

IHO – CAPACITY BUILDING

SJOERD VAN DEN BROM

MANAGER SURVEY DEPARTMENT

MARCH 2014



ROYAL BOSKALIS WESTMINSTER

INTERNATIONAL MARINE SERVICE PROVIDER

FOUNDED IN 1910

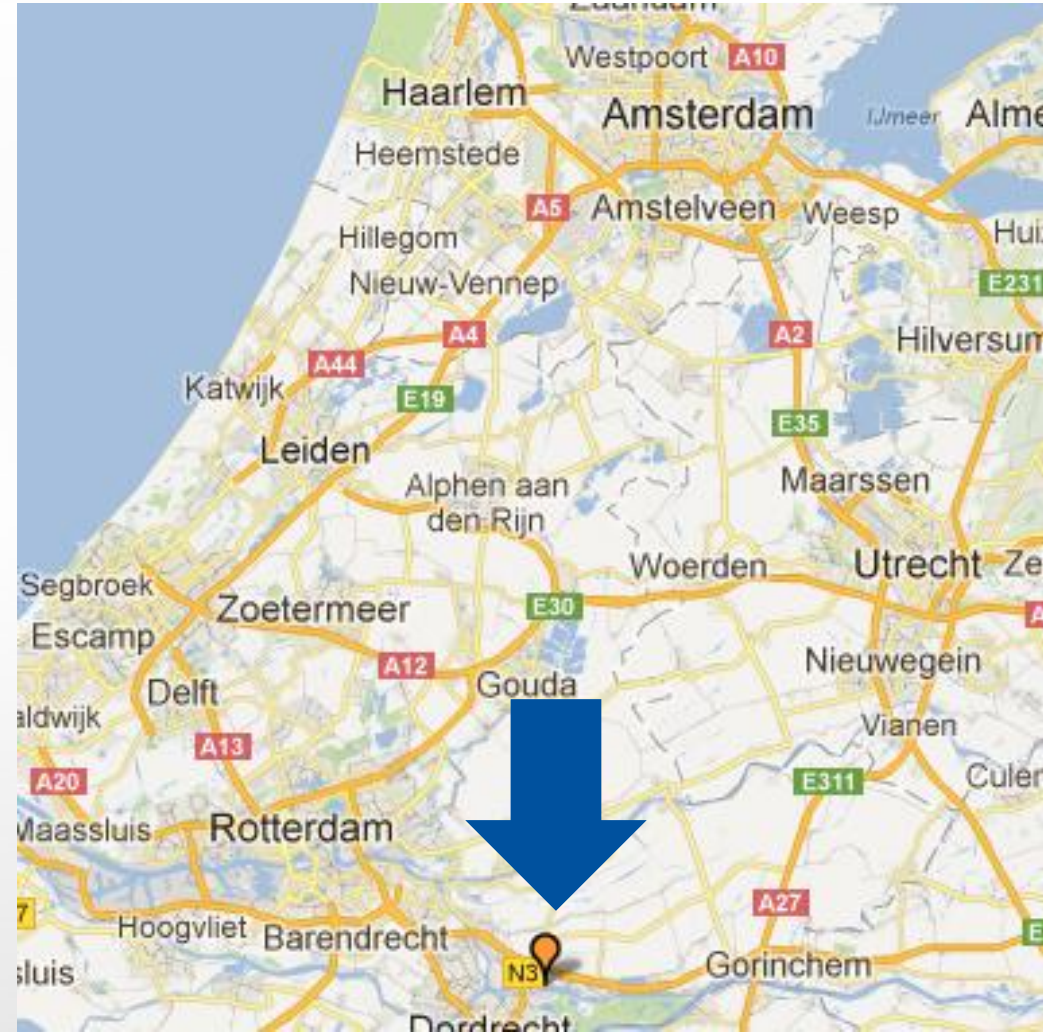
HEADOFFICE in PAPENDRECHT (NL)

LISTED ON AMSTERDAM STOCK EXCHANGE

ANNUAL TURNOVER € 4 BILLION

14.000 EMPLOYEES

OVER 1000 VESSELS



BOSKALIS ACTIVITIES



DREDGING

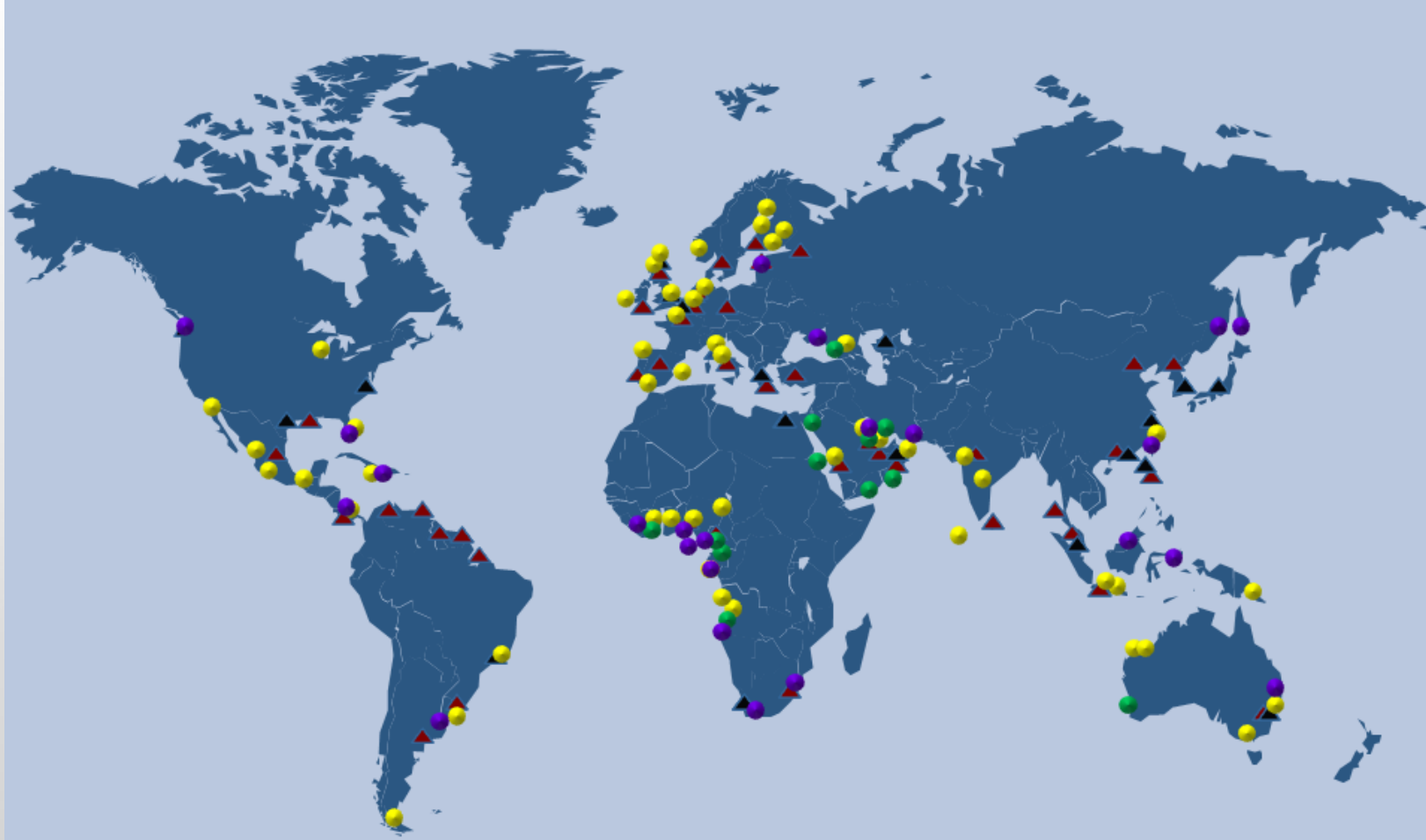


OFFSHORE ENERGY



DRY INFRASTRUCTURE

GLOBAL FOOTPRINT



IHO



THE IHO IS IMPORTANT TO US

Worldwide international standard
Government accepted

For our personnel – Cat A
For our data – S44 special order

TRADITIONAL HYDROGRAPHY (BEFORE 1970)



BASIC CONCEPT OF SEA TRADE



From port A → dangerous environment (the SEA) → To Port B
The sea was merely the medium of travel

ROLL OF THE NAVY

Protect the merchant fleet



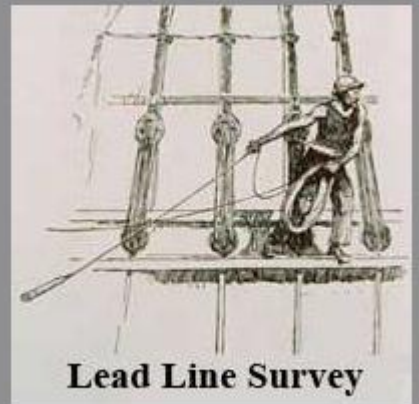
HYDROGRAPHY – EMBEDDED IN NAVY

Protect the merchant fleet
From navigational hazards



TRADITIONAL HYDROGRAPHER

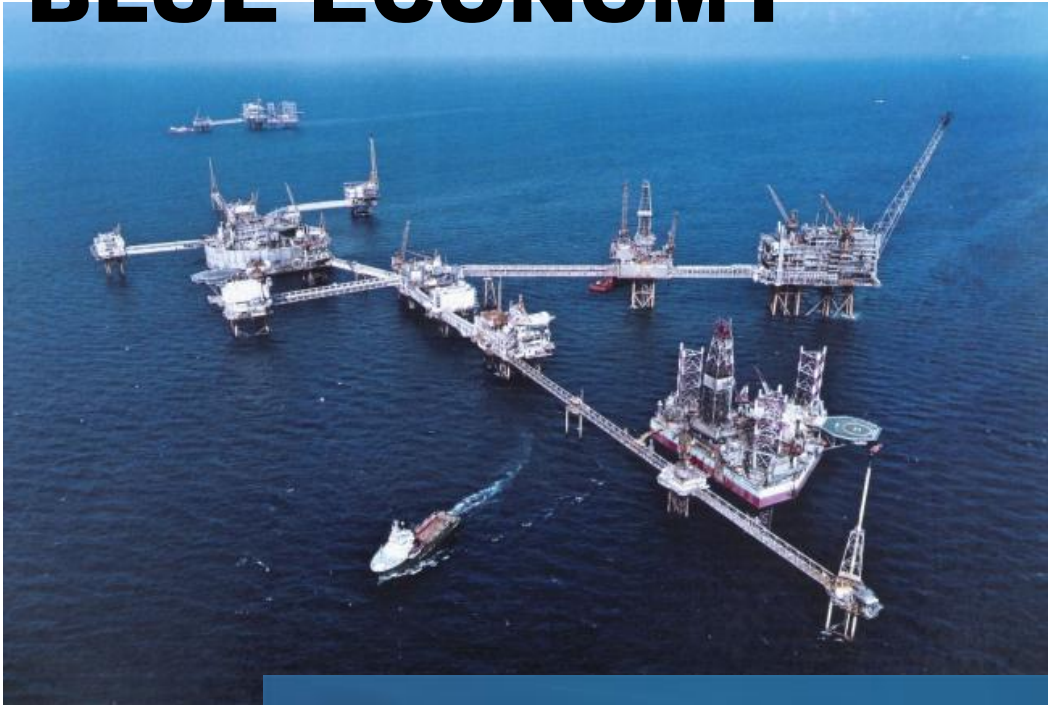
- Focus on safety for navigation
 - Provide (on paper) information to mariner
 - Only the shallowest points of interest (limited to draught of vessels)
 - Some bottom detail on anchorage area's
 - Lighthouses, Currents, Tides
-
- Well defined scope, finite array of tools and set-ups



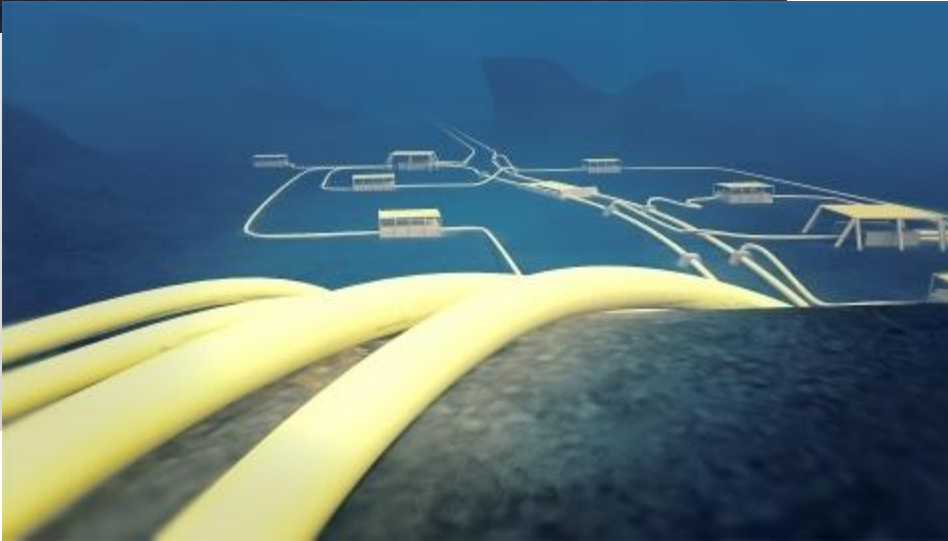
POST 1970 – THE BLUE ECONOMY



BLUE ECONOMY



**THE SEA HAS BECOME
THE DESTINATION**



THE NEW HYDROGRAPHER

- **THE SEA HAS BECOME THE DESTINATION**
- **Focus on completeness of information**
- **No real depth limit**
- **Highly accurate digital terrain models in HI-RES**
- **Planning for CONSTRUCTION vs navigation**
- **Many tools, marine equivalent of everything used on land**

THE NEW HYDROGRAPHIC SURVEYOR CHANGING ROLE

- Traditional:
 - Measurement **OF** the marine environment
- New Era
 - Measuring **IN** the marine environment



CAPACITY BUILDING

MORE & DIFFERENT COMPETENCES

- **Developing solutions – often unique**
- **Project management skills**
- **Handling huge (financial) pressure**
- **Leadership skills**
- **Technical understanding of complex systems**
- **Administrative & procedural skills**
- **Adaptability**
- **Environmental consciousness**
- **Technical specialisms per field (manufacturers)**
- **Various legal skills (not limited to law of the sea)**
- **Etc.etc.**

CAPACITY BUILDING

MORE & DIFFERENT ROLES

- Cat A
 - Party chief
- Cat B
 - Party Member



- Cat I
 - Systems Architect
- Cat II
 - Manage a campaign/project
- Cat III
 - Perform the measurement
- Cat IV
 - System operator (not unlike petrochem)

HYDROGRAPHIC STANDARDS

EXTENSION/ RE-DEFINITION WELCOME

- **S44 order 1**
 - **To 100 m**
- **S44 special order**
 - **Under keel clearance critical**
 - **Typical to 40 m**



S44 special is usable for most construction work when THU and TVU are RELATIVE measures for working at ANY depth

