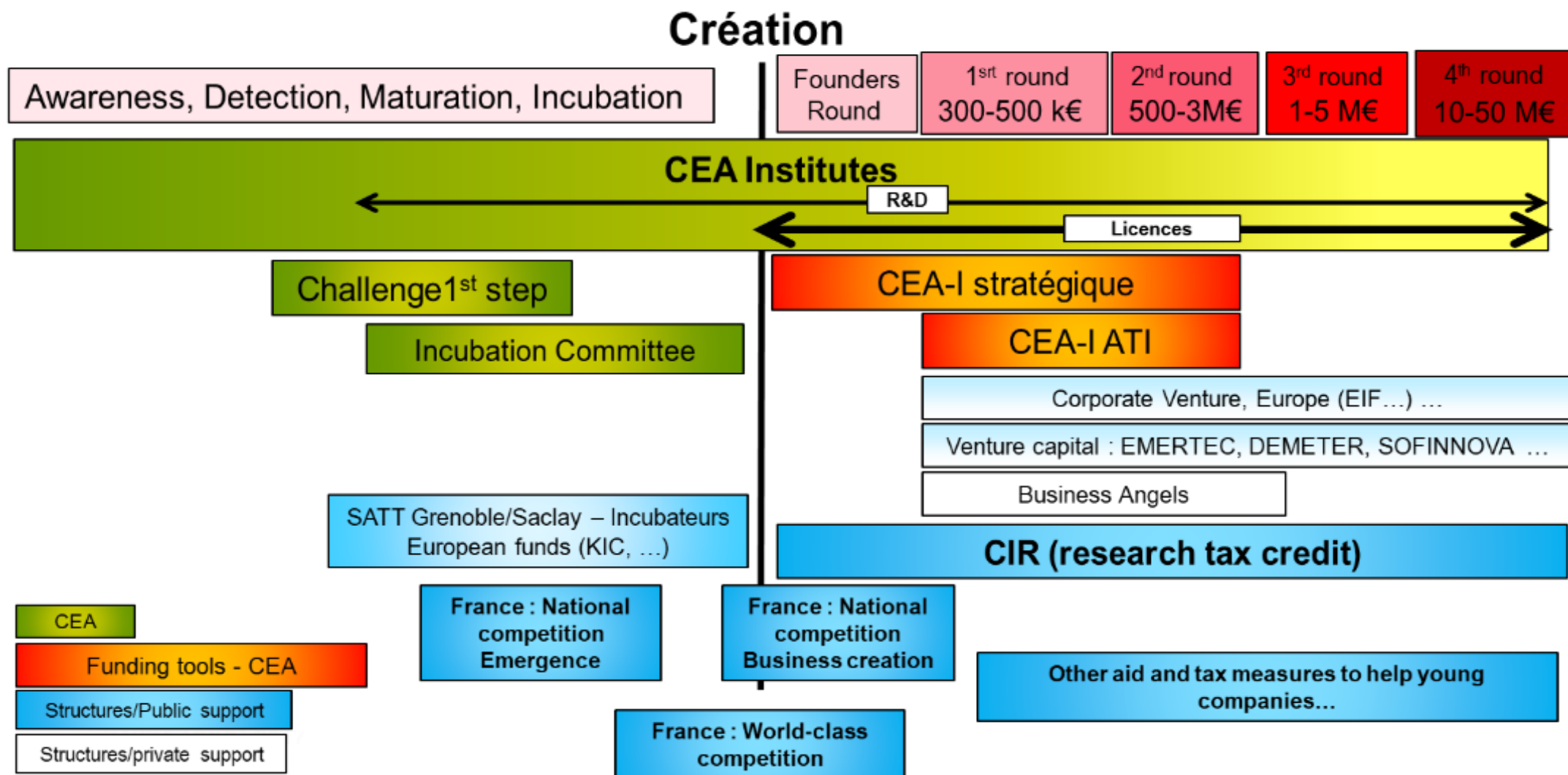
## **How do RTOs create Spin-offs?**



# RTOs' Support System for Start-ups' creation



# RTOs' Support System for Start-ups' creation: the example of CEA in France



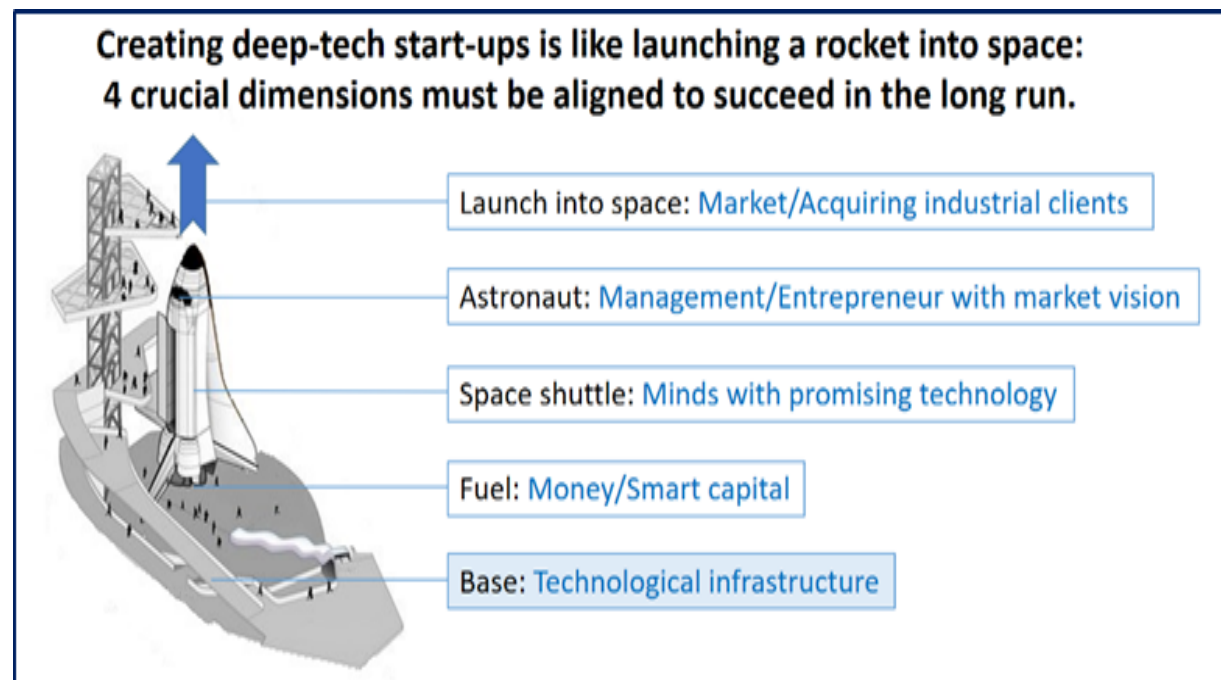


## 4 Key Dimensions to Create Start-Ups

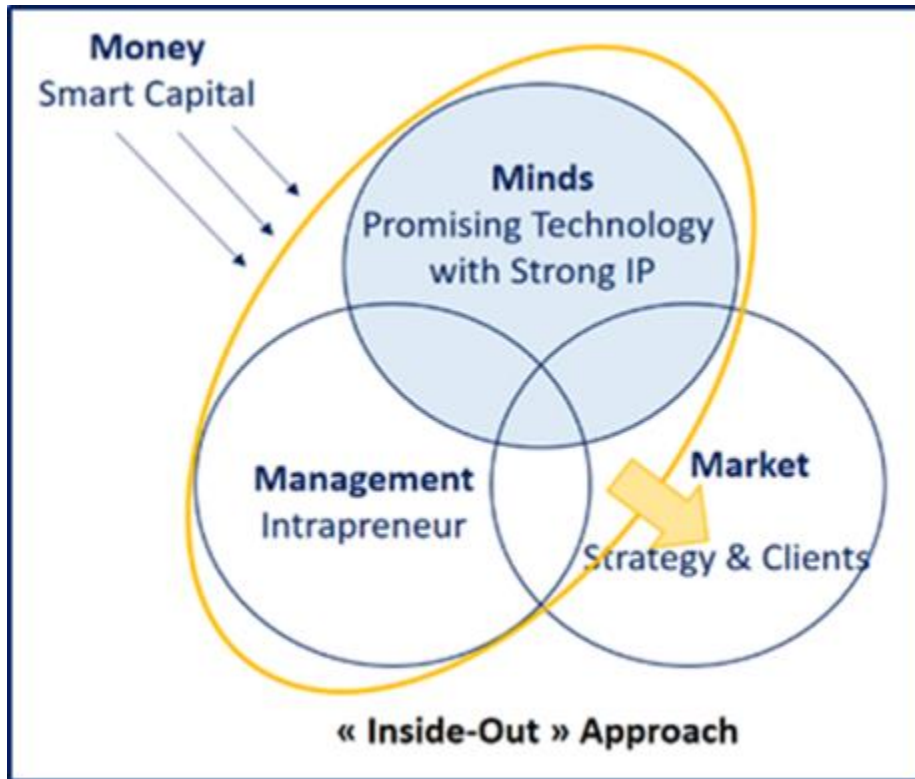
- **Minds:** technology experts with access to excellent technological infrastructure to provide a promising market-oriented RTO technology.
- **Management:** smart team around an entrepreneur with a market vision, willing convert disruptive technologies into ready-to-invest business opportunities.
- **Market:** strategy with interested and committed industrial partners/clients.

+

- **Money:** smart capital from investor to transform technology into business value and growth.



# Inside-Out Approach



1. Starting point: RTOs' promising technology at a close-to-market level of development, with potential applications in different markets
2. Leadership dilemma: RTOs need to find a motivated intrapreneur who will act as a driving force to find the right market
3. Market Development: smart team needs to develop the market and the technology hand in hand and to identify the industrial clients interested in the technology

# Inside-Out Approach



**Cheaper & More  
Efficient 3D LED Lamps**

*Aledia*



**Making Waste  
Water Re-usable**



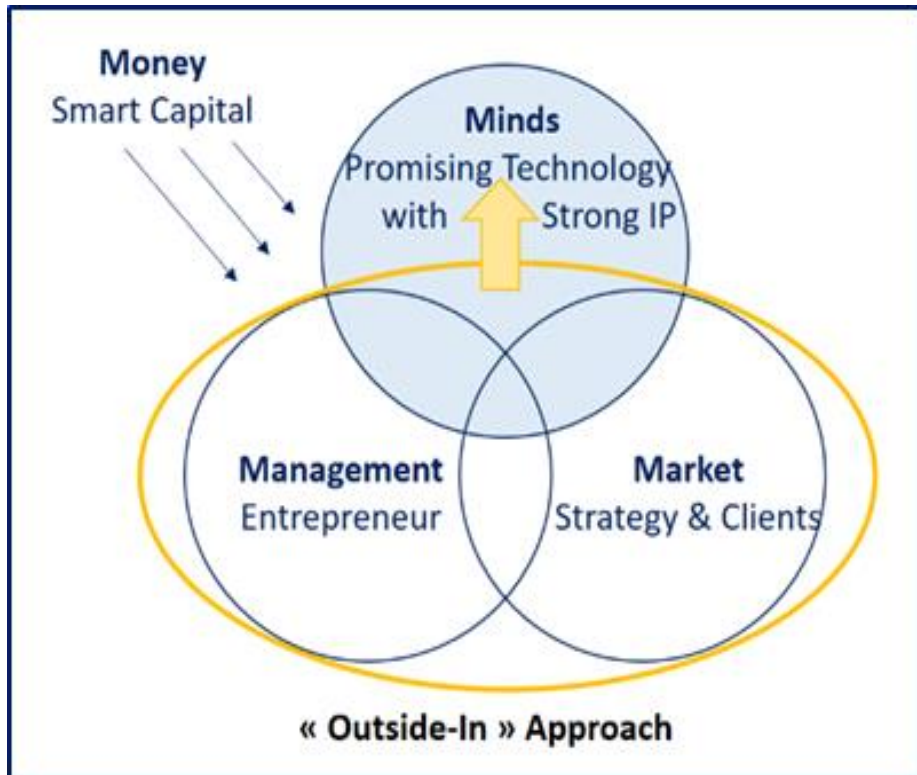
**Innovative Medical Devices  
for Cranial & Spinal  
Neurosurgery**



**ADBIOCOMPOSITES**

**Really Sustainable  
Packaging Solutions with  
Bioplastic Materials**

# Outside-In Approach



1. Entrepreneurs in low TRLs, with good market vision contact RTOs to develop a promising technology portfolio for the new business
2. RTOs collaborate with these entrepreneurs, helping them create the needed technology or apply an existing RTO technology to their needs
3. After project ends, RTOs can take the opportunity to invest in the start-up

# Outside-In Approach



**Collaborative Platform for Creative  
Television Teams**



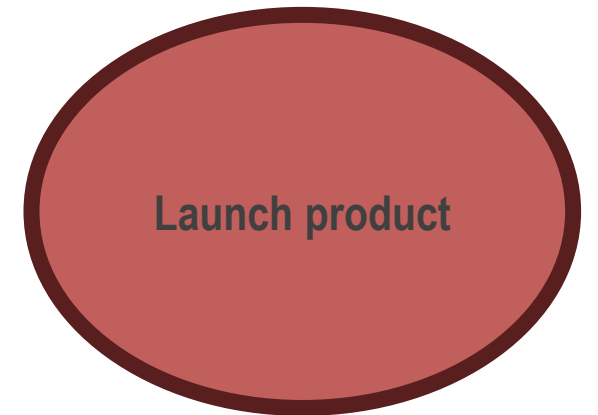
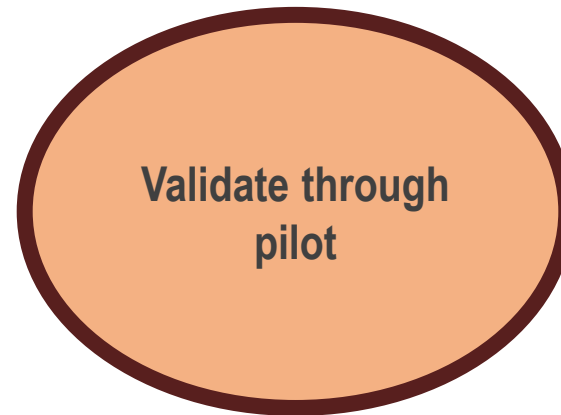
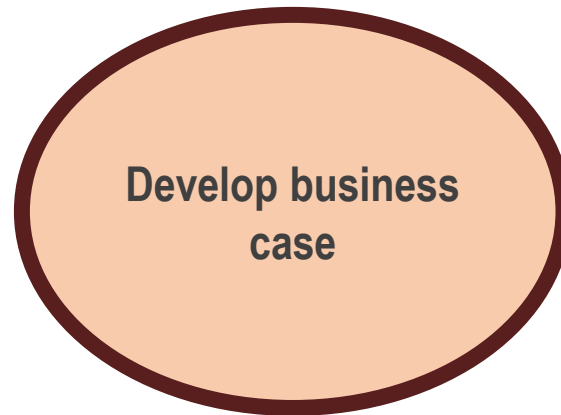
**Technological Voucher Connecting  
RTOs & Early-Stage Start-Ups  
for Robot technology transfer**



# Outside-In Approach



The joint power of 4 leading European RTOs to launch new businesses in robotics



+1500 agents → +120 voucher applications → 64 business case → 8 pilots → + 4 products



## **What are the specificities of RTOs Spin-offs?**

## Some figures on RTOs' support to Deep-Tech Start-Ups

550+

**Spin-offs still active in  
2014** from 7 large  
European RTOs

70+

**Spin-offs created each  
year** by 7 large European  
RTOs

+80%

**Success rate of  
RTOs' spin-offs  
after 5 years**

13.000+  
Jobs  
Created

€1,8 bn  
Turnover

**Providing access to RTOs' untapped technology potential  
would deliver high value for society**

**Why are RTOs Spin-offs doing so well?**

# Making Innovations Investment-Ready: RTOs' Operational Support for Deep-Tech Start-Ups

**RTOs' multifaceted support provided to their deep-tech start-ups at every step of the way is crucial to their success:**

- Detection of promising projects at early stages
- Support to build the business case & implement the business plan
- Support for the validation phase through pilots and prototypes
- Access to in-house technological research infrastructures
- Transfer of strong Intellectual Property Rights
- Support to build smart teams with high-level entrepreneurs
- Staff detachment
- Financial support & advice: RTOs' label as due diligence process
- Connecting to industry and finding customers
- Legal support, IP issues assessment
- Advice on internationalisation
- Coaching to reinforce the technological basis of the venture



# Bringing Science into Finance: RTOs' Financial Support for Deep-Tech Start-Ups

- RTOs sometimes also **manage investment funds to leverage the risk** and produce investable opportunities for “smart capital”
- With their deep technological knowledge and expertise, **RTOs bring science into finance and act as due diligence for investors**, helping them assess the technology value



**Why are RTOs not doing more?**



# Downsides for RTOs to Create Deep-Tech Start-Ups



- High commitment & resources required to ensure success in high risk environment: what return?
- Transfer of heads to the spin-offs: loss of high-level researchers with expertise & network
- Transfer of customers' connections

**Supporting RTOs' to make their untapped technology potential investment-ready would deliver high value for society**

**What type of support needed by RTOs?**

# Support Technology Maturation to Make Innovation Investment-Ready

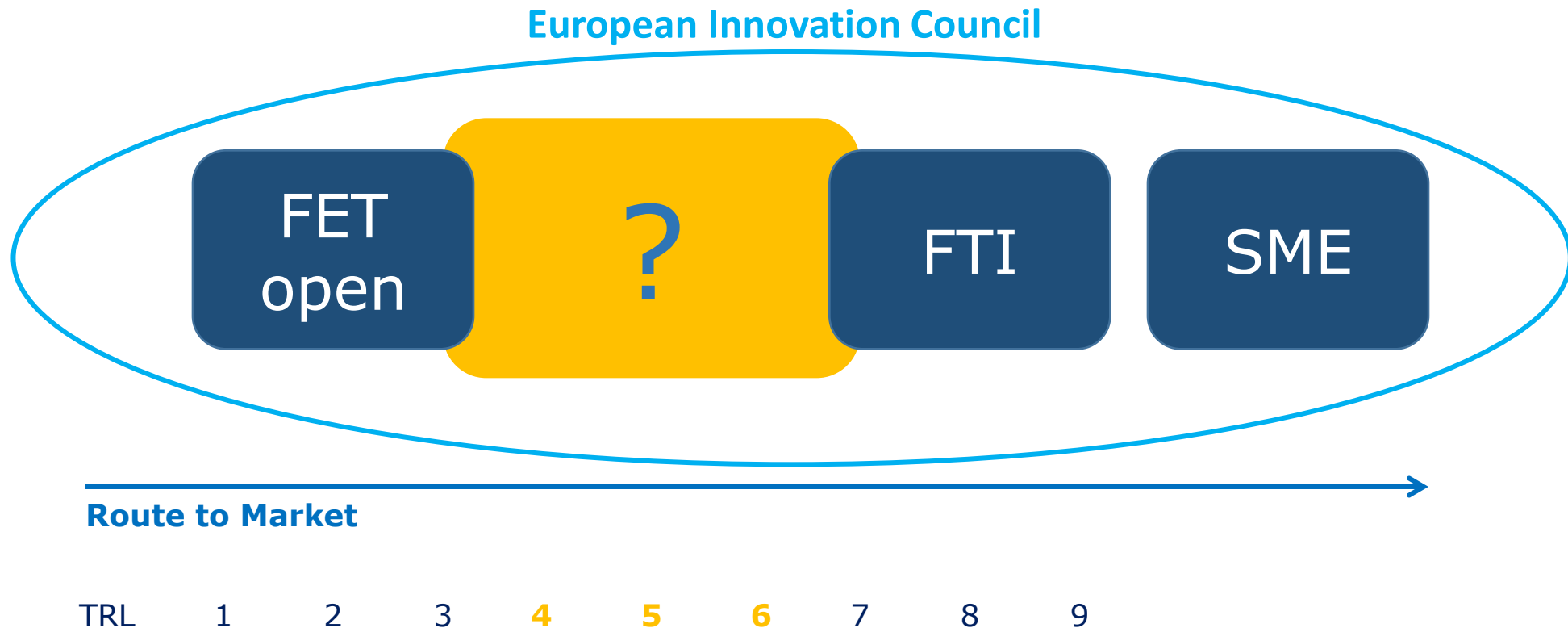
- **RTOs' tech transfer via the creation of deep-tech start-ups requires continuity and high operational and financial investments**, at a time when equity is too risky and private investors don't invest at that stage.



## Support needed:

- **EU grant funding scheme with a bottom-up approach focussing on the maturation and incubation phase**
  - In Finland: Tekes has a limited but well working pre-seed grant funding instrument supporting this commercialisation/maturation/incubation phase at national level with €20M/year pre-seed funding grant.
  - In Germany: the EXIST Transfer of Research Program is another good example of technology transfer grant-funding to develop a Minimum Viable Product (phase 1), to build business case (phase2), and to attract capital (phase 3).

# At EU level: Support Technology Maturation Phase to Make Innovations Investment-Ready in EIC?



# Connect Technological Experts to Entrepreneurs to Build Smart Teams

- **A smart team is crucial to attract industrial clients and investors:** essential success factor in deep-tech start-up creation.
- **Need to better connect technological experts to entrepreneurs with strong market insights**



## Support needed:

- **Creating a pool of entrepreneurs/intrapreneurs with market insights looking for high potential business opportunities, and connecting it to a pool of untapped RTOs' technological potential.**
- Using a pool of seasoned "entrepreneurs" as mentors to support less experienced ones.

# Provide Access to Liquidity after the Start-Up Foundation to Keep Start-Ups in Europe

- After creation, many **EU deep-tech start-ups tend to move out of Europe** to find funding and less regulatory constraints
- **RTOs do not have the means on their own to provide the liquidity that these companies** require to stay in Europe



## Support needed:

- **Increase public & private support to provide liquidity to start-ups at a later stage after their creation, to make the high investment they require worthwhile and create jobs & growth in Europe**
  - Stimulate seed and early round investors to work on a more European scale
  - Improve the regulatory framework in Europe to attract foreign investors from overseas (ex. Show-casing the top European investment opportunities with proven potential)



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