



Question here: to what extent the IENC should be equipped to provide the user with information, so that the user will NOT take an undesirable course when passing a complex infrastructure situation (“lock , barrage and bridge”)

Encoding Inland ENC's for complex situations

Lessons learned after an accident on the Maas.

René Visser

Rijkswaterstaat

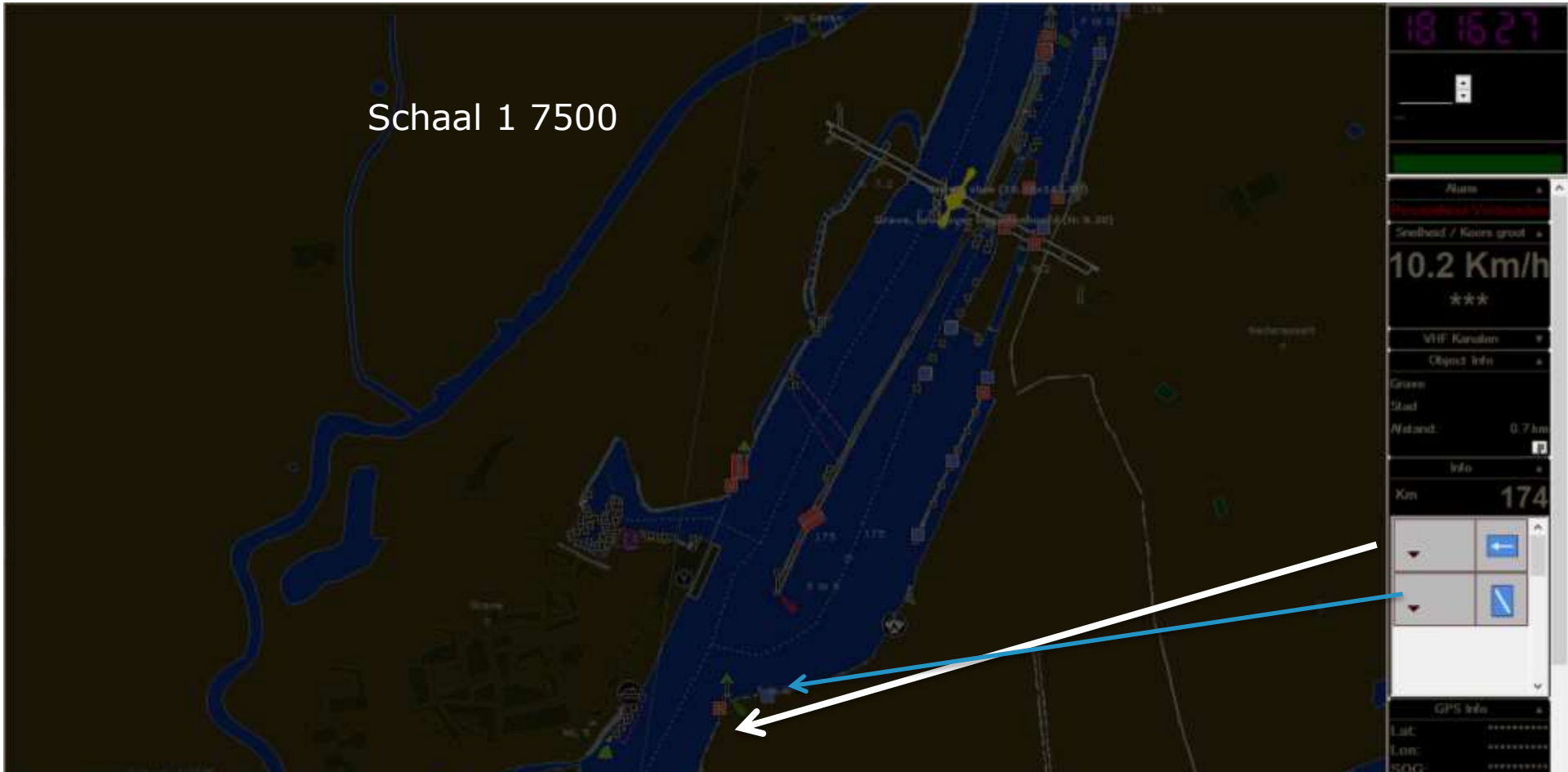






Possible IECDIS view at that moment downstream approach to the complex Grave

Schaal 1 7500



After research it is known that the use of Inland Ecdis was not related with the accident !






RWS Research on several complex situations

Situation & ATON's in the real world

General

It is not always that clear what the desired sailing route is

- Difference in use of signs  
- Some place there is the sign 'Weir'  ; at other spots not
- Three different ways of closing the weir channel with ATON's



RWS Research on several complex situations Inland ENC

General

ECDIS users (information mode) can choose the method of symbolization themselves!!

So it is not certain that coded information will be shown in the IECDIS

Results

- Important signs for deciding the recommended route are not clearly visible
- Deviations from the actual situation outside
- Conflicting information by encoding both routes (Lock channel & Weir channel)



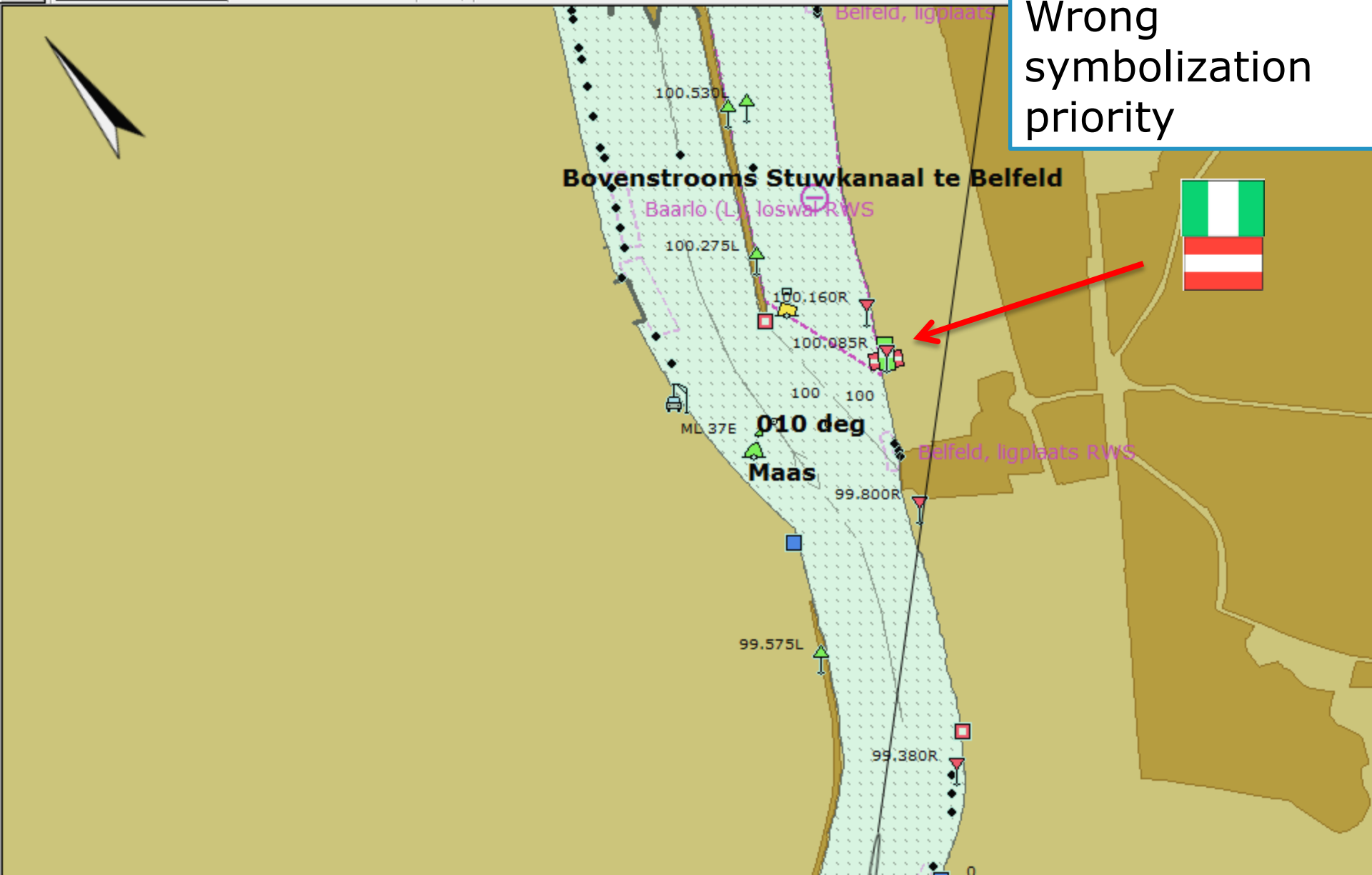
Showing detailed information of Notice marks what is the desired sailing route ?



Plan Monitor Std Usr All
Schaal

Scherm Navigatie Waypoints Aantekeningen Symbolen Simulatie Reis
Navigation controls: back, forward, stop, play, etc.

Wrong symbolization priority



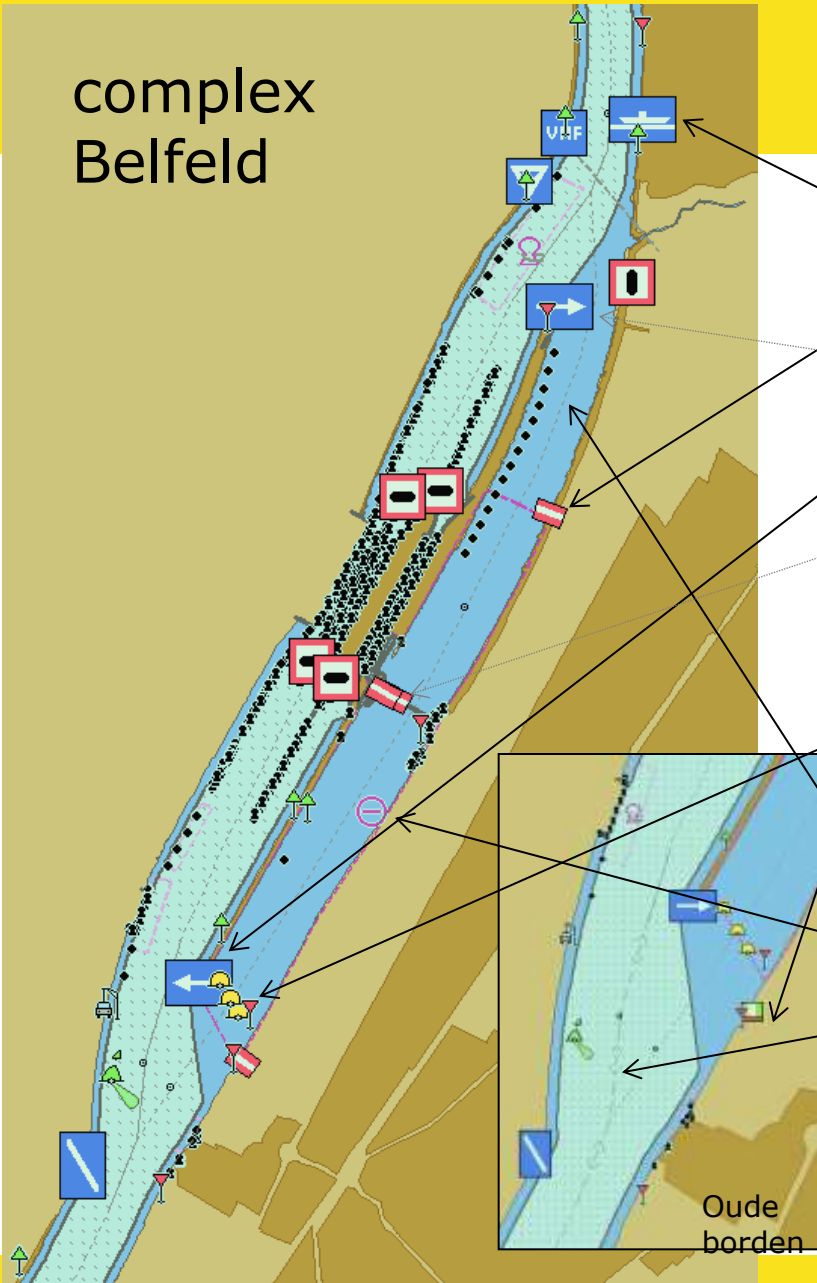







starting point IENC's

- We have to deal with dynamic situations in barrage and lock complexes.
- The IENC will not follow this dynamic situation in real time.
- The IENC will be statically coded, with a recommended route. This is the route through the lock. If the weir is open for navigation, it will not be displayed in the IENC.



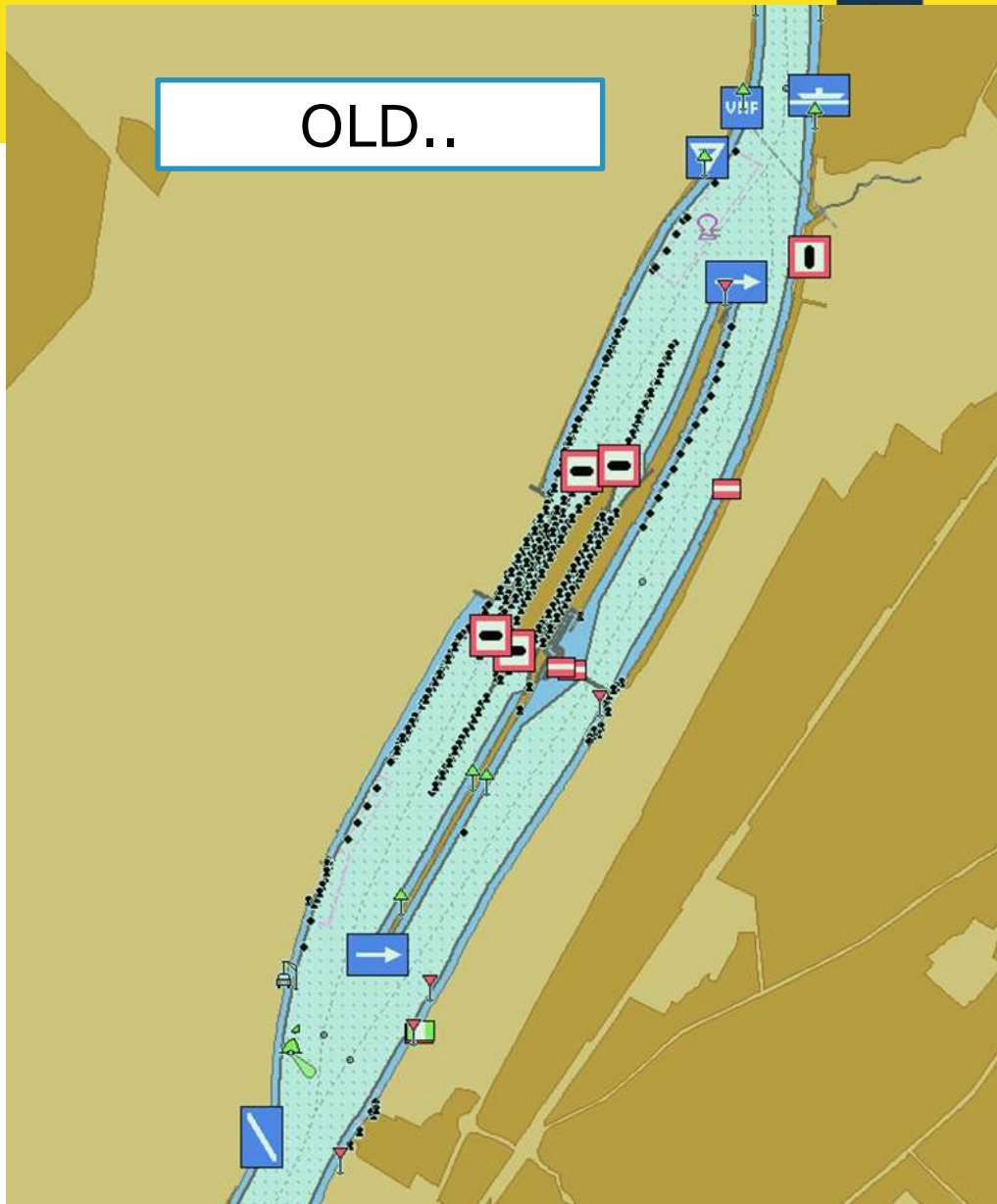
complex Belfeld



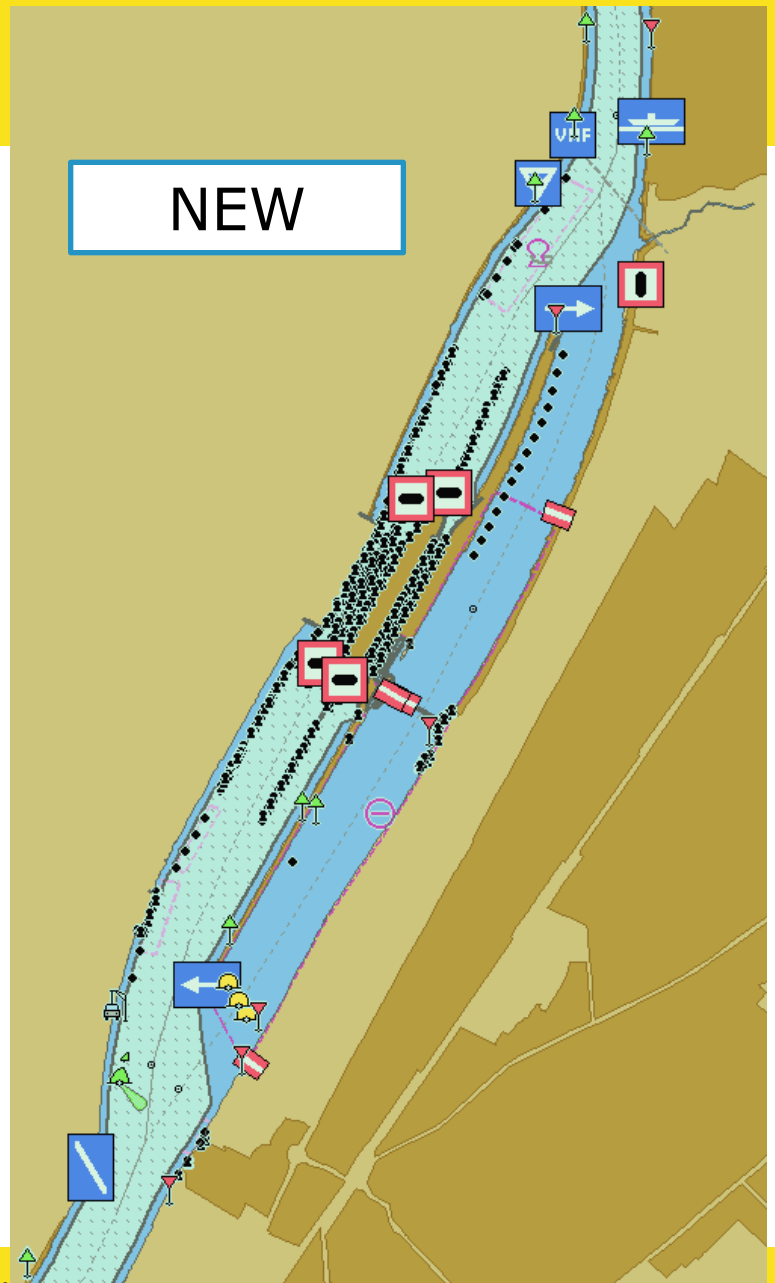
1. Match ATON's with ATON's outside
2. Improve A1-signs with the right orient
3.  towards the lock
4.  towards the lock
5. Remove yellow light or sign  from the bridge
6. Remove E1-sign 
7. Encode fenceline with 
8. Remove fairway from the weir channel
9. Add restricted area's
10. Add recommended track towards the lock



OLD..



NEW



Rijkswaterstaat



Not recommended adjustments in the IENC!

Apply virtual marking.

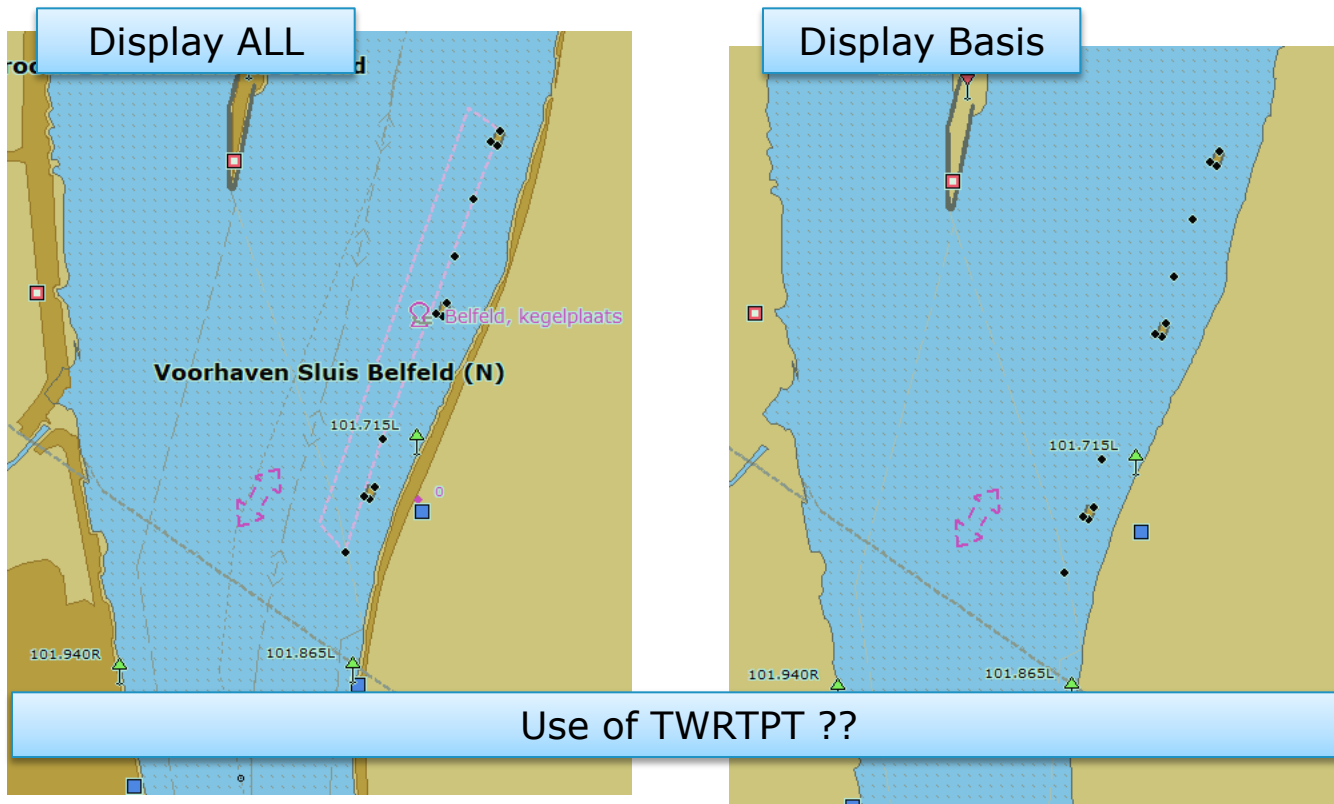


One said : Could lead to confusion!

Future?!



The arrow is not recommended for now. But....





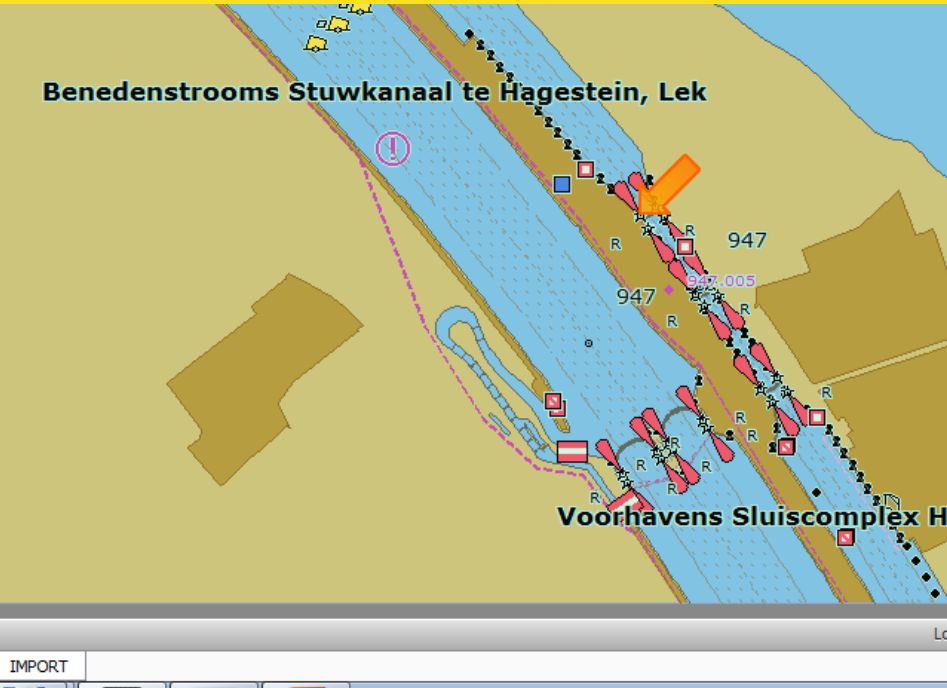
Issues – Solutions?

- Make these notice marks always visible, like the A1 sign





Benedenstrooms Stuwkanaal te Hagestein, Lek



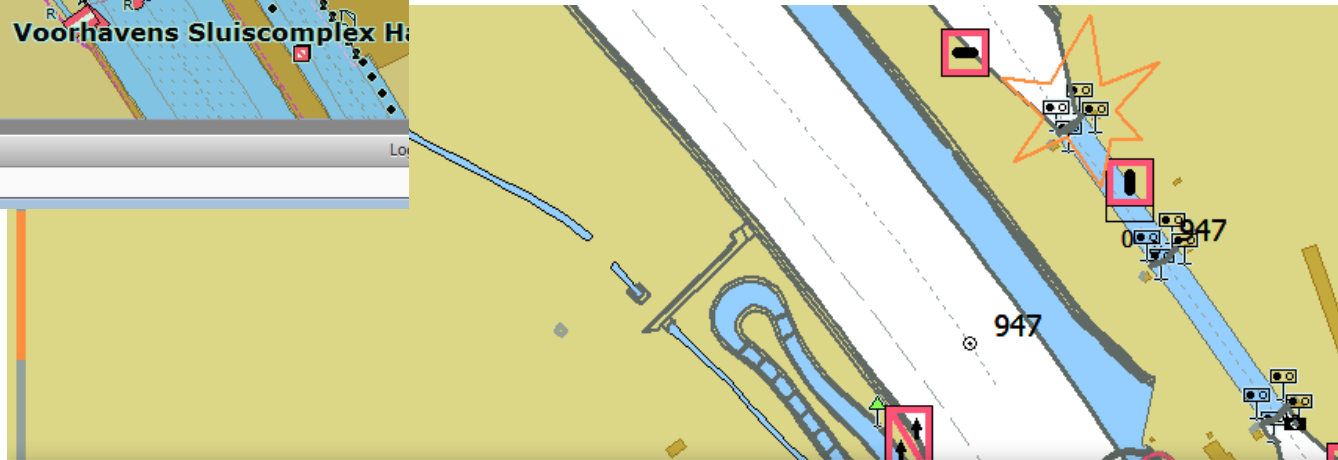
Voorhavens Sluiscomplex H

How to reduce clutter

Is B5



needed in the IENC?



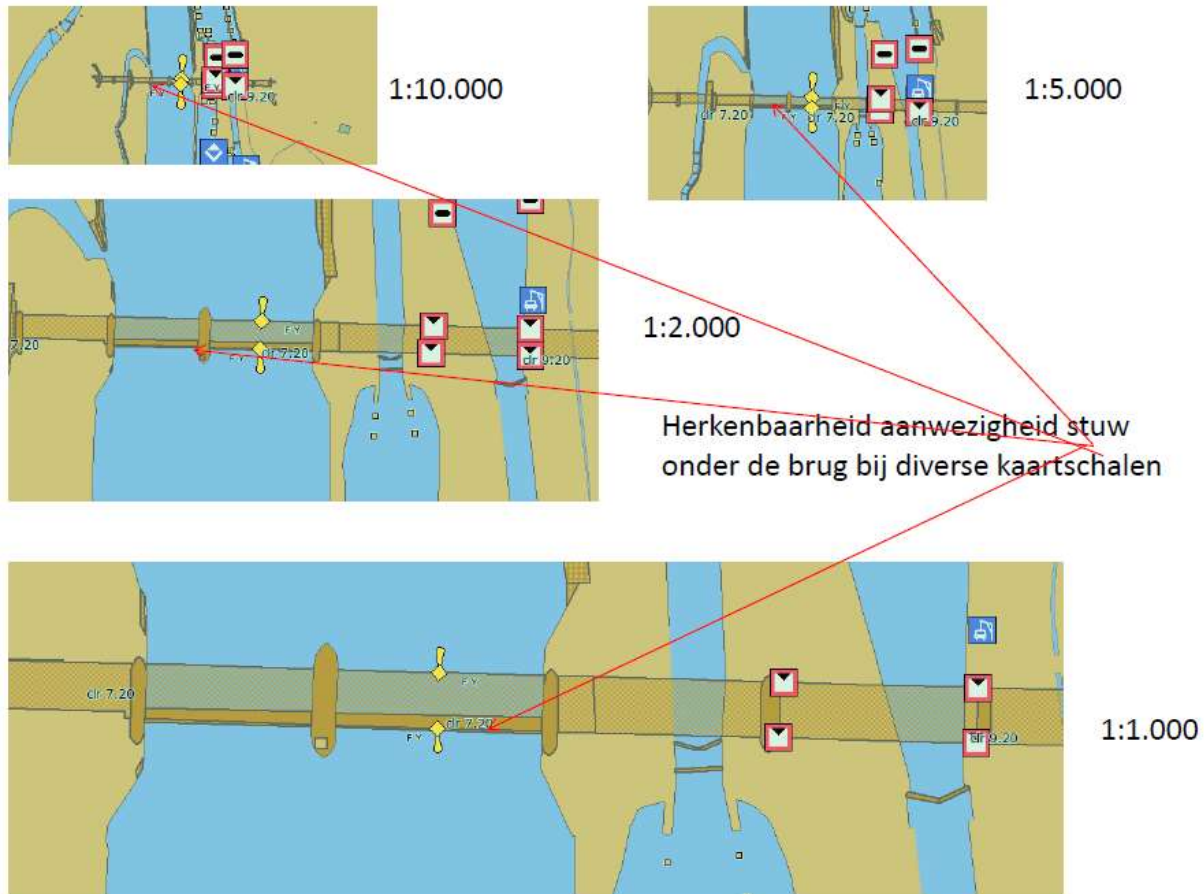
Kaartobjecten

- 9T7LE962
- Seinhuis, verkeer
- Seinhuis, verkeer

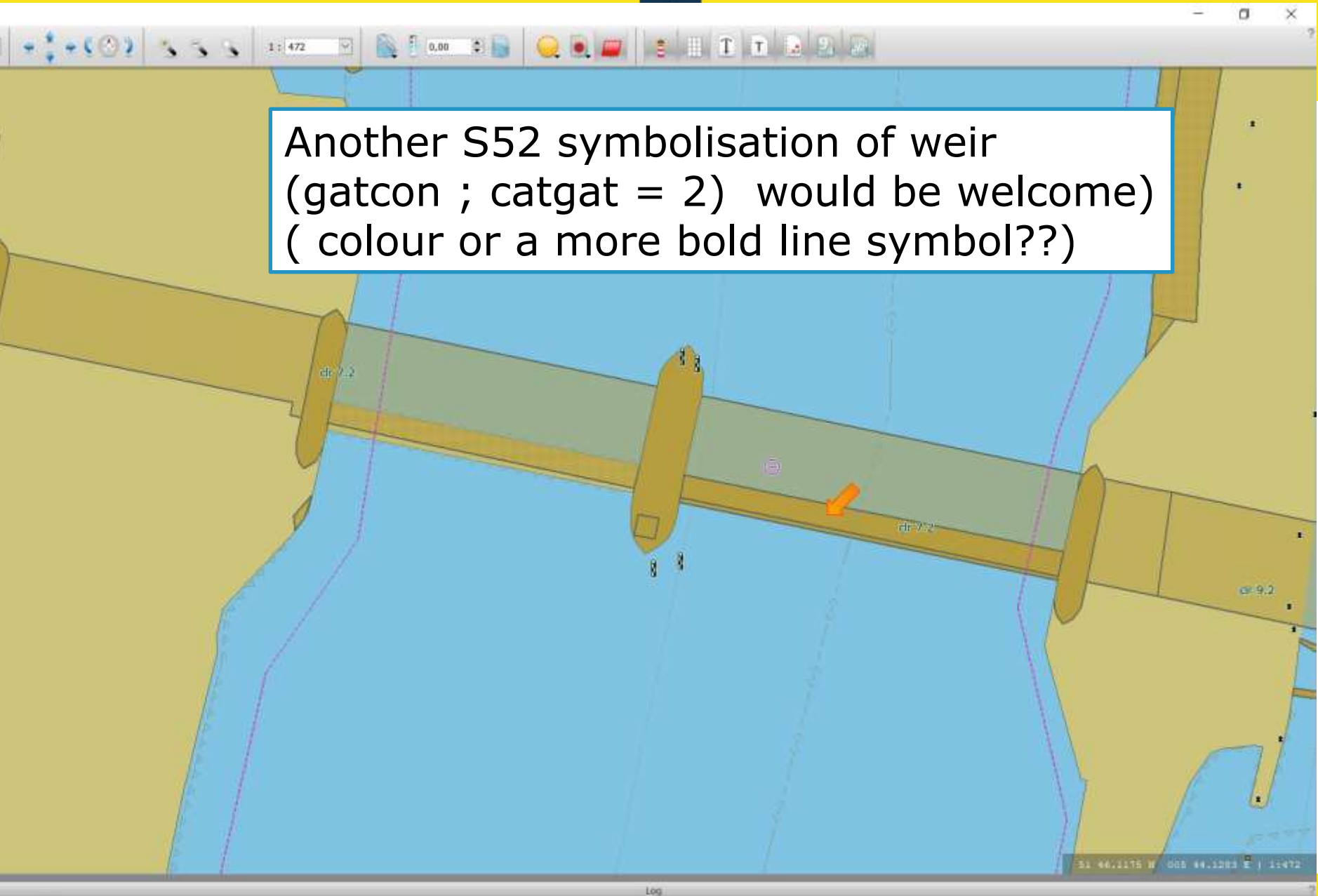
Attributen	Waarde
Minimum schaal	22000
Soort signaal station, ...	sluis



Better visible symbolization for weirs



Another S52 symbolisation of weir
(gatcon ; catgat = 2) would be welcome)
(colour or a more bold line symbol??)





Questions

- is inclusion possible for a separate encoding instruction of "complex waterway infrastructure" in the IEHG IENC Encoding Guide?
- Is there a solution for **not showing** signs that are related to the opposite sailing direction, because sometimes these are confusing in the Inland ECDIS



- Thank you!
- Ideas , remarks are welcome
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