The preliminary draft of the Strategy Implementation Plan for e-Navigation was endorsed by the Sub-Committee on Safety of Navigation (NA V), when it met for its 59th session held from 2nd to 6th September. The e-Navigation strategy implementation plan aims to integrate existing and new navigational tools, in particular electronic tools, in an all-embracing transparent, user-friendly, cost-effective and compatible system that will contribute to enhanced navigational safety while simultaneously reducing the burden on the navigator.

The Sub-Committee also endorsed five prioritized potential e-Navigation solutions, namely: improved, harmonized and user-friendly bridge design; means for standardized and automated reporting; improved reliability, resilience and integrity of bridge equipment and navigation information; integration and presentation of available information in graphical displays received via communication equipment; and improved communication of Vessel Traffic Services (VTS) Service Portfolio.

The Sub-Committee noted progress in developing draft Guidelines on/for: human centred design (HCD) for navigational equipment and systems; Usability evaluation of navigational equipment; software quality assurance (SQA); and the harmonization of test beds reporting.

The Correspondence Group on e-Navigation was re-established to progress the work and report to the Sub-Committee on Human Element, Training and Watchkeeping (HTW) and the Sub-Committee on Navigation, Communication and Search and Rescue (NCSR).

**Routeing of ships, ship reporting and related measures**
The Sub-Committee approved the following new and amended ships’ routeing measures, for submission to the Maritime Safety Committee (MSC) for adoption:

*Traffic Separation Schemes (TSSs)*

- new Traffic Separation Scheme “On the Pacific coast of Panama” (Panama); and
- new Traffic Separation Scheme “At the approaches to Puerto Cristobal” (Panama).

*Routeing measures other than Traffic Separation Schemes*

- new two-way route in the Prince of Wales Channel, Torres Strait (Australia);
new two-way route in the Great Barrier Reef Inner Route (North) (Australia);
new two-way route in the Great Barrier Reef Inner Route (South) (Australia);
new Precautionary Area “At the approaches to Puerto Cristobal” (Panama);
and
revocation of the existing Area To Be Avoided and a Mandatory No Anchoring Area at El Paso Deep-water port in the Gulf of Mexico (United States), as the deep-water port had been decommissioned and its associated apparatus removed.

Recommendations to protect whales off the Pacific coast of Panama agreed
The Sub-Committee agreed Recommendations on navigation in the Traffic Separation Scheme “On the Pacific coast of Panama” (Gulf of Panama section), which recommend that, In order to help reduce the risk of lethal strikes with cetaceans, ships, as far as it is safe and practical to do so, should proceed at a speed of not more than 10 knots. This should be applied during the period from 1st August to 30th November every year, in both traffic lanes of the Traffic Separation Scheme in the Gulf of Panama section, north of latitude 08°00'.00 N.

Draft performance standards for BeiDou Satellite Navigation System receiver approved
Draft performance standards for shipborne BeiDou Satellite Navigation System (BDS) receiver equipment, were agreed, for submission to the MSC for adoption. The Sub-Committee also invited the International Electrotechnical Commission (IEC) to develop relevant technical standards for type approval of shipborne BDS receiver equipment.

BDS is operated by China and came into official service with full operational capability covering most parts of the Asia-Pacific region at the end of 2012. It is expected to provide a global service by 2020.

The Sub-Committee’s Technical Working Group on Navigational Aids and Related Matters conducted a preliminary assessment of BDS, and provide relevant comments with regard to the information and data needed for a full evaluation of BDS as a future component of the World-Wide Radionavigation System (WWRNS).

Revised recommendations on deep-sea pilotage agreed
Updated draft Assembly resolutions on Recommendation on the use of adequately qualified deep-sea pilots in the North Sea, English Channel and Skagerrak and Recommendation on the use of adequately qualified deep-sea
pilots in the Baltic sea, were agreed, for forwarding to the 28th session of the IMO Assembly for adoption. The draft resolutions update the previous recommendations issued in 1981, including updated formats and details for the deep-sea pilot's identity card.

**Policy and new symbols for AIS aids to navigation agreed**
The Sub-Committee endorsed a draft MSC circular on the Policy on use of AIS Aids to Navigation, which aims to provide mariners and shore authorities, especially Aids to Navigation service providers, a clear policy direction on the use of AIS Aids to Navigation (AtoN) for ensuring the safety of navigation. It includes guidance on performance standards, operation, monitoring, risks and limitations, graphic portrayal and training.

The Sub-Committee also agreed a draft SN Circular on Amended Guidelines for the presentation of navigational-related symbols, terms and abbreviations, for submission to the MSC for approval, to include improved replacement symbols for portrayal of AIS AtoN.

**Guidance on BNWAS auto function agreed**
The Sub-Committee endorsed a draft MSC circular on Guidance on the Bridge Navigational Watch Alarm System (BNWAS) Auto Function, in order to clarify the use of the automatic mode of operation, for submission to the MSC for approval. The draft circular notes that automatic interface with activation of the ship's heading or track control system is a superfluous function because SOLAS regulation V/19.2.2.3 requires the BNWAS to be in operation whenever the ship is under way at sea.

**Revised Guidelines for the onboard operational use of AIS developed**
The Sub-Committee further developed draft revised Guidelines for the onboard operational use of shipborne Automatic Identification Systems (AIS) (resolution A.917(22), as amended) and forwarded them to the Sub-Committee on Navigation, Communication and Search and Rescue (NCSR) for review and finalisation. The draft revised guidelines are intended to promote the safe and effective use of shipborne Automatic Identification Systems (AIS), and in particular to inform the mariner about the operational use, limits and potential uses of AIS.

**Inadequacy of charts in Polar regions highlighted**
The Sub-Committee agreed that information relating to the lack of adequate hydrographic surveys in nearly 95% of the Polar regions and the status of nautical charting in polar waters be included in the Polar Code, which is being developed by IMO.
The International Hydrographic Organization (IHO) informed the Sub-Committee that appropriate scale chart coverage was inadequate for coastal navigation in Polar regions and therefore mariners should navigate with extreme caution and keep, wherever possible, to recognised shipping corridors.

**Unified interpretation to COLREG, 1972, as amended, agreed**

The Sub-committee agreed a revised unified interpretation of COLREG 1972, as amended, with respect to Annex I, section 9(b) (Horizontal vectors), for submission to the MSC for approval.

**ITU liaison statements approved**

The Sub-Committee approved draft liaison statements to the International Telecommunication Union (ITU), in relation to technical characteristics for an automatic identification system using time-division multiple access in the VHF maritime mobile band (ITU-RM.1371-4) and frequency bands identified by ITU-R for future assessment of the suitability for International Mobile Telecommunications.

The Sub-Committee also invited the Joint IMO/ITU Experts Group to update the draft IMO position with regard to the concept of VHF Data Exchange System (VDES), noting that IMO should support further development of the VDES, without committing the Organization regarding future requirements on the use of the VHF frequency band.