



Ministry of Infrastructure and the
Environment

Smart shipping & The Netherlands: national and international cooperation

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Dutch government approach to smart shipping

Smart shipping

- automated and/or digital systems that
- support, complete or replace human actions on board of a ship
- different levels of autonomy
- autonomous = highest level; autonomous \neq unmanned

Active attitude

- Facilitation
- Stimulation
- Contribution
- Cooperation (also within the government!)



Dutch government: facilitation and stimulation

Recently, now and short term

- Building community: platform for networking
- Smart shipping challenge
- Tests and experiments: 'legal' framework with maximum possibilities

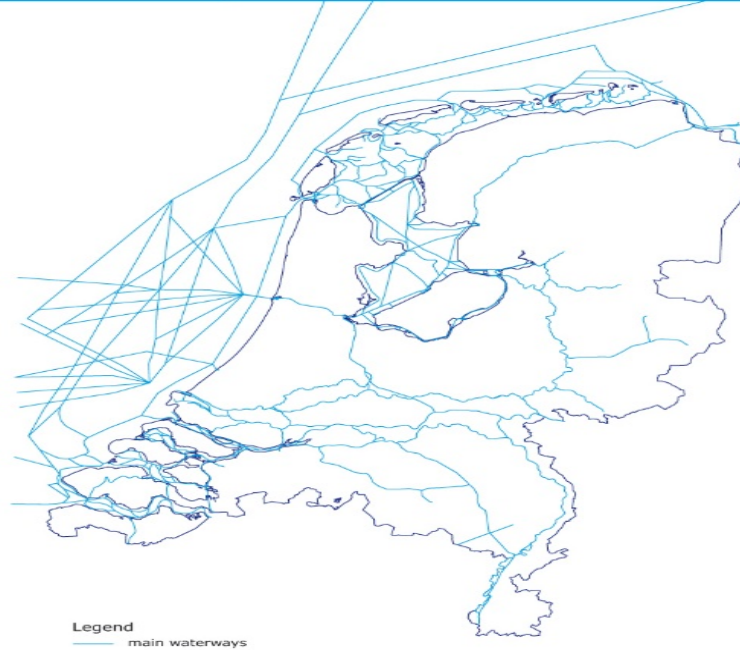
Long term

- Develop policy
- Legislation based on international law (IMO, CCR (Rhine))



Tests and experiments: maximum possibilities

Main waterway network



- 2,137 km of canals and rivers
- 5,472 km of waterways in open water
- 84 locks
- 278 bridges



Maximum possibilities: different locations





Moezelhaven Amsterdam: test location for drones

DRONES TE WATER

WOENSDAG 5 APRIL 2017

Start 15h00

Einde 17h30

PRODOCK





National cooperation: within Dutch government

Maritime Affairs with:

- Rijkswaterstaat (executive body) and ILT (inspectorate)
- Rijksrederij: offers a platform (launching customer?)
- Coast guard: tests on the North Sea

On related subjects:

- smart mobility, digitalization (paperless transport), smart logistics, smart infrastructure,...

On shared challenges:

- Cybersecurity, data sharing,...

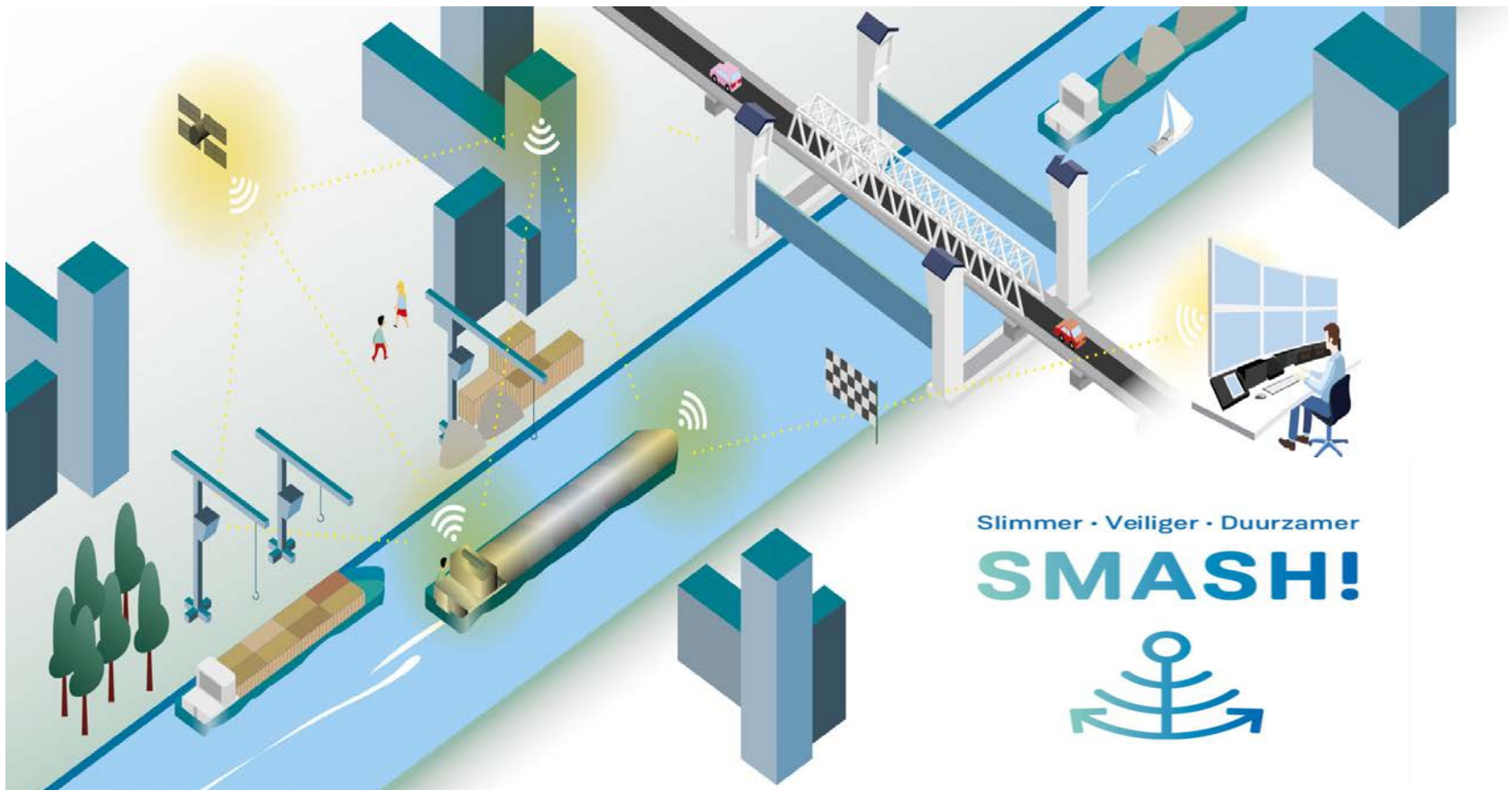


National cooperation: smart shipping community





National cooperation:
<https://smartshippingchallenge.nl/>: November 30th!





National cooperation: MIT and Amsterdam





If it works in Amsterdam...





National cooperation: maritime affairs & ports





National cooperation: skippers and Rijkswaterstaat

CoVadem



Continuously up-to-date water depths information by combining a 'sailing network' with state of the art Big Data technology. We harvest depth information readings from the collaborating vessels and combine these on our Cloud hosted servers. There, the data are being filtered, processed, enriched, managed and finally distributed to a growing range of services for the benefit of our members. Always available. Always the latest information. The river network as it was seen by your vessels.



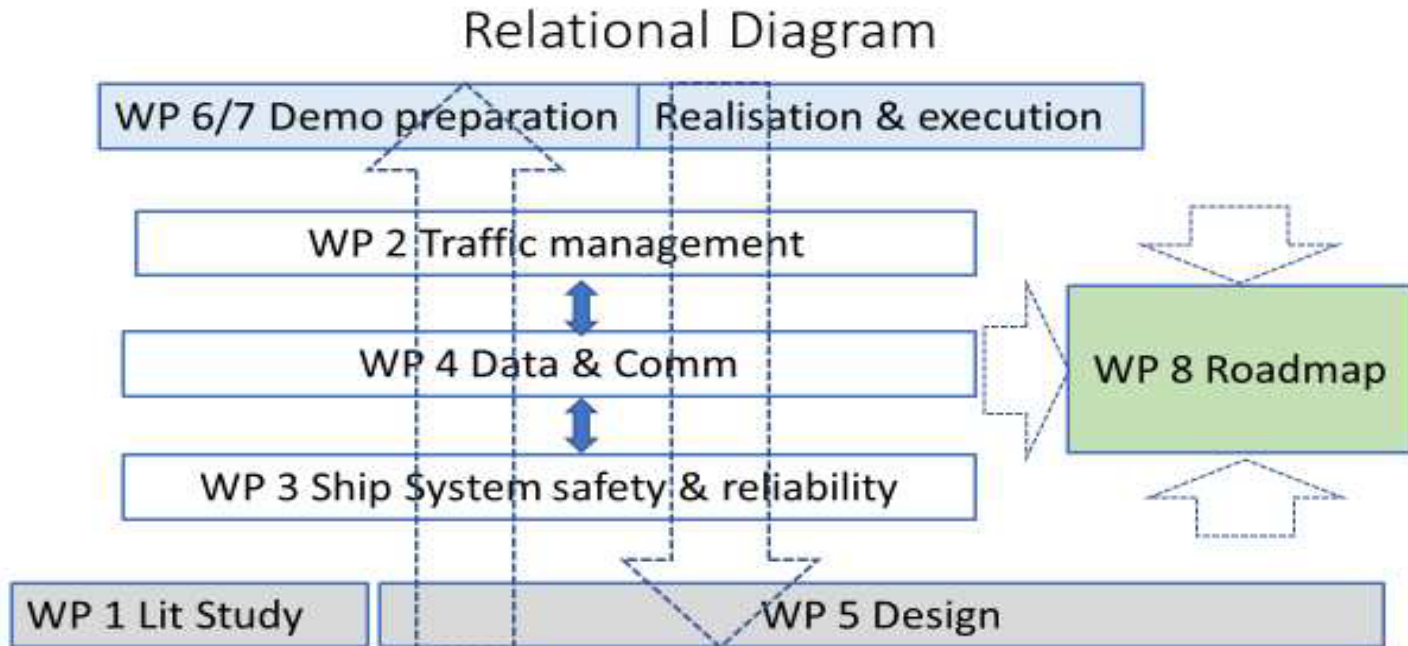
Joint Industry Project Autonomous Shipping

*“The Joint Industry Project sees companies, governmental organisations, educational institutes and research institutes working together to identify, integrate and demonstrate the available technology required for the use of vessels which are sailing without interference of crew on board, by combining remote monitoring and controlling with various levels of autonomy. These technologies include the strategies for monitoring and control of ship systems, the ship-shore communication, the shore control functions, the traffic management and the design approach of unmanned ships. **This will create insight into and help develop the missing technologies for market uptake of autonomous shipping with vessels that will be designed and equipped for this purpose.**”*

In 2020: demonstration autonomous ship



JIP: Work Packages





JIP Partners

Anthony Veder LNG Shipping B.V.

Bosch Rexroth B.V.

TNO Ministerie van Defensie

Wärtsilä Netherlands BV

CIG Maritime Technology B.V.

Bureau Veritas

Thales Nederland B.V.

Conoship International BV

Loodswezen

Seazip

MARIN

Saab Technologies B.V.

Maritiem Instituut Willem Barentz

STC-Group

RDM Centre of Expertise

Damen Shipyards Group

TU Delft

Netherlands Maritime Technology Foundation

De Voogt Naval Architects B.V.

Oceansat B.V.

Alphatron

Ministerie van Infrastructuur en Milieu



International cooperation

With Flanders on:

- Cross-border testing and experimenting (combined 'legal' framework)
- An international community?

IMO: scoping exercise MASS

CCR: Rhine



International cooperation: benefits!

For example:

- Experiments on (North) sea
- Definitions and levels of autonomy
- Codes of industry
- Joint input in IMO
- Shared challenges (e.g. cybersecurity)
- Share information
- ...