DIH²

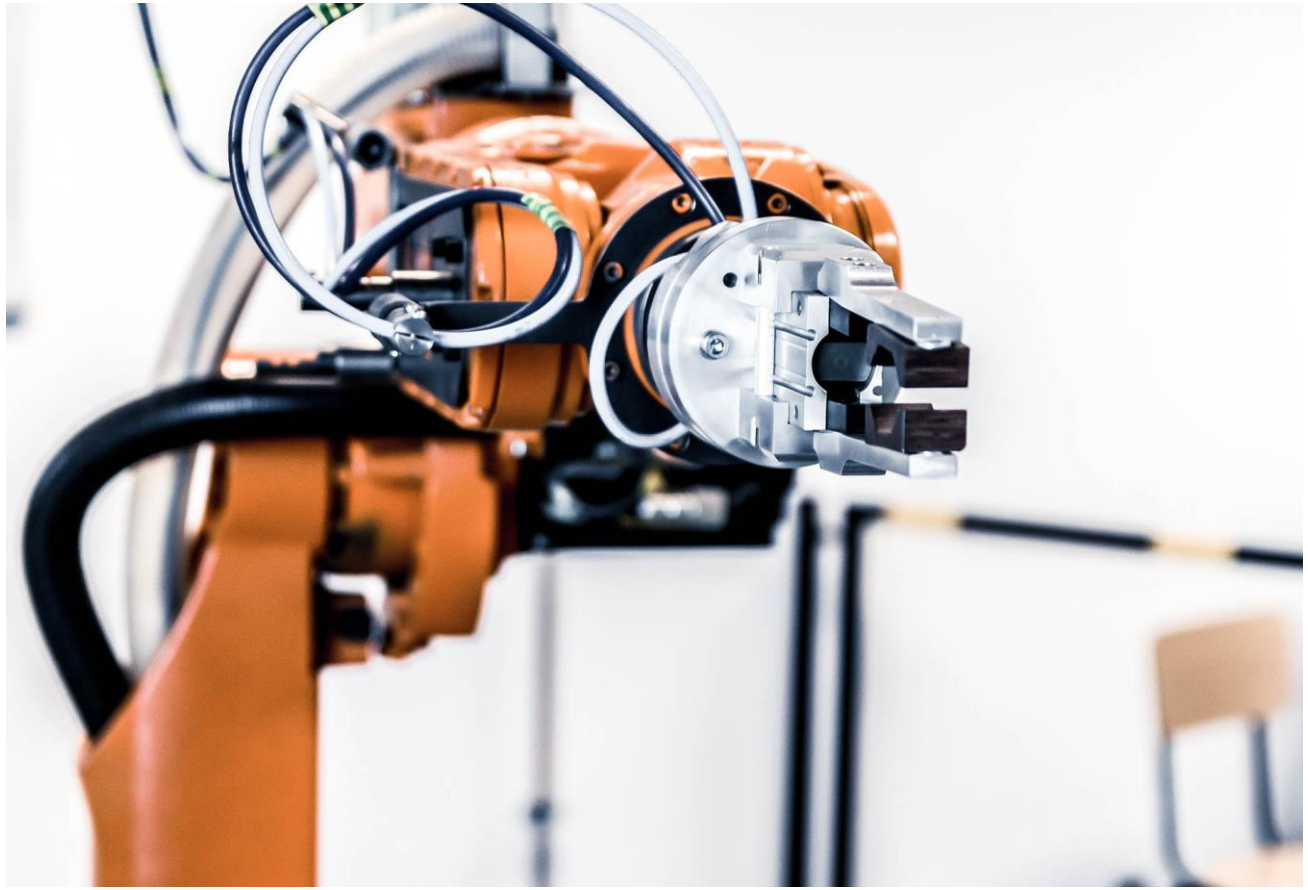
ACCELERATING PRODUCTION

We accelerate factories through robotics.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 824964

We accelerate factories through robotics.

- DIH² believes in the power of robotics to transform the agility of manufacturing in Small and Medium-sized Enterprises (SMEs) and drive economic growth across the European Union.
- Our role is to facilitate the connections that will enable agile production in factories where speed and versatility are essential to satisfy customer demand.



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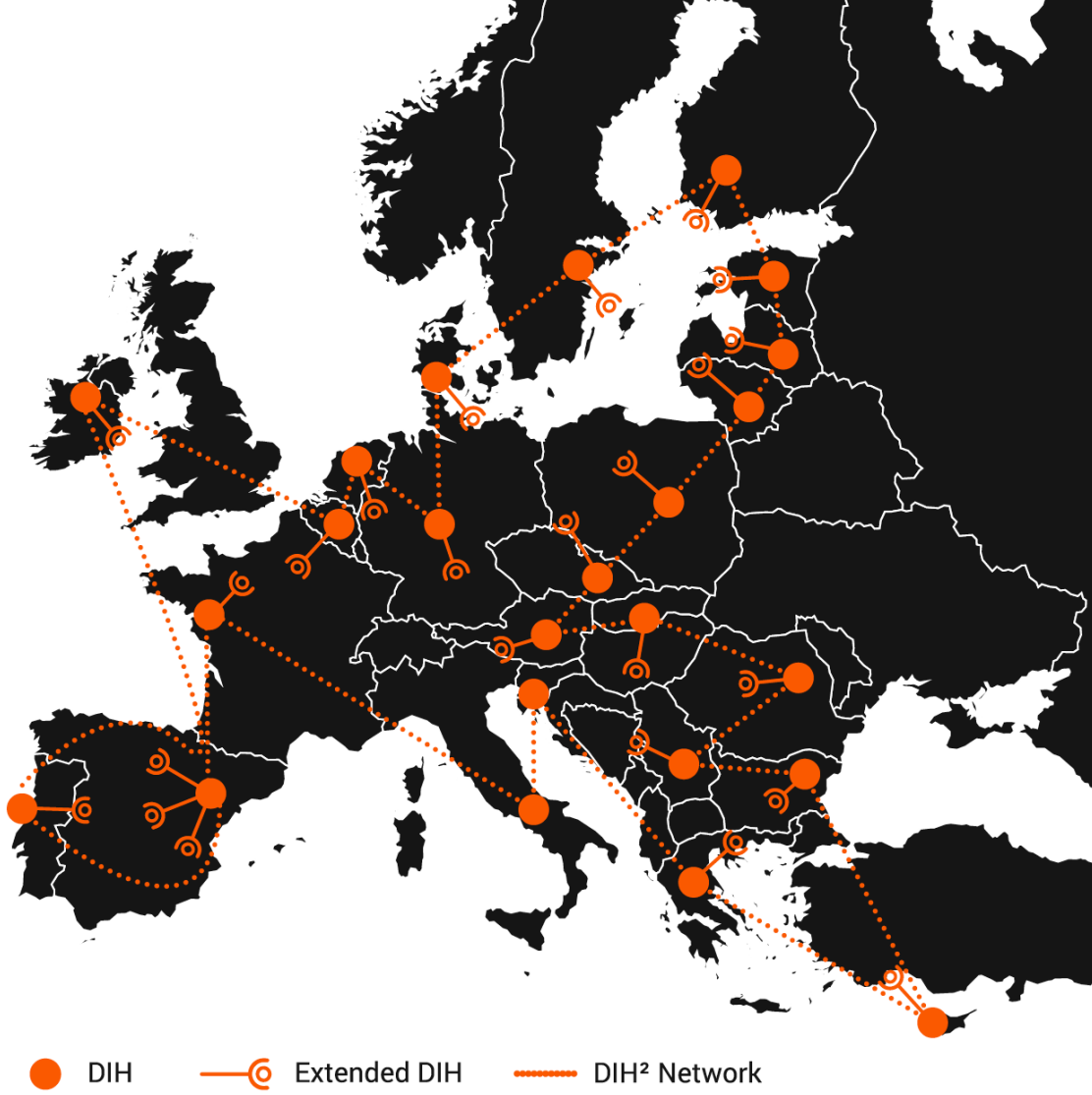
Our ambition.

- The ambition of the DIH² project is to:
  - Improve the cost-effectiveness of advanced robotics solutions.
  - Drive growth of the European manufacturing robotics market.
  - Generate innovation that maximises productivity and optimises agility in over 300,000 manufacturing SMEs and Mid-Caps across the European Union.
- DIH² is a network of 26 European Digital Innovation Hubs (DIHs). Our objective is to grow this network to over 170 DIHs by 2022.



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How we support SMEs.

Equity-free funding is available through two competitive Open Calls. Over €26,000,000 of public and private funding is available for Agile Production through advanced robotics solutions. In addition to European Union funding, a further €5,000,000 is available through the regional Smart Specialisation Strategy.

Benefit from our corporate sponsorship programme - a network of equipment and automation suppliers who are committed to enabling SMEs to access the latest research in robotics.

RAMP - our Robotics and Automation MarketPlace - is a one-stop-shop for SMEs to access essential factory automation services including business modelling, technical advice, training and financial support.

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Connected factories.

A digital platform for connected factories.

- DIH² offers a reference system architecture that enables SMEs to step into Industry 4.0 without large-scale changes in their current production equipment.
- The Common Open Platform Reference Architecture for Agile Production (COPRA-AP) allows the integration of heterogeneous systems, robots, automation equipment and sensors under a common platform.
- Plug and Play implementations for a range of different use cases will be available through RAMP.

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A digital platform for connected factories (II).

- The COPRA-AP aims at defining common interfaces and eliminating vendor lock-in and allowing new entrants to robotics market to ensure their compatibility with existing solutions a priori.

- The mandatory use of NGSI interfaces in COPRA-AP platforms and components (ROSE-APs) promotes their interoperability and replicability. NGSI interfaces are simple JSON/REST based standards for context data management used to facilitate the development of smart solutions.

- Any machine, robotics device, IoT network, or information system using the NGSI protocol to provide/consume context data can be easily plugged into literally any COPRA-AP instance.

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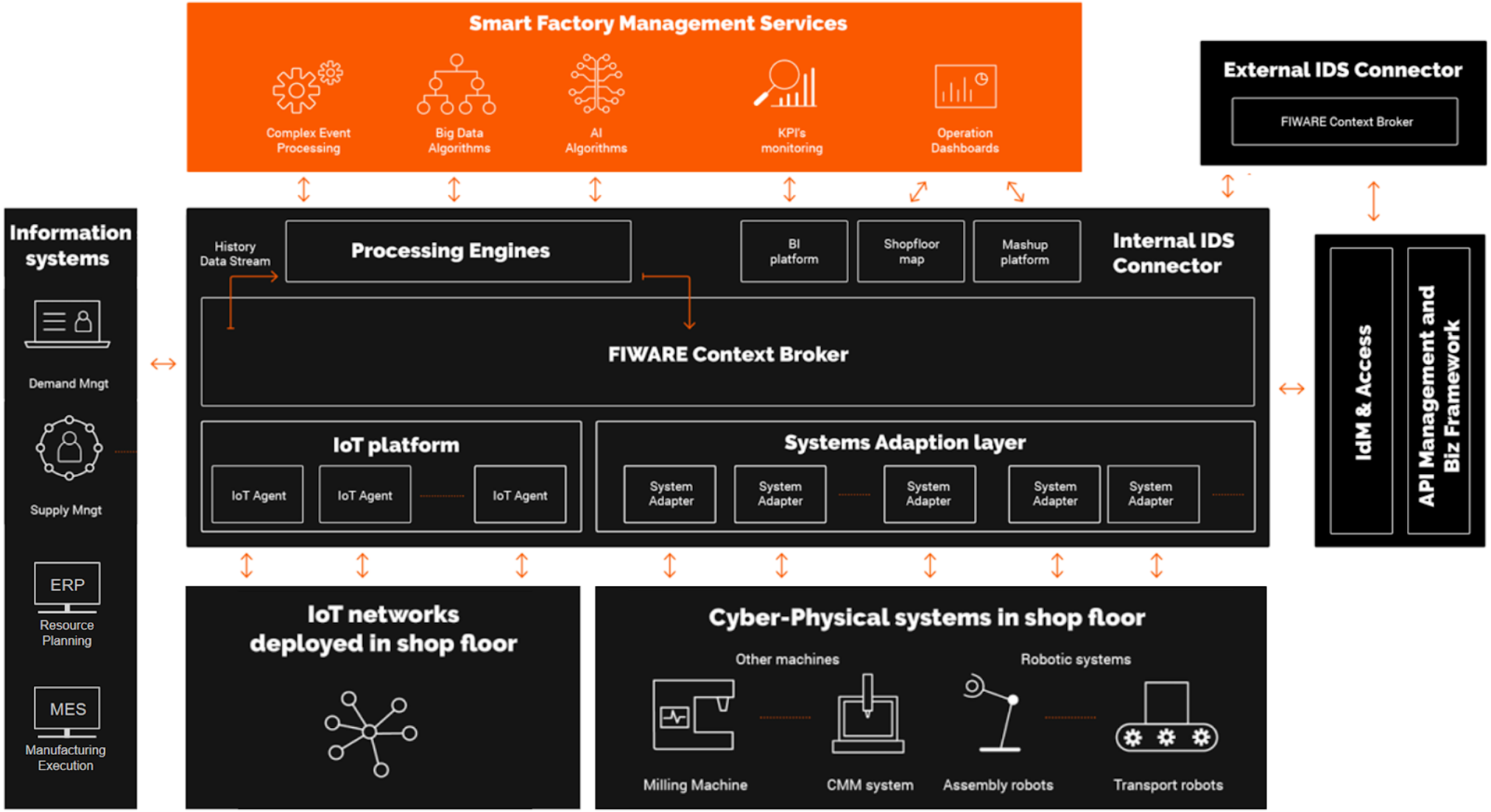
Reference Architecture Diagram



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COPRA-AP Interfaces.

Two types of COPRA-AP interfaces will be considered:

1. “Powered by FIWARE” ROSE-APs, which are technical solutions architected around the FIWARE Context Broker component, therefore gravitate around management of context data (including state of robots). Smart systems "powered by FIWARE" can easily integrate robots and other devices (IoT devices, cameras) leveraging on existing FIWARE open-source components.

2. “FIWARE Ready” ROSE-APs, which are software components able to retrieve and respond to messages in the NSGI format. In addition, they should offer NGSI subscriptions or registration endpoints using standard data models as necessary. The ability for any system to be "FIWARE-Ready" can be supplied either directly - with software developed by the system provider – or via the use of FIWARE components such as IDAS, Fast-RTPS or FIROS, which can be used to translate proprietary message formats and transport protocols to NGSI.

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ROSE-AP Catalogue

The ROSE-AP Catalogue is a collection of components that account for convenient COPRA-AP interfaces. They can be assembled together and integrated with other technologies to implement the COPRA-AP instances defined by TTEs.

- Open Source FIWARE enablers (FIWARE Catalogue)
- FIWARE ready enablers and devices (FIWARE Marketplace)
- Other supporting technologies (Hadoop, Flink , Spark, Storm)
- IDSA connectors (get your starter kit at tech-onboarding@internationaldataspaces.org)
- Future ROSE-APs (COPRA-AP components developed within the Transfer Technology Program)

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Technology Transfer Experiments (TTEs).

- Every Technology Transfer Experiment should be driven by a real industrial use case where robotics can be instrumental to materialize enabling factors for Agile Production.
- A list of eight relevant challenges has been generated (next slide), every experiment must address at least one of these challenges.
- The reuse of existing ROSE-APs from the COPRA-AP catalogue will be considered a bonus.

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Challenges.

1. INCREASING THE SAFETY OF ROBOTIZED WORKPLACES
2. DEVELOPING HUMAN-CENTERED INTERFACE TO FACILITATE THE CONTROL OF ROBOTS BY NON-TRAINED WORKERS USING STANDARD HUMAN-TO-HUMAN COMMUNICATION (SPEECH, TOUCH, MIMICS, ETC.)
3. REDUCING THE PROBABILITY OF OCCURRENCE OF HAZARDOUS EVENTS FOR CO-OPERATIVE ROBOTICS AND GO BEYOND THE “JUST SAFE STOPPAGE” OF THE CURRENT MACHINERY
4. INCREASING DRONE RELIABILITY IN MANUFACTURING ENVIRONMENT
5. DEVELOPING DIGITAL TWINS TO TRAIN SAFETY ALGORITHMS IN ORDER TO AUTOMATE FAULTY OPERATIONS, IMPROPER BEHAVIOURS AND POTENTIAL COLLISIONS DETECTION
6. DEVELOPING REAL-TIME PRODUCTION MONITORING APPLICATIONS ABLE TO HANDLE HETEROGENEOUS SENSORS PORTFOLIO
7. INCLUDING MORE SECURITY STRATEGIES WITHIN ORGANIZATIONS IN ORDER TO MITIGATE CYBERSECURITY RISKS
8. ENABLING TO RESPOND QUICKLY TO CUSTOMER NEEDS AND MARKET CHANGES WHILE STILL CONTROLLING COSTS AND QUALITY

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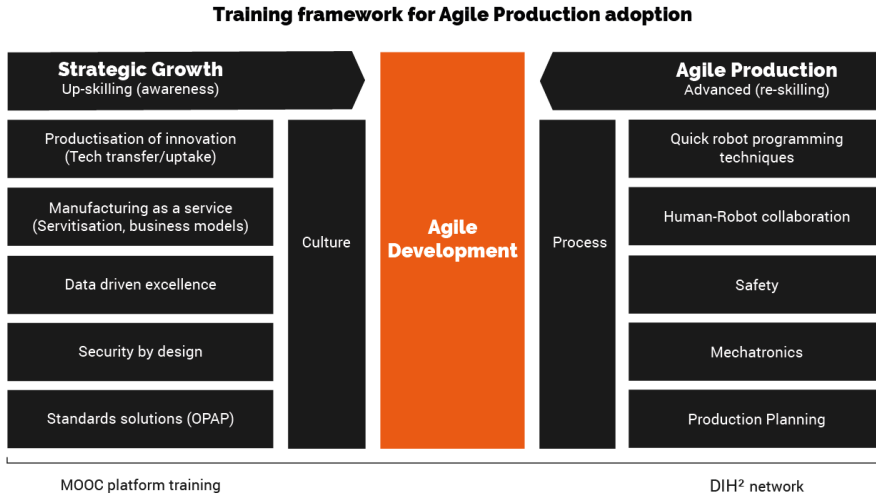
Agile Production training.

Agile Production training.

- DIH² will partner with selected manufacturing Small and Medium-sized Enterprises (SMEs) to identify their training needs while they implement the Agile Production approach.
- The technical needs associated with robotics technologies will be addressed through a portfolio of training courses offered by the DIH² network.
- Business related courses will enable both senior management and operational staff to implement an Agile Production approach throughout their organisation.
- The full portfolio of training courses will be available for SMEs, DIHs and robotics systems integrators through RAMP - The Robotics and Automation MarketPlace.



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Equity-free funding.

Who can apply for funding?

- Up to €248,000 equity-free funding is available for the following types of organisation:
    - Manufacturing Small and Medium-sized Enterprises (SMEs) with up to 500 employees and a maximum of €100 million in turnover.
    - Systems integrator and technology providers specialised in technology transfer or integration to end users (this includes research and technology organisations, competence centres, Mid-Caps or start-ups).

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What are the key steps?

Stage 1:

- Type of applications: individual applications for SME/Mid-Caps and system integrators/technology providers.
- Applicants: a minimum of 520 individual applications, 20 per country.
- Beneficiaries: 520 individual applicants will be invited to the brokerage event. 10 manufacturing SMEs and 10 system integrators/technology providers per country.
- Timing: from 1st July to 31st October 2019.

Stage 2:

- Type applications: consortia made up of 2 to 3 members, of which one must be a manufacturing SME/Mid-Cap. Consortia can be set up before or during the national brokerage event.
- Applicants: a minimum of 130 applications/5 consortia per country.
- Beneficiaries: 13 consortia.
- Timing: from 3rd December to 27th February 2020. The brokerage events will take place 1st – 15th December 2020.

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Open call process.

1st Stage Call Launch
01/07/2019 - 31/10/2019
(4 months)

Robot Days
01/07/2019 - 31/10/2019

1st Stage Selection and Matchmaking
01/11/2019 - 15/11/2019
(15 days)

2nd Stage Call Launch
03/12/2019 - 27/02/2020
(3 months)

Local Brokerage Events
01/12/2019 - 15/12/2019
(15 days)

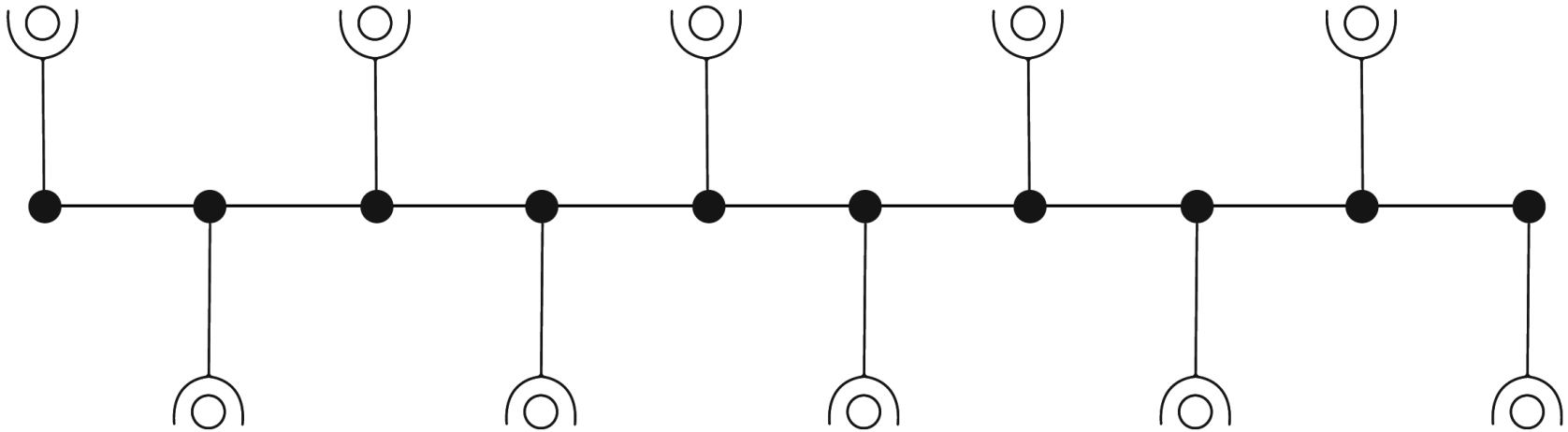
Support to Prepare Application
03/12/2019 - 27/02/2020
(3 months)

External Evaluation
02/03/2020 - 14/03/2020
(15 days)

Consensus Meeting
23/03/2020 - 27/03/2020

Jury Day and Beneficiaries Selection
April 2020

Negotiation
May-June 2020



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Value Proposition -> CASH

Up to € 248K
Equity free

€ 0,5 M
Private Funding

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Value Proposition -> SERVICES

Mentoring

Technical
Business
Funding

Access to investment

Public: EU &
National
Private

IP&ELS

Ethis, Legal and
Cybersecurity
vouchers

Training

Mooc Platform
Agile Production
Business Model
Commertialization
Standarization

Standarization

Mentor
COPRA AP

Marketplace

Publication in the
COPRA AP Catalogue
in the Mktplace

Corporate Brokerage

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Technology Transfer Program

10 Months
Program

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Technology Transfer Program

Go to Market		Support
ROSE AP	2 Months	€30K
Technology Transfer Experiment	8 Months	€216K
Selection: Brokerage event and Jury Day	4 months	€2K

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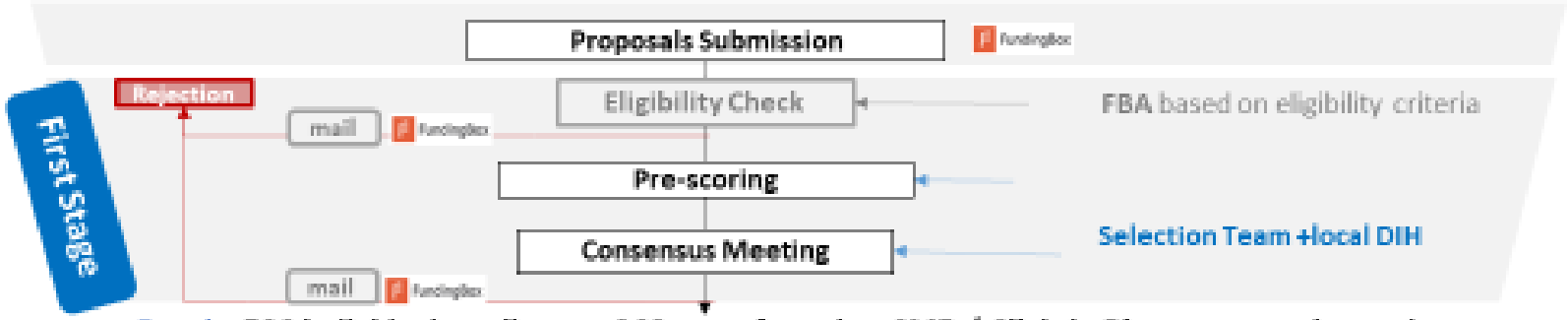
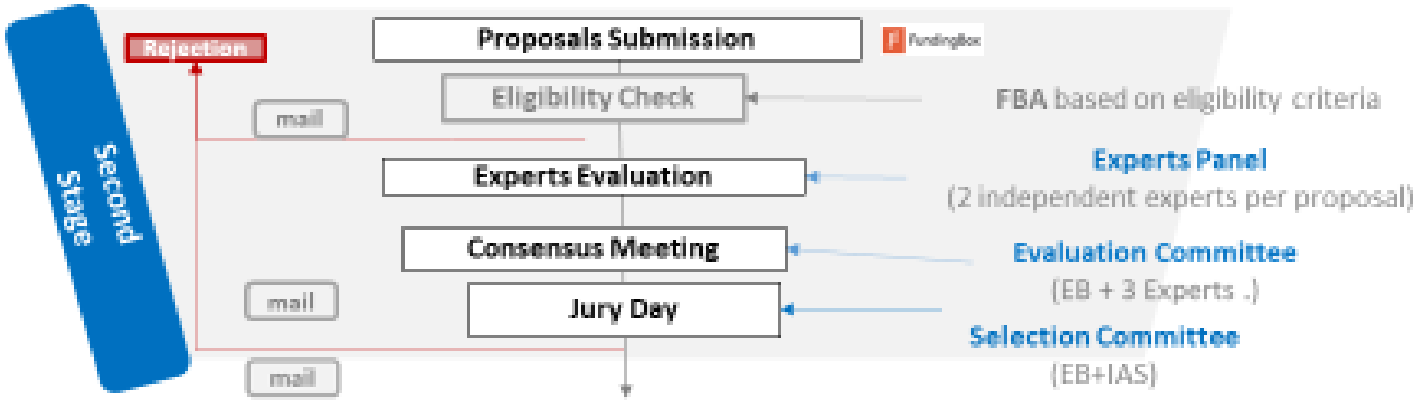
Selection Process



Result: 520 individual applicants: 260 manufacturing SMEs/ Slightly Bigger companies and 260 Technology Providers



Result: 13 Beneficiaries

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What to do next.

Send your application, find our Guide for Applicants and FAQs to
https://dih-squared.fundingbox.com/

Follow us

Email us at helpdesk@dih-squared.eu

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Partners.

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