



LNG REFIT “EIGER – NORDWAND”

Ben Maelissa,
ADN, Geneva, August 27 2013

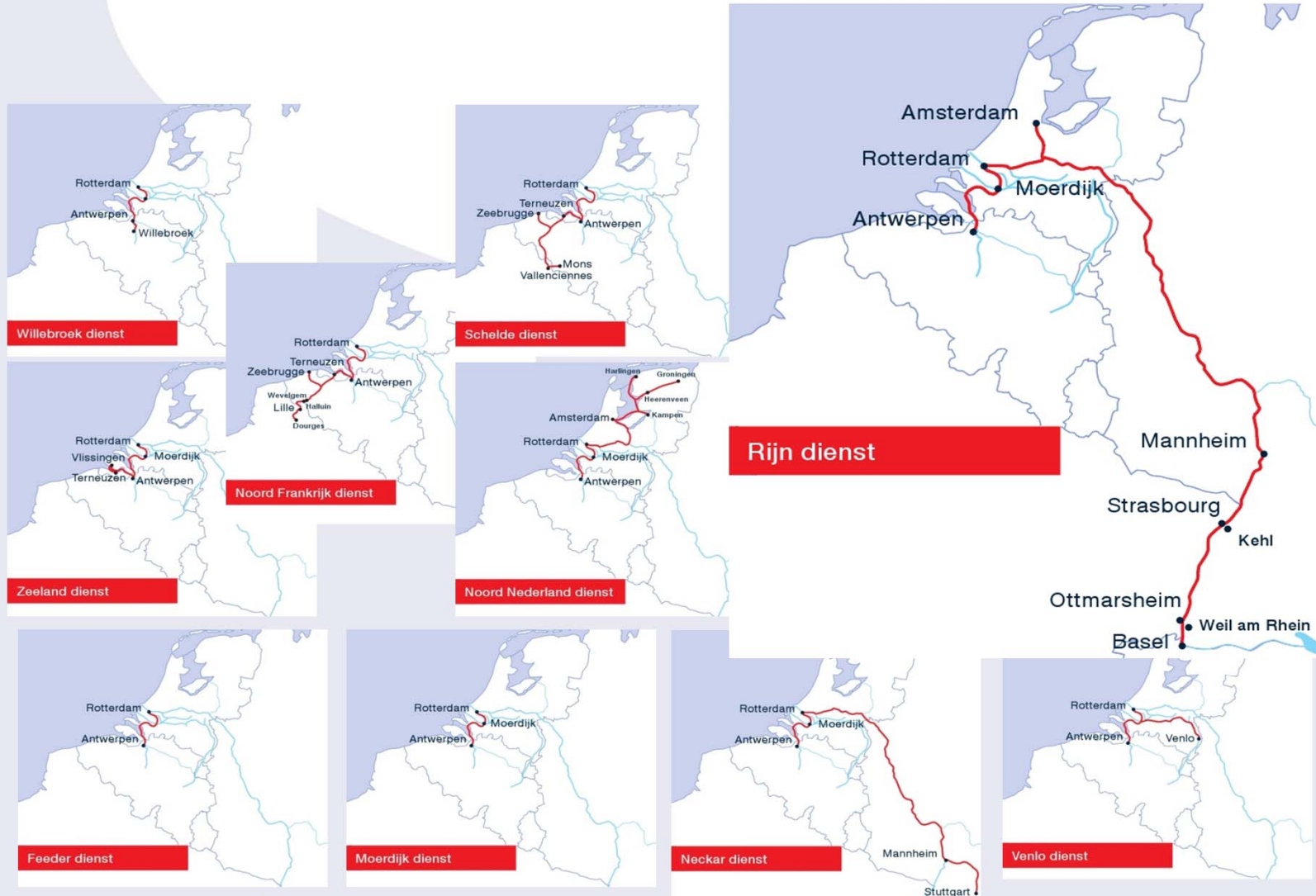
Company profile



- Privately owned company
- Founded in 1982
- Headquarters in Sliedrecht
- Branch offices :
 - *Sliedrecht (NL)*
 - *Antwerp (B)*
 - *Brussels (B)*
 - *Basel (CH)*
 - *Strasbourg (F)*
 - *Ottmarsheim (F)*
 - *Lille (F)*
- Number of employees : 140
- Danser owned vessels : 5
- Danser chartered vessels : 50
- Transported in 2012 : > 1,0 million TEU

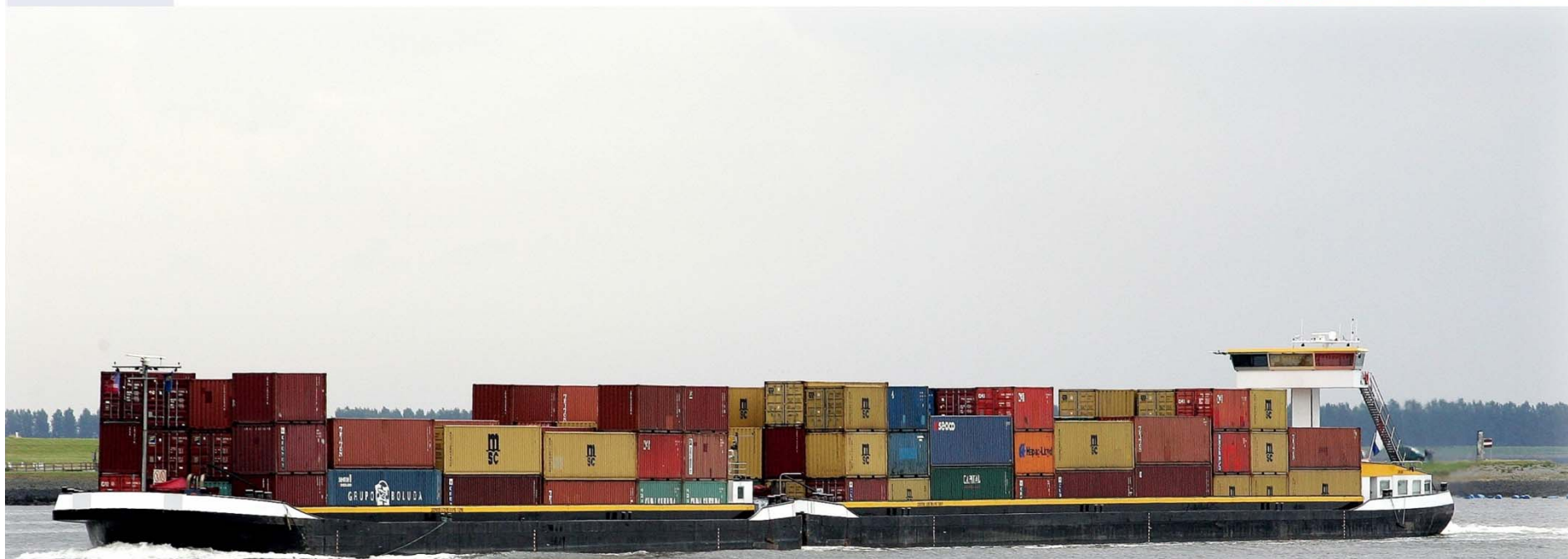


Operating Area



Vessel particulars

“Eiger-Nordwand”



Built	2000
Overall length	177 meter
Width	11,45 meter
Draft	2,56 meter
Tonnage	5300 tonnes
Capacity (4 layers)	348 TEU
Engines	2x 900 kW



Project Targets



- Meet customer demand; green transportation
- Meet upcoming legislation by ports and governments
- Meet Danser Group strategy: Frontrunner in clean & safe transportation
- Realisation first LNG refit on Inland vessel
- Emission meeting (expected) CCR4 requirements
- Pilot for LNG refit on 4 more container vessels

How:

- Installation Dual-Fuel propulsion system (Wärtsilä Engine, Tank/Coldbox)
- Turn-key installation & commissioning
- Increased performance; fully redundant
- Safety leading parameter in overall design



Project planning



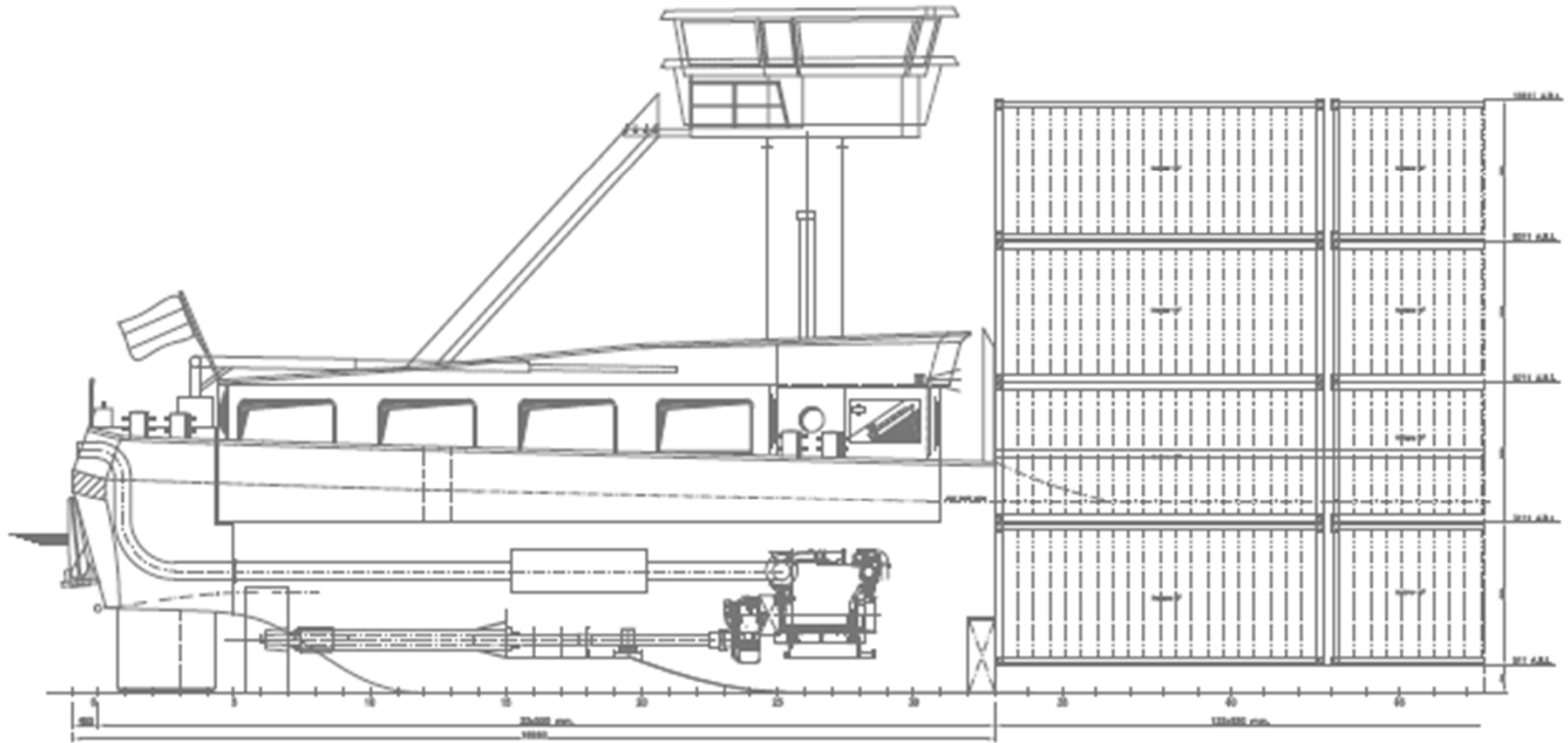
- Feb 2012
- Jun 2012
- July 2012
- Dec 2012
- Feb 2013
- Mar 2013
- Aug 2013
- Sept 2013
- Oct 2013
- Feb 2014
- Apr 2014
- Start project, initial discussions
- Conceptual design by project team
- Presentation to LRoS
- Introduction to Ministry of Infrastructure (IL&T, I&M)
- Submission call for TEN-T project
- Start detailed design
- Presentation at ADN meeting in Geneva
- Presentation at CCR meeting in Strassbourg
- HAZID study by LROS
- Start refit
- Tests, commissioning & trials



Actual Arrangement



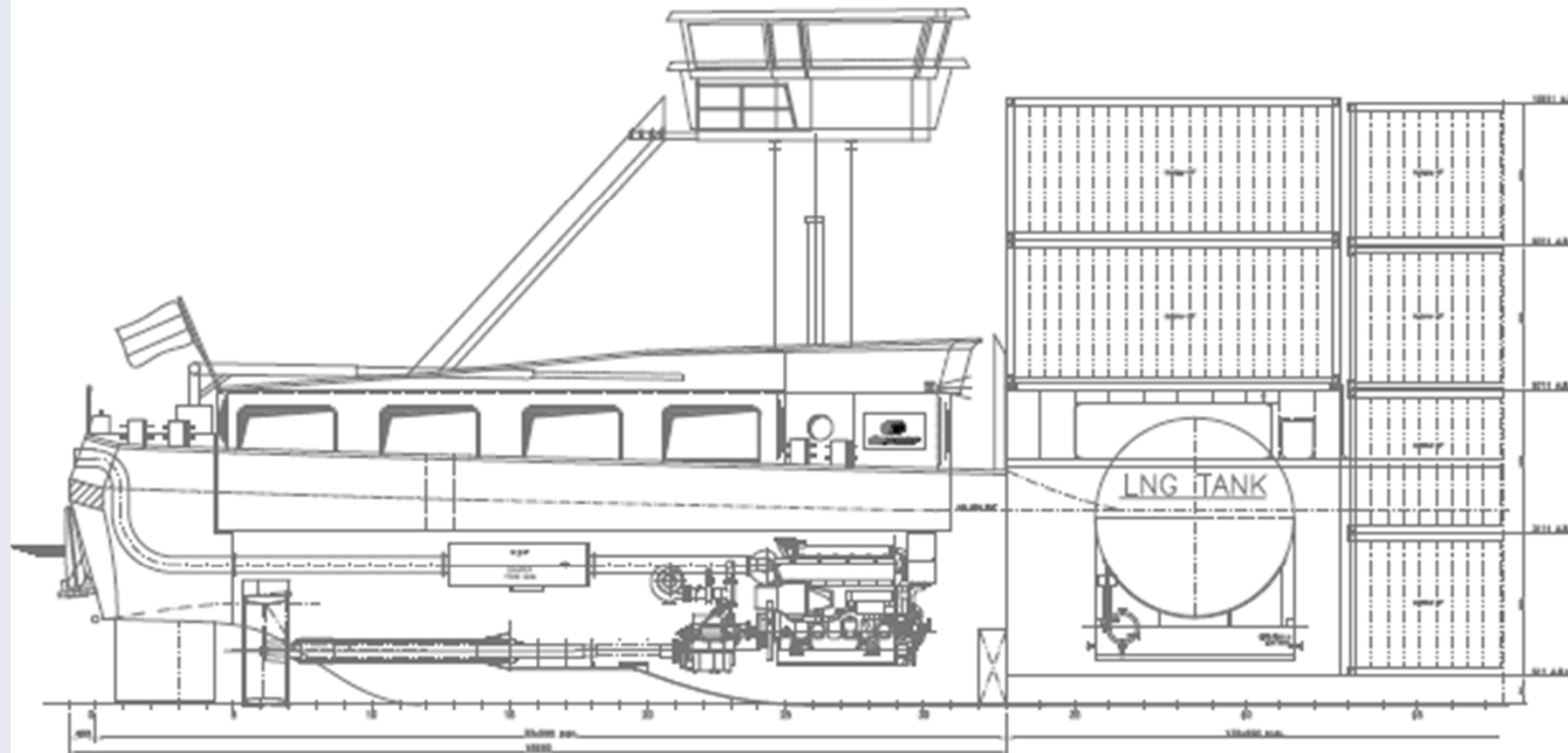
EXISTING SHIP



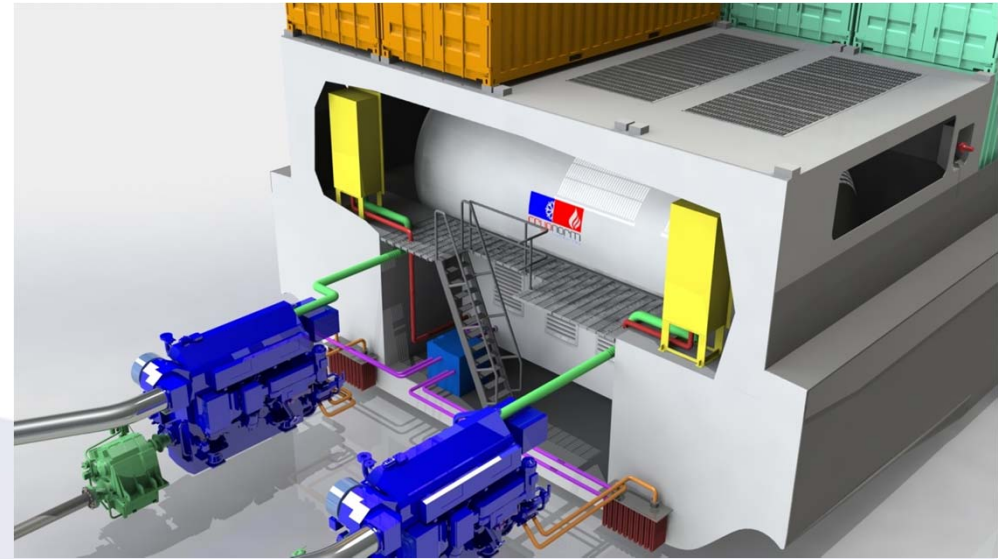
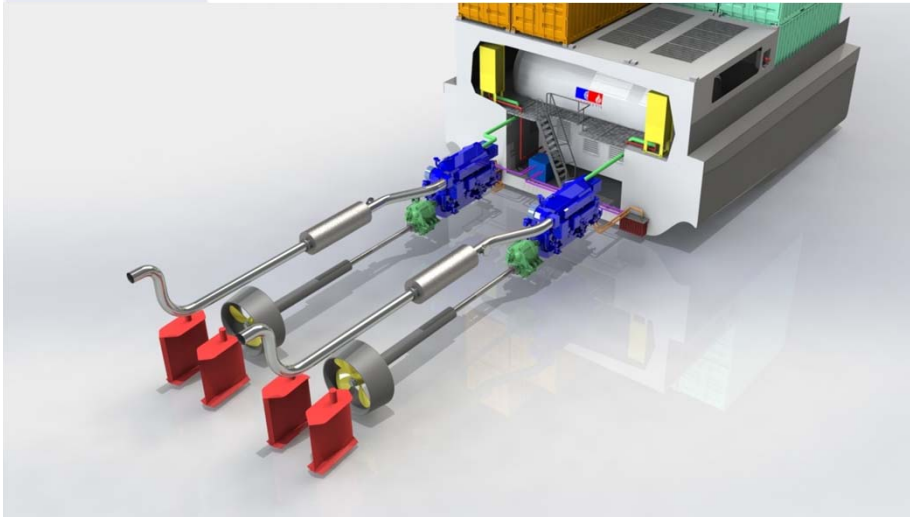
REFIT Arrangement



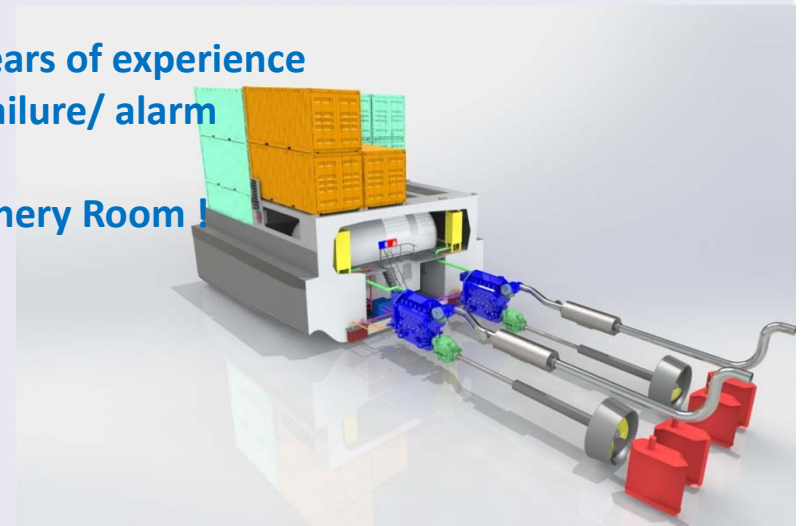
REBUILT SHIP



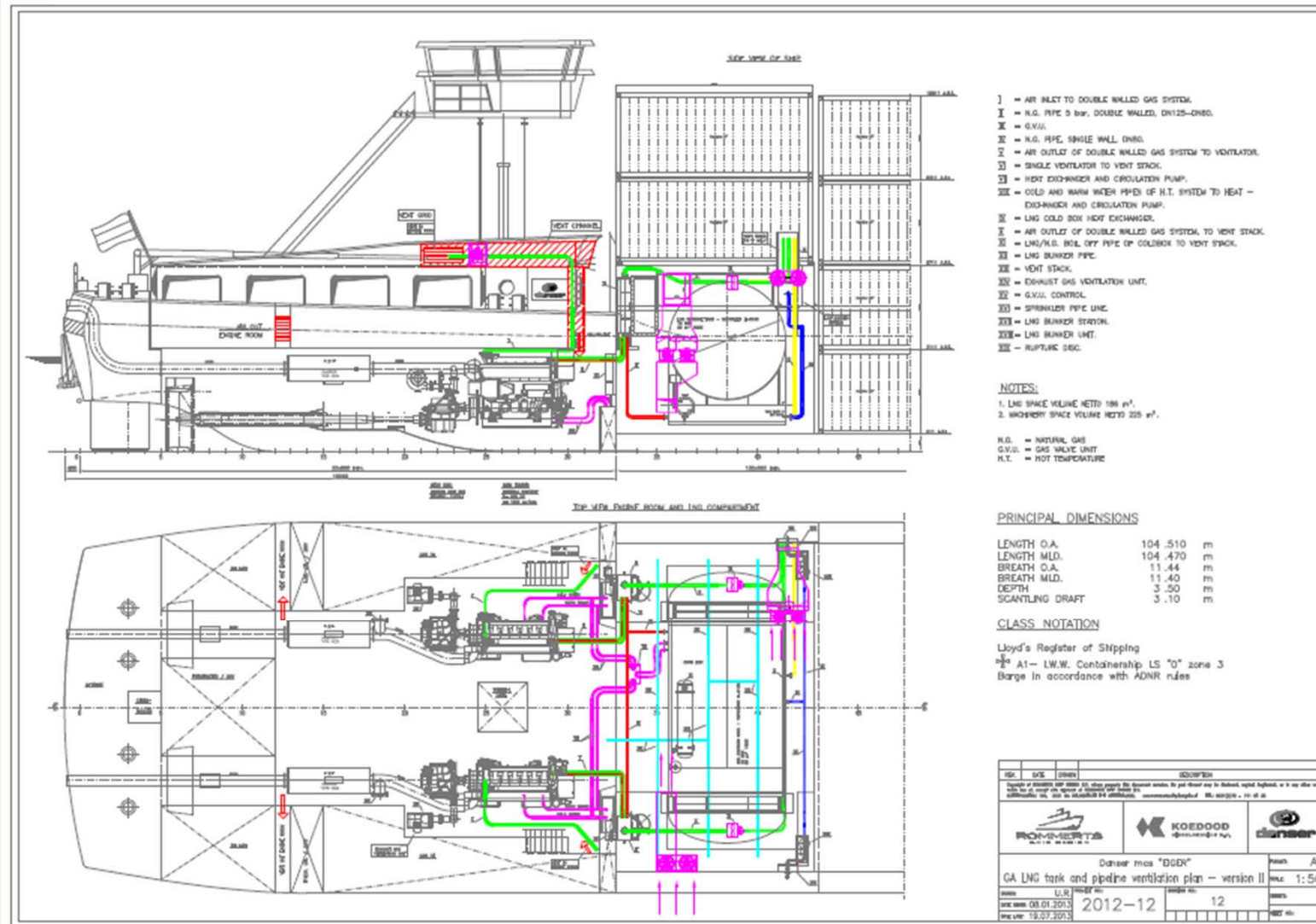
REFIT Arrangement



- Proven design of all major components, based on multiple years of experience
- Dual-Fuel Engine: automatic switch over to gasoil in case of failure/ alarm
- Dual-Fuel Engine: designed for LNG as main fuel
- Dual-Fuel Engine with a/o double wall piping; gas safe Machinery Room !
- Gas detection and auto shut down of main LNG valve
- Double redundant ventilation
- Bunkering at starboard side
- Trained crew & management



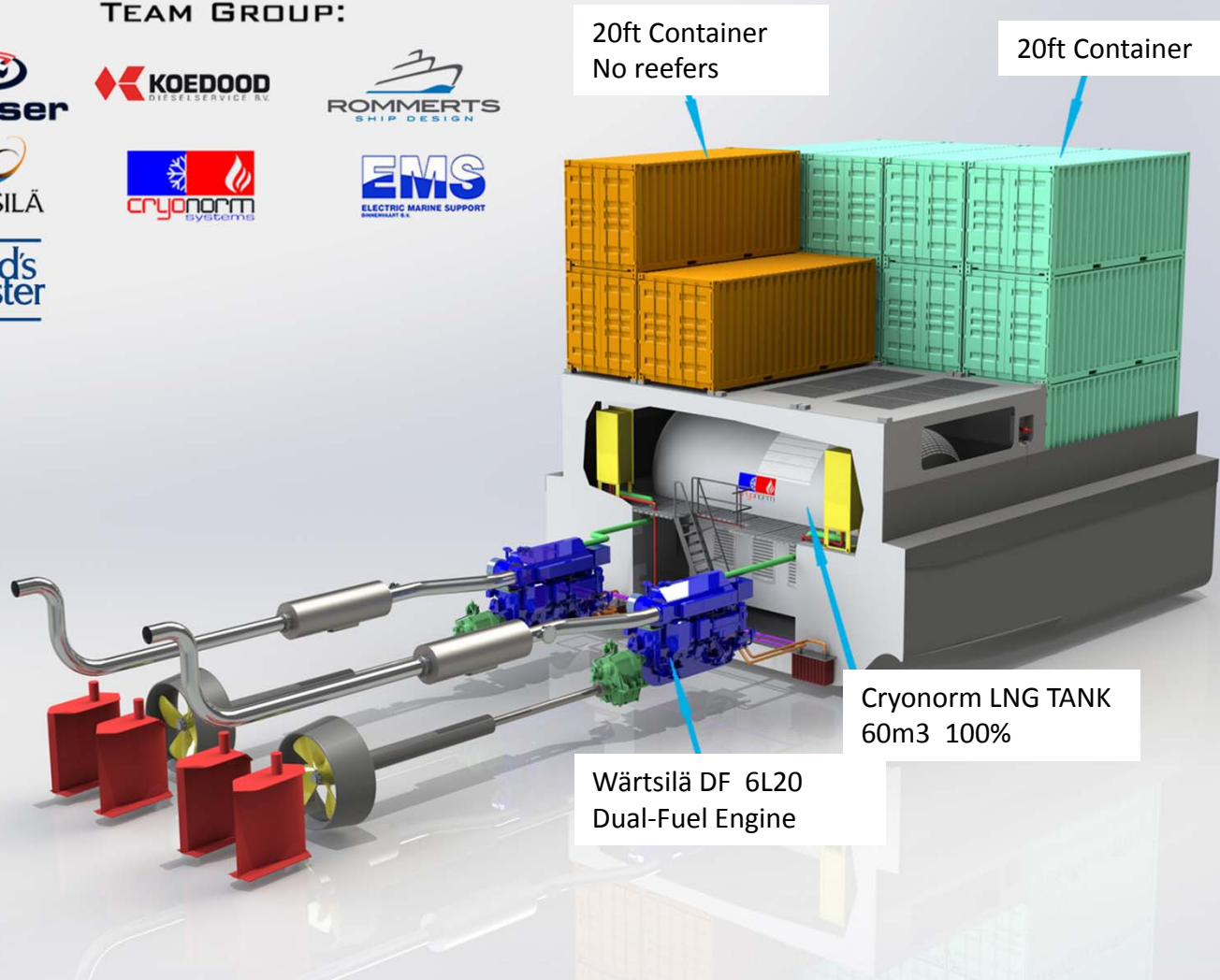
REFIT Detailed design



Project Partners



TEAM GROUP:



20ft Container
No reefers

20ft Container

Cryonorm LNG TANK
60m3 100%

Wärtsilä DF 6L20
Dual-Fuel Engine



Reduction of Emissions

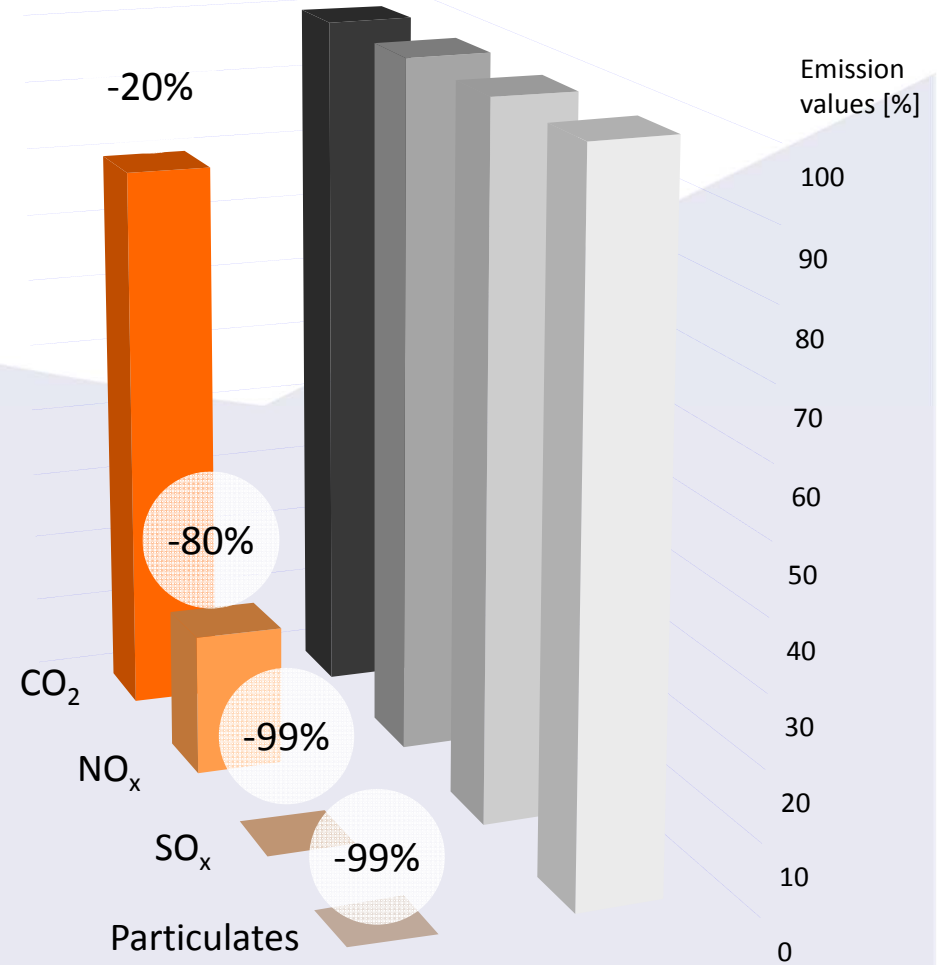


Wärtsilä DF 6L20

Gasoil backup capability
DF engines suitable for mechanical drive

Dual-Fuel engine
in gas mode

Diesel engine



*ADN and CCR approval
requested to realise this LNG
refit project*

