

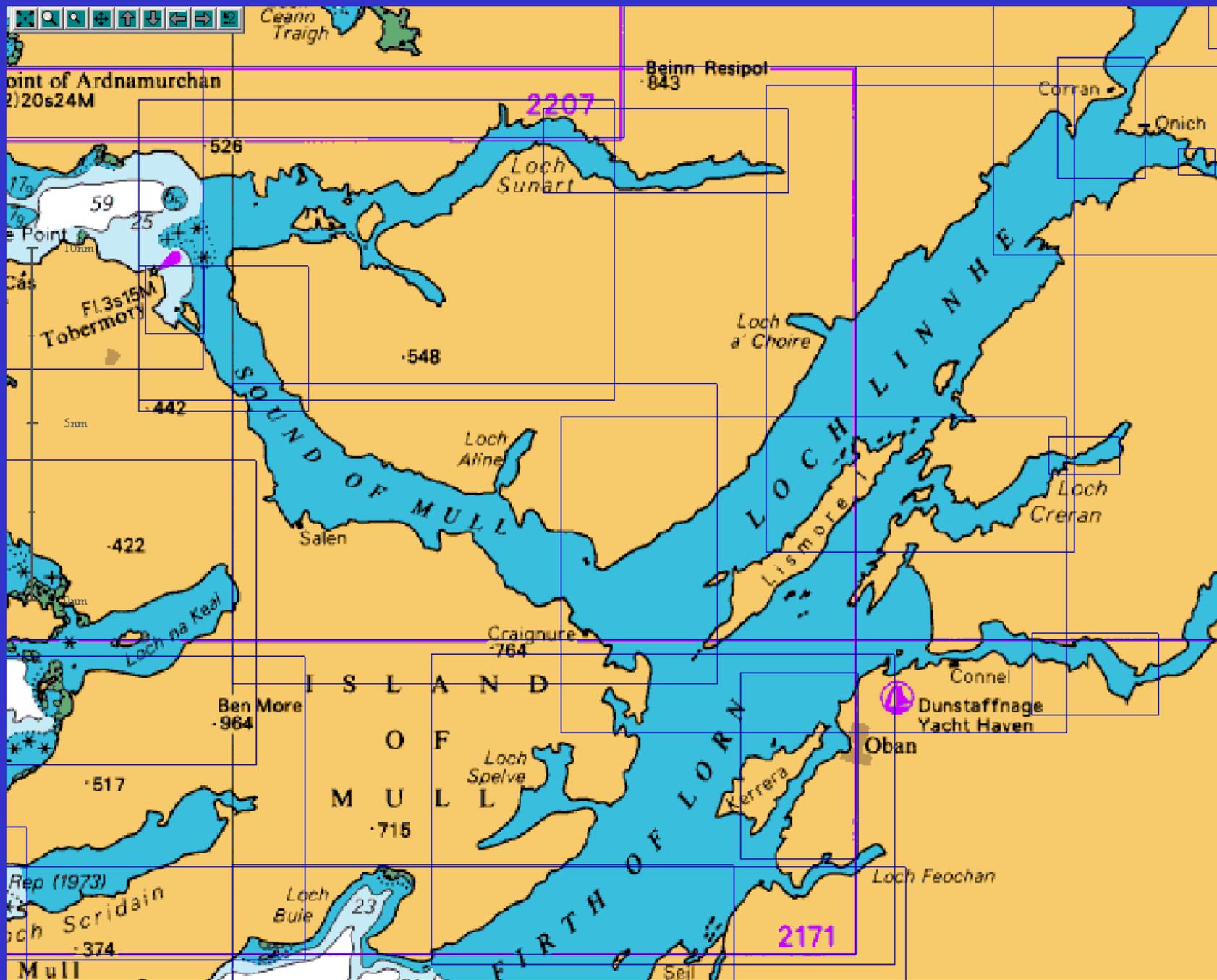
AIS EWMB Sea Trials. Northern Lighthouse Board, Oban, Scotland.



COMMISSIONERS OF NORTHERN LIGHTHOUSES AIDS TO NAVIGATION



- 201 Lighthouses
- 150 Buoys
- AtoN under contract



Oban Sea Trials



- Hosted by Northern Lighthouse Board (NLB)
- 3rd and 4th December, 2008.
- NLB Oban Depot, Gallanach Rd, Oban, Argyll, Scotland. PA34 4LS.

Oban Sea Trials



- ***EWMB with AIS***
- An AIS equipped EWMB has more features and additionally functionality over that of a standard AIS AtoN. There are however fewer constraints, such as being able to operate for 5 years between maintenance overhauls. An EWMB should only be deployed for a few months at most. Power consumption of the AIS components is therefore not as critical for an EWMB.

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- ***EWMB Features***
- AIS can transmit virtual targets that appear on the bridge displays that are integrated with the AIS shipborne transponder. This feature is used by the EWMB to generate virtual targets for the Cardinal Marks around the wreck.

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- ***EWMB Features***

- Dual redundant AIS AtoN Station
- IEC Standard 62320-2 compliant.
- The dual redundant transponders operate entirely independently of each other ensuring reliability and availability of the system that is designed to operate in emergency situations.

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- ***EWMB Features***

- EWMB is monitored using GLA Msg 6.
- Msg 6 is addressed to the relevant GLA.
- Some of this health check information is also given to the mariner via the status bits in message 21.
- The correct operation of the special blue and yellow light along with the Racon condition are given to the mariner.
- More detailed information to GLA.

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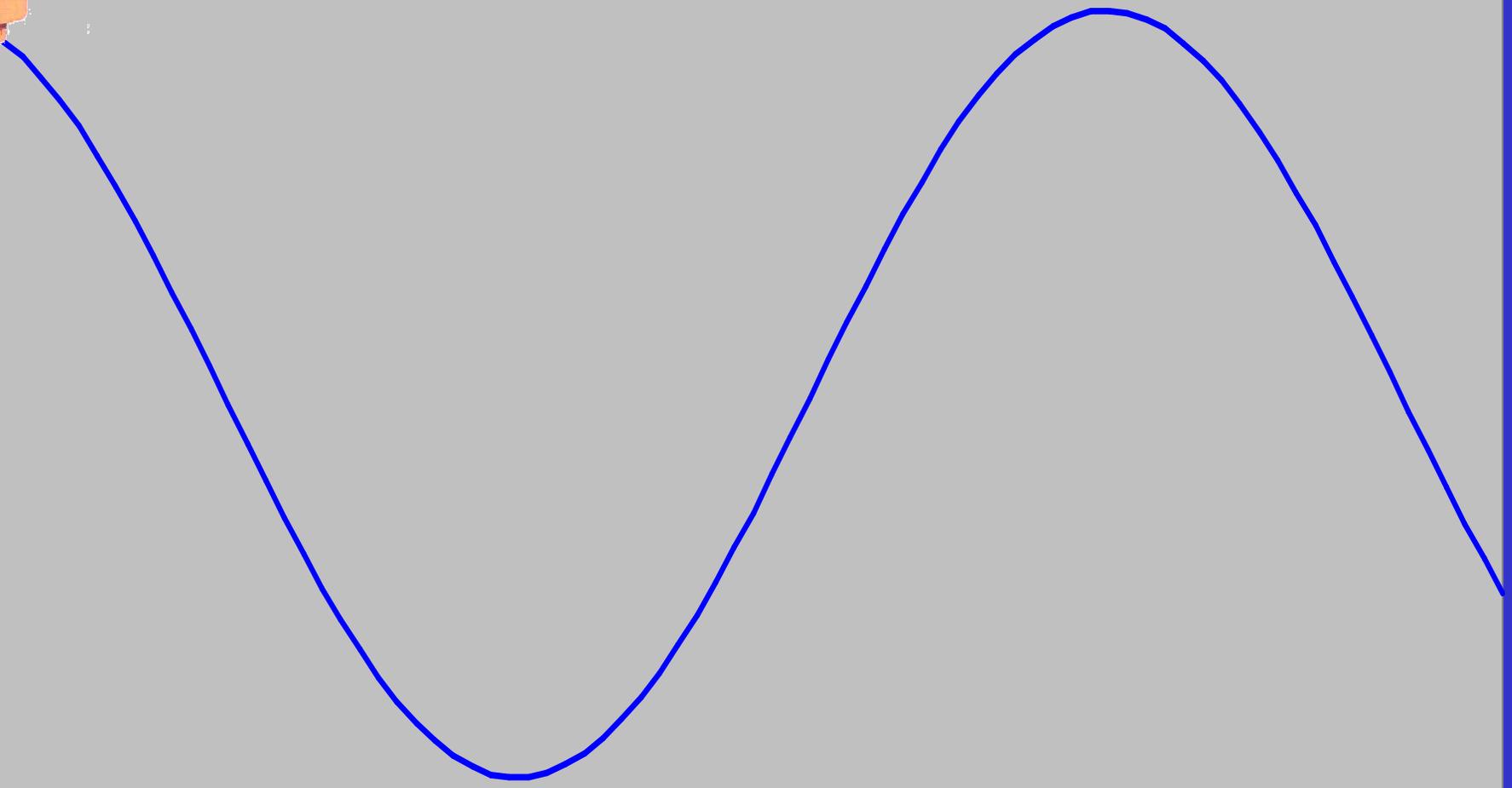


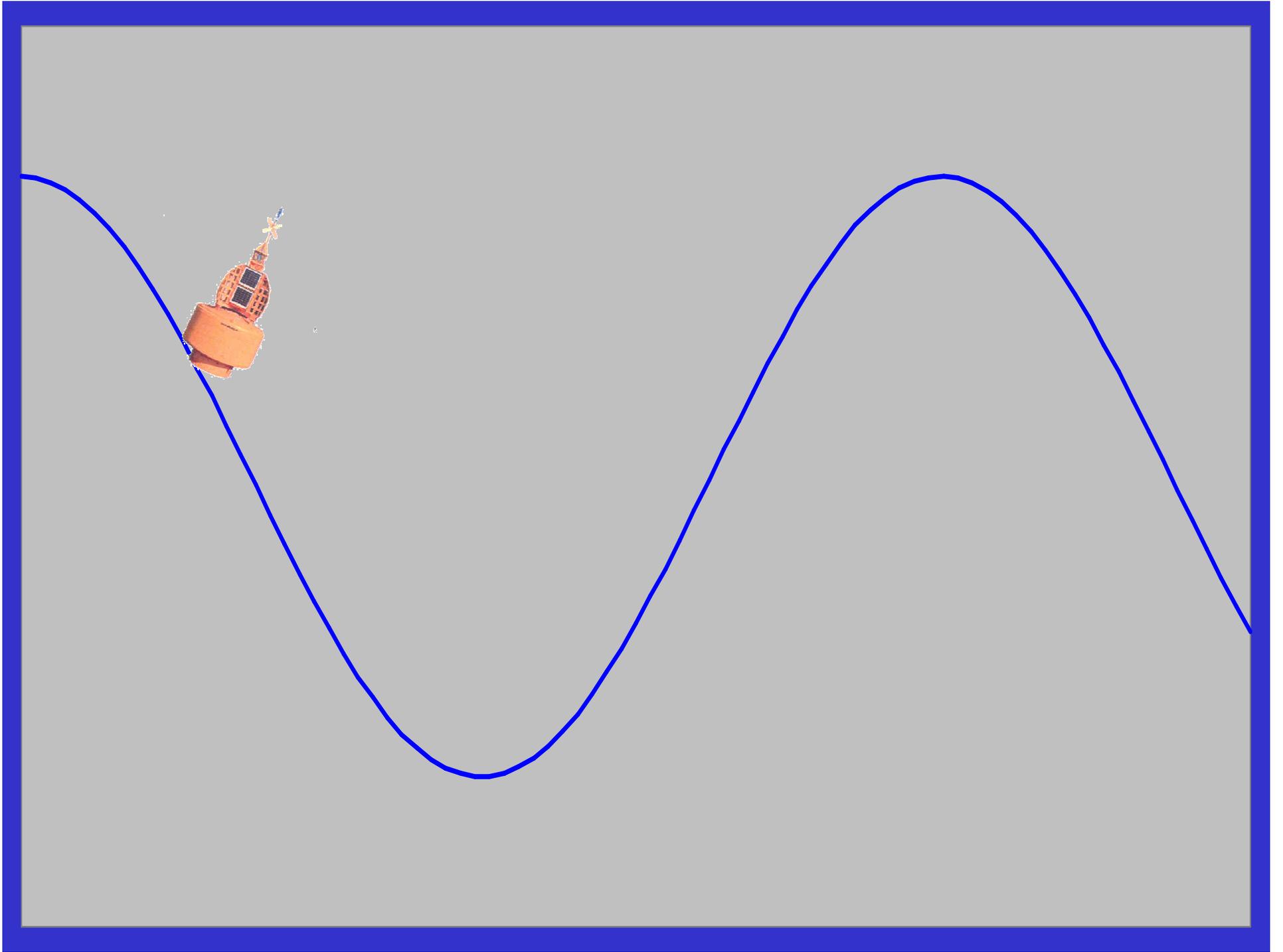
- ***EWMB Features***

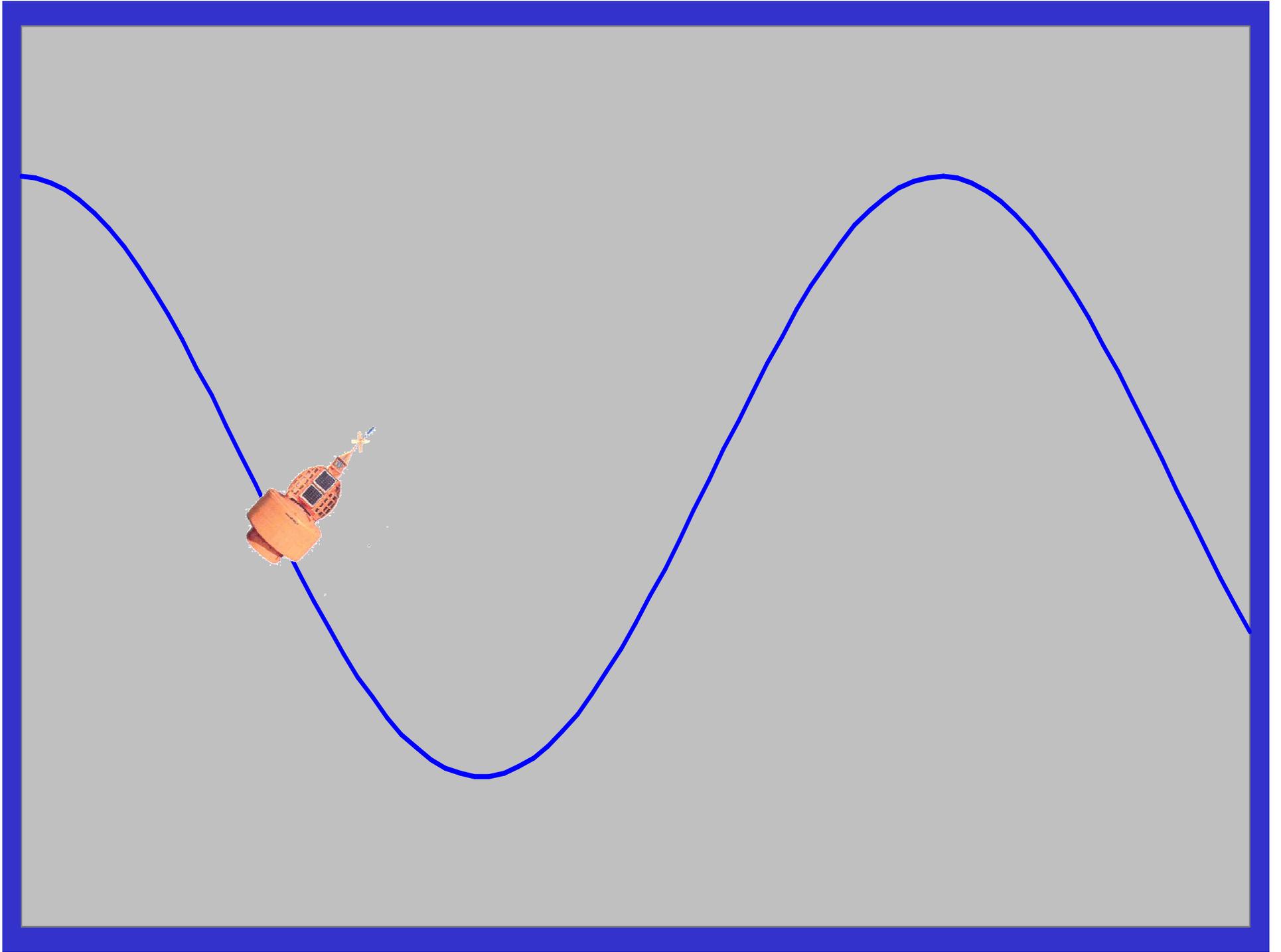
- Bursty behaviour is a special technique developed to increase the likelihood of reception of AIS message during adverse conditions.
- The first device to use this technique is the AIS SART.
- EWMB with a 3 metre antenna height and 12.5 Watt transmitter will always have a better range than a SART.
- Bursty behaviour will improve the reception range in bad weather and poor sea states.

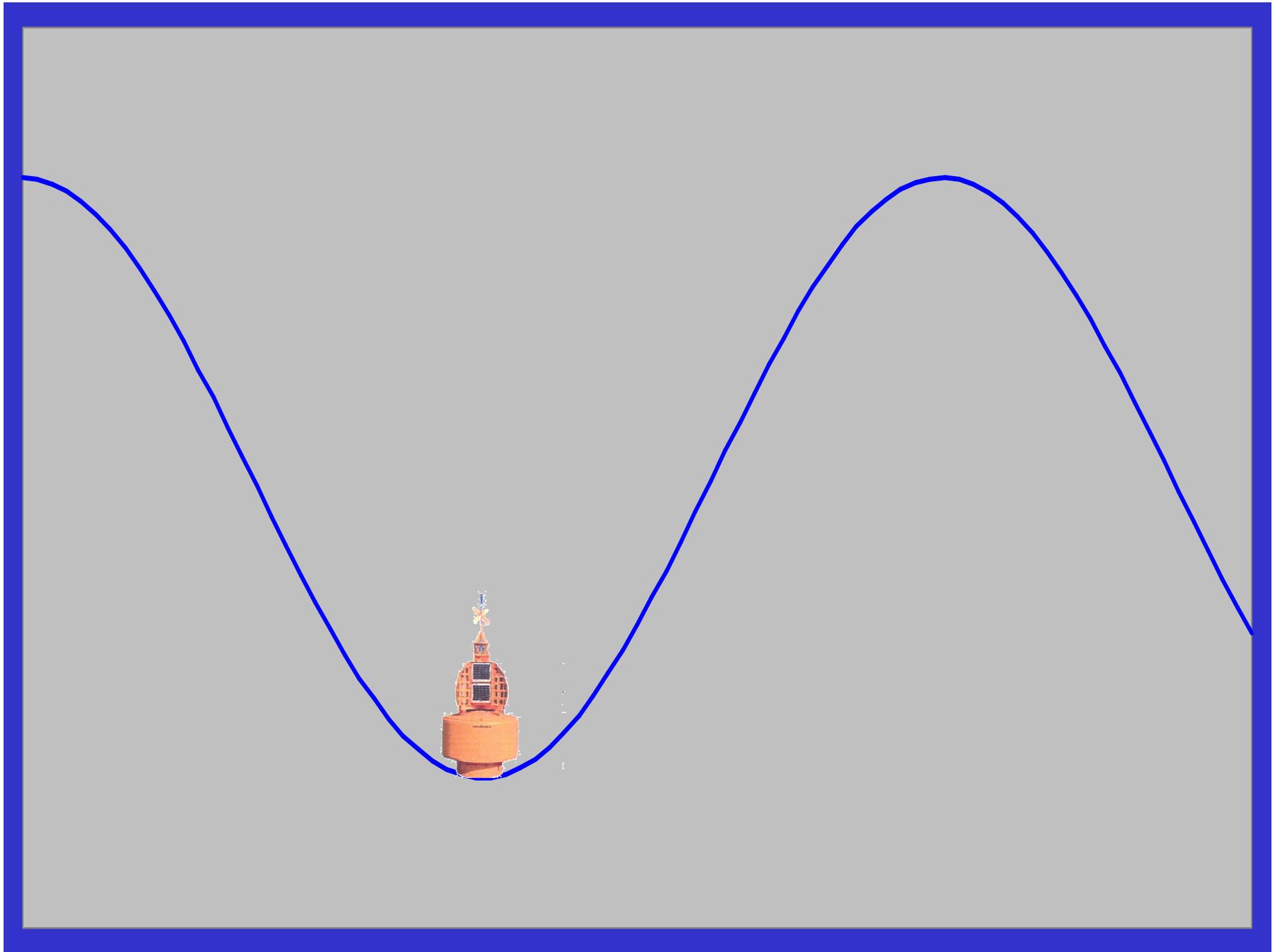


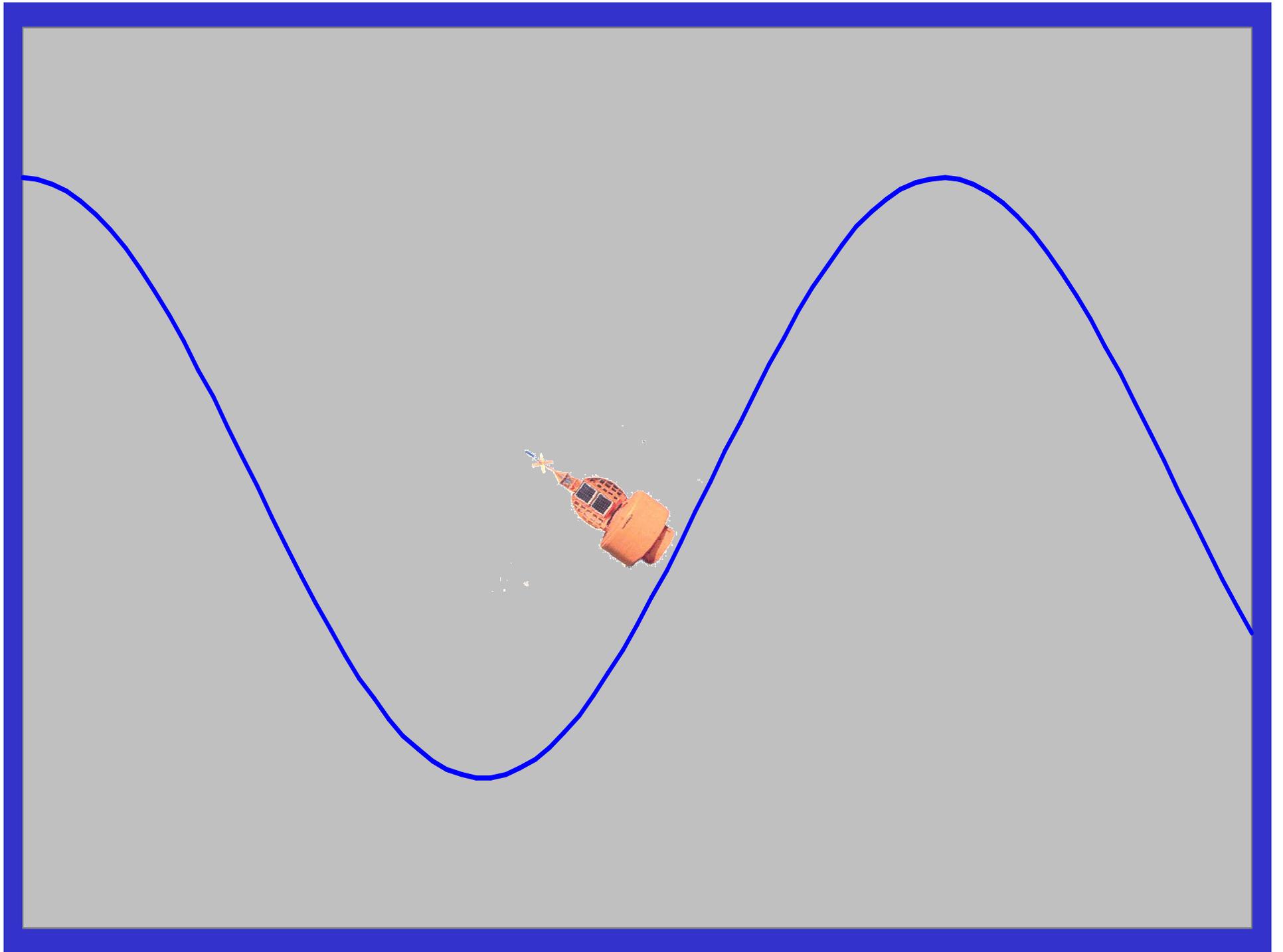
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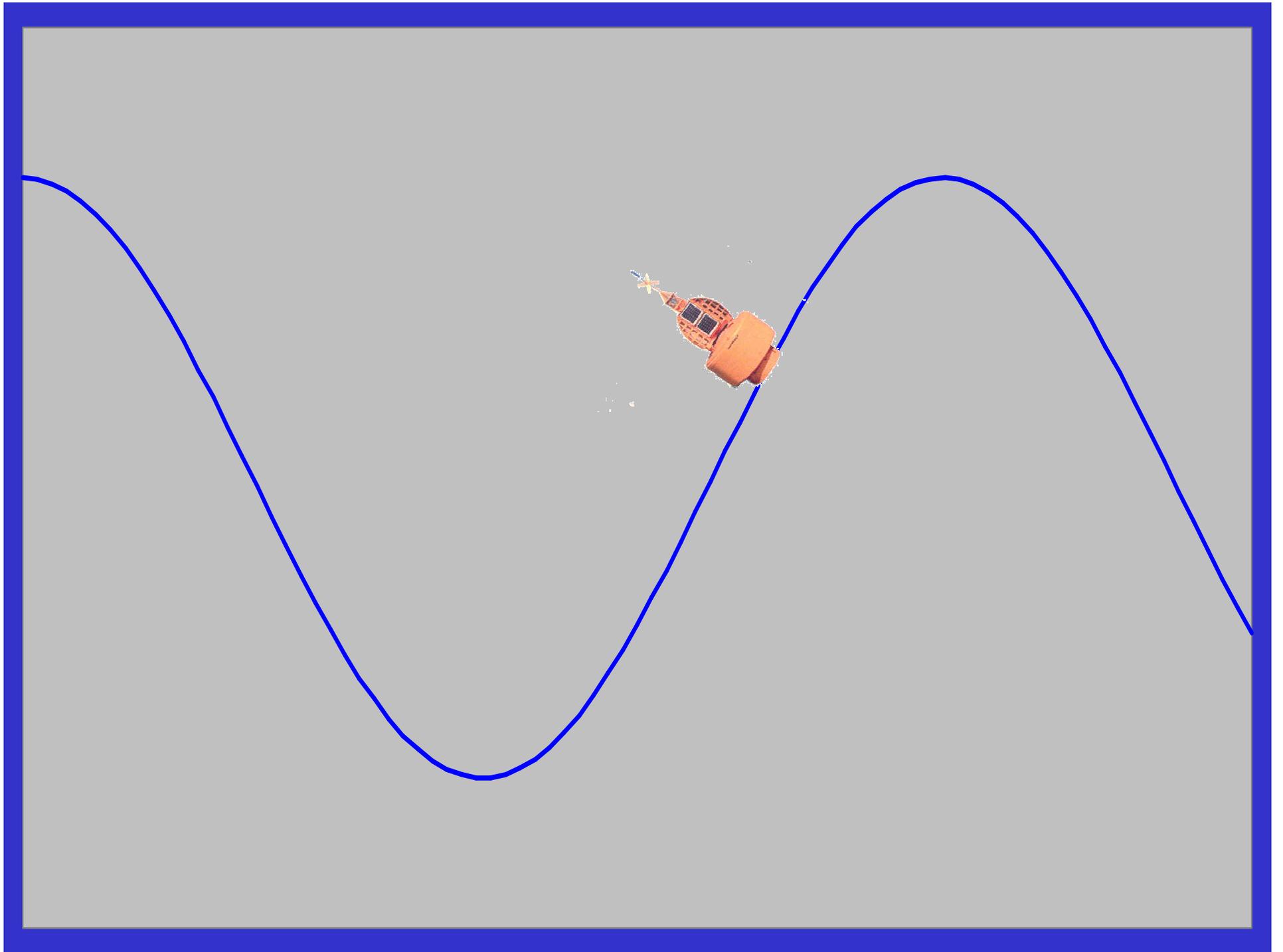


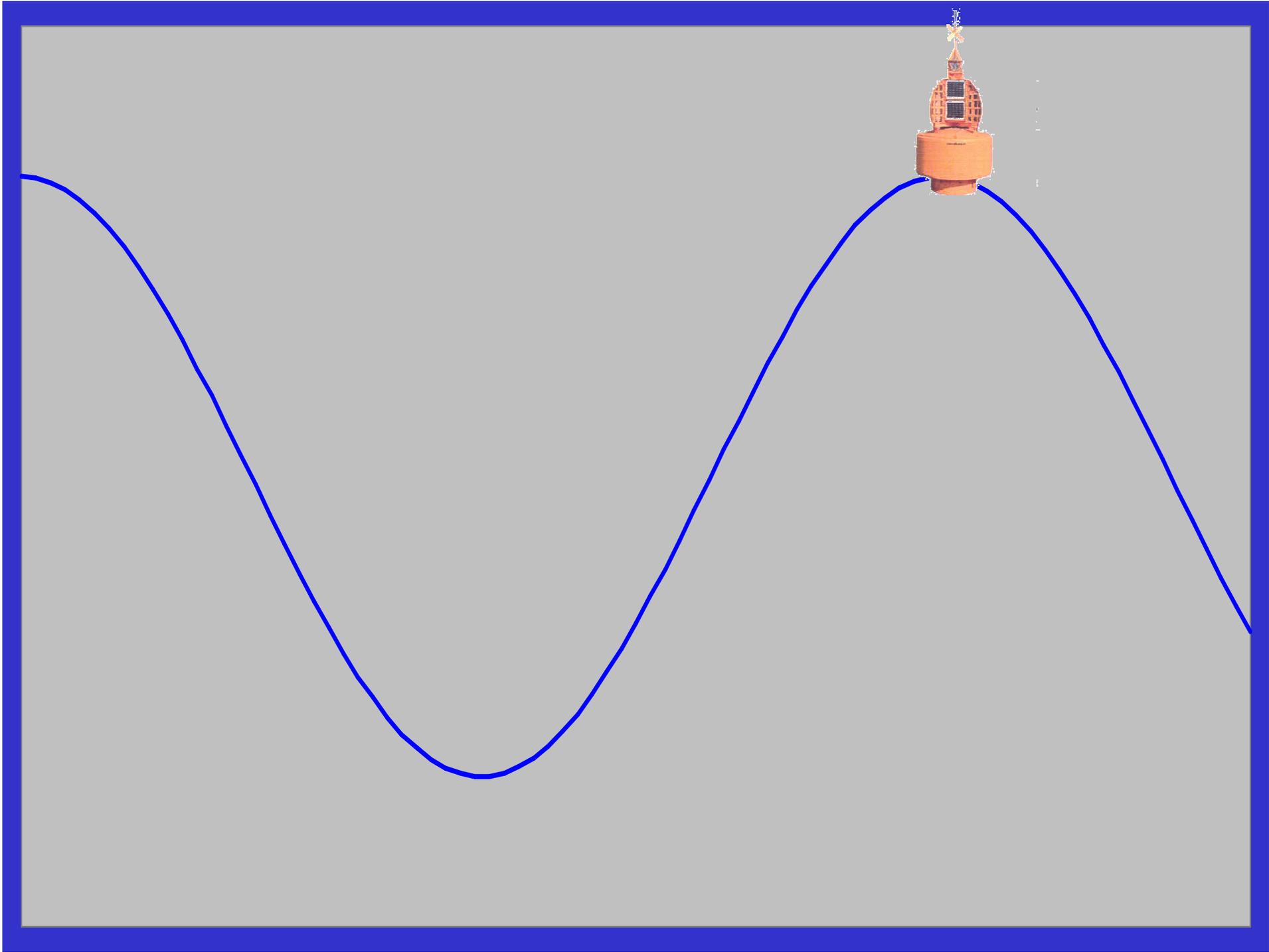


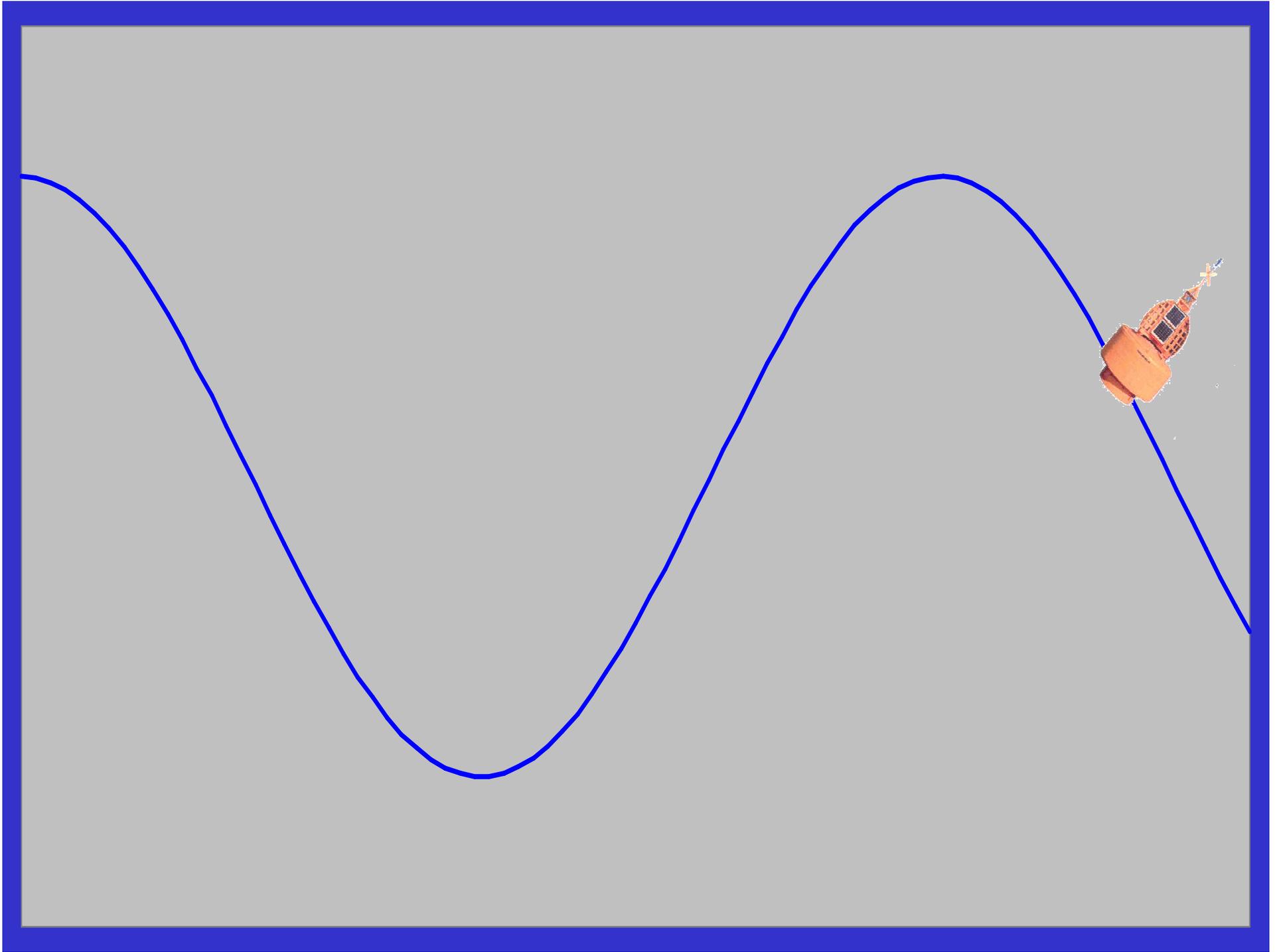


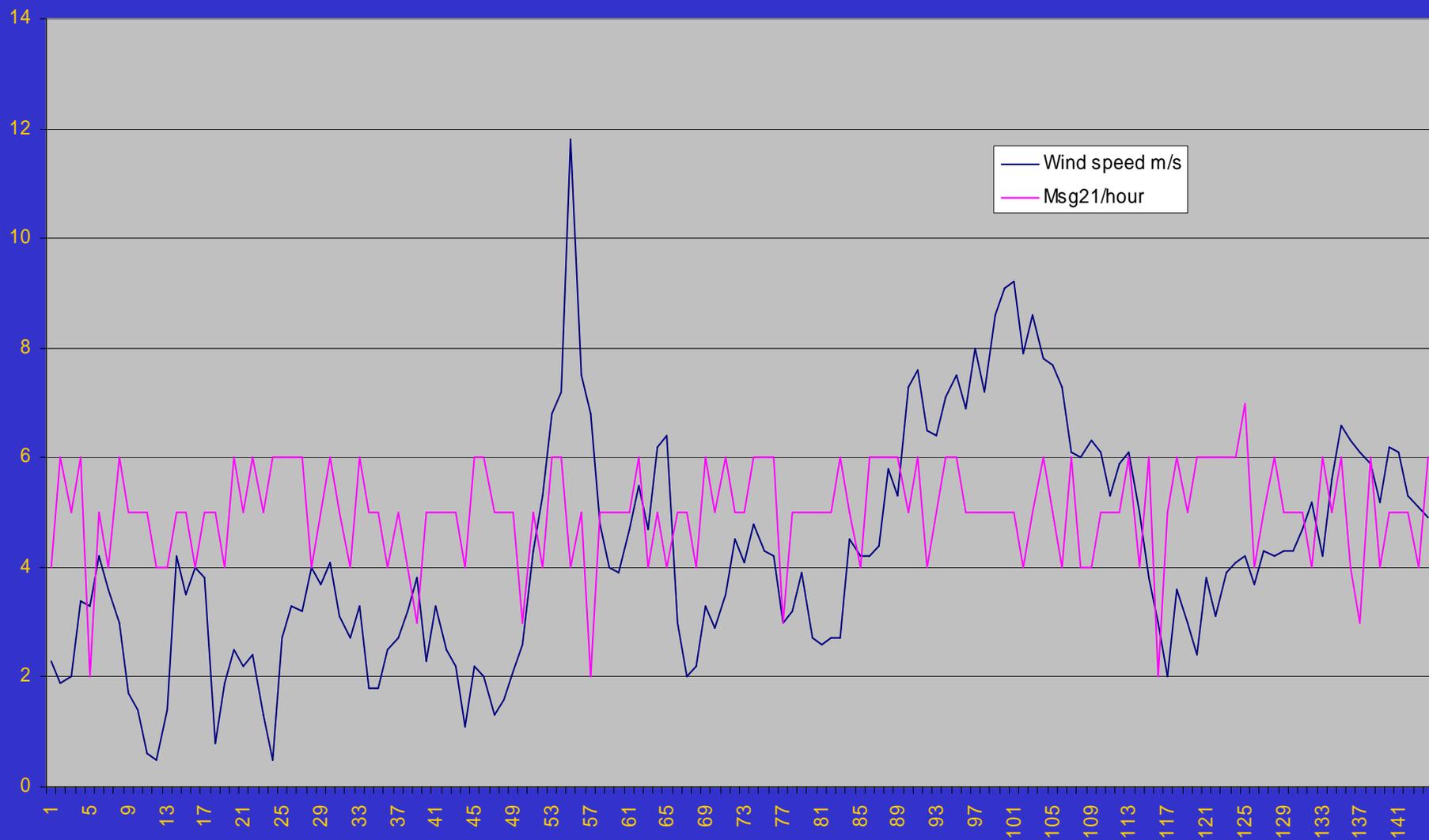












Oban Sea Trials



- ***Performance during trials***
 - The NLB Buoy Tender Pole Star deployed the special blue and yellow EWMB in Oban Bay and then proceeded to place two AIS SARTs in the vicinity.
 - The SARTs were placed such that the AIS Base Station at NLB's depot would not be able to directly detect the SARTs but would have to rely on the repeated messages from the EWMB.

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- ***Performance during trials***
 - The EWMB was deployed as the West Cardinal and it transmitted virtual targets for the North, South and East Cardinals.
 - During deployment the EWMB was activated on the deck of the Pole Star some distance from the charted position of the imaginary wreck.
 - The EWMB transmitted the off-position status until the Pole Star came within the guard ring set for the position of the EWMB.
 - DGPS gives high accuracy to position.

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- ***Performance during trials***
 - The AIS SARTs were detected ashore as repeated messages from the EWMB and this will aid locating life rafts during a search and rescue operation.
 - One of the principal advantages of an AIS SART is that only one message is needed to get a position fix.
 - Its is not only EWMB that can have the capability to repeat AIS SART messages, any fixed or floating AIS AtoN can have this feature.

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- ***The Future***

- An option discussed by the GLAs and the equipment supplier during the trials was to use the feature of the guard ring to actively alert vessels approaching a wreck of the danger by sending an addressed safety related message as they approach.
- The EWMB has this capability and it is being considered as a further enhancement adding to the safety of navigation.

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