

ENC

Published by Japan Coast Guard

Electronic Navigational Chart



What is Electronic Navigational Chart: ENC?

The Electronic Navigational Chart is designated solely to the navigational chart published officially by, or on the authority of a government, authorized hydrographic office, or other relevant governmental institution. Any similar vector chart other than ENC are unauthorized ones and unsuitable to meet the legal requirements for provision of nautical charts.

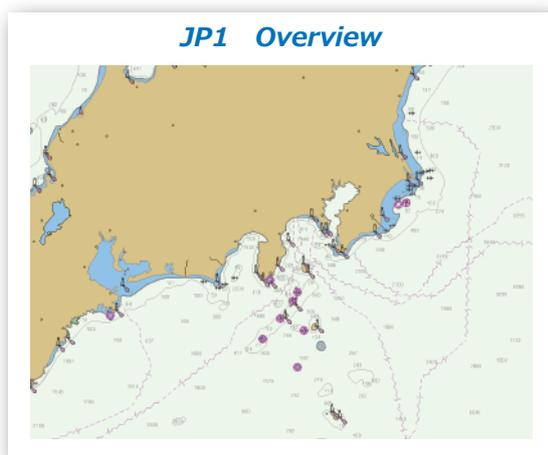
ENC is produced on the basis of the IHO Transfer Standard for Digital Hydrographic Data (S-57 Edition 3.1) provided by the International Hydrographic Organization (IHO). Accordingly, the official ENCs published by various hydrographic offices of the world are produced on the common specifications. The Japanese ENCs are produced and published by the Japan Coast Guard.

The basic unit of ENC is called 'cell'. A cell is a rectangular geographical area defined by two parallels and two meridians. ENCs are produced for 6 navigational purposes, ranging from a small-scale one incorporating various information covering a vast area to a large-scale one precisely indicating the information within a limited area necessary for vessels' anchoring and berthing. The cell size and the scales of nautical charts to be used are decided at the discretion of the responsible national hydrographic office.

Classification of ENCs (for Japanese ENCs)

Type	Navigational purpose	Chart scale	Cell size (lat. & long.)
1	Overview	<1:1,500,001	8, 25 degrees
2	General	1: 300,001 to 1:1,500,000	4 degrees
3	Coastal	1: 80,001 to 1:300,000	1 degree
4	Approach	1:25,001 to 1:80,000	30 minutes
5	Harbour	1: 7,501 to 1:25,000	15 minutes
6	Berthing (not yet issued)	> 1:7,500	15 minutes

Examples of ENC Display



The above is a display example of ENC for navigational purpose 'Overview', compiled from nautical charts with scales smaller than 1/1,500,000. As for the ENCs for this navigational purpose, there are two types of cell sizes, of 8-degree mesh and of 25-degree mesh, both covering a vast area. Any information on coastal areas is not shown. Thus, it is used mainly for navigational planning.



The above is a display example of ENC for navigational purpose 'Harbour', compiled from nautical charts with scales from 1/7,501 to 1/25,000. The ENC for this navigational purpose is composed of 15-minute mesh cell size, indicating detailed information in a limited coverage. Thus, detailed information for anchoring and berthing in a harbour can be available.

Use of ENC

In order to use an ENC, a user has to obtain a license by paying a fee for use of the data for a contracted period, but not to purchase an ENC itself. ENC will be supplied by a cell unit, and the user will use ENCs by cell units. For use of ENC, the user is required to make a contract for each cell unit.

Protection of ENC Data (User Permit, Cell Permit)

All ENCs and Electronic Notices to Mariners (Updates) for updating ENCs are protected from illegal copying, data falsification or disguising, by means of encryption (data protection treatment) by the Japan Hydrographic Association based on the IHO Data Protection Scheme (IHO S-63).

What is User Permit?

For use of ENCs, an exclusive **ECDIS** (Electronic Chart Display and Information System) and software for ENC display based on the IHO Data Protection Scheme (S-63) are required. Upon purchasing these items, an identification code called **User Permit** for each of ECDIS and of ENC display software will be given. Without this User Permit, ENCs cannot be available.

What is Cell Permit?

Cell Permit is a decrypting code for decoding the data of ENC. It is prepared and issued by the Japan Hydrographic Association by using the User Permit provided at the time of use contract of ENC. The Cell Permit will be issued to each cell. Cell Permit will effectively function only for the ECDIS or the software having the User Permit provided at the time of ENC use contract. Since Cell Permit decrypts the encrypted ENC, any ENC cannot be displayed without Cell Permit.

ENC Contract and Ordering

In order to use ENC, a client is necessary to make an ENC use contract. Upon conclusion of the contract by the client, the Japan Hydrographic Association issues License ID (also called User ID) and Password. The License ID and Password are necessary for all future contracts. Ordering of ENC will be made at a sales agent or by telephone, FAX or e-mail. It will also be made at the web-shop of the Japan Hydrographic Association.

In selecting ENC cells, a client will use the index appearing on the website of the Japan Hydrographic Association or the printed sheet of cell index issued by the Association, or the web-page of the Hydrographic and Oceanographic Department of the Japan Coast Guard. After contracting the use of ENC, the client will be provided with three types of CDs, i.e. a CD storing Cell Permit, a CD storing ENC data (Base CD) and a CD storing Electronic Notices to Mariners (Update CD).

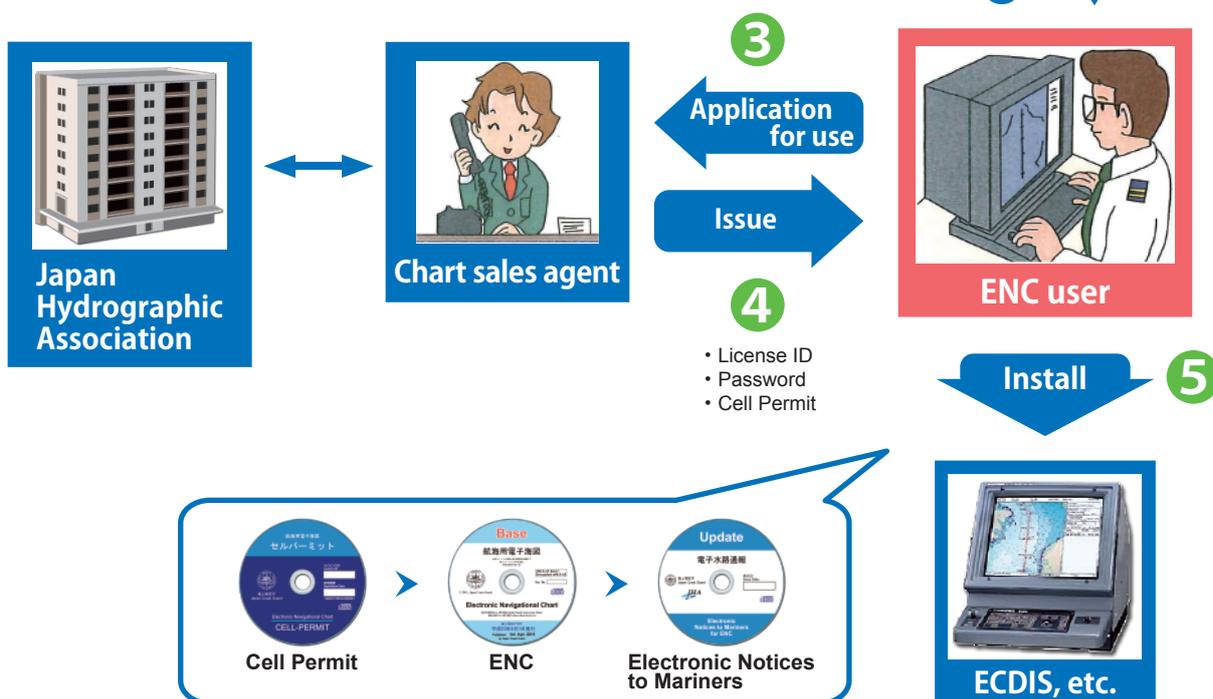


Process for Obtaining ENC

The process from obtaining ENC to displaying ENC data are as follows:

- 1 To purchase ECDIS with necessary tools.
- 2 To obtain User Permit * together with ECDIS.
- 3 To send in User Permit and ENC Use Application Form to order ENC.
- 4 After completion of a use contract, User ID and Password are issued. The User ID and Password will be necessary for renewal of contract or additional ordering.
- 5 Installation will be made in the order of Cell Permit CD, ENC CD and Electronic Notices to Mariners CD.

* User Permit is an identification code of a display device such as ECDIS. Upon purchasing, it is given by the ECDIS manufacturer without fail.



Contract Period, Additional Contract, Renewal of Contract and Use Fee

- The contract period for use of ENC is any of 12 months, 9 months, 6 months or 3 months. When Cell Permit is obtained, ENC can be used.
- The use fees are as follows (net price not including consumption tax):

	12 months	9 months	6 months	3 months
Price of 1 cell	¥ 550	¥ 500	¥ 400	¥ 300

- In case where additional ENCs are necessary, they will be available from a sales agent as in the case of a new contract. The closing date of additional contract will be the same closing date of the existing contract. When the closing date of contract is approaching, a message informing as such will appear on the display of ECDIS. When the contract expires, Electronic Notices to Mariners will become unavailable. Renewal of contract can be made from two months before the closing date. The use fee in the renewed contract will be the same as in the new contract, without any privilege such as a renewal discount.

Electronic Notices to Mariners (Updates)

In using ENC for navigation, it should always be used in an updated condition. The updating information will be supplied by Electronic Notices to Mariners (Updates) issued on Friday every week. On Electronic Notices to Mariners CD, the update information is stored in an accumulating manner. Accordingly, if any updating information has previously been missing, such information can be found when the latest updating information is obtained. During the ENC contract period, ENC can be updated by obtaining through either of the following methods:

- To obtain from the web page of the Japan Hydrographic Association (<http://www.jha.or.jp/en/jha/purchase/enc.html>), where License ID and Password obtained at the first ENC use contract are required. As of the closing date of the contract, updates cannot be available.
- Only to those who so desires, Electronic Notices to Mariners on a charged CD will be provided. As for the charge, inquiries will be made to a chart sales agent.

Service for Foreign ENCs

The Japan Hydrographic Association is dealing with the following foreign ENCs for use by clients:

- Malacca & Singapore Straits ENC
- Singapore ENC
- Hong Kong ENC
- South China Sea ENC
- Chile ENC

Ordering of foreign ENCs can be made to a sales agent or the Japan Hydrographic Association.

As for the foreign ENCs, encryption is applied according to IHO S-63 as in the same case of the Japanese ENCs, so that such an ECDIS or ENC display software that is coping with the encryption is necessary.

For details, inquiries will be made to a chart sales agent or JHA.



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