

## Netherlands (NL)

The Netherlands' national initiative for digitising industry is *Smart Industry - Dutch Industry fit for the Future*.<sup>1</sup> This initiative is part of the Smart Industry Implementation Agenda 2018-2021 which was launched early 2018 and is the successor to the 2015-2017 Action Agenda. The ambition with this agenda is that in 2021 the Netherlands has the most flexible and the best digitally connected production network in Europe, with which the manufacturing companies involved also realize substantial energy and material savings.

The agenda contains five lines of action one of which is the *Field Labs* which are practical environments in which companies and knowledge institutions develop, test and implement effective Smart Industry solutions, as well an environment in which people learn to apply these solutions.

For the time period 2014-2017 TNO estimated that a total of 163 million was invested in the Smart Industry Fieldlabs initiative out of which 68 million was private funding, 25 million came from the regional funds, and the federal government invested approximately 42 million while the EU investment was around 28 million.<sup>2</sup> Should this level of investment continue, the yearly investment is estimated to be around 40 million. Currently there are 35 Smart Industry Fieldlabs.

On a **national level** Netherlands has 40 *Digital Innovation Hubs* (18 fully operational and 22 in preparation status) covering various market domains (agriculture, fishing, construction, manufacturing (food products, textiles, chemicals, basic and fabricated metal products, electrical and optical equipment, machinery, electrical equipment), transport, electricity, public administration, education and health) through a large spectrum of technology areas presented as follows:

- Additive manufacturing (3D printing)
- Advanced or High-performance computing
- Artificial Intelligence and cognitive systems
- Augmented and virtual reality, visualization
- Broadband and other communication networks (e.g. 5G)
- Cloud computing
- Cyber security (including biometrics)
- Data mining, big data, database management
- Gamification
- ICT management, logistics and business systems
- Interaction technologies (e.g. human-machine Interaction, motion recognition and language technologies)
- Internet of Things (e.g. connected devices, sensors and actuators networks)
- Internet services (e.g. web development, web production, design, networking, and e-commerce)
- Location based technologies (e.g. GPS, GIS, in-house localization)
- Micro and nano electronics, smart system integration
- New Media technologies
- Photonics, electronic and optical functional materials
- Organic and Large Area Electronics (OLAE)
- Robotics and autonomous systems

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<sup>1</sup> Smart Industry - Dutch Industry fit for the Future, <http://www.smartindustry.nl>

<sup>2</sup> Fieldlab Monitoring 2017, TNO, <https://publications.tno.nl/publication/34623516/GpWLTz/TNO-2017-R10006.pdf>

- Screens and display technologies
- Sensors, actuators, MEMS, NEMS, RF
- Simulation and modelling
- Software as a service and service architectures

On a **regional level**, each hub's activities seem to be aligned with the RIS3 strategies. A concise list of all hubs on national and regional level is presented as follows:

### 1. Fully operational DIHs

Hub name	City	NUTS2 region	Country	Smart Specialisation (SS)	Link to SS	AI	HPC	Cyber Security	Association to EU-funded project
<b>AMSYSTEMS Center</b>	Eindhoven	Noord-Brabant	Netherlands	Additive manufacturing	-	-	-	-	-
<b>Biorizon</b>	Delft	Zuid-Holland	Netherlands	Biobased bulkaromatics	organic aromaticities	-	-	-	-
<b>BOOST Smart Industry Hub, East-Netherlands</b>	Apeldoorn	Gelderland	Netherlands	Manufacturing	-	X	-	X	-
<b>Brightlands Materials Center</b>	Geleen	Limburg (NL)	Netherlands	Polymeric materials	-	-	-	-	-
<b>EOSC-DIH</b>	Amsterdam	Noord-Holland	Netherlands	General innovation	-	X	-	-	SAE (DIATOMIC), I4MS (CloudiFacturing)
<b>European Digital Innovation Hub The Northern Netherlands / Region of Smart Factories</b>	Groningen	Groningen	Netherlands	General innovation	-	X	X	-	-
<b>Industrial Reality Hub</b>	Apeldoorn	Gelderland	Netherlands	Virtual reality	promote private sector implementation	X	-	-	-
<b>Innovation Center for Artificial Intelligence</b>	Amsterdam	Noord-Holland	Netherlands	AI	-	X	-	-	-
<b>Jheronimus Academy of Data Science</b>	's-Hertogenbosch	Noord-Brabant	Netherlands	Smart data	-	X	-	-	-
<b>PhotonDelta</b>	Eindhoven	Noord-Brabant	Netherlands	Photonics	-	-	X	-	-
<b>Smart Connected Supplier Network</b>	Eindhoven	Noord-Brabant	Netherlands	ICT in manufacturing	Smart sensor systems	-	-	-	-

<b>Smart Welding Factory (SWF)</b>	Hengelo	Overijssel	Netherlands	Robotics and autonomous systems	-	X	-	-	-
<b>Space53</b>	Enschede	Overijssel	Netherlands	General innovation	-	X	X	X	-
<b>TechMed Innovation Hub</b>	Enschede	Overijssel	Netherlands	Digital technologies in healthcare	-	X	-	-	-
<b>Technologies Added</b>	Emmen	Drenthe	Netherlands	Smart Manufacturing	-	-	-	-	-
<b>ThermoPlastic composites NL</b>	Enschede	Overijssel	Netherlands	ThermoPlastic composites	-	-	-	-	-
<b>Hub name</b>	<b>City</b>	<b>NUTS2 region</b>	<b>Country</b>	<b>Smart Specialisation (SS)</b>	<b>Link to SS</b>	<b>AI</b>	<b>HPC</b>	<b>Cyber Security</b>	<b>Association to EU-funded project</b>
<b>TNO Holst Centre</b>	Eindhoven	Noord-Brabant	Netherlands	Wireless autonomous sensor technologies and flexible electronics	Smart sensor systems	-	-	-	-
<b>VP Delta</b>	Delft	Zuid-Holland	Netherlands	General innovation	-	-	-	-	-

## 2. In preparation DIHs

<b>Hub name</b>	<b>City</b>	<b>NUTS2 region</b>	<b>Country</b>
<b>3D Makers Zone</b>	Haarlem	Noord-Holland	Netherlands
<b>5G Fieldlab 5Groningen</b>	GRONINGEN	Groningen	Netherlands
<b>Amsterdam Data Science (ADS)</b>	Amsterdam	Noord-Holland	Netherlands
<b>Blockchain Havenbedrijf Rotterdam</b>	Rotterdam	Zuid-Holland	Netherlands
<b>Centre for Lightweight Structures</b>	EMMELOORD	Overijssel	Netherlands
<b>Cooperative Data Hub (Smart Dairy Farming)</b>	Amersfoort	Utrecht	Netherlands
<b>Digital Innovation Hub Smart Manufacturing in Zuid-Holland SMIZH</b>	Den Haag	Zuid-Holland	Netherlands
<b>Dutch Optics Centre (DOC)</b>	Delft	Zuid-Holland	Netherlands
<b>Eindhoven Living Lab for Smart Society (ELL4SS)</b>	Eindhoven	Noord-Brabant	Netherlands
<b>FreshTEQ.nl</b>	Honselersdijk	Zuid-Holland	Netherlands
<b>MAMTeC (Metal Additive Manufacturing Technology Centre)</b>	Marknesse	Flevoland	Netherlands

<b>NOMI Joint Innovation Centre</b>	Delft	Zuid-Holland	Netherlands
<b>Novel-T</b>	Enschede	Overijssel	Netherlands
<b>RDM makerspace</b>	Rotterdam	Zuid-Holland	Netherlands
<b>RoboValley Delft</b>	Delft	Zuid-Holland	Netherlands
<b>Smart Farming</b>	Den Haag	Zuid-Holland	Netherlands
<b>Smart Industry Hub Noordwest</b>	Zoetermeer	Zuid-Holland	Netherlands
<b>Smart Industry Hub South</b>		Noord-Brabant	Netherlands
<b>StartupUtrecht</b>	Utrecht	Utrecht	Netherlands
<b>Sustainability factory</b>	Dordrecht	Zuid-Holland	Netherlands
<b>TValley</b>	Enschede	Overijssel	Netherlands

### 3. RTOs/universities that had a DIH role in an EU project

A list of RTOs/universities that have participated in the EU FP7 and H2020 projects, and *are not mentioned above*, is presented in the following tables:

#### a. H2020 participation<sup>3</sup>

Project Topic Code	Project Acronym	Project Duration	Project End Date	Participant Legal Name	Participant Role	Participant Short Name	Core Legal Entity Type	Research Organisation	Project Topic Code
FoF-09-2015	XS2I4MS	30	28/02/2018	BRAINPORT DEVELOPMENT NV	PARTICIPANT	BPD	PRIVATE	No	FoF-09-2015
FoF-09-2015	Fortissimo 2	36	31/10/2018	NAWIJN MARCO	PARTICIPANT	COLOSSO	INDIVIDUAL	No	FoF-09-2015
FoF-09-2015	Fortissimo 2	36	31/10/2018	SURFSARA BV	PARTICIPANT	SURFSARA	PRIVATE	No	FoF-09-2015
Project Topic Code	Project Acronym	Project Duration	Project End Date	Participant Legal Name	Participant Role	Participant Short Name	Core Legal Entity Type	Research Organisation	Project Topic Code
FoF-09-2015	Fortissimo 2	36	31/10/2018	KE-WORKS BV	PARTICIPANT	KEWORKS	PRIVATE	No	FoF-09-2015
FoF-09-2015	HORSE	54	30/04/2020	THOMAS REGOUT INTERNATIONAL BV	PARTICIPANT	TRI	PRIVATE	No	FoF-09-2015
FoF-09-2015	HORSE	54	30/04/2020	TECHNISCHE UNIVERSITEIT EINDHOVEN	PARTICIPANT	TUE	PUBLIC	No	FoF-09-2015
FOF-12-2017	AMable	48	31/08/2021	CISCO SYSTEMS INTERNATIONAL B. V.	PARTICIPANT	CISCO	PRIVATE	N/A	FOF-12-2017
ICT-01-2014	EuroCPS	36	31/01/2018	VERENIGING HIGH TECH NL	PARTICIPANT	HIGH TECH NL	PRIVATE	No	ICT-01-2014
ICT-04-2017	TETRAMAX	48	31/08/2021	TECHNISCHE UNIVERSITEIT DELFT	PARTICIPANT	TUDELFT	PUBLIC	Yes	ICT-04-2017

<sup>3</sup> Data available in CORDIS ([http://cordis.europa.eu/home\\_en.html](http://cordis.europa.eu/home_en.html)) and in the European Commission databases.

ICT-04-2017	Smart4Europe	24	31/08/2019	THHINK BV	PARTICIPANT	THHINK BV	PRIVATE	No	ICT-04-2017
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### b. FP7 participation3

Project Number	Project Acronym	Project Duration	Project Start Date	Project End Date	Project Number of Participants	Participant Short Name	Participant Legal Name	Participant Role	Organisation Type
609029	FORTISSIMO	42	01-Jul-2013	31-Dec-2016	123	DELTARES	STICHTING DELTARES	Participant	REC
609029	FORTISSIMO	42	01-Jul-2013	31-Dec-2016	123	SCM	Scientific Computing & Modelling N.V.	Participant	PRC
609029	FORTISSIMO	42	01-Jul-2013	31-Dec-2016	123	KEW	KE-WORKS BV	Participant	PRC
609029	FORTISSIMO	42	01-Jul-2013	31-Dec-2016	123	VORTECH	VORTECH BV	Participant	PRC
609029	FORTISSIMO	42	01-Jul-2013	31-Dec-2016	123	HKV	HKV LIJN IN WATER BV	Participant	PRC
609029	FORTISSIMO	42	01-Jul-2013	31-Dec-2016	123	SARA	SURFSARA BV	Participant	PRC
609029	FORTISSIMO	42	01-Jul-2013	31-Dec-2016	123	DRG	DYNFLOW RESEARCH GROUP BV	Participant	PRC
609029	FORTISSIMO	42	01-Jul-2013	31-Dec-2016	123	IONIQA	IONIQA TECHNOLOGIES BV	Participant	PRC
609029	FORTISSIMO	42	01-Jul-2013	31-Dec-2016	123	EAL	ELECTRIC ANT LAB BV	Participant	PRC
609046	LASHARE	48	01-Sep-2013	31-Aug-2017	69	VECO	VECO BV	Participant	PRC
609355	APPOLO	48	01-Sep-2013	31-Aug-2017	36	Lightmotif	Lightmotif B.V.	Participant	PRC
609355	APPOLO	48	01-Sep-2013	31-Aug-2017	36	SKF	SKF BV	Participant	PRC
609355	APPOLO	48	01-Sep-2013	31-Aug-2017	36	NST	NEXT SCAN TECHNOLOGY BV	Participant	PRC
288881	COLAE	36	01-Sep-2011	31-Aug-2014	19	KMC	KEY MANAGEMENT CONSULT B.V.	Participant	PRC
619205	ACTPHAST	48	01-Nov-2013	31-Oct-2017	24	TU/e	TECHNISCHE UNIVERSITEIT EINDHOVEN	Participant	HES
619205	ACTPHAST	48	01-Nov-2013	31-Oct-2017	24	LIO	LIONIX BV	Participant	PRC
619205	ACTPHAST	48	01-Nov-2013	31-Oct-2017	24	SPH	SMART PHOTONICS BV	Participant	PRC
601116	ECHORD Plus Plus	60	01-Oct-2013	30-Sep-2018	107	WU	WAGENINGEN UNIVERSITY	Participant	HES
601116	ECHORD Plus Plus	60	01-Oct-2013	30-Sep-2018	107	AVU	AVULAR BV	Participant	PRC

## 4. Regions in the Netherlands that have no DIHs

- Friesland

- Limburg
- Zeeland