



The European Coordination Hub for Open Robotics Development



Echord++ review meeting Y5

WP4 – RIF@Paris-Saclay

Christophe Leroux, CEA

Barcelona – March 27-28, 2019



Inside RIF@Paris-Saclay



**RIF@Paris-Saclay – is people experts,
managers, business developers**



Frédéric Colledani,
Robotics for agro-agri



François Lansade,
Robotics for manufacturing



Pascale Betinelli
business developer

Christophe Leroux,
Project manager



Gregorio Ameyugo,
Deputy director, DIGIHALL

Yann Perrot,
Head of robotics lab



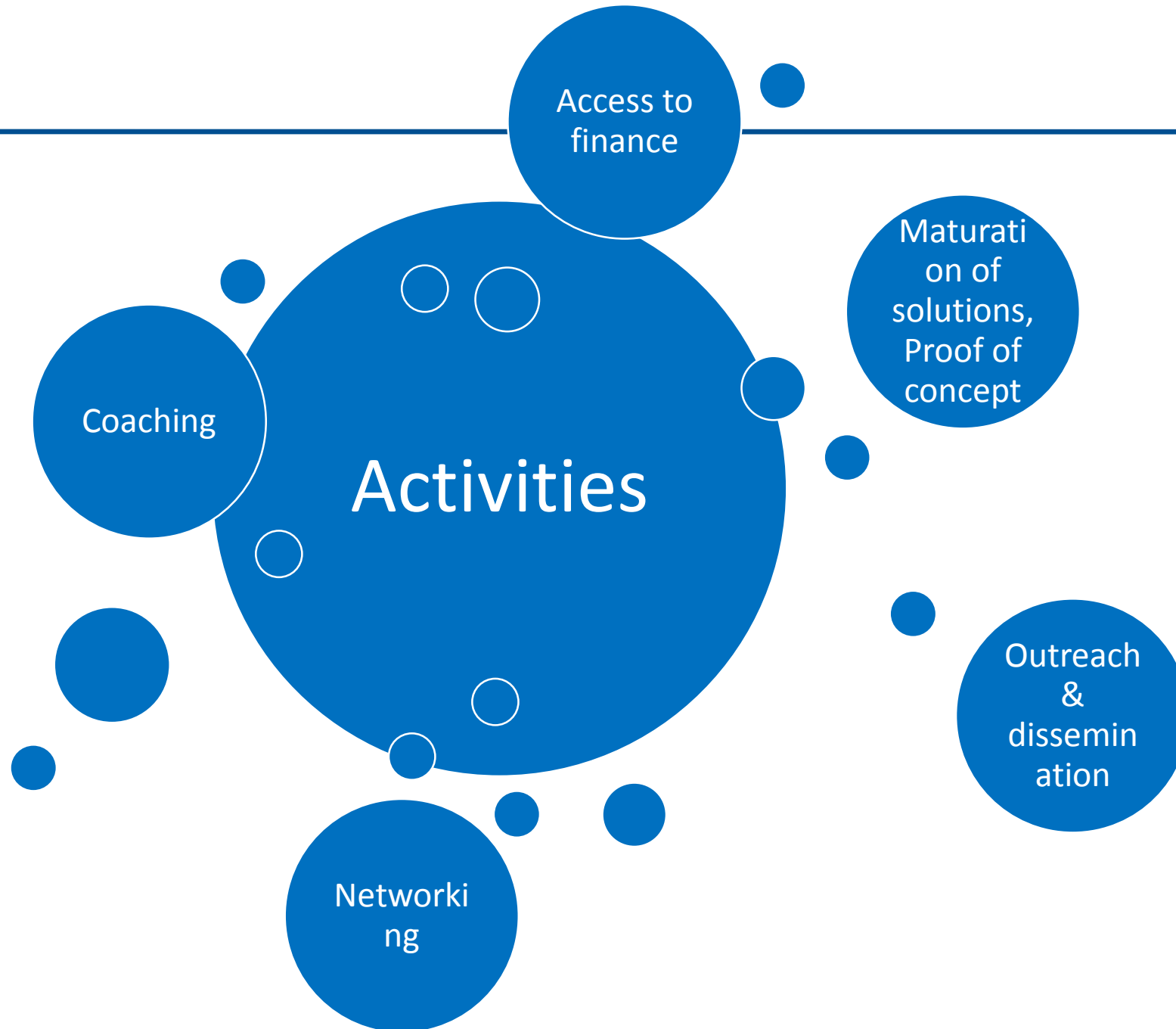
Hardware

- 1 x STAUBLI TX90
- 1 x 6 DoF HAPTION VIRTUOSE
- 1 KUKA IIWA
- 1 ABB YUMII
- 1 COBOMANIP from SARAZIN
- 1 x SYBOT PK0 (3 dof)
- 1 x iSYBOT (4 dof)
- Lower limb exos HV-SLIM

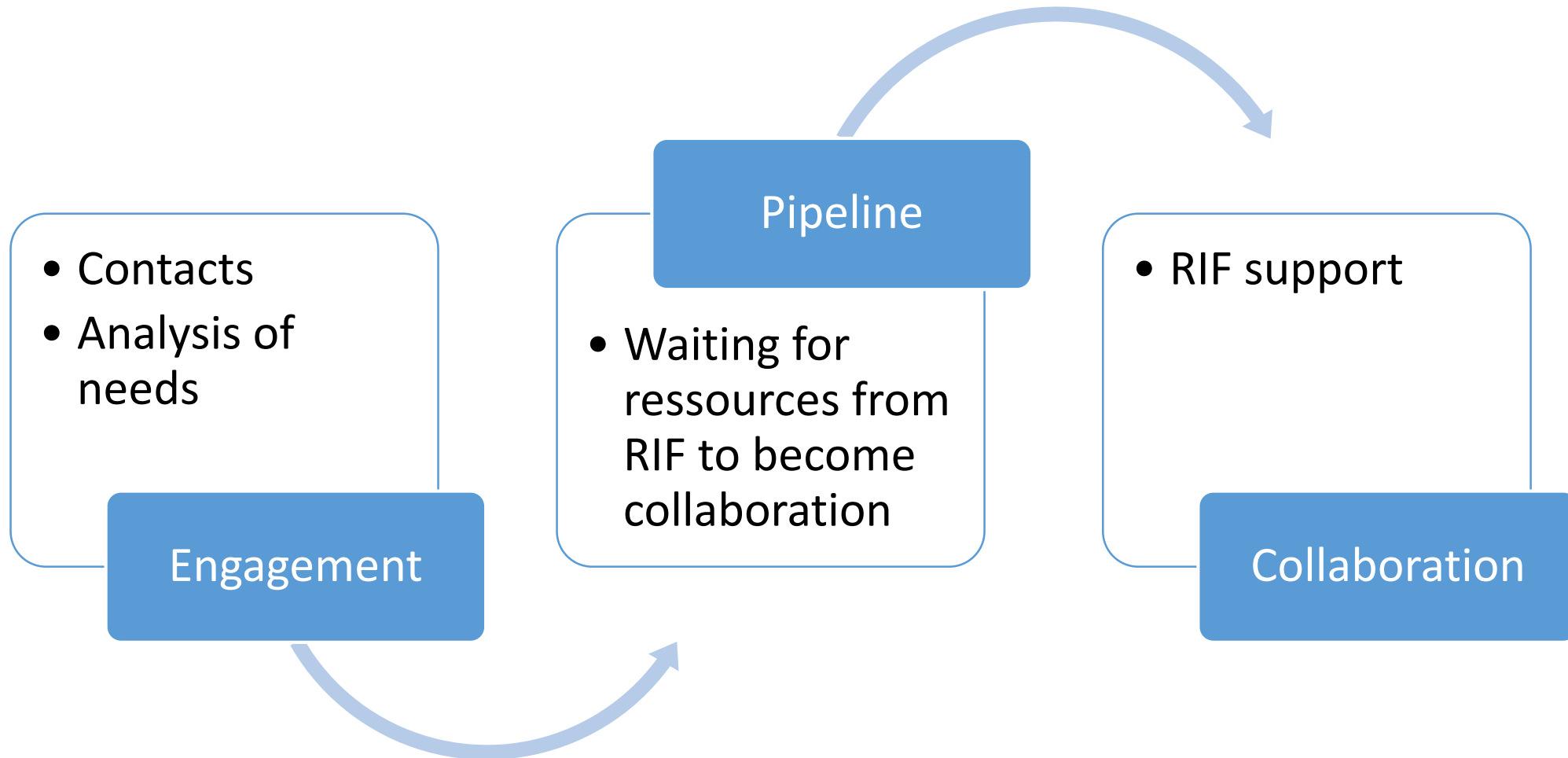
Software

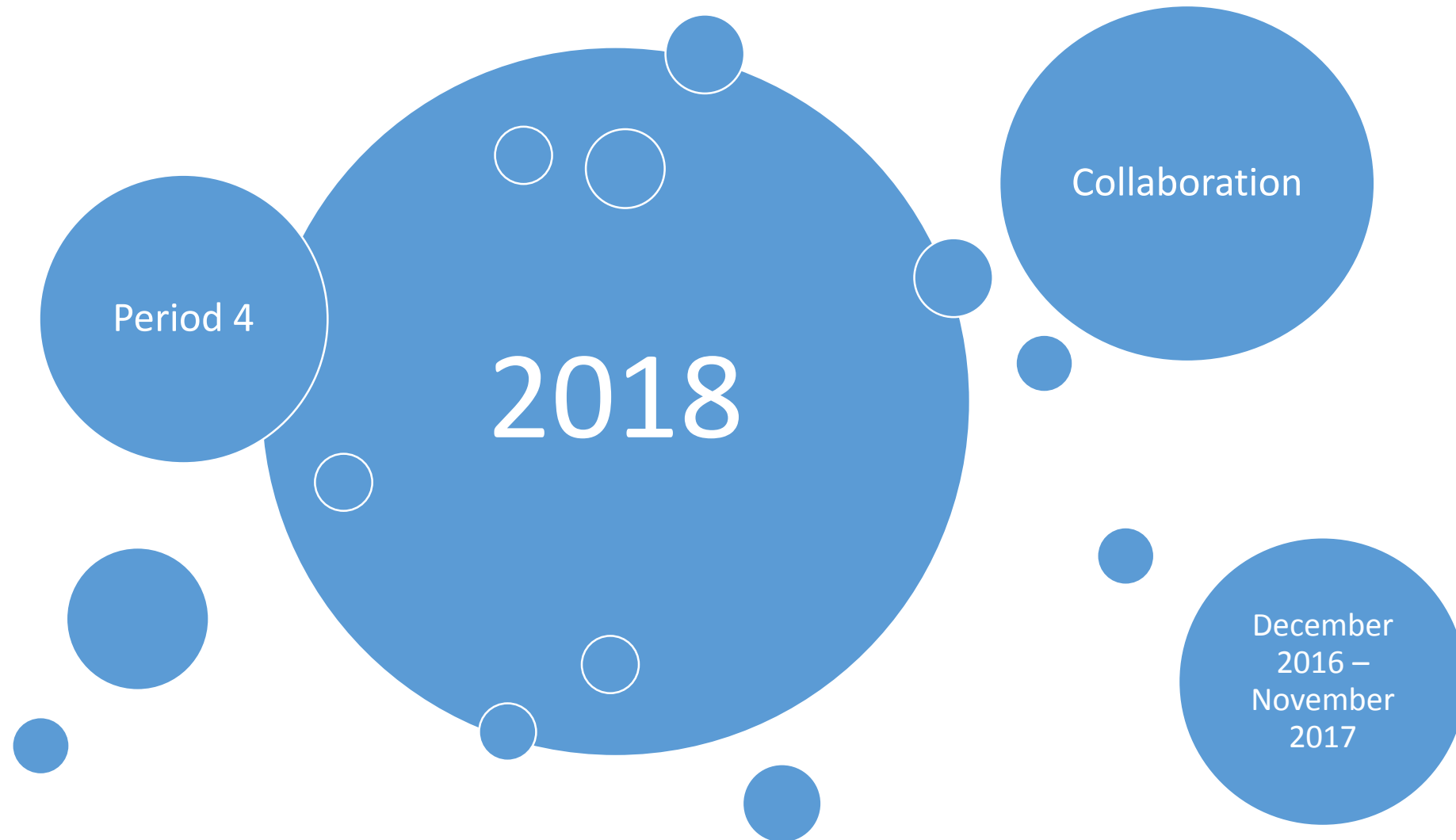
- P-RC2: robotics controller API
- SCORE: 3D graphic supervisor
- XDE: realtime simulation





Support for take global phasing





2018 - collaborations

DIACE

- Manipulation of spoon with molten metal for aluminum casting
- Hardware: COBOMANIP
- Follow up: one robot purchased by the foundry

RATP

- Maintenance, removal of windshield
- Hardware: SYBOT
- Follow up: one robot tested by the Company
- Confidential

CAMERON

- Manipulation of heavy loads for an oil and gas application
- Hardware: COBOMANIP
- Follow up: one robot purchased by the Company
- Confidential

COLAS

- Gesture assistance for asphalt pavement spreading
- SYBOT
- No follow up

PSA

- Collaborative robot benchmarking for PSA: UR UR10, IIWA (KUKA,) YASKAWA (MOTOMAN)
- Comparison of collaborative robot performances in a screw driving operations for the mounting of a turbo compressor
- Follow up: Final choice not known
- Confidential

Outreach & dissemination in 2018

- **March 2018, CEA List tech days**, Paris-Saclay
- **March 2018, Smart Industrie fair, Paris**, communication about the RIF@ParisSaclay activities with SMEs and interaction with robotics industries to improve the relay between research and industry
- **March 28, DEI stakeholder forum**, Paris Villepinte
- **June 2018, Automatica Munich**, RIF@Paris-Saclay success stories, presented on the Echord++ booth with iSybot team
- **June 13th, DIH days in Grenoble, MINATEC**
- **November 7, Big Data & DIH**, Brussels
- **November 22, ERRIN & DIH**, Brussels
- **March 2019, Smart Industry**, Lyon





H2020 Scalings

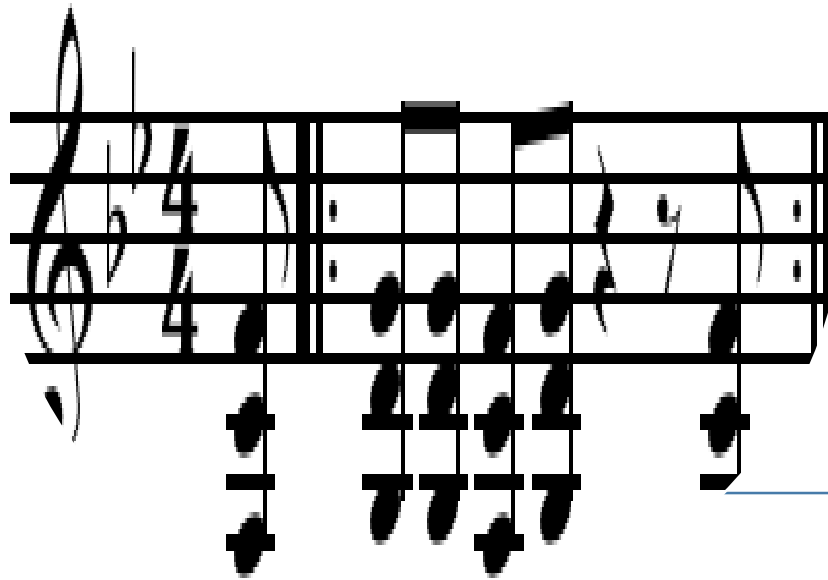
- **“Scaling up Co-Creation: Avenues and Limits for integrating Society in Science and Innovation”**
- 09.2018 – 09.2021
- <http://www.scalings.eu/>
- Deliverable January 31st 2019

Interactions

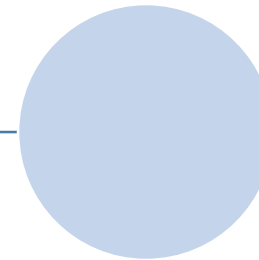
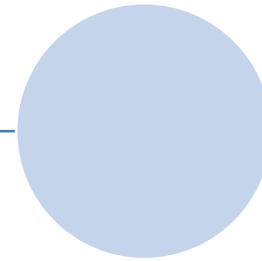
- Meetings, workshop, phone
- Follow up with ESMERA, RIMA

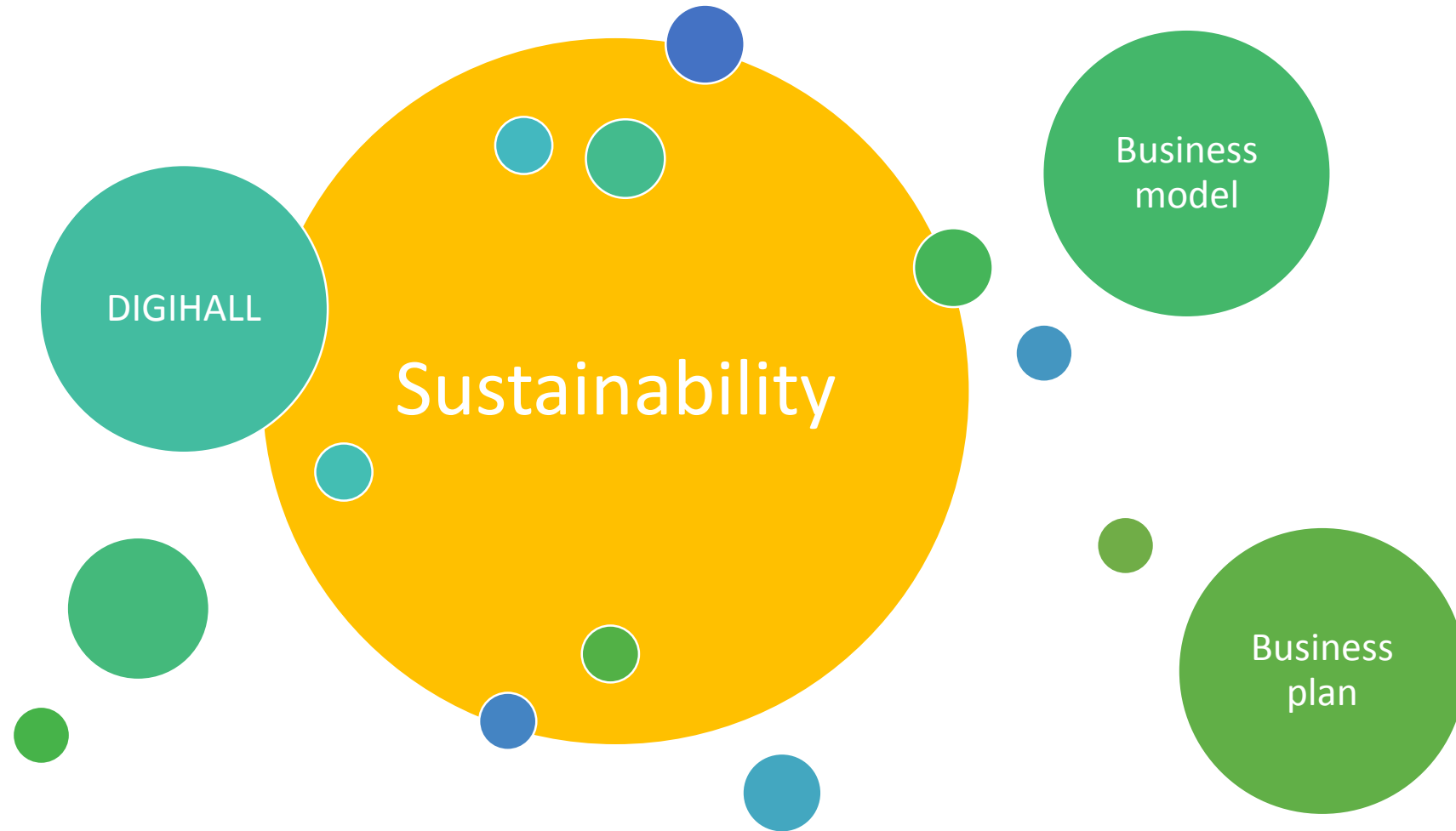


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RIF@Paris-
Saclay





2019 - collaborations planned

e-Commerce Company

- Logistics
- Exoskeleton HVSLIM

COVAL

- Logistics, handling of packages
- SYBOT

CETIM

- installation of welding pipes in a manufacturing application
- COBOMANIP

SAFRAN

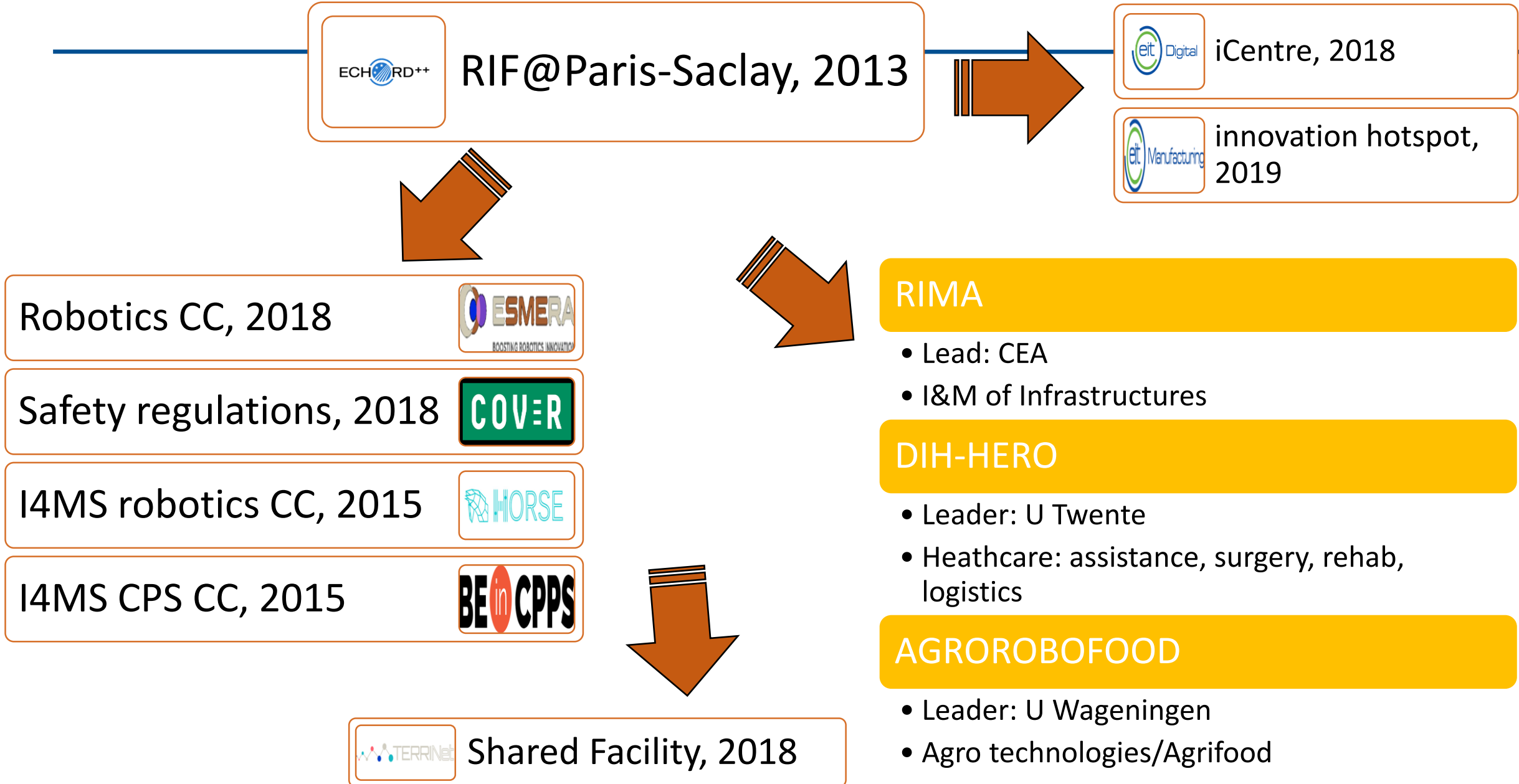
- assembly of aeronautical components
- COBOMANIP

SAFRAN

- Screw driving
- SYBOT

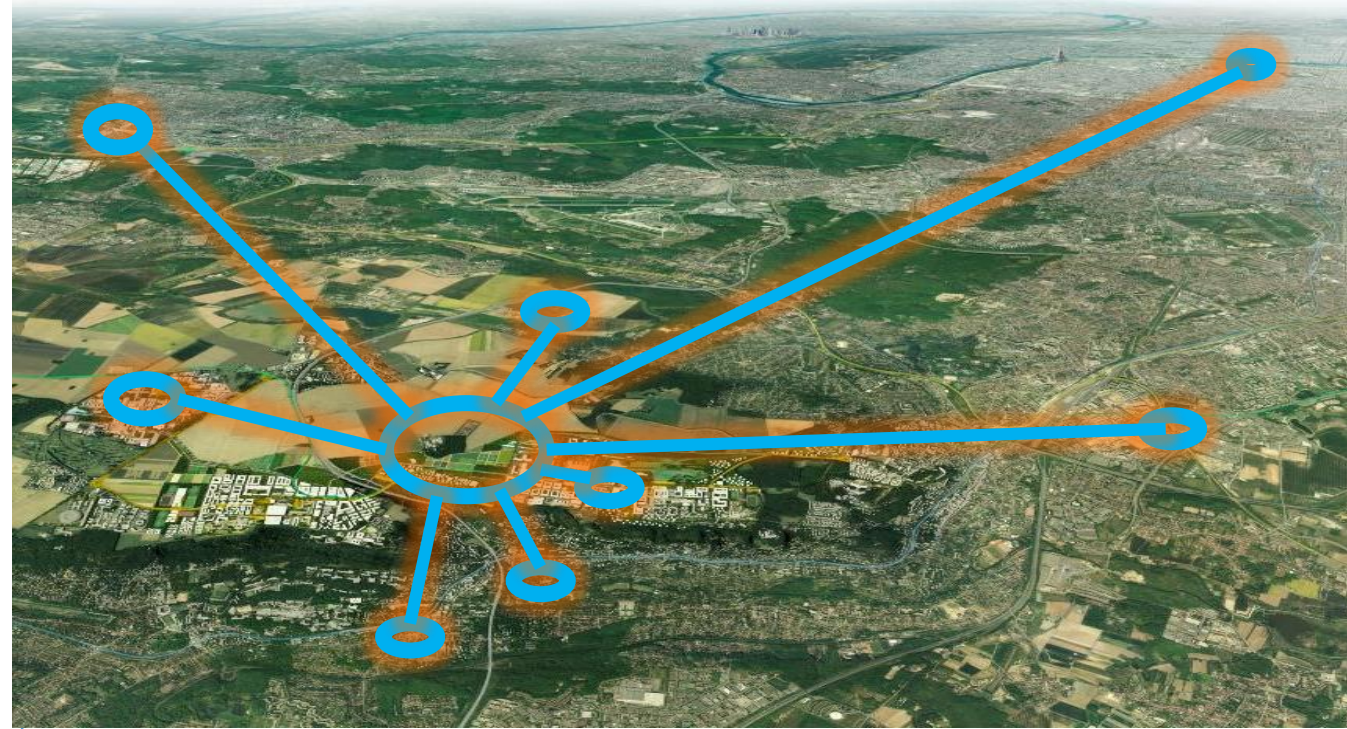
SAFRAN

- Quality control
- UR



DIGIHALL DIH

- Digital trust
- AI & ICT all sectors
- RIF@Paris-Saclay forerunner
- Support from region
- Aligned with S3



Value chain

Manufacturing industry

Tech providers



Integrators

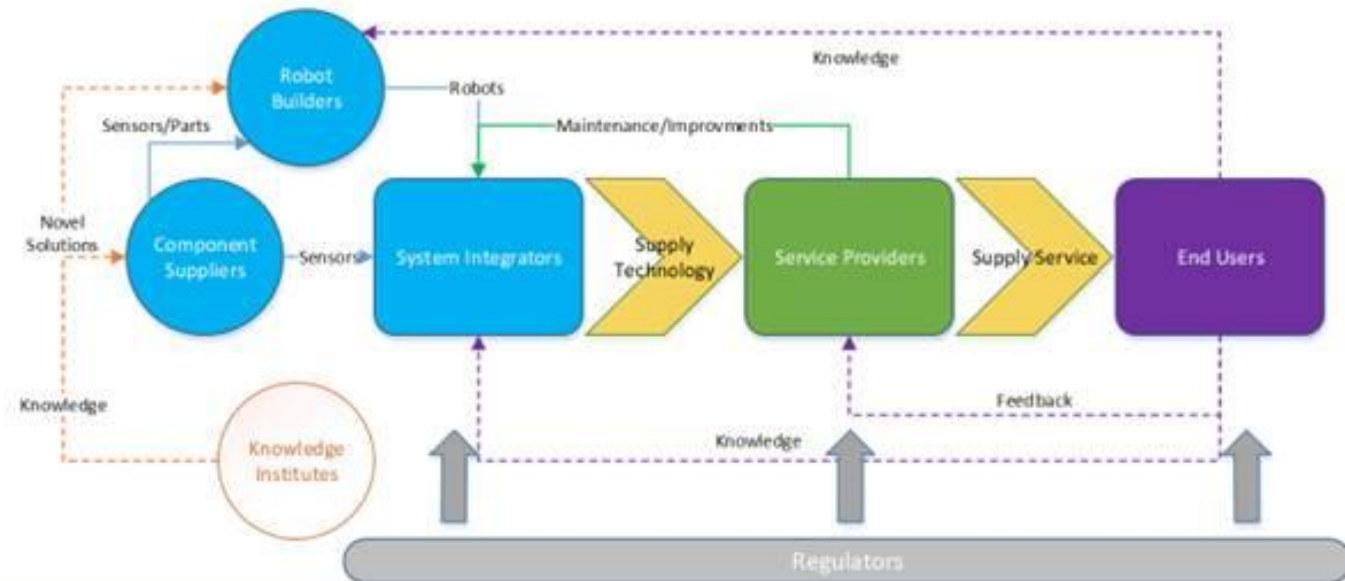


End users

Inspection and Maintenance



Collaboration in the value chain



Positioning in the value chain

Interaction with System Integrators of manufacturing

- Essential in the value chain
- Facilitate technology transfer.
- Ideally involve integrators from the beginning of the collaborations.

Some example of organizations contacted

- **GEBE2**: integrator in the domain of aeronautics involved in a collaboration on polishing of surfaces with the PK0 (Sybot) collaborative robot
- **ACTEMIUM**: integrator in the domain of automotive industry involved in a collaboration on benchmark of collaborative robot
- **OPTEAMUM**: Integrator in the domain of industry involved in a collaboration on assembly of furniture packings
- **FIVES**: integrator in the domain of automotive industry involved in a collaboration on engine small part assembly
- **HMI**: Integrator in the domain of industry involved in an exploration of a new domain, agriculture
- **AKEO+**: integrator in the domain of industry proposing solutions of advanced robotics coupling collaborative robotics and vision technologies

Role of *Technological Infrastructures*



Factory Lab
oct 2016
Paris-Saclay



FFLOR
Jan 2017
Metz



TROPIC
Fev 2017
Bordeaux

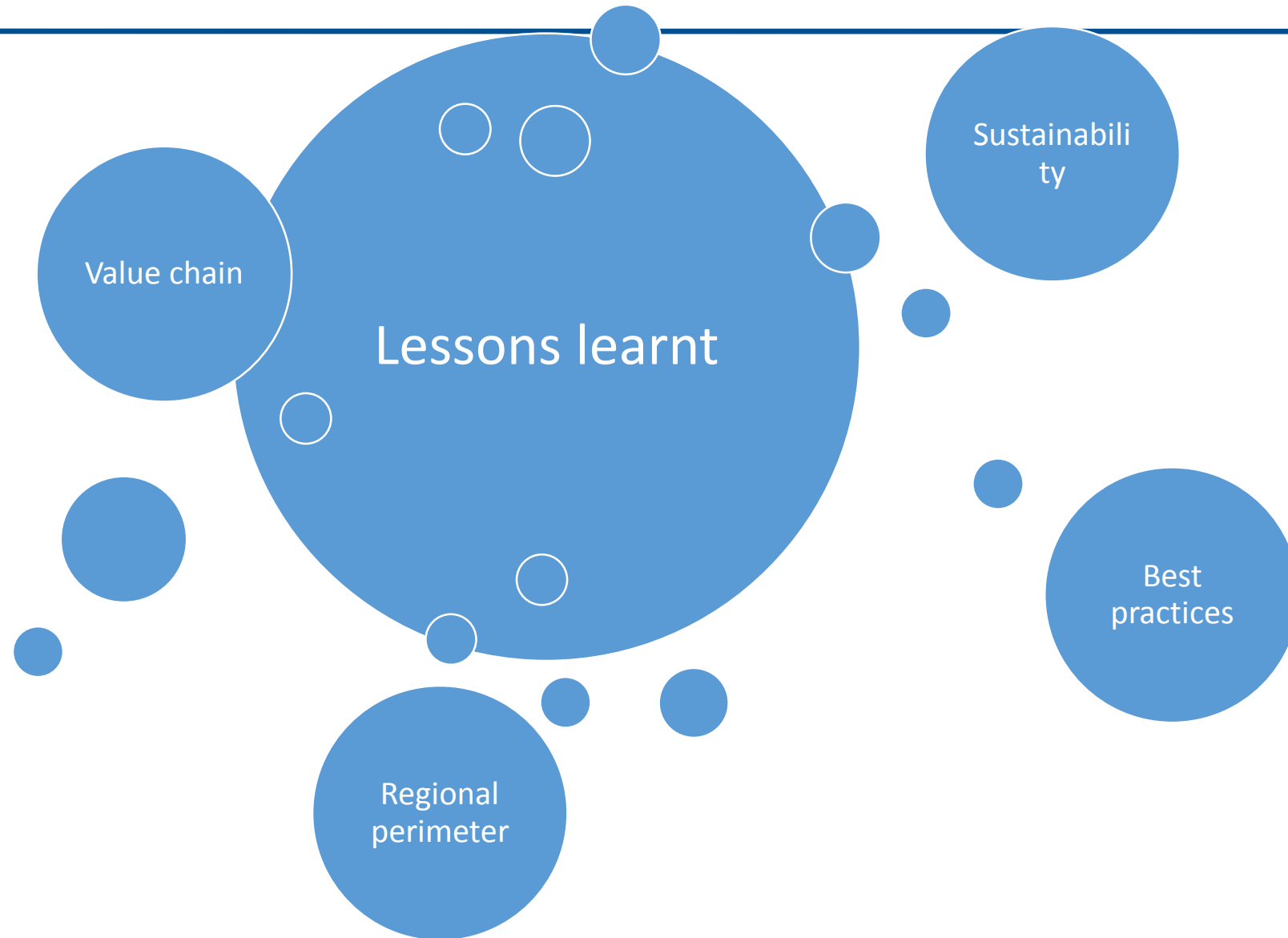


AXESS
Fev 2017
Nantes

Complementary to DIH

Between

- Research infrastructures
- Industrial infrastructures
- Aligned with SPARC PA
- Independent from industries
- Open



Success stories structuration of the activity



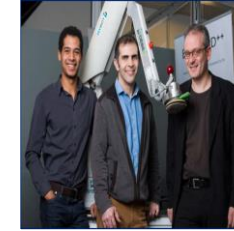
Technology transfer

- **SARAZIN**
- Zero gravity manipulator
- Demonstration of interest to end users
- New product COBOMANIP
- New market for the SME



Ecosystem development

- **RB3D**
- Lower limb exoskeleton
- Engagement with major industries in FactoryLab
- New applications in aeronautics, automotive, oil & gas, naval sectors



Access to finance

- **iSYBOT**
- Support to proof of concept to several end users
- Collaborative robotics
- Access to investors through Incuballiance, SATT,
- Creation of *iSYBOT* spin off in Oct 2016
- *SYBOT product* Apr 2018



2013

- Focus on Healthcare
- European perimeter
- Technological offer



2019

- All sectors
- Regional perimeter
- Multiple non technological services

Lessons learnt

RIF are not a duplicate one from the other; it is an ambition

Building trust

Need time

Involvement of key actors of the value chain: integrators, service provider

Balance the risks and the expectations

Provide offer well beyond technological expertise

Interest for technological infrastructures

RIF Paris-Saclay's surrounding at night



Looking forward to welcoming you