

**8<sup>TH</sup> WEND COMMITTEE MEETING**  
**Tokyo, Japan, 5-6 March 2004**

**HO's responses to WEND 1/2004 on RCDS proposal by Australia**

**SUMMARY**

**Executive summary:** This document includes all written responses made to WEND Letter 1/2004, which forwarded an Australian submission to IMO/MSC78 on a '*Proposal to consider permitting ships to use the Raster Chart Display System (RCDS) mode of ECDIS, without the requirement to carry paper charts*'.

**Action to be taken:** The meeting is invited to take note of this paper.

**Related documents:** WEND8-10.1A

## **1. Netherlands**

Introduction. Referring to the minutes of CHRIS15 with regard to the NOAA proposal to remove the extra restrictions when operating in the RCDS mode (CHRIS15-10.1A), there was a mutual concern that reopening this issue at IMO would be detrimental to IHO (less focus on ENC-production and most likely another demonstration of inconclusive behaviour of member states). A similar observation was made by the Dutch National Maritime Administration (DNMA) when considering this NOAA proposal in advance of CHRIS15; DNMA also perceived that IMO/MSC was very reluctant to "reopen" ECDIS-related matters.

When formulating the DNMA equivalent arrangements (under SOLAS regulation V/19) NLHO shared the same view as USA and AU: the RCDS limitations from some five years ago, as presented in NAV44/14 Annex 16, SN(207) 7th January 1999, are not representative anymore with today's improved RCDS-functionalities. ECDIS in RCDS-mode significantly improves "situational awareness" and supports decision making and the mandatory additional use of equivalent (same) paper charts does not contribute to this at all.

Remarks. Although there is a common rationale (shared view) to reconsider the IMO-resolution with regard to the RCDS-mode of operation during the WEND meeting, NLHO is concerned about supporting the "reopening" of this issue at IMO-level with the intention to remove the mandatory use of paper charts when operating ECDIS in the RCDS-mode.

Firstly it is common practice (IMO-rule of conduct) that flag state equivalent arrangements are in principle also applicable in foreign waters unless the foreign Port State Control Authority (PSCA) formally responds to this with additional rules and directives. In the case of the NL-equivalent arrangements under regulation V/19 (SLS.14/Circ.191, 17th September 2002) there is not any formal PSCA response known, therefore the NL-arrangements are to be regarded as applicable to NL-ships in all foreign waters. NL ship

holders appreciate this NL equivalent arrangement and do not have any negative experiences in foreign waters; their major complaints are especially related to the lack of ENC coverage and content (consistency).

Secondly there is the observation that the majority of "top-10 tonnage countries" (IHO 2002 yearbook) do not make any issue of this RCDS-matter and corresponding equivalent arrangements. If they want or need similar favourable RCDS-conditions, then an equivalent arrangement is easily made for their large fleet. The minor participation of the majority of these top-10 countries is a clear indication of the less compelling need for such a reconsideration of RCDS-matters than stated in the Australian proposal.

Thirdly one could reason that, given the minor attention of the majority of the earlier mentioned top-10 tonnage countries, a serious threat exists that reopening the RCDS-matters at IMO level could lead to a more restrictive interpretation of the definition "appropriate folio up-to-date paper charts" disadvantageous to the present "favourable" equivalent arrangements. DNMA in this case prefers the present diversity of equivalent arrangements; if other flag states need a similar change in favour of RCDS then the tools are already there. Besides this, for years now it is common practice with regard to maritime matters other than ECDIS, that additional (or deviating) port state control regulations do exist. In the case of these ECDIS-matters chart agents/distributors can adapt to these circumstances to facilitate a proper service to their customers.

Last but not least this reopening of the RCDS-matters could be seen as a new offensive step against the emerging industry of private vector data (i.e. ECS-manufacturers). There is serious doubt if this proposal is in favour of the common IHO-Industry agenda. The fact that some IHO-members recommend private vector data next to the official ENC data in the ECDIS dual fuel configuration (in stead of RNC data) is a clear demonstration of private industry involvement.

Conclusion. DNMA is reluctant to support the reopening of the ECDIS/RCDS-matter at IMO, although there is a shared view that the RCDS-mode significantly improves "situational awareness" and supports decision making and that the mandatory additional use of the equivalent paper charts does not contribute to this. The above stated four observations indicate a preference for the present situation (status quo). Nevertheless there is support for putting this matter on the WEND agenda; at least WEND should facilitate discussion of this matter especially with regard to the opinion of the top-10 tonnage countries and the relation with the common IHO-Industry agenda.

## **2. Greece**

Given that Greece is unable to attend the forthcoming WEND meeting in Tokyo, I would like to provide some views concerning the proposal submitted by Australia.

Greece is of the view that a potential permission for the use of RNCs and RCDS mode of operation without the requirement of the appropriate folio of up to date paper charts, will cause serious problems to the widespread acceptance, distribution and use of the ENC's.

Due to the fact that the main goal of both IHO and IMO is to promote the use of ECDIS together with the use and further production of official ENC's, it is obvious that a potential emulation of the two products (RNCs and ENC's) will constitute a significant impediment to the implementation of this goal.

Taking into consideration the above reasons Greece opposes to this proposal

### 3. Canada

CHS believes that the IHO should support the Proposal Work programme item contained in the Annex of WEND Letter No. 1/2004. CHS believes that the removal of the paper chart requirement would compliment and promote the use of ENC's.

CHS would like to make the following comments and points of clarification:

- i) In Canada, Transport Canada writes the carriage requirements for vessels. CHS's role is to make available the most-up-to-date, accurate information possible.
- ii) In Canada, RCDS mode of ECDIS is to be used only in the absence of ENC coverage. As a navigation tool, ENC's are seen as superior to the raster navigational chart (RNC) and CHS's position does not, in any way, suggest "equivalence" between the 2 products.
- iii) Use of an RNC requires the same prudence as the use of paper charts, particularly in confined waters, when visibility is limited, where the chart scale is small, or the positional accuracy of the chart is low.
- iv) RCDS mode should be complimented with the use of radar (overlay preferable).
- v) There should be some manner of certification for:
  - a) ECDIS and ECDIS in RCDS mode of operation to ensure that mariners are fully trained and
  - b) That the ECDIS-RCDS are supported by a service that ensures the ship's digital chart portfolio is maintained up-to-date.
- vi) Port authorities, coast guard, and others carrying out ship inspections should be educated on what to look for a vis-à-vis compliance with the above certification.

### 4. USA

#### United States (NOAA) Position

#### 1. Summary

<b><i>Executive summary:</i></b>	Use of ECDIS in the RCDS mode requires an accompanying "appropriate folio of up to date paper charts." A proposal to remove this requirement is being submitted to the IMO. The United States (NOAA) supports this proposal. It is believed that this restriction is unnecessary, and may be slowing the adoption of ECDIS.
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## 2. Introduction/Scope

An ECDIS operating in the RCDS mode has extra requirements placed on its use. One of those requirements is that an “appropriate folio of up-to-date paper charts” must be carried when operating in the RCDS mode. Since this extra requirement was imposed, the world has gained 8 years of experience with Raster Navigational Charts (RNCs) and their use in RCDS. Thousands of raster charts are available covering most parts of the world. Millions of copies have been sold. Based on this experience, it is clear that the requirement to carry paper charts may safely be removed. Doing so may encourage mariners to adopt and use ECDIS without compromising safety.

## 3. Analysis/Discussion.

The RCDS mode of operation was added to the ECDIS Performance Standard after that standard had been adopted. This action was taken so that mariners could benefit from the successful production of official Raster Navigational Charts by hydrographic offices. These official RNCs were of high quality, were supported by official update services, and were usable in navigation software that had evolved to be far more functional and practical than anticipated when the ECDIS Performance Standard was written.

The RCDS mode of operation, while less capable than ECDIS operating with ENCs, still offers the mariner significant benefits compared to paper charts. These benefits include:

- the display of a vessel’s position in real time over the familiar chart backdrop;
- easy, fast, accurate updating of RNCs using official updates from hydrographic offices;
- use of the voyage planning capabilities of ECDIS;
- use of many of the voyage monitoring capabilities of ECDIS;
- the ability to add automatic, alarm-triggering points and areas;
- convenient, instant access to a large folio of charts via software; and
- reduced chart acquisition and maintenance costs compared to paper charts.

The lesser capability of the RCDS mode of operation was recognized by issuing IMO Circular SN/Circ.207, “Differences Between RCDS and ECDIS”, and by placing two restrictions on the use of the RCDS mode of operation:

- an “appropriate folio of up-to-date paper charts” was required when operating as an RCDS;
- the RCDS mode was permitted only when official ENCs were not available;

The folio of paper charts was intended to compensate for the limited overview and lookahead capability of electronic charts, a limitation believed to be greater for RNCs than ENCs. The specification of an “appropriate folio of up-to-date paper charts” was left to each coastal state.

Since the ECDIS Performance Standard was amended to permit RCDS, thousands of RNCs have become available covering most parts of the world, and millions of copies have been sold. Successful update services are in place. As a result, mariners have gained considerable experience with RCDS. From this experience, it can be concluded that the precautionary requirement for an “appropriate folio of up-to-date paper charts” is

unnecessary. Nations choosing to produce RNCs have sufficient comprehensive chart coverage to enable an RNC of smaller scale to be used to provide adequate overview capability. Improved software permits mariners to conveniently and instantly switch among those RNCs of different scales.

It may also be concluded from this experience with RNCs that the requirement for an accompanying folio of paper charts may be discouraging mariners from adopting ECDIS. This could be for many reasons including: uncertainty about what is an “appropriate folio,” and the loss of many economic, convenience, and update accuracy benefits of RCDS because mariners must purchase and maintain that “appropriate folio” of paper charts.

For these reasons, it is appropriate to now remove the requirement that an ECDIS operating in the RCDS mode have “appropriate folio of up-to-date paper charts.” By making this change, the uncertainty as to what that “folio” is will be removed. Furthermore, the economic, convenience, and update accuracy benefits of RCDS will be restored to mariners. Safety will not be compromised. This change will not require nations to make RNCs for their waters; no mariner will be required to use RCDS, and no mariner will be prohibited from carrying paper charts. However, the judgment of professional mariners will be restored to determining the most appropriate tools for the task at hand.

An additional issue was raised in the past concerning RCDS. Some were concerned that accepting RCDS and RNCs might discourage nations from making the more complex and resource intensive ENCs. Also, some were concerned that the availability of RCDS might discourage mariners from using ECDIS with ENCs, and thus deprive them of the full benefit of ECDIS. There is simply no evidence of any State’s ENC compilation effort having been slowed by the availability of RCDS. There is also no evidence of RCDS discouraging mariners from using ENCs and the full capability of ECDIS when ENCs are available. This issue should no longer be a concern as Member States move forward with electronic charting.

#### 4. Benefits.

Removal of the requirement for an “appropriate folio of up-to-date paper charts” when operating in the RCDS mode is expected to encourage mariners to adopt ECDIS. It will permit them to achieve some of the benefits of ECDIS thus improving the safety of navigation. It may stimulate the production of ENCs by expanding the installed base of ECDIS systems ready to use those ENCs.

### 5. **INDIA**

1. We are now commenting on a proposal on the above subject, which was not recommended by the majority of delegates during the 15<sup>th</sup> CHRIS meeting. It is for discussion whether it is technically right for Member States to send proposals such as this to IMO/MSC directly.

2. Notwithstanding the following may be taken into account during the discussions in the forthcoming WEND meeting at Tokyo, for arriving at a clear and reasoned position on the subject matter: -

(a) ECDIS fuelled by ENC's was conceived by the IMO/MSC as one unified and effective navigational tool, for improving navigational safety at sea. The minimum performance standards prescribed by IMO/MSC for the ECDIS cannot be achieved without an official ENC in S-57 VERSION 3.X. An ECDIS without the official ENC cannot, therefore, qualify for IMO type approval.

(b) The content of the best Raster charts will fall much below an ENC, for obvious reasons. Moreover, this ECDIS fuelled by Raster chart will not meet the IMO/MSC's minimum prescribed performance standards. Such a degraded ECDIS is bound to give a false sense of security to the Mariner at sea.

(c) Even if the said proposal is accepted, mariners especially in developing countries will find it economically viable to use paper charts, rather than incurring huge expenditure on ECDIS and on RCDS for which expenditure has to be incurred for initial procurement and subsequent frequent renewals

(d) There is a need to formulate consistent guidelines for backup arrangements for ECDIS.

3. Since the issue of using RCDS had earlier been considered at MSC and rejected as legal requirement of paper charts and there are no significant advancements since then in RCDS safety factors, the proposal of Australia before IMO is not recommended by India. It is also important to note that the production of ENC's (which has seen quantum jump in the last two years) will get affected unduly with attendant loss of marine safety, as a result of accepting RCDS.

4. It would be useful if Member States of IHO work in unison to effectively ensure enhanced production of ENCs for shipping routes, and adopt a "party line" instead of derailing ENC development process at this stage.

## **6. EGYPT**

Regarding the proposal made by Australia, we would like to confirm our agreement on the above mentioned proposal under the following condition:

"Implementation should be gradually throughout Five years started after the necessary adoption by IMLO and IMO".

Always together for the benefit of safety of navigation.

## **7. SPAIN**

1. The possibility of using raster charts (RCDS) as legal equivalent and replacement of paper charts has been sufficiently discussed. Finally, its use along with such a set of

paper charts as determined by National Maritime Administrations was approved. This was considered as satisfactory by countries that had been under strong pressure.

2. From the point of view of this Hydrographic office, it does not seem reasonable to submit a proposal on a subject that has already been voted on and finished. It would seem that there is the intention of having something agreed by pure fatigue.

We should consider whether agreeing to this proposal would be considered as definitive “losing” countries would open the discussion again to cancel previous decisions.

3. In addition to the above, if the discussion is started anew this Hydrographic office will start from a clean slate and not from the previous achievements. That is, our position would be that use of RCDS requires a full portfolio of paper nautical charts for each route to be sailed.
4. Finally, we should note that approval of raster charts would possibly mean that countries that have yet to start their ENC production will never do it now.

#### Conclusion

In our view, IHO should remain uninvolved with this proposal and keep from backing it up in any way. In fact, this issue has already been discussed and rejected during the 15<sup>th</sup> Meeting of CHRIS Committee so it should not be a part of the Agenda of the 8<sup>th</sup> Meeting of WEND

## **8. RUSSIAN FEDERATION**

(taken from a letter of 4 March by Admiral A. Komaritsyn, Chief of HDNO, to Dr. Nishida, Head of JHOD)

I kindly ask you to inform the Chairman of WEND that the Head Department of Navigation and Oceanography (HDNO), Russian Federation, strongly opposes to the use of Raster Navigational Charts (RNC) without the obligatory carriage of official paper (analogue) navigational charts.