

# FAIR: the universe in the laboratory

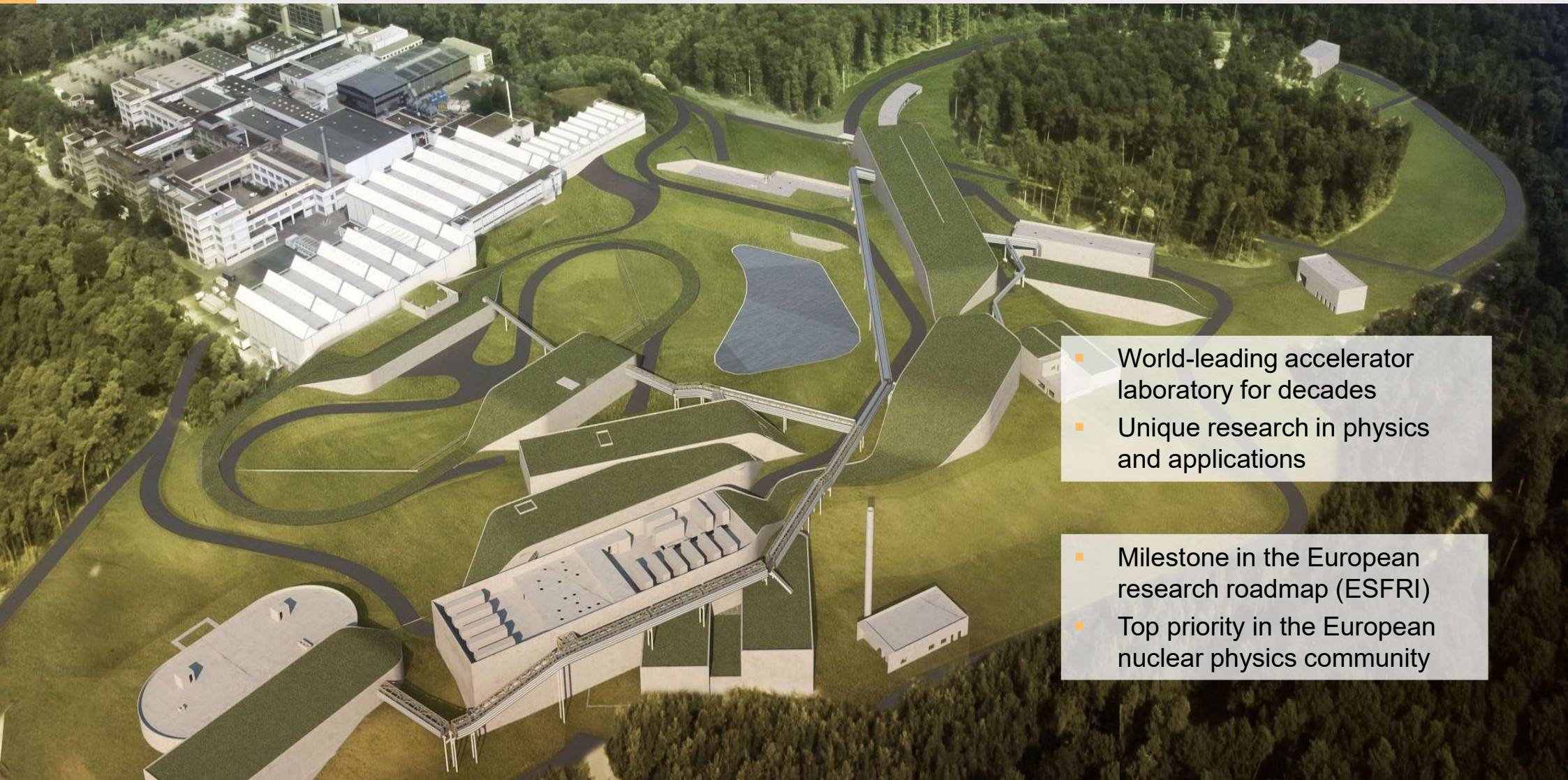
Presented by Sonia Utermann  
8<sup>th</sup> October 2020

# FAIR in five (minutes)





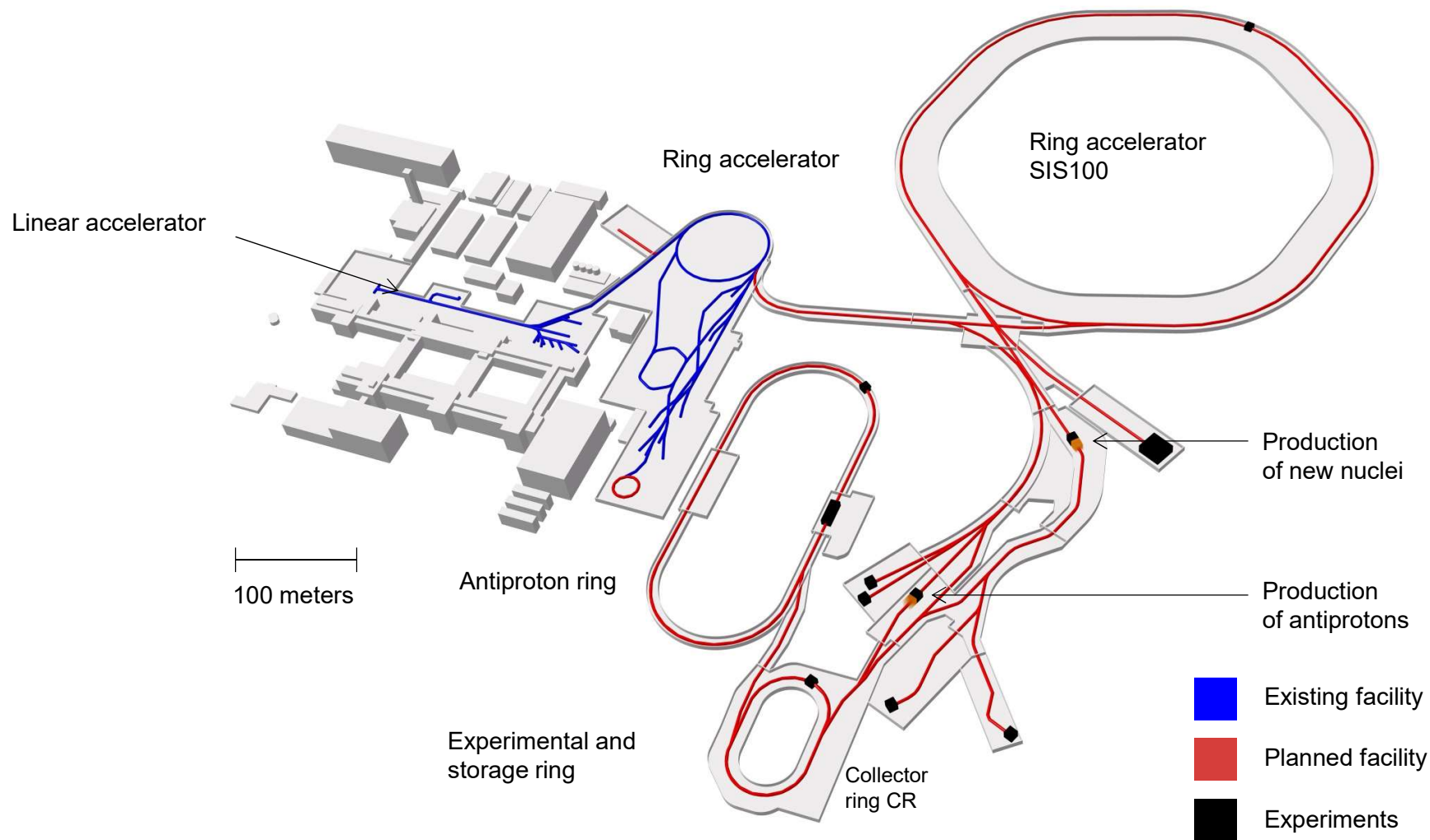
# FAIR in five (minutes)



- World-leading accelerator laboratory for decades
- Unique research in physics and applications

- Milestone in the European research roadmap (ESFRI)
- Top priority in the European nuclear physics community

# FAIR – The facility





# The four scientific pillars at FAIR



## **NUSTAR**

Nuclear Structure, Astrophysics and  
Reactions: Stars and nuclei  
(850 scientists)

## **CBM**

Compressed Baryonic Matter:  
Inside a neutron star  
(500 scientists)

## **PANDA**

Antiproton-Annihilation at Darmstadt:  
Antimatter research  
(500 scientists)

## **APPA**

Atomic, Plasma Physics and Applications:  
From atoms to planets to cancer research  
(720 scientists)

- FAIR is a GmbH
- Host laboratory is GSI Helmholtz
- Majority shareholder is GSI (Germany)
- Other shareholders are Finland, France, India, Poland, Romania, Russia, Slovenia, Sweden
- UK is an associate partner and the Czech Republic is an aspirant partner

# A Big Science life cycle

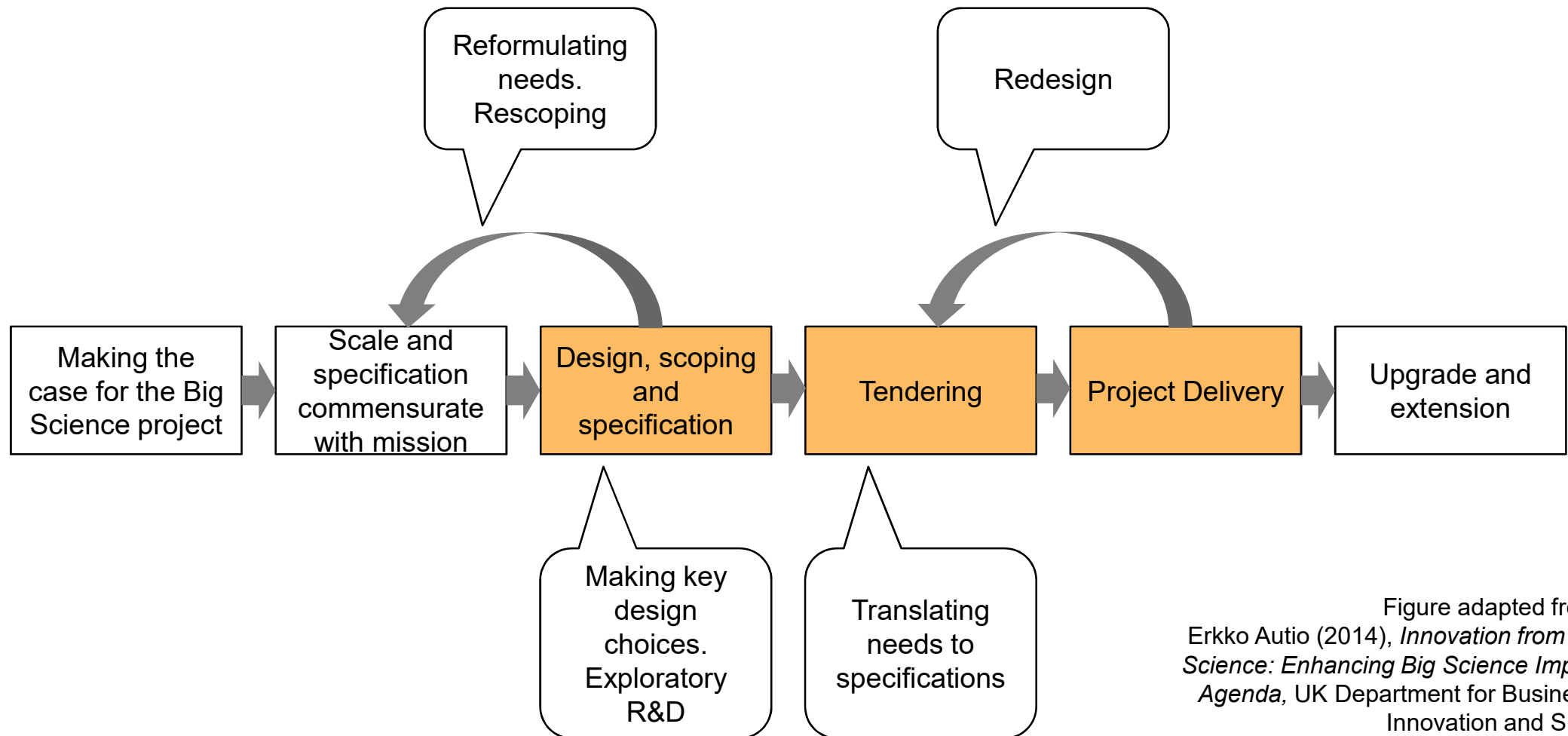
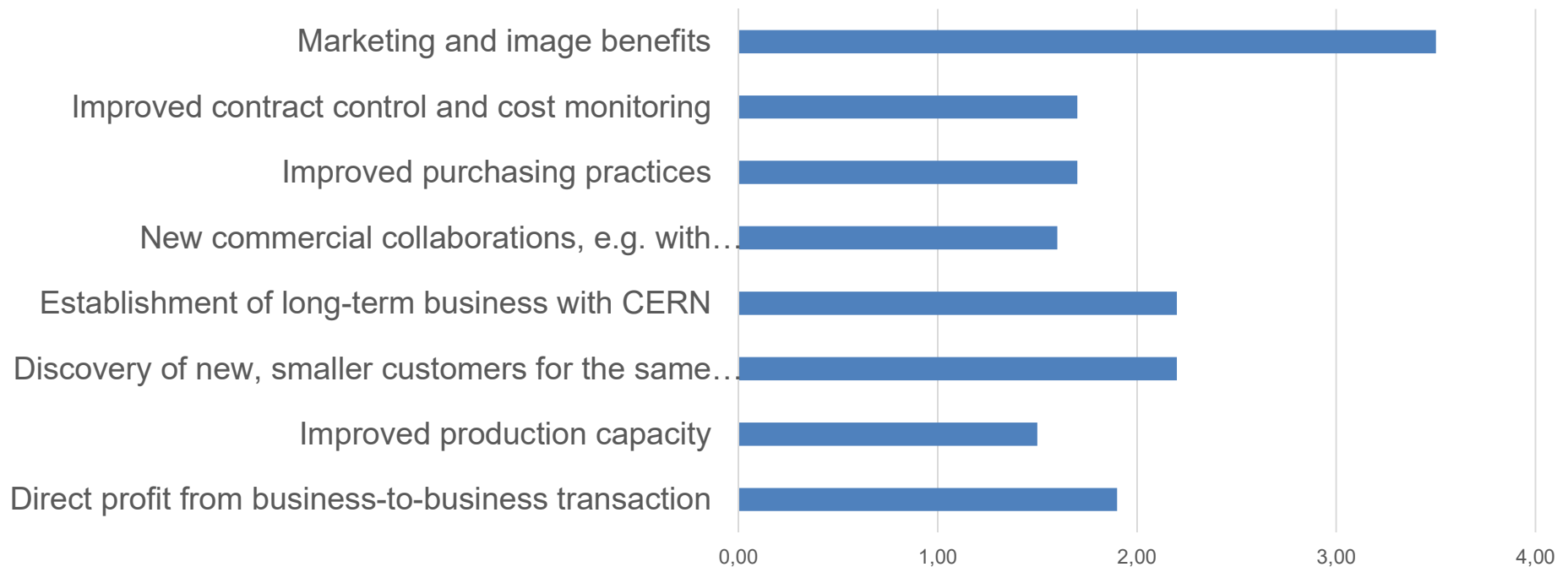


Figure adapted from:  
Erkko Autio (2014), *Innovation from Big Science: Enhancing Big Science Impact Agenda*, UK Department for Business, Innovation and Skills

# Why supply Big Science?

## Economic benefits of supplying CERN



Data taken from:

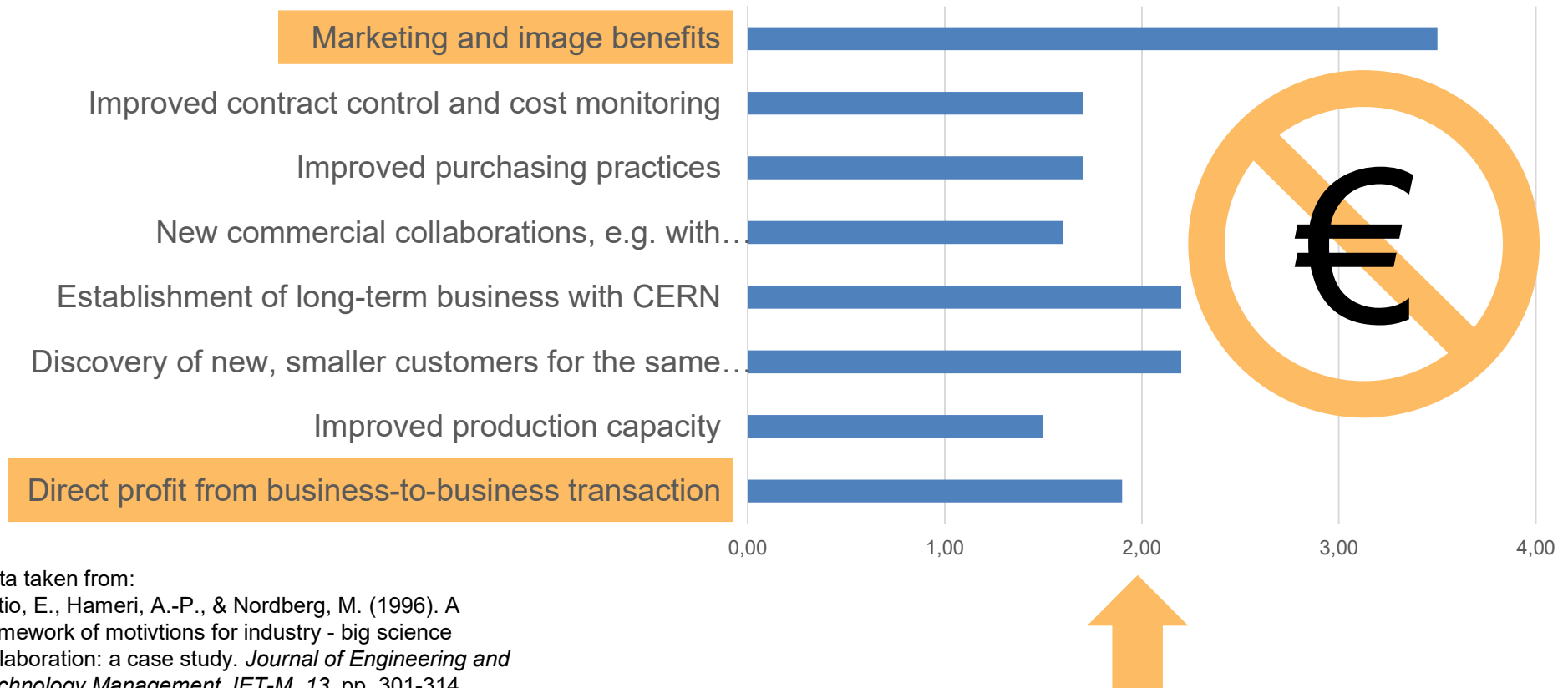
Autio, E., Hameri, A.-P., & Nordberg, M. (1996). A framework of motivations for industry - big science collaboration: a case study. *Journal of Engineering and Technology Management JET-M*, 13, pp. 301-314





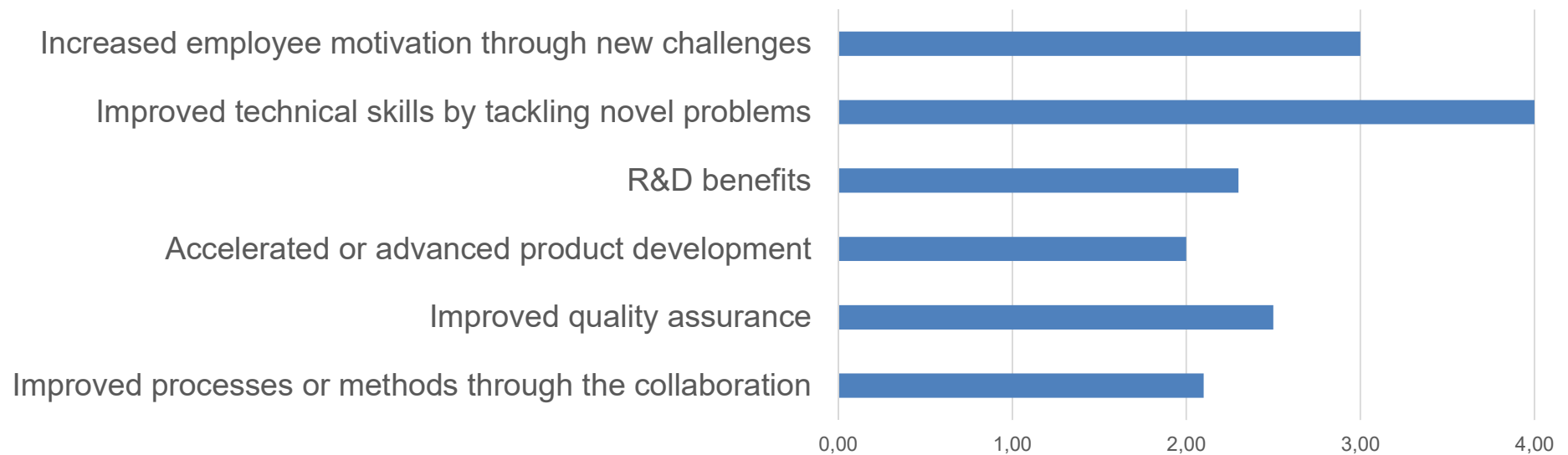
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## Economic benefits of supplying CERN



# Why supply Big Science?

## Technical benefits of supplying CERN

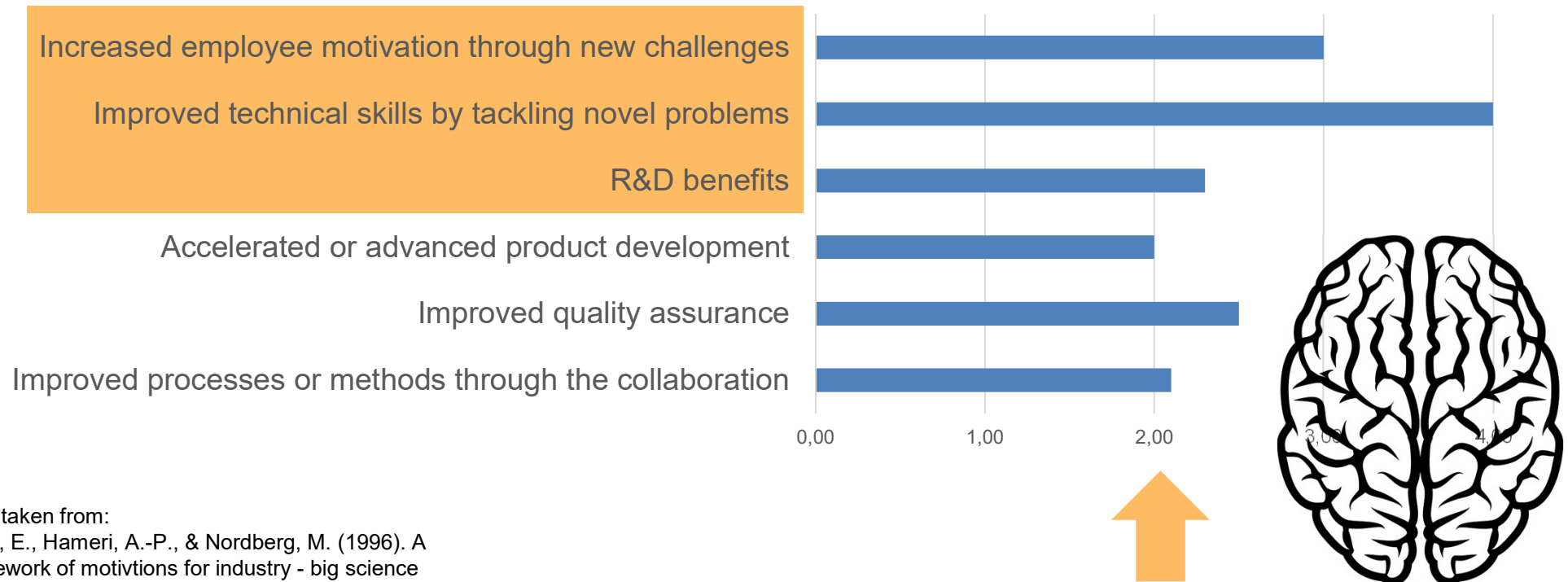


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# Why supply Big Science?



- x It's not for the money...
- x and it's not because we are easy customers!
- ✓ Reputation and marketing
- ✓ Knowledge, skills, R&D
- ✓ Many companies seek out opportunities to supply Big Science as part of their **innovation strategy**

## Tendering Process

- without or
- with negotiation



German national tender for < 214 k€

EU-tender for > 214 k€

## In-kind



Degree of R&D or innovation sought  
defines the tendering process

## Tendering Process

- without or
- with negotiation

} German national tender for < 214 k€  
EU-tender for > 214 k€

## In-kind

Functional specifications:

“It should do x”  
**-not-**  
“build it like this”

➤ Degree of R&D or innovation sought defines the tendering process



# Procurement processes at FAIR



e.g. Procurement value 2019:

- 169 M€ worth of tenders
- of which just ~ 1.4 M€ were off-the-shelf

2019 Purchase type	No. tenders national (<221 k€) above 25K€	No. EU tenders (>221 k€)
Without negotiation	102	18
With negotiation	165	24



increasing  
degree of R&D or  
innovation sought

- Accounts for about half of accelerator procurement

# Procurement processes at FAIR



e.g. Procurement value 2019:

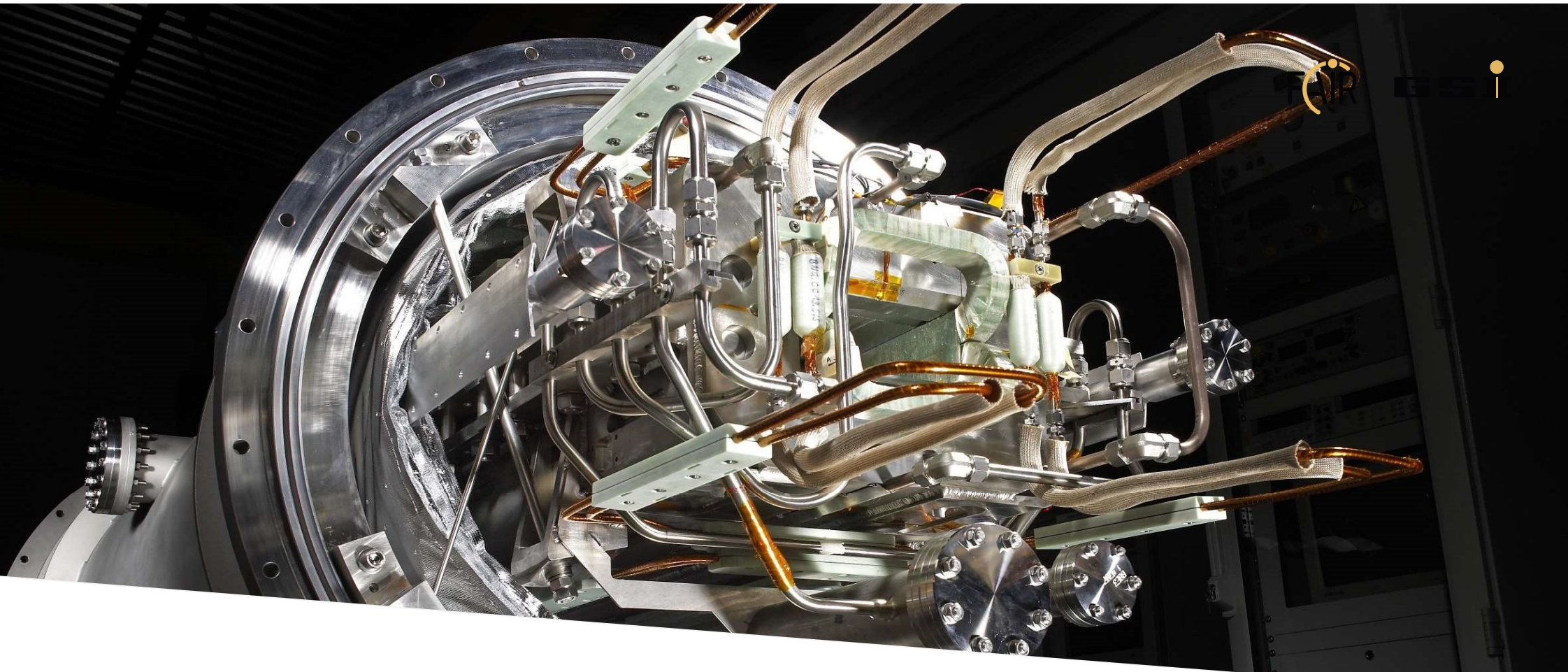
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Where to look for  
FAIR and GSI  
tenders: links at  
the end

increasing  
degree of R&D or  
innovation sought

- Accounts for about half of accelerator procurement



Sometimes\*, we want something  
*really* special...

\* approximately 50% of FAIR accelerator budget



# When FAIR needs innovative solutions

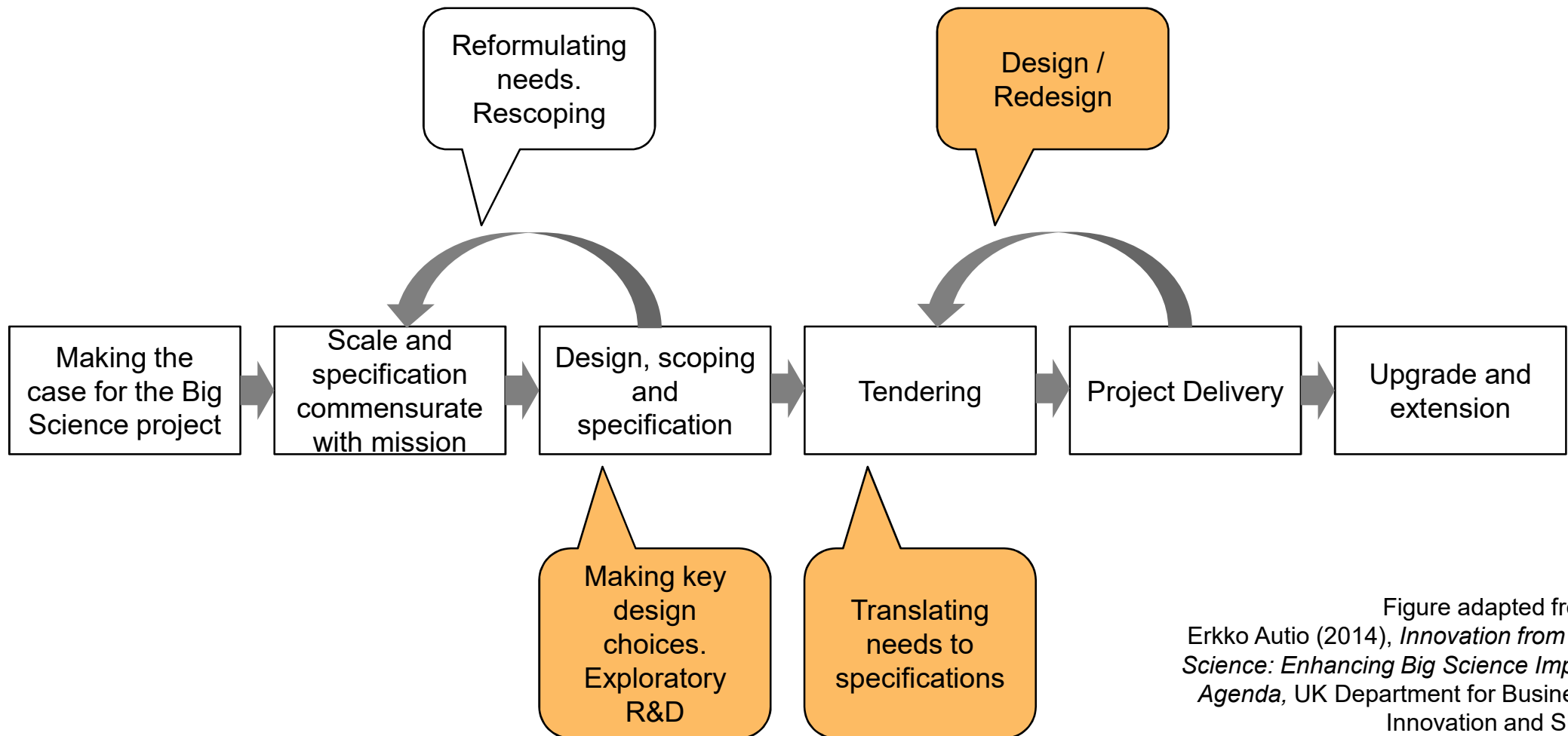
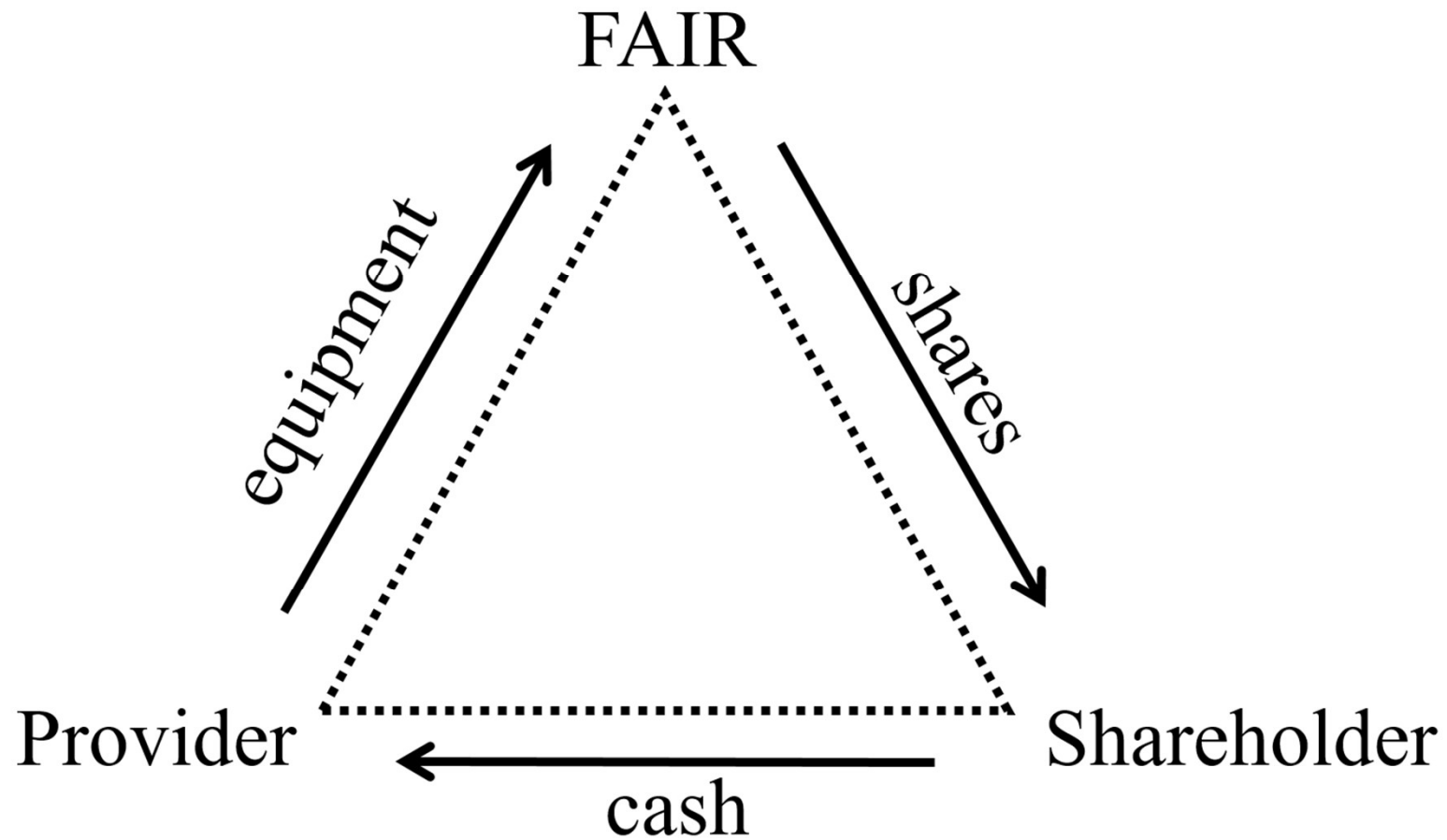
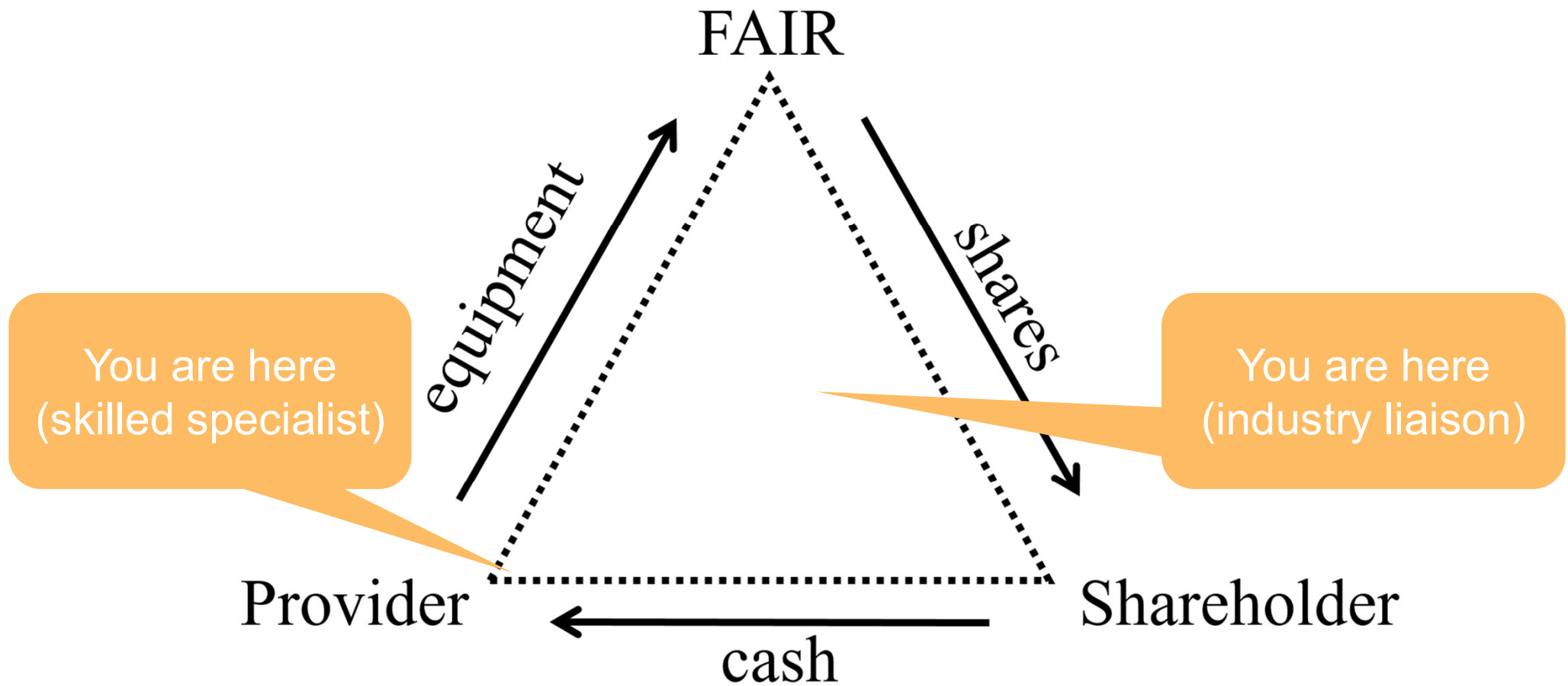


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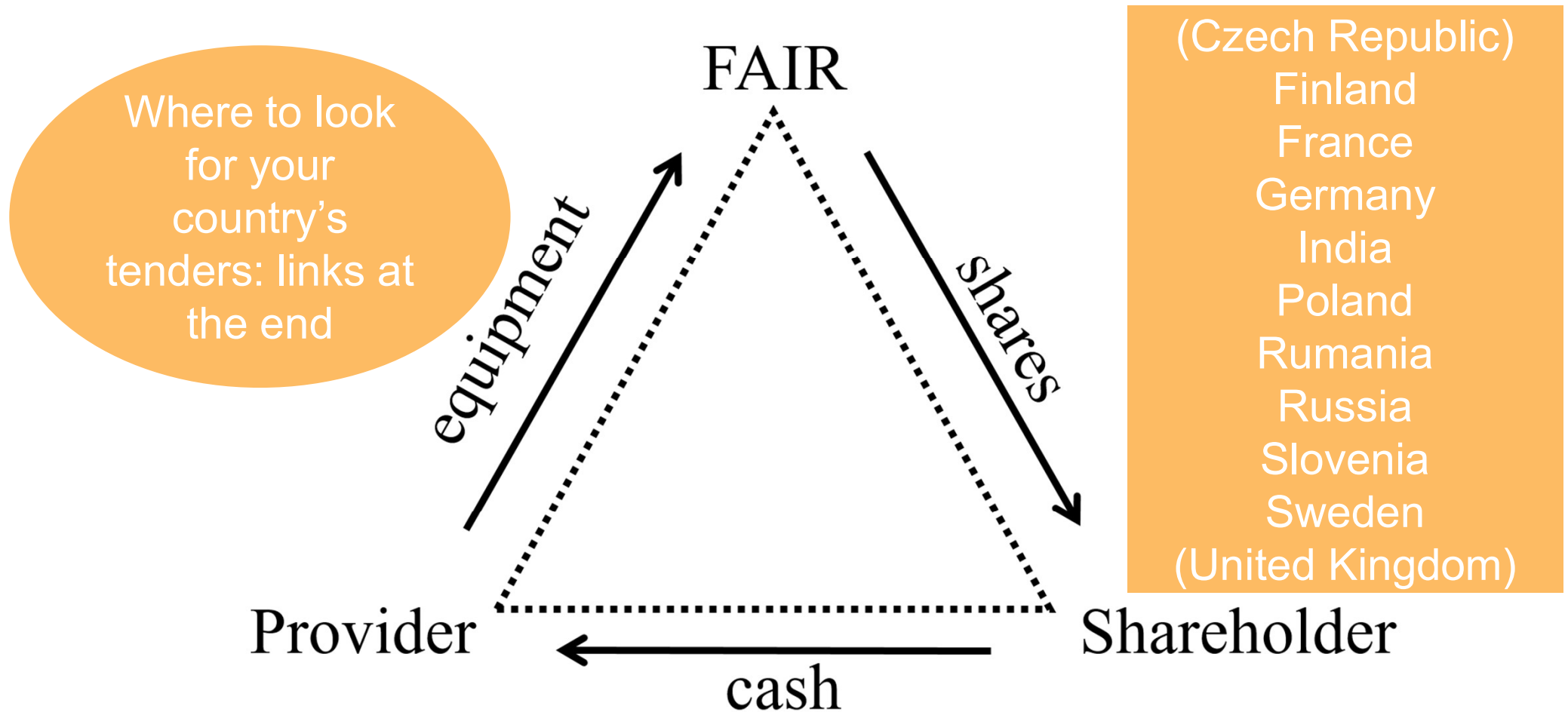
# Tool of choice: in-kind



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# Tool of choice: in-kind



# In-kind: an R&D partnership



- Extend your knowledge network with FAIR and GSI
- Share R&D risk with FAIR
- Favourable IP terms
- True of many negotiated tenders, too



# GSI & FAIR: Flexible Technology Transfer



## GSI & FAIR: a source of innovation for industry

Our laboratories for material sciences, biophysics and IT are often partners to industry for new technological developments.

## GSI & FAIR: innovation in cooperation

Several internal groups for electronics, vacuum technology, sensors and others have a broad range of profound expertise, which they contribute to prosperous cooperations with suppliers.



Office of Technology Transfer: *Your connecting bridge to GSI/FAIR innovations*

E-mail: [transfer@gsi.de](mailto:transfer@gsi.de) Web: [www.gsi.de/transfer](http://www.gsi.de/transfer)

# Technology transfer opportunities



- FAIR has uploaded four TT proposals to the BSBF website:  
[https://www.bsbf2020.org/Technology\\_transfer\\_proposals](https://www.bsbf2020.org/Technology_transfer_proposals)
- Contact the Technology Transfer team at FAIR and GSI:  
[www.gsi.de/transfer](http://www.gsi.de/transfer)

# If you want to supply FAIR



- Take a look at the BSBF procurement handbook:  
[https://www.bsbf2020.org/module\\_api/282492/blog/bsbf2020-news/post/318374-bsbf2020-procurement-handbook](https://www.bsbf2020.org/module_api/282492/blog/bsbf2020-news/post/318374-bsbf2020-procurement-handbook)
- Contact your industry liaison officers (ILOs): <https://fair-center.eu/fair-gmbh/in-kind-procurement/industry-liaison-officers.html>
- Check out our open tenders:  
[https://www.gsi.de/en/start/business\\_industry.htm](https://www.gsi.de/en/start/business_industry.htm)
- Consortia are welcome

# Do you work in industry liaison?



<https://enriitc.eu/>

First (virtual) meeting next week! <https://indico.esss.lu.se/event/1510/>



# Thank you for your attention

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