IMPA input paper to IALA ARM committee meeting 23-27 November 2015

* General Requirements for Maritime Buoyage systems and other AtoNs including AIS, Radar & Beacons.

The IMPA NavTech working group felt that for Pilots a mixture of technologies provided from a number of different inputs went to form their ‘picture’. One of those inputs were the physically visible objects, be they buoys, beacons, or riverside objects or mountain peaks/profiles. These eyeball fixes are key to situational/positional awareness and in an estuary situation with a flat low-lying shoreline, with poor radar returns, buoys fulfilled a valuable function. “Looking out the window” is an oft-quoted mantra at IMPA events.

Pilots view all inputs as having capacity for error but on balance trust the physical/visible ahead of the electronic. AIS, whilst having great capacity, is probably the least trusted input.

The actual system of buoyage is for Pilots, people with intimate knowledge of a waterway, of little interest. They know a waterway by heart so the positional data is what Pilots want from buoys. Colour, shapes etc are for the unfamiliar.

* Comments on Leading Lights / Daymarks and Wreck Marking.

Pilots continue to use Leading Lights and Daymarks. Good examples are the Panama Canal or entry into Milford Haven. Even with a PPU in use, and ROTI on Bridge wings, Leading lights and shapes provide definitive confirmation that the electronics are up to scratch and the ship is where it needs to be.

As regards wreck marking, Pilots are almost inevitably amongst the first to be aware of new wrecks in their districts, so there is perhaps less need to be worried about the wrecks “existence” being advised, but for a Pilot, possibly conducting a vessel with limited UKC and maneuverability, the precise position and clearance depth of the wreck is most important. Pilots on the Missisippi trying to re-start traffic in the days after the Hurricane Katrina in 2005 encountered considerable wreckage (almost all safely avoided).

* Comments of the use of Virtual AtoNs

In considering virtual Aids to Navigation, it had to be remembered that under SOLAS, ships built prior to 2002 many still have an analogue radar so virtual AtoNs would be unseen. Virtual AtoNs say for emergency wreck-marking would have a valuable function but they cannot as yet be considered as anywhere near mature enough because of other issues with chart accuracy. A key area of interaction with virtual AtoNs is the quality of the chart data/ENCs in use. In Norway for instance, 50m accuracy in charts will only arrive in 2035 and in Brazil the pilots on the Amazon are using Raster charts. On the St Lawrence the Pilot’s PPU for instance is using Cat-U chart data. IMPA has a feeling that with virtual AtoNs we need to be looking through the other end of the telescope at the chart data rather than what may be technically possible in placing virtual AtoNs on the screen. In conclusion Pilots are enthusiastic about the opportunities of virtual AtoN complementing the overall mix of existing AtoNs.