



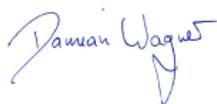
December 2018

Dear Reader, dear Smart City Enthusiast,

Finally, the smart lampposts in our cities are decorated with sparkling lights, the CO2-reduced air smells of mulled wine, “Jingle Bells” rings in our retrofitted homes and the amendments are briefly on hold, giving us the chance to have a look back to an exciting and progressive year of smart city piloting and exploitation. “Smart with a heart!” - I believe this slogan of the Nordic Edge Conference met the point of what drives and leads most of us through stormy waters. The joint spirit and enthusiasm to develop solutions and to make our cities future proof was tangible at our joint SCC1 events this year, such as in Stavanger or Barcelona, and has led to a remarkable amount of team work within the Triangulum consortium.

As a matter of fact, Triangulum and the (now) 13 other Lighthouse consortia are showcasing and leading the way forward and, together, we will be shaping a “city-needs-led European market” under the Horizon Europe framework. There is much to look forward to in 2019, the final year of the Triangulum Project, and I am confident to say that we will stay “smart with our hearts”.

We wish you and your loved ones wonderful Christmas Holidays and a great New Year 2019!



Project Coordinator

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**Triangulum ID**

**Title**

Triangulum  
Demonstrate, Disseminate,  
Replicate

**Programme**

European Union’s Horizon 2020  
Researched Innovation Programme

**Duration**

01/02/2015-31/01/2020

**Budget**

30 million Euro overall budget  
25 million Euro funding from H2020

**Project management**

Fraunhofer Institute for Industrial  
Engineering (IAO), Universität  
Stuttgart, Steinbeis-Europa-Zentrum



## Nordic Edge 2018

### Smart with a heart!

## Bringing together the Smart City Community at Nordic Edge 2018



(Pictures: Fraunhofer IAO and Steinbeis-Europa-Zentrum)

From 25-27 September 2018, the fourth Nordic Edge Expo & Conference took place in our Lighthouse City Stavanger, Norway. The Nordic Edge is an annual event showcasing the latest innovative solutions from the Smart City community and thus the ideal meeting place for the project partners of the Horizon 2020 Smart Cities and Communities programme. 4500 visitors from all across Europe and even beyond attended this three-day event to present outcomes, exchange knowledge and meet with project partners. Apart from the official event, several side-sessions were organised around this largest Smart City event in the Nordics.

“Smart with a Heart” was the theme of this year’s Nordic Edge Expo and Conference. To us, the EU-funded Horizon 2020 Smart Cities and Communities (SCC1) projects, being smart with a heart has many different meanings. But mostly, it’s about working together and about seeing the person behind as well as in front of the technology – that is, both project and city representatives as well as the citizens living in Smart Cities. And that’s why the Nordic Edge was such a special event this year. Because it gave project coordinators, universities, technical partners, municipalities, but also investors and decision makers the chance to meet like-minded people with the same enthusiasm at heart. The Nordic Edge Expo with 2500 m<sup>2</sup> of exhibition space and 200 exhibitors from more than 47 countries is the place in the Nordics for the Smart City community to exchange knowledge, network and create new business opportunities. During all three days of the exhibition, Triangulum was thus, together with the other 11 European Lighthouse Projects, represented with a joint stand. The stand featured all 12 Lighthouse Projects as well as the two tenders Smart City Information System and the European Innovation Partnership on Smart Cities and Communities.

[Read more](#)



## Progress in our Lighthouse Cities

### First co-created houses implemented in Eindhoven

Many houses in Eindhoven’s residential district ‘Eckart-Vaartbroek’ were built in the 1960s and are therefore poorly insulated. Therefore, the owner, Woonbedrijf Housing Association, decided to renovate 140 of their houses. However, the renovations are done differently, meaning not all at once or in a uniform way. Instead, one home is being renovated at a time according to the wishes of each individual tenant.



Finished renovation in Vaartbroek  
(Picture: Martin van Rooij)

Woonbedrijf decided to think (and act) outside the box by offering tenants a choice as to which modifications they would like to have done and when they would like the renovation to start. Some renovations do not result in a rent increase, others come with a moderate adaptation. Either way, it is up to the tenant to decide! The first renovations are just being finished now.

[Read more](#)

### Triangulum featured at the Manchester MCCA News Channel

Various of the Triangulum project partners, especially from Manchester, have recently been interviewed by the Manchester Climate Change Agency News Channel. Andrew Smyth (Siemens) and Ettore Murabito (University of Manchester) were the first interviewees, talking about the energy and ICT work that is taking place in Manchester. During [his interview](#), Andrew mentions that, here in Manchester, “we are currently looking at how we can trial new innovative energy technologies”. Ettore speaks about the concept of Smart Cities in general and states that, in his opinion, the term “Smart City” is not at all unambiguous. Curious to find out what he means by that? Check out the full [video](#).



Backstage at Andrew Smyth’s interview  
(Picture: Manchester City Council)

Snapshots and previews of the interviews have been posted on [twitter](#) (and, of course, [retweeted by us](#)), with longer versions being uploaded to the [MCCA News Channel on YouTube](#).

[Read more](#)



## Progress in our Lighthouse Cities

### Manchester's Clicks & Links wins Sabadell Innovation Award

With their VR (Virtual Reality) Bike concept, Clicks & Links was one of two winners of the Innovation Award at the Coinnovem Sabadell Innovative Ideas for Urban Development event, organised by the City of Sabadell.

The competition consisted of two categories: 1) Innovative ideas for urban development (not developed by the applicant) and 2) Products, processes or methodologies for urban development (as a prototype already developed or implemented in a real environment).

The Clicks & Links VR Bike (built upon the Visualisation Platform idea) had previously been demonstrated in Triangulum's Follower City Sabadell. Afterwards, the local coordinator of Sabadell, Oriol Llevot and his team decided to enter it into the Sabadell Innovation Awards. Michael King at Clicks & Links believes that "Sabadell was interested in how the VR Bike could be used to support developments in the tourist space". Eventually, this means that people interested in a certain city can use the VR Bike to already "explore" the city virtually without having to leave their home town.

[Read more](#)

### Battery infographic at Manchester Metropolitan University campus

A sign has recently been erected at ManMet providing details about the technological innovations implemented at Birley Fields Campus.



Sign at ManMet campus  
(Picture: ManMet)

As a key partner in Triangulum, ManMet benefitted from the installation of a Siemens lithium-ion battery, a micro-grid controller and an array of solar photovoltaic panels. These innovations complement the existing Combined Heat and Power (CHP) plant and the private heat and power network on site at the University. The micro-grid controller seamlessly connects and manages assets throughout the network – reducing energy costs (less power purchased at peak times/price bands), flattening of peak demand, increasing network resilience, and providing CO2 savings via the solar PV and energy storage facility.

The sign provides students and visitors with details of the impact and the benefits that Triangulum has brought to ManMet.

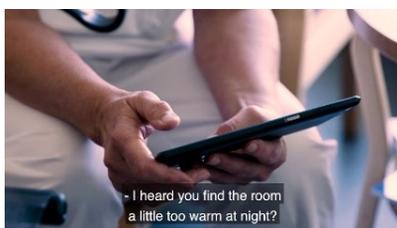
[Read more](#)



## Progress in our Lighthouse/Follower Cities

### New video: Technology at a nursery home in Stavanger

Lyse, a Stavanger partner, has produced a new video to showcase one of the technologies provided through the project which has proven to be of a great value to its users: At Bergåstjern nursing home, Lyse has installed a remote controlled system to individually handle air quality, light and heat at eight of the rooms. This gives the staff an opportunity to set temperature and light individually at the patient's own room, without being dependent on a centrally controlled heating or cooling system.



Snippet from the video  
(Picture: Vimeo)

The technology comes from the company Sensio. The nurse Synnøve Sel says that "technology can make my job easier and improve the everyday life of the patients." This is a great example of how the Triangulum project gives real value to the citizens.

[Watch the video](#)

### Intensive knowledge exchange: Prague in the Nordics

IPR Prague initiated a business trip to Stavanger, inviting representatives of the local Prague consortium UCEEB (University Centre for Energy Efficient Buildings) and the city district of Prague 7 from the social and health departments to join. The aim of the trip was to gain more insights into innovative projects in the field of smart home care in order to support the implementation process of the Smart HomeCare pilot project in Prague 7.

The trip consisted of four main activities:

During the first two days, the Triangulum partner Lyse from Stavanger invited the local consortia from the Follower Cities Prague and Sabadell to their headquarters to demonstrate the use of the Blink technology, which is part of the replication between Stavanger and the Follower Cities. Blink is a video communication device enabling secure communication with peers, health and social services. It has, for example, an add-on for health devices like an oximeter.



Prague delegates at Lyse  
(Picture: IPR PRague)

[Read more](#)



## Progress in our Follower Cities

### Replication of virtual reality bike solution in Sabadell

As part of Triangulum’s Follower City Implementation Strategy of Sabadell, a procurement of videoconference equipment will take place before the end of 2018 for the benefit of entrepreneurs hosted at the “Can Roqueta” municipal incubation centre.

The Triangulum Manchester partner Clicks & Links presented its “virtual reality bike tour” on 7 September in Sabadell during “Sabatic” - a big citizen outdoor event related to new technologies. Clicks & Links was also awarded one of the 4,000 Euro prizes of the City of Sabadell’s Coinnovem contest on the 6th November, for its virtual reality bike solution.



Clicks&Links presentation  
(Picture: Ajuntament de Sabadell)

For more information, also have a look at our article [“Manchester Partner Clicks & Links Wins Innovation Award in Sabadell”](#)

### Prototyping of solutions to tackle Sabadell challenges

Catalan and Eindhoven-based students from the Technical University of Eindhoven (TU/e) continued the prototyping of solutions to face selected Sabadell challenges, as part of the TUE’s Master kick-off event and during an on-site visit to Sabadell coinciding with the Smart City Expo.



Participants of Master kick-off event  
(Picture: Ajuntament de Sabadell)

The focus of this prototyping before April 2019 will be in the field of 3D modelling of Sabadell, in order to geoposition relevant real-time and static data of the city on this 3D model. During the on-site visit, the students contrasted their ideas with municipal officers from the police, geographic information system (GIS) and energy departments, as well as with other public and private operators in the field of GIS and sensing.

[Read more](#)



## Other News

### Triangulum webinar about „Data Platforms“

The Triangulum webinar about “Data Platforms” took place on 4 October from 10:00-12:00 CEST, with diverse talks and input from all our Lighthouse Cities. The webinar was actively attended by more than 20 participants from all over the world. Have a look at the featured speakers and their presentations:

- Rick Schager and Niels Wiersma from Gemeente Eindhoven were speaking about “the city of Eindhoven as a Living Lab – Bringing it all together”
- Ettore Murabito from the University of Manchester gave a talk about “The Why, What and How of a Smart City Data Platform. Considerations and lessons learned”
- Russel Wolff, Mina Farmanbar and Faraz Barzideh from the University of Stavanger talked about the “Triangulum Data Platform”

The presentations were followed up with an interactive discussion where questions such as “Which (programming) languages did you use to create the platform?” were raised. Thank you all for attending!

The next webinar is scheduled for early 2019.

Missed the webinar? You can find a recording at our Triangulum webinar page: [Click here](#)

### 4th General Assembly in Manchester

From 16-18 October, representatives from all seven Triangulum work packages met in Manchester for their fourth General Assembly and their tenth Steering Committee meeting. The first day of the General Assembly was held at the Manchester Art Gallery, where one of the Triangulum solutions has been implemented – what a great location for a project meeting!

The agenda focused on topics such as first results of the monitoring process and information about the progress of ongoing implementations.

Each Lighthouse City presented five proposals on how to exploit results, followed by an interactive Q&A session. WP6, focusing on replication, then presented successful replication approaches and the question how Triangulum as a project can support upscaling and facilitation. The Follower Cities also talked about their progress and presented some exploitation proposals.



Triangulum GA  
(Picture: Fraunhofer IAO)

[Read more](#)



## European Lighthouse Projects News

### Triangulum at the #SCEWC18 in Barcelona

As the world's leading event for Smart Cities, the Smart City Expo World Congress in Barcelona provides a unique meeting point for the Smart City sector and an innovative platform for urban action worldwide. #SCEWC18 took place from 13-15 November at the Gran Via venue. In its eighth edition, it gathered representatives of more than 700 cities, featuring major capitals such as Atlanta, Berlin and London. Over 100 mayors and representatives from five continents were present.

Triangulum together with its 11 sister projects from the European Lighthouse Projects



Alain Juppé at the Joint Stained  
(Picture: SEZ)

family, covers almost 80 cities across Europe. This year in Barcelona, the entire community, including the two EU initiatives SCIS and EIP-SCC, came together at a joint stand with various workshops and three larger Agora sessions to demonstrate how EU funded smart cities are leading the way in driving sustainable and smart innovation.

[Read more](#)

### News from our sister projects

In MATCHUP, the city of Valencia keeps on working to develop a palette of innovative urban regeneration solutions for the Poblats Marítims district. 40 experts in energy, mobility, ICT and social domain sectors delved into the challenges that the city will face to improve the services offered to citizens. [Read more](#)

Smarter Together's Vienna has introduced an all-in-one touchscreen computer with high quality graphic capabilities to the local public library at the peoples' university VHS Simmering, located in the heart of the project area. Smarter Together installed it on site for future project use as many Smarter Together visitor groups have an opportunity to use the Knowledge Carrier that has been developed in the framework of the project. [Read more](#)

In REMOURBAN's Valladolid, there is a district with 19 residential buildings and a single tower block, surrounded by a small park, which was built in the 1960s for employees of the car manufacturer FASA-Renault. Today, the area is the hub of an ambitious refurbishment plan which aims to halve energy consumption and to cut CO2 emissions by 80 per cent.

[Read more](#)



## Past Events

### Some of the events attended by Triangulum's project partners:

Nordic Edge Expo & Conference,  
25.-27.09.2018, Stavanger (Norway)

[Further information](#)

CROSS-SCC Replication Workshop,  
28.09.2018 after the Nordic Edge,  
Stavanger (Norway)

[Further information](#)

Triangulum General Assembly,  
16.-18.10.2018, Manchester (UK)

Smart City Solutions Expo & Congress,  
16.-18.10.2018, Frankfurt (Germany)

[Further information](#)

Smart City Expo World Congress,  
13.-15.11.2018, Barcelona (Spain)

[Further information](#)

Foreign & Commonwealth Office Visit  
showcasing Manchester's Triangulum and  
CityVerve actions,  
05.12.2018, Manchester (UK)

## Upcoming Events

### Find Triangulum's partners at the following events:

*Save the Date:* Triangulum Event during  
Dutch Technology Week, 20-25.05.2019,  
Eindhoven (the Netherlands)

*Save the Date:* Nordic Edge, 24.-  
26.09.2019, Stavanger (Norway)

[Further Information](#)

*Save the Date:* Smart City Expo World  
Congress, November 2019, Barcelona  
(Spain)

[Further Information](#)



Partners

Project Management



Eindhoven



Manchester



Stavanger



Replication



Follow us on Twitter: [@Triangulum\\_EU](https://twitter.com/Triangulum_EU)

Contact:

Project Coordinator: Damian Wagner, Fraunhofer IAO, [damian.wagner@iao.fraunhofer.de](mailto:damian.wagner@iao.fraunhofer.de)

Press: Bettina Remmele, Steinbeis-Europa-Zentrum, [remmele@steinbeis-europa.de](mailto:remmele@steinbeis-europa.de)