

## Mariners Workshop Breakout Session Report

### CCG National AIS AtoN Strategy

#### Summary:

CCG has developed preliminary criteria for the permanent/semi-permanent utilization of AIS AtoNs and asked participants for comments to help validate these criteria. It should be noted that the initial focus in this first phase of trials with AIS AtoNs will be on real and virtual applications (with the exception of time critical situations).

#### Results:

Different viewpoints were shared and following are the highlights of the discussion:

- Participants insisted that new technology such as AIS AtoN must offer an added value. The majority agreed that deploying new technology for the sake of new technology is unconstructive. Additional information such as real time position and status of equipment would represent an added value. Also, provision of additional information (such as current sensors to calculate set and drift) would be beneficial. For specific areas, mariners highlighted the importance of receiving more strategic real time meteorological and/or hydrographical information.
- Given that not all mariners are familiar with the new technology and symbology, there may be a risk of confusion regarding the interpretation of symbols on the ENC/ECDIS. Participants remarked that it will be important to focus on **education** (communication of information) as we are in a transition phase. CCG assured the participants that Notices to Mariners will be issued with specific information on AIS symbology before the trial phase. An example of such information has been posted on NOAA's website for whale protection areas (<http://www.nmfs.noaa.gov/pr/shipstrike/#speedlimit>).
- Participants insisted that existing aids should not be removed, including RACON. Mariners have a good knowledge of RACON's operating capability and limitations and they do not want to lose it until AIS AtoN proves to be a real enhancement. As there is no obligation to interface AIS with radar on ships, AIS AtoN cannot replace RACON. Another significant benefit of RACON over AIS is its independence from GNSS errors.
- The levels of service should not be impacted because an AIS unit is installed on a buoy. If an AtoN is off position or not operating correctly, the CCG should take appropriate actions in a timely manner and according to its levels of service. Real AIS AtoN may contribute to an improvement in the levels of service, as CCG would be informed of the status of a buoy in real time.
- Not all participants recognized the potential benefit of AIS AtoNs. Some pilots commented that they have a fair knowledge of their areas of operation and already use multiple means to mark objects and confirm their positions. However, participants

admitted that foreign vessels that do not operate in the area frequently and vessels that do not require pilotage might benefit from AIS AtoN.

- Some participants asked what will happen if a unit does not work properly. For example, with antennae offset errors or gyro errors, AIS targets do not display correctly when interfaced with radar. CCG proposed to use virtual AIS AtoN calibration points (benchmark points with known bearing and distance) to help zero the radar; however, some participants suggested using real AIS AtoN or a physical aid instead to quickly see the error. CCG will continue to consult with pilots and mariners to find the best solution. Pilots from the Atlantic Region commented that they are interested in testing virtual AIS AtoN calibration points, given they have the proper platform on their pilot boat. Pilots from the Lower St. Lawrence sector remarked that the Prince Shoal Light could be a good target to test a synthetic predicted AtoN, as it is not always reflected properly on the radar.
- There was a brief discussion on synthetic monitored AtoN. The CCG explained that this technology will not make much difference for mariners, as it presents itself the same as a Real AtoN, from a user's perspective. Instead of broadcasting directly to ships, as is the case for real AIS AtoN, a synthetic monitored AtoN will communicate its position and status to a shore-based station, and the station will then broadcast the information. For the service provider however, this technology may produce significant gain as it may decrease power drain and increase the range of the AtoN. The USCG advised that they are testing it where they had issues with range due to AIS line of sight broadcasting.
- Some participants questioned the probability that real AIS AtoN will provide a good estimation of current speed. They argued that the dynamic position of a buoy would only provide its real position in comparison with the theoretical one and that there would be no real indication of the current speed.
- Regarding virtual AtoN, pilots from the Seaway proposed to test it in their sectors during the seasonal buoys' tending/removal. This would provide additional information on the buoy tending operation progress.
- Participants recognized that there could be a benefit to using virtual AIS AtoNs in areas where buoys cannot be deployed. The USCG representative stated that they are using virtual AIS AtoN to protect sensitive areas (coral reef) from being damaged by chain mooring systems.
- The objective of the breakout session was mainly to discuss the permanent/semi-permanent utilization of real and virtual AIS AtoN. However, participants suggested potential time critical situations where it can be used: to mark a new danger or to mark the proper position of a buoy that is off station.

## **Conclusions:**

Overall, the preliminary criteria presented to start testing real and virtual AIS AtoNs were recognized as providing an added value to the mariner. However, the criteria proposed to help with calculating current

speed was not seen as beneficial and participants suggested instead to install current sensors on the existing buoys and broadcast the real data.

CCG will continue to work closely with pilots and mariners in this trial phase. This collaboration is essential to find the best solutions for using AIS and resolving issues such as radar errors.

CCG intends to initiate AIS AtoN testbeds in all three regions (Atlantic, Central and Arctic, Western) in the coming months. CCG encourages feedback to ensure that the use of AIS AtoNs is an enhancement to the current buoyage system and that it improves the level of safety of mariners.