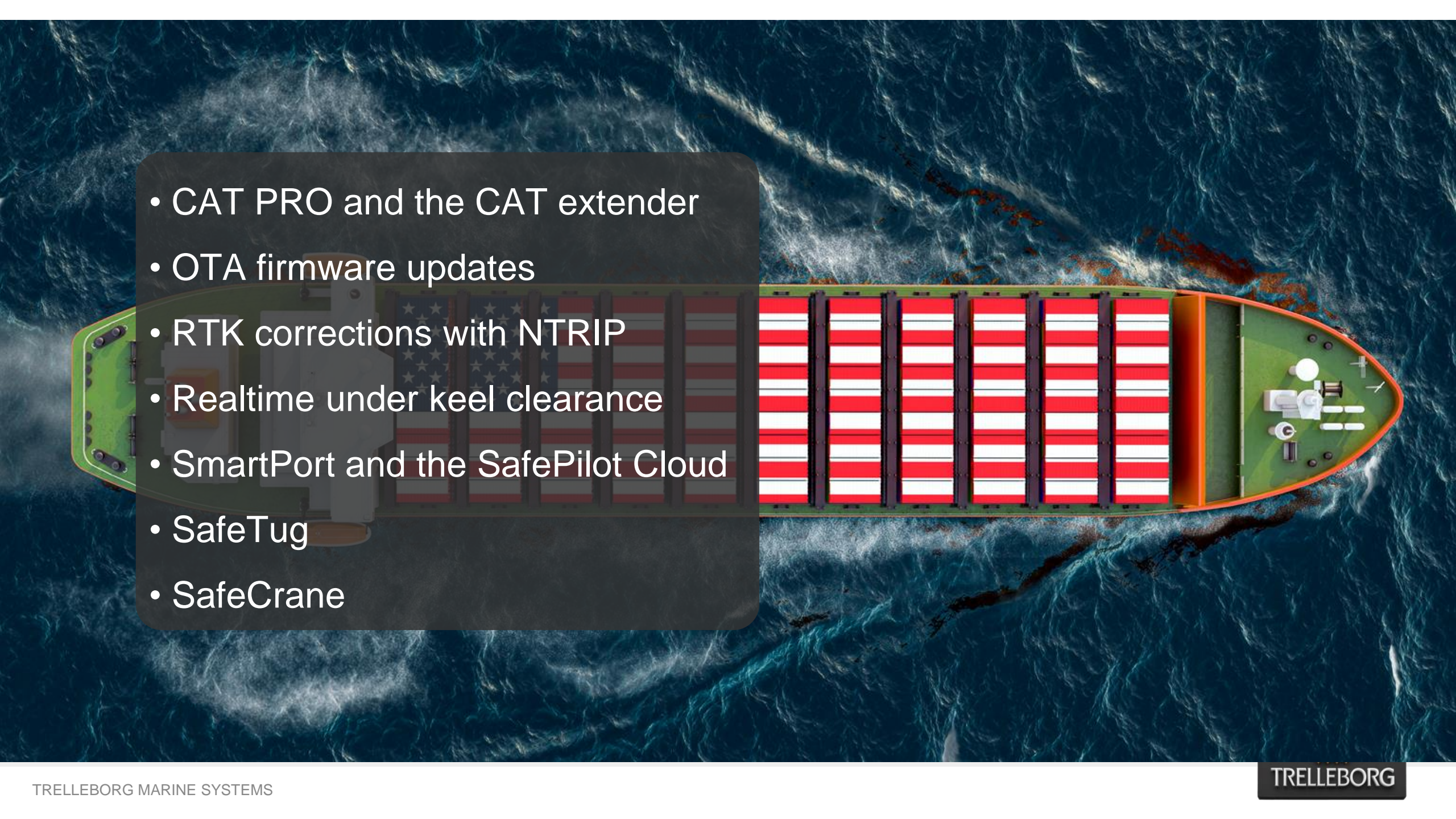


NavTech Conference – December 6th 2022

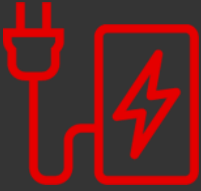
Jakob Poulsen – Development Manager

Trelleborg Marine Systems Denmark



- 
- CAT PRO and the CAT extender
 - OTA firmware updates
 - RTK corrections with NTRIP
 - Realtime under keel clearance
 - SmartPort and the SafePilot Cloud
 - SafeTug
 - SafeCrane

Quick charge
< 1 hour
0-80%



Same small form factor



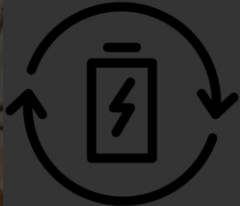
Qi charging



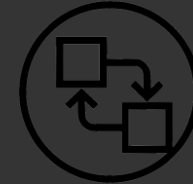
All satellites



60 cm SBAS
1 cm RTK



X2 ~ 30h



Swappable



"You forgot me"



420 g



OTA
Firmware
updates



WiFi
Extender



NTRIP
Corrections



- Three units
- Highly flexible
- Swappable
- Independent

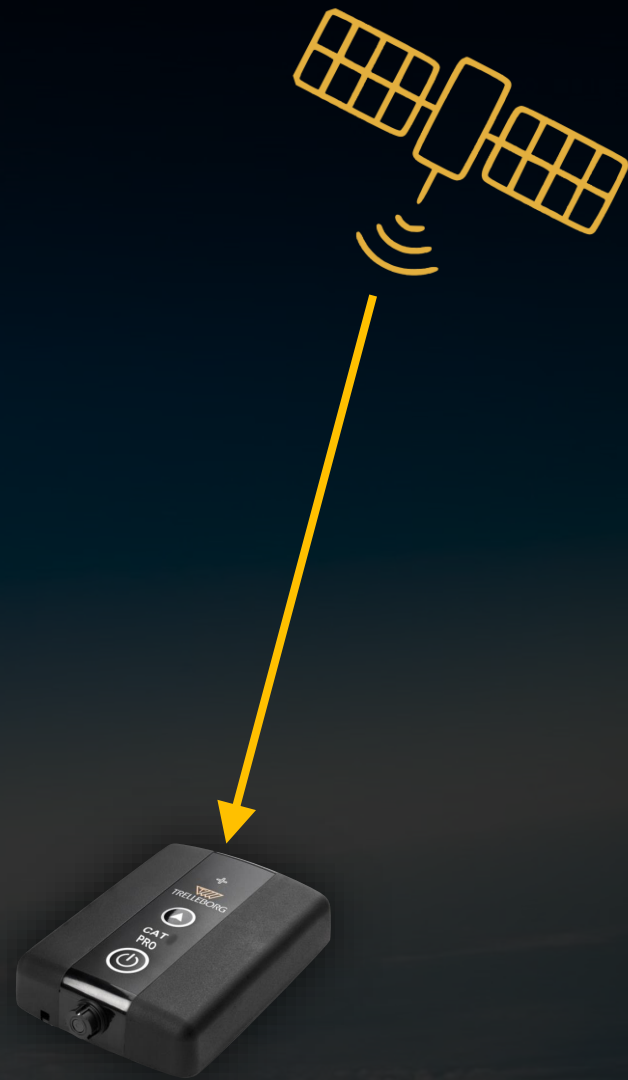
- The CAT Extender
- Small unit
- Connects to pilot plug
- Powerful Wi-Fi coverage



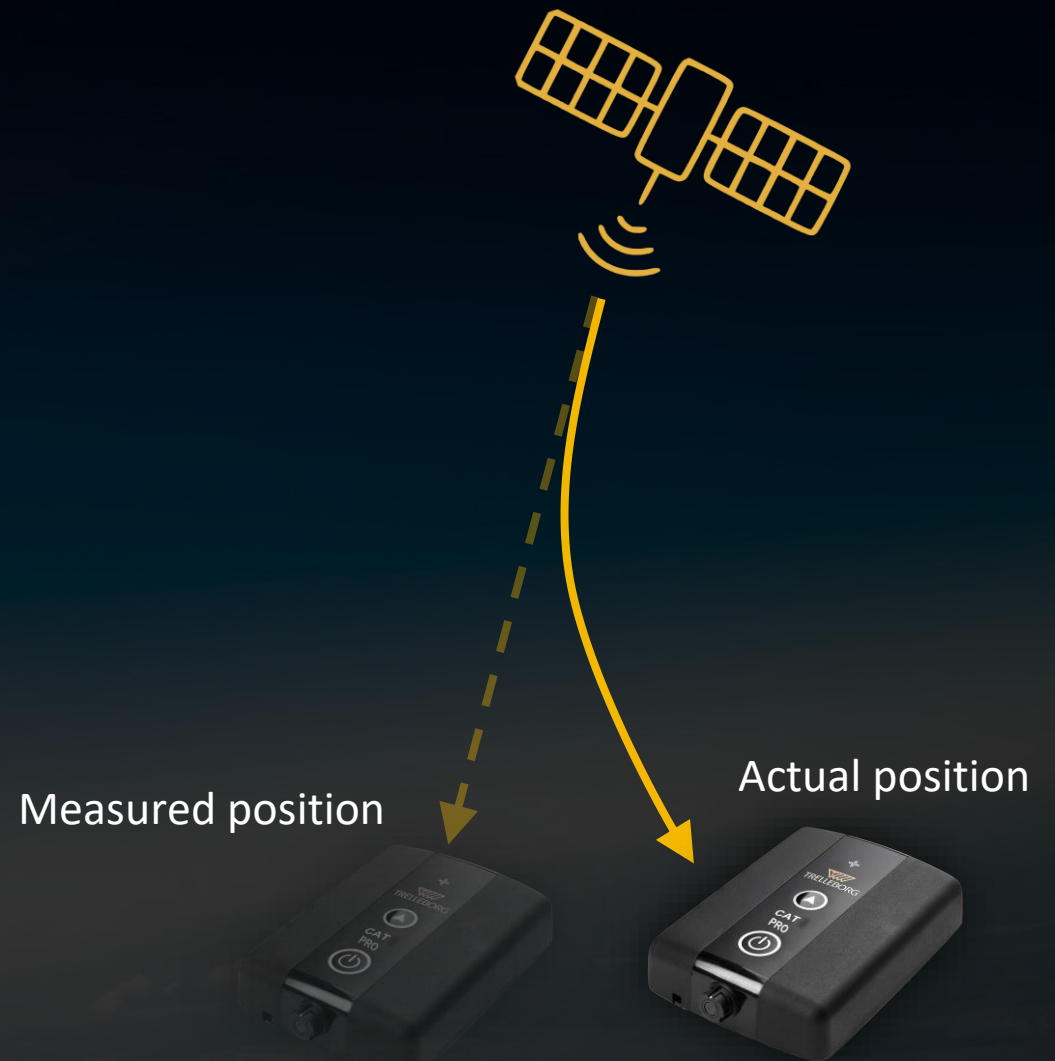
- Firmware update from SafePilot
- Just press the button
- No files
- No cables



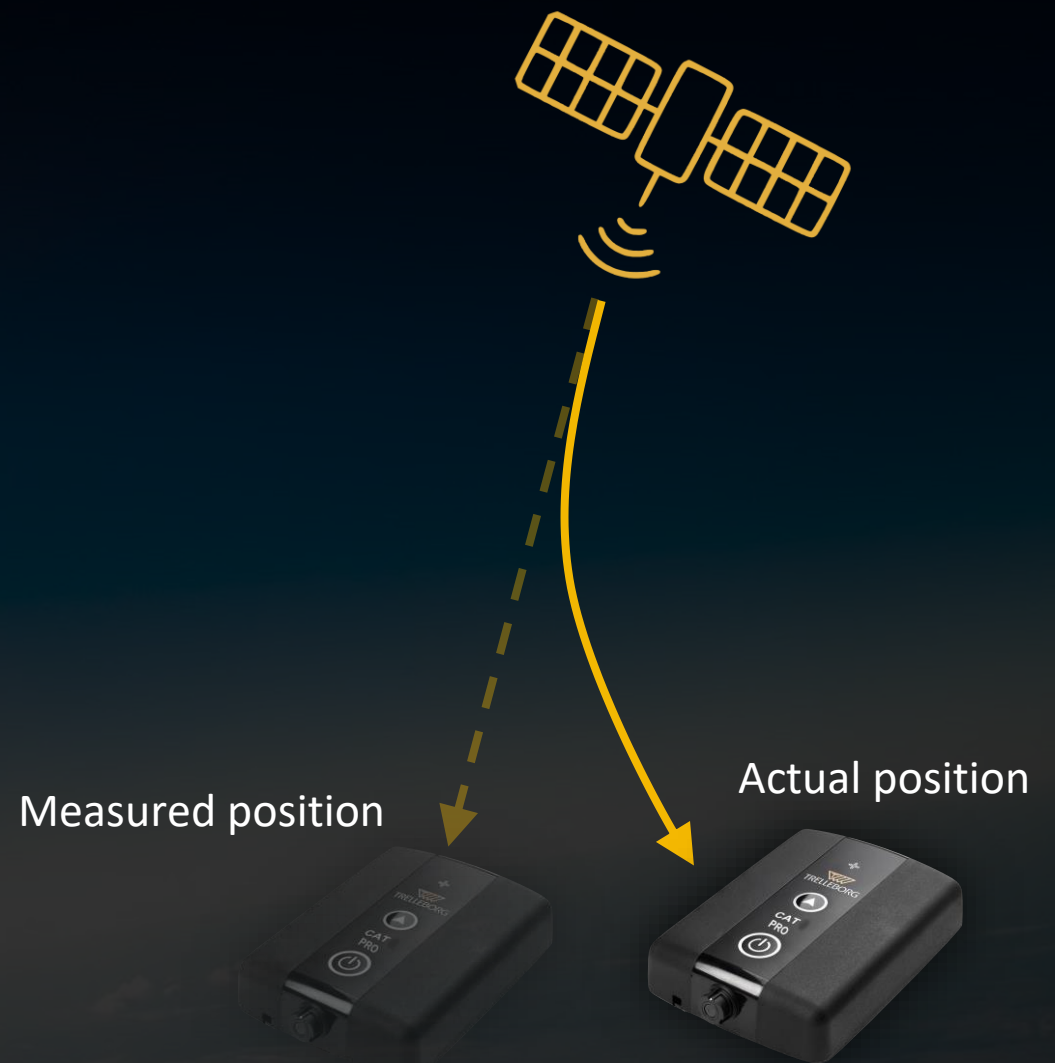
- RTK corrections
- Centimetre accuracy
- NTRIP services
- Internet based



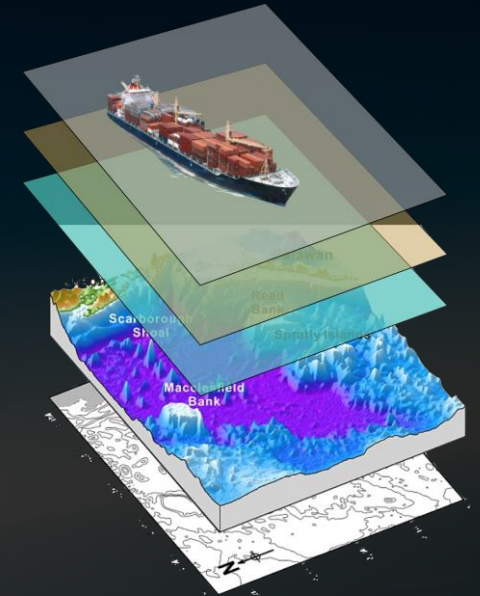
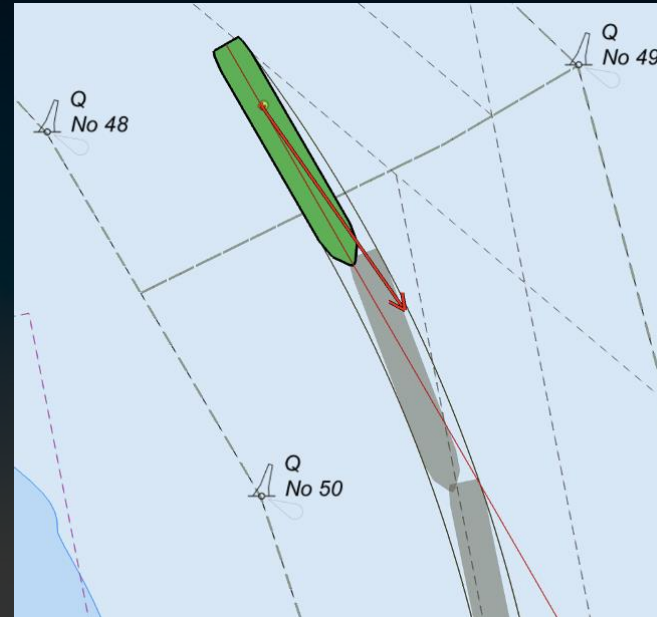
- Deflection through the atmosphere
- Measured position is offset from actual position
- Corrections improve accuracy



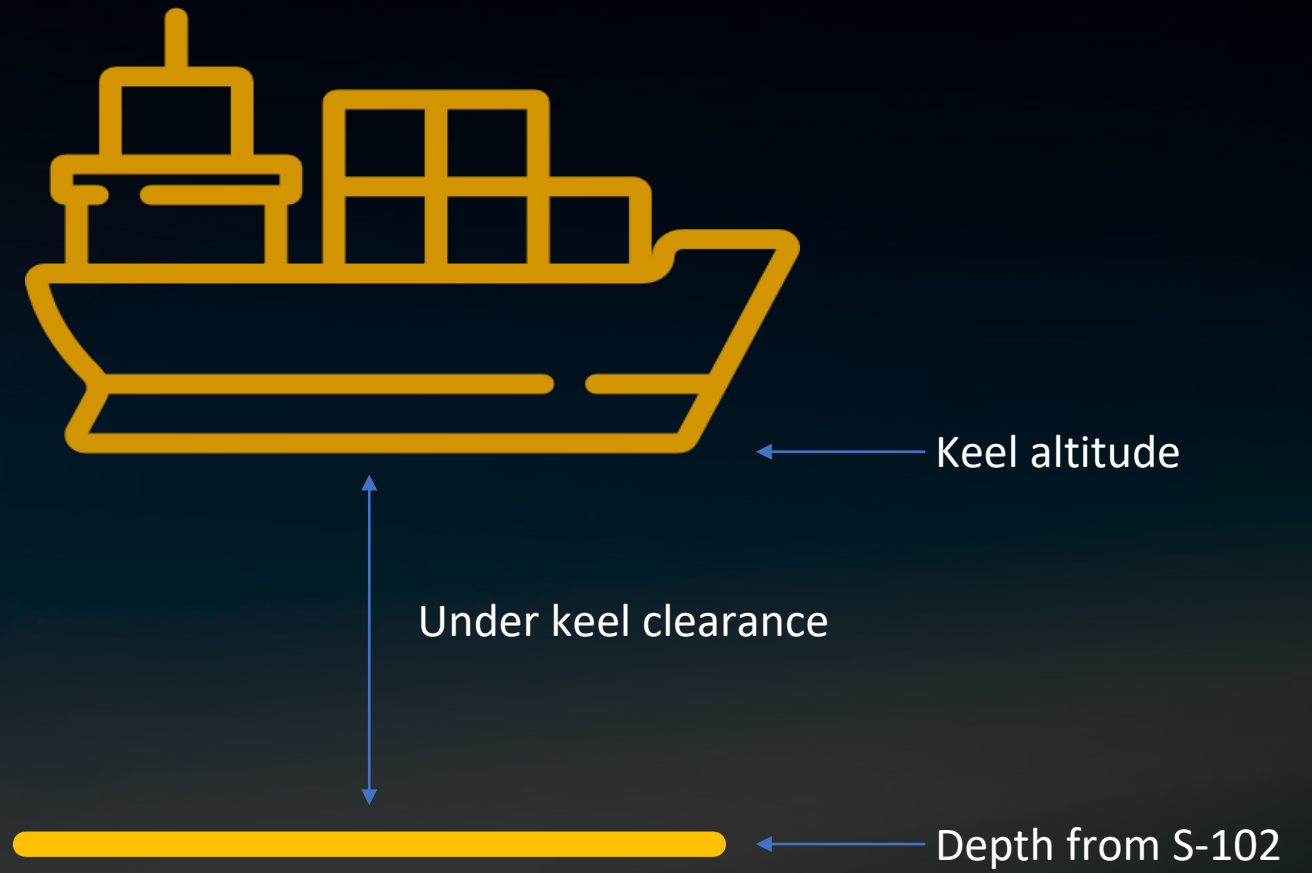
- SBAS corrections via satellites
- RTK corrections via UHF or Internet based

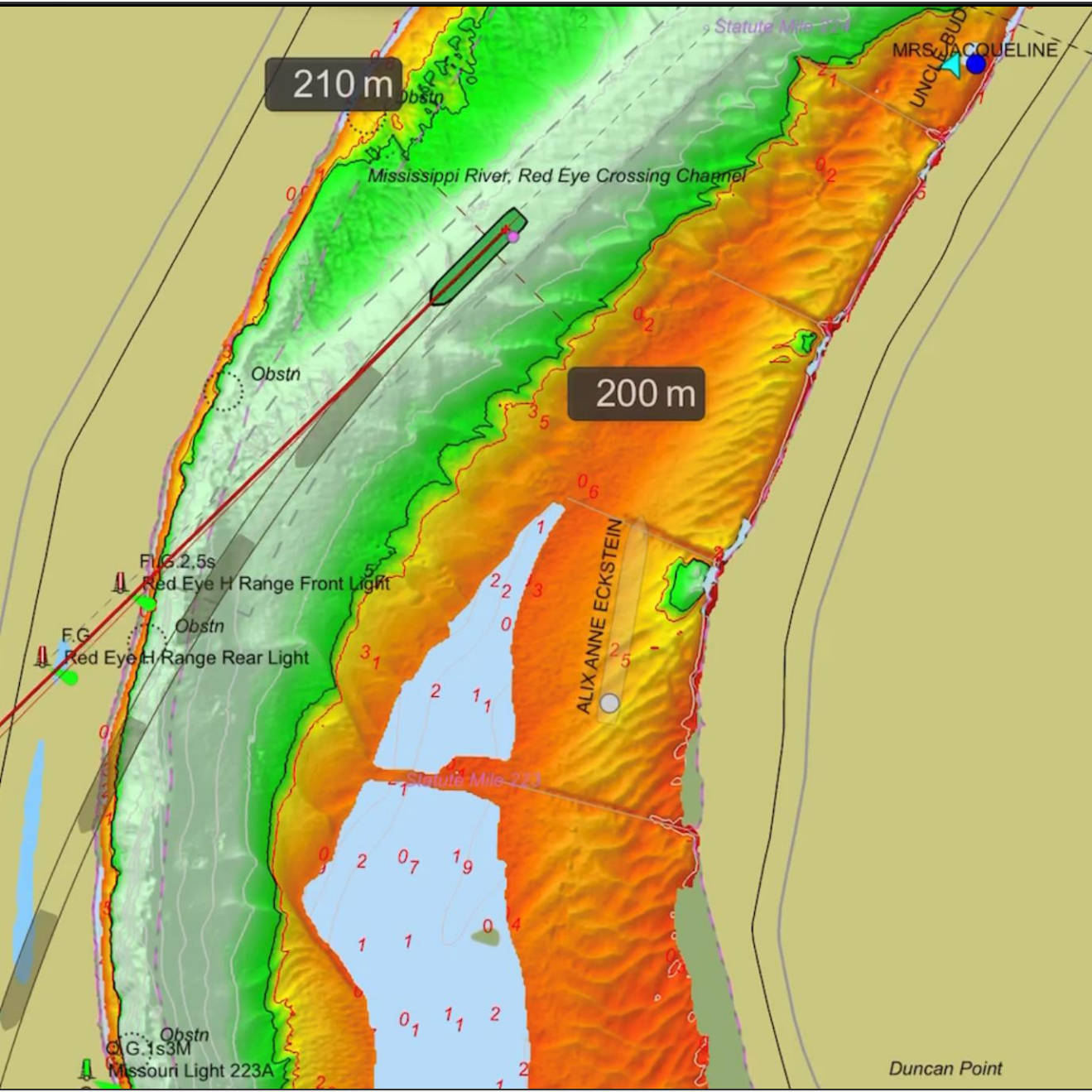


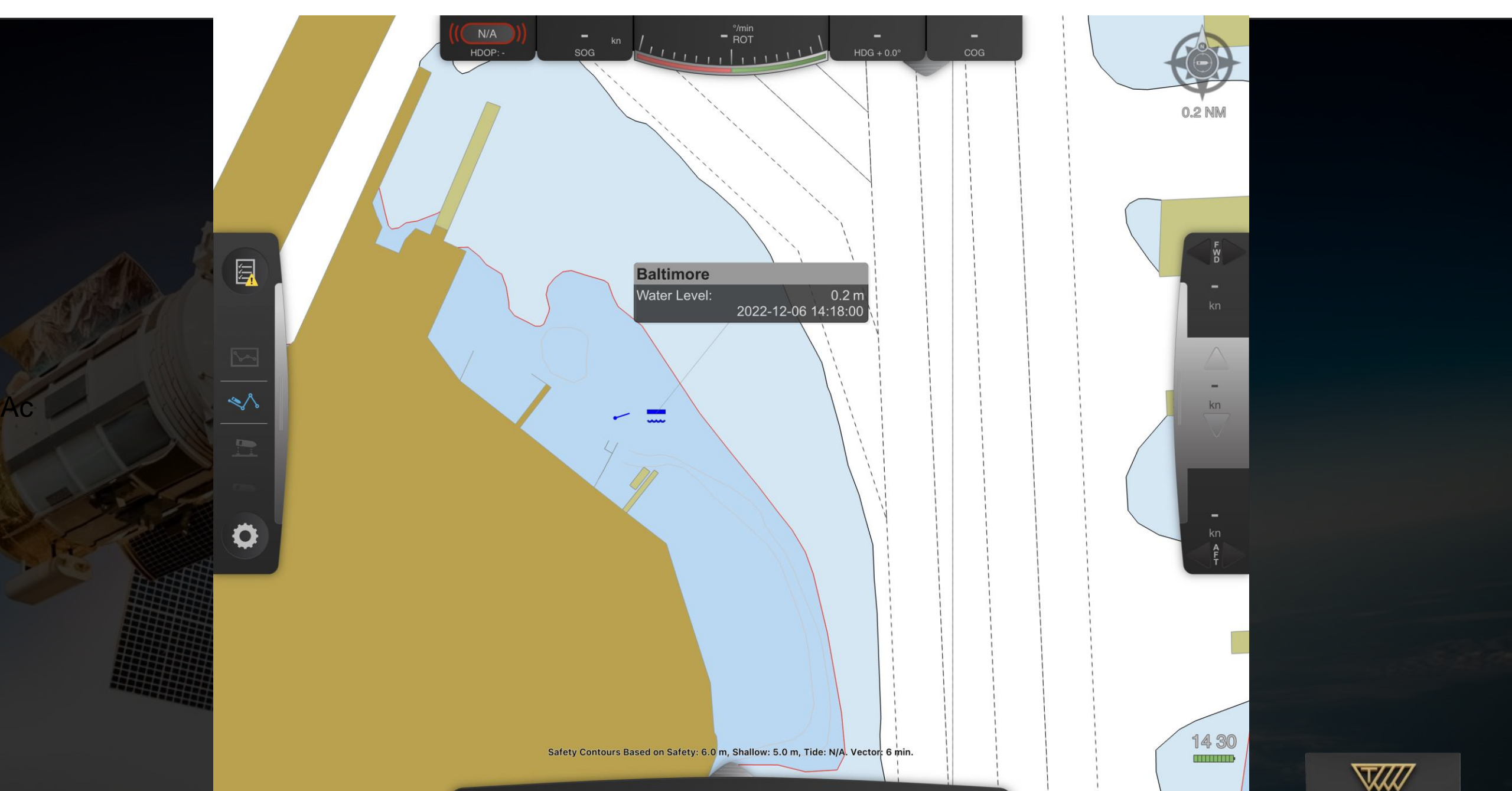
- Why do we need RTK?
 - Horizontal accuracy
- vs
- Vertical accuracy



- S-102 bathymetric data
- Keel altitude
- Under keel clearance
is difference between the two



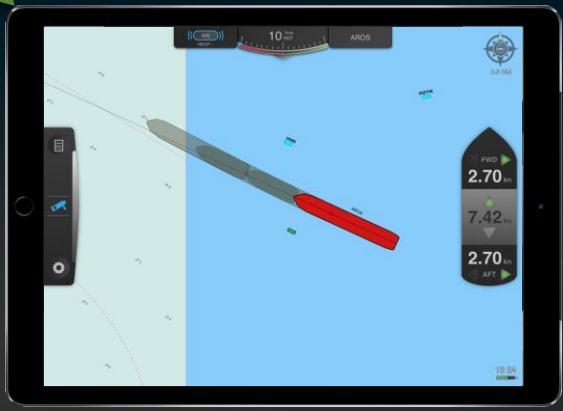
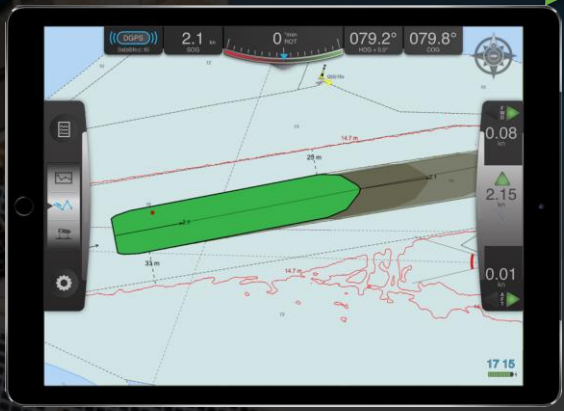
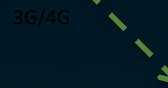




Ac



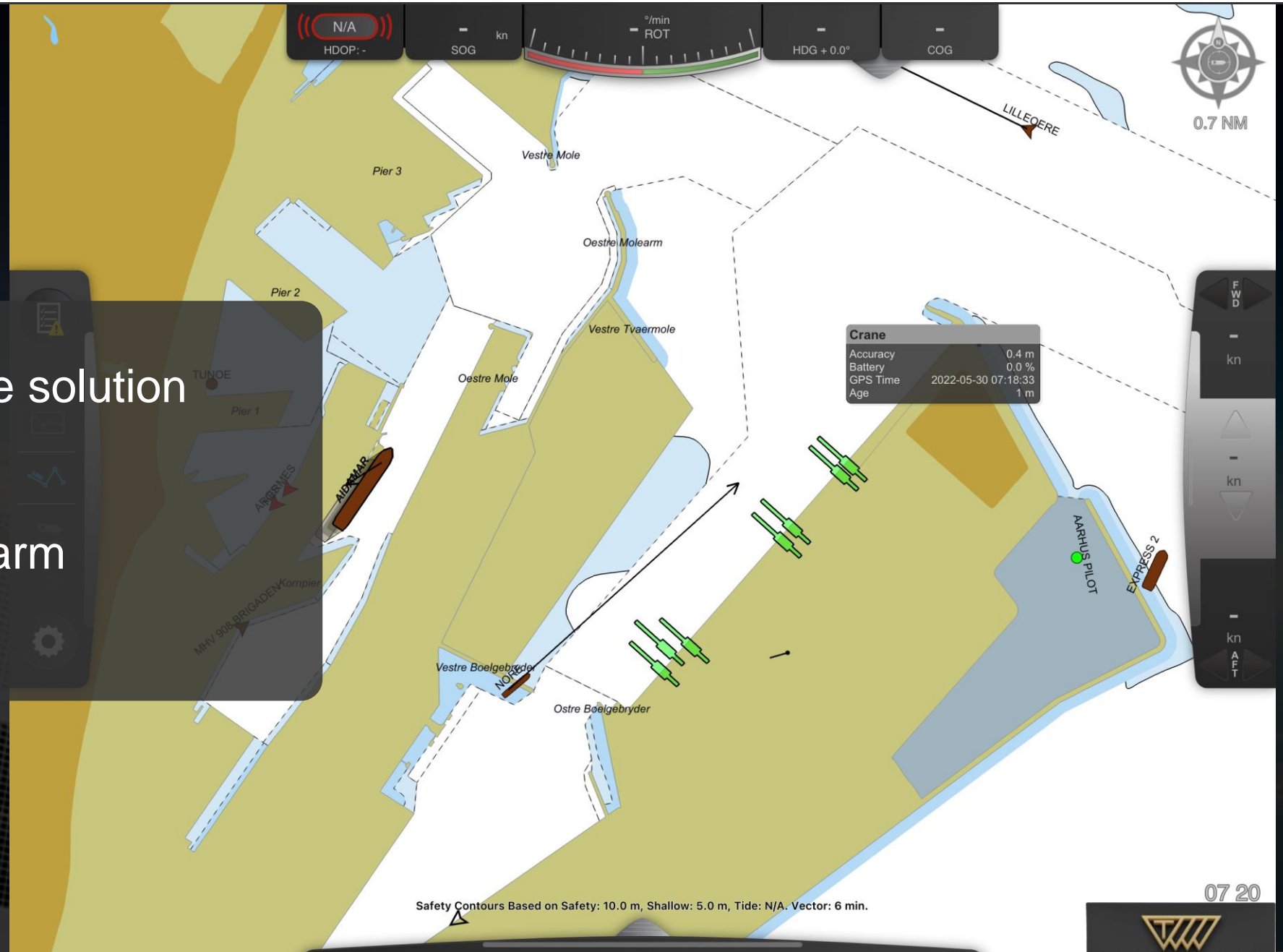
SafePilot Cloud



- Trelleborg SafeTug solution
- High accuracy
- Frequent updates
- Shared situational awareness



- Trelleborg SafeCrane solution
- Crane locations
- Status of e.g. crane arm
- Increased safety





TRELLEBORG