

## RECOMMENDATION 826\*

**TRANSMISSION OF INFORMATION FOR UPDATING ELECTRONIC  
CHART DISPLAY AND INFORMATION SYSTEMS (ECDIS)**

(Question 98/8)

(1992)

The CCIR,

*considering*

- a) the need to provide radio transmissions of digital data for use by ships to automatically update and make corrections to their electronic charts, as expressed by the International Maritime Organization (IMO);
- b) that these data transmissions must be performed with minimum error in view of possible marine accidents that might arise from a mistake in an automatically-made change to an electronic nautical chart;
- c) that transmission of digital data at MF and HF is subject to signal distortion and fading which adversely affect error ratios in digital systems;
- d) that methods of error correction employed in MF and HF would necessarily slow down rates of signal transmission, thereby resulting in unacceptable time durations for sending the volume of data required for chart corrections;
- e) that transmission of digital data at the required data rates is not possible in the narrow bandwidths available at LF;
- f) that studies of present and anticipated volumes of data traffic have shown that there will probably be adequate channel capacity available in the INMARSAT-A and INMARSAT-C systems for an electronic chart updating service;
- g) that satellite transmissions in the INMARSAT-A and INMARSAT-C systems provide wide-area coverage at sea;
- h) that the use of forward error detecting and correcting coding of the digital data used for chart updating, combined with the favourable signal-to-noise ratios attained in the INMARSAT-A and INMARSAT-C systems should result in acceptable error ratios;
- j) that many ships are, or will be, equipped with INMARSAT-A ship earth stations (SES), thereby making it possible to establish a two-way, interactive updating service whereby a ship requests and receives updates for specific charts, and that such ships can receive updating broadcasts on INMARSAT-A;
- k) that many ships will be equipped with INMARSAT-C SESs, including EGC SafetyNET receivers, that are especially suited for receiving broadcast group calls of digital data including those for the updating of electronic charts, and that INMARSAT-C can also be used for interactive, selective updating;
- l) that there is a need to establish a standardized system of digital VHF broadcasts in the maritime mobile band for the purpose of placing temporary warning symbols automatically on electronic nautical charts on ships within the coverage area,

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\* The Director, CCIR, is requested to bring this Recommendation to the attention of the International Maritime Organization (IMO), the World Meteorological Organization (WMO), the International Hydrographical Organization (IHO) and the International Maritime Satellite Organization (INMARSAT).

*recommends*

1. that a suitable forward error detecting and correcting code be used in connection with the transmission of information for updating electronic chart display and information systems;
  2. that INMARSAT-A and INMARSAT-C, including EGC SafetyNET, be recognized as a means for transmitting information to ships to update electronic chart display and information systems;
  3. that where harbours have facilities for transmitting local information for display on electronic chart display and information systems, a VHF channel in the maritime mobile band be designated for that purpose.
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