

## Fixed Fehmarnbelt crossing between Denmark and Germany



@Femern A/S

## Tunnel for cars and trains

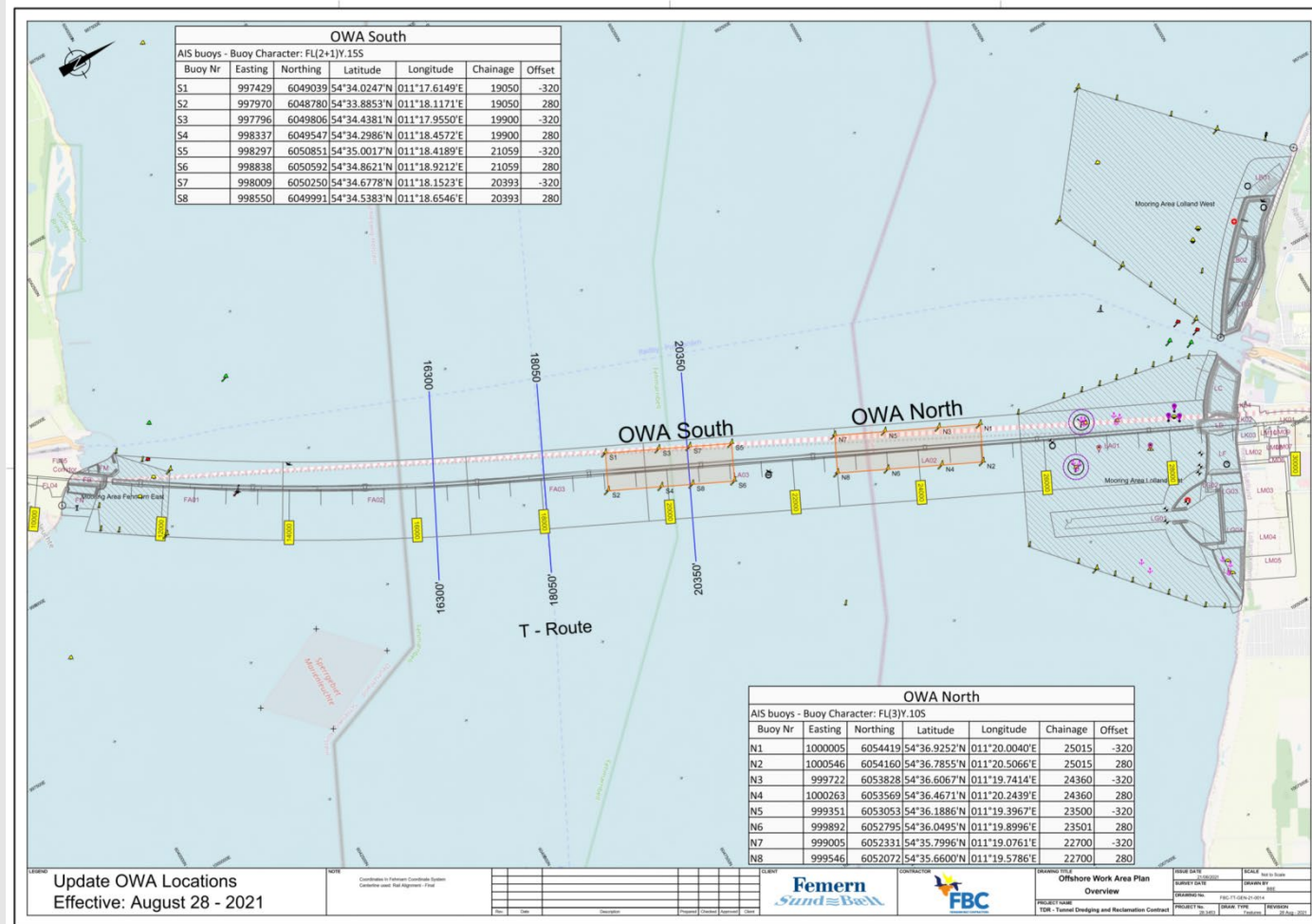


@Femern A/S

## The dredging and the immersion

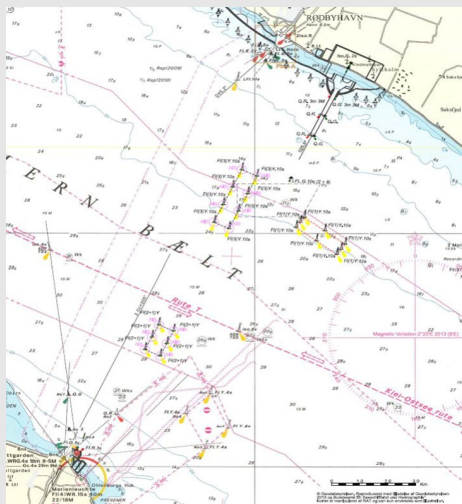


# Restricted areas along the tunnel trench



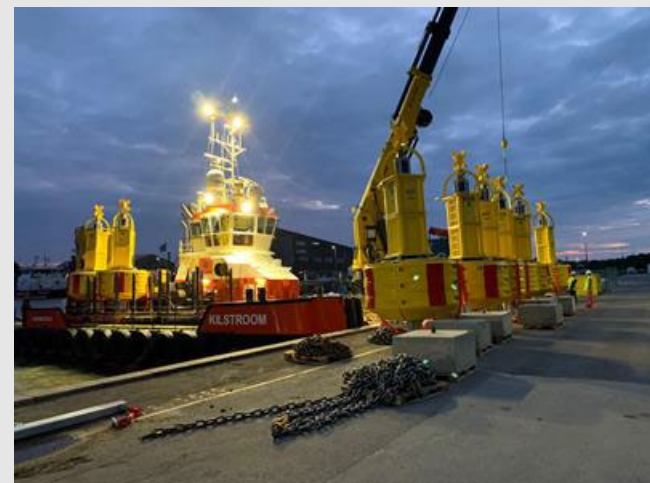
## Marking of restricted areas

- Consistent marking according to the IALA Maritime Buoyage Agreement independent of Danish or German waters
- Different flashing pattern for each of the northern and southern restricted area
- All buoys equipped with AIS-AtoN
- Additional marking: construction work harbour Puttgarden und Rødby and reclamation area



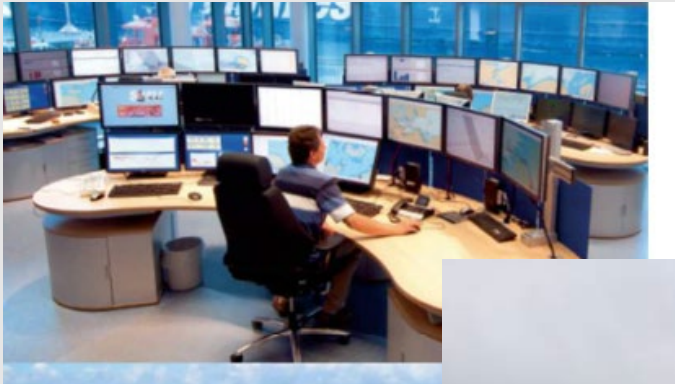
S5

@Femern A/S



Wir machen Schifffahrt möglich.

## The implementation of temporary VTS Fehmarnbelt as a risk-reducing measure



## temporary VTS Fehmarnbelt in Travemünde

- When constructing the new VTS Travemünde, additional space for VTS Fehmarnbelt was already considered during the planning
- VTS Travemünde and VTS Fehmarnbelt share a watch room
- VTS Fehmarnbelt has three additional work stations for operators, office space for the managers and a break room
- in operation since 1 July 2021 until the end of construction work offshore 2027

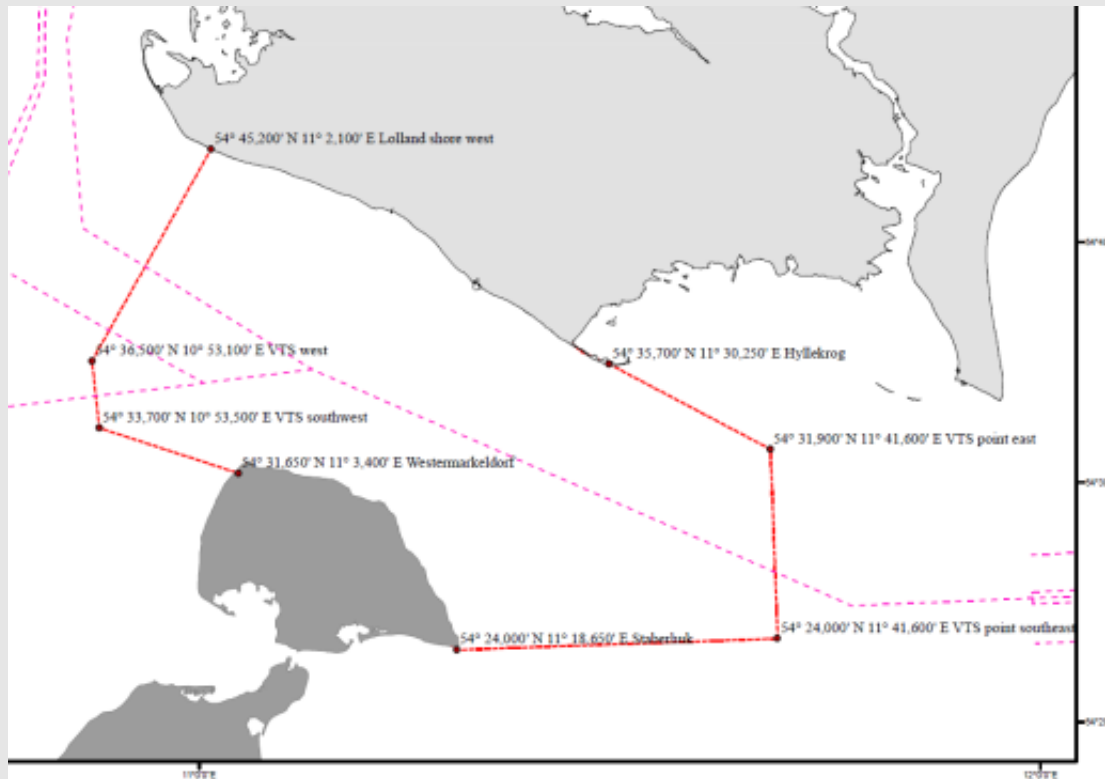


## How did we get there?

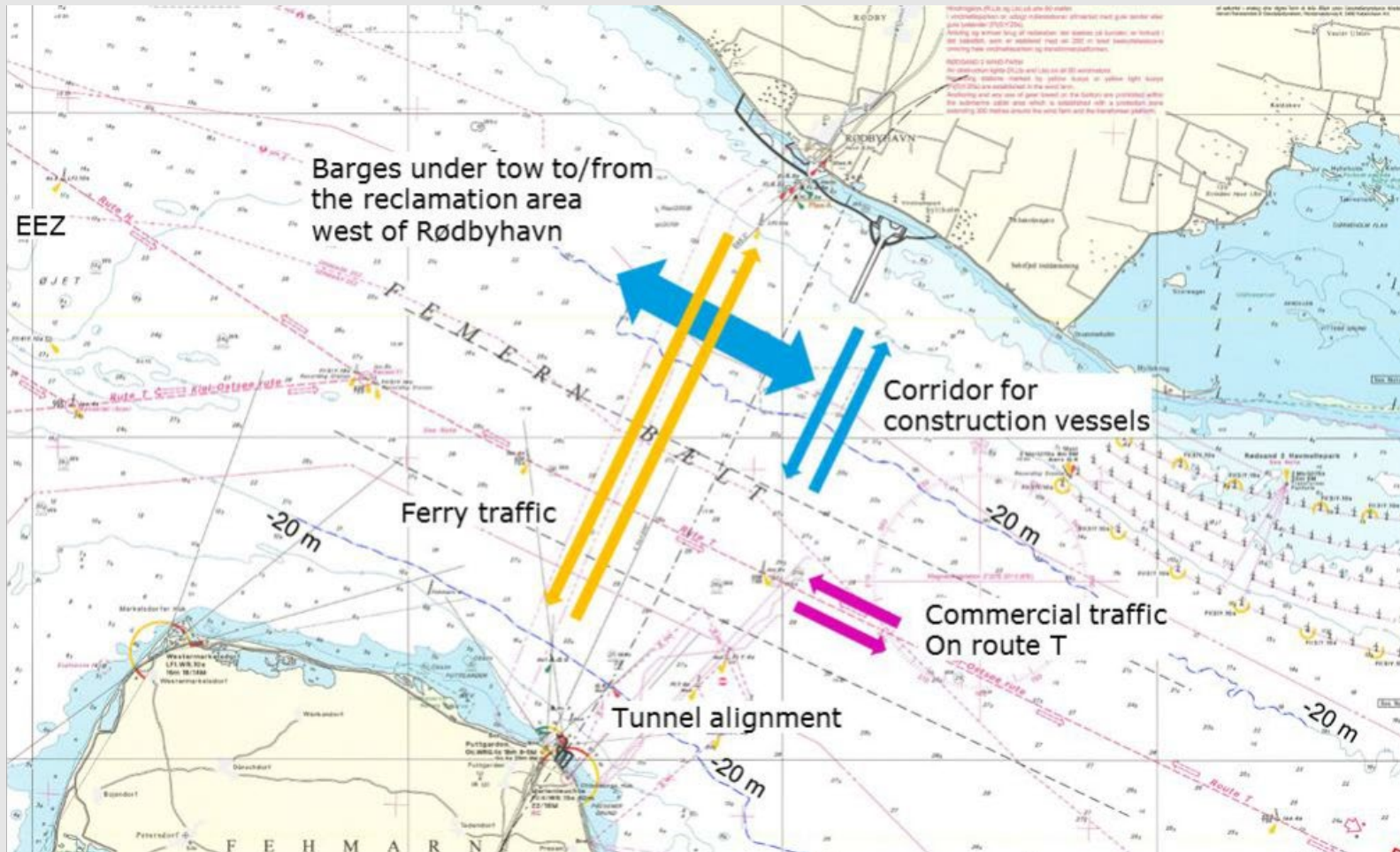
- close bilateral cooperation from the beginning on all levels
- the founding of the DenGer Administration group where both Danish authorities (DMA and RDNC) and German authorities (Federal Waterways and Shipping Agency and the local office for the Baltic Sea) met regularly and discussed all issues
- The negotiation and signing of a VTS agreement between the Danish-German authorities and Femern A/S
- The negotiation and signing of an additional agreement between the relevant bilateral authorities
- The early implementation of a VTS management team consistent of both the Danish and German manager and deputy manager to be in charge of all operational aspects
- The development and implementation of operational procedures, watch orders and internal regulations based on IALA Recommendations
- Joint VTS training including VTS simulations at German simulator



## VTS-area



# The Fehmarbelt



## Tasks of VTS Fehmarnbelt

- VTS FB is a voluntary VTS as it operates to a large extent in the Danish and German EEZ
- In addition the VTS area is considered a common responsibility area and as a result Danish operators can act in German areas of responsibility and vice versa
- VTS Fehmarnbelt shall establish contact with all vessels 50m or longer or 300GT entering the VTS area
- It should provide information on the construction work, position and marking and crossing of work vessels including advice on where to pass the restricted areas
- the crossing work vessels are obliged to report departure and arrival to the VTS
- In case of a developing unsafe situation, between either the passing traffic or the crossing traffic (work vessel or ferries) the VTS shall establish communication with the relevant vessels and if deemed necessary issue warnings or advice to avoid near-misses, collision or any other dangerous situation
- Provide routine broadcasting of the traffic situation every hour or if deemed necessary at any time with urgent information

## More tasks

- VTS FB can use 2 guard vessels and provide 1 assistance tug
- Close cooperation between VTS FB and the Maritime Operations Center by Femern A/S
- Emergency procedures in place including evacuation of stationed work vessels in the restricted areas in case of danger to the restricted areas
- Either a hopper dredger or a vessel retrieving boulders is allowed to operate outside the restricted areas
- VTS FB has the right to delay the start of operation or abort the operation of that vessel in case of a developing dangerous situation with a passing vessel
- Ensure the involvement of the respective national authorities/institutions in case of a developing situation where a national authority must intervene
- And specifically in summer time keep all the pleasure crafts with no knowledge of the construction work or the meaning of the marking out of the restricted areas

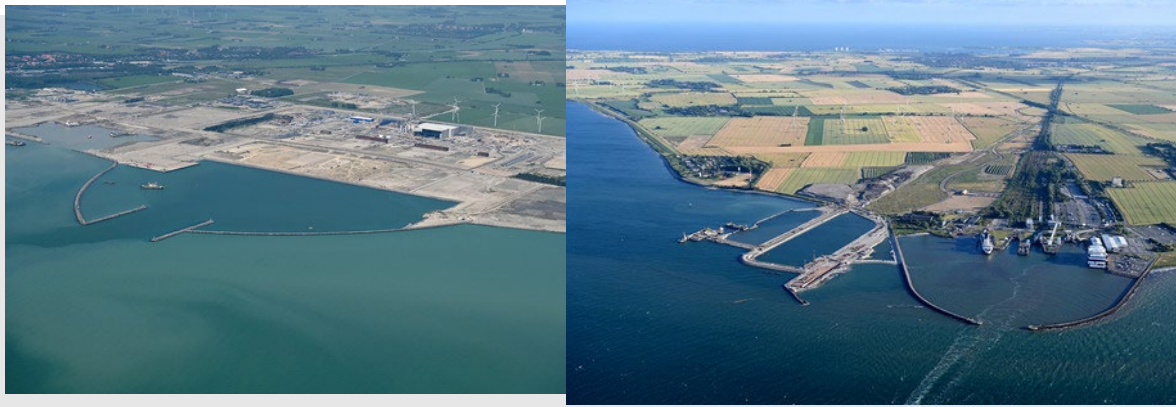
## Legal challenges

- The duration of the project is very long
- The first ideas of implementing a shared VTS started more than 10 years ago and the circumstances evolved constantly
- Both DK and GER have very advanced national VTS systems with a long tradition, so it was difficult to leave that „national perspective“, also finding acceptance on the national level after agreement in the DenGer Administration group
- On the German side the tunnel project was under heavy legal attack especially from the ferry company and environmental NGOs
- All documentation had to be released under the German Freedom of Information Act
- Issues and questions will come up until the end of the offshore construction work and the end of operation for VTS FB

## Legal lessons learned so far

- all of the above mentioned concepts and procedures had to be developed from scratch (despite experiences of a bilateral VTS between DK and SWE)
- There are 2 different countries, 2 different legal systems, 2 different VTS-systems and despite being neighbours sometimes cultural differences.....
- No system is better than the other, they are just different
- IALA Standards always helped to provide guidance in discussions as they are universally accepted and remain impartial
- remain close to the operational side of things in order to understand the operational needs better
- Think outside the box of „your national system“ when drafting procedures etc.
- Provide solid procedures, but trust the expertise of the VTS managers and operators to apply them on a daily basis and in all situations

Wir machen Schifffahrt möglich.



**Thank you!!!**



S15

@Femern A/S