

# 10 YEARS OF MOBILITY ECOSYSTEMS

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January 29<sup>th</sup>, 2019

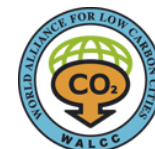
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World Alliance for Low Carbon Cities


# Eco Urban Living – the first ecosystem

## Objectives:

- A **demonstration platform** for electric vehicles in the city of Espoo (regional dimension).
- A **capability building** initiative (national dimension).
- **International networking** with cities and universities (global dimension).

## Activities:

- Initiated by Valmet Automotive and the City of Espoo in autumn 2009 with Synocus as orchestrator.
- Later joined by Nokia and Fortum.
- Supporting the formation of the national innovation program EVE (Electric Vehicle Systems).
- Spurring several new research projects funded by Tekes.
- Formation of the World Alliance for Low Carbon Cities in 2012.



Eco Urban Living Eco U  
n Living Eco Urban Liv

Espoo as an innovation hub in 2020

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Fisker Karma – A luxury EV manufactured by Valmet Automotive

Demonstration project applies for funding from Finnish government.  
Click here  
(in Finnish)  
Investointituki haettavissa sähköautoille ja latausjärjestelmille.  
Lue tästä

synocus  
Synocus Group is a company building superior capabilities for its customers.  
Read more

News

Inaugural WALCC Newsletter published  
14 Oct. 2011

European automakers commit to mutual charging standard  
19 Oct. 2011

Study: Subsidizing smaller battery plug-ins yields greater returns  
01 Oct. 2011

Analysis & Synthesis

Solyndra's bankruptcy and the future of the solar industry  
06 Oct. 2011

Cross-cultural exchange: The City of Ordoz  
04 Oct. 2011


The quest to define a universal charging standard  
03 Sep. 2011

Events

Electric Vehicle Infrastructure China Summit  
2011  
28 Nov. 2011

Fifth Sino-Finnish Innovativeness Forum on September 27th  
27 Sep. 2011

Fourth Sino-Finnish Innovativeness Forum, May 12th, 2011  
12 May 2011



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# Autonomous Vehicles and Mobility Services (AVM - [avm.walcc.org](http://avm.walcc.org))

## Vision:

- Integrate public and private interests in co-creating new mobility services markets in a global context.

## Strategy:

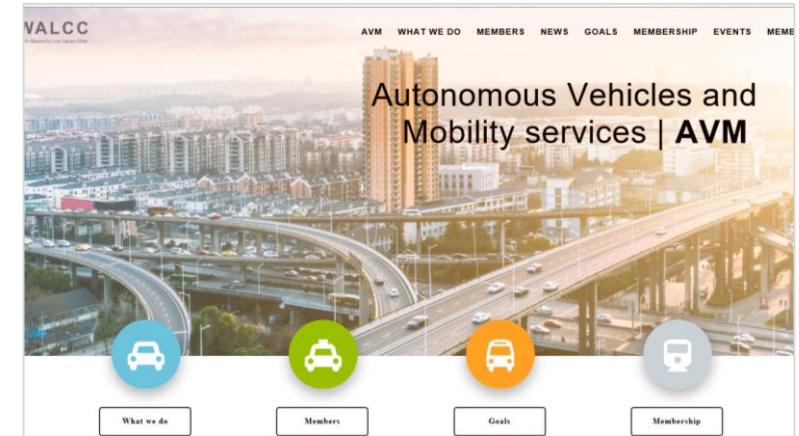
- Accelerating innovation:
  - transport related technologies (e.g. 5G, electrification, autonomous driving),
  - mobility services and new business models.

## Architecture of the AVM ecosystem:

- Anchor companies (ABB, Fortum, Ponsse, Telia, Valmet Automotive).
- Cities (Turku and Lahti) and SMEs (12 companies).
- WALCC owner, Synocus orchestrator, Business Finland support.

## International expansion of the ecosystem:

- Nordic Innovation E-Mobility System Architecture Project.
- Autonomous shuttle pilot in the City of Turku.
- Collaborating with the WALCC in different events.



# The what, how, and who of AVM

## Way of working

- Mission driven, co-creative growth
- Shared priorities
- Multidisciplinary approach to create capabilities for new types of offerings
- Interconnected, company-specific programs & projects

## Present Focus Areas

**Autonomous Vehicles**

Software applications for **citizen engagement**

Low-carbon **inner-city logistics**

**Market shaping**

## Members (Jan 2019)

**ABB**

**chempolis**

**City  
nomad**

**CoreOrient**

**EPEC**

**FUTURE DIALOG**

**fortum**

**KONETEKNOLOGIAKESKUS  
TURKU OY**

**KYTI**

**LAHTI**

**NIINIVIRTA  
European Cargo Oy \*\*\*\*\***

**PONSSE**

**ROIMA**

**synocus**

**Telia**

**TURKU  
ÅBO**

**UNIKIE**

**VALMET AUTOMOTIVE**

**Wapice**

## Ongoing Projects

Shaping the Future

Battery Ecosystem  
Internationalization

5G as enabler for  
transportation transformation

Turku autonomous shuttle

Excellence in Renewal

Electrification of moving  
machines and vessels

Personal carbon-trading  
market

E-Mobility Sys. Architecture

New city transportation  
solutions



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# Turku autonomous shuttle project

## Turku, a pioneer in public transport innovation

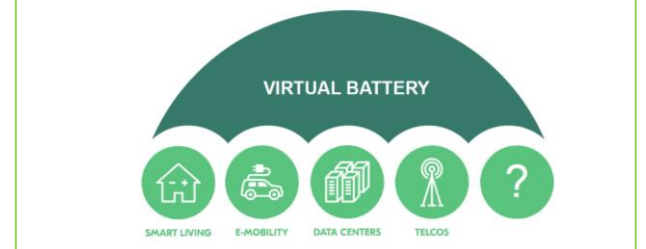
- Introducing new technologies and services for its public transport.
- One of the first Finnish cities to take electric buses into use.

## Establishing a showcase for autonomous shuttles

- Integrating research, technology development and service development with support from the Finnish government.
- Finnish technology companies such as Nokia (5G), Valmet Automotive (vehicle manufacturing), ABB (charging), Fortum (smart cities), Linkker (electric buses) and Unikie (software) participating.
- Negotiations with ST Engineering from Singapore as lead autonomous technology partner.
- Launch the first autonomous shuttle for demonstration during autumn 2019.



Spring by Fortum is building a virtual battery for distributed demand-side resources



# BATTERY ECOSYSTEM BY VALMET AUTOMOTIVE

- Project manager: Jari Mattila                      Chairman: Pasi Rannus
- Partners: AVM anchor companies, numerous SMEs
- Work packages:
  - WP1 Manufacturing technology innovation
  - WP2 Product technology innovation
  - WP3 Ecosystem pilots
  - WP4 Knowledge transfer concepts
  - WP5 Ecosystem orchestration and project management
- Main objectives:
  - Profitably expand the battery business of Valmet Automotive to exceed 100 M€ by 2021.
  - Establish a core group of highly skilled and complementary ecosystem partners around the Valmet Automotive manufacturing competence center originated in Uusikaupunki that will strengthen the Finnish competitiveness in automotive manufacturing and battery systems; at least ten institutionalized ecosystem partnerships between Valmet Automotive and external partners by 2021.
  - Create new jobs; at least 200 new jobs created by the ecosystem by 2021.



# Excellence in Renewal (EIR), Fortum-driven ecosystem

## EIR Initiative:

- Supports Sino-Finnish collaboration in smart city solutions and renewable energy.

## EIR Ecosystem Project:

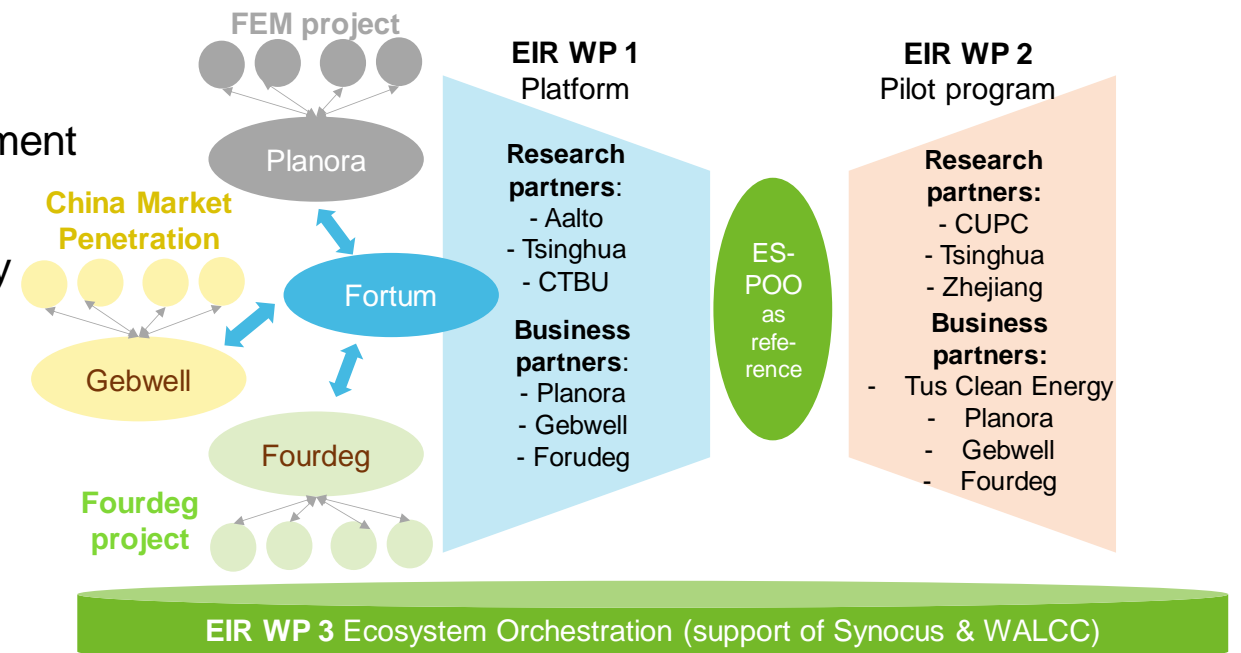
- By partnering with Fourdeg, Gebewell, Planora and Synocus, Fortum will form an ecosystem to develop sustainable solutions for the Chinese market. The project application was submitted in December 2018.

## Three Focus areas of the EIR Ecosystem Project:

- Energy Interconnection Systems Platform
- Integrated Smart Energy Pilot Town Program
- Ecosystem Orchestration and Project Management

## Chinese research and piloting partners:

- Chongqing Technology and Business University
- Tsinghua University
- Zhejiang University
- CUPC, Beijing
- State Grid Energy Research Institute
- State Grid Tianjin Electric Power Company
- Tus Clean Energy



# Ecosystems - impact through four layers of excellence

## CAPABILITIES

Culturing capabilities

Dynamic capabilities

Offering and coordination capabilities

Producing capabilities



## ACTIVITIES

**Takahiro Fujimoto:**

Doing what has been agreed (compliance)

Routinized manufacturing capability

Doing things right (efficiency)

Routinized learning capability

Doing the right things (effectiveness)

Evolutionary learning capability

Making a better world (sustainability)

Capability-building competition

- WALCC drives **societal excellence** through low-carbon policy making and low-carbon initiatives such as AVM.
- AVM nurtures **innovation excellence** with pilots and demonstrations supported by BF.
- AVM Focus Areas, such as autonomous shuttles, supports **offering excellence** for participating companies.
- Individual projects look for ways to contribute to a lower carbon environment and **process excellence**.



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# Synocus - ecosystem orchestrator

- Synocus specializes in ecosystem orchestration based on research documented e.g. in books like Prime Movers (2000) and Business Orchestration (2006).
- The orchestration concepts have been refined in collaboration with experts such as Takahiro Fujimoto (*The Evolution of a Manufacturing System at Toyota*).
- Lean thinking, systemic capability building and reconfigurative orchestration drive the present development of the Synocus Group.
- Currently, Business Finland financially supports several ecosystems orchestrated by Synocus such as AVM, Manufacturing Excellence Finland (with Sandvik as anchor), and Intralogistixx (with Rocla as anchor).
- Synocus is a values driven company
  - Think Big – Act Small – Move Fast
  - Personal Growth, Customer Orientation, Fair Process
- For more information see [www.synocus.com](http://www.synocus.com)

