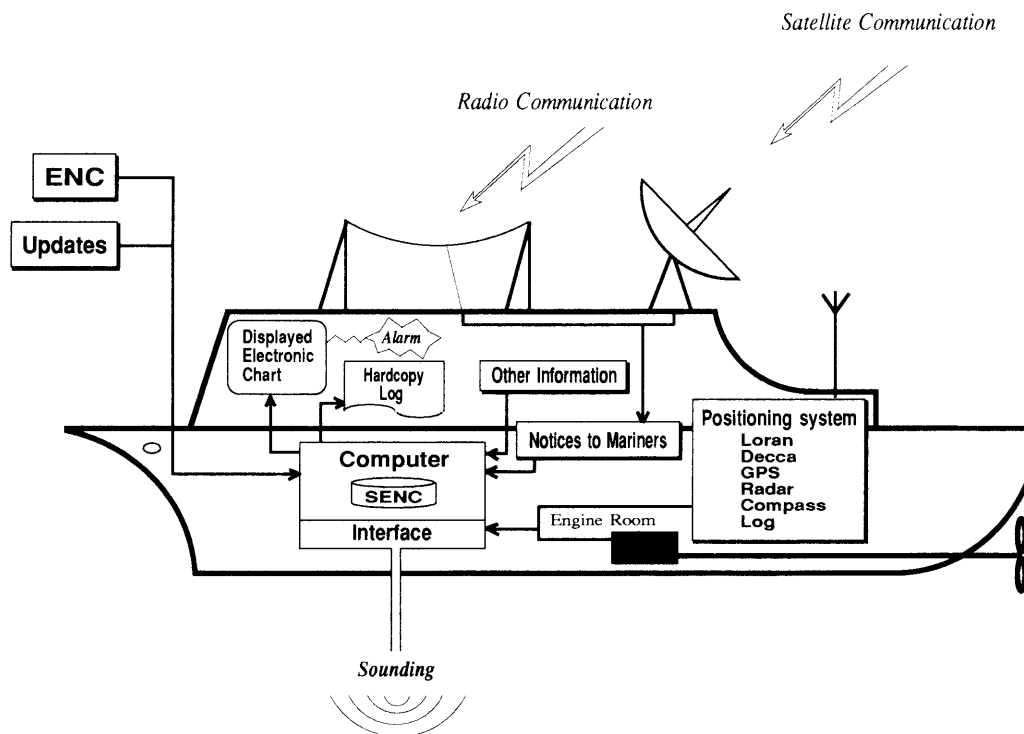


DEVELOPMENT OF ELECTRONIC NAVIGATIONAL CHARTS IN JAPAN

The performance standards for Electronic Chart Display and Information System (ECDIS), which is considered the equivalent to the contemporary paper charts, are scheduled to be determined by IMO in autumn of 1993, and it is expected that ECDIS will provide its user with much more convenience and safety in navigation. (See illustration of ECDIS concept below.)

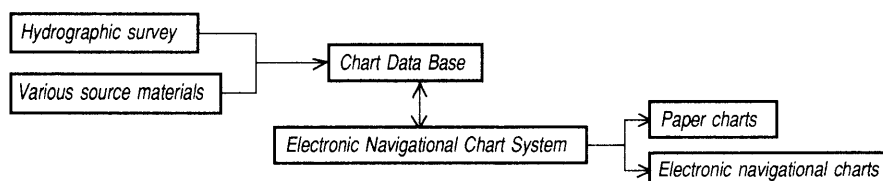


Based on the IMO "Provisional Performance Standard for ECDIS" and the IHO SP-52 "Provisional Specifications for Chart Content and Display of ECDIS", the Hydrographic Department of Japan has been preparing digital chart data for Tokyo Bay and carrying out several sea trials of an Electronic Chart equipped on the Survey Vessel *SHOYO* and certain MSA Patrol Vessels since 1988.

In 1992, the Department began preparing system designs for production of an ENC, and three sheets of

nautical charts covering Tokyo Bay were digitized in trial in accordance with the IHO SP-57 "Transfer Standard for Hydrographic Digital Data (DX-90)". The figure on page 5 shows part of displayed images of an electronic chart of Tokyo Port on CRT.

For 1993, further efforts will be made on the development of software for the ENC production system, which will also be applied to the production of contemporary paper charts. With these activities, the Department now has a plan to publish the first ENC



Preparation of Electronic Navigational Chart System in Japan

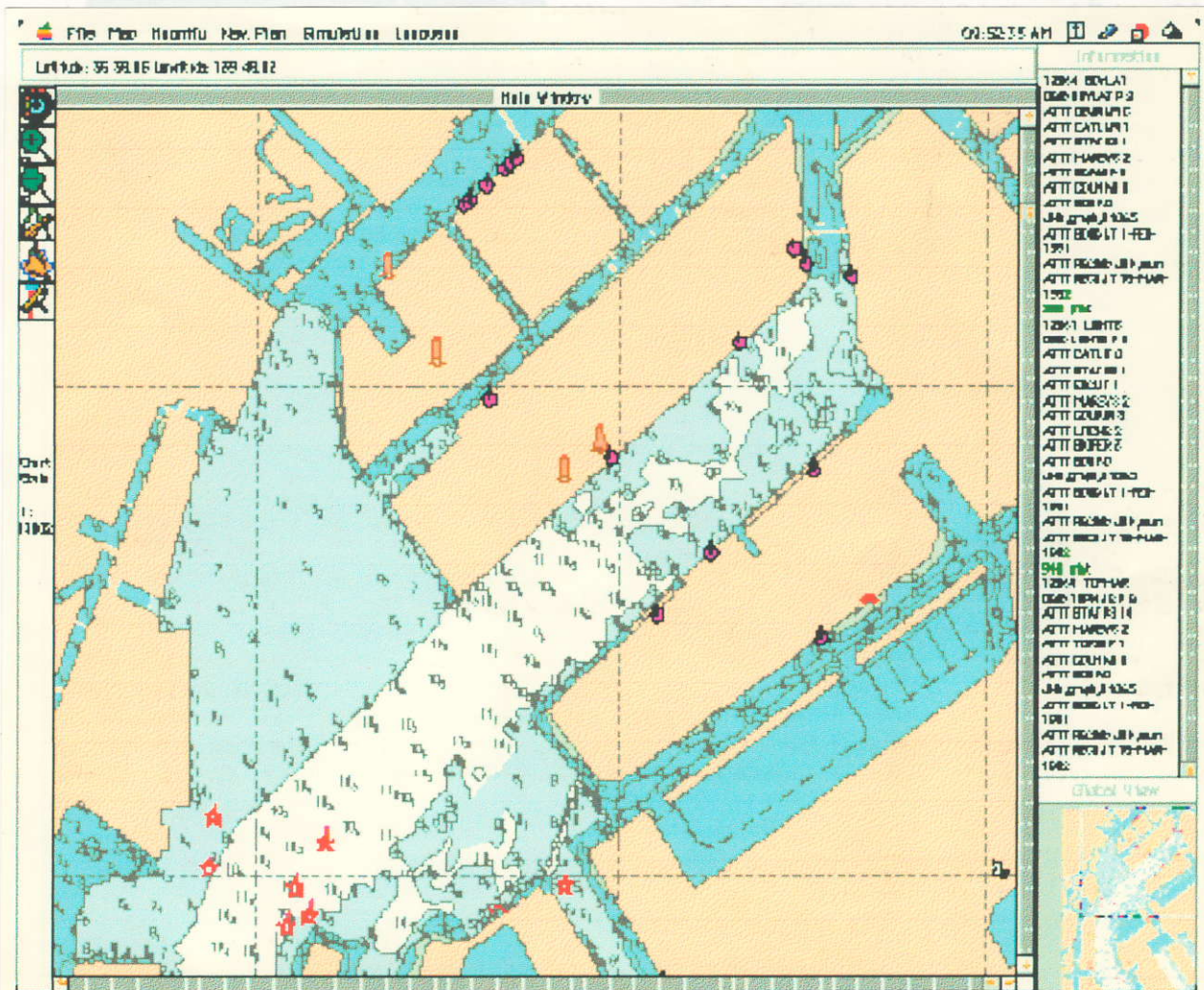
Production and Publication Schedule

Items	Fiscal Year	1992	1993	1994	1995	~	2001	2002
1. System Designs		→						
2. Development of Software			→					
3. Digitization of Nautical Charts		→	→	→	→	→	→	→
4. Introduction of Hardware				→	→	→	→	→
5. Publication of ENC					→	→	→	→

sometime in 1994 fiscal, and under such a plan digitization will be made for 1,000 sheets of different nautical charts of the Department, using these charts and produce a data base in 10 years.

Mutual cooperation among the hydrographic offices in our region is vital to preparation and establishment of

a regional electronic chart data base, taking into account our regional peculiarities, situations, and conditions. It is expected that a meeting will be held as early as possible to exchange views and information on establishment of such a regional data base and cooperation program as well as promotion of technical aspects of ECDIS and ENC for our region.



Displayed ENC showing portion of Tokyo Port