

# Impact in Europe

Research by Dutch Universities  
of Applied Sciences



**Vereniging Hogescholen**

Netherlands Association of  
Universities of Applied Sciences

'Take risks but make sure successes really matter'

*Mazzucato-report, 2018*

## Impact in Europe Research by Dutch Universities of Applied Sciences

Dutch Universities of Applied Sciences (UAS) participate in increasing numbers in European research-and innovation programmes, such as Horizon 2020 and Interreg. Societal relevance, solving critical and real-life issues, is seen as the main driver for conducting research at our UAS. Applied research directly contributes to the quality of our education, and is therefore an integral part of our educational methods. In the end it provides our students with a head start in their future careers, while contributing to solving global challenges.

Through the 'Research with Impact'-agenda (2016) the Dutch Universities of Applied Sciences identified 10 topics on which they focus their research efforts. These priority areas form the basis for this booklet. Through 10 stories you will be able to see and read how our UAS generate European societal relevance through applied research. In other words, we make successes really matter! Not only in the Netherlands, but also across our borders.

UAS increasingly participate in European research-and innovation programmes, as the two examples below will show:

### **Interreg (2014-2020)**

- Interreg is one of the European research instruments to stimulate cross-regional partnerships. The total budget is 10,1 billion EUR (between 2014-2020).
- 16 of our Universities of Applied Sciences are actively participating in Interreg-programmes, covering a wide area of topics such as high-tech systems, circular economy and fostering youth entrepreneurship.
- By forming Smart Partnerships for Regional Impact, our UAS institutions work together on innovative practice-based projects together with local businesses and public sector that are strongly embedded in the region. For example: in Interreg A (Germany-Netherlands) in 70 to 80% of the projects local SME's are involved.

### **Horizon 2020 (2014-2020)**

- With a total budget of 74 billion EUR Horizon 2020 is the biggest research-and innovation programme funded through the European Union.
- At the moment 15 of our institutions have been granted a research fund. This number is steadily increasing.
- 64% of the Horizon 2020-projects in which our UAS participate focus on the Societal Challenges-pillar, in many cases a University of Applied Sciences cooperate with local businesses.





Health: healthcare and vitality

## XoSoft

For people with walking impairments, assistive devices play a pivotal role in their lives and independence. XoSoft as a project focusing on the

latest techniques to assist people with mobility impairments in Europe. Using multidisciplinary research and innovation actions, a soft modular lower-limb exoskeleton is being developed that people with muscle weakness and/or a partial loss of sensory or motor function can wear to assist their leg strength and support, to increase their mobility and thereby improve their health and quality of life. XoSoft will employ smart soft robotics, biomimetic controlled actuation and connected health data feedback and interface.

***xosoft.eu***

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### **Partners**

Fondazione Istituto Italiano di Tecnologia (IT), Consejo Superior de Investigaciones Científicas (ES), Saxion University of Applied Science (NL), University of Limerick (IE), Zurich University of Applied Sciences (CH), Roessingh Research and Development BV (NL), accelopment AG (CH), Geriatrie-Zentrum Erlangen (DE), Össur hf (IS)



Co-funded by the Horizon 2020  
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Education and talent development

## **ESSENCE**

European Sustainable Solutions for Existing and New City Environments

Purpose: to promote the development of sustainable cities through international cooperation.

The impact of ESSENCE IS:

- An international, interdisciplinary curriculum will be developed;
- Students will work on practical solutions for issues concerning sustainability in the urban environment on behalf of three local governments;
- New teaching methods are studied and applied in order to achieve best practices for using MOOC, e-learning and blended learning.

Outcome: urban societal problems are addressed in the programme, and approached from a multinational and multidisciplinary perspective, including practice, industry, education and research.

***[husite.nl/essence](https://husite.nl/essence)***



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### **Partners**

Hamburg University of Applied Sciences, Germany (DE), HU University of Applied Sciences Utrecht (NL), Turku University of Applied Sciences (FI), Universitat Politècnica de València (ES), Manchester Metropolitan University (UK), City of Utrecht (NL), City of Alcoi (ES), City of Turku (FI)





Resilient society: at neighbourhood, city and regional level

## SoCaTel

SoCaTel aims at improving the accessibility, responsiveness, efficiency, transparency and transferability of social and care services in an integrated

long-term care (LTC) model to older adults, by bringing together different actors in a co-creation environment. SoCaTel leverages existing technologies and resources in Europe to address current needs and gaps during service delivery and implementation. The SoCaTel project is an intercultural collaboration where European professionals with unique knowledge and skills work together in research and education.

The project comprises 3 main stages:

- 1 The design and creation of a digital co-creation platform.
- 2 Co-creation of public services within the realm of long-term care services, involving hackathons with third-party innovators, and using face-to-face co-creation methodologies, with the aim of developing a new technology better adapted to citizens' needs.
- 3 Service publishing and impact assessment on the open source platform, supported by extensive change management activities.

**[socatel.eu](http://socatel.eu)**



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### **Partners**

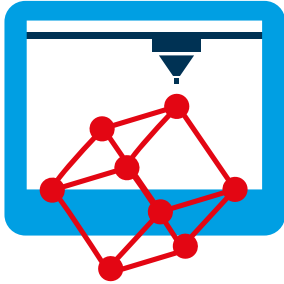
Universitat Rovira i Virgili  
– Coordinator (ES),  
Stichting Fontys (NL),  
Tampereen Yliopisto (FI),  
Gal Ferenc Foiskola (HU),  
Trinity College Dublin (IE),  
Blau Advisors Strategic  
Partners SL (ES), CY.R.I.C.  
Cyprus Research and  
Innovation Center LTD  
(CY), Ajuntament de  
Vilanova i la Geltrú (ES),  
Tampereen Kaupunki (FI),  
Health Service Executive  
HSE (IE), Fundación  
ONCE (ES), Ozwillo (FR),  
Everis Spain SL (ES)





Status ONLINE	
Temp	27.51
a few seconds ago	
Humidity	38.75
a few seconds ago	
Pressure	100245
a few seconds ago	
Light	5





Smart technology and materials

## 5Groningen

5Groningen is transforming northern Groningen into the ultimate testing ground for the latest generation of mobile internet. Entrepreneurs and non-profit

organizations are joining forces with experts to test 5G applications. The pilot area is called the 5G Field Lab.

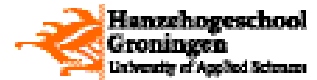
The aim of the 5Groningen field lab is to help SMEs in the northern Netherlands with the (experimental) development and concrete utilisation of promising applications. The support of the European Union advances the economic, social and territorial cohesion of member states and the EU as a whole. This support contributes to sustainable economic growth, strengthening competitiveness and boosting employment. With help of the EU, the field lab can be a good solution to prevent and limit market failures among SMEs that arise through coordination problems.

**[5groningen.nl/en](https://5groningen.nl/en)**



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### **Partners**

NL: Economic Board Groningen (EBG), KPN, Agentschap Telecom, TNO, Rijksuniversiteit Groningen, SURF. Huawei (CH), Vodafone (UK), Ericsson (SE)





The built environment: sustainable and habitable

## IRIS

Integrated and Replicable Solutions for Co-Creation  
in Sustainable Cities

A quickly growing percentage of the EU population (currently 75%) lives in urban areas, using 70% of available energy resources. To realise the European targets for further growth of renewable energy in the energy market – and to exploit the expected technological opportunities in a sustainable manner both on a European and global level – city planners, administrators, universities, entrepreneurs, citizens and all other relevant stakeholders need to work together and be the main cog in future EU urban development.

Our solution: in light of such an evolving environment, the need for strategies that help cities to smartly integrate technological solutions has become more and more apparent. Given this condition and the fact that cities can act as large-scale demonstrators of integrated solutions, and want to contribute to the socially inclusive energy and mobility transition, IRIS offers an excellent opportunity to demonstrate and replicate the cities' great potential.

***[irissmartcities.eu](http://irissmartcities.eu)***



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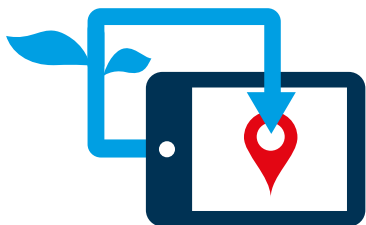
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### Partners

**NL:** Municipality of Utrecht (NL), Stichting Bo-Ex '91, Koninklijke KPN NV, Stedin Netbeheer BV, LomboXnet, Eneco Zakelijk BV, Qbuzz BV, Utrecht University, Stichting Hogeschool voor de Kunsten Utrecht, Civity BV. **FR:** Métropole Nice Côte d'Azur, University of Nice Sophia Antipolis, Electricité de France, Enedis, Centre Scientifique et Technique du Bâtiment, VEOLIA ENVIRONMENT, Côte d'Azur Habitat, VULOG SA, Nexity ywood. **SE:** City of Gothenburg, Johanneberg Science Park AB, Chalmers University of Technology, Metry AB, HSB Göteborg, Riksbyggen Ekonomisk Förening, Akademiska Hus, Trivector Traffic AB, Tyréns AB, City of Vaasa, IMCG Sweden AB, SP Technical Research Institute of Sweden. **FI:** Oy Merinova AB, University of Vaasa. **RO:** Municipality of Focsani, amongst others.





Sustainable transport and intelligent logistics

## SEEV4-City

Electric vehicles are not always charged using sustainable energy sources, and the power supply is not always stable either. SEEV4-City, an Interreg project putting green city development first, encompasses research into the most effective way in which electric car batteries can be used as a buffer for energy storage. This will ultimately ensure that more cars can be charged using sustainable energy sources, thereby enabling progression in terms of the use of this type of environmentally friendly transport.

The SEEV4-City project is a collaborative effort between various regional authorities in north-west Europe: Pilots have now been set up in six cities in five European countries. The Interreg project will be running until the summer of 2019, and is being carried out by research institutes, regional delegations and local businesses.

**[northsearegion.eu/seev4-city](http://northsearegion.eu/seev4-city)**

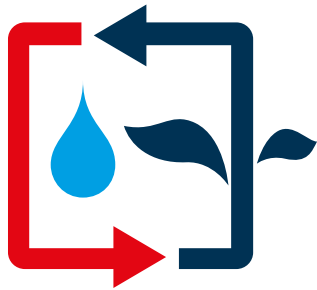
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### Partners

**NL:** Hogeschool van Amsterdam, City of Amsterdam, Amsterdam Arena. **BE:** Universiteit Leuven. **UK:** Leicester City Council, Northumbria University. **SE:** Oslo Kommune. AVERE, POLIS, CENEX





Sustainable agriculture, water and food supply

## 4D4F

Data Driven Dairy Decisions for Farmers

The Data Driven Dairy Decisions for Farmers (4D4F)

H2020 thematic network will focus on the role which dairy

animal and environmental sensors can play in collecting real time information to help make more informed decisions in dairy farming. The network will develop a Community of Practice comprised of farmers, farm advisors, technology suppliers, knowledge exchange professionals and researchers who will work together to debate, collect and communicate best practices drawn from innovative farmers, industry and the research community to facilitate the co-creation of best practice. The results will be communicated to farmers using best practice guides on the use of sensors and data analysis tools supported by videos, infographics and an online virtual warehouse of dairy sensor technologies. The network will include the development of Standard Operating Procedures (SOPs) which can be tailored to individual farms to help farmers and farm advisors adopt dairy sensor and data analysis technology.

**[4d4f.eu](http://4d4f.eu)**



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### Partners

**BE:** Flanders research institute for agriculture, fisheries and food. **EE:** Estonian University of Life Sciences, Wim Govaerts & Co LT, KU

**Leuven:** Latvian Academy of Sciences. **RO:**

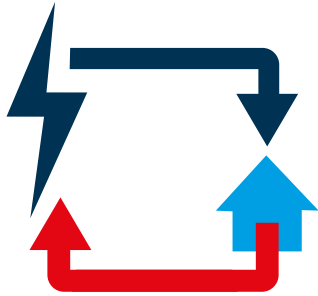
University of Agronomic Sciences and Veterinary Medicine of Bucharest.

**SE:** The Royal Swedish Academy of Agriculture and Forestry. **NL:**

Zuidelijke Land- en Tuinbouworganisatie, Van Hall Larenstein University of Applied Sciences. **BE and NL:** Liba. Knowledge Information Market, Paragon Europe, Institute for Food and Agricultural Research and Technology, DeLaval International AB







Energy and energy supply

## Smart Light Concepts

Avans University of Applied Sciences is the lead partner in Smart Light Concepts, a research project that aims to cut carbon emissions produced through public lighting. The

research group will set up seven pilot projects focusing on different low-carbon lighting techniques, including dimming, remote, sensors, dynamic optimisation and low voltage. These projects will be conducted in different environments, such as the countryside, urban areas, a nature reserve and an industrial estate. The project spans four countries: the Netherlands, Belgium, France and Great Britain. Government agencies, lighting businesses, nature conservation organisations and public-interest entities are joining forces in this project.

Local and regional authorities in Europe are behind on their 2020 carbon reduction goals. These goals were set by the European Union in 2015. Public lighting accounts for approximately 35% of all carbon emissions. Intended research project outcomes include funding models, business cases and a cross-border knowledge platform for local and regional government agencies.

**[interreg2seas.eu/en/slic](https://interreg2seas.eu/en/slic)**

### **Partners**

**UK:** Suffolk County Council, University of Portsmouth Higher Education Corporation.  
**BE:** Metropole of Amiens, City of Bruges, West Flanders Intermunicipal Association, Province of West Flanders, IGEMO.  
**NL:** Municipality of Etten-Leur





Art and creative industry

## Innofest

Nine out of ten innovations fail: often because of insufficient testing of a prototype prior to being taken to market.

Usually user research is done or testing is conducted in the

lab to see whether a prototype works, but it is far less common for prototypes to be genuinely tested in practice before the leap to taking the product to market is made. Innofest stages eight festivals in the northern Netherlands, with these serving as living labs for these kinds of innovation issue. The participating festivals open up their festival grounds as a living laboratory. Start-ups, companies, entrepreneurs and students meet at the festivals to test (socially responsible) prototypes and devise solutions for the challenges with which festivals and local entrepreneurs are themselves faced. The activities all take place in an annual cycle, culminating in the eight enriching occasions when the festivals take place in summer. In this manner Innofest is creating an innovation scene, or living lab, that will enable the northern Netherlands to regularly act as Europe's temporary innovation scene, with a lasting impact on the innovation ecosystem in the northern Netherlands.

***innofest.co***



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### **Partners**

**NL:** NHL-Stenden UAS, Hanze UAS, NOM, Province of Friesland / Drenthe / Groningen, Municipalities of Leeuwarden, Assen, Groningen, SNN, LAB Vlieland, BeStart Clearntech, Noorderpoort, Hanze UAS, Frisian Design Factory, Groningen University, SIA





Entrepreneurship: responsible and innovative

## SCITHOS

Smart CITY HOSpitality

A toolkit for local authorities to reduce the adverse impacts of urban tourism:

City tourism is growing fast and its impact on cities is increasing, both positively (e.g. by diversifying, enlivening and internationalizing city life) and negatively (e.g. the 'overtourism' debate which can be observed in many European cities). To decrease the negative aspects, it is important for cities to learn from each other, even when the specific issues may differ. The SCITHOS toolkit explicitly facilitates this: through serious gaming it enables cities to discuss, collaborate and learn from each other. SCITHOS embeds city tourism into the wider city context and specifically connects this with the quality of life, the quality of experiences as a tourist destination, and citizen engagement.

[scithos.eu](http://scithos.eu)

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### Partners

**NL:** NHTV Breda University of Applied Sciences, CELTH.

**NO:** Western Norway Research Institute, City of Stavanger and the Stavanger region.

**ES:** Worldline Iberia SA, Valencia Tourism.

**AT:** MODUL University Vienna. SE: Göteborg & co



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# About the Netherlands Association of Universities of Applied Sciences

The Netherlands Association of Universities of Applied Sciences (Vereniging Hogescholen) unites all 36 government-funded Universities of Applied Sciences in the Netherlands.

The association focuses on strengthening the civic position of Universities of Applied Sciences. To this end the association maintains contacts with a wide range of people and organisations, including journalists, the Confederation of Netherlands Industry and Employers VNO-NCW, the Dutch Federation of Small and Medium-Sized Enterprises (MKB-Nederland), members of parliament and several ministries. The Netherlands Association of Universities of Applied Sciences also functions as an employers' organisation on behalf of Universities of Applied Sciences. As such, it negotiates on their behalf with unions about collective labour agreements.

## **Netherlands Association of Universities of Applied Sciences**

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Twitter: @Ver\_Hogescholen – [www.verenighogescholen.nl/english](http://www.verenighogescholen.nl/english)

## **Colophon**

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ArtEZ University of the Arts



Gerrit Rietveld Academie

