

smart industry



# SMART INDUSTRY FIELDLABS 2018

Fieldlabs are practical environments where businesses and knowledge institutions develop, test and implement Smart Industry solutions in a targeted way. In addition, they allow people to learn how to apply these solutions. Fieldlabs also strengthen the links to research, education and policy in relation to a specific Smart Industry theme and transfer knowledge to other businesses. As at the start of 2018, 32 Fieldlabs are up and running, with a regional, national or international focus.

For more information go to [www.smartindustry.nl/fieldlabs](http://www.smartindustry.nl/fieldlabs).

## 1. ULTRA-PERSONALIZED PRODUCTS AND SERVICES

UPPS is developing new methods for designing and creating personalized products and services. It focuses on the entire process: from data acquisition, concept development and scanning to engineering and data processing for production. *Partners: CLICKNL, 4TU, Universiteiten of applied sciences, TNO, Philips, SMEs. Locations: Delft, Eindhoven, Enschede, Amsterdam.*

## 2. REGION OF SMART FACTORIES

Consortium of 40 businesses from the Northern Netherlands (including Philips and Fokker) developing concepts for the Factory of the Future, with a focus on zero-defect manufacturing and 'first-time-right' product development. Programme comprises 10 pilot projects, business development activities for technology suppliers and development of a smart manufacturing ecostructure, including education (Centre of Expertise) and shared facilities. *Location: Northern Netherlands.*

## 3. SMART DAIRY FARMING 3.0

Increasing the sustainability (animal health and production) and (economic) efficiency of dairy farming by collecting data from dairy cows in real time and sharing this within the chain. *Partners: Friesland Campina, CRV and Agrifirm. Location: Amersfoort.*

## 4. SMART BENDING FACTORY

Ultramodern factory for laser cutting and bending of steel, controlled entirely via the internet. Aim: reduce total cost of ownership by 20% and make time to market 5x faster. *Partners: 247TailorSteel, Gunnebo, Innclose, Staja, Viscon, Jansen Metal Products, ROC Graafschap College, Anton Tjindik Opleidingen. Location: Varsseveld.*

## 5. THE GARDEN

Secure collaboration within the chain. Security in Smart Industry, with a first project focusing on EPLM (Extended Product Lifecycle Management). *Partners: Thales, Demcon, Figo, Norma, Parthian, PM Group, USG, VIRO, VMI, Benchmark, True Information Solutions, Cobblue, Vidinexus, NDIX, FME, Saxion, UT, TNO. Location: Hengelo.*

## 6. FRESHTEQ.NL

Technological innovation for greenhouse farming. Smart solutions for fully automated production, cultivation and distribution of fresh fruit and vegetables. Creation of fresh food chains for cities and densely populated regions worldwide. *Partners: Demokwekerij Westland, TU Delft, WUR, TNO, GHC. Location: Westland.*

## 7. MULTI-MATERIAL 3D PRINTING

Focus on developing completely new value chains, based on next-generation, multi-material 3D-printing technologies and associated data-management systems. *Partners: TNO, High Tech Systems Centre (TU Eindhoven), ECN, Admatec, Vertex-NextDent, Océ, Philips Lighting, DoMicro, PwC, ASML, XYCarb, BOM and LIOF. Location: Eindhoven.*

## 8. SMART CONNECTED SUPPLIER NETWORK

Fieldlab that aims to make the exchange of information in the supply chain more efficient through standardization and interoperability, starting with ERP software. *Partners: Brainport Industries, KMWE, NTS Group, Eurotechniek, MKG, Isah, TNO, Fujitsu Glavia, Newways, Infor, Exact, Tradecloud, Ridder, Viscon, Suplacon, AAE, Faes, Van Raak Staal, Ketenlink, Supplydrive. Location: Eindhoven.*

## 9. CAMPIONE FIELDLAB

This first Fieldlab in the process industry aims to make maintenance 100% predictable. Condition-based maintenance: sensors monitor the status of installations to predict with precision when maintenance is needed. Availability of factory installations is increased, while costs are reduced. *Partners: Consortium of around 20 businesses, 10 knowledge institutions and 3 supporting organizations. Location: Gilze Rijen.*

## 10. FLEXIBLE MANUFACTURING

This Fieldlab aims to make production processes more flexible through robotics, ICT and operator support systems, etc. Faster changeovers and zero programming will allow a large product mix to be manufactured in small series more easily and flexibly and with zero defects. *Partners: Brainport Industries, Bosch Rexroth, Bronkhorst High Tech, De Cromvoirtse, Newways, Smart Robotics, Vincitech, Yaskawa, Accerion, Assemblage Perfect, Total Productivity, ICT Automatisering Nederland, KMWE, Omron, Avans Hogeschool, Fontys Hogeschool Eindhoven, Technische Universiteit Eindhoven, TNO. Location: Eindhoven.*

## 11. DIGITAL FACTORY FOR COMPOSITES

Facility for open, cross-sector innovation and demonstration centre for automated, digital production of composites. *Partners: Airborne, Siemens, SABIC, KUKA and TU Delft. Location: Ypenburg.*

## 12. AUTOMATED COMPOSITES AND METAL MANUFACTURING & MAINTENANCE ACM<sup>3</sup>

Centre for development of lightweight structural components in composites and metal and associated manufacturing technologies and maintenance concepts. Focuses on automated processes (including robot-based composite manufacturing and metal additive manufacturing). *Partners: Nationaal Lucht- en Ruimtevaart Centrum, Ampyx Power, Correlan, Fokker Landing Gear, Fontys Hogeschool Engineering, Label/Breed, Kaptein Roodnat, Omron Europa, PAL-V, TNO, TU Delft, VABO Composites, Windesheim. Location: Marknesse.*

## 13. RAMLAB

Develops knowledge relating to metal 3D printing and certification of large parts for the port-related sector. *Partners: InnovationQuarter, Port of Rotterdam, RDM Makerspace, Valk Welding, Air Liquide, Autodesk, IBM, Lincoln Electric, Lemtech, M2i, Huisman, Heerema, Fokker, Netherlands Navy, Damen, Volkerrail, Allseas, MX3D, Bolier, Royal Roos, Promarin. Location: Rotterdam.*

## 14. 3D MAKERS ZONE

Revolutionizing how things are made. 3D Makers Zone is focusing on applied innovation for Smart Industry. We create innovative products and solutions for businesses by applying innovative technologies, with a strong focus on industrial 3D printing/Additive Manufacturing. Our practical environment also has various labs where IoT tech, blockchain, AR/VR and robotics are applied. *Partners: PWN, Spaarnelanden, KLM, InHolland, Nova College, HvA, Hoogheemraadschap Hollands Noorderkwartier, Berenschot, Province of North Holland. Location: Haarlem/Amsterdam.*

## 15. SMART WELDING FACTORY

Flexible and fully automated manufacturing and 3D printing (WAAM) using welding robots and with zero programming time: 'first-time-right' and 'one-piece-flow'. *Partners: LAC, NIL, Aebi Schmidt, Pan Oston, Stork Thermag, Hoekman RVS, Exerion, Contour, Wive Techniek, Noteboom Trailers, Van Raam, Breman Machinery, Stanstechniek Gaanderen, Gunnebo, VSMI, Techwise Twente, Anton Tjindik opleidingen, ROC van Twente, SMEOT. Location: Enschede.*

## 16. PRACTICAL CENTRE FOR PRECISION AGRICULTURE

Makes measurement and other data accessible for (collective) use by farms, suppliers, the processing industry and knowledge institutions. Offers demo and test facilities within the practical centre and on site. *Partners: ZLTO, Vd Borne, TU Eindhoven, Delphy, Rusthoeve, HAS Den Bosch, WUR. Location: Reusel and Colijnsplaat.*

## 17. THE SUSTAINABILITY FACTORY

Smart solutions for maritime automation (robotics), smart metrology and smart energy. Promotes development and exploitation of innovations linked to the maritime sector and energy transition and facilitates 'lifelong development'. *Partners: Valk Welding, Scheepswerf Slob, De Waal, Krohne Altometers, PRIVA, Verkerk, VIV, Opleidingsbedrijf Installatiewerk, VAF, Da Vinci College, FESTO, HVC, Edorado, 10XL. Location: Dordrecht.*

## 18. 3D MEDICAL

Making far-reaching improvements to personalized care by means of SMART technology, such as 3D imaging and 3D printing. Collaboration with UMC Utrecht, Stichting ProtoSpace and Hogeschool Utrecht. *Partners: MRiGuidance, Zimmer Biomet, 3Devo, Ultimaker, Xilloc, Landre, Livit. Location: Utrecht.*

## 19. COMPOSITE MAINTENANCE AND REPAIR

The aim is to fully automate the maintenance and repair of composite components, mainly in aircraft. *Partners: Stichting Development Center for Maintenance of Composites (DCMC), Fokker, NLR, TU Delft, Airborne, Netherlands Air Force, REWIN, BOM, TIAT and Damen Shipyards. Location: Hoogerheide/Woensdrecht.*

## 20. THERMOPLASTIC COMPOSITES NETHERLANDS (TPC NL)

Fundamental and applied research centre for thermoplastic composite manufacturing. Key focus areas are tape laying, compression moulding, insert moulding, recycling and automation (robotics). *Partners: TPRC and TPAC. Location: Enschede.*

## 21. CAMINO FIELDLAB

The ambition is to make maintenance of infrastructure works 100% predictable. Work takes place in 2 clusters, Rail and Water, with new clusters for Smart Energy and Tunnels currently being developed. Within the clusters parties such as Prorail, Rijkswaterstaat and Waterschap Vechtstromen are working together with technology partners to develop new solutions in the area of smart maintenance. *Initiated by Stichting World Class Maintenance, together with Oost NL and Novel-T. Location: Enschede.*

## 22. SMASH FIELDLAB

The ambition is to make maintenance 100% predictable. Condition-based maintenance in the shipbuilding sector: collection and analysis of real-time information on a ship's condition to allow prompt maintenance and prevent downtime. *Partners: MCN/KIM, NMT, WCM, IQ, various asset owners and suppliers. Location: Rotterdam/Drechtsteden and national.*

## 23. SMART BASE

A testing platform for developing a 'Smart Base' for the Ministry of Defence. Together with innovative businesses, the Ministry will be conducting experiments to develop solutions linked to protection, energy, water and support & services. *Partners: Ministry of Defence, LIOF, BOM, Oost NV, InnovationQuarter, NOM. Location: Amersfoort.*

## 24. 5G FIELDLAB

Northern Groningen is becoming the testing ground for 5G mobile internet. Businesses and non-profit organizations are working together with experts to test 5G applications. *Partners: EBG, KPN, Vodafone, Huawei, Ericsson, TNO, RUG, Hanzehogeschool, SURF, Agentschap Telecom. Location: Groningen.*

## 25. INDUSTRIAL ROBOTICS

Develops certified secondary and higher professional education courses on robot programming and operation. Offers the opportunity to develop and experiment with new technologies and applications. *Partners: Deltion College, Landstede mbo, Hogeschool Windesheim, Altrex, Auping, AWL-Techniek, Goma, Mechdes, Kinkelder, Hellebrekers, Moba, Nefit, Teqram, VMI, Voestalpine Polynorm, Wivé, Jssel Technologie. Location: Harderwijk.*

## 26. TECHNOLOGIES ADDED

The first Shared Smart Factory with a shared production site for smart manufacturing, incubators and service providers in the field. Added also offers in-house facilities for Hogeschool Stenden and other knowledge and educational institutions. *Partners: Technologies Added, Sustainer, NOM, Stenden, RUG, Drente-college. Location: Emmen.*

## 27. DUTCH OPTICS CENTRE

Dutch Optics Centre brings together knowledge and research capacity to support Dutch businesses. Together we are developing the next generation of optical instruments to contribute to global challenges. *Founders: TU Delft, TNO and 25 SMEs and knowledge institutions. Location: Delft and Enschede.*

## 28. ROBOHOUSE

Facility and innovation programme for further developing robotics in the Netherlands. Focuses on accelerating the adoption of state-of-the-art robotics solutions within organizations. *Partners: RoboValley, TU Delft, Festo, Exact, Haagse Hogeschool, TNO, Innovation Quarter. Location: Delft.*

## 29. HIGH TECH SOFTWARE COMPETENCE CENTRE

Consortium of 20+ high-tech software firms focusing on virtual prototyping & design, model-based software and data analytics & services. Demonstrates how groundbreaking, innovative software contributes to more efficient and flexible and higher-quality hardware development and production. *#3x\_snelier\_ontwikkelen #aanpasbaar #nul\_fouten. Location: Eindhoven.*

## 30. BLOCKLAB

Blocklab is working on a decentralized future. Together with engineers, developers and chain partners from the logistics and energy sectors, it is developing blockchain use cases that will radically change chains, grids and market models. *Partners: TU Delft, Havenbedrijf Rotterdam, CGI, STC group, HRO, Municipality of Rotterdam, TKI Dinalog, Innovation-Quarter. Location: Groothandelsgebouw, CIC, Rotterdam.*

## 31. DUTCH GROWTH FACTORY

Innovation cluster to speed up the digital transformation of manufacturers and open up new markets. Aim: to develop and scale up production processes of 50 scale-ups, SMEs and multinationals by 2025. *Partners: SMITZH, 3D Robotprinting, Spark Design & Innovation, Centwerk, TNO, Municipality of Rotterdam, Hogeschool Rotterdam, Willem de Kooning Academy, TU Delft, Dutch Makers Revolution.*

## 32. TECHPORT

The Techport Fieldlab aims to link real-time data from factory installations to production and quality data to fully integrate data - and therefore control - within the process industry. The result: installation maintenance that is 100% predictable and optimized use of production resources, with maximum output at minimal cost. *Partners: Tata Steel, Vrije Universiteit Amsterdam, Amsterdam Center for Business Analytics, Amsterdam Data Science, Facta, SKF, Semiotic Labs, 30Mhz, VanderEng Labels, Koning & Hartman, Bosma & Bronkhorst, Jssel Technologie, World Class Maintenance, Techport. Location: Velsen-Noord.*

