

INTERREG MED Programme

2014-2020

ESMARTCITY

Enabling Smarter City in the MED Area through Networking

(3MED17_1.1_M2_022)

Priority Axis 1. Promoting Mediterranean innovation capacities to develop smart and sustainable growth

Specific Objective 1.1 To increase transnational activity of innovative clusters and networks of key sectors of the MED area

WP2 – Project Communication

Activity 2.9 – Coordination with the Interreg MED Programme Communication Strategy

Deliverable 2.9.9 – Study Visit in Nice

Delivery Date: **31.07.2019**

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Dissemination Level		
PU	Public	X
PP	Restricted to Programme Partners and MED Programme	
RE	Restricted to a Group defined by the Partnership and MED Programme	
CO	Confidential, only for members of the partnership and MED Programme	



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2 Introduction

The ESMARTCITY project enrolls into pilot testing activities associated with the Smart City paradigm and more specifically application domains of Smart and Energy Efficient Buildings, and Smart Public Lighting. In furthermore addresses the need for policy change in MED cities related to innovation and the Smart City paradigm.

In this context, it is envisaged that the ESMARTCITY project will perform two Study Visits in cities that can be characterized as advanced in the Smart City theme in an effort to learn from their good experiences. These cities will play somehow the role of mentor for the project activities as the ESMARTCITY consortium is expected to study their experience, integrating it into its own pilot testing activities, and being more fruitful towards transfer and capitalization in the wider MED area.

The two cities envisaged in the Application Form are Cologne, Germany and Copenhagen, Denmark. Project Steering Committee has taken a decision to substitute Cologne, Germany with Nice, France. In this context the two study visits were performed in Nice, France and Copenhagen, Denmark.

The present deliverable provides information about the first Study Visit in Nice, France.

3 Study Visit I Overview

The 1st Study Visit was performed on November 27-28, 2018.

On November 27, 2018 the ESMARTCITY consortium visited:

- IMREDD, the Mediterranean Institute of Risk, Environment and Sustainable Development
- “Horizon” Schneider Electric Smart Building

On November 28, 2018 the ESMARTCITY consortium visited:

- Valenergies’ “Les Aqueducts”
- Accenture Innovation Labs



4 Visit to IMREDD

IMREDD¹ is the Mediterranean institute of Risk, Environment and Sustainable Development.

It represents a new model of collaboration of the entire ecosystem in Nice area, i.e. public administration, academic world and enterprises. Building a cooperative ecosystem is not always straightforward as the different stakeholders have to sit around the same table and find common ground. IMREDD has succeeded stimulating partnerships between the different stakeholders sharing the same vision for the city. It offers educational programs as well as acts as a promoter of innovation for enterprises in the area, attributing to sustainable development and employment.

There are four major Strategic Areas (SA) that IMREDD focuses on:

- SA1: Environment – dealing with pollution, climate change, air quality, particles, pollen, impact on health, noise, water, and water treatment
- SA2: Risks – dealing with territory, resilience, climate change, natural risks and disasters, floods, landslides, earthquakes, and tsunamis
- SA3: Energy – dealing with energy transition, smart district, smart grid, climate change, renewable energies, positive energy building
- SA4: Mobility – dealing with multimodality, dynamic ride sharing, car sharing, connected vehicles, autonomous vehicles, electromobility, and recharge stations

Bringing the citizen at the center of the Smart City paradigm is also of paramount importance, attributing to citizen well-being and safety.

IMREDD was founded in 2012 by Metropole Nice Cote d'Azur², Academie Nice³, Departement des Alpes-Maritimes⁴, Ministere de l'Enseignement superieur, de la Recherche et de l'Innovation⁵, and Region Sud – Provence, Alpes, Cote d'Azur⁶. The partnership created comprises 12 institutional partners, 32 industrial partners, 11 academic partners, 3 competitiveness clusters, 8 start-ups, and 4 associations.

ESMARTCITY consortium and stakeholders visited the IMREDD Showroom and learnt about the different projects and applications in the four Strategic Axes mentioned above.

¹ <https://imredd.fr/en/home/>

² <http://www.nicecotedazur.org/>

³ <http://www2.ac-nice.fr/>

⁴ <https://www.departement06.fr/departement-des-alpes-maritimes-3.html>

⁵ <http://www.enseignementsup-recherche.gouv.fr/>

⁶ <https://www.maregionsud.fr/>







5 Visit to “Horizon” Schneider Electric Smart Building

Schneider Electric⁷ “Horizon” building is located in Carros. Built in 2011 it represents an office building with a net floor area of 5.436 sqm distributed in 3 floors or laboratories and offices. The building was built as part of a merger of Schneider Electric sites involving R&D and production. It is the result of co-design of the company, its staff, the architect and the builder.

The building is of class “A” with guaranteed by contract final energy of 40 kWh / sqm / year outside solar power production. Photovoltaic energy produced at the building (220 GW) is equivalent to its energy needs.

The building has been the recipient of SUB Award 2013 for the building contribution to the city of the future for its model of energy efficiency meeting the smart and connected buildings of tomorrow.

The building energy performance is primarily attributed to

- Performance of hot heat pump production
- Space cooling by direct exchange of groundwater up by chiller
- Transmitter chilled beams type 4 tubes without auxiliary local
- Treatment of thermal bridges by external insulation
- Successful joinery with external solar protection low solar factor
- Use of wind for night cooling space between April and October
- Active sun protection on 3 sides
- Optimization of energy through Building Automation Schneider Electric modules

The systems employed at the building comprise

⁷ <https://www.se.com/fr/fr/>



- Heating system
 - Geothermal heat pump
- Hot water system
 - Electric boiler
- Cooling system
 - Geothermal heat pump
 - Chilled Beam
- Ventilation System
 - Natural ventilation
 - Nocturnal ventilation
 - Free cooling
 - Double flow heat exchanger
- Renewable systems
 - Solar Photovoltaics
 - Geothermal heat pump
- Renewable energy production 100%





6 Visit to ValEnergies' "Les Aqueducts"

ValEnergies⁸ is a company with expertise in photovoltaics, energy efficiency and Smart Grid. Its mission is to prove with ambitious achievements that the pillars of energy transition are within the reach of companies (intelligent photovoltaic self consumption, energy efficiency, storage of energy, electromobility and charging stations). It offers solutions for solar energy production, energy efficiency and consumption control.

ValEnergies was founded in 2008 and is a leader of photovoltaics in France. It is part of the Valfidus⁹ group positioning itself sustainably in the building energy market.

ESMARTCITY consortium visited the "Les Aqueducts" smart building in Valbonne Sophia Antipolis. It represents actually a "Mini Quartier" of 4 buildings that produce and share energy among them.

⁸ <https://www.valenergies.com>

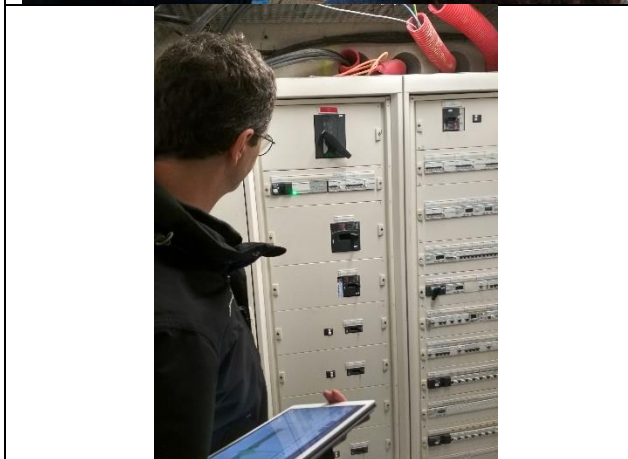
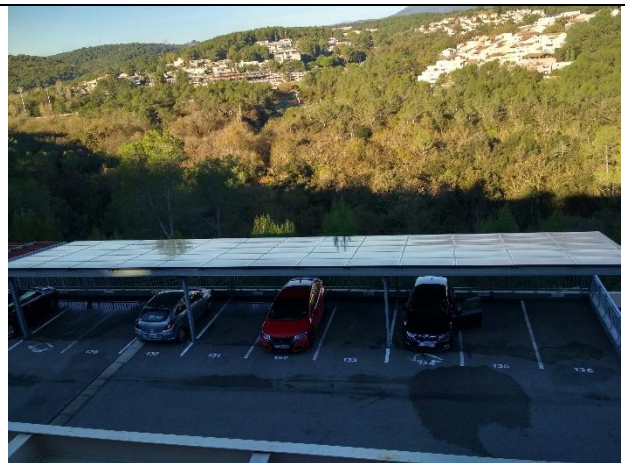
⁹ <http://www.valfidus.com/>



The buildings produce energy via photovoltaics autonomously. There are energy meters for measuring the consumption, monitoring of the energy produced and consumed, exchange of energy between the buildings, energy storage batteries. There are also charging stations for electromobility. For energy efficiency there is external insulation and double flux ventilation. There are also some office automation solutions.

Photovoltaics cover 50% of total yearly energy needs of the building.







7 Visit to Accenture Innovation Labs

Accenture¹⁰ has set up a center of innovation in Sophia Antipolis. The goal is to provide an ideation environment and immersive experience at a Showroom that promotes innovative products of the company to its visitors. The Showroom in a 500 sqm space allows a “touch and feel” of digital and technology innovation.

The major trends of Accenture Technology Vision 2018 include

- Trend 1: Citizen AI – raising AI to benefit business and society
- Trend 2: Extended Reality – the end of distance
- Trend 3: Data Veracity- the importance of trust
- Trend 4: Frictionless business-built to partner at scale

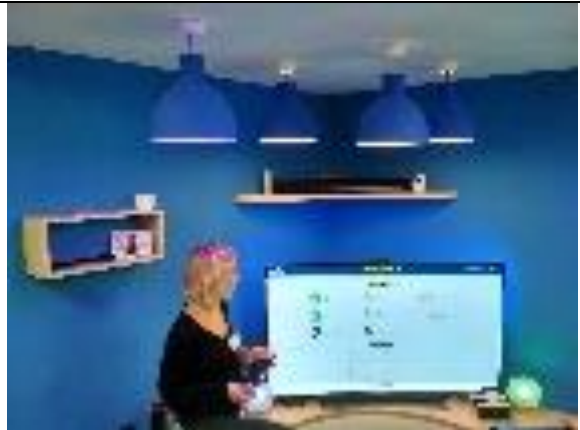
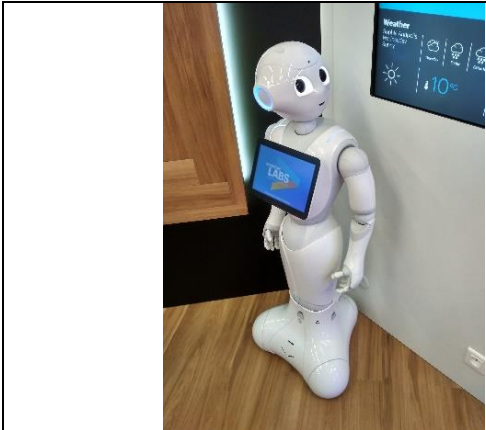
¹⁰ <https://www.accenture.com>

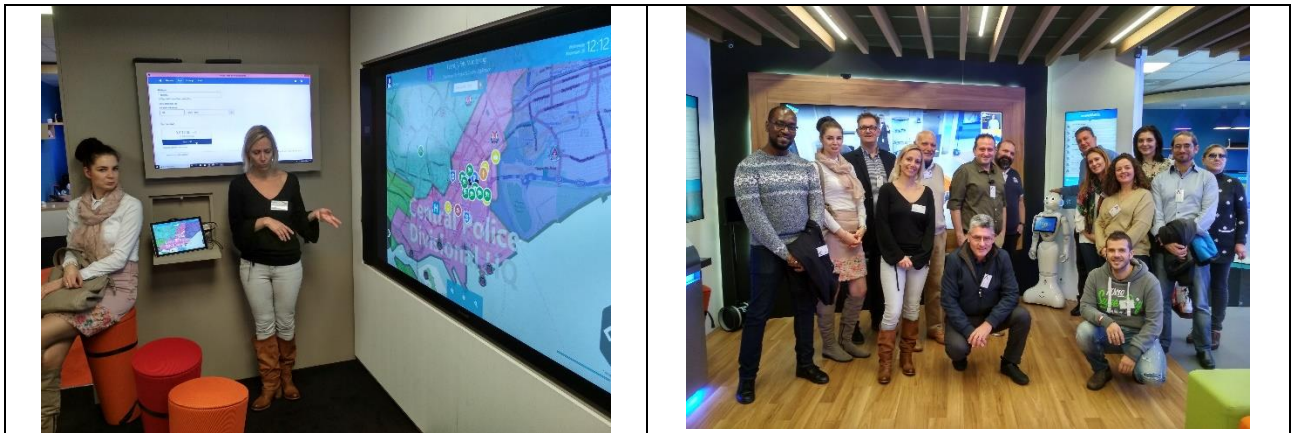


- Trend 5: Internet of Thinking-creating intelligent distributed systems

These trends influence the overall technological progress and could be applicable with reference to Smart Cities. In fact different demonstrations at the Show Room are relevant to the Smart City paradigm comprising security issues, smart home / business environment, blockchain technology, smart grid / renewables, immersive reality, monitoring and supervision for security / safety.







8 Lessons Learnt

Study Visit in Nice provides useful insight to the ESMARTCITY consortium as it brought the partners against innovative solutions that can change the life of the citizens and enhance their well being, while addressing the issue of sustainable development and growth. Some of the lessons learnt include the following:

- The Smart City paradigm is technology pushed. As technology evolves there are different solutions that can be brought to the service of the citizen. Transformation of technological progress into innovative products and services at an affordable cost is a challenge. Yet, the technological progress is entering into the everyday life especially in highly innovative sectors including Internet of Things, Edge Computing, Smart Networked Embedded Devices, Artificial Intelligence, Big Data Analytics, Machine Learning.
- Energy Efficient buildings are a reality. Both “Horizon” and “Les Aqueducts” smart buildings visited are equipped with the necessary technological solutions and renewables to address energy efficiency issues and even energy autonomy. So, for new buildings the technologies already exist to enable high energy efficiency making them Class A buildings and drive towards smart networked buildings in a smart city.
- New models for building energy efficiency can lead to energy autonomy. Clustering buildings together and allowing them to exchange energy among them could be a new way of dealing with energy issues, empowering Smart Grid at a local scale.
- At city level there is a need to formulate an ecosystem involving all relevant stakeholders: institutional, academic, business and the citizens. This ecosystem can act as the catalyst for wider applicability of existing solutions associated with the Smart City paradigm. A critical element for the proper functioning of this model is the existence of open infrastructures or



open data so as to enable the different systems installed in a city to interoperate and offer a coherent view to the city manager.

- Open infrastructure or open data can help enhance entrepreneurship and innovation. Existing installations at city level serving different application domains can be utilized by innovative enterprises / start-ups, in order to provide new and innovative services. The model of licensing city infrastructure related data to innovative companies can be linked to employment created in the area, launching of new services / apps offered to the citizens. If specific licensing criteria are not met by a specific company then the city can always stop opening up its data.
- Combining data from different application domains is quite useful at city level as it can resolve different problems all together. The different systems and applications that exist at city level solve individually their domain problems but might miss some common causes behind them. Combining applications at a higher level might be beneficial to this end. In this context some higher level platform could serve the purpose of clustering systems / applications applicable in different domains and offer different levels of integration between them, enabling for instance exchange of information via appropriate interfaces, or enabling interoperability, or even offering full scale integration in the context of system of systems approach.

