

One Sea - From collaboration to automation

The Importance of Cooperation



Sanna Sonninen - Finnpilot Pilotage Oy

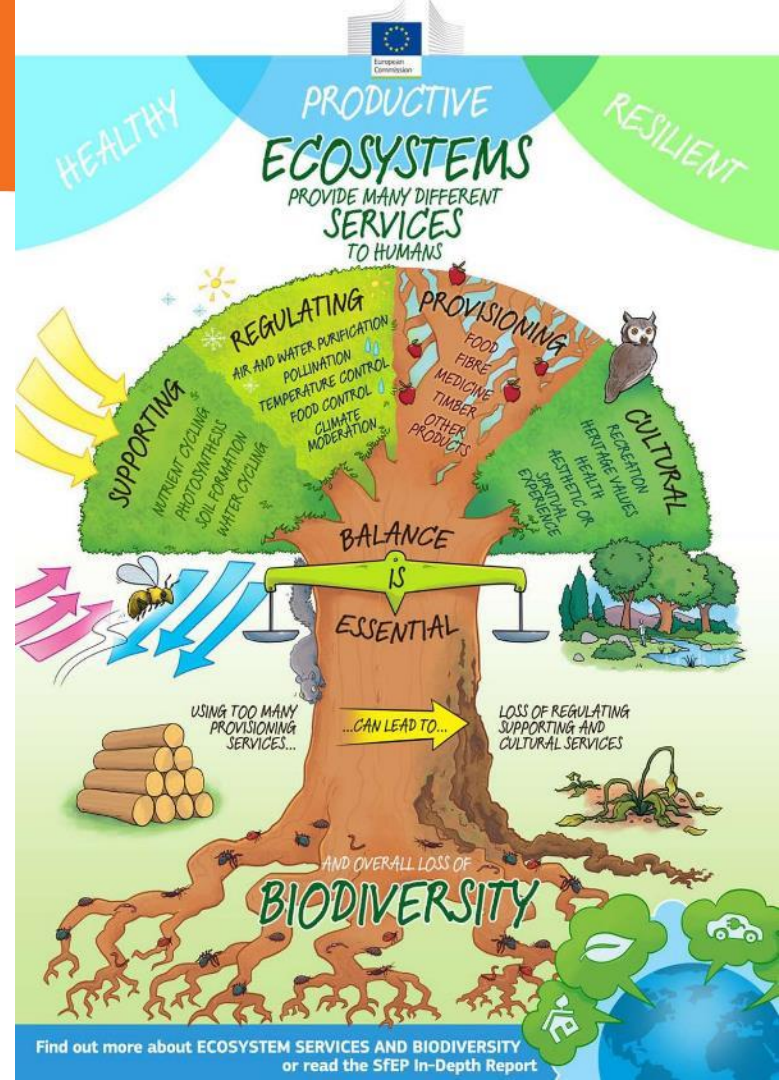
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Cluster versus ecosystem

What are ecosystems and why is it not a cluster?

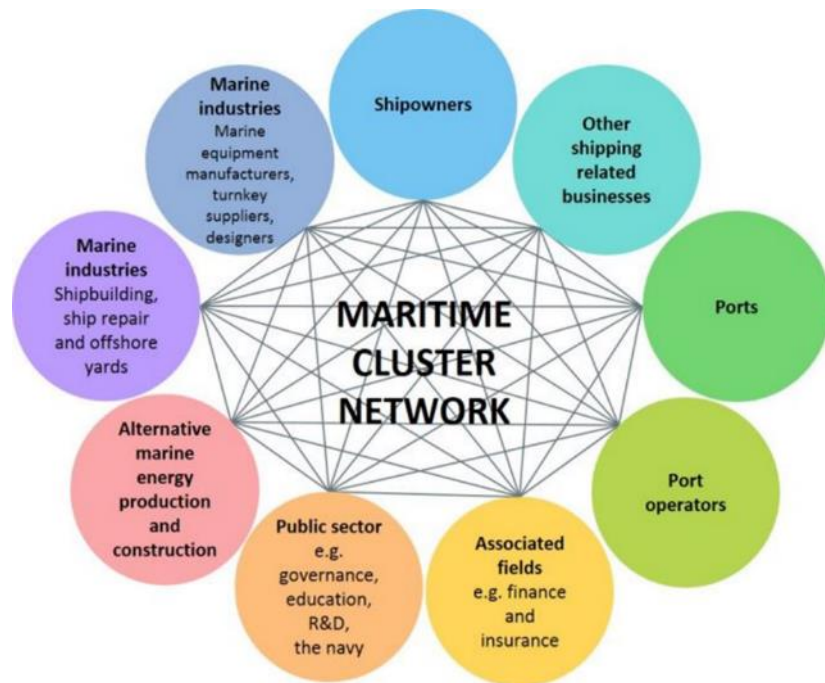
- In recent years the Finnish discussion concerning trade and innovation policies has become increasingly focused on the ecosystem concept.
- The starting point of ecosystems is similar to the cluster and well established business ecosystems have often been referred to as clusters.
- However, an ecosystem differentiates from a cluster as it is, in principle, more open, more diverse and more dynamic, and does not have to be confined to a specific geographical area in a manner clusters in general are (TEM, 2017).
- In management studies, industrial, business, service, innovation, and knowledge ecosystems have been introduced (Valkokari, 2016).

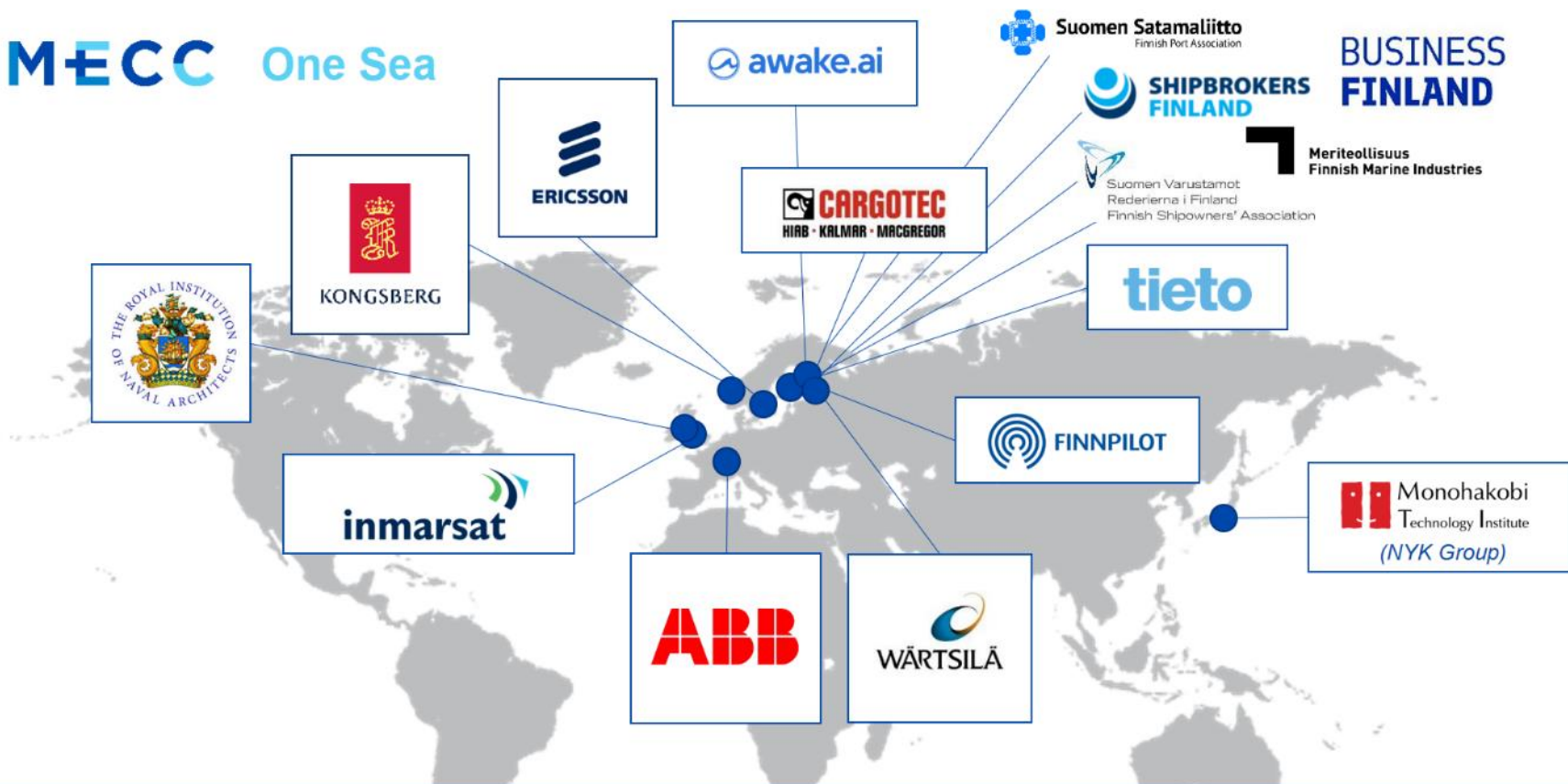


Ecosystems

	Business Ecosystems	Innovation Ecosystems	Knowledge Ecosystems
Baseline of Ecosystem	Resource exploitation for customer value	Co-creation of innovation	Knowledge exploration
Relationships and Connectivity	Global business relationships both competitive and co-operative	Geographically clustered actors, different levels of collaboration and openness	Decentralized and disturbed knowledge nodes, synergies through knowledge exchange
Actors and Roles	Suppliers, customers, and focal companies as a core, other actors more loosely involved	Innovation policymakers, local intermediators, innovation brokers, and funding organizations	Research institutes, innovators, and technology entrepreneurs serve as knowledge nodes
Logic of Action	A main actor that operates as a platform sharing resources, assets, and benefits or aggregates other actors together in the networked business operations	Geographically proximate actors interacting around hubs facilitated by intermediating actors	A large number of actors that are grouped around knowledge exchange or a central non-proprietary resource for the benefit of all actors

Clusters - Ecosystems





One Sea ecosystem is a collaboration of leading, global, multi-industrial companies, to enable autonomous logistics system.

The objective of **One Sea** is to have world's first autonomous maritime system in operation by 2025.

DIMECC is a co-creation ecosystem that combines digitalization, internet, materials and engineering.

One Sea Partners

ABB
Awake.AI
Cargotec
Ericsson
Finnpilot Pilotage
Inmarsat
MTI (NYK Group)
Kongsberg
Tieto
Wärtsilä



A large container ship, the 'TSINGTAN EXPRESS', is shown from an aerial perspective, sailing on a deep blue ocean. The ship's deck is densely packed with multi-colored shipping containers in shades of orange, yellow, green, and blue. The ship's hull is dark blue with 'Hapag-Lloyd' written in white. The ship is moving towards the left, leaving a white wake behind it. The sky is a clear, pale blue.

**Global pioneers of marine
industry are leading the
business-driven project.**



Image @ Kongsberg

One Sea main themes

autonomous maritime transport system

autonomous maritime transport system

Fairways



Ports



Ships



Cloud



Cyber security



Interfaces



AI



Satellite



New business models



Legal



Ethics



Standards



Human factor



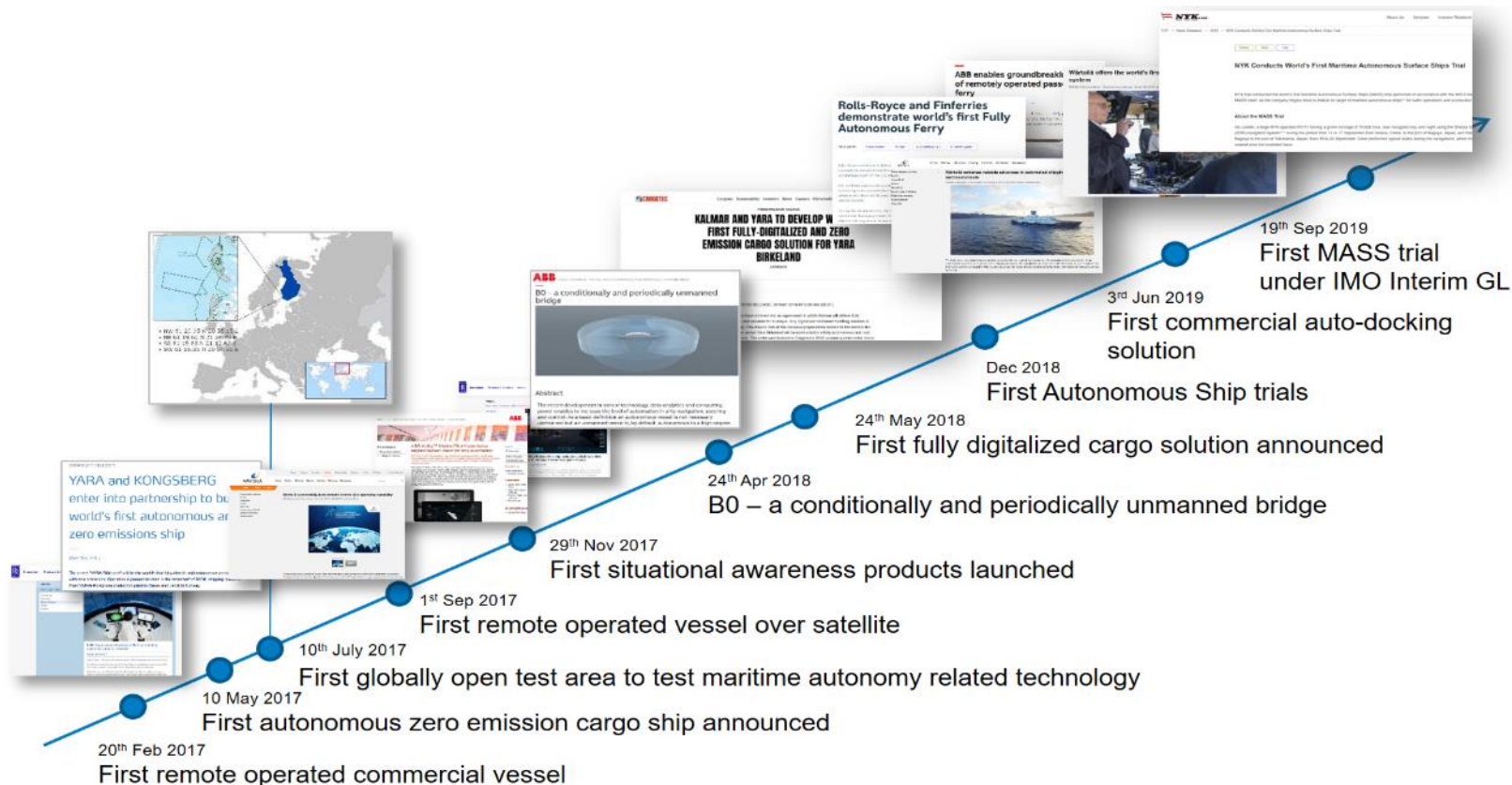
Terrestrial



Ecosystem activities

Ecosystem Core Activities	Vision & Strategy	Roadmaps			
Ecosystem Program Activities <i>Open to all parties</i>	Product & service creation				
	Startup ecosystem				
	Pilots, PoC's				
	R&D Programs				
	Rules & regulations				
	Test areas, Labs				

Recent development (ecosystem members involvement)



16/06/2017

Steering committee on autonomous vessels put on agenda

The MSC agreed to include the issue of remote autonomous surface ships on its agenda. This will be in the form of a working group to determine the scope, nature and environmental impact of maritime autonomous surface ships (MASS) to be introduced in IMO instruments.

The MSC remains concerned that the introduction of MASS into the maritime system will require a number of regulatory and other measures to be taken.

The working group will consider the regulatory and other measures to be taken in order to ensure the safe and secure operation of autonomous vessels.

The working group will also consider the need for a new definition of autonomous vessels and the need for a new definition of remote control.

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ANNEX

INTERIM GUIDELINES FOR MASS TRIALS

1 Introduction

1 June 2019

Interim guidelines for MASS Trials

protection of the environment.

Roadmap published in 2017

2023

2025

Remote monitoring

Fully remote controlled vessel (manned) – unmanned with special approval

Gradual increase of autonomous control

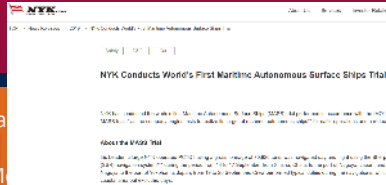
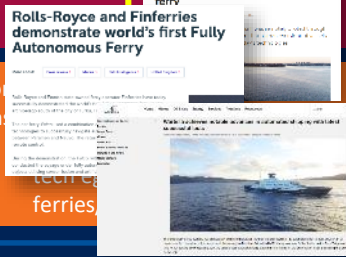
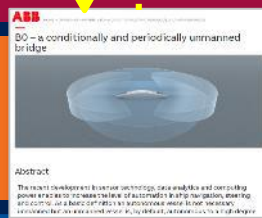
Autonomous ship traffic commercial

Test areas

National pilots

Several pilots globally

Full scale testing / validation



Ethical issues

10th July 2017
 First globally open test area

24th Apr 2018
 BO – a conditionally and periodically unmanned bridge

Dec 2018
 First Autonomous Ship trials

Sep 2019
 First MASS trials under IMO Interim guidelines

Projects, IPK, competences, e

National, IMO and global legislation development

Master of Engineering in Autonomous Maritime Operations

<https://www.novia.fi/degree-students/master-degree-programmes/master-of-engineering-autonomous-maritime-operations/>

§ Amendments to Pilotage Act to allow ePilotage trials

<https://www.lvm.fi/en/-/legislative-amendments-to-allow-remote-pilotage-946792>

Research alliance for Autonomous Systems

<https://www.vttresearch.com/media/news/raas-research-alliance-to-drive-innovation-in-the-automation-of-transport-and-logistics>

§ Regulatory changes in manning and watch keeping

<https://www.lvm.fi/en/-/legislative-amendment-promotes-automatisation-tests-in-maritime-transport-with-regard-to-manning-and-watchkeeping-976729>

Autonomous vessel model tests

<https://akerarctic.fi/en/news/press-release-aker-arctic-demonstrates-autonomous-vessel-model-tests>

Research projects on autonomous vessels & UAV's

<http://techfinland100.fi/category/autonomous-and-collaborative-offshore-robotics-acolor/>

Renewed road ferry strategy

https://www.businessfinland.fi/ajankohtaista/uutiset/2018/uudet-maantielauttaliikenteen-kiilpailutukset-kannustavat-ymparistoinvestointeihin?ref=rms_li

§ IMO Scoping Exercise for MASS

<http://www.imo.org/en/MediaCentre/MeetingSummaries/MSC/Pages/MSC-98th-session.aspx>

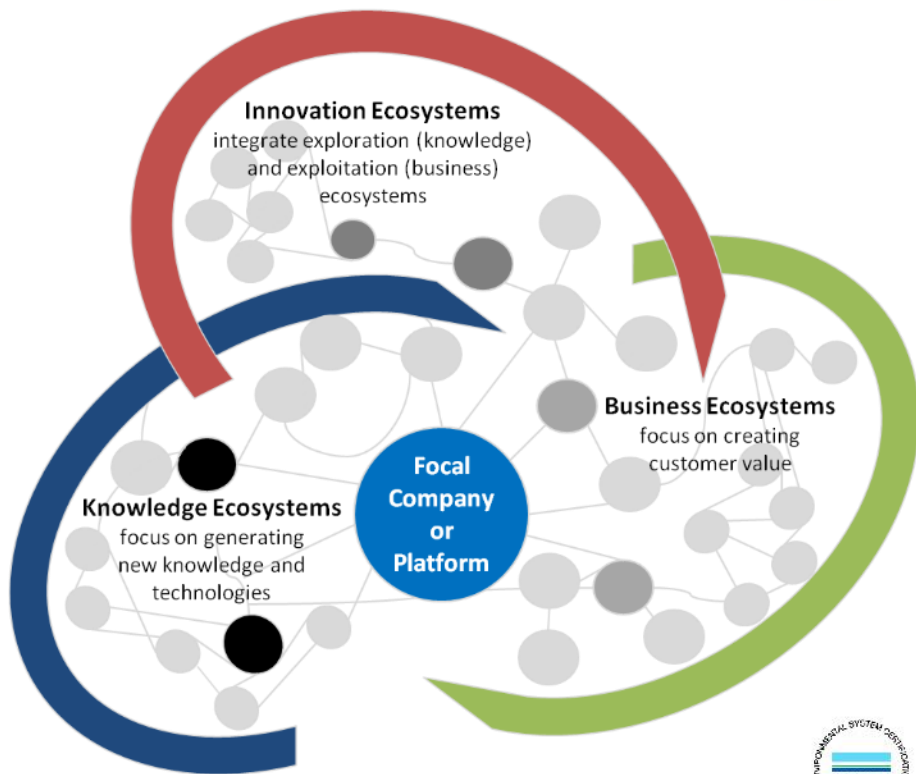
Autonomous maritime test areas in number of countries

<https://www.oneseaecosystem.net/test-area/>

Correspondence group on MASS prior to MSC100

Benefits - company view

- Information sharing, discussion
- Building a comprehensive view on an complex issue
- Understanding challenges
- Support to own development
- Power of many as oppose to one/some
- Strategic work, envisaging the future
- R&D: Common projects
- Etc.



Thank You!



29.11.2019