



## Fact Sheet: AusENC

### Frequently asked questions

The following answers may be helpful to new and prospective AusENC users.

#### Who makes and distributes Electronic Navigation Charts for our region?

The Australian Hydrographic Office (AHO) produces all ENC covering Australian, Papua New Guinea, Solomon Islands and Australian Antarctic Territory waters. All ENC produced by the AHO are included within the AusENC Service. This is a low cost service intended to meet the needs of mariners operating entirely within our local region. When purchased through the AusENC service, ENC in most packs are less than \$1 per ENC, per year.

Identical ENC are also available in other commercial services linked to the two international ENC 'wholesalers', namely the International Centre for ENC (IC-ENC.org) and PRIMAR. Costs through these services are significantly higher.

The NZ Hydrographic Authority (NZHA), part of Land Information New Zealand, produces ENC for New Zealand, several South West Pacific island nations, and the New Zealand Antarctic Territory waters. All ENC produced by the NZHA are available through the commercial services linked to IC-ENC and PRIMAR, as well as through their own local ENC service.

NZ ENC covering the NZ North and South Islands are also available in the AusENC Service to support cross-Tasman Sea voyages.

ENC included in the AusENC Service include:

- AU – Australia, Australian offshore islands, Australian Antarctic Territory
- PG – Papua New Guinea and all PNG islands
- SB – Solomon Islands and all islands
- NZ – New Zealand North and South Islands only.

#### How can I subscribe to the AusENC Service?

The AHO sells subscriptions for AusENC through a network of AusENC distribution agents listed on the AHS website at [www.hydro.gov.au/webapps/jsp/agents/agents-list.jsp](http://www.hydro.gov.au/webapps/jsp/agents/agents-list.jsp)

Organisations with established data sharing arrangements with the AHO, as well as Commonwealth and State agencies, may subscribe to the AusENC Service at no cost. These organisations should contact the AHO directly.

For information on installing, updating and renewing an AusENC subscription, please refer to the relevant AusENC Fact Sheet.

## What are the various permits I require?

Almost all national hydrographic offices use the IHO S-63 Data Protection Scheme. The key function of the scheme is to ensure that ENC are not corrupted between release by the hydrographic office, and using it in your navigation system. The following table describes all the component parts of the data protection scheme:

Component	Description	Source and Timing
S-63 User Permit	<p>A 28 character alphanumeric code created by your system manufacturer and provided to you when you purchase your navigation system. You must use this code when ordering your ENC service.</p> <p>Your S-63 User Permit is used to create cell permit files (PERMIT.TXT, ENC.PMT) that will unlock the encrypted ENCs that you purchase.</p>	Upon purchase of your navigation system.
S63 Scheme Administrator Certificate	<p>An authentication file used by your system to ensure it recognises that the ENC you are loading have come from an official source.</p> <p>If a producer is not included on this certificate (IHO.crt), then your system will not accept anything supplied by that producer.</p>	Included on AusENC Base datasets and disks, and from the International Hydrographic Organization website.
ENC Permits	<p>These are used by your navigation system to unlock access to the encrypted AusENC Base and Update datasets during the subscribed period for the subscribed packs.</p> <p>Each time ENC Permits are issued they contain the latest for every ENC contained within <u>all</u> your active AusENC pack subscriptions for a particular system.</p> <p>If you have AusENC subscriptions for multiple navigation systems, you will receive a separate set of ENC Permits for each system (S-63 User Permit).</p>	Supplied by email from AHO: <ul style="list-style-type: none"><li>• When you establish or renew your AusENC subscriptions, or add a new pack.</li><li>• Attached to your fortnightly AusENC update notification as required.</li></ul>

For guidance on how and when these various permits are used, please refer to the Fact Sheet on installing, updating and renewing the AusENC Service.

## How many installations can I have on one ENC subscription?

The AusENC service enables mariners to install up to navigation systems under the one subscription. An example of where this can occur is on large commercial vessels that use multiple independent ECDIS. Generally there is a primary and backup system on the ship's bridge and frequently additional systems at other locations on the vessel.

AusENC subscriptions for use on networked systems ashore are based upon the number of workstations networked within a single system. A limit of five workstations per subscription is therefore considered appropriate.

### **If I have several separate navigation systems, will I need multiple subscriptions?**

A separate S-63 User Permit is required for each separate navigation system or site. For example, a shipping company wishing to use ENC on five vessels will require (at least) five ENC subscriptions and therefore at least five S-63 User Permits.

### **What happens if I load the wrong ENC Permits on my navigation system?**

If the wrong user permits are loaded, the navigation system will report an error. ENC Permits will only work with the matching S-63 User Permit. The applicable ENC Permits for each S-63 User Permit are listed in the fortnightly AusENC Report sent to subscribers.

### **When will I receive ENC Permits?**

New ENC Permits will be sent:

- Following receipt of your details upon setting up, altering or renewing an AusENC subscription
- As part of your fortnightly AusENC Notification email and report:
  - In parallel with release of a new ENC that has been automatically added within the area covered by a subscribed ENC pack,
  - In parallel with release of a new edition of an existing ENC within the area covered by a subscribed ENC pack.

For information on installing, updating and renewing an AusENC subscription, please refer to the relevant AusENC Fact Sheet.

### **What happens when my ENC Permits are about to expire?**

You will receive notifications from the AHO from four weeks before expiry, to two weeks after, contained in each AusENC Update Report.

IHO S-63 compliant navigation systems should issue warnings prior to ENC Permit expiry to provide sufficient lead time for you to purchase new subscriptions.

It is important to renew your subscription before it expires to guarantee continued access to your ENC. Once permits have expired it will not be possible to load updates.

For information on installing, updating and renewing an AusENC subscription, please refer to the relevant AusENC Fact Sheet.

### **How do I extend the duration of my subscription?**

The AusENC service offers 12 month subscriptions for Port and Coastal Packs, and 3, 6, 9 or 12 months subscriptions for the Voyager and Australia Packs. When you wish to extend your subscriptions you will actually be purchasing a new subscription for the nominated duration.

## **Can I use AusENC if I have ENC from other services installed on my system?**

You can use AusENC if you have ENC from other services installed. However, noting that ENC published by the AHO are available with identical names, editions and content through several ENC services, your navigation system may behave unpredictably if ENC with identical file names have been loaded from two or more ENC services.

If you are intending to use the AusENC service in combination with other ENC services we recommend that you identify the AU, PG or SB ENC that you will receive as part of your AusENC service and remove any matching AU cells from other services from your system. This should be done prior to loading AusENC however before taking this step you should ensure that you have backup copies of your other service's ENC data and permits.

For information on installing, updating and renewing an AusENC subscription, please refer to the relevant AusENC Fact Sheet.

## **What is the IHO S-63 standard?**

The IHO S-63 standard has two main components: encryption and authentication.

Encryption is a means to make electronic data readable only to those possessing a key. A Data Server encrypts the data using a mathematical algorithm called a cipher. The recipient's key decrypts or 'unlocks' the data making it readable again.

Authentication is the process of verifying that data has not been tampered with or corrupted in transit between the Data Server and the recipient.

## **How does the IHO S-63 encryption work?**

Under the IHO S-63 standard, the AHO Data Server encrypts the ENC in the AusENC Service and provides the mariner with a unique encrypted key for each ENC they have purchased via their subscription. These keys are known as either an 'ENC Permit' or a 'Cell Permit'. They are unique to each IHO S-63 compliant navigation system (more on this below).

ENC Permits also contain information about the duration of each subscription. The mariner loads the ENC Permits into the navigation system - the system then uses the permit to unlock subscribed ENC to enable access and viewing until the end of the subscription period.

As mentioned above, before the Data Server can create ENC Permits the mariner must supply the Data Server with another encrypted key called an 'S-63 User Permit'. The S-63 User Permit is allocated by the system manufacturer and is an encrypted key which is unique to each navigation system sold. This is usually supplied with documentation accompanying the navigation system when purchased. On receipt of a valid S-63 User Permit, the Data Server is able to identify the manufacturer of the system and generate encrypted ENC Permits that will only work on the mariner's navigation system.

An additional function of ENC Permits is that they also control versioning of ENC within a navigation system. If the AHO adds a new ENC into a user's subscribed pack (at no additional cost), or replaces an existing ENC with a new edition, a new ENC Permit will be issued that enables access to the new ENC and disables access to the superseded edition.

## How do I determine if my navigation system is IHO S-63 / AusENC compatible?

To use AusENC your navigation system will need to be IHO S-63 compatible. There are numerous IHO S-63 compatible navigation systems, ranging from full Electronic Chart Display and Information Systems (ECDIS) on the Bridge of a large ship, to Portable Pilotage Units (PPU) and more modest Electronic Chart Systems (ECS) able to run as an application on a laptop or tablet computer.

If your system is compatible, your system distributor or manufacturer will be able to provide you with an 'IHO S-63 User Permit'. It is unique to your system. If one cannot be provided, your system is not compatible.

In addition, your navigation system should be configured for use with the 'IHO S-63 Scheme Administrator Certificate'. The 'IHO S-63 Scheme Administrator certificate' (IHO.crt) includes the AHO in the Data Server list. Some manufacturers supply the 'IHO S-63 Scheme Administrator certificate' with their software or provide a web-site link to the certificate in their system documentation.

To assist mariners who do not have access to the Internet whilst at sea, a copy of the IHO S-63 Scheme Administrator certificate is included on each AusENC Base dataset CD under the root directory (top level directory). However, if you wish to independently download the IHO S-63 Scheme Administrator (SA) certificate the URL is: [www.iho.int/iho\\_pubs/standard/S-63/S-63\\_SA\\_Certificate.htm](http://www.iho.int/iho_pubs/standard/S-63/S-63_SA_Certificate.htm).

Systems configured for use with non IHO S-63 Scheme Administrator certificates may have difficulty loading AusENC. The 'PRIMAR certificate' (PRIMAR.crt) will not work with AusENC.

## What happens if the S-63 authentication check fails?

If the S-63 authentication check fails, your navigation system will issue a warning that you will be required to acknowledge. This will occur prior to loading any ENC data (including updates) in to the navigation system's internal system ENC (SENC) database. You can choose to halt the loading process or continue.

If the authentication check fails the AHO encourages mariners to contact their ENC distributor. However, if you choose to load the ENC data the warning will not be re-issued because the navigation system will then convert the ENC data into its own proprietary 'SENC' format. Once loaded into the SENC, the ENC that failed the authentication check will be undistinguishable from the other ENC viewable in the navigation system. The decision to add non-authenticated ENC should not be made lightly as data quality and integrity cannot be assured.

## AusENC technical support

If you need help with installing updates on your navigation system you should contact your system manufacturer or system distributor.

However, if you are experiencing problems with the AusENC data or have misplaced your latest AusENC permits and would like them resupplied, please contact the AHO via email.

AHO Technical Support	hydro.sales@defence.gov.au
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