

# ECHORD Workshop at RSS

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Informatik VI - Robotics and Embedded Systems

# Core Idea

Academia and industry hand in hand

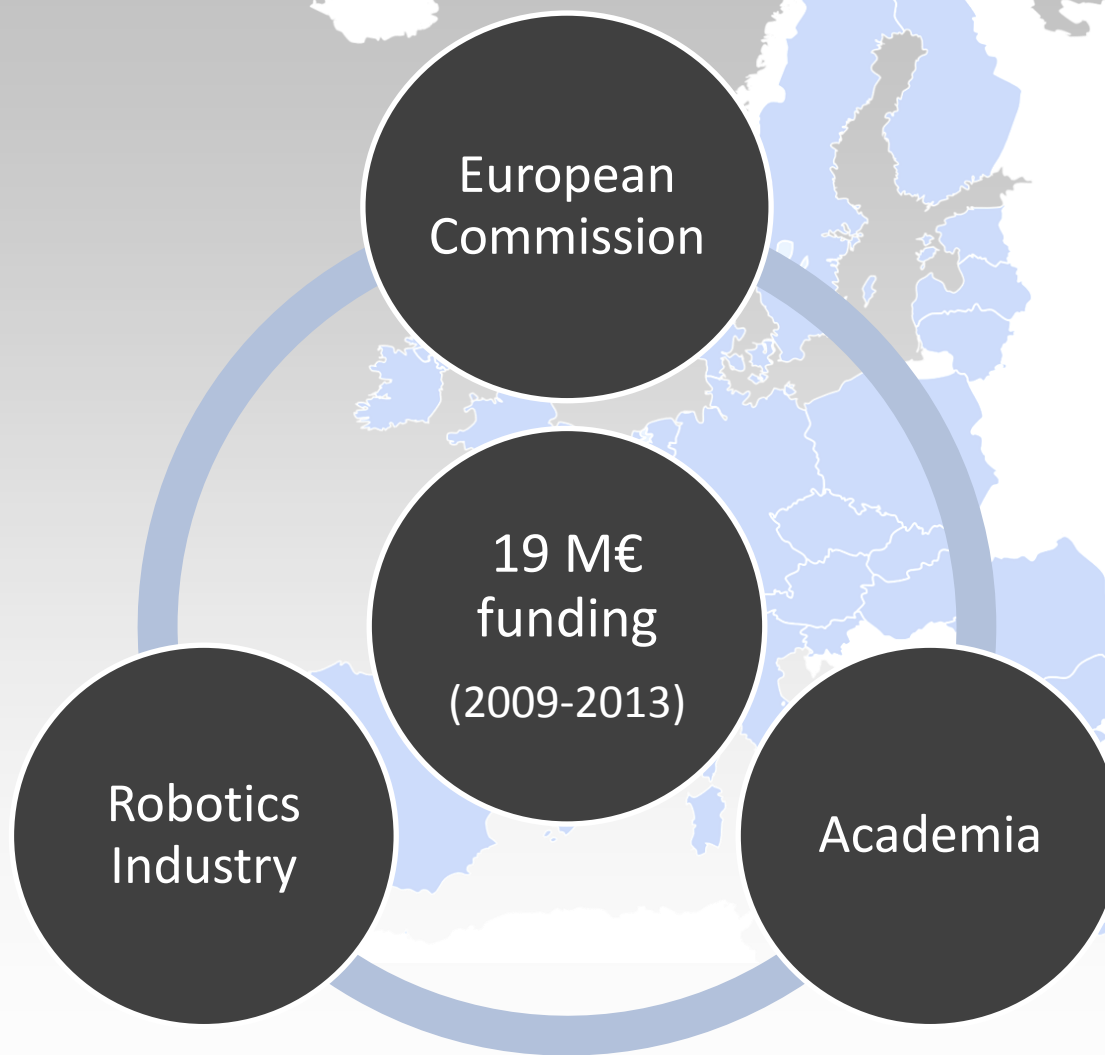


Experiments



Structured Dialogue

# The ECHORD-Project



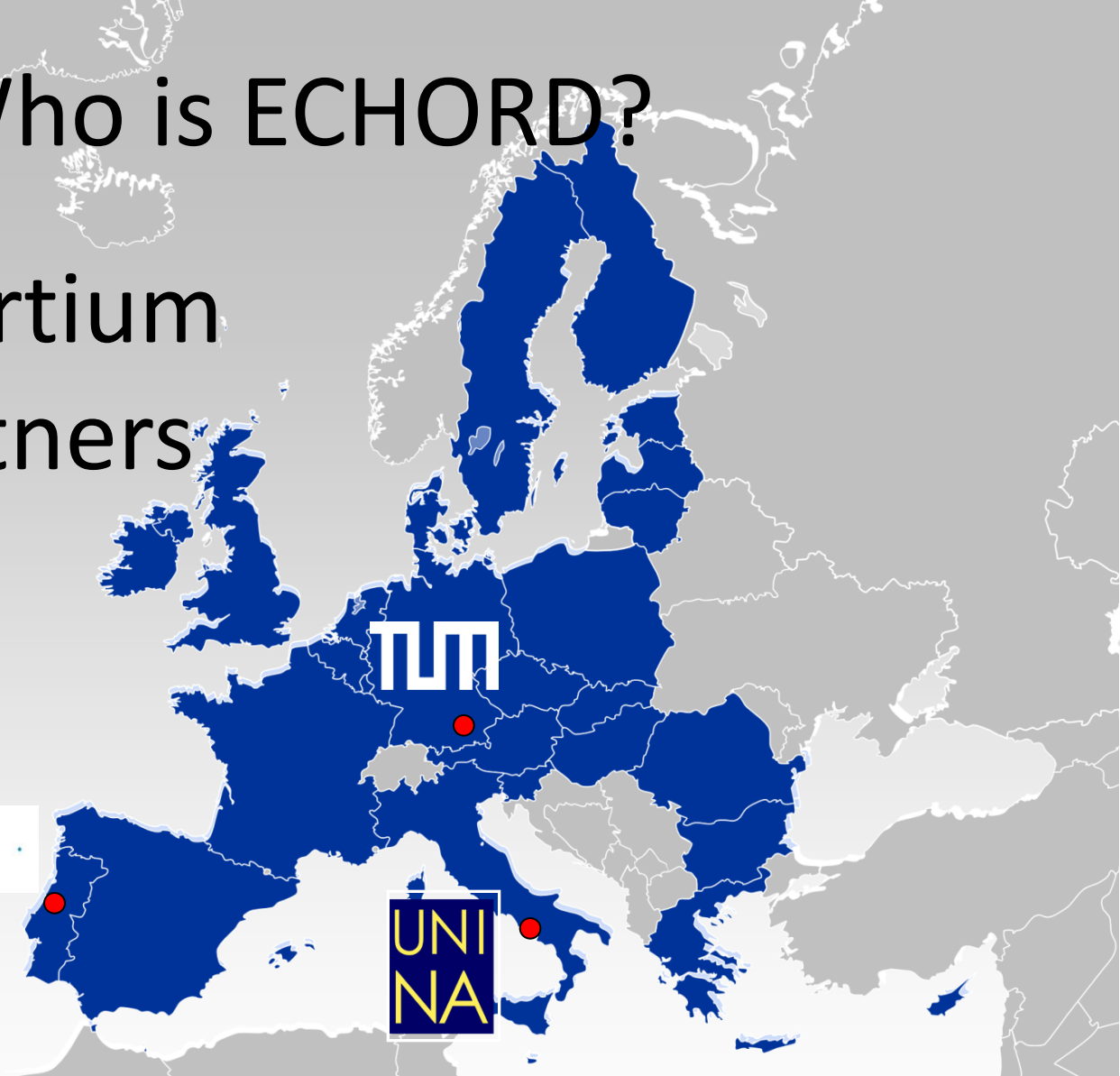
# Who is ECHORD?

Core consortium  
with 3 partners



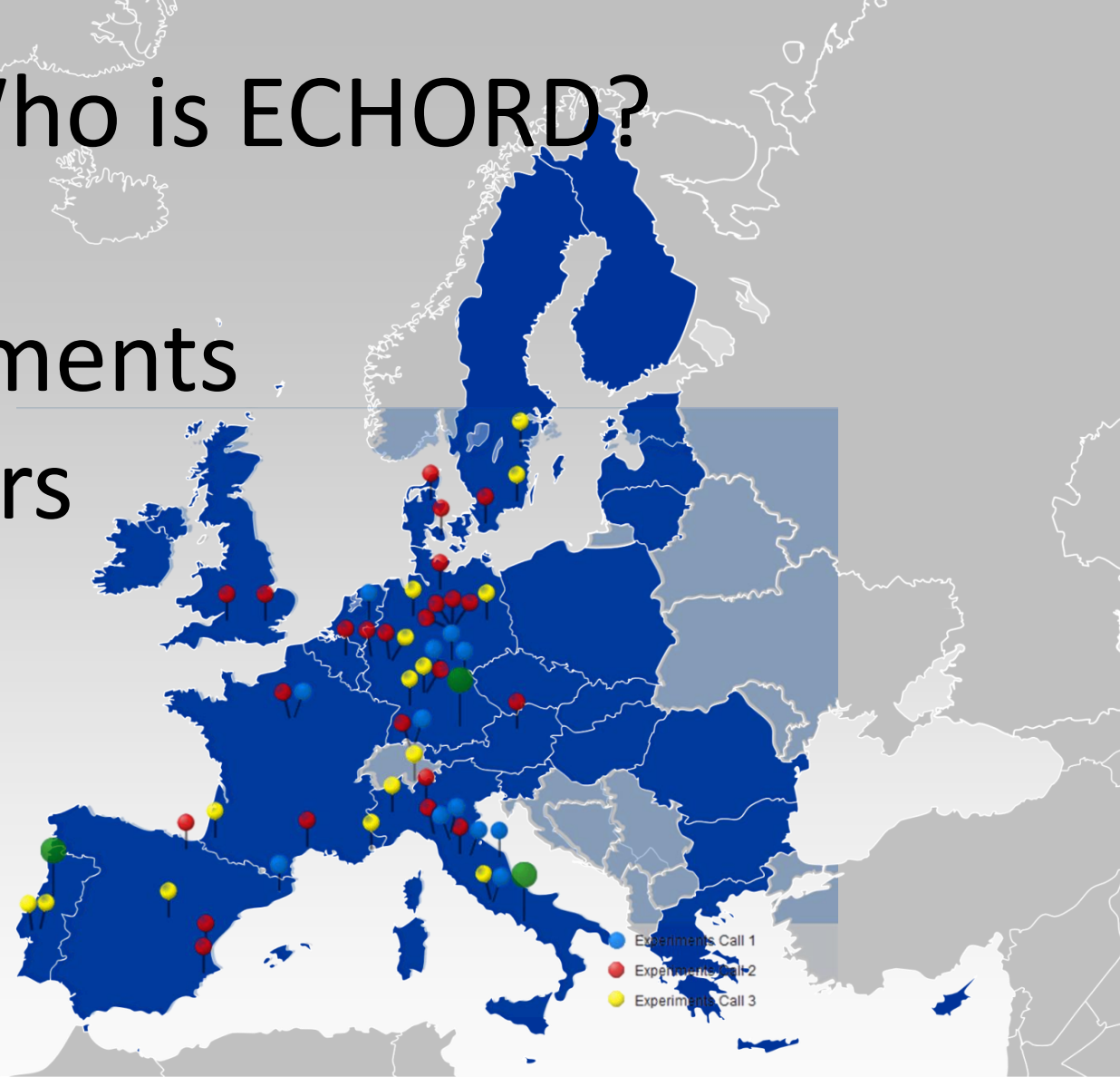
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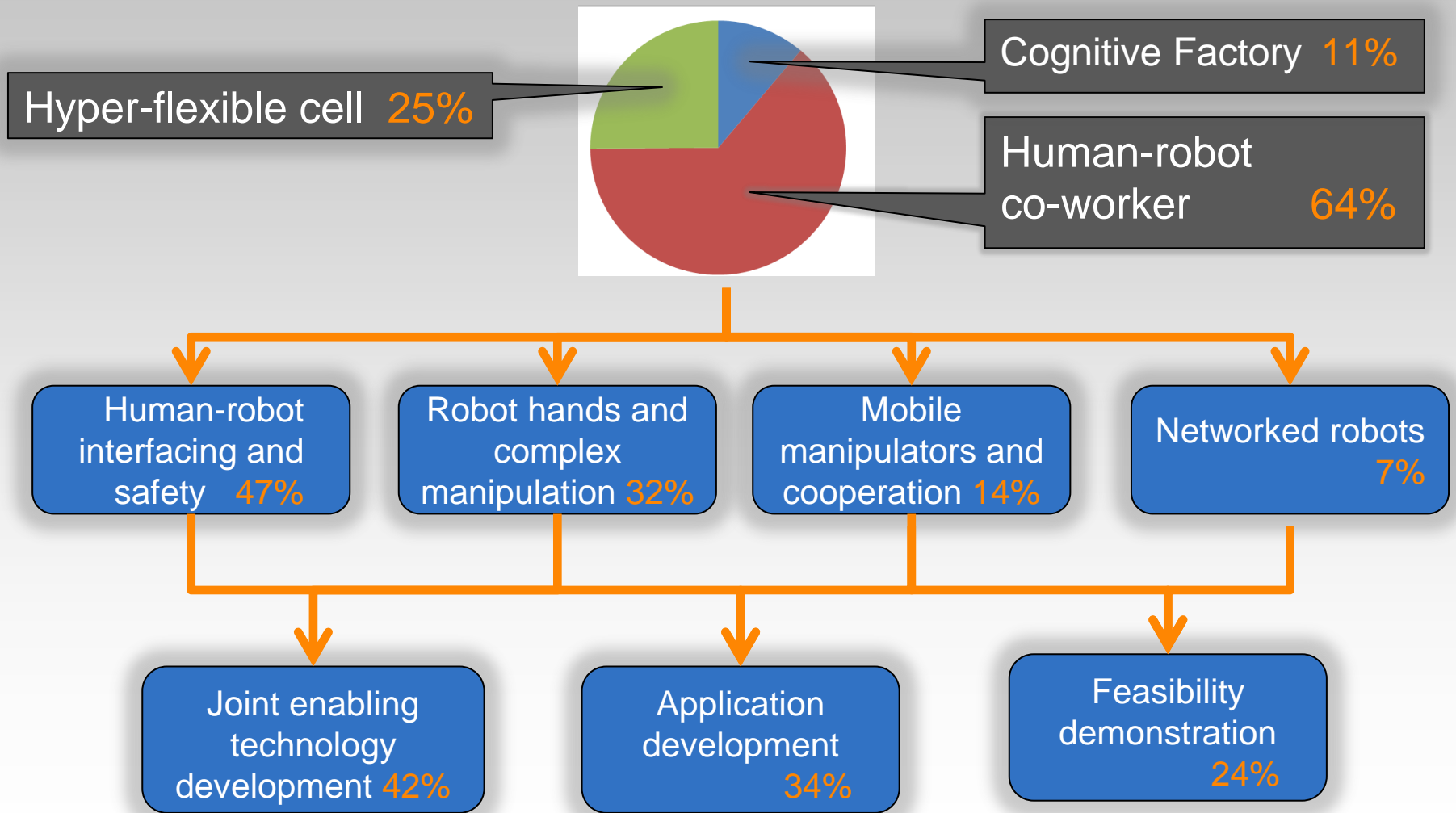


# Who is ECHORD?

51 Experiments  
~100 Partners



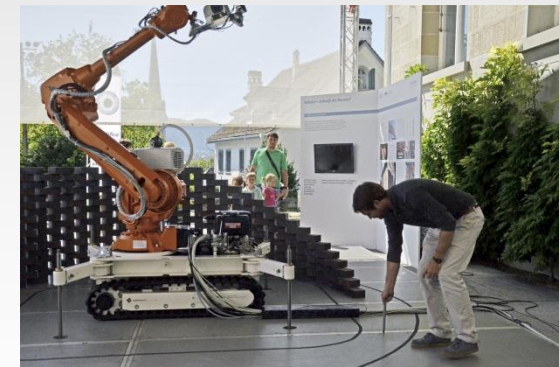
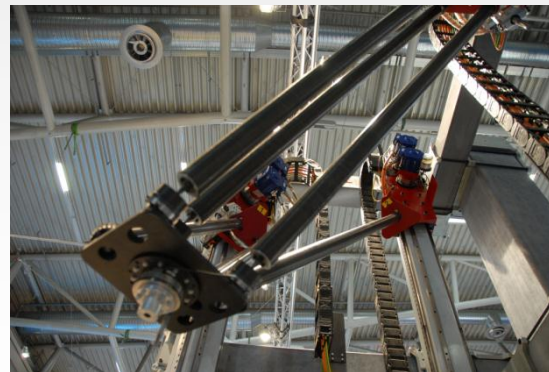
# Experiments – “Scenarios”, “research foci” and “experiment types”





# Experiments

- Various areas
  - Agricultural robotics
  - Construction robotics
  - Logistics (fleet of robots)
  - Medical and health care
  - Human-robot interaction
  - ...



# Structured Dialogue

- Intensify and foster the contact between academia and industry
- Identification and overview of international trends
- Success factors for knowledge transfer
- How to stimulate innovation?
- Various Instruments
  - Workshops
  - Questionnaires
  - Expert interviews
  - Literature analysis
  - Lab tours to Northern America and Asia



# Lab Tours

- Comparison of different cultures in the continents
  - Research trends
  - Knowledge transfer between universities/research and Industry
  - Handling of intellectual property rights
  - Funding and financing of research
  - Entrepreneurship, start-up culture, and support mechanisms
- Discussions with representatives of industry and academia

# Lab Tour America



# Impressions America



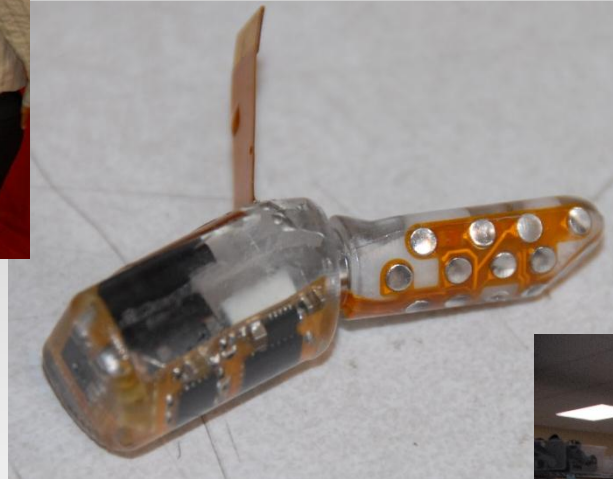
Stanford Artificial Intelligence Lab  
& Biomimetic Robotics Lab



# Impressions America



Bosch Palo Alto



SynTouch LLC

Visiting companies of different size

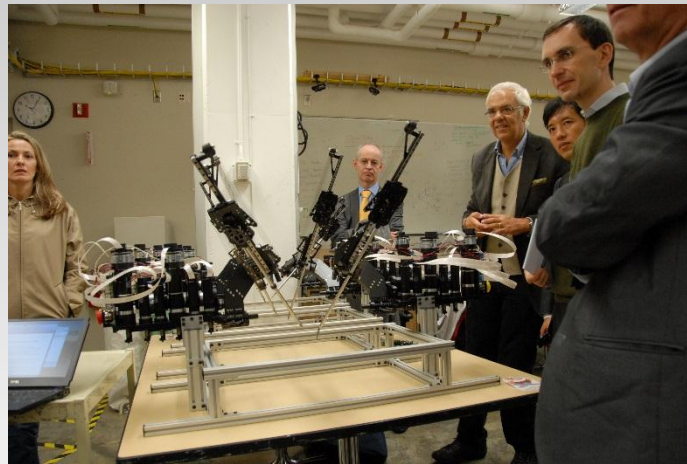


Willow Garage

# Impressions America

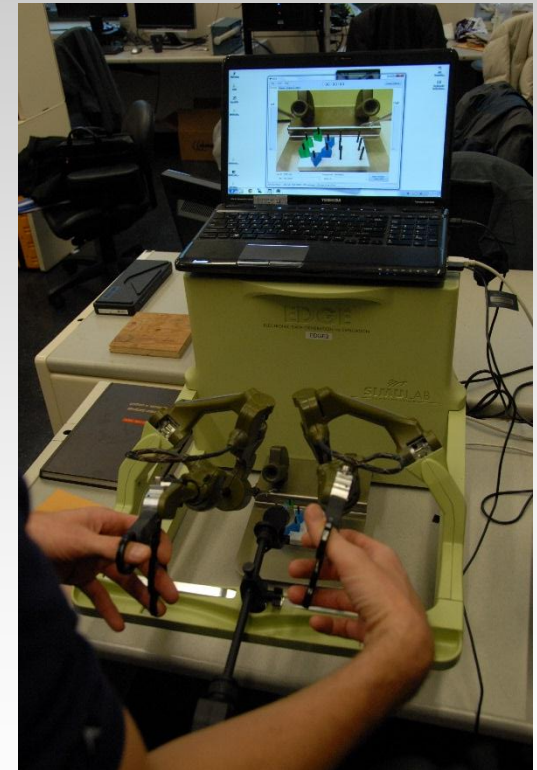


Univ. of Southern California



Univ. Washington

Medical and rehabilitation robotics



Univ. Washington



# Lab Tour Asia

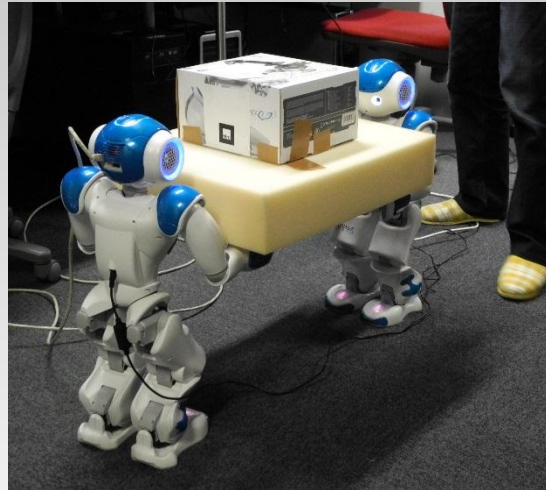




# Impressions Asia



AIST, Japan



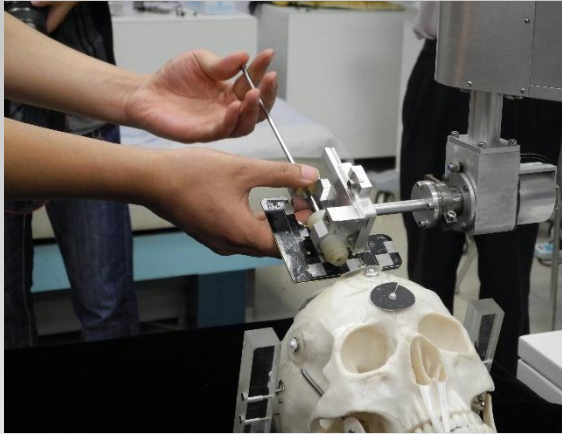
Univ. Tokyo

Humanoids



KIST, Korea

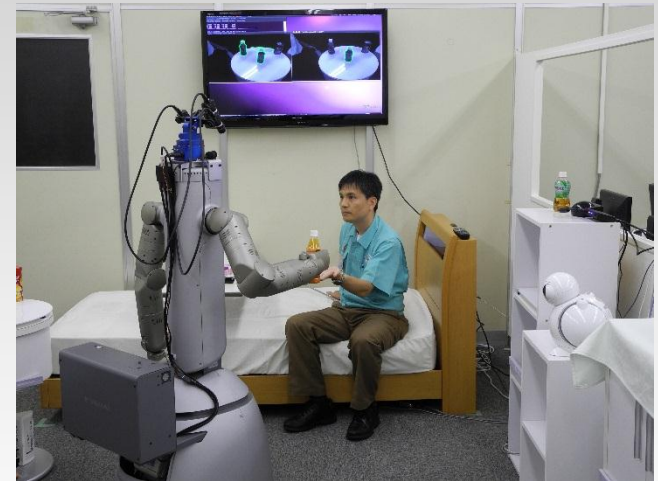
# Impressionen Asien



Beihang Univ., China



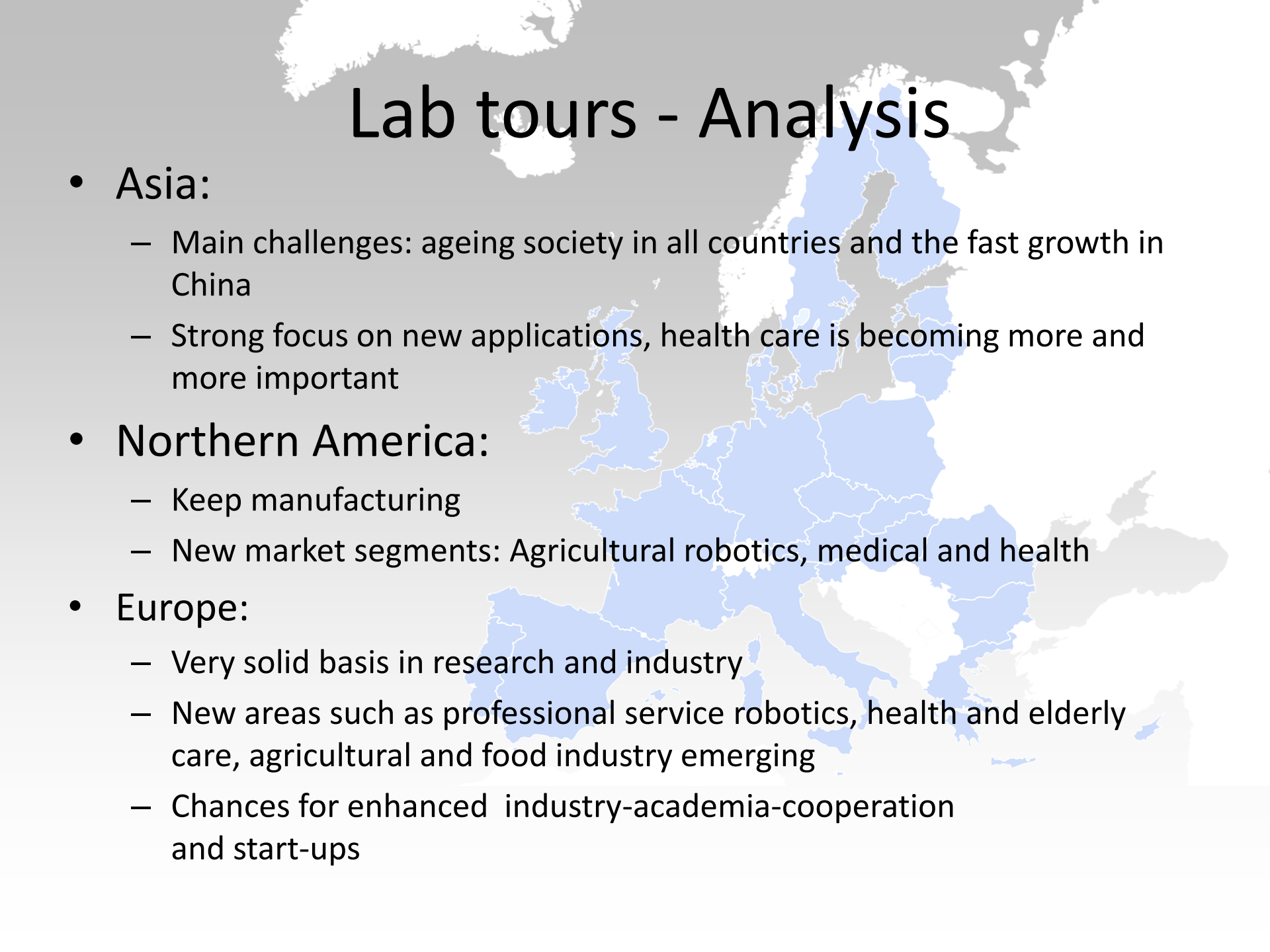
Jiaotong Univ, Shanghai



Yaskawa, Japan

Medical and health care robots

# Lab tours - Analysis



- **Asia:**
  - Main challenges: ageing society in all countries and the fast growth in China
  - Strong focus on new applications, health care is becoming more and more important
- **Northern America:**
  - Keep manufacturing
  - New market segments: Agricultural robotics, medical and health
- **Europe:**
  - Very solid basis in research and industry
  - New areas such as professional service robotics, health and elderly care, agricultural and food industry emerging
  - Chances for enhanced industry-academia-cooperation and start-ups

# The future - ECHORD++

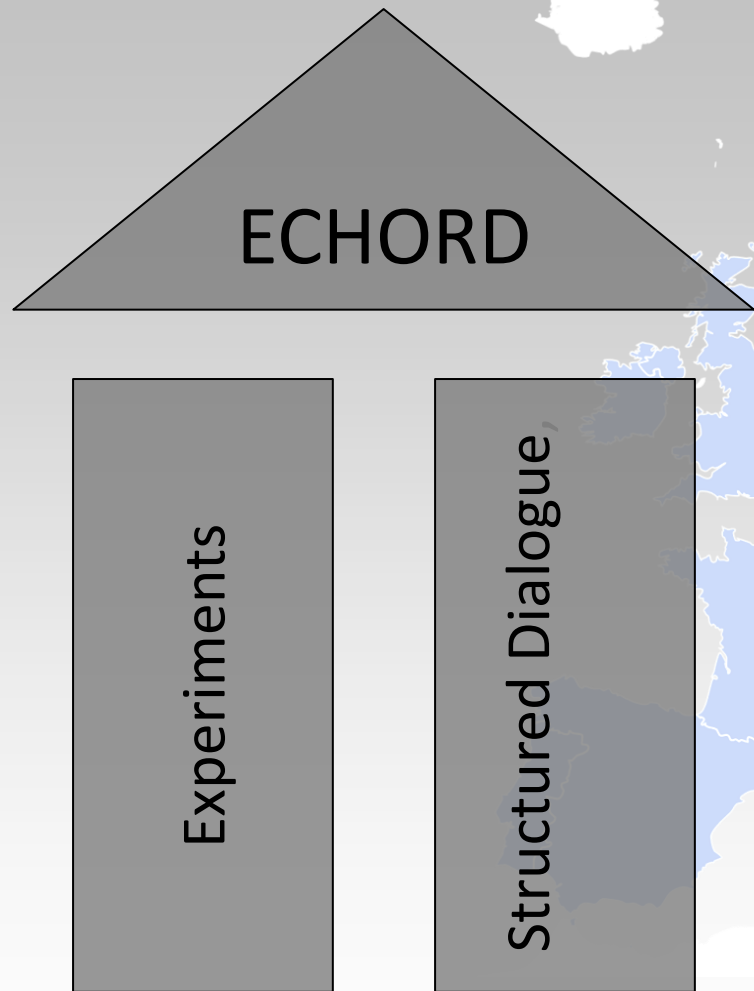
Follow-up project of ECHORD starts in autumn 2013

- Adaptation of the scenarios based on the results of the Structured Dialogue and the SRA
  - Medical robotics
  - Agricultural and food robotics
- Build on current success and experience
- Adapt to the goals of Horizon2020  
R&D → R&D&I
- Innovation, i.e. turning research results into practice as a key element



Explore additional innovative instruments besides the “experiments”

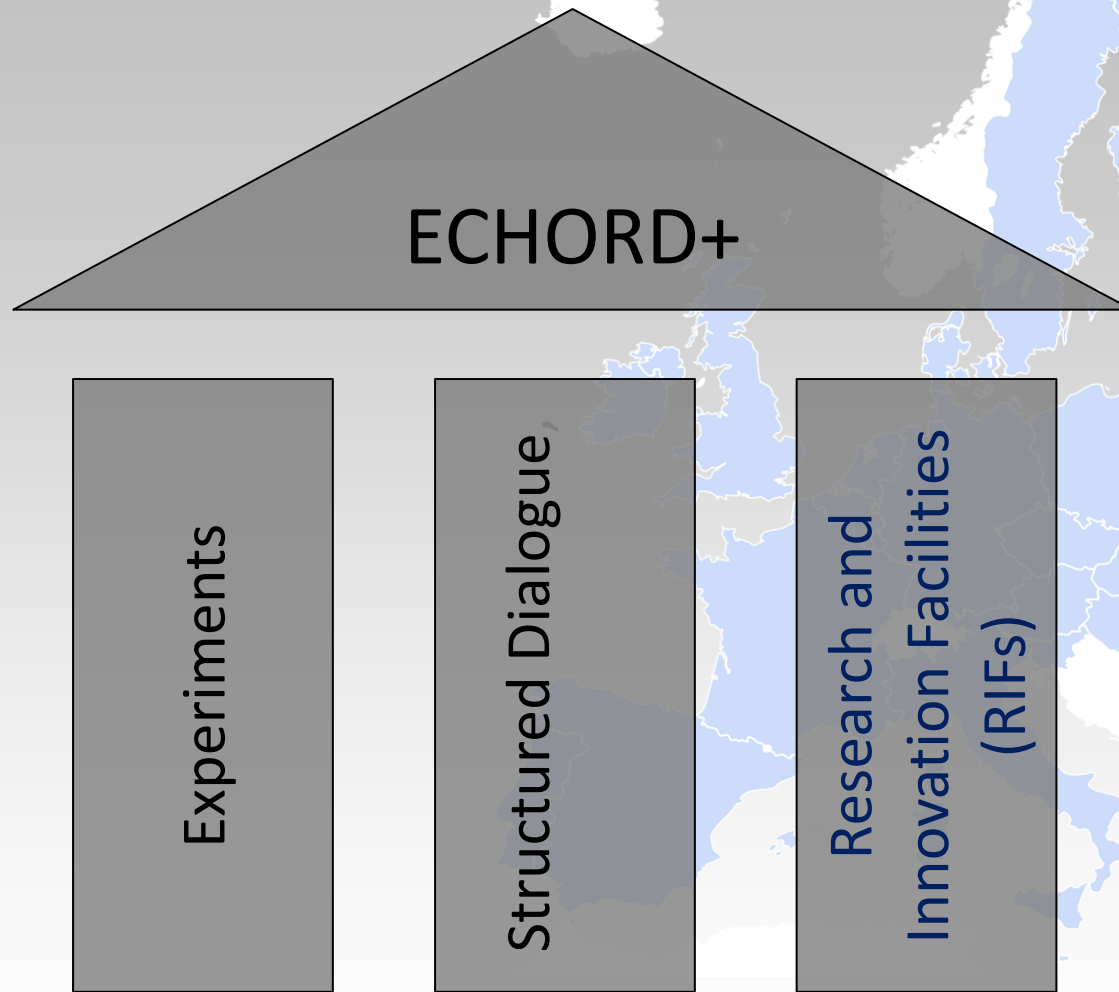
# Concept of ECHORD++



## Adjustment of Szenarios

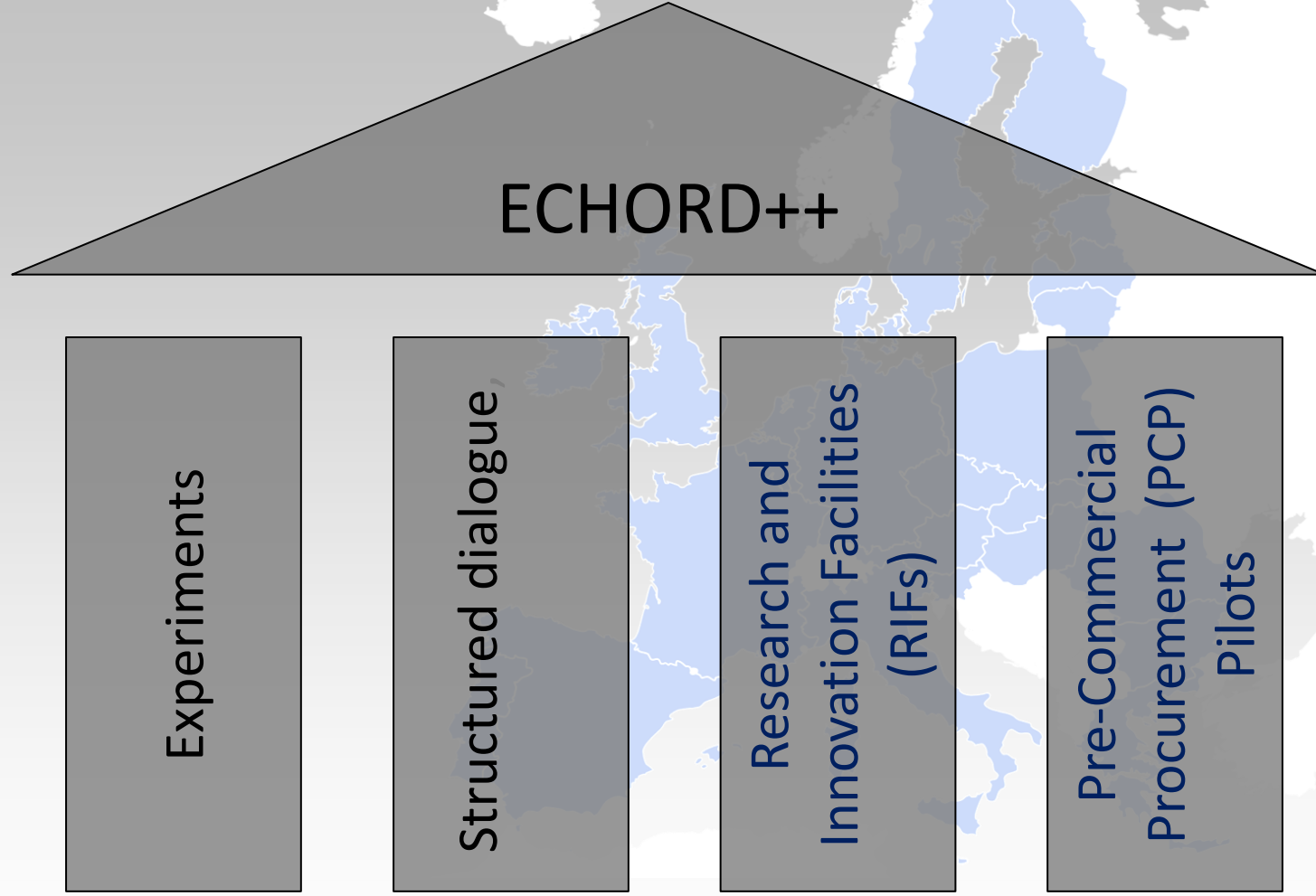
1. Cognitive Tools and Workers for Cognitive Factories
2. General Purpose Robotic Co-workers
3. Cognitive Logistics Robots
4. Medical Robotics
5. Agricultural and Food Robotics

# Concept of ECHORD++

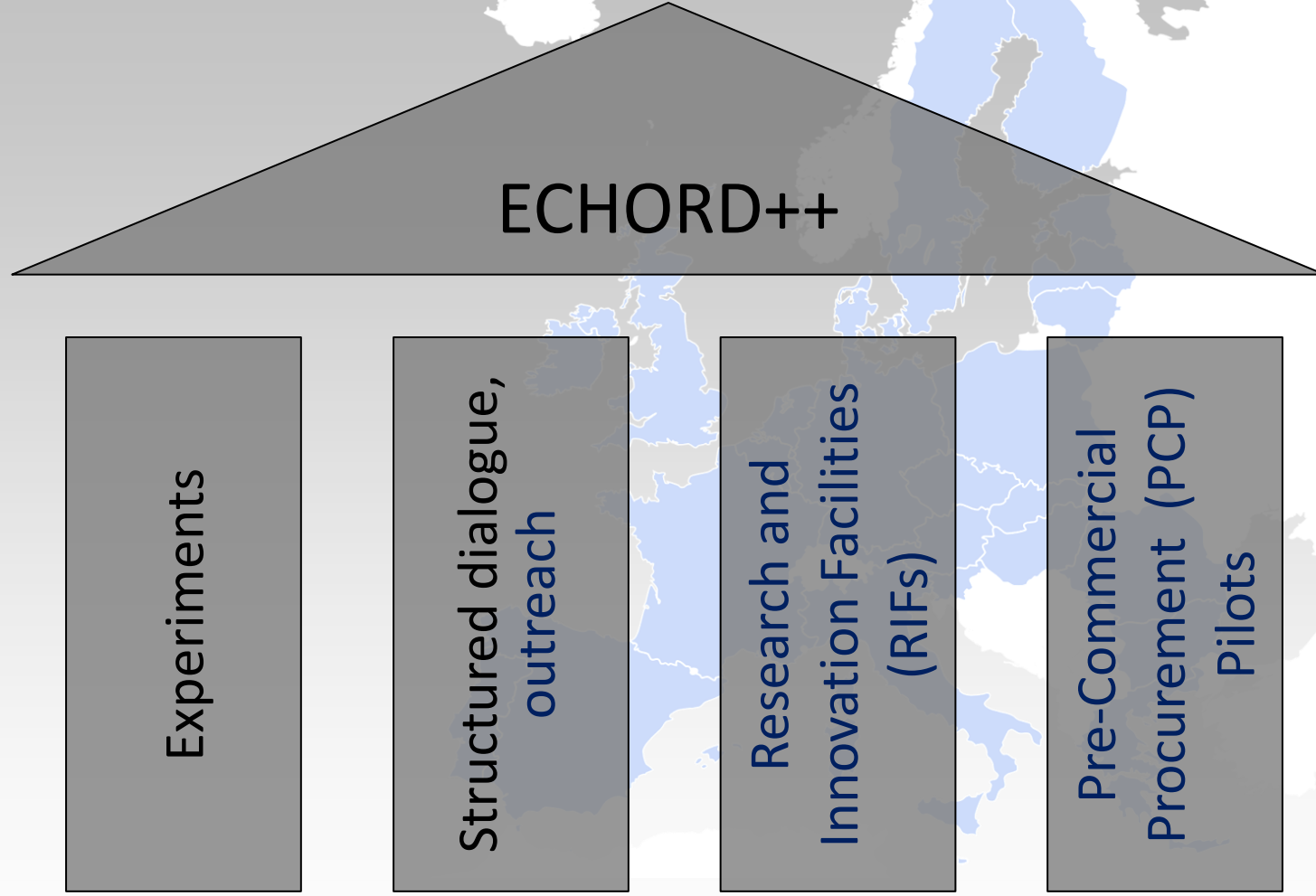




# Concept of ECHORD++



# Concept of ECHORD++



# Comparison ECHORD / ECHORD++

What will be continued and improved in ECHORD++?

- ECHORD experiments are appreciated by the community (and the EC), two calls will be issued (~35 experiments)
- Adaptation and revision of scenario definitions
- Improvement of scheduling
- More outreach

What is new?

- Support SMEs even more and help set up new ones
- Attract new stakeholder groups

**RIFs**

- Involve users/customers early
- Use the legal framework created by the EC to generate “pre-commercial” markets

**PCP**