CSMWG16-5.1A Rev.1

IHO CSMWG 16
IHB Monaco 29-31 May 2006

Report from TSMAD SubWg10 on S-57 E3.1.1
(Updated 22 May 2006)

The SubWg considered suggestions that had been made by the various members. The main outcomes were:

The new generic object **GENOBJ** was not considered to be a suitable name as the meeting agreed with NOAA that it was only to be used for new IMO objects and for any new feature that cannot be encoded using existing S-57 E3.1 object/attribute/attribute value combinations, that is considered to affect safety of navigation. This new object must not be used without first obtaining approval from TSMAD and then, only after an approved ENC Encoding Bulleting has been released in the IHO website. It was agreed to tighten the use of such a feature and **not** provide a generic type object that may be used to encode features that do not fit 'nicely' within the current standard. It was also pointed out that CHRIS had a very specific reason for allowing 3.1.1 and this new generic type object and that Stakeholders played a large part in its inception..

It was agreed to change the name of this object to infer a safety related or hazardous feature. The final term and acronym is yet to be agreed, however the term 'New Hazard' (**NEWHAZ)** will be circulated for further comment amongst TSMAD members. Having now slept on the subject, perhaps other alternatives such as **HAZOBJ, HAZARD, BEWARE**, may be more suitable? The term **GENOBJ** will not be adopted for E3.1.1.

Because of the strengthening of the definition to include safety issues, it was considered that the proposed S-52 symbols (CSMWG16-5.3A) for the previous **GENOBJ** were not suitable as there were already numerous question mark symbols which are not necessarily safety related. The colour grey does not emphasise the feature at all. Take for example the new IALA emergency wreck buoy. If this was shown as a grey question mark, there would be no indication of the importance of such a mark.

The SubWg suggested that consideration be given to using the existing danger symbology such as the isolated danger symbol for point features, and some form of magenta lines for both line and area primitives, but not using question marks for PL E3.3. It will also be imperative that any existing S-57 E3.1 attributes such as INFORM and TXTDSC are available for the mariner to examine to determine the exact nature of this 'new hazard'. It was agreed to add additional S-57 E3.1 attributes to **NEWHAZ** as follows: COLOUR, CONDTN, CONRAD, CONVIS, NATION, RESTRN, STATUS and WATLEV. These are in addition to what was originally proposed for **GENOBJ**. Other attributes may also be added and members of TSMAD have been asked for suggestions. It would be expected that the S-52 Presentation Library E3.3 will be amended to accommodate this enhancement so that the new object **NEWHAZ** will use these attributes to affect symbolisation in a similar manner to existing S-57 features.

The issue of older ECDIS at sea (which will not use S-52 E3.3 PL) was also discussed. HOs will be encouraged to release a NtM warning mariners about poor or non existent display of 'unknown' objects on their SENCs. It was suggested that an NtM may also be issued for any new **NEWHAZ** describing the position and or limits of such feature(s), encouraging the mariner to plot that feature using mariner's objects on his SENC. This should then trigger the usual indications and alarms. Perhaps this is a better way to inform mariners of such **NEWHAZ** as it is not expected that it will be used very often, if at all. NGA advised that they would also broadcast a warning about such features as well as issuing a NtM. The views and opinions of the C&SMWG members is sought on these issues in particular.

It is anticipated that wording very similar to what follows will be submitted to CHRIS18 before Friday 4 August (closing date for new papers), but that final discussion will possibly be made by stakeholders at the meeting held in conjunction with WEND in September before the CHRIS meeting. However it would be much better if further discussion could be made with the stakeholder's before the closing date for comments to CHRIS18 (about Friday 1 September).

The revised draft for the S-57 E3.1.1 Supplement, which is still open to further comment and suggestions, is attached for the information of C&SMWG members.

Chris ROBERTS
Member TSMAD SubWg and Sec CSMWG

INTERNATIONAL HYDROGRAPHIC ORGANIZATION

IHO TRANSFER STANDARD
for
DIGITAL HYDROGRAPHIC DATA

Enhancements Required to Encode S-57 Edition 3.1.1 ENC Data

December 2006

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Version 2 released 22May 2006
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Commentaire [c1] : Someone, please fix page numbering

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1. Introduction to S-57 Edition 3.1.1

This document provides a set of necessary enhancements to S-57 Edition 3.1. These are comprised of:

- three new feature objects;
- two new attributes, and;
- two new attribute values for Category of Restricted Area.

This document is structured so that its contents may be easily used in conjunction with the existing S-57 Edition 3.1. It contains pages for the new features and attributes (Editions 3.1.1) as well as numbered sections corresponding to the relevant sections of the ENC Product Specification (Edition 2.0) and the Use of the Object Catalogue for ENCs (Edition 2.1). When these enhancements are applied to S-57 Edition 3.1, the resulting updated standard is referred to as Edition 3.1.1.

Use of these enhancements is optional and the decision to use them is at the discretion of each ENC producer. It is anticipated that only those ENC producers needing to encode Archipelagic Sea Lanes, Environmentally Sensitive Sea Areas or Particularly Sensitive Sea Areas will use these enhancements. The enhancements will only be published in this form and there are no plans to reissue the entire S-57 document.

A third new feature object - Generic Object - has been added with its associated generic attributes, for possible future use by the IHO to accommodate features that might need to be included in an ENC that cannot be adequately encoded using existing objects and attributes. The Generic Object is only to be used in conjunction with an ENC Encoding Bulletin issued by the IHO. The Bulletin will provide the specifics on how to use the object for a particular application. The Generic Object is not to be used under any other circumstances. For example, an ENC producer must not use Generic Object to encode a national feature unless it has been approved by the Transfer Standard Maintenance and Application Development Working Group (TSMADWG) and an ENC Encoding Bulletin has been issued.

If an ENC producer chooses to implement these enhancements, when a 3.1 ENC is upgraded to 3.1.1 the dataset must be issued as a new edition.

The latest version of the IHO Test Data Set contains an example of each of these new feature objects and attributes.

The rationale for issuing these enhancements is explained in IHO Circular Letter 94 of 2005 which reads in part:

“At the 17th meeting of the Committee on Hydrographic Requirements for Information Systems (CHRIS) it was agreed that ENCs based on the next major revision of the IHO Data Transfer Standard (S-57) will not occur before 2012. However, the International Maritime Organization (IMO) recently adopted measures that require new chart features, such as Particularly Sensitive Sea Areas and Archipelagic Sea Lanes. These features cannot be adequately encoded in an ENC using S-57 Edition 3.1. As a result, the CHRIS has asked its Transfer Standard Maintenance and Application Development Working Group (TSMAD) to develop a minor revision to the S-57 standard to accommodate the new requirements. This revision (S-57 Edition 3.1.1) will also add placeholders that can be used to accommodate any other new features that IMO may require in the future.”

Further, it explains:

“In the event that a 3.1.1 cell is loaded into an ECDIS that has not been upgraded, any new 3.1.1 features will be shown as “Unknown Objects” and should be displayed using the ECDIS “?” symbol. Further information about these features is available in the ‘Information’ attribute. But the mariner must obtain this using the ECDIS “Pick Report” functionality. As a result, the data is available but is not presented intuitively. As such, upgrading ECDIS equipment to 3.1.1 to correctly display the new IMO requirements is highly desirable…The CHRIS has instructed TSMAD that the changes they develop for this minor revision should not result in a requirement for ECDIS equipment to be re-tested for type-approval.”

2. S-57 (EDITION 3.1.1) Appendix A Chapter 1 (*IHO Object Catalogue)*

The following new object classes have been included in order to encode Archipelagic Sea Lanes.

2.1 New Object Classes - Archipelagic Sea Lane

GEO OBJECT CLASSES

Object Class: **Archipelagic Sea Lane**

Acronym: **ARCSLN** Code: **161**

Set Attribute_A: DATEND; DATSTA; NATION; NOBJNM; OBJNAM;

Set Attribute_B: INFORM; NINFOM; NTXTDS; PICREP; SCAMAX; SCAMIN; TXTDSC;

Set Attribute_C: RECDAT; RECIND; SORDAT; SORIND;

Definition:

Article 53 of the United Nations Convention on the Law of the Sea (UNCLOS) states that:

> 'an archipelagic State may designate sea lanes ..., suitable for the continuous and expeditious passage of foreign ships ... through ... its archipelagic waters and the adjacent territorial sea. ... All ships ... enjoy the right of archipelagic sea lanes passage in such sea lanes ... [which] include all normal passage routes used as routes for international navigation … through archipelagic waters'.

(Note: references to aircraft and air routes in UNCLOS have been omitted in these extracts from Article 53). (IHO M-4 B-435.10, S-51 Appendix 2 Part II)

References:

INT 1: M 17;

M-4: B-435.10;

Remarks:

The object class Archipelagic Sea Lane encodes the area of an Archipelagic Sea Lane.

Distinctions: administrative area; archipelagic sea lane axis; caution area; fairway, inshore traffic zone; recommended traffic lane part, restricted area; traffic separation scheme lane part.

2.2 New Object Classes - Archipelagic Sea Lane Axis

GEO OBJECT CLASSES

Object Class: **Archipelagic Sea Lane Axis**

Acronym: **ASLXIS** Code: **162**

Set Attribute_A: DATEND; DATSTA; NATION; NOBJNM; OBJNAM;

Set Attribute_B: INFORM; NINFOM; NTXTDS; PICREP; SCAMAX; SCAMIN; TXTDSC;

Set Attribute_C: RECDAT; RECIND; SORDAT; SORIND;

Definition:

The reference line used to determine the maximum extents of an Archipelagic Sea Lane. It may not indicate the deepest water nor any recommended route or track.

Article 53 of the United Nations Convention on the Law of the Sea (UNCLOS) states that:

> 'an archipelagic State may designate sea lanes ..., suitable for the continuous and expeditious passage of foreign ships ... through ... its archipelagic waters and the adjacent territorial sea. ... All ships ... enjoy the right of archipelagic sea lanes passage in such sea lanes ... [which] include all normal passage routes used as routes for international navigation … through archipelagic waters'.

References:

INT 1: M 17;

M-4: B-435.10;

Remarks:

In the definition, references to aircraft and air routes in UNCLOS have been omitted in these extracts from Article 53. (IHO M-4 B-435.10, S-51 Appendix 2 Part II)

Distinctions: administrative area; archipelagic sea lane; caution area; fairway, inshore traffic zone; recommended traffic lane part, restricted area; traffic separation scheme lane part.

2.3 New Object Class – New Hazard *(or similar term with this meaning)*

The following New Hazard class has been included in order to cater for possible future requirements of the IMO or for a new feature that affects the safety of navigation, where no existing S-57 object classes can be used. It must not be used unless approved by the Transfer Standard Maintenance and Application Development Working Group (TSMADWG) and promulgated as an ENC Encoding Bulletin on the IHO web site (http://IHO.int).

GEO OBJECT CLASSES

Object Class: **New Hazard**

Acronym: **NEWHAZ** Code: **163**

Set Attribute_A: COLOUR, CONDTN; CONRAD; CONVIS; DATEND; DATSTA; GENDEF; GENNAM; NATION; NOBJNM; OBJNAM; PEREND; PERSTA; RESTRN; STATUS; WATLEV; *(other suggestions???)*

Set Attribute_B: INFORM; NINFOM; NTXTDS; PICREP; SCAMAX; SCAMIN; TXTDSC;

Set Attribute_C: RECDAT; RECIND; SORDAT; SORIND;

Definition:

A feature considered to be a hazard to navigation that cannot currently be encoded by any existing object for use in an S-57 product.

References:

INT 1: not specified;

M-4: not specified;

Remarks:

This object has been designed for S-57 E3.1.1 as a placeholder for any new feature that is required by the IMO to be encoded and or that affects the safety of navigation, that cannot be encoded using existing S-57 E3.1 objects. Its use is strictly controlled by the TSMAD and must only be used following an approved ENC Encoding Bulletin release on the IHO web site.

3. S-57 (EDITION 3.1.1) Appendix A Chapter 2 *(Attributes)*

The following new attribute values for Environmentally Sensitive Sea Area (ESSA) and Particularly Sensitive Sea Area (PSSA) have been included for CATREA.

3.1 New Attribute values for CATREA

FEATURE OBJECT ATTRIBUTES

Attribute: **Category of restricted area**

Acronym: **CATREA** Code: **56**

Attribute type: L

Expected input:

ID		Meaning	INT 1	M-4
1	:	offshore safety zone	L 3;	
2	:	~~anchoring prohibition area~~		
3	:	~~fishing prohibition area~~		
4	:	nature reserve	N 22;	
5	:	bird sanctuary	N 22;	
6	:	game reserve	N 22;	
7	:	seal sanctuary	N 22;	
8	:	degaussing range	N 25;	B-448.1-3;
9	:	military area	N 31;	
10	:	historic wreck area	N 26;	B-449.5;
11	:	~~inshore traffic zone~~		
12	:	navigational aid safety zone	M 29.1;	B-435.7;
13	:	~~danger of stranding area~~		
14	:	minefield	N 34;	B-441.8;
15	:	~~diving prohibition area~~		
16	:	~~area to be avoided~~		
17	:	~~Prohibited area~~		
18	:	swimming area		
19	:	waiting area		
20	:	research area		
21	:	dredging area	N 63;	B-446.4;
22	:	fish sanctuary		
23	:	ecological reserve		
24	:	no wake area		
25	:	swinging area		
26	:	water skiing area		
27	**:**	**Environmentally Sensitive Sea Area (ESSA)**	**N 22;**	**B-437.1;**
28	**:**	**Particularly Sensitive Sea Area (PSSA)**	**N 22;**	**B-437.6;**

Definitions:

offshore safety zone: the area around an offshore installation within which vessels are prohibited from entering without permission; special regulations protect installations within a safety zone and vessels of all nationalities are required to respect the zone. (IHO Dictionary, S-32, 5th Edition, 4471)

nature reserve: a tract of land managed so as to preserve its flora, fauna, physical features, etc.

bird sanctuary: a place where birds are bred and protected.

game reserve: a place where wild animals or birds hunted for sport or food are kept undisturbed for private use.

seal sanctuary: a place where seals are protected.

degaussing range: an area, usually about two cables diameter, within which ships' magnetic fields may be measured; sensing instruments and cables are installed on the sea bed in the range and there are cables leading from the range to a control position ashore. (IHO Chart Specifications, M-4)

military area: an area controlled by the military in which restrictions may apply. (Hydrographic Service, Royal Australian Navy)

historic wreck area: an area around certain wrecks of historical importance to protect the wrecks from unauthorized interference by diving, salvage or deposition (including anchoring). (IHO Chart Specifications, M-4)

navigational aid safety zone:
an area around a navigational aid which vessels are prohibited from entering.

minefield: an area laid and maintained with explosive mines for defence or practice purposes.

swimming area: an area in which people may swim and therefore vessel movement may be restricted.

waiting area: an area reserved for vessels waiting to enter a harbour.

research area: an area where marine research takes place.

dredging area: an area where dredging is taking place.

fish sanctuary: a place where fish are protected

ecological reserve: a tract of land managed so as to preserve the relation of plants and living creatures to each other and to their surroundings.

no wake area: an area in which a vessels' speed must be reduced in order to reduce the size of the wake it produces.

swinging area: an area where vessels turn. (Service Hydrographique et Océanographique de la Marine, France).

water skiing area: an area within which people may water ski and therefore vessel movement may be restricted.

Environmentally Sensitive Sea Area (ESSA):
a generic term which may be used to describe a wide range of areas, considered sensitive for a variety of environmental reasons. (IHO Chart Specifications, M-4)

Particularly Sensitive Sea Area (PSSA):
an area that needs special protection through action by IMO because of its significance for regional ecological, socio-economic or scientific reasons and because it may be vulnerable to damage by international shipping activities. (IHO Chart Specifications, M-4)

Remarks:

The official legal status of each kind of restricted area defines the kind of restriction(s), e.g. the restriction for a 'game preserve' may be 'entering prohibited'. *(second example deleted as value is not allowed).*

3.2 New Attribute - Generic Definition

The following new attributes have been included to describe the characteristics for the "New hazard" object class.

FEATURE OBJECT ATTRIBUTES

Attribute: **Hazard Definition**

Acronym: **HAZDEF** Code: **190**

Attribute type: S

Definition:

This specifies the defining characteristics of a new hazard object.

Remarks:

No Remarks

3.3 New Attribute - Hazard Name

FEATURE OBJECT ATTRIBUTES

Attribute: **Hazard Name**

Acronym: **HAZNAM** Code: **191**

Attribute type: S

Definition:

This specifies the descriptive name of a new hazard object class.

Remarks:

All new hazard objects of the same class must share the same HAZNAM.

4. S-57 (EDITION 3.1.1) Appendix B.1 *(Product Specifications for ENC)*

The following clauses are supplementary to the "ENC Product Specification" document (Edition 2.0), and are necessary for Edition 3.1.1 requirements.

3.3.1 New object classes and their geometric primitives permitted by this enhancement for use in ENC.

The following is a list of additional object classes allowed in an ENC and the geometric primitives allowed for each of them (P = point, L = line, A = area, N = none).

ARCSLN			A		ASLXIS		L			NEWHAZ	P	L	A	

For reasons of backward compatibility with Edition 3.1, the new objects which appear in S-57 3.1.1 which are listed above, must have their meaning described in at least one of the attributes INFORM (e.g. Archipelagic Sea Lane), or TXTDSC (which must include a heading for and text such as 'Archipelagic Sea Lane').

The Generic Object must only be used in conjunction with an ENC Encoding Bulletin issued by the IHO. The Bulletin will provide the specifics on how to use the object for a particular application. The Generic Object must not be used under any other circumstances.

3.5.2.1 New mandatory attributes

Object Class	Attributes						
ARCSLN	NATION	At least one of	INFORM or TXTDSC				
ASLXIS	NATION	At least one of	INFORM or TXTDSC				
NEWHAZ	HAZDEF	HAZNAM	At least one of	INFORM or TXTDSC			
RESARE	INFORM	Only when values 27 or 28 are used.	(as well as existing mandatory attributes)				

Supprimé : ¶

3.5.7.1 New attribute values

For reasons of backward compatibility with Edition 3.1, the new attribute values which appear in S-57 3.1.1 which are listed below, must have their meaning described in the attributes INFORM (e.g. Environmentally Sensitive Sea Area (ESSA)) or TXTDSC (which must include a heading for and text such as 'Environmentally Sensitive Sea Area').

CATREA 27: Environmentally Sensitive Sea Area (ESSA)
28: Particularly Sensitive Sea Area (PSSA)

3.5.8 New attributes

Two new attributes are added and are of type "Free Text".

HAZDEF

6.3.2.1 Data Set Identification field – DSID (EN)

The STED subfield content must remain "03.1".

The PRED subfield content must remain "2.0".

To indicate that the data set is Edition 3.1.1 data, the text "STED:3.1.1;" must be included in the COMT subfield.

6.4.2.1 Data Set Identification field – DSID (ER)

The STED subfield content must remain "03.1".

The PRED subfield content must remain "2.0".

To indicate that the update applies to a 3.1.1 data set, the text "STED:3.1.1;" must be included in the COMT subfield.

5. S-57 (EDITION 3.1.1) APPENDIX B.1, Annex A *(Use of the Object Catalogue for ENC, Edition 2.1)*

The following clauses are supplementary to the "Use of the Object Catalogue" document (Edition 2.1), and are necessary for Edition 3.1.1 requirements.

10.5 Archipelagic Sea Lane

If it is required to encode Archipelagic Sea Lane, it must be done using **ARCSLN** and/or **ASLXIS** objects, and possibly navigational aids objects.

The unique character of the Archipelagic Sea Lanes (ASLs) is specified by UNCLOS Article 53 and Part H, General Provision of IMO Ships Routing.

The encoding of relationships between these objects is defined in clause 10.5.3.

Remarks:

- In some cases only accurate information on the axes (**ASLXIS**) may be available and in such cases the extents of the ASL (**ARCSLN**) may not be able to be encoded.

10.5.1 Archipelagic Sea Lanes (see M-4 - B-435.10)

The object class **ARCSLN** must only be used to encode the area of an Archipelagic Sea Lane.

Geo object: Archipelagic Sea Lane (**ARCSLN**)
Attributes: DATEND DATSTA NATION NOBJNM OBJNAM

For reasons of backward compatibility with Edition 3.1, at least one of the attributes INFORM or TXTDSC must be populated with *Archipelagic Sea Lane.*

10.5.2 Archipelagic Sea Lane Axis (see M-4 - B-435.10)

The object class **ASLXIS** must only be used to encode the axes defining an Archipelagic Sea Lane.

Geo object: Archipelagic Sea Lane Axis (**ASLXIS**)
Attributes: DATEND DATSTA NATION NOBJNM OBJNAM

For reasons of backward compatibility with Edition 3.1, at least one of the attributes INFORM or TXTDSC must be populated with *Archipelagic Sea Lane Axis*.

10.5.3 Archipelagic Sea Lane systems

To encode an Archipelagic Sea Lane (ASL) system, the **ARCSLN, ASLXIS** objects, and any navigational aids objects (if they are stated in the regulation defining the ASL), should be aggregated using the collection object **C_AGGR** (see clause 15). The attribute OBJNAM for the **C_AGGR** object is used to encode the name of the ASL (if applicable), and the attribute INFORM or TXTDSC should be used to encode textual information about the whole ASL.

Commentaire [c2] : Roberts: this is a duplication of text which we need to avoid and in fact, is prohibited in the second paragraph below table 3.3 in the UOC. Collection objects are not currently handled by S-52, so this is a wasted effort. Suggest this section be deleted.

11.15 Environmentally Sensitive Sea Areas (see M-4 - B-437)

If it is required to encode an Environmentally Sensitive Sea Area, it must be done using a **RESARE** object (see clause 11.1), with attribute CATREA = *27* (ESSA) or *28* (PSSA).

An Environmentally Sensitive Sea Area that is shown on the source as a point symbol should be encoded using a **CTNARE** object of type point, with the attribute INFORM = *ESSA* or *PSSA*.

Commentaire [c3] : Roberts: this is another incorrect use of **CTNARE** which we need to avoid. HOs need to find out the extents of the ESSA and encode it accurately. Following discussion at SubWg10, a suitable work around would be to create a small area. If this is agreed to, an ENC Encoding Bulletin would need to be agreed and issued (suggested wording follows after the E3.1.1 proposed supplement).

16. New Hazard Object

If it is required to encode a new object specified by the IMO, and or that affects the safety of navigation that cannot currently be encoded using existing S-57 E3.1 objects, it must be done using the object class **NEWHAZ.** The New Hazard Object must only be used in conjunction with an ENC Encoding Bulletin issued by the IHO. The Bulletin will provide the specifics on how to use the object for a particular application. The New Hazard Object must not be used under any other circumstances.

Geo Object: New Hazard object (**NEWHAZ**)
Attributes: COLOUR, CONDTN CONRAD CONVIS DATEND DATSTA HAZDEF HAZNAM NATION NOBJNM OBJNAM PEREND PERSTA RESTRN STATUS WATLEV INFORM NINFOM NTXTDS PICREP ~~SCAMAX~~ SCAMIN TXTDSC

Remarks:

- *We need clear guidance here explaining what HAZNAM is to be used for. Holger mentioned something about a possible name for a future object class. It needs to be clearly distinguishable from the OBJNAM. Holger, please add clear distinctions here.*
- *Again we need clear guidance on what top encode in HAZDEF. It is aimed to help with data migration. Holger, please add a clear explanation here please.*
- At least one of INFORM or TXTDSC is mandatory, not both. INFORM is used to describe the feature for ECDIS systems that are not yet E3.1.1 compatible, as was done for the new attribute values for S-57 E3.1. For example, 'Ship Reporting System'.
- A corresponding ENC Encoding Bulletin will provide the specifics on how to use the object for a particular application. This object must not be used without an approved Bulletin issued by the IHO on the authority of TSMAD.

Proposed ENC Encoding Bulletins associated with ASLs, ESSAs and PSSAs and also S-57 Supplement No 1 (Edition 3.1.1).

At previous TSMADWGs, it was approved to issue ENC Encoding Bulletins for ASLs and PSSAs in particular. Once the S-57 Supplement No 1 is approved, several new encoding bulletins will be required, however in the interim, it is suggested that the following ENC Encoding Bulletins need to be promulgated:

These were not discussed at the TSMAD SubWg in Brest but result from the review and of some of the wording in the above document.

If members agree with the comment c2, the following wording should be considered:

Encoding Environmentally Sensitive Sea Areas (ESSAs) and Particularly Sensitive Sea Areas (PSSAs).
These must be encoded using the object class **RESARE** with a description of the feature in INFORM and or TXTDSC.

If it is considered to be important to encode a small or narrow section of ESSA or PSSA as a point or line, it must be encoded as a small area **RESARE** feature. (**CTNARE** must not be used).

Encoders should be aware that TSMAD is finalising a new Supplement to S-57 (to be known as S-57 Supplement No 1, Edition 3.1.1), which is expected to be published later in 2006. This Supplement will include 2 new attribute values for CATREA specifically for ESSA and PSSA. It will not be mandatory for HOs to adopt Edition 3.1.1,

Archipelagic Sea Lanes (ASL): TSMAD has not been able to advise a method to encode the ASL axis and accordingly it has been necessary to prepare a new supplement for S-57 to permit ASLs to be encoded in an intelligent manner. Until the release of the new S-57 Supplement No 1 (Edition 3.1.1), if it is required to encode an ASL, it may be encoded as a **CTNARE**. However once the new supplement is operational, ASL must be encoded using the new proposed objects Archipelagic Sea Lane (**ARCSLN**) and Archipelagic Sea Lane Axis (**ASLXIS**).

S-57 Supplement No 1 (Edition 3.1.1): it has become necessary to publish this supplement to permit intelligent encoding and portrayal of Archipelagic Sea Lanes, Encoding Environmentally Sensitive Sea Areas (ESSAs) and Particularly Sensitive Sea Areas (PSSAs). CHRIS also approved the adoption of a new object with special attributes to encode any future IMO approved features, or features that cannot adequately be encoded using existing object classes that affect safety of navigation. The nature of this new object is currently under discussion and it will be published in the new Supplelment later in 2006. Only HOs who need to encode ASLs, ESSAs and PSSAs will need to adopt the S-57 Supplement No1 (Edition 3.1.1) as it is intended to permit the issue of S-57 Edition 3.1 ENCs even after the publication of S-101 (the new ENC Product Specification). S-101 is not anticipated to be operational until about 2012, however it will be available before this date for operational testing.