

**16<sup>th</sup> CHRIS MEETING**  
**28-31 May, 2003, Ottawa, Canada**

**PROPOSED AMENDMENT TO THE RCDS MODE OF ECDIS**  
*(May 2004)*

Submitted by United States (NOAA)

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 by Australia 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.
<b><i>Actions to be taken:</i></b>	IHO submit a paper to the IMO’s Maritime Safety Committee supporting the amendment to the ECDIS Performance Standard that would remove the requirement for a “appropriate folio of up to date paper charts” when operating ECDIS in the RCDS mode.
<b><i>Related documents:</i></b>	IMO Resolution A.817 (19) as amended by IMO Resolution MSC.64(67) including Appendix 7 IMO Resolution MSC.86 (70) IHO Special Publication No. 61 CHRIS16-9.1A and 9.1B

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. 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 different raster charts are available covering most parts of the world. Millions of copies have been sold. Based on this experience, it is clear that this requirement may safely be removed. Doing so would 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 ENC's, still offers the mariner significant benefits compared to paper charts. Those benefits include:

- The display of a vessel's position in real time over the familiar chart backdrop;
- Easy, fast, accurate updating of RNC's 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 access to a large folio of charts via software; and
- Lower 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 putting two restrictions on 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 ENC's were not available;

The folio of paper charts was intended to compensate for the limited overview and look ahead capability of electronic charts. That limitation was believed to be greater for RNC's than ENC's. 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 different RNC's 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 RNC's have sufficient chart coverage to enable an RNC of smaller scale to be used for overview capability. Improved software permits mariners to conveniently and instantly switch among those RNC's of different scales.

It may also be concluded from experience that requiring an accompanying folio of paper charts may discourage 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 updating benefits of RCDS because mariners must purchase and maintain that "appropriate folio" of paper charts.

For these reasons, it is appropriate to remove the requirement that an ECDIS operating in the RCDS mode have "appropriate folio of up-to-date paper charts". This change will remove the uncertainty as to what that "folio" is. Furthermore, the economic, convenience, and updating 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. No mariner will be prohibited from carrying paper charts. However, the judgment of professional mariners will be restored to determining the most appropriate tool for the task at hand.

An additional issue was raised in the past concerning RCDS. Some were concerned that accepting RNCs might discourage nations from making the more complex and costly ENC. Others 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 that any State's ENC compilation effort has 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.

4. Benefits.

Removal of the requirement for an "appropriate folio of up-to-date paper charts" when using 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. Working Groups.

(Not applicable)

6. Other relevant information.

USA (NOAA) released its entire suite of 1,016 nautical charts as RNCs in 1995. Its official, weekly update service was fully available by 1999. Other nations have likewise successfully released official RNCs in the same time frame.

Mariners have successfully used NOAA RNCs for 9 years. For 9 years they have benefited from:

- The use of official digital data;
- The display of a vessel's position in real time over the chart;
- Fast, accurate updating with official RNC updates;
- The voyage planning capabilities of ECDIS;
- Many of the voyage monitoring capabilities of ECDIS;
- Manually added alarm-triggering points and areas; and
- Convenient access to a large folio of digital charts.

The United States Coast Guard, which is the USA's maritime safety administration, has equipped 250 of its ships with official NOAA RNCs, and subscribes to the weekly RNC update service.

Professional maritime pilots guide over 95 percent of all ocean-going vessels moving in USA waters. Many marine pilots Associations in the U.S. ports carry and use official NOAA RNC's.

The United States Power Squadrons (USPS) purchased 20,000 CD's of official NOAA RNCs to teach electronic charts and navigation. USPS is America's largest non-profit boating organization dedicated to making boating safer by teaching seamanship and navigation.

Member States should take note of what those we serve are telling us. By their actions, they are showing that RNCs are safe, practical, and beneficial. Member States are invited to reconsider IHO actions that interfere with the adoption of official products that add to the safety of navigation. We should not let our desire for further improvements hinder the adoption and use of currently available, effective tools.

7. Priority.

Medium

8. Target completion date.

In time for submitting an IHO position to the 78<sup>th</sup> convening of the IMO Maritime Safety Committee in May 2004.

9. Action Required

The CHRIS committee is invited to discuss the proposed amendment to the ECDIS Performance Standard and convey the results of those discussions to MSC 78.