Input paper: ARM12-7.3.9

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Agenda item 7

Technical Domain / Task Number R0139 (O-139)

Author(s) / Submitter(s) CHINA MSA

Modification proposal for R0139 (O-139)The Marking of man-made offshore structures

# Summary

There are all kinds of breakwaters in Chinese ports, especially in the Yangtze River Estuary of Shanghai port, where the ship density is high and the navigation environment is complex. Since 1998, more than 120 kilometers of various breakwaters have been built there, which is the largest and most complex artificial structure group in the world. The AtoN the breakwater ensure the safe navigation of ships. In this regard, it is suggested that in the revising IALA R0139 (o-139) ‘The Marking of man-made offshore structures ‘, various factors should be recommended comprehensively when marking arrangement for similar breakwaters, including the structure of breakwater and its water conditions, traffic density and risk level etc.

# Background

Arm 11-8.5 (arm10-13.2.11) is in the process of revising IALA R0139 (o-139) "The Marking of man-made offshore structures" and soliciting the opinions of Member States. The revision involves the breakwater marking. In this regard, combined with the application practice of breakwater marks in China, the corresponding amendment suggestions are put forward.

# Discussion

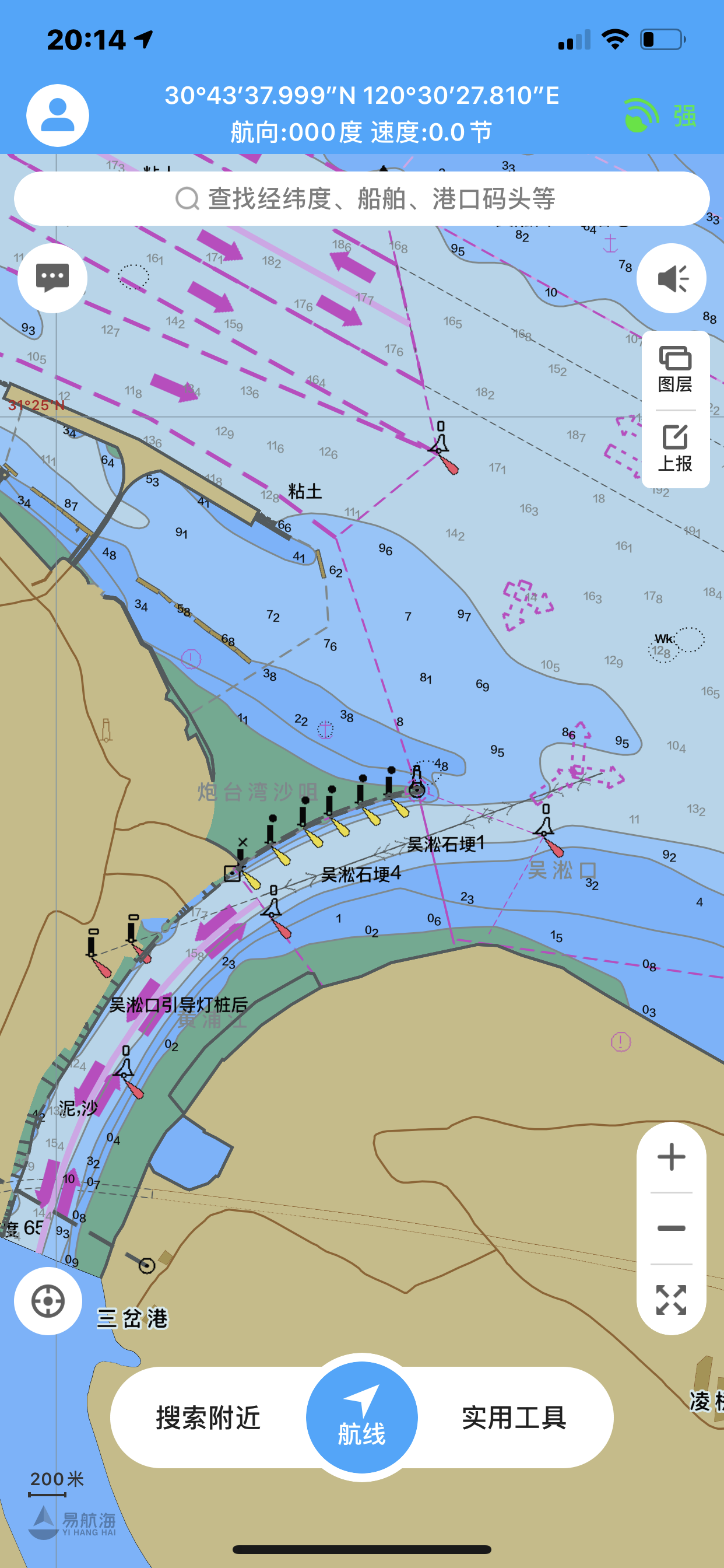
1. It is mentioned in 2.6.1 of the draft: :Large Commercial Ports – Some larger ports incorporate a combination of special marks, spaced at an equal distance apart (no more than 200m), in a similar fashion to that illustrated in section 3.3. Examples of where ‘Special Marks’ have been used extensively to mark breakwaters include the Port of Brisbane (Australia) and port of Townsville (Australlia). Examples of marking arrangements are included ，but this example is special and not suitable for all situations. The distance between signs shall not more than 200 meters. Usually, there will be too many aids to navigation and making the lights too dense. Only when the risk level is high, this kind of arrangement is needed.
2. It is mentioned in 2.6.1 of the draft: Examples:1.Marking with fixed AtoN,but this example, like Figure 2 in 2.6.1, does not apply to all cases. It is too higher requirement that the distance between the AIDS to navigation set with fixed marks is less than 200 meters. In China, the maximum is 1000m.

# Proposal

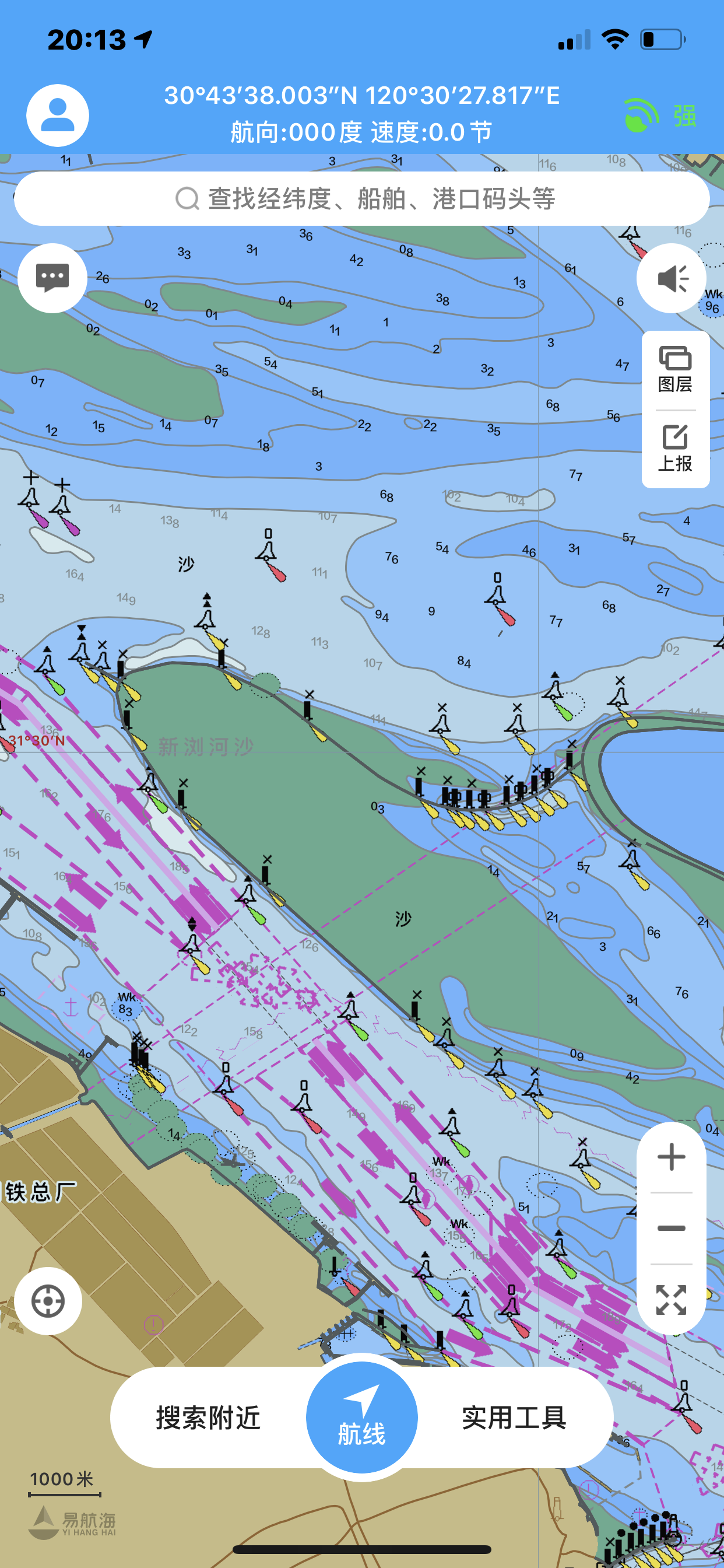
1. (Add the following contents on the basis of the original text)

The deployment of exposed breakwater marking shall be recommended in accordance with the following criteria, taking into account various factors, including the structure of exposed breakwater and maritime conditions near the deployment site, traffic density and proximity to the port.

1. When the breakwater is parallel to the channel, the color of the light pile and light tower at the head of the breakwater and the side of the channel shall be the same, but the light quality shall be different from that of the side marker of the channel.
2. Generally,AIDS to navigation are set every 1.0-1.5 nautical miles on the breakwater, and the lights of AtoN on the same breakwater flash synchronously. When there are many navigable ships nearby, the navigation aids can be encrypted according to the level of risk assessment. When the breakwater is built in the navigable waters of ships, the spacing of AtoN arrangement should be considered on a case by case basis after close consultation with owner of project and the risk assessment, and the warning should be strengthened by means of text signs.Examples of marking arrangements are included below:



*Figure3 - Wusong Estuary submerged dikes*



*Figure 4 - New Liuhe sand bar and Nanshatou Channel submerged dikes,**Yangtze River Estuary*

1. Generally, AIDS to navigation are set every 1000m on the exposed breakwater, and the lights of AtoN on the same exposed breakwater flash synchronously.
2. Delete examples 1 & examples 2.