D1.3: Identification of existing CCs and DIHs for building the network 1st version

WP1 – Competence Centres and Technical Expertise Management

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Document Information

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Executive summary

This Deliverable was initially submitted in December 2019 and in March 2020 Commission services requested a revision of the Deliverable for addressing the comments generated as part of the review of the first reporting period. Since by design Deliverables 1.3, 1.4 and 1.5 have the same scope but are meant to complement one another sequentially in time during the evolution of the project, and considering the fact that all of the comments generated from the first review of D1.3 have been already incorporated in the updated D1.4, only very small modifications are made to this revised version of D1.3 being resubmitted. The only change made explicitly in this revised version involve:

- Definitions used for DIH and CCs: Necessary updates and references to the definitions used by the European Commission and not necessarily by individual projects are modified according to what is used in D1.4

One of the aims of agROBOfood project is to foster a network of DIHs and stakeholders active in the agri-food sectors.

This document presents the current list of identified DIHs and Competence Centers (CC), gathering at the moment the information of 105 organizations, 100 of these being listed as CC, 55 being DIHs.

This list will be updated throughout the project, and this document will be updated accordingly.

To ensure common understanding of the concept of Digital Innovation Hubs, the definition used in the following JRC publication is used[1]: "Digital Innovation Hubs as policy instruments to boost digitalization of SMEs," by Kalpaka, A., Sörvik, J. and Tasigiorgou, A., 2020. Brief excerpts from this handbook is provided below:

Digital Innovation Hubs[1]

Digital Innovation Hubs are one-stop-shops that help companies become more competitive with regard to their business/production processes, products or services using digital technologies, by providing access to technical expertise and experimentation, so that companies can "test before invest". They also provide innovation services, such as financing advice, training and skills development that are needed for a successful digital transformation. Environmental issues will be considered, in particular regarding energy consumption and low carbon emissions. As proximity is considered crucial, they act as a first regional point of contact, a doorway, and strengthen the innovation ecosystem. A DIH is a regional multi-partner cooperation (including organisations such as research and technology organisations [RTOs], universities, industry associations, chambers of commerce, incubators/accelerators, regional development agencies and vocational training institutes (Figure 1-2) and can also share strong connections with service providers outside of their region supporting companies with access to their services.

[1] Kalpaka, A., Sörvik, J. and Tasigiorgou, A., "Digital Innovation Hubs as policy instruments to boost digitalization of SMEs," Kalpaka, A., Rissola, G. (Eds.), EUR 30337 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-21405-2,doi:10.2760/085193,JRC121604. https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/digital-innovation-hubs-policy-instruments-boost-digitalisation-smes

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Competence Centres[2]

A Competence Centre is a technology infrastructure centred on technologies that can be applied to any area, bringing together in one place extensive expertise in this field. A competence centre offers a set of services like training courses in the use of the technologies, advice on the choice of technologies and also work directly with DIH to apply the tools to the area problems in hand (Adapted from European Commission Competence Centres, 2019)[3].

Competence Centres cooperate within the Digital Innovation Hubs with other members of the innovation chain to support businesses in their digital transformation. This includes connection to investors, business developers and legal experts, as well as technical expertise.

The CCs often have regional scope and they aim at capturing the industrial ecosystem in each region where they are implemented (I4MS HORSE, 2018)[4].

[2] Source : agROBOfood common definitions on Basecamp

[3] https://ec.europa.eu/jrc/en/knowledge

[4] http://www.horse-project.eu/sites/default/files/publications/HORSE_D7.3-v1.00.pdf

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1 Introduction

1.1 agROBOfood in a snapshot

More than **9 billion people** in **less** than **40 years:** this estimation highlights the **challenge** that the agri-food sector will need to address on a global level. This means that the production of **food** will need to be **increased**, while at the same time the **environmental impact** of that activity will need to be **reduced** to avoid detrimental consequences. Another parameter that comes into place is that of the **workforce** that is also **under pressure**, as fewer seasonal workers are available for labor-intensive seasons such as harvest. A way to address those challenges is to **increase** the use of **robotic sensing and automation** in the agri-food industry. This facilitates precision and organic farming methods with their reduced environmental footprint, automates the heavier and more repetitive jobs, reduces the need for seasonal workers, can supply 24/7 vigilance against pests and disease, increases food hygiene and improves food traceability.

More food is available at a lower cost, to feed the increasing population. **agROBOfood** will establish a network of robotics **Digital Innovation Hubs** (DIHs) in the agri-food domain, each bringing their own ecosystem of **Competence Centres** (CCs). Each of those have **expertise** either in the **robotics**, or in the **agricultural** or **food** sectors. By connecting these actors with their different strengths, each will contribute to providing a more joined-up set of automation options for food producers and wider markets for technology providers. This network will work together to **foster robotics deployment** in agri-food, **improve the automation service offer** across Europe and **support SMEs** and **mid-caps in developing new robotics products** for agri-food. In other words DIHs will act as centres of gravity, where various stakeholders such as developers, users, consultants and investors can interact and ensure synergy and cross-pollination of ideas.

The overarching goal of **agROBOfood** will be to increase the end user awareness of what robotics can do for them through the demonstration of **Innovation Experiments** (IEs), to develop **a one-stop shop online and physically** within reasonable working distance, providing access to appropriate services on a pan-European level to facilitate market introduction of **new robotic technologies** by maturing research prototypes to **advise end users** how to fund the digital transformation of their company to **engage in standardization** activities and promote open standards and platforms to **connect** to other robotics networks and projects through direct links and the Robotics Digital Innovation Hubs CSA.

1.2 Identification of competence centers and digital innovation hubs

For growing the agROBOfood network of competence centres and digital innovation hubs, knowledge about existing network partners and possible future network partners plays a vital role.

This deliverable describes how agROBOfood will identify competence centres and digital innovation hubs. To do so, a definition of the term digital innovation hub and competence centre is needed. The definitions specific for robotics in the agrofood sector are developed based on definitions created by other H2020 projects as well as the definition published by the European Commission. Then, methods are developed for identifying digital innovation hubs and competence centres. These methods consist of specific criteria, which can be assessed without contacting an organization as well as data sources which can be searched for new competence centres and digital innovation hubs. Finally, a list of currently identified competence centres and digital innovation hubs is presented.

This deliverable serves to identify competence centres and digital innovation hubs. The tools used for identification of competence centres and digital innovation hubs during proposal writing are

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refined. Therefore, the current network is reanalysed. Also, some new potential partner organisations are identified.

2 Definitions

To ensure common understanding of the concept of Digital Innovation Hubs, the definition used in the following JRC publication is used[5]: "Digital Innovation Hubs as policy instruments to boost digitalization of SMEs," by Kalpaka, A., Sörvik, J. and Tasigiorgou, A., 2020. Brief excerpts from this handbook is provided below:

Digital Innovation Hubs[1]

Digital Innovation Hubs are one-stop-shops that help companies become more competitive with regard to their business/production processes, products or services using digital technologies, by providing access to technical expertise and experimentation, so that companies can "test before invest". They also provide innovation services, such as financing advice, training and skills development that are needed for a successful digital transformation. Environmental issues will be considered, in particular regarding energy consumption and low carbon emissions. As proximity is considered crucial, they act as a first regional point of contact, a doorway, and strengthen the innovation ecosystem. A DIH is a regional multi-partner cooperation (including organisations such as research and technology organisations [RTOs], universities, industry associations, chambers of commerce, incubators/accelerators, regional development agencies and vocational training institutes (Figure 1) and can also share strong connections with service providers outside of their region supporting companies with access to their services.

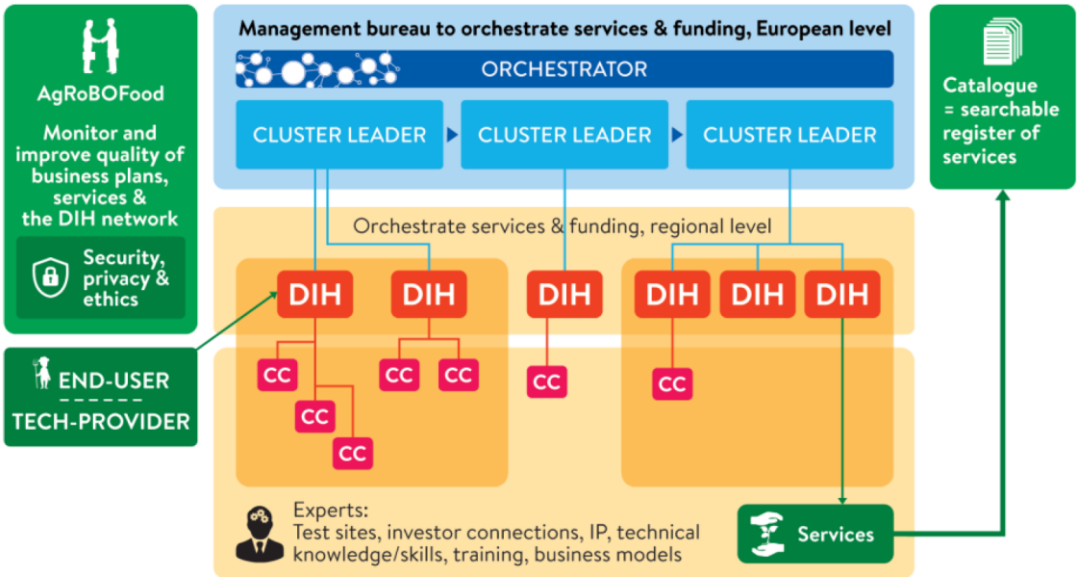

Figure 1: Envisioned agROBOfood network structure.

[5] Kalpaka, A., Sörvik, J. and Tasigiorgou, A., "Digital Innovation Hubs as policy instruments to boost digitalization of SMEs," Kalpaka, A., Rissola, G. (Eds.), EUR 30337 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-21405-2,doi:10.2760/085193,JRC121604. https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/digital-innovation-hubs-policy-instruments-boost-digitalisation-smes

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Other definitions proposed for Digital Innovation Hubs:

Project FEMAC

A Digital Innovation Hub (DIH) is a support facility that helps agricultural companies and farmers to become more competitive by improving their business/production processes as well as products and services by means of digital technology (FEMAC, 2018).

Project DIATOMIC

The services available through a DIH enable any business to access the latest knowledge, expertise and technology for testing and experimenting with digital innovations relevant to its products, processes or business models. DIHs also provide connections with investors, facilitate access to financing for digital transformations, and help connect users and suppliers of digital innovations across the value chain. These services are of particular relevance to companies which currently have a relatively low level of digitisation and which do not have the resources or personnel to address the digitisation challenge, for instance SMEs and mid-sized companies (DIATOMIC, 2017 - 2019).

Competence Centres[6]

A Competence Centre is a technology infrastructure centred on technologies that can be applied to any area, bringing together in one place extensive expertise in this field. A competence centre offers a set of services like training courses in the use of the technologies, advice on the choice of technologies and also work directly with DIH to apply the tools to the area problems in hand (Adapted from European Commission Competence Centres, 2019)[7].

Competence Centres cooperate within the Digital Innovation Hubs with other members of the innovation chain to support businesses in their digital transformation. This includes connection to investors, business developers and legal experts, as well as technical expertise.

The CCs often have regional scope and they aim at capturing the industrial ecosystem in each region where they are implemented (I4MS HORSE, 2018)[8].

Other definitions used for Competence Centres:

Project I4MS HORSE

Competence Centres will offer expert advising support on deployment and fast assessment of robotics solutions in manufacturing. Competence Centres will hold robotics equipment and supplies used in production lines.

Competence Centres are one-stop shops for industries interested in robotics for their production line. They are places to support SMEs to overcome the difficulties they face in adopting robotics such as:

- low awareness of the technological improvement
- low technical competence beyond their core business
- hesitation to new long-term investment
- concerns about advanced robotic solutions, especially Human-Robot-Interaction

Competence Centres have a regional scope. They aim at capturing the industrial ecosystem in each region where they are implemented (I4MS HORSE, 2018).

[6] Source : agROBOfood common definitions on Basecamp

[7] https://ec.europa.eu/jrc/en/knowledge

[8] http://www.horse-project.eu/sites/default/files/publications/HORSE_D7.3-v1.00.pdf

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Project Smart Agri Hubs

In addition to their role in stimulating the industries to use robotics, the Competence Centres will:

- be places for implementing and assessing technologies in settings representative of manufacturing installations,
- serve to assess pilot experiments by building the first demonstrators of these pilots in the CC's before implementation in the factory
- capitalise lessons learned and best practices,
- constitute market places and regional one-stop shops of robotics for manufacturing,
- be used to carry out a part of dissemination and exploitation activities

Within their respective Digital Innovation Hubs, Competence Centres cooperate with all relevant partners in the agri-food innovation value chain to support farmers, businesses and other agri-food entities in their digital transformation. This entails establishing connections with a wide range of technology companies, research institutions, and digital solutions providers as well as potential users and customers.

The Competence Centre may also play the role of the Digital Innovation Hub orchestrator, taking a coordinating, organising and/or an agenda setting role. End-users, e.g. farmers or cooperatives are the main target and beneficiary of the Digital Innovation Hubs. Financial institutions include banks, but also governments in their role of funding R&D and innovation activities. Finally, education and training play an important role in building capabilities for the Digital Innovation Hub and users (Smart Agri Hubs)

Given that no single Competence Centre can be the front-runner in all fields, strong linkages will be built between complementary Competence Centres, both within and between the different Digital Innovation Hubs. At the start of the initiative, SmartAgriHubs involves several hundred Competence Centres and is expected to reach a pan-European network of at least 2000 (Smart Agri Hubs CC)

2.1 Definitions and idea of competence centers and digital innovation hubs used in this deliverable

Within this document, the following definitions for competence centers and digital innovation hubs have been used. We will continue using these definitions for identification of possible DIHs and CCs throughout the project.

Competence Center:

"An agROBOfood Competence Centre provides access to the latest knowledge, expertise and technology for experimenting, testing or piloting with robot technologies in the agri-food sector. A CC is an organisation, which is open to anyone and helps regional technology developers and end-users with specific technology services to use robot technologies in the agri-food sector."

Digital innovation hub:

"An agROBOfood digital innovation hub is based on or connected to an agROBOfood Competence Centre. In addition to the technology services the Competence Centre provides, the Digital Innovation Hub provides business and ecosystem services for regional technology developers and end-users with needs in robotics and the agri-food sector. "

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Within agROBOfood, we believe that competence centers and digital innovation hubs have developed naturally. The goal of agROBOfood is to find these naturally developing organizations and help them improve their service portfolio. The ultimate goal is to create regional digital innovation hub networks which are connected to the pan-European network agROBOfood. Each regional digital innovation hub network should have digital innovation hub nodes in every corner of its region in order to facilitate access to robot technologies targeting the agri-food sector. Regional innovation hub nodes can be organizations which provide technology, ecosystem or business services using the regional partner network. However, for identification of possible new network partners, we will focus on above stated definitions. Once an organization joins the network, we will help it to mature its region into a regional digital innovation hub network.

agROBOfood will also focus on the white spots that may exist is some regions, and will help the hubs to develop their activities and services in these areas. Within the project we have created 7 regional clusters and the regional cluster leader has an active role in identifying these white spots and setting up activities to stimulate organizations in these white spot to become an agROBOfood DIH/CC.

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3 Methods

3.1 General criteria

The coordinating action RODIN has proposed general criteria for competence centers and digital innovation hubs. In order to keep compatible with the coordinating action, we chose to use these criteria for identification. The following table lists the criteria that were defined by RODIN.

Table 1 - Criteria defined by RODIN project

	Service	Competence Center (CC)	Digital Innovation Hub (DIH)
Technology services	***Strategic RDI*** Joint, pre-competitive R&D, secondment from companies	*Yes*	*Yes*
	Contract research Specific R&D, technology concept development, proof of concept	*Yes*	*Yes*
	Technical support Concept validation, prototyping, small series production or support with a agrofood robot product	*Yes*	*Yes*
	Provision of tech infrastructure Renting equipment, low rate production, platform technology infrastructure, Lab facilities	*Yes*	*Yes*
	Testing and validation Certification, product demonstration, product qualification	*Yes*	*Yes*
Ecosystem services	***Community building*** Scouting, brokerage, awareness creation, dissemination, ecosystem building		*Yes*
	Strategic development Market intelligence, market assessments, roadmapping , technology watch		*Yes*
	Ecosystem learning Workshops, seminars to share knowledge and experience		*Yes*

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	Representation, promotion Representing interests during meetings & conferences, organizing (country) visits, roadshows		*Yes*
Business services	***Incubator/accelerator support*** Voice of customer , market assessment, business development, IPR strategies, location strategies, sales strategy		*Yes*
	Access to finance Financial engineering, connection to funding sources, investment plans		*Yes*
	Project development Identification of opportunities, creating consortia, development of proposals		*Yes*
	Offering housing Office space and space for experimentation and pilot manufacturing		*Yes*

The goal in this deliverable is to identify existing and potential competence centres. As competence centres have grown naturally and were not designed in order to fit the criteria defined above, we will identify an organisation, which offers at least one of the mentioned technology services as a competence centre. The competence centre will have the chance to extend its service portfolio once it joins agROBOfood.

Similarly, agROBOfood tries to identify digital innovation hubs that can potential join agROBOfood. RODIN has as criteria for a digital innovation hub, that it provides technology services (can be provided by external CC), ecosystem services as well as business services. For identification it suffices, that an organisation can offer at least one service from each category.

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3.2 Data sources

3.2.1 Current network

In this deliverable we use the agROBOfood DoA with partner and associated partner descriptions and the network partner database for identification of digital innovation hubs and competence centers as the criteria has been refined and the partners needed to be reanalyzed. The existing data has been scanned using the criteria defined in this deliverable to create consistent declarations of digital innovation hub and competence center labels. Some discrepancies have been identified. Our new scan has revealed some discrepancies with the previous classification of the partners. This will be addressed in the future.

3.2.2 Questionnaire

Within the project consortium, a questionnaire is in circulation in order to identify the key players in the agrofood sector. The goal is to use the knowledge present in the consortium to identify the partners, which would be most valuable for growing the network. Currently, the questionnaire was answered by 20 partners. Around 15 new organizations were identified using this method.

3.2.3 Future data sources

In the future, we want to also use other data sources. Possible source include:

- Digital Innovation Hubs Catalogue
- Exhibitors at trade fairs (Agritechnica …)
- Presenter affiliations at conferences (FIRA, …)
- agROBOfood info days
- agROBOfood communication channels (website, LinkedIn, Twitter, partner pages)

Based on these data sources, we hope to identify many more competence centers and digital innovation hubs around Europe.

The database will be continuously updated (candidate CCs or hubs will be able to register to the catalogue), with their status as candidate, until they are properly evaluated by agROBOfood.

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4 Identified organizations

In this section, the competence centers and digital innovation hubs are listed. By using the criteria above and the data sources state above, we have been until now to identify 100 competence centers and 55 digital innovation hubs. In total, 105 organizations were identified. Figure 2 shows the distribution of the organizations over the seven clusters of agROBOfood.

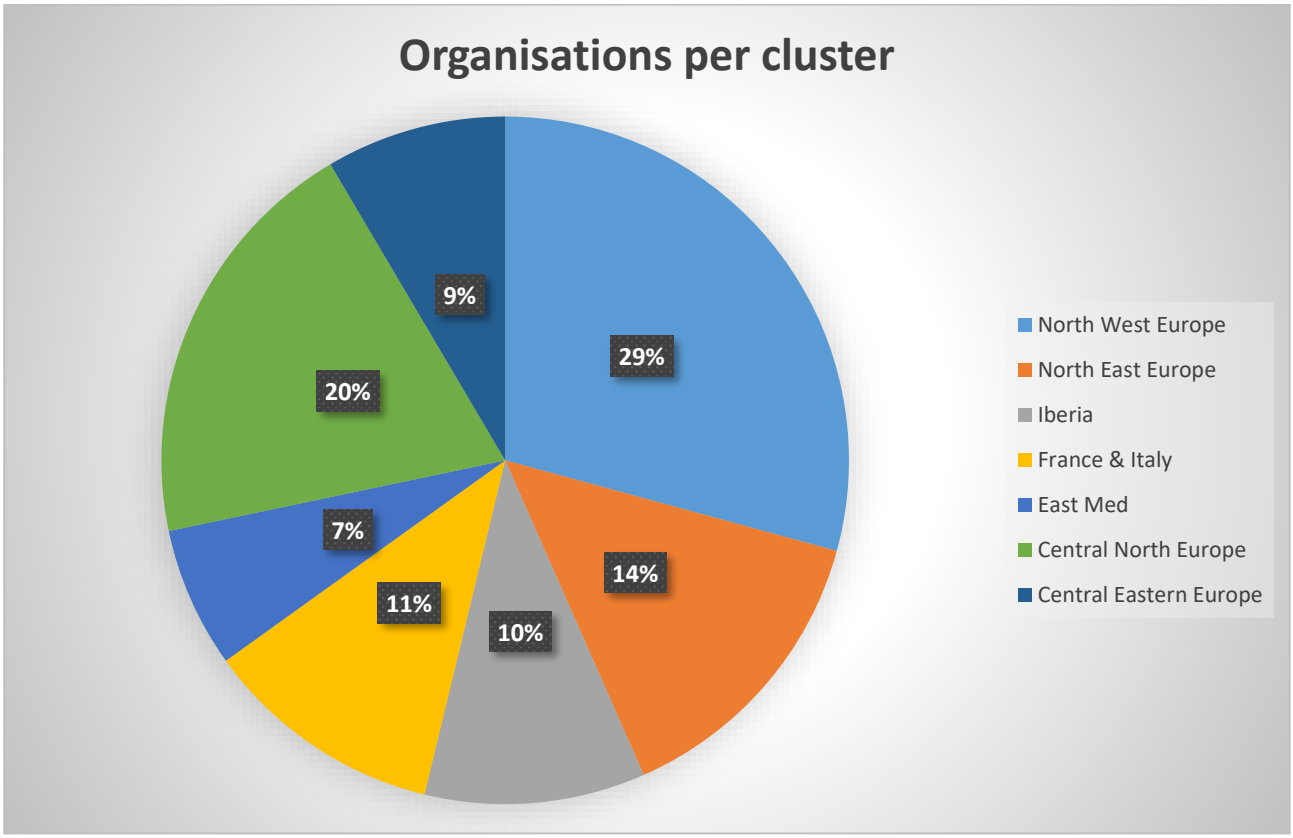

Figure 2: Distribution of identified organizations per agROBOfood cluster

The complete list of competence centers and digital innovation hubs, which have been identified until, is contained in Table 2. This table is a central part of the agROBOfood project and will be updated continuously with all newly identified organizations.

Table 2 - List of identified competence centers and digital innovation hubs

Region	Country	Short name	DiH/CC Name	DIH	CC	Consortium/Associated/ Prospective
Central Eastern Europe	Serbia	CAM ENGINEERING	CAM Engineering		x	Consortium
Central Eastern Europe	Serbia	Krivaja doo	Krivaja doo		x	Consortium
Central Eastern Europe	Serbia	BIOS	BioSense Institute	x	x	Consortium
Central Eastern Europe	Bulgaria	DTB	Bulgarian Innovation & Technology Hub - Bulgarian DigiTecH 4.0	x	x	Consortium

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Central Eastern Europe	Croatia	ICENT	CROBOHUB (Croatian Robotics Digital Innovation Hub) Innovation Centre Nikola Tesla	x	x	Associated
Central Eastern Europe	Bulgaria	DSLL	Digital Spaces Living Lab	x	x	Associated
Central Eastern Europe	Serbia	ICT Hub	ICT Hub d.o.o. Belgrade	x	x	Associated
Central Eastern Europe	Slovenia	STP	Štajerski Tehnološki park d.o.o.	x	x	Associated
Central Eastern Europe	Romania	Transilvania DIH	Transilvania Digital Innovation Hub	x	x	Associated
Central North Europe	Czech Republic	AGRIS	Agrarian Advisory & Information group of Czech University of Life Science	x	x	Associated
Central North Europe	Germany	AEF e.V.	Agricultural Industry Electronics Foundation		x	Consortium
Central North Europe	Hungary	AGIT FIEK	Agro-Informatics Center for Higher Education & Cooperation	x	x	Associated
Central North Europe	Austria	ARIA	Austrian Robotics Innovation Hub for Agriculture (JOANNEUM RESEARCH)	x	x	Consortium
Central North Europe	Germany	DKE-Data	DKE - Data GmbH & Co. KG		x	Associated
Central North Europe	Germany	Fraunhofer IPA	Fraunhofer - Gesellschaft zur Forderung der angewanten Forschung e.V.	x	x	Consortium
Central North Europe	Germany	Fraunhofer IVV Dresden	Fraunhofer Institute for Process Engineering & Packaging IVV, Institute Part Dresden		x	Associated
Central North Europe	Czech Republic	Plan4All	Innovation Hub for Open Data & Landscape Management	x	x	Associated
Central North Europe	Poland	IoT North Poland	Regional Digital Innovation Hub	x	x	Associated

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			related to Internet of Things			
Central North Europe	United Kingdom	Q-Technologies	Q Techonologies Ltd		x	Consortium
Central North Europe	Germany		AgritechValley	x	x	Prospective
Central North Europe	Germany		Uni Hohenheim		x	Prospective
Central North Europe	Germany		RTWH Aachen		x	Prospective
Central North Europe	Germany		Kuka		x	Prospective
Central North Europe	Switzerland		ETH		x	Prospective
Central North Europe	Austria		TTTech		x	Prosepctive
Central North Europe	Switzerland		ABB		x	Prospective
Central North Europe	Germany		IFR	x		Prospective
Central North Europe	Germany		Bosch		x	Prospective
Central North Europe	Germany		DFKI		x	Prospective
Central North Europe	Germany		Continental		x	Prospective
East Med	Greece	AUA	Agricultural University of Athens	x	x	Consortium
East Med	Greece	AIC Central Macedonia	Alexandreio Innovation Center AIC - Central Macedonia DIH	x	x	Associated
East Med	Greece	ATHENA RC	ATHENA Research & Innovation Center	x	x	Associated
East Med	Greece	DRAXIS	DRAXIS	x	x	Consortium
East Med	Greece	AGENSO	Agricultural & Environmental Solutions		x	Consortium
East Med	Greece	Gaiasense	Gaiasense DIH on Smart Farming	x	x	Associated
East Med	Turkey	IAIC	Izmir Agrifood Innoavtion Center	x	x	Associated
France & Italy	France	BDI-AGRETIC	Bretagne Development Innovation AGRETIC	x	x	Associated
France & Italy	France	CEA	CEA			Consortium

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France & Italy	Italy	CNR-IMAMOTER	Consiglio Nazionale delle Ricerche - Instituto per le Macchine Agricole e Movimento Terra		x	Consortium
France & Italy	France	Vitirover	Vitirover SAS		x	Consortium
France & Italy	France	AgreenCulture	AgreenCulture		x	Consortium
France & Italy	France	VitiBot	VitiBot		x	Consortium
France & Italy	France	SITIA	Sitia		x	Consortium
France & Italy	Italy	MEDISDIH	Distretto Meccatronico Regionale e Digital Innovation Hub della Puglia S.c.a r.l.	x	x	Associated
France & Italy	Italy	CNR	Nationa research Council		x	Associated
France & Italy	France	IRSTEA	National Research Institute of Science and Technology for Environment and		x	Consortium
France & Italy	France	RobAgri	RobAgri	x	x	Associated
France & Italy	France	Naio	Naio technologies		x	Prospective
Iberia	Spain/Catalonia	AgriTech BigData DIH	AgriTech BigData, Big Data Innovation Hub	x	x	Associated
Iberia	Spain	Tecnova	Andalusian Technological Centre of Agricultural Industry	x	x	Consortium
Iberia	Spain	EURECAT	Eurecat	x	x	Consortium
Iberia	Spain	E-STRATOS	E-STRATOS		x	Consortium
Iberia	Spain	INNOVI	INNOVI		x	Consortium
Iberia	Spain	ROBOTNIK	Robotnik		x	Consortium
Iberia	Portugal	INESC TEC	INESCTEC	x	x	Consortium
Iberia	Portugal	Iman Norte Hub	iMan Norte Hub	x	x	Consortium
Iberia	Spain/Catalonia	IAAC	Institute for Advanced	x	x	Associated

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			Architecture Catalunya			
Iberia	Spain/Madrid	ROBOCITY2030	ROBOCITY2030		x	Associated
Iberia	Spain		Tecnalia	x	x	Prospective
North East Europe	Denmark	Agrotech	Agrotech		x	Associated
North East Europe	Sweden	Agroväst	AGROVÄSTLIVSMEDEL LTD	x	x	Associated
North East Europe	Denmark	SEGES	Danish Food and Agricultural Council, SEGES		x	Associated
North East Europe	Denmark	DMRI	Danish Meat Research Institute		x	Associated
North East Europe	Denmark	DTI	Danish Technological Institute	x	x	Consortium
North East Europe	Estonia	SmartIC Robotics	DIH Smart Industry Centre of Robotics in Estonia	x	x	Associated
North East Europe	Latvia	ZSA	Farmers Parliament, Union		x	Associated
North East Europe	Denmark	TECHNICON	Technicon ApS		x	Consortium
North East Europe	Lithuania	LRA	Lithuanian Robotics Association Digital Innovation Hub	x		Associated
North East Europe	Finland	Luke DIS	Luke DigiInno Services	x	x	Associated
North East Europe	Denmark	OR	Odesen Robotics	x		Associated
North East Europe	Finland		Robocoast	x	x	Consortium
North East Europe	Denmark	RT	Robot Technology	x	x	Associated
North East Europe	Lithuania	SD	VSI Startup Division		x	Consortium
North East Europe	Finland	VTT	VTT Technical Research Centre of Finland Ltd	x	x	Consortium
North West Europe	Netherlands	AVAG	Algemene Vereniging van Aannemers en Installateurs in de Glastuinbouw, AVAG	x	x	Associated
North West Europe	Belgium	CEMA	CEMA European Agricultural Machinery		x	Consortium

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			Industry Association			
North West Europe	Netherlands	TUDelft	Delft University of Technology		x	Consortium
North West Europe	Luxembourg	EXXUS	EXXUS SA	x	x	Associated
North West Europe	Netherlands	WUR-FTE	Farm Technology Group		x	Associated
North West Europe	Netherlands	Fedecom	Fedecom	x		Associated
North West Europe	Belgium	Flanders MAKE	Flanders MAKE		x	Associated
North West Europe	Belgium	FF	Flanders` food	x	x	Associated
North West Europe	Netherlands	FME Agri & Food	FME Cluster Agri & Food	x	x	Consortium
North West Europe	Netherlands	GTL	GreenTechLab		x	Associated
North West Europe	Netherlands	HIGH TECH NL	High Tech NL		x	Consortium
North West Europe	United Kingdom	IFA	Innovation for agriculture	x	x	Associated
North West Europe	Belgium	ILVO	Institute for Agricultural, Fisheries and Food		x	Consortium
North West Europe	Ireland	ITT	Institute of Technology Tralee		x	Associated
North West Europe	Belgium	IMEC	Interuniversitair Micro-Electronica Centrum vzw	x	x	Associated
North West Europe	Netherlands	KvK	Kamer van Koophandel	x		Associated
North West Europe	Belgium	KU Leuven	Katholieke Universiteit Leuven		x	Associated
North West Europe	Netherlands	WUR-GRS	Laboratory of Geo-information science & remote sensing		x	Associated
North West Europe	Belgium	BAA	B&A Automation		x	Consortium
North West Europe	Netherlands	NLR	Nederlands Aerospace Centre	x	x	Associated
North West Europe	Belgium	SDF	Smart Digital Farming	x	x	Associated
North West Europe	Netherlands	WR	Stichting Wageningen Research	x	x	Consortium
North West Europe	United Kingdom	UoL	The University of Lincoln	x	x	Associated
North West Europe	Netherlands	UT	University of Twente		x	Associated

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North West Europe	Netherlands	Akkerweb	Stichting Akkerweb		x	Prospective
North West Europe	Netherlands	Letsgrow	LetsGrow.com		x	Consortium
North West Europe	Netherlands	WDCC	Wageningen Data Competence Center	x	x	Associated
North West Europe	Netherlands	SAIA Agrobotics	Saia Agrobotics		x	Consortium
North West Europe	Ireland	WIT	Waterford Institute of Technology	x	x	Consortium
North West Europe	Netherlands	ZLTO	Zuidelijke Land en Tuinbouw Organisatie	x	x	Associated
North West Europe	Netherlands		Lely		x	Prospective

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5 Conclusions

In this deliverable, we have presented a definition for digital innovation hubs and competence centers, which is specific to the domain of robotics and the agri-food sector. Based on the definitions and the RODIN project, criteria for identification of competence centers and digital innovation hubs have been developed. We have also identified several data sources from which potential organizations can be identified. Finally, we presented a list of identified competence centers and digital innovation hubs.

The methods developed and used in this deliverable will be used throughout the project to identify new potential organizations for the agROBOfood network.

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