Central Dredging Association

PROGRAMME

9–10 November 2017
Rotterdam Ahoy, Rotterdam, the Netherlands

CEDA DREDGING DAYS 2017

CONFERENCE AND EXHIBITION

Sustainable dredging – continued benefits

Pre-event technical visit on 8 November 2017

In conjunction with:

EUROPORT
exhibition for maritime technology
7-10 November 2017
Rotterdam Ahoy

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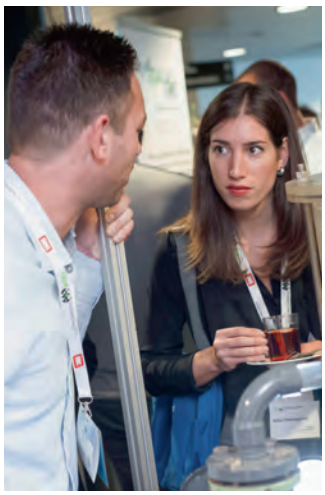

CEDA Dredging Days 2017

Sustainable dredging – continued benefits
9-10 November 2017
Rotterdam Ahoy, Rotterdam, the Netherlands

Technical visit
8 November 2017

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Central Dredging Association

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Welcome to CEDA Dredging Days

From CEDA president Polite Laboyrie

In nearly 40 years, CEDA Dredging Days has grown to become the primary event for dredging professionals in the CEDA region. It's where you meet relevant people from the sector and hear the latest industry developments. This year's event will focus on the continued benefits of dredging projects that add value to nature, society and economy, and minimise potential negative impacts.

The Central Dredging Association (CEDA) has a long tradition of delivering thought-provoking and well-curated technical conferences. CEDA Dredging Days 2017 is no exception. The programme that has been carefully curated by our technical committee and will showcase the sustainable character of modern dredging projects, includes:

- A technical programme of 20 peer-reviewed papers presented by international experts on:
  - Environment and monitoring;
  - Developments in instrumentation;
  - Sustainable working methods and equipment;
  - Innovative solutions.
  - Plus an academic session showcasing up-to-the-minute research papers.
- The presentation of the Dredging Management Commission's first work: CEDA's *Checklist for Successful Dredging Management*.
- The launch of a new book on the subject, prepared in association with IADC members, that will be the next standard guideline for the dredging community.
- A technical visit to the Princess Beatrix lock, organised and sponsored by Jan De Nul.
- An interactive session on "Contractual problems, and how to avoid them occurring" and
- A guided networking breakfast "Break-ice-fast".

Many thanks to the authors, speakers, and panellists for sharing their knowledge and experience with us and for contributing to this excellent technical programme.

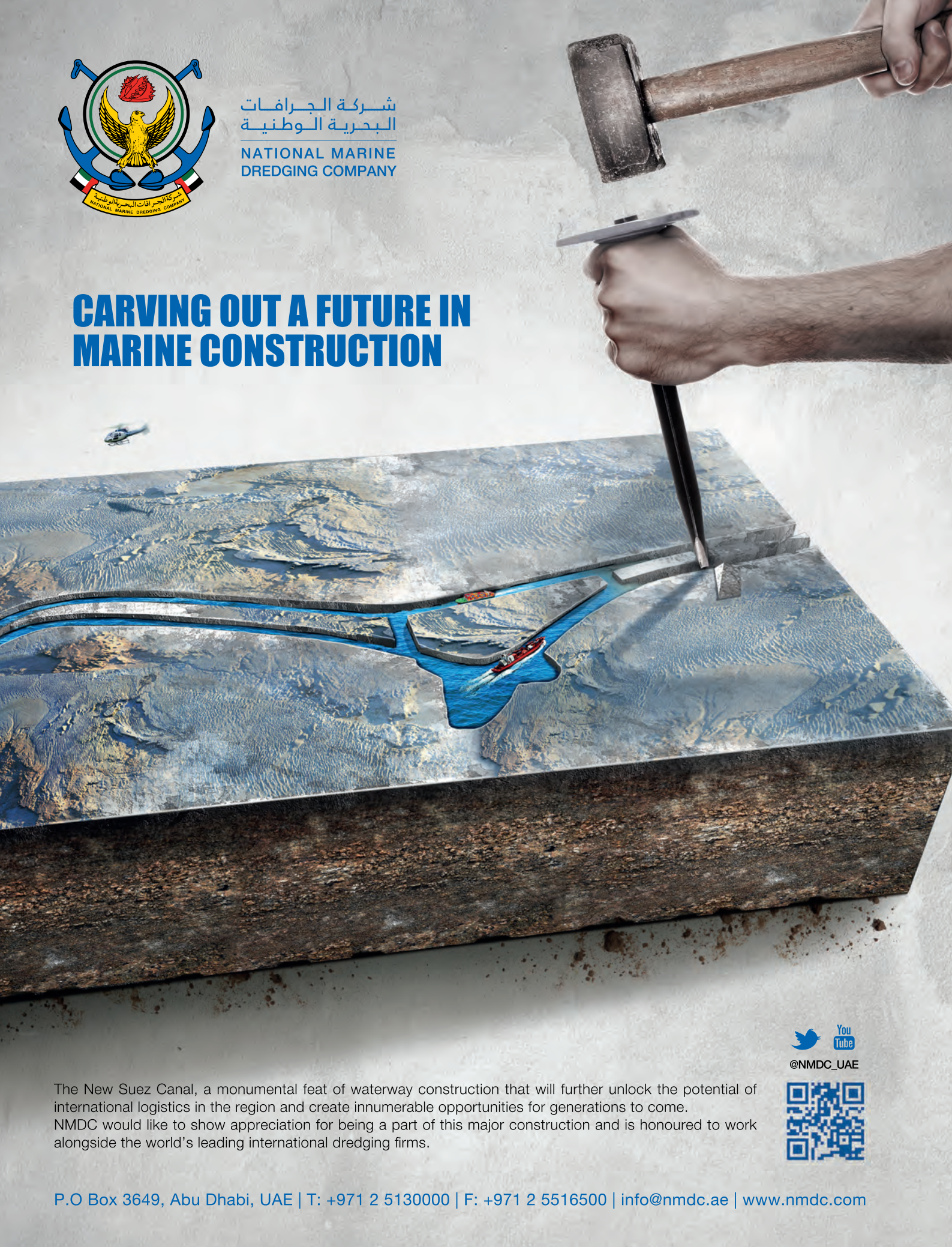
Alongside the technical sessions, there will be many opportunities for delegates to relax, network and swap notes over drinks, including the very popular CEDA Netherlands Reception, generously sponsored by iPS Powerful People, Royal HaskoningDHV and Svasek Hydraulics. Co-located in the Dredging exhibition, there will also be the chance to meet leading companies as they showcase their latest products and services.

Such a great event would not be possible without our sponsors, Antea Group, CableArm, Damen Dredging Equipment, Dredging International, Port of Rotterdam, Royal IHC, Wärtsilä, and our media partner, *DPC* at IHS Markit, so I would like to thank them for their valuable support.

I look forward to seeing you at Dredging Days 2017!

"This year's event will focus on the continued benefits of dredging projects that add value to nature, society and economy, and minimise potential negative impacts"

Polite Laboyrie, CEDA president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Central Dredging Association

Programme at a glance

Tuesday 7 November			
10:00 – 18:00	**Europort 2017 open**		**Europort 2017**
Wednesday 8 November			
10:00 – 18:00	**Europort 2017 open**		**Europort 2017**
12:00 – 17:00	**Technical visit, hosted by Jan De Nul**		
20:00 – 22:30	**Young CEDA's ice breaker**		
Thursday 9 November			
07:00 – 09:00	Dredging exhibition build-up		
07:00 – 19:00	Registration desk open		
07:45 – 09:00	Break-ice-fast guided networking breakfast		
09:30 – 10:30	**Session 1: Opening and keynote speeches**	**Dredging Exhibition**	
10:00 – 22:00	**Europort 2017 open**		**Europort 2017**
10:30 – 10:55	Coffee and tea served in the exhibition area		
10:55 – 12:45	**Session 2: Environment and monitoring**		
12:45 – 13:45	Lunch served in the exhibition area sponsored by Damen Dredging Equipment		
13:45 – 15:15	**Session 3: Academic session**		
15:15 – 15:45	Coffee and tea served in the exhibition area		
15:45 – 17:15	**Session 4: Developments in instrumentation**		
17:15 – 17:30	Presentation of the CEDA-IADC book *Dredging for sustainable infrastructure*		
17:30 – 18:00	CEDA Annual General Meeting		
18:00 – 19:00	CEDA Netherlands reception		
Friday 10 November			
08:00 – 17:30	Registration desk open	**Dredging Exhibition**	
09:00 – 10:30	**Session 5: Interactive session: Contractual problems, and how to avoid them occuring**		
10:00 – 17:00	**Europort 2017 open**		**Europort 2017**
10:30 – 11:00	Coffee and tea served in the exhibition area		
11:00 – 12:30	**Session 6: Sustainable working methods and equipment**		
12:30 – 13:30	Lunch served in the exhibition area sponsored by Royal IHC		
13:30 – 14:30	**Session 7: Young CEDA pitch talks**		
14:30 – 15:00	Coffee and tea served in the exhibition area		
15:00 – 16:30	**Session 8: Innovative solutions**		
16:30 – 16:35	Presentation of the IADC Young Authors' Award		
16:35 – 16:45	Conference chair's closing remarks		
16:45 – 17:30	Farewell drinks		

The organisers wish to thank the following companies for their support:

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Conference introduction

Cees van Rhee, Professor of Dredging Engineering at Delft University of Technology and chairman of the CEDA Dredging Days 2017 Technical Papers and Programme Committee, outlines this year's event

The theme of this year's conference is Sustainable Dredging – Continued Benefits. But what do we mean by that? For the purposes of CEDA Dredging Days 2017, we'll be focusing on sustainable dredging with regard to both dredging activities and the resulting projects. Presentations will include:

- Novel solutions that predict and measure the sediment release due to dredging activities
- Examples of sustainable project development, such as the beneficial use of dredged sediment and the concept of Building with Nature
- Latest developments in dredging technology that contribute to sustainable dredging by improving equipment efficiency.

The keynote address, by Frank Verhoeven, president of the International Association of Dredging Contractors (IADC), will focus on the most important developments that have influenced the dredging industry to date and decisive drivers of this market in the future.

The traditional academic session will feature young professionals as they present high-quality papers on numerical modelling and experimental validation of sediment water systems for various applications such as plume dispersion and liquefaction of seabed sediment.

Following the highly successful interactive session at the 2015 Dredging Days, CEDA's Dredging Management Commission will be hosting a session focusing on contractual issues and how to avoid them. Using an engaging theoretical case study, groups of participants, supported by a team of experts, will explore issues, share insights, and discuss solutions relevant to some of the most pressing and commercially important aspects of delivering real-life dredging projects.

Young CEDA will again host the fast-paced pitch talks in the PechaKucha 20x20 style. This is always a great opportunity for graduate students and young professionals to present their work to more experienced professionals and get valuable feedback.

Thanks to the sterling efforts of the authors and the Papers Committee, we're confident that we've put together a stimulating programme that will bring you up to speed with dredging's latest developments during this important two-day event.

CEDA / Jim Wilson

"We're confident that we've put together a stimulating programme that will bring you up to speed with dredging's latest developments during this important two-day event"

Professor Cees van Rhee, Delft University of Technology

Conference programme

Day 1, Thursday 9 November

07:45 – 09:00

Break-ice-fast – guided networking breakfast

(Additional fee)
This light-hearted and fun session will offer participants the opportunity to quickly make the acquaintance of a number of fellow participants and share ideas on a variety of issues.

See page 23 for more details.

09:30 – 10:30

Session 1 – Opening and keynote speeches


C van Rhee

Chair: Cees van Rhee – Delft University of Technology, the Netherlands


P Laboyrie

Opening remarks: Polite Laboyrie, President CEDA – Witteveen+Bos, the Netherlands


C van Rhee

Introduction: Prof Dr Cees van Rhee, Technical Papers and Programme Committee chairman – Delft University of Technology, the Netherlands


F Verhoeven

Keynote address: Dredging the Industry's Mindset
Frank Verhoeven, President IADC – International Association of Dredging Companies, the Netherlands


K De Wit

Featured presentation: CEDA's checklist for successful dredging management
Kathleen De Wit, on behalf of CEDA Dredging Management Commission (DMC) – IMDC, Belgium

10:30 – 10:55 **Coffee and tea served in the exhibition area**

10:55 – 12:45

Session 2 – Environment and monitoring


R De Sutter

Chair: Renaat De Sutter – Antea Group, Belgium


F Manso

Assessment of siltation processes and implementation of nautical depth in the port of Cochin, India
Ferket B, Heredia Gomez M, Rocabado I, De Sutter R, and Manso F – Antea Group, Belgium; Van Hoestenberghe T – Fluves, Belgium; Kwee J and Werner C – Stema Systems, the Netherlands; Verwilligen J and Vos S – Flanders Hydraulics Research, Belgium; Nair P, Lamba P, Sharma S, and Marthi S – IIC Technologies, India; Vantorre M – Ghent University, Belgium


U Lumborg

A method for monitoring and control of spill during dredging operations
Lumborg U and Saremi S – DHI, Denmark; Lauridsen P – Rohde Nielsen, Denmark


N Crossouard

Potential sources and magnitude of errors associated with the measurement of suspended sediment concentration
Crossouard NA, Taylor JA, and Lee MW – HR Wallingford, United Kingdom


L De Keukelaere

Integrated approach to monitor water dynamics with drones
Raymaekers D, De Keukelaere L, Knaeps E, Strackx G, and Verstappen T – VITO, Belgium; De Crop B and Bollen M – IMDC, Belgium


W Coulet

Modelling and monitoring of dredged sediment dispersal Brightlingsea UK
Coulet W and Manning W – Exo Environmental, United Kingdom; Rotsaert M and De Wit L – Svasek Hydraulics, the Netherlands

12:45 – 13:45 **Lunch, sponsored by Damen Dredging Equipment, served in the exhibition area**

Conference programme

13:45 – 15:15

Session 3 – Academic session


B Malherbe

Chair: Bernard Malherbe – Jan De Nul, Belgium


K De Wit

Pipeline floatation due to wave-induced liquefaction of trench backfill material
Baelus L, Szengel V, Breughem A, Tavallali A, and De Wit K – IMDC, Belgium


J Boone

1DH modelling of transport and sedimentation inside a hopper of a trailing suction dredger
Boone J and De Nijs MAJ – Van Oord Dredging and Marine Contractors, the Netherlands


F van Grunsven

Simulating turbidity plumes with OpenFOAM
Van Grunsven F, Keetels GH, and Van Rhee C – Delft University of Technology, the Netherlands


JC Goeree

Lock exchange experiments with particle-driven gravity currents
Stovers MPJ and Goeree JC – Delft University of Technology/IHCMTI/Royal IHC, the Netherlands; Van Rhee C – Delft University of Technology, the Netherlands

15:15 – 15:45 **Coffee and tea served in the exhibition area**

15:45 – 17:15

Session 4 – Developments in instrumentation


H Röper

Chair: Henrich Röper – Hamburg Port Authority, Germany


KS Zych

Non-radioactive slurry density measurement for inland dredgers
Zych KS and Osnabrugge J – IHC Systems, the Netherlands


A van der Spek

Velocity profiling in hydrotransport
Van der Spek A – ZDoor, the Netherlands; Fernald M and Bailey T – CiDRA Minerals Processing, United States of America


HG Stuifbergen

Innovative spill measurement for wirecrane and excavator dredging
Stuifbergen HG – Teledyne Marine, the Netherlands


W Hazineh

Deployment and field evaluation of a non-nuclear densitometer, based on electrical resistance tomography
Hazineh W, McCormack D, Primrose K, Qiu C, and Wei K – Industrial Tomography Systems, United Kingdom

17:15 – 17:30

Presentation of the CEDA-IADC book *Dredging for sustainable infrastructure*


P Laboyrie

Polite Laboyrie, chairman of the Editorial Advisory Board – Witteveen+Bos, the Netherlands

17:30 – 18:00

CEDA Annual General Meeting

18:00 – 19:00

CEDA Netherlands reception

Sponsored by:

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The reception takes place in the exhibition area

Conference programme

Day 2, Friday 10 November

09:00 – 10:30

Session 5 – Interactive session: Contractual problems, and how to avoid them occuring


M Van der Vijver

Mediator: Mike Van der Vijver – MindMeeting, the Netherlands

The interactive session uses an engaging theoretical case study incorporating issues and problems that are commonly experienced in dredging and offshore projects.

Expert panel:


K De Wit


A van Hassent


C Wilsoncroft


J Van Acker

Designed to be accessible and beneficial to all parties to a contract (owner, contractor, subcontractor/supplier and engineer/designer) the session will draw together the combined experience of both the expert panel and the attendees, all of whom will bring their unique insight, problems, and solutions to some of the most pressing, relevant, and commercially important aspects of the delivery of a dredging project currently being faced on real schemes.

The session is organised by CEDA's new Dredging Management Commission.

Expert panel:

- Kathleen De Wit, principal engineer, IMDC, Belgium
- André van Hassent, asset manager ports and fairways, Port of Rotterdam, the Netherlands
- Charles Wilsoncroft, director, HKA, United Kingdom
- Johny Van Acker, department manager masterdesk tender department, Dredging International, Belgium

See page 12 for more details.

10:30 – 11:00 **Coffee and tea served in the exhibition area**

The CEDA Dredging Days 2017 Technical Papers and Programme Committee reserves the right to adjust or change the programme if necessary.

11:00 – 12:30

Session 6 – Sustainable working methods and equipment


D Roukema

Chair: Dirk Roukema – Blue Pelican Associates, the Netherlands


K Slager

A novel approach to determine dredge pump NPSHr in field conditions
Slager K – Damen Dredging Equipment, the Netherlands


EA van Duursen

New approach of a double-walled pump house
Van Duursen EA and Winkelman MO – Damen Dredging Equipment, the Netherlands; Tijssen M – Damen Shipyards Gorinchem, the Netherlands


J Kirkpatrick

Dredging the Hugli estuary: creative solutions through client, consultant, and contractor engagement
Kirkpatrick J and Barber D – HR Wallingford, United Kingdom; Chaudhuri B – Kolkata Port Trust, India


B van Spaendonk

Using CFD to develop new drag heads
Van Spaendonk BAW, Kuypers RHA, Bijvoet ECJ, and Van der Blom EC – Royal IHC, the Netherlands

12:30 – 13:30 **Lunch, sponsored by Royal IHC, served in the exhibition area**

13:30 – 14:30

Session 7 – Young CEDA pitch talks


R Hoekstra

Chair: Roderik Hoekstra – Deltares, the Netherlands

Conference programme


A Frens

Terra Plana
Frens A – Royal Boskalis Westminster, the Netherlands


C Kapela

Dredging contaminated mud in an environmentally sensitive area
Kapela C – Egis Ports, France


D van Kester

Creating societal value in Costa Rica
Van Kester D – Van Oord, the Netherlands


Y van Leeuwen

Innovative river model
Van Leeuwen Y – DEME Group, Belgium


M de Lucas Pardo

Improving the environmental management of mining at sea: laboratory study of the physics of cohesive sediment
De Lucas Pardo M – Deltares, the Netherlands


S Saremi

Multiscale modeling of overflow plumes
Saremi S – DHI Group, Denmark


B Sloof

Re-engineered model to optimize the settling of material in the hopper
Sloof B – Damen Dredging Equipment, the Netherlands

14:30 – 15:00 **Coffee and tea served in the exhibition area**

15:00 – 16:30

Session 8 – Innovative solutions


N Borgers

Chair: Niels Borgers – Smals Dredging, the Netherlands


L Sittoni

Beneficial use of sediments in the context of sustainable development: today and tomorrow
Luca Sittoni, Chair CEDA Working Group on Beneficial Use of Sediments – Ecoshape/Deltares, the Netherlands


H Quaeyhaegens

Renovation of a controlled flood area in the Scheldt estuary using dredged material from the Durme River
Quaeyhaegens H – Waterwegen en Zeekanaal, Belgium; Ratinckx P and Van Rompaey M – IMDC, Belgium; Boone C – Engie TRACTEBEL, Belgium


J Putteman

Dredging and operations of a heavy-duty deepsea quay wall for offshore wind energy
Broos EJ and Bosschieter CG – Port of Rotterdam Authority, the Netherlands; Putteman J – MariTeam/SBE Engineering Consultants, Belgium; Tuunter LTC – MariTeam/Iv-Infra Engineering Consultants, the Netherlands


EMM van Eekelen

The living lab for mud: integrated sediment management based on Building with Nature concepts
Van Eekelen EMM – Ecoshape/Van Oord Dredging and Marine Contractors, the Netherlands; Sittoni L – EcoShape/Deltares, the Netherlands; Van der Goot F – EcoShape/Royal Boskalis Westminster, the Netherlands; Nieboer HE – EcoShape/Witteveen+Bos, the Netherlands; Baptist MJ – Wageningen Marine Research, the Netherlands; Boer J – Arcadis Nederland, the Netherlands; Tonneijck FH – Wetlands International, the Netherlands

16:30 – 16:35

Presentation of the IADC Young Authors' Award


R Kolman

René Kolman, Secretary General IADC – International Association of Dredging Companies, the Netherlands

16:35 – 16:45

Conference chair's closing remarks


C van Rhee

Prof Dr Cees van Rhee, chairman, Technical Papers and Programme Committee – Delft University of Technology, the Netherlands

16:45 – 17:30 **Farewell drinks**

Interactive session

Contractual problems, and how to avoid them occurring

Following the well received and highly successful interactive session at the 2015 Dredging Days, CEDA will be hosting a new session at this year's Dredging Days event. The industry faces ever increasing risks and constraints including in respect of contracting, risk allocation, tightening margins, and general contract and commercial management.

These factors, among others, often result in an increase in commercial risk and uncertainty for contracting parties, frequently manifesting as unforeseen expenditure on one or each side of a contracting relationship. The focus for this year's event is therefore related to contractual problems and, critically, how to avoid them.

For the case study we return to the city of Loof. We are in the closing stages of a large capital works programme to deepen the River Tariwa, the harbour entrance to Distan Port. This programme is carried out in combination with complex dredging works in and around the area of the construction of a new terminal. The employer is the Distan Port Authority. It has engaged a local civil engineering design company, Distan Inshore Offshore Consultants, to act as its agent and to develop the initial design.

Although Distan Inshore Offshore Consultants is very experienced and well respected in the field of on-shore works, it has a poor track record when it comes to marine works.

The Distan Port Authority internal team has little experience in project or contract management and consists mainly of operational staff and political appointees. The contractor is Dredging Done, which has a significant amount of experience in delivering complex marine engineering schemes.

The parties to the contract are in bitter dispute, with each complaining of the other. Dredging Done considers it is entitled to a significant extension of time and additional costs, whereas the Distan Port Authority has large counterclaims and has levied liquidated damages for delay. All is not well.

The interactive session will draw on the thoughts and experience of the participant teams and a panel of industry experts. The teams of participants will debate and evaluate the causes and cures of such problems. These evaluation fora will be carried out, discussed with, and reflected on by the expert panel which, along with the participants, will explore and identify aspects of contracting best practice and procedure.

Designed to be accessible and beneficial to all parties to a contract (owner, contractor, subcontractor/supplier, and engineer/designer) the session will draw together the combined experience of the expert panel and the attendees, each bringing their unique insight, problems and solutions to some of the most pressing, relevant, and commercially important aspects of the delivery of a dredging project currently being faced on real schemes.

At the interactive session at CEDA Dredging Days 2015

DPC INNOVATION AWARDS 2017

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29th November 2017

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Central Dredging Association

About the papers

Session 1: Opening and keynote speeches

Keynote address: Dredging the Industry's Mindset

Frank Verhoeven, President IADC – International Association of Dredging Companies, the Netherlands

- Technical developments have advanced and broadened the scope of the dredging industry's activities
- Dredgers with the capability of deeper dredging and increased accuracy through automation generates new markets
- Industry propels forward by emphasising safety and applying an in-depth knowledge of the environment
- Key drivers which chart the industry's growth will be demonstrated by their leading developments
- The industry's drivers include world trade, demographics and urbanisation, coastal protection, energy, tourism and environment

The dredging industry benefits by increasing safety in each step involved in the realisation of marine infrastructure projects. IADC's Safety Award 2017 was given to Jan De Nul for a solution that optimised the process of transporting pipelines

Featured presentation: CEDA's checklist for successful dredging management

Kathleen De Wit, on behalf of CEDA Dredging Management Commission (DMC) – IMDC, Belgium

- First product of CEDA's Dredging Management Commission (DMC)
- A generic but comprehensive checklist, to identify and avoid problems in an early project stage
- Shows how the same issues are sometimes experienced differently by different parties
- Improving mutual understanding and thus leading to solutions all stakeholders benefit from

Forewarned is forearmed

The papers will be available from February 2018 from www.dredging.org (Resources > CEDA publications online > Conference proceedings).

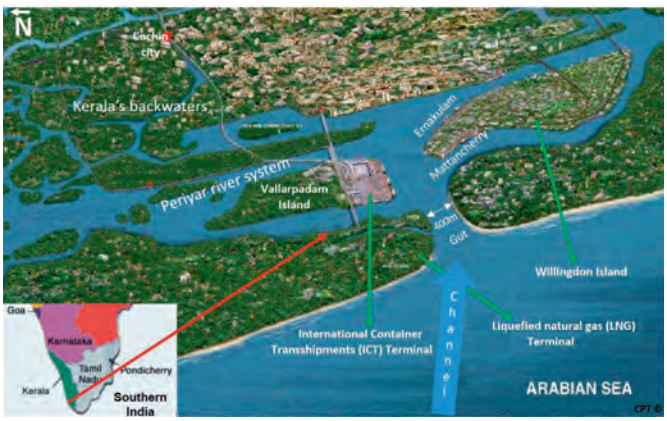
About the papers

Session 2: Environment and monitoring

Assessment of siltation processes and implementation of nautical depth in the port of Cochin, India

Ferket B, Heredia Gomez M, Rocabado I, De Sutter R, and Manso F – Antea Group, Belgium; Van Hoestenberghe T – Fluves, Belgium; Kwee J and Werner C – Stema Systems, the Netherlands; Verwilligen J and Vos S – Flanders Hydraulics Research, Belgium; Nair P, Lamba P, Sharma S, and Marthi S – IIC Technologies, India; Vantorre M – Ghent University, Belgium

- 20 million m^3 problem
- Largest siltation in Indian ports, seasonally driven
- Harbour dredging maintenance optimisation by means of comprehensive hydrogeomorphology studies
- First: understanding of siltation processes by 2D numerical modelling (TELEMAC)
- Second: definition of nautical depth by assessing (physically and numerically) vessels' manoeuvrability



Cochin Harbour overview

A method for monitoring and control of spill during dredging operations

Lumborg U and Saremi S – DHI, Denmark; Lauridsen P – Rohde Nielsen, Denmark

- Scalable system to cost-effectively document spill from dredging operations
- Accurate vessel-based monitoring of sediment leaving the work area
- Calibration of numerical sediment transport model based on the survey results
- Daily spill reports issued based on simple input from contractor and online measurement station
- Example of the system applied to a dredging project in Denmark

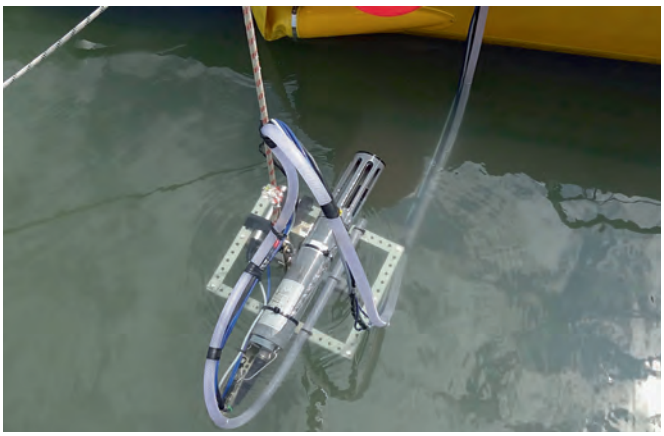
Spill from dredging operations was accurately monitored using vessel based survey. Data was fed into a numerical modelling complex to provide spill documentation.

About the papers

Potential sources and magnitude of errors associated with the measurement of suspended sediment concentration

Crossouard NA, Taylor JA, and Lee MW – HR Wallingford, United Kingdom

- An evaluation of potential errors associated with the measurement of suspended sediment concentrations (SSC)
- Considers the use of water sampling and optical sensors, both widely used for measuring SSC
- Accurate measurement of SSC is of considerable importance to monitoring study design and implementation
- The accuracy (or potential lack of accuracy) of the two techniques is rarely considered



Example profiling rig, comprising optical sensors and pump water sampler intake, used to measure suspended sediment concentration

Integrated approach to monitor water dynamics with drones

Raymaekers D, De Keukelaere L, Knaeps E, Strackx G, and Verstappen T – VITO, Belgium; De Crop B and Bollen M – IMDC, Belgium

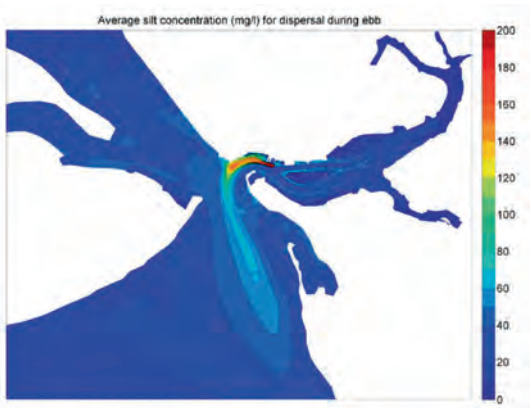
- Use of drones to map water quality in natural waters
- Retrieval of sediment concentration: drones vs traditional sampling techniques
- Visualisation of drone images and products in a user-friendly platform and integration with existing sources of information.

Drone measurement campaign on the River Scheldt (June 2016)

Modelling and monitoring of dredged sediment dispersal Brightlingsea UK

Coulet W and Manning W – Exo Environmental, United Kingdom; Rotsaert M and De Wit L – Svasek Hydraulics, the Netherlands

- Dispersal dredging within a heavily designated tidal environment made possible with adaptive management
- Baseline data collection of local environmental parameters
- Predictive numerical hydrodynamic model FINEL modelling reduces uncertainty
- Sensitive receptors protected by monitoring and the verification of the hydrodynamic model
- Experiences and knowledge utilised for the future maintenance of the marina and harbour



FINEL model output Brightlingsea sediment dispersal

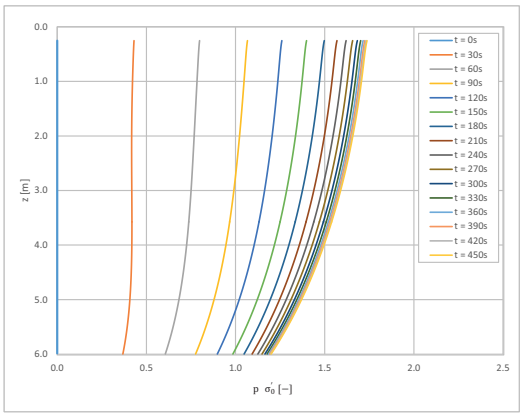
About the papers

Session 3: Academic session

Pipeline floatation due to wave-induced liquefaction of trench backfill material

Baelus L, Szengel V, Breugem A, Tavallali A, and De Wit K – IMDC, Belgium

- Design of trench backfill material to avoid pipeline floatation after installation (during project lifetime)
- Wave-induced liquefaction study of the backfill material
- Local wave conditions, material disposing method and pipeline trench configuration are taken into account.
- Requirements on physical and mechanical properties of the backfill material are identified



Build-up of excess pore pressure over initial effective stress p^{-}/σ' resulting in backfill liquefaction

Central Dredging Association

About the papers

1DH modelling of transport and sedimentation inside a hopper of a trailing suction dredger

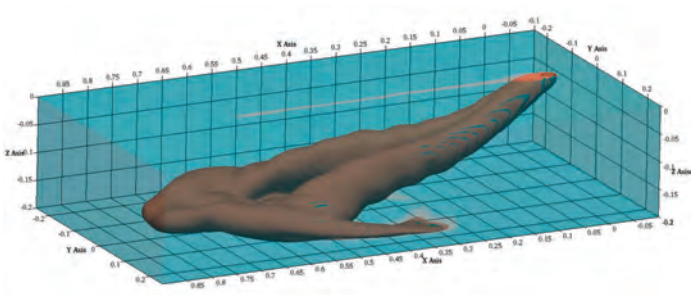
Boone J and De Nijs MAJ – Van Oord Dredging and Marine Contractors, the Netherlands

- Numerical simulation model of the hopper sedimentation process
- One-dimensional cross-section averaged mathematical framework, which includes the effects of density currents
- Validated for the overflow losses on laboratory and prototype scale
- Good predictions of overflow losses on laboratory scale as well as on prototype scale
- Practical model, which requires low computational time with potential for future application

Simulating turbidity plumes with OpenFOAM

Van Grunsven F, Keetels GH, and Van Rhee C – Delft University of Technology, the Netherlands

- TREASURE – Towards responsible extraction of submarine mineral resources
- Modelling turbidity sources for future seabed mining environmental impact assessments
- Testing open-source CFD tool OpenFOAM with a large eddy model and Driftflux model
- Comparison of laboratory turbidity plumes with 3D simulations



Simulated turbidity plume in crossflow after experiments of Boot (2000)

Lock exchange experiments with particle-driven gravity currents

Stovers MPJ and Goeree JC – Delft University of Technology/IHCMTI/Royal IHC, the Netherlands; Van Rhee C – Delft University of Technology, the Netherlands

- Lock exchange experiments have been conducted of sand water mixtures. This has been done using a rectangular tank.
- In the tests the initial height, initial volume concentrations and particle sizes have been varied.
- Run out lengths and distribution of particles along the bottom wall of the tank were determined
- At volume concentrations (of solids) lower than 20%, smaller particle sizes are propagated further, along the bottom wall from the initial lock exchange.
- At volume concentrations (of solids) higher than 20%, there the particle sizes are distributed evenly along the bottom wall of the rectangular tank.

About the papers

Session 4: Developments in instrumentation

Non-radioactive slurry density measurement for inland dredgers

Zych KS and Osnabrugge J – IHC Systems, the Netherlands

- Non-radioactive slurry density meter, based on radio waves, is developed for inland dredging market
- The new meter offers the same performance as the conventional radioactive density meter for inland waters
- No more severe administrative and legal obligations associated with radioactive meters

The non-radioactive density meter installed in a pump room of a dredger (radioactive source only used as reference)

Velocity profiling in hydrotransport

Van der Spek A – ZDoor, the Netherlands; Fernald M and Bailey T – CiDRA Minerals Processing, United States of America

- Algorithm for calculation of rate of flow from a five sensor velocity profiler was developed
- Algorithm produces flow rate values to within a few percent of available reference flow rate
- Field experience of five sensor array velocity profiler in big bore hydro-transport line is presented
- Applications in dredging include dredging mixture velocity measurement on both hopper and cutter dredgers
- Operating on a hydro-transport line will lead to quantifiable efficiency increases and save fuel

SONARtrac® Flow Velocity and Entrained Gas Measurement System

Innovative spill measurement for wirecrane and excavator dredging

Stuifbergen HG – Teledyne Marine, the Netherlands

- Monitoring spill during dredging with wirecrane and excavator
- Measure area after each dredge cycle using small multibeam
- System is part of dredge monitoring system
- Monitor placement of objects realtime as part of dredge monitoring system

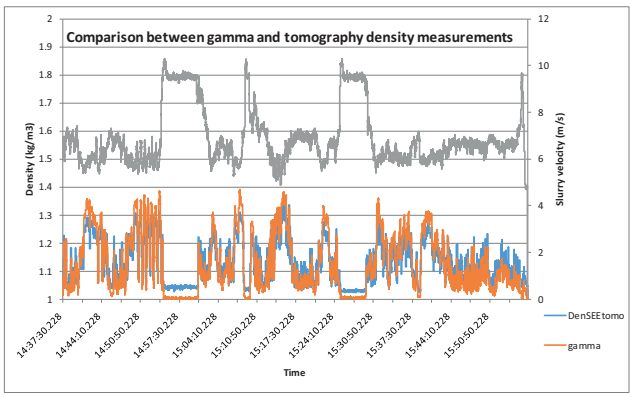
About the papers

Deployment and field evaluation of a non-nuclear densitometer, based on electrical resistance tomography

Hazineh W, McCormack D, Primrose K, Qiu C, and Wei K – Industrial Tomography Systems, United Kingdom

Deployment of non-nuclear density meter in different field settings:

- Measuring density on a trailing suction hopper dredging (TSHD) in a European river
- Measuring density on a TSHD in the Atlantic Ocean
- Measuring density on a cutter suction dredger in the Far East
- Measuring density on land-based booster station



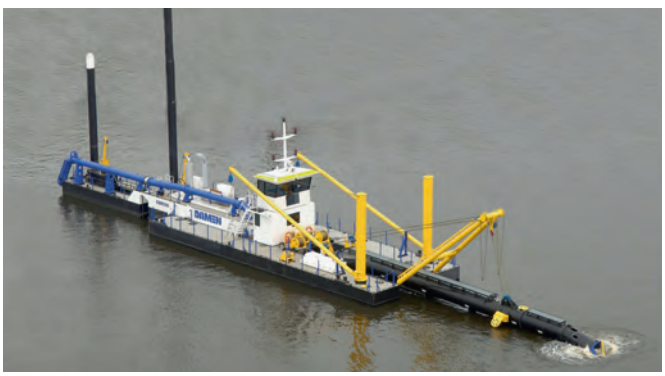
Comparison of tomography and radioactive density measurement in dredging cycles

Session 6: Sustainable working methods and equipment

A novel approach to determine dredge pump NPSHr in field conditions

Slager K – Damen Dredging Equipment, the Netherlands

- Measuring NPSHr of a dredge pump in field conditions can be a complex task
- A new measurement method, the rev-up cavitation measurement method, is proposed
- The rev-up method can be executed in a quick and easy way in field conditions
- A detailed description of the algorithm with example data is given
- Condition-based maintenance based on the rev-up method is feasible

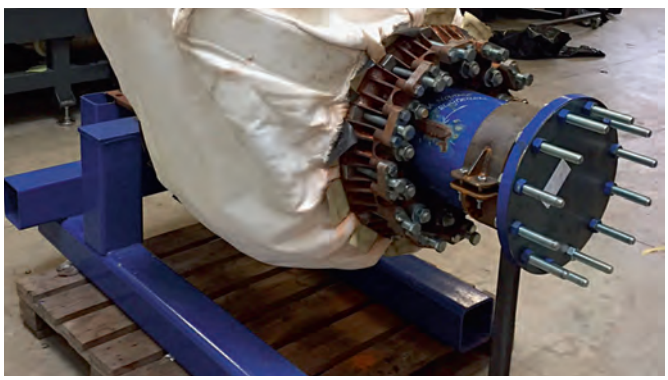


How to measure the NPSHr of this dredger in a quick and easy way?

New approach of a double-walled pump house

Van Duursen EA and Winkelman MO – Damen Dredging Equipment, the Netherlands; Tijssen M – Damen Shipyards Gorinchem, the Netherlands

- The development of a flexible double-walled pump house
- Lightweight, easy to handle
- Suitable for any existing dredge pump



Flexible double walled pump house

About the papers

Dredging the Hugli estuary: creative solutions through client, consultant, and contractor engagement

Kirkpatrick J and Barber D – HR Wallingford, United Kingdom; Chaudhuri B – Kolkata Port Trust, India

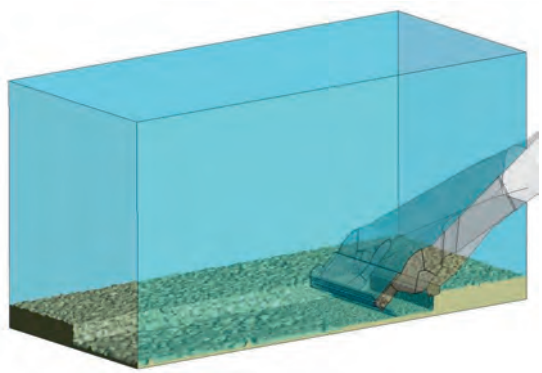
- Maintaining navigable depths around the mobile sands of the Hugli Estuary
- Input from multiple consultants, contractors, and government organisations on nationally important project
- Novel dredging techniques were trialled to meet infill requirements

Novel techniques for maintenance dredging

Using CFD to develop new drag heads

Van Spaendonk BAW, Kuypers RHA, Bijvoet ECJ, and Van der Blom EC – Royal IHC, the Netherlands

- Verification of CFD modelling of jetting erosion and pipe flow processes
- Using CFD to simulate soil-water behaviour in a draghead
- Optimise draghead design using CFD
- Dredging clay with newly developed Mighty Dragon draghead



IHC developed CFD model for draghead simulation

Session 8: Innovative solutions

Beneficial use of sediments in the context of sustainable development: today and tomorrow

Luca Sittoni, Chair CEDA Working Group on Beneficial Use of Sediments – Ecoshape/Deltares, the Netherlands

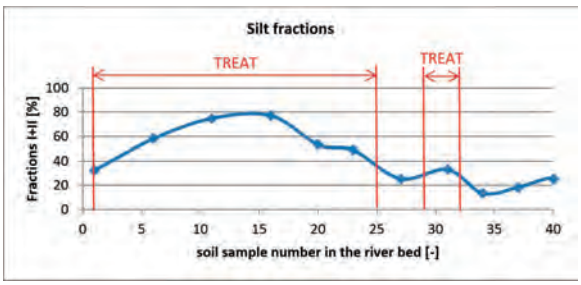
- Sediments can be perceived as (hazardous) waste, which often hampers use
- Sediment is a valuable resource for sustainable development, including climate adaptation
- Beneficial use of (contaminated) sediments should be based on the ability to create socioeconomic values, manage risk, and encourage natural functions
- Beneficial use should be prioritised, in line with the holistic functioning of the natural and manmade system
- Practical applications of beneficial use have been successfully applied – some of these will be presented
- We invite the community to reach out and contribute with additional applications

About the papers

Renovation of a controlled flood area in the Scheldt estuary using dredged material from the Durme River

Ratinckx P and Van Rompaey M – IMDC, Belgium; Boone C – Engie TRACTEBEL, Belgium; Quaeyhaegens H – Waterwegen en Zeekanaal, Belgium

- Specific dredging techniques in a non-navigable river
- Treatment of contaminated sediments for reuse in dyke bodies
- Ring dyke and overflow dyke construction
- Renovation and coupling of pumping stations



Fraction of fines in the Durme dredging material

Dredging and operations of a heavy-duty deepsea quay wall for offshore wind energy

Broos EJ and Bosschieter CG – Port of Rotterdam Authority, the Netherlands; Putteman J – MariTeam/SBE Engineering Consultants, Belgium; Tuunter LTC – MariTeam/Iv-Infra Engineering Consultants, the Netherlands

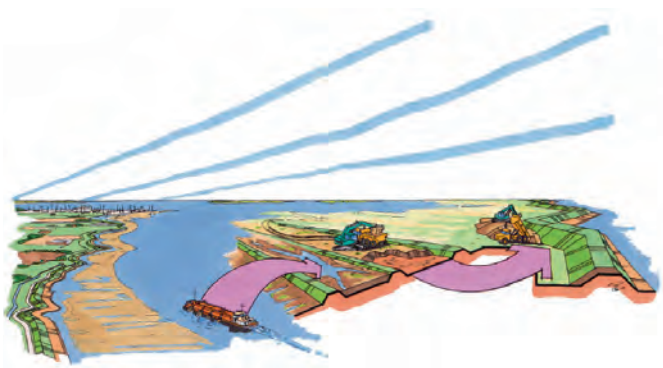
- Deepsea quay wall specifically designed for loading of jackup vessels
- Impact of spudcan on subsoil versus quay wall stability
- Clay dredged and replaced by vibro-compacted sand in order to limit spudcan penetration
- Quality control of vibro compaction
- Design and execution of related dredging works

Loading of the Innovation jackup vessel (rear) and TSHD *Artevelde* dredging in front of the new deepsea quay wall (front)

The living lab for mud: integrated sediment management based on Building with Nature concepts

Van Eekelen EMM – Ecoshape/Van Oord Dredging and Marine Contractors, the Netherlands; Sittoni L – EcoShape/Deltares, the Netherlands; Van der Goot F – EcoShape/Royal Boskalis Westminster, the Netherlands; Nieboer HE – EcoShape/ Witteveen+Bos, the Netherlands; Baptist MJ – Wageningen Marine Research, the Netherlands; Boer J – Arcadis Nederland, the Netherlands; Tonneijck FH – Wetlands International, the Netherlands

- Worldwide issues related to sediment scarcity and abundances, and need for construction material in deltas
- Coupling these challenges and Building with Nature within the Living Lab for Mud provide sustainable solutions
- Need for further knowledge development in the Living Lab for Mud
- Several pilot projects already foreseen/implemented
- Further international co-operation and co-knowledge sharing in LLM very much welcomed
- Design and execution of related dredging works



Artist's impression of Pilot Kleirijperij, one of the projected pilot projects in the Living Lab for Mud

Break-ice-fast

Sharpen up your networking skills at CEDA Dredging Days

The chances are that you've probably been to many events in your professional career but how much have you made of the great opportunities to network with your peers? The Break-ice-fast session at CEDA Dredging Days 2017 will change that.

This is a new addition to the Dredging Days programme to help you make the most of your two days at the conference. When you register for the conference, sign up also for the Break-ice-fast event, on 9 November from 07:45 – 09:00, and take part in a light-hearted facilitated breakfast session.

An experienced facilitator will take participants through a series of quick-fire ice-breaker exercises, specifically designed to sharpen up networking skills and bring the fun back into making new and lasting contacts.

By the end of the Break-ice-fast, you can expect to leave with a renewed zest for networking and skills that can be used throughout your professional career. Also, with the launch of the new CEDA Event App, making new contacts and finding old friends at Dredging Days 2017 will be even easier.

By the end of the **Break-ice-fast**, you will leave with improved skills and a renewed zest for networking

Young CEDA programme

Student programme

The student programme is a highly successful initiative that enables promising students to attend Dredging Days. Under this programme CEDA offers a considerable number of free registrations to graduate and postgraduate students. They are granted to students who have shown great affinity with dredging technology within their studies.

The free registrations have been organised and co-ordinated by Young CEDA, and 15 European universities and institutions of higher professional education have been offered up to three each.

Participating students will be "looked after" by members of the Young CEDA Commission who will make sure that they find their way both at the conference and in Rotterdam including meeting other students, young professionals and more senior members of the dredging community.

Young CEDA social event

As always, the social events will be an important part of the Young CEDA programme during Dredging Days 2017. They help to ensure that students and young professionals attending the conference have plenty of opportunities to meet their peers and spend some relaxed time with each other. A networking event for students and young professionals is scheduled for Wednesday 8 November from 20:00 onwards, as an icebreaker for the conference. Exact location in Rotterdam to be announced.

Young CEDA pitch talks session

Young CEDA will be hosting a pitch talks session: a dynamic series of seven short and sharp presentations on the overall theme of the conference. The pitch talks aim to provide students and young professionals a platform to present their ongoing work, expose their ideas to a broad expert audience and get immediate feedback and inspiration.

Where to meet Young CEDA?

- At the Icebreaker
- In the Young CEDA corner
- During the Young CEDA pitch talks session

Make sure you don't miss the traditional CEDA Netherlands reception on Thursday evening either, where there will be plenty opportunity to meet dredging enthusiasts from all segments of the dredging field from whom there is a lot to learn and who are fun to talk to.

Students at CEDA Dredging Days 2015

Technical visit

Wednesday 8 November 2017
12:00 – 17:00

Princess Beatrix lock expansion project

The Princess Beatrix Lock is part of the Lek Canal, which connects the Amsterdam Rhine Canal to the Lek River. It is an important waterway between the ports of Rotterdam and Amsterdam and is used by an increasing number of large vessels. To reduce the threat of it becoming a bottleneck, Rijkswaterstaat has commissioned a much-needed expansion of the lock and canal, including creating a third chamber. The project will improve passage for the vessels that pass through the canal and reduce waiting times at the lock. To create space for the third chamber, the Lek Canal will be widened.

The Lek dyke to the south of the lock complex is a primary flood defence and protects a large hinterland against high water. The new Lek dyke and the third chamber will be part of the primary flood defence and will be designed to hold back high water levels of more than 7.80 m NAP. Other measures to protect the natural and built environment around the project include the relocation of flora and fauna, such as moor frogs and big loaches, to suitable areas. Cables and pipelines have also been moved to ensure uninterrupted utility services to the local communities.

The project construction is scheduled for completion in 2019, after which time the 27-year maintenance programme will begin.

In November, the following activities will be ongoing and participants are likely to see:

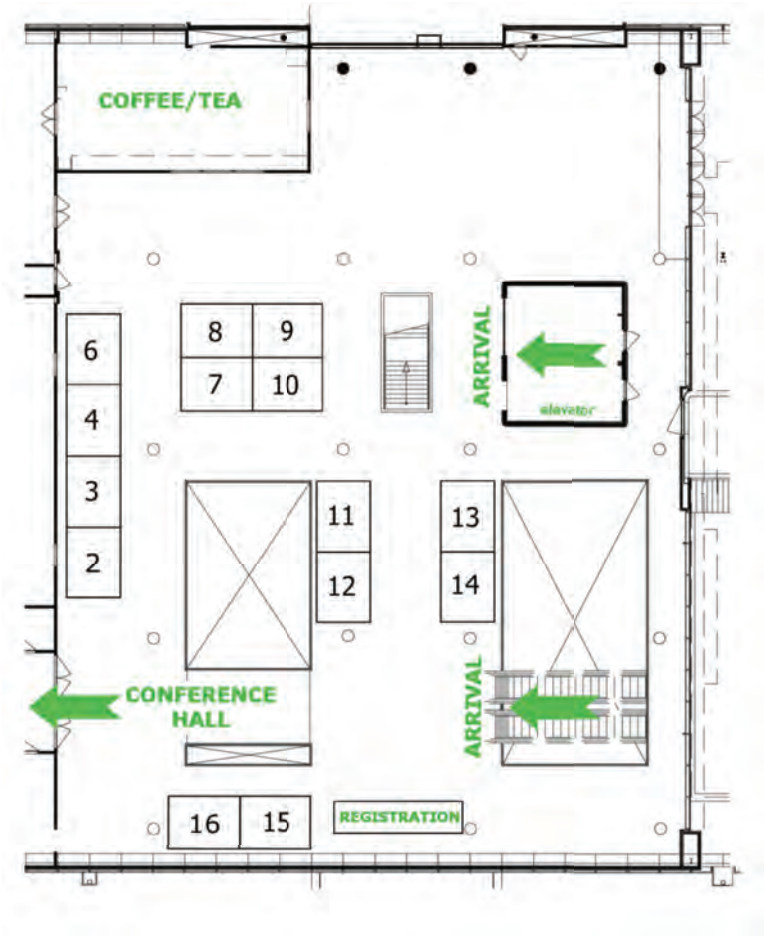
- The excavation works to widen the canal on north and south side;
- Placing of geotextile and rocks on the excavated slopes of the canal;
- Construction of the outer and inner lock head, particularly placing of reinforcement formwork and concreting works;
- Construction of the lock chamber between the two lock heads, especially excavation works, placing of reinforcement formwork, and concreting;
- Completion works for the canal sheetpile wall with fender construction;
- The finishing works on the new bridge over the canal;
- The moved objects – culverts, small lock, and defence line bunkers;
- The working of the two existing locks.

You must register for the tour in advance (please refer to the registration form). There is an extra charge for participation: EUR50 (excluding VAT). Please note: the number of places is limited to a maximum of 50 and will be allocated on a first-come first-served basis. The coach will depart from Rotterdam at 12:00 and will return at approximately 17:00. Please check the conference website for up-to-date information. Participants registering for the visit will receive detailed joining instructions from the conference secretariat.

The visit is hosted by Jan De Nul Group, part of Sas van Vreeswijk, the project consortium responsible for managing the design, financing and maintenance programme of the lock.

Princess Beatrix lock expansion construction site

Technical exhibition



Exhibition booths in numerical order:

2 Geometius
3 Alia Instruments
4 Royal IHC
6 CC JENSEN
7 EIVA
8 DHI
9 LIEBHERR
10 Aqua Vision
11 Information desk
12 HollandMT
13 Central Dredging Association
14 Teledyne Marine
15 Damen Shipyards
16 Geomil Equipment

Alia Instruments

Booth 3

Address: Institutenweg 25a
7521 PH Enschede
The Netherlands
Tel: +31 (0)85 - 773 1436
Website: www.aliainstruments.com
Email: j.peters@aliainstruments.com
Contact person: Mr Jan Peters, managing director

Production monitoring for dredgers will increase the productivity of the dredger and raise the profit for the dredging company. For production monitoring the density of the dredged material must be measured. Alia Instruments develops and produces the Alia Density Meter (ADM). Until now for the density measurement a radioactive sensor was the only practical solution. Now an alternative called the Alia Density Meter is available based on an electromechanical principle. This creates an opportunity for new and existing dredgers to be equipped with production monitoring, automatic operation to increase profitability.

Aqua Vision

Booth 10

Address: Servaasbolwerk 11
3512 NK Utrecht
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Tel: +31 (0)30 245 9872
Fax: +31 (0)30 245 9499
Website: www.aquavision.nl
Email: csadmin@aquavision.nl
Contact person: Mr Peter Meyer, director

Aqua Vision BV is an independent Hydro- en Oceanographic Consultancy with clients including government agencies, dredging & offshore industry and engineering companies worldwide. We offer a comprehensive range of services including inland and coastal surveying, hardware and software development, representation of leading industry manufacturers and leasing from our extensive instrument pool. ViSea, our in-house developed software, is used worldwide for ADCP data collection, validation and presentation. Interested in our activities? Take at further look at www.aquavision.nl.

CC JENSEN

Booth 6

Address: Marconistraat 7
2809 PH Gouda
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Tel: +31 (0)182 379 029
Fax: +31 (0)182 379 031
Website: www.ccjensen.nl
Email: mvb.nl@cjc.dk
Contact person: Mr Marco van Boven, sales manager

The value of uptime – always clean & dry oil and fuel
C.C.JENSEN has over six decades of experience in standard and customized offline oil filtration and inline fuel filtration / separation in marine and offshore applications. Our filtration solutions are supported with a condition monitoring package to obtain continuously information about the quality of the oil and the health of the system.

CJC™ Oil Filters constantly remove particles, water, soot, acids and oil degradation products from oil and fuel, hence reducing wear on components und improving up-time. Oil life time extension is typically a factor 3 to 6.

Central Dredging Association

Booth 13

Address: CEDA Secretariat, Radex Building
Rotterdamseweg 183c, 2629 HD Delft
The Netherlands
Tel: +31 (0)15 268 2575
Fax: +31 (0)15 268 2576
Website: www.dredging.org
Email: ceda@dredging.org
Contact person: Ms Anna Csiti, general manager

CEDA is an established authority and the leading independent forum for the professional dredging community and associated industries in Europe, Africa and the Middle-East. It represents dredging professionals and organisations from government, academia and business in the region and fosters and promotes the understanding and advancement of dredging to the wider community. Drawing on the collective knowledge of its members, and as an impartial body, CEDA regularly gives expert advice to government and international regulatory bodies. CEDA members are representatives of consultancies, research and educational institutions, port authorities, government agencies, dredging contractors, designers and builders of dredging vessels, suppliers of ancillary equipment and organisations providing a whole range of related services.

CEDA is part of the World Organisation of Dredging Associations (WODA). CEDA's two sister associations, WEDA (Western Dredging Association) and EADA (Eastern Dredging Association), serve the Americas and Asia, Australia and the Pacific region respectively.

Damen Shipyards

Booth 15

Address: Avelingen West 20
4202 MS Gorinchem
The Netherlands
Tel: +31 (0)183 639 911
Website: www.damen.com
Email: shanna.van.berchum@damen.com
Contact person: Ms Shanna van Berchum, event manager

Damen Shipyards Group operates more than 33 shipyards and related companies worldwide. Constant quality and short delivery times, due to standardized designs, modular construction and keeping vessels in stock, are Damen hallmarks. Well-proven technology, reliable performance and continuous scientific research enable Damen to offer customers innovative vessels with great Total Cost of Ownership.

Damen's portfolio encompasses tugs, workboats, high-speed craft, offshore support vessels, specialized offshore (wind) construction vessels, dredgers, cargo vessels, fast ferries and a wide range of naval & patrol vessels from 7 m to 200 m. In addition, Damen offers the full range of support and service activities, incl. maintenance, training, customer finance and building vessels locally.

DHI

Booth 8

Address: Agern Allé 5
2970 Hørsholm
Denmark
Tel: +45 4516 9200
Website: www.dhigroup.com
Email: anj@dhigroup.com
Contact person: Mr Anders Jensen, group manager

DHI is an independent research and consultancy organisation that builds competence and promotes technological advancement in areas relevant to water, environment and health.

DHI offers a broad range of consultancy services and reference material as well as software and hardware products and tools. Competencies include numerical modelling, environmental laboratories and scale model test facilities, field surveys and monitoring programmes. and institutional capacity building and training.

DHI's objective is to help solve the world's toughest challenges in water environments by using global knowledge of water to provide local solutions through a worldwide network of offices and internationally recognised software products.

More detailed information about our governance, financial status, services and products can be found on our web site www.dhigroup.com.

EIVA

Booth 7

Address: Niels Bohrs Vej 17
8660 Skanderborg
Denmark
Tel: +45 862 82 011
Fax: +45 862 82 111
Website: www.eiva.com
Email: aja@eiva.com
Contact person: Ms Anne Juul Andreasen, marketing manager

For more than 35 years, EIVA has provided equipment and software to the maritime construction and survey industry to a wide range of segments, covering virtually any subsea task – for purchase and rent. We know and understand the challenges that our customers face, and we work closely together with them to choose and implement the solution that will offer the most value to their operations, with all that implies – including software training and 24/7 support.

Geometius

Booth 2

Address: Operetteweg 4a
1323 VA Almere
The Netherlands
Tel: +31 (0)88 436 6300
Website: www.geometius.nl
Email: m.windhausen@geometius.nl
Contact person: Ms Marieke Windhausen, marketing

Geometius is a specialist in supplying equipment and systems for hydrographic and oceanographic applications, location/positioning, land survey and geographical applications.

Primarily known for our Trimble distributorship we also offer complete hydrographic solutions like the Teledyne Oceanscience remote operated boat (Z-Boat) as well as dedicated oceanographic sensors and software.

Geometius offers a total solution to customers in the Survey, GIS & Mapping, Hydrographic and dredging markets. Apart from the hardware and software you can also contact us for various additional services as maintenance, repair, rental equipment and technical support.

Geomil Equipment

Booth 16

Address: Westbaan 240
2841 MC Moordrecht
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Tel: +31 (0)172 427 800
Fax: +31 (0)172 427 801
Website: www.geomil.com
Email: sales@geomil.com
Contact person: Ms Joyce Schot, account manager sales

Geomil is the world's first manufacturer of Cone Penetration Testing (CPT) equipment. Geomil manufactures and supplies a wide range of state-of-the-art machines and geotechnical products. The equipment varies from cones to complete data acquisition systems and from stand alone penetrometers to heavy duty CPT units for onshore and offshore. Today you can find reliable Geomil systems in every corner of the world. Geomil has a global network of agents and facilities to provide the best products and services. The enthusiastic and skilled team of professionals aim for the highest standards of quality. Geomil Equipment B.V. is ISO 9001:2015 certified by Lloyds Register Quality Assurance.

HollandMT

Booth 12

Address: Pompmolenlaan 13
3447 GK Woerden
The Netherlands
Tel: +31 348 416 075
Fax: +31 348 410 019
Website: www.HollandMT.com
Email: info@HollandMT.com
Contact person: Mr Jan Willem de Wit, managing director

HollandMT is a leading engineering & contracting company providing dredger equipment packages, dredge parts and innovative designs to dredging contractors and shipyards (dredge builders).

HollandMT's effective project approach is based on providing value added services by making use of first class 3D engineering skills, special-product partners, cost effective manufacturing and outsourcing, and dedicated project management & support services.

Over the past years HollandMT has developed a strong track record in supplying design & equipment for Trailing Suction Hopper Dredgers (TSHD) such as, dragarms & gantries, dredge pumps, dredge pipes, gate-valves, coupling systems and unloading systems.

LIEBHERR

Booth 9

Address:
Dr.-Hans-Liebherr-Strasse 1
6710 Nenzing
Austria
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Website: www.liebherr.com
Email: alexander.moosbrugger@liebherr.com
Contact person: Mr Alexander Moosbrugger,
business segment development dredging

LIEBHERR, a market-leading crawler crane manufacturer – with service stations worldwide incl. Amersfoort (Holland) and various other locations all over the globe, is since many years very active in the DREDGING business. Our proven Heavy Duty products (HS Series) may be equipped with CLAMSHELL BUCKETS and all sort of other GRABS for Dredging Applications. With buckets sizes of 1,0 m3 to 22,0 m3 and related capacities (SWL) of up to 75t we are able to perform underwater-operations down to 200m. Our machines are built for continious operations with a design life of at least 2 Million load cycles. A Dredging Management Systems can be interfaced with the LIEBHERR duty crane and we are also able to connect the crane to barges or ships via a welded pedestal adapter.

Together with our excellent support network and spare part centers this makes us a perfect partner for Dredging Contractors or Port companies who wanna rely on a well-known brand.

Royal IHC

Booth 4

Address: Smitweg 6
2961 AW Kinderdijk
The Netherlands
Tel: +31 (0)88 015 2781
Website: www.royalihc.com
Email: r.massar@royalihc.com
Contact person: Mr Richard Massar, communication manager

Royal IHC enables its customers to execute complex projects from sea level to ocean floor in the most challenging of maritime environments. We are a reliable supplier of innovative and efficient equipment, vessels and services for the offshore, dredging and wet mining markets. We have in-depth knowledge and expertise of engineering and manufacturing high-performance integrated vessels and equipment, and providing sustainable services. With our commitment to technological innovation, in which sustainability and safety are key, we strive to continuously meet the specific needs of each customer in a rapidly evolving world.

Teledyne Marine

Booth 14

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Tel: +45 4738 0022
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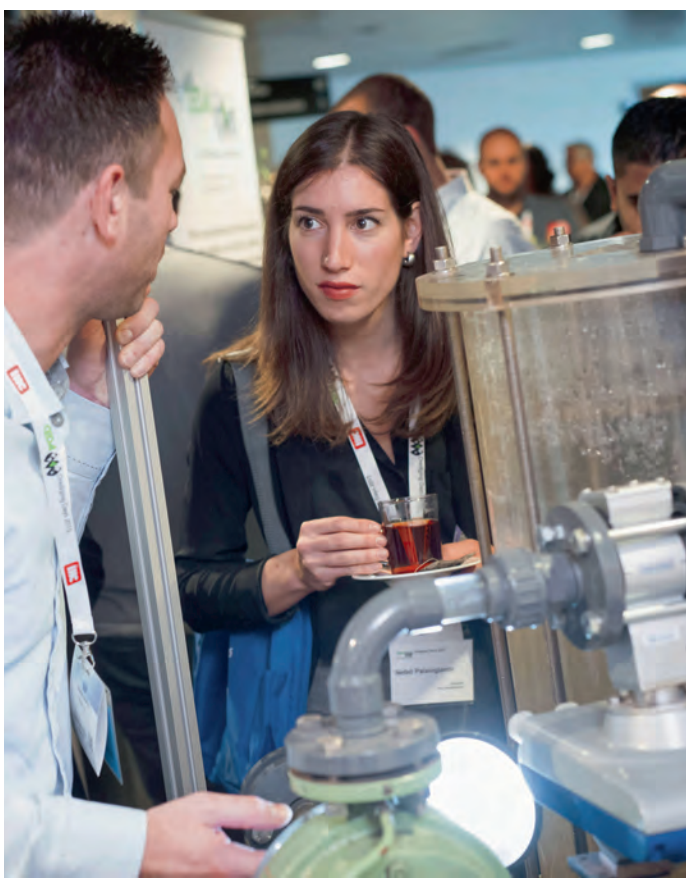
Contact person: Mr Helle Auken Lygum,
global marketing project manager

Teledyne RESON, BlueView and Odom Hydrographic are part of the Teledyne Marine's Acoustic Imaging Group (TMAIG). We offer the strongest collective product portfolio in the market for subsea acoustic imaging and multibeam echosounder solutions in a variety of application areas including offshore, hydrography, civil engineering, defense and security and dredging.

TMAIG is part of Teledyne Marine, an organization comprised of 23 leading-edge undersea technology brands that have been assembled by Teledyne Technologies Inc. Each Teledyne Marine brand is a leader in its respective field, with a shared commitment to providing premium products backed by unparalleled service and support.



Central Dredging Association

Registration information

CEDA Dredging Days 2017 will be held at Rotterdam Ahoy, Ahoy-weg 10, Rotterdam, the Netherlands, on Thursday and Friday 9 and 10 November and in conjunction with Europort.

Registration fees	
Members of CEDA, EADA and WEDA	€605
Non-members	€780
Speakers and PhD students	€370
Students	€125
Technical visit	€50
Break-ice-fast, guided networking breakfast	€20

The above fees are exclusive of the additional VAT (21%)

Registration

Registration can be done online via www.cedaconferences.org/dredgingdays2017
Conference Secretariat CEDA Dredging Days 2017:
Sylvia Minten, Minten Projectmanagement,
Rotterdamseweg 183c, 2629 HD Delft, the Netherlands
Tel: +31 (0)6 1660 3947, Fax: +31 (0)84 215 0053
NB: Same details apply throughout the conference

Registration desk location and opening hours

When you arrive at CEDA Dredging Days 2017, contact the registration desk. You'll find it located on the second floor.
NB: To enter Ahoy on the first day you will be asked to show an email, provided by the conference secretariat. We'll send it to you a couple of days before the start of the conference.

- Thursday 9 November – from 07:00 to 19:00
- Friday 10 November – from 08:00 to 17:30

NB: If you are an exhibitor, you may set up your stand from 07:00 on Thursday 9 November; breakdown will be from 17:30 on Friday 10 November.

Registration entitlements

Conference delegate and student registration fee includes:

- Conference sessions on 9 and 10 November
- A full set of conference documents
- Morning coffees, lunches, afternoon teas, reception and farewell drinks
- The official Europort 2017 exhibition catalogue

Exhibition staff registration fee includes:

- Morning coffees, lunches, afternoon teas, reception and farewell drinks
- The official Europort 2017 exhibition catalogue

NB: This fee does not include the conference papers or entry to the conference sessions. Staff who would like to attend the technical sessions should register as conference delegates.

Technical visit registration fee includes:

- Transportation
- Site visit and refreshments

Ahoy Rotterdam

Name badges

These will be issued to all registered delegates and exhibitors. Badges must be worn for entry to all technical sessions, the exhibition and social functions. Those not wearing a badge will be refused entry.

Name badges will be colour coded as follows:

Conference delegate	White
Exhibitor	Orange

Liability and insurance

Registration fees do not include insurance of any kind. It is strongly recommended that when registering for the conference and booking travel arrangements, participants should arrange personal insurance cover for the following:

- Loss of registration and tour fees, deposits, hotel costs and airfares through cancellation of the conference for *force majeure* or any other reason
- Failure to use pre-booked arrangements due to airline delays, for *force majeure*, or any other reason
- Medical expenses and loss or damage to personal property.

CEDA, Minten Projectmanagement and Rotterdam Ahoy will not accept responsibility for any personal injury, damage or loss of property that may occur in connection with the conference. The insurance is to be purchased in the participant's own country.

CEDA Dredging Days 2017 is organised by the Central Dredging Association. Minten Projectmanagement has been appointed as the Conference Secretariat.

The Central Dredging Association (CEDA) is an internationally recognised independent professional association. It is an easy-to-access leading platform for the exchange of knowledge and an authoritative reference point for impartial technical information. CEDA actively strives to contribute towards sustainable development by strongly recommending working with nature. CEDA members are corporations, professionals and stakeholders involved in a diversity of activities related to dredging and marine construction. CEDA represents the common interest of all fields related to dredging and marine construction and does not promote the interest of any particular industry sector or organisation.

For more information visit: **www.dredging.org**

Practical information

What you need to know for CEDA Dredging Days 2017

The city of Rotterdam is known for its Erasmus university, riverside setting, lively cultural life and maritime heritage. Obviously the main attractions are CEDA Dredging Days 2017 and the Europort event, but if you have some spare time, download a Rotterdam City Guide app to your phone: en.rotterdam.info/visitors/practical/mobile-city-guide-app/ or get more information at www.rotterdam.nl or www.holland.com.

Danny Cornelissen

Transport

By air

- **Rotterdam The Hague Airport**

This airport is only 20 minutes away from Rotterdam Ahoy, either by taxi or by metro. For more information see www.rotterdamthehagueairport.nl.

- **Schiphol Airport**

Schiphol airport is located 65km from Rotterdam. The NS Hispeed intercity train will bring you from Schiphol to Rotterdam Central Station in just 27 minutes.

By public transport

- **By train** – Rotterdam offers excellent train connections. The international high speed trains stop here, but intercity trains from all over the Netherlands also call at Rotterdam Central Station. The Thalys high-speed train (ten times a day) makes Rotterdam just a short trip from Antwerp (30 min), Brussels (1h11 min) and Paris (2h36 min). UK travellers can take the Eurostar to Brussels and transfer to the Thalys there.
- **Metro** – At Rotterdam Central Station, take the metro with direction 'De Akkers' (Line D) or direction 'Slinge' (Line E). Get off at 'Zuidplein' (in front of Rotterdam Ahoy). It will take less than 3 minutes to walk to the main entrance. Please check www.9292ov.nl or www.ret.nl for a timetable of NS and metro in Rotterdam.
  Note: a public transport chip card is mandatory for the Rotterdam Metro. A disposable card can easily be bought in Rotterdam Central Station at the entrance to the metro. It is also possible to order a chip card on forehand through the web shop on www.ret.nl. where you can also find more information on travelling with the "OV-chipkaart."
- **Taxi** – If you are traveling by taxi, you can find the taxi stand at the entrance / exit of Hall 8. You do not need to call taxis yourself – Rotterdam Ahoy ensures enough taxis.

Parking and shuttle services at Ahoy

- **Parking** – the Ahoy parking area offers space for 3.000 cars at €13 per car per day. Other nearby parking areas are Q-Park Zuidplein and Q-Park Ikazia.
- **Hotel shuttle service** – during Europort, a daily shuttle service will be available from a wide range of hotels in Rotterdam. A detailed time schedule, including all listed hotels, will be available on its website.

By car

- **Coming from Amsterdam/The Hague**

Take the A4 to The Hague; follow the A13 towards Rotterdam; take the A20 towards Hoek van Holland. Take the A4 through the Benelux tunnel, then follow A15 direction Rotterdam. Take the exit Rotterdam-Charlois (19). From the Groene Kruisweg take the 4th exit right onto the Oldegaarde. Then turn left onto the Zuiderparkweg at the traffic lights. On the Zuiderparkweg take the first right onto the Ahoy-weg.

- **Coming from Utrecht**

Take the A12 to Gouda; follow the A20 towards Rotterdam and take exit A16 towards Dordrecht/Breda. After the Van Brienenoord bridge take the Ring Rotterdam towards Zierikzee / Barendrecht / Europoort (A15). On the A15, follow the Ring A15 towards Rotterdam-Zuid before you reach intersection Ridderkerk, then follow Ring Rotterdam Zierikzee (A29) and take exit Rotterdam-Zuidplein (19A). At the 2nd traffic lights, turn left on to the Oldegaarde. Turn right at the next traffic lights. On the Zuiderparkweg take the first right on to the Ahoy-weg.

- **Coming from Dordrecht/Breda**

Stay on the A16 towards Rotterdam. On the A16 take the Ring Rotterdam-Zuid towards Zierikzee (A15). On the A15 follow the Ring A15 towards Rotterdam-Zuid before you reach intersection Ridderkerk, then follow Ring Rotterdam Zierikzee (A29) and take exit Rotterdam-Zuidplein (19A). At the 2nd traffic lights, turn left onto the Oldegaarde. Turn right at the next traffic lights. On the Zuiderparkweg take the first right onto the Ahoy-weg.

- **Coming from Zeeland/Roosendaal**

Stay on the A29 towards Rotterdam. Drive to the end of the A29. At intersection Vaanplein, take exit Rotterdam-Zuidplein (19A). At the 2nd traffic lights, turn left onto the Oldegaarde. Turn right at the next traffic lights. On the Zuiderparkweg take the first right onto the Ahoy-weg.

Staying there

Hotel rooms have been reserved at a special rate but the number available has greatly reduced as conference nears. Information about booking remaining accommodation, including an interactive map, can be found on the Europort website where you can make a hotel reservation.
Please contact Preferred Hotel Reservations directly if you have difficulties, or would like to check-in earlier/ later. It can be reached Monday – Friday 9am – 5.30pm by telephone (+31 299 656 527), or by email (congress@preferredhotelreservations.nl) mentioning 'Europort 2017' in the subject line.

Central Dredging Association

Your guide to the CEDA Dredging Days 2017 mobile app

We created this mobile app to make this year's Dredging Days experience even more valuable for all of the attendees, speakers, exhibitors, and sponsors. Here are some tips on how you can make the most out of it.

Download the app on the device you're bringing to the event

Option 1. Through the invitation email without typing a single letter

1 **Find your Invitation.** Check your email for a message from CEDA Dredging Days 2017 Conference secretariat with the subject: Access the app for CEDA Dredging Days 2017 through this email.

2 Click **Download the App** to be taken to the App Store. Click **Download** and wait for the app to install on your device.

3 **Return to your Invitation.** Once the app has finished installing, open your invitation email again.

4 Click **Verify account**.

Confirm your verification. Click **Open App** to complete the verification via your brand new mobile app.

5 Ready to go.

Option 2. From the App Store

You will find the CEDA Dredging Days 2017 event within the CrowdCompass AttendeeHub app.

1 **Go to the right app store.** Access the App Store on iOS devices and the Play Store on Android.

If you're using a Blackberry or Windows phone, skip these steps. You'll need to use the web version of the app found here: https://crowd.cc/cdd2017

2 **Install the CrowdCompass AttendeeHub app.** Search for CrowdCompass AttendeeHub app. Once you've found the app, tap either Download or Install.

3 **Install the CEDA Dredging Days 2017 app.** Open the AttendeeHub app and search for CEDA Dredging Days 2017.

4 Tap OPEN.

5 **Access the app.** Enter the event password sent to you by email. The event main navigation screen will open.

6 **Login to access all details.** Tap either the three parallel lines at the top left or any of the navigation icons. Enter your first and last name where prompted (**Important:** use exactly the same name you used for registering for CEDA Dredging Days 2017), then tap **Next**. A four-digit verification code will be sent to you by email to the email address you used for registering for the conference.

7 **Verify your account.** Exit the app and open your verification email. You'll see it includes your four-digit verification code. Important: The verification code expires in 24 hours.

8 **Enter your verification code.** Return to the app and enter the verification code, then tap **Verify** to log in to your mobile app.

Complete/update your profile

From your registration information we have already added some of your data. Tell your fellow attendees more about yourself and help them find you and connect with you before, during, or after the conference.
Tip: Have your LinkedIn or Twitter URL and your photos at hand.

1 **Access your profile settings.** After logging in, tap the three parallel lines in the top left, then tap your name (iOS)/arrow to the right of your name (Android) at the top of the screen.

2 **Complete your details.** Fill out the text fields. You can write a short bio, describe expertise, key professional interests, provide your contact information, and/or direct people to your website or social media accounts.

3 **Add your profile photo.** Click **Choose Files** (iOS) or tap **Edit Profile Photo** (Android) and either select a photo from your gallery or take a new one with your camera. Note: If you added your social media account(s) and connected to at least one of those channels, your profile photo on that channel will appear here.

4 **Manage your privacy.**

- **Share your profile with other attendees.** Uncheck the **Set Profile** to Private box at the top of your profile settings.
- **Set your profile private.** If you'd rather have control over who can see your profile, check the **Set Profile** to **Private** box. Other attendees will first have to send you a contact request to be able to see your full profile. They will still be able to see your photo, company name, and job title.
- **Hide your profile entirely.** Tap the Attendees icon and click the silhouette icon in the top right to open Attendee Options.

Make sure the slider next to Show Me On Attendee List is switched off. Fellow attendees will no longer be able to find you on the list at all.

5 **Don't forget** to tap **Save Changes** at the bottom of the profile page.

Message attendees

1 **Access the attendee list**. After logging in, tap the **Attendees** icon.

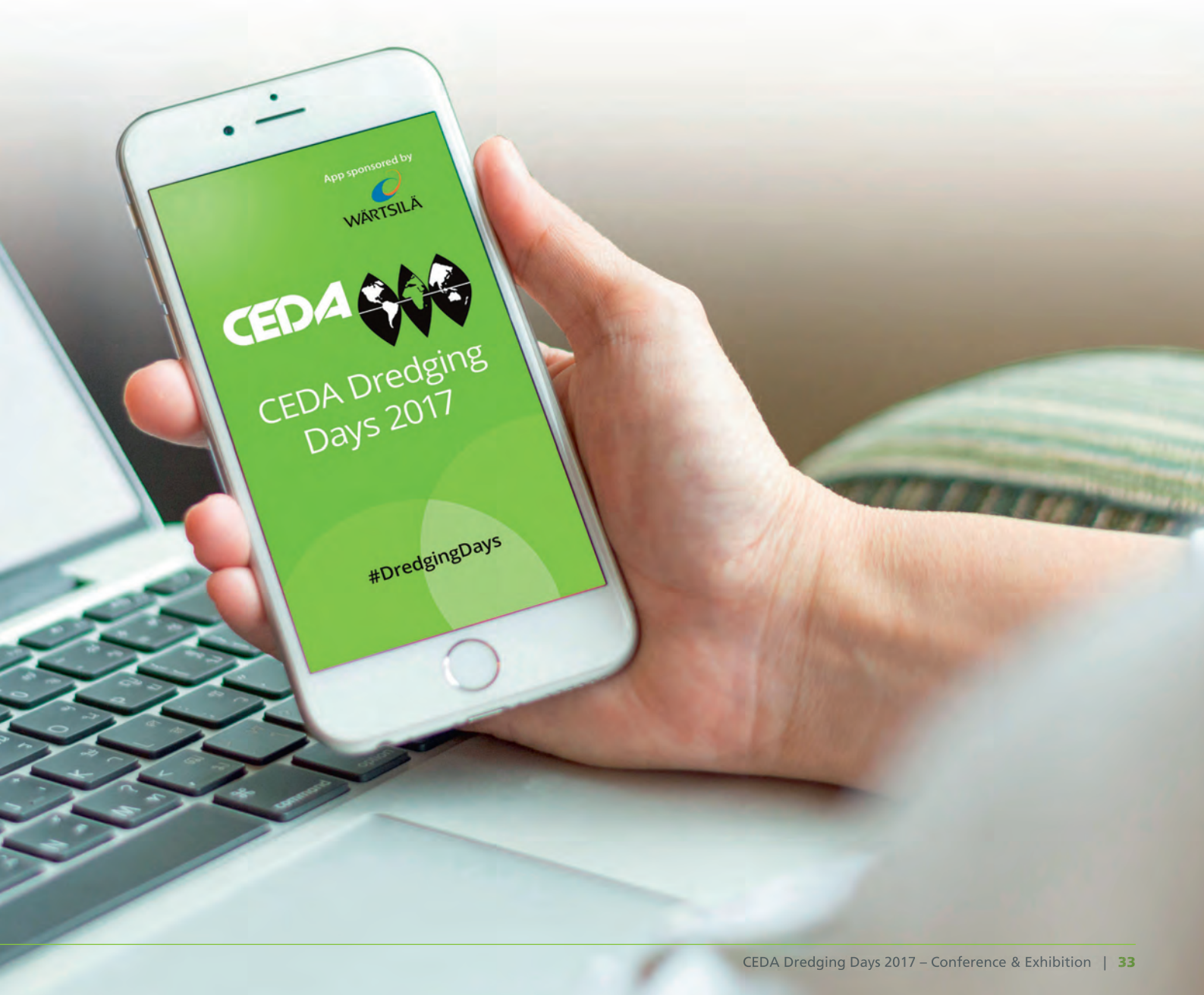
2 **Send your message.** Find the person you want to message by either scrolling through the list or using the search bar at the top of the screen. Tap their name, then the chat icon to start texting. If you want to pick up a chat you previously started, tap the three parallel lines in the top left, then **My Messages**.

3 **Rather be a hermit?** Follow the steps above but after tapping the chat icon, don't type anything, instead tap **Block** in the top right.

What if an attendee's profile is private?

1 **Access the attendee list.** After logging in, tap the **Attendees** icon.

2 **Send a contact request.** Find the person you want to share your contact information by either scrolling through the list or using the search bar at the top of the screen. Tap their name, then **Add Contact** to send a contact request. If they accept, the two of you will exchange info.



Central Dredging Association

Conference app information

Schedule an appointment

Why not do it before the start of the conference to make most use of 'face-time' at the event?

1 **Navigate to My Schedule.** Tap the three parallel lines in the top left, then **My Schedule**.

2 **Create your appointment.** Tap the plus sign to access the Add Activity page. Give your appointment a name, a start and end time, and some invitees. When you're finished, tap **Done**. Invitations will be immediately sent to all relevant attendees.

Create notes and export them

A great thought or idea? Make sure you will not forget it: write it down right away and collect it later at your leisure.

1 **Find the item,** the session, speaker, or attendee you'd like to create a note about by tapping on the appropriate icon in the event directory, then scrolling through the item list. Once you've found the item you're looking for, tap on it.

2 **Write your note.** Tap the note icon to bring up a blank page and your keyboard. Enter your thoughts, observations, and ideas. Tap **Save** when you've finished.

3 **Navigate to My Notes.** Tap the three parallel lines in the top left, then My Notes. Here you'll find all the notes you've taken, organised by session.

4 **Choose where to send your notes.** Tap the share icon in the top right and CrowdCompass will automatically generate a draft of an email that contains all your notes. All you have to do is enter an email address, then tap **Send**.

Share on social media

1 **Access your profile settings.** After logging in, tap the three parallel lines in the top left, then your name to access your profile settings.

2 Add social media accounts. Scroll down to find a set of buttons that you can use to connect to your accounts. Tap the appropriate button, enter your username and password, and tap Authorise App or Connect Account.

3 Access the Activity Feed. Tap the **Activity Feed** icon on the navigation screen.

4 Post your creation. Tap the plus sign in the bottom right corner on the screen and choose whether you'd like to upload a photo or text to the activity feed. Once you've finished, you can use the icons to select which accounts you want to share this on, then tap **Post**.

Taking live polls and Q&A

1 **Locate your session.** In **Schedule** tap the name of your chosen session to be taken to the Session Detail page.

2 **Do the poll**. Scroll down in the Session Detail page to the **Live Polls** header and tap the name of the poll.

3 **Ask your question.** Scroll down in the Session Detail page to the **Live Q&A** header. Tap **Submit a question now**. Questions are anonymous unless you provide your name.

Play Click and win great prizes

1 **Access the Click game.** After logging in, tap the **Click** navigation icon.

2 **Choose a challenge.** Tap **Profile** at the top right. Scroll down to see a list of badges and the challenges you need to complete to earn them. Take them on in any order.

3 **Submit a photo.** Tap the camera icon next to the challenge you want to take. Shoot or upload your masterpiece, then tap **Submit**.

4 **Track the competition and defeat your opponents.** Tap Leaderboard on the top left. Keep completing challenges to earn points.

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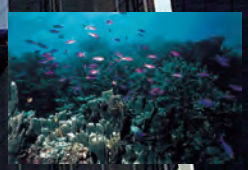

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