

# Integrated Coastal Zone Management via Increased Situational Awareness through Innovations on Unmanned Aircraft Systems

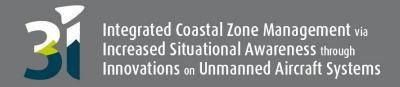
#### Kick-off event

Thursday 21st June 2012

Town hall Municipality of Woensdrecht





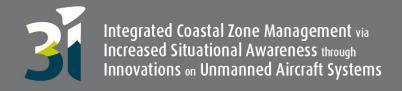


## Allyn Thomas

Chairman of the day.





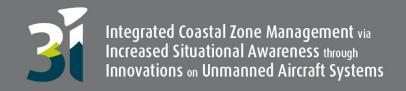




### Program

Time	Subject					
10.00 -11.30	3i Guest Speakers, Approval ceremony, Demonstration					
11.30-11.45	Coffee Break + 3i poster presentation					
11.50-12.45	3i Guest Speakers, Opening ceremony					
12.45-13.15	Lunch + 3i poster presentation					
13.30-14.45	UAV Guest Speakers					
14.45-15.00	Refreshment break & Info market					
15.00-16.00	0-16.00 Interactive workshop					
16.00-18.00	Info market, drinks and informal meeting					
18.00	End of Kick-off Event					
15.15-20.00	Site Visit D&MS & Boat Tour Port of Rotterdam					

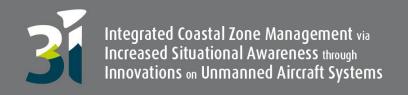






### Speakers Morning Program

Subject	Person			
Welcome at Woensdrecht and Aviolanda	Major of Woensdrecht- Marcel Fränzel			
Interreg 2 Seas Cross Border Cooperation Program & Review by the 2Seas Steering committee	2Seas Joint Technical Secretariat- Gianluca Ferreri & Ministry of EL&I - Jan Willem van Wijngaarden			
Introduction 3i project	REWIN -Stefan van Seters			
Security issues in World Port of Rotterdam and approach area of Channel & North Sea	Port Of Rotterdam-Jan Gardeitchik			
Research & Development at the TU Delft and Overview of Dutch participation in 3i	TU Delft-Prof. Max Mulder			
Information demonstration of Unmanned Aircraft System	TU Delft-Bart Remes			
Overview of French participation in 3i;	Telecom Bretagne - Gilles Coppin			
Overview of UK participation in 3i;	University of Southampton - Jim Scanlan			





#### Speakers Afternoon Program

Subject	Person		
Wrap-up morning, Start afternoon program	Stefan van Seters-REWIN		
Aviation & maintenance park Aviolanda Woensdrecht & Video	Business Park Aviolanda -Rob Sturm		
Launch of Dutch UAV project "Unmanned Aircraft Systems Maintenance Valley"	Fokker Services – Marc Huyzer		
Example of UAV applications in The Netherlands	KLPD - Gerard ter Buuren		
Interactive workshop: Initiate new projects on UAV applications and UAV technology-innovations	In2Nova - Rob van Nieuwland & Innovatie fabriek – Henk van Dijk		

#### **Extra**

Site visit 3i-partner Digital & Media Solutions BV

Boat trip on the 'Nieuwe Maze' in Rotterdam harbor + diner





## Marcel Fränzel

- Major of Woensdrecht
  - Welcome at Woensdrecht!





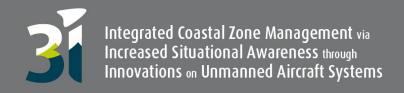


Integrated Coastal Zone Management via Increased Situational Awareness through Innovations on Unmanned Aircraft Systems

## 3i project Kick-off 21, June 2012

Marcel Fränzel Mayor of Woensdrecht







## Welcome to the municipality of Woensdrecht

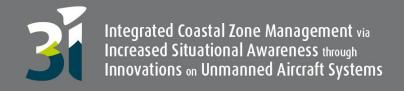














75 years runway and air base







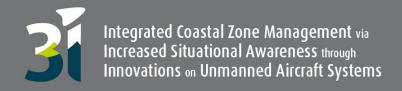




## Military and civil aviation activities in the Woensdrecht region

- Royal Dutch Airforce (Pilot school)
- Logistic Center Woensdrecht (Maintenance)
- Fokker Elmo (Wiring Harness)
- Fokker Services (Maintenance)
- The National Aerospace Laboratory (Research)
- Dutch Aero Services (Engine Maintenance)
- Terma (Electronic Warefare)
- BOEING (Rotary Wing)
- Elbit Systems of America (Avionics)
- Aircraft End of Life Solutions







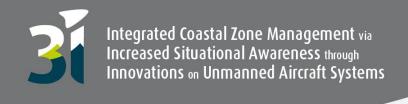
#### **Business Park Aviolanda**





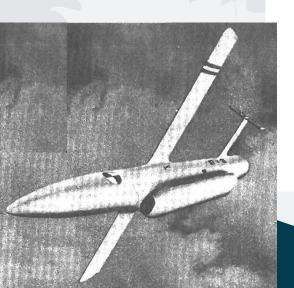


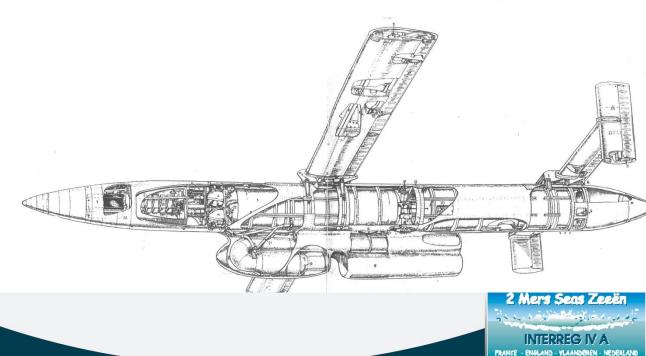


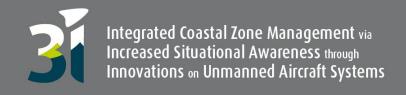


#### Unmanned aircraft 1956

#### 'Aviolanda AT-21'







#### Unmanned aircraft 2012





# Integrated Coastal Zone Management via Increased Situational Awareness through Innovations on Unmanned Aircraft Systems

### Thank you all for your attention!



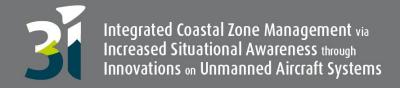
# 2 Seas crossborder cooperation Programme 2007 - 2013 Bratie and above find it deep in the Control findle will be finance Journal - Equal Fragment The Control of the Control findle will be finance of the Control of the Control findle will be finance of the Control of the Con

## Gianluca Ferreri

- 2Seas Joint Technical Secretariat
  - INTERREG IV A 2 Seas Programme
  - An introduction and a bridge to the future







#### Gianluca Ferreri

Local ppt





Woensdrecht, The Netherlands 21st June 2012



Notification of the INTERREG IVA 2SEAS PROGRAMME STEERING COMMITEE - 9TH CALL FOR PROPOSAL -PROJECT 09-004-31

Evaluation of the Interreg IVA 2 Seas Programme Steering Committee on the 17<sup>th</sup> of April 2012, by Jan Willem van Wijngaarden, Ministry of Economic Affairs, Agriculture & Innovation



Ministerie van Economische Zaken, Landbouw en Innovatie 2 Mers Seas Zeeën

INTERREG IV A

FRANCE - ENGLAND - YLAANDEREN - NEDERLAND

Woensdrecht, The Netherlands 21st June 2012





The project 3i - Integrated Coastal Zone Management via Increased situational awareness through Innovations on Unmanned Aircraft Systems - is approved by the steering committee on 17th April 2012.

The eligible costs incurred during the implementation of the 3i project will be reimbursed by the Interreg IVA 2 Seas Programme up to a maximum:

## € 1.854.571,=

from the European Regional Development Fund (ERDF)





































## Stefan van Seters

- REWIN
  - Introduction 3i project: Origin, goals, partners, activities, planning



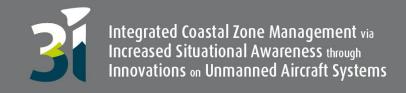




#### Origin of 3i project

- Roadmap Aviolanda-Woensdrecht (2009)
- Workshops REWIN & WCM (2010)
- Set up of Joint Industry Project funded by Ministry of Economic Affairs & Provinces Brabant and Zeeland ('UAS Maintenance Valley') (2011)
- Contacts of REWIN with Dutch national UAV user groups: (2011)
- >> Need for European cooperation
- >> Start of 2Seas project development (2011)



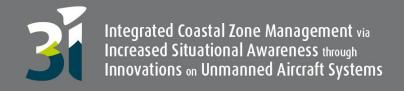




#### Important goals development 3i project

- Accelerate the European UAV knowlegde
- Gain practical knowlegde on UAV operations for end-users
- Develop the UAV business opportunities for European SME
- Create open platform for research and for open communication/publicity



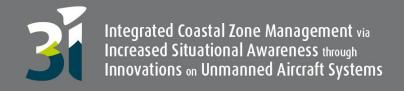




#### Joint project development & Partner search

- With common interest and right knowlegde:
  - 1. Rewin > Police Rotterdam
  - 2. Police Rotterdam > Police Kent
  - 3. Police Kent > Rewin
  - 4. Rewin > TU Delft
  - 5. Rewin > Port of Rotterdam
  - 6. Police Kent > University of Southampton
  - 7. TU Delft > Telecom Bretagne
  - 8. Telecom Bretagne > TBI & ENSTA & Deev
  - 9. Rewin > AM&TS
  - 10. AM&TS > D&MS







#### Final: Project partners & supporting partners



































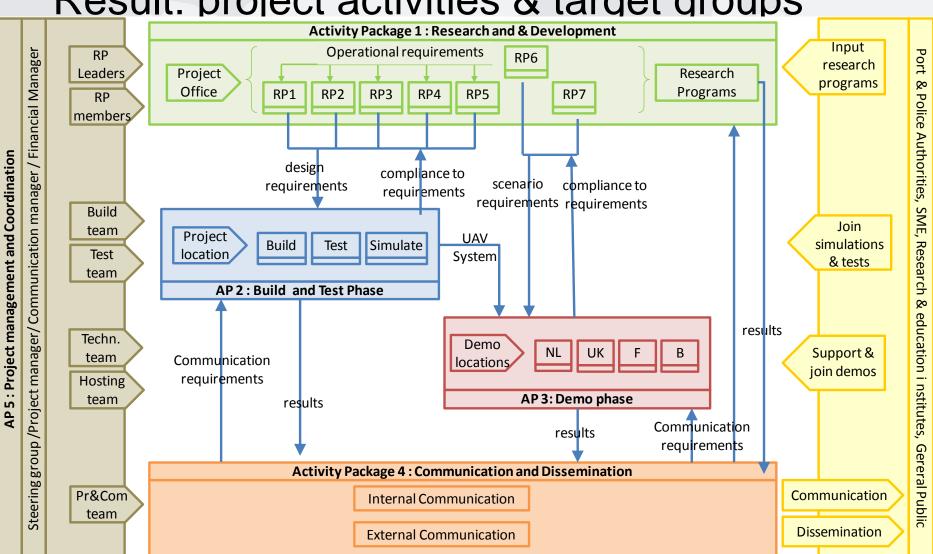






Target groups, project observers and project supporters

Result: project activities & target groups







INTERREG IV A

## **Project Planning**

Activity	2012-1	2012-2	2013-1	2013-2	2014-1	2014-2
Activity 1: Research & development						
Activity 2: Build and test						
Activity 3: Demonstrations						
Project Management & coordination						
Communication & Dissemination						



# Integrated Coastal Zone Management via Increased Situational Awareness through Innovations on Unmanned Aircraft Systems

### Thank you all for your attention!



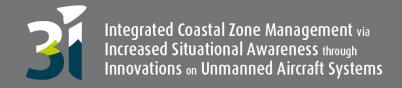


## Jan Gardeitchik

- Port Of Rotterdam
  - Security issues in World Port of Rotterdam and approach area of Channel & North Sea







#### Jan Gardeitchik

Local ppt





## Max Mulder

- Delft University of Technology
  - Research & Development at the TU Delft and
     Overview of Dutch participation in 3i







#### Max Mulder

Local ppt





# Integrated Coastal Zone Management via Increased Situational Awareness through Innovations on Unmanned Aircraft Systems

### Thank you all for your attention!





## **Bart Remes**

- Delft University of Technology
  - Demonstration of Unmanned Aircraft System







#### Bart Remes - TU Delft

 http://prezi.com/oj9puwlqp7cx/mavlab/?aut h\_key=2cc853f659bae24208f20f559c80b7 fd976e4021





Integrated Coastal Zone Management via Increased Situational Awareness through Innovations on Unmanned Aircraft Systems

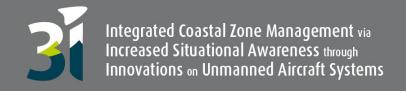
Thank you all for your attention and your are invited for coffee/thee and the 3i info market!





#### "Investing in your future"

Crossborder cooperation programme 2007-2013 Part-financed by the European Union (European Regional Development Fund)





INTERREG IV A

#### Program

Time	Subject
10.00 -11.30	3i Guest Speakers, Approval ceremony, Demonstration
11.30-11.45	Coffee Break + 3i poster presentation
11.50-12.45	3i Guest Speakers, Openings ceremony
12.45-13.15	Lunch + 3i poster presentation
13.30-14.45	UAV Guest Speakers
14.45-15.00	Refreshment break & Info market
15.00-16.00	Interactive workshop
16.00-18.00	Info market, drinks and informal meeting
18.00	End of Kick-off Event
15.15-20.00	Site Visit D&MS & Boat Tour Port of Rotterdam

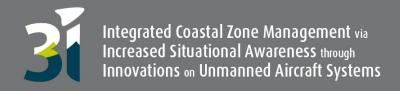


## Gilles Coppin

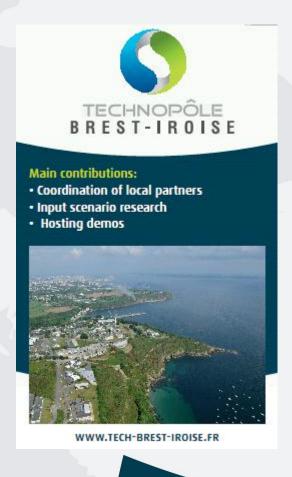
- Telecom Bretagne
  - Overview of French participation in 3i





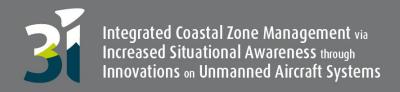


#### Overview of French participation in 3i









#### Overview of French participation in 3i



#### Main contributions:

- Man-Machine Interaction
- Multi touch Interface Design



WWW.DEEV-INTERACTION.COM



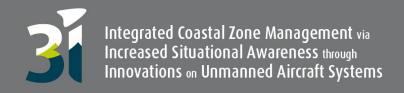
#### Main contributions:

- · Research on Autopilot algorthms
- · HWIL (Hardware in the Loop) simulations

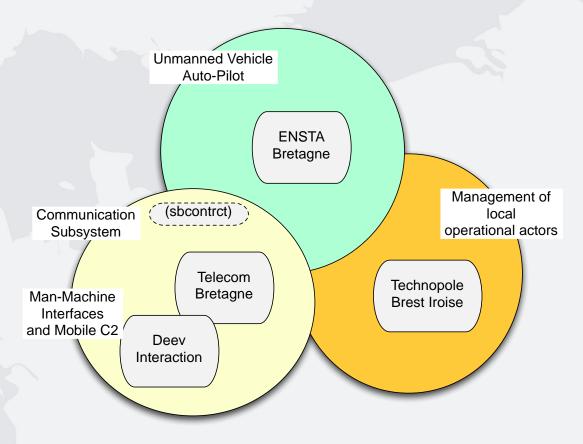


WWW.ENSTA-BRETAGNE.FR





#### French Partners positioning





#### Telecom Bretagne

- French « Grande Ecole » specialized in IT
  - Digital communications
  - Mission systems
  - Advanced man-machine interaction
- Expertise in Maritime Surveillance
  - ATOL joint lab with Thales on Maritime Surveillance





#### Telecom Bretagne



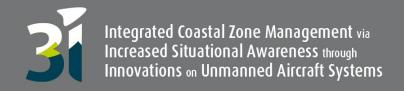




#### **Deev Interaction**

- Spin-off of Telecom Bretagne
- Design and Evaluation of innovative interaction systems
- Specialized in multitouch digital tabletop interaction
- Expertise in Command & Control





#### **Deev Interaction**

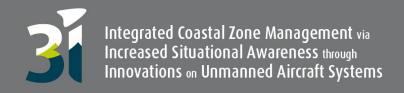




#### **ENSTA Bretagne**

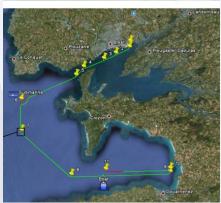
- French « Grande Ecole » specialized in military systems and robotics
- Expert in control theory and robust guidance algorithms and embedded systems
- French main contributor to autopilot techniques





#### **ENSTA Bretagne**







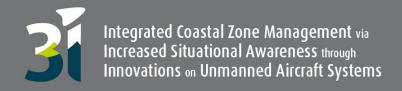


2 Mers Seas Zeeën
INTERREG IV A
FRANCE - ENGLAND - VLANDOREN - NEDERLAND

#### Technopôle Brest Iroise

- Industrial, technical and scientific facilitator in Brest and West Brittany area
- ICT and bio-marine activities
- Unmanned robotics and UV





#### Technopôle Brest Iroise





### Integrated Coastal Zone Management via Increased Situational Awareness through Innovations on Unmanned Aircraft Systems

#### Thank you all for your attention!





#### James Scanlan

- University of Southampton
  - Overview of UK participation in 3i





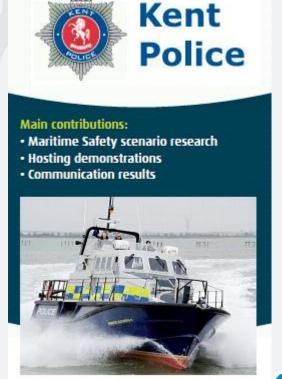




#### Overview of UK participation in 3i:

# Main contributions: Scenario selection Design & build airframe Power plant selection

WWW.SOUTHAMPTON.AC.UK

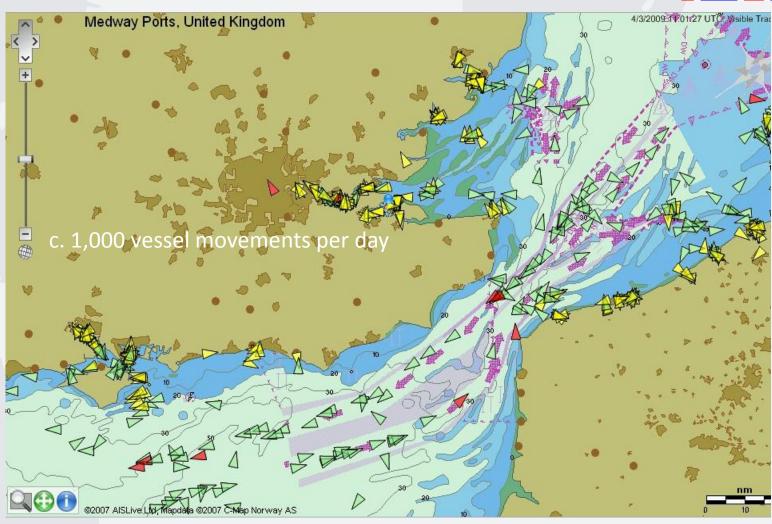


WWW.KENT.POLICE.UK



#### Ports Policing - Maritime







Integrated Coastal Zone Management via Increased Situational Awareness through Innovations on Unmanned Aircraft Systems

### 2Seas Project University of Southampton University

Prof Jim Scanlan, Marc Bolinches, Mario Ferraro



#### "Investing in your future"

Crossborder cooperation programme 2007-2013 Part-financed by the European Union (European Regional Development Fund)



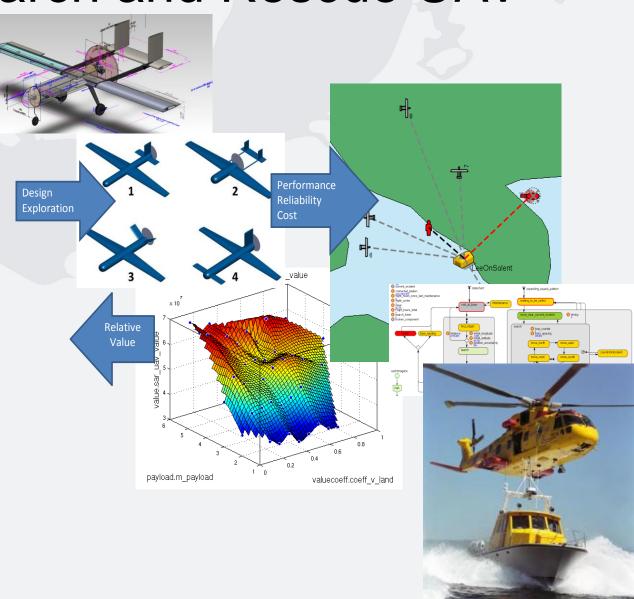
#### Context

 DECODE (Decision Environment for COmplex DEsign)

#### Maritime Search and Rescue UAV

 "Value" assessment

 Concept through to performance prediction using high and low fidelity analysis (CFD, FE etc)



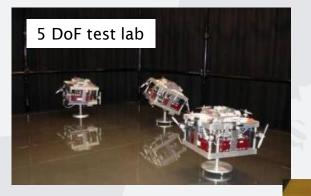
#### **Experience of Rapid Prototyping**



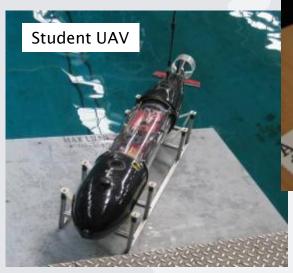
#### Other University Unmanned

Technology

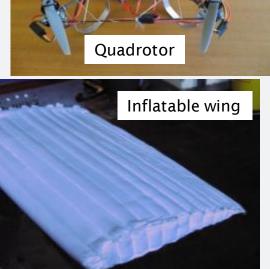












Professor Jim Scanlan

### Sulsa (Southampton University Laser Sintered Aircraft) Overview



### Hinges and moving parts printed in place





#### Finally; BBC aircraft!

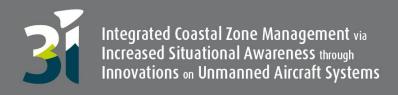




### Integrated Coastal Zone Management via Increased Situational Awareness through Innovations on Unmanned Aircraft Systems

#### Thank you all for your attention!







#### Opening Project Office





























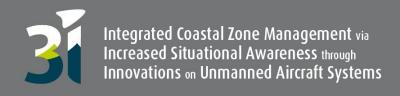












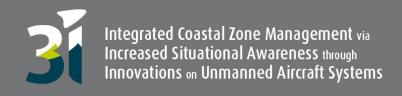


#### Why a 3i project office?

- Joint research on maritime unmanned aircraft (UAV) applications and UAV technology
- Joint Building and Testing of the prototype UAV System.







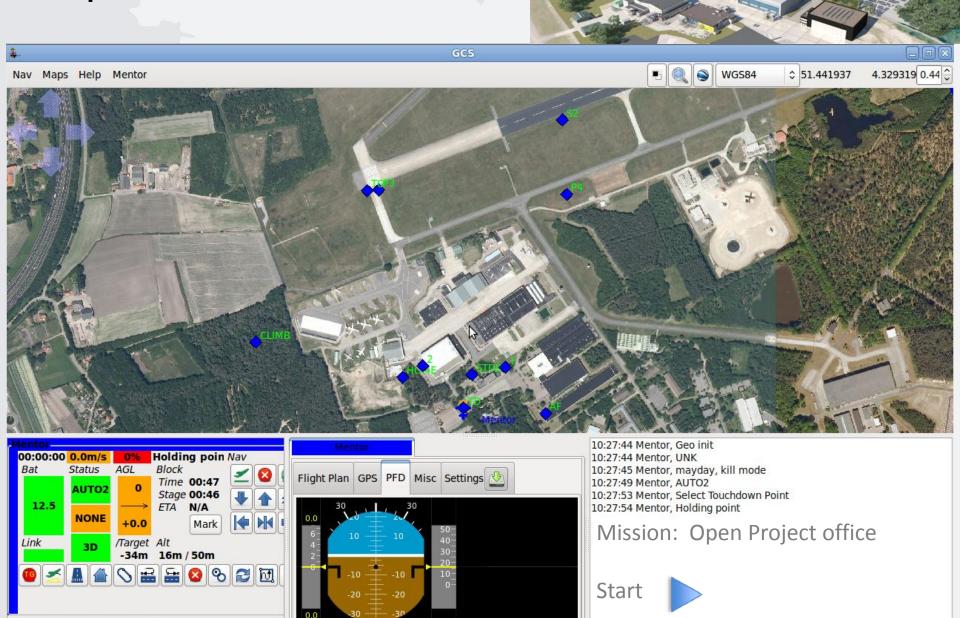


#### Welcome to the project partners:

Project partner	Persons present today
Technische Universiteit Delft	Erik Jan van Kampen & Bart Remes
ROC West Brabant /AM&TS	Willem Braat
Digital & Media Solutions	Jan Derksen
Ensta Bretagne	Benoit Clement
Kent Police	Andrew Little
Politie Rotterdam Rijnmond	Paul de Kruijf
Technopôle Brest-Iroise	Jeremie Bazin
Havenbedrijf Rotterdam	Reinout Gunst
Rewin	Stefan van Seters
Telecom Bretagne & Deev Interaction SAS	Gilles Coppin
University of Southampton	James Scanlan & Team

FRANCE - ENGLAND - YLAANDEREN - NEDERLAN

#### **Special UAV Mission**



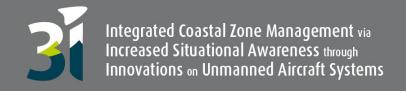


Integrated Coastal Zone Management via Increased Situational Awareness through Innovations on Unmanned Aircraft Systems

# Thank you all for your attention Please enjoy the lunch and info market!



2007-2013 Part-financed by the European Union (European Regional Development Fund)





#### Program

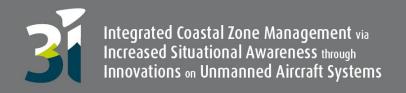
Time	Subject	
10.00 -11.30	3i Guest Speakers, Approval ceremony, Demonstration	
11.30-11.45	Coffee Break + 3i poster presentation	
11.50-12.45	3i Guest Speakers, Openings ceremony	
12.45-13.15	Lunch + 3i poster presentation	
13.30-14.45	UAV Guest Speakers	
14.45-15.00	Refreshment break & Info market	
15.00-16.00	Interactive workshop	
16.00-18.00	Info market, drinks and informal meeting	
18.00	End of Kick-off Event	
15.15-20.00	Site Visit D&MS & Boat Tour Port of Rotterdam	





## Wrap-up morning, Start afternoon program







#### Speakers Afternoon Program

Subject	Person
Aviation & maintenance park Aviolanda Woensdrecht & Video	Business Park Aviolanda -Rob Sturm
Launch of Dutch UAV project "Unmanned Aircraft Systems Maintenance Valley"	Fokker Services – Marc Huyzer
Example of UAV applications in The Netherlands	KLPD - Gerard ter Buuren
Interactive workshop: Initiate new projects on UAV applications and UAV technology-innovations	In2Nova - Rob van Nieuwland & Innovatie fabriek – Henk van Dijk

Subject	Person
Site visit 3i-partner Digital & Media Solutions BV	D&MS- Jan Derksen & International guests
Boat trip on the 'Nieuwe Maze' in Rotterdam harbor + diner	Port of Rotterdam & International guests



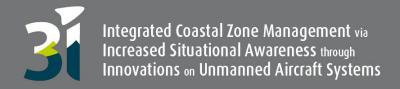


#### Rob Sturm

- Business Park Aviolanda BV
  - Business development at Aviation & maintenance park Aviolanda Woensdrecht







#### Rob Sturm

Local ppt







- Fokker Services BV
  - Launch of Dutch UAV project "Unmanned Aircraft
     Systems Maintenance Valley"







Integrated Coastal Zone Management via Increased Situational Awareness through Innovations on Unmanned Aircraft Systems

#### **UAS Maintenance Valley**

"Pieken in de Delta"

Thursday 21 June 2012

Marc Huyzer



#### **UAS Maintenance Valley**

#### Agenda

- Project goals
- Project Structure
- Partners
- Planning









## **Project Goals**

- Acceleration UAS development in the Netherlands
  - UAS Knowledge Centre
  - UAS Innovation

- Yearly UAS Roadmap
- Independent continuation after project

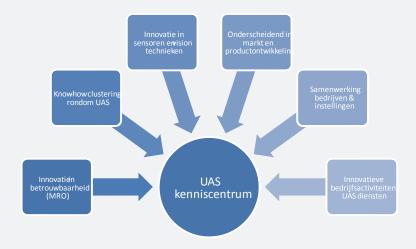






# UAS Knowledge Centre Woensdrecht

- Channel information to and from UAS community
- Contributions from partners
- Vision development: NL UAS Roadmap
- Projects foreground knowledge sharing
- Creating awareness
- Advise
- Demonstrate
- Initiation of new projects
- Evaluation of innovations







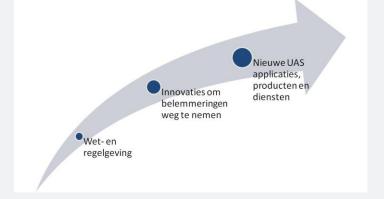




#### **UAS Maintenance Valley**

# UAS Innovation Woensdrecht

- Feasibility studies innovative technologies "which technologies to improve?"
- Research on innovative technologies
- Prototyping/testing/certifying









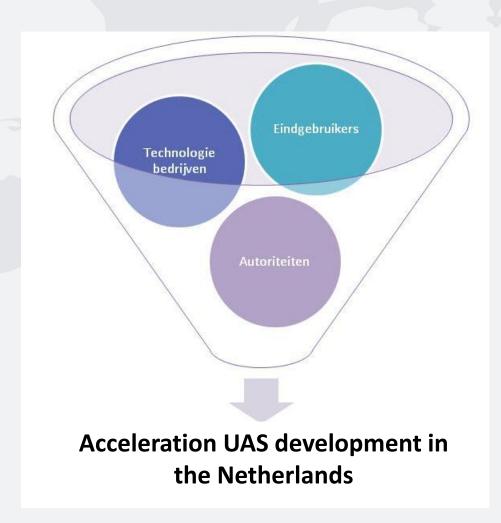
#### **UAS Maintenance Valley**

## Target groups

(High) Tech

End-users

Authorities









### Partners & Participants

50 partners and participants

- Core team
  - DIWCM Project Coordinator
  - Rewin
  - In2Nova
  - Fokker Project Management









# UAS Maintenance Valley Planning

- Kick-off UAS Event June 28<sup>th</sup> 2012
- September 2012
  - Frozen scope of projects
- Duration Project
  - September 2012 December 2014
- Point of contact
  - DIWCM Kees van der Hoop
  - Fokker Marc Huyzer





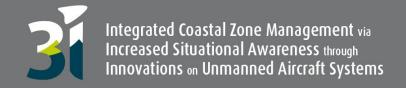




# Integrated Coastal Zone Management via Increased Situational Awareness through Innovations on Unmanned Aircraft Systems

#### Thank you all for your attention!







### Gerard ter Buuren

- Korps Landelijke Politiediensten
  - Example of UAV applications in The Netherlands







#### Gerard ter Buuren

Local ppt



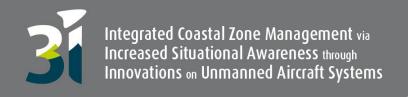




#### Program

Time	Subject
10.00 -11.30	3i Guest Speakers, Approval ceremony, Demonstration
11.30-11.45	Coffee Break + 3i poster presentation
11.50-12.45	3i Guest Speakers, Opening ceremony
12.45-13.15	Lunch + 3i poster presentation
13.30-14.45	UAV Guest Speakers
14.45-15.00	Refreshment break & Info market
15.00-16.00	Interactive workshop
16.00-18.00	Info market, drinks and informal meeting
18.00	End of Kick-off Event
15.15-20.00	Site Visit D&MS & Boat Tour Port of Rotterdam





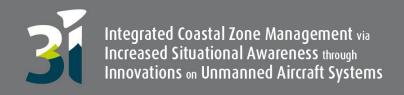




#### **Evening Programs**

Subject	Person
Interactive workshop: Initiate new projects on UAV applications	In2Nova - Rob van Nieuwland &
and UAV technology-innovations	Innovatie fabriek – Henk van Dijk
Info market, drinks and informal meeting	

Subject	Person
Trip to Oud-Gastel (0:26 min)	VIP & International guests
Site visit 3i-partner Digital & Media Solutions BV (factory tour 3x15 persons)	D&MS- Jan Derksen, VIP & International guests
Trip to Port of Rotterdam (0:41 min)	International guests
Boat trip on the 'Nieuwe Maze' in Rotterdam harbor + diner (55 persons)	Port of Rotterdam & VIP& International guests
Trip back to Hoogerheide (0:59 min)	International guests



#### Interactive workshop by:





Henk van Dijk











#### Henk van Dijk

Local ppt









## UAS Maintenace Valley (Pieken in de Delta)

#### Two sub programs:

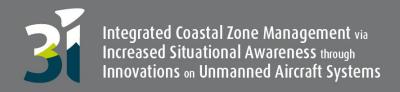
# UAS Centre of Expertise, Woensdrecht

- Channel information to and from UAS community
- Contributions form partners
- Vision development: NL UAS Roadmap
- Projects foreground knowledge sharing
- Creating awareness
- Advise
- Demonstrate
- Initiation of new projects
- Evaluation of innovations

#### **UAS Innovation Projects**

- Feasibility studies innovative technologies
   "which technologies to improve?"
- Research on innovative techonogies
- Prototyping/testing/certifying





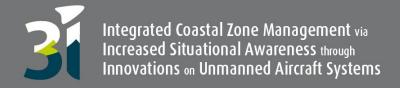




#### Inspiring notes workshop!

- Class 1 use only
- Expansion to Class 2
- Development of Acceptable Means of Compliance
- Development of Safety Management System Light for UAS
- Your contribute to UAS expert centre
- Expansion flight endurance (fuel cells)
- Creation Qualified Entity UAS
- Mission preparation
- Sense, detect and avoid (sensors/transponders)
- New applications/payloads

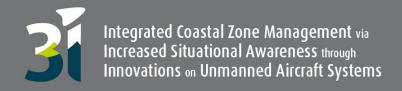






#### Conclusions and further actions







#### Program

Time	Subject
10.00 -11.30	3i Guest Speakers, Approval ceremony, Demonstration
11.30-11.45	Coffee Break + 3i poster presentation
11.50-12.45	3i Guest Speakers, Opening ceremony
12.45-13.15	Lunch + 3i poster presentation
13.30-14.45	UAV Guest Speakers
14.45-15.00	Refreshment break & Info market
15.00-16.00	Interactive workshop
16.00-18.00	Info market, drinks and informal meeting
18.00	End of Kick-off Event
15.15-20.00	Site Visit D&MS & Boat Tour Port of Rotterdam





# Anton van der Wijst

Day ending & invitation to reception, on behalf of:









































Integrated Coastal Zone Management via Increased Situational Awareness through Innovations on Unmanned Aircraft Systems

Thank you all for your presence! Hope to see you back in further meetings!





#### "Investing in your future"

Crossborder cooperation programme 2007-2013 Part-financed by the European Union (European Regional Development Fund)