

SUB-COMMITTEE ON NAVIGATION,  
COMMUNICATIONS AND SEARCH AND  
RESCUE  
6th session  
Agenda item 3

NCSR 6/INF.19  
13 November 2018  
ENGLISH ONLY

## **ROUTEING MEASURES AND MANDATORY SHIP REPORTING SYSTEMS**

### **Datum reference status and provision of modern nautical charts covering Indonesian archipelagic sea lanes**

**Submitted by Indonesia**

#### **SUMMARY**

*Executive summary:* This document contains information on the status of Indonesian archipelagic sea lanes (ASL) axis line geographical coordinates and nautical charts datum references which were stated in resolution MSC.72.(69) (*Adoption, designation and substitution of ASL*) based on the Indonesian Government proposal (MSC 69/5/2) at MSC 69, in 1998

*Strategic direction, if applicable:* Other work

*Output:* OW 4

*Action to be taken:* Paragraph 8

*Related documents:* Part IV of UNCLOS 1982; SOLAS regulation V/10; resolution MSC.72.(69); IMO publication *Ships' Routeing*; NCSR 6/3/3 and NCSR 6/3/4

#### **Introduction**

1 The determination of the archipelagic sea lanes (ASL) carried out by the Government of Indonesia is based on Article 53 of the United Nations Convention on the Law of the Sea 1982 (UNCLOS) and with due regard to the interests of the international community through IMO. In 1998, MSC 69 adopted the Indonesian Government's proposal (MSC 69/5/2) regarding the determination of the axis line of the three ASL's and their branches (parts I, II and III) which could be used for the implementation of the ASL passage across the Indonesian waters, contained in resolution MSC.72(69) and the IMO publication *Ships' Routeing*. Those partial systems of ASL in Indonesian archipelagic waters parts I, II and III contain axis line geographical coordinates described by the reference charts, publisher, chart number, chart scale and ASL axis line points, reflected on charts. The reference charts also contain information of the datum references and the latest edition.

2 The reference charts of ASL axis line have had various ellipsoid references such as: Bessel 1841, WGS-72 and WGS-84 with no particular priorities at that time. As the use of WGS-84 datum references is highly recommended by IMO, the status of charts references in resolution MSC.72(69) becomes an issue especially on the establishment of ships' routeing associated with the ASL axis line. The newly published ASL charts on 1999 were in the international format as being recommended by the International Hydrographic Organization (IHO). This information document explains that the status of Indonesia nautical charts datum references, stated in resolution MSC.72(69), has been transformed to WGS-84 at a later stage, therefore there will be no longer issues related to the datum status.

### **Discussion**

3 In the early 1990s, it was the initial period of the application of GNSS which use WGS-84 datum. The use of WGS-84 datum on charts is recommended by IMO to enable the navigator to use directly satellite-derived geographical positions which are in the WGS-84. Therefore, all nautical charts are recommended to use this datum since. Yet, Indonesian Navy Hydrographic Office has taken several years to achieve satisfactory level of new datum reference for all charts. Accordingly, some of Indonesian nautical charts are still referenced to the old datum (e.g. Bessel 1841 ellipsoid reference using Jakarta local geodetic datum) at the time the proposal on ASL was submitted on 1998. However, based on the review of the IHO, Indonesia strived to improve the quality of its ASL charts based on modern hydrographic surveys from 1996 to 1999. Indonesia National Mapping Agencies worked together in the Digital Marine Resource Mapping Project to cover the priority area of ASL using modern multibeam echosounder in the WGS-84 datum. At the Hydrographic Office, all modern data were compiled in a new ASL charts including implementation of bilingual (English and Indonesian) and creating source diagram (zone of confidence) as being recommended by IHO resolution. Based on the new data, other related Indonesian nautical charts are also updated as well including all charts which are listed in resolution MSC.72(69).

4 Based on resolution MSC.72(69), annex, part I, there are lists of reference charts and axis line geographical coordinates (points). But this document does not state the datum status of axis line geographical coordinates. It states the datum status only for reference charts in various scales, therefore there are overlapping ASL axis point reflected on charts which have various scale and datum. In figure 1 below, it can be seen that there are no ASL axis line drawn on chart No. 2, edition September 1988, corrected to 17 February 1997. This is one of the examples of reference charts listed on resolution MSC.72(69) which used Bessel 1841 ellipsoid reference. Therefore, it can be concluded that the ASL axis line points were not drawn on the reference charts listed in resolution MSC.72(69). But the ASL axis line points were drawn on the next editions of charts listed and other new charts. For example, the ASL is drawn on chart No. 2, edition March 1999, corrected to 15 March 1999, which already used WGS-84 ellipsoid reference (see figure 2).

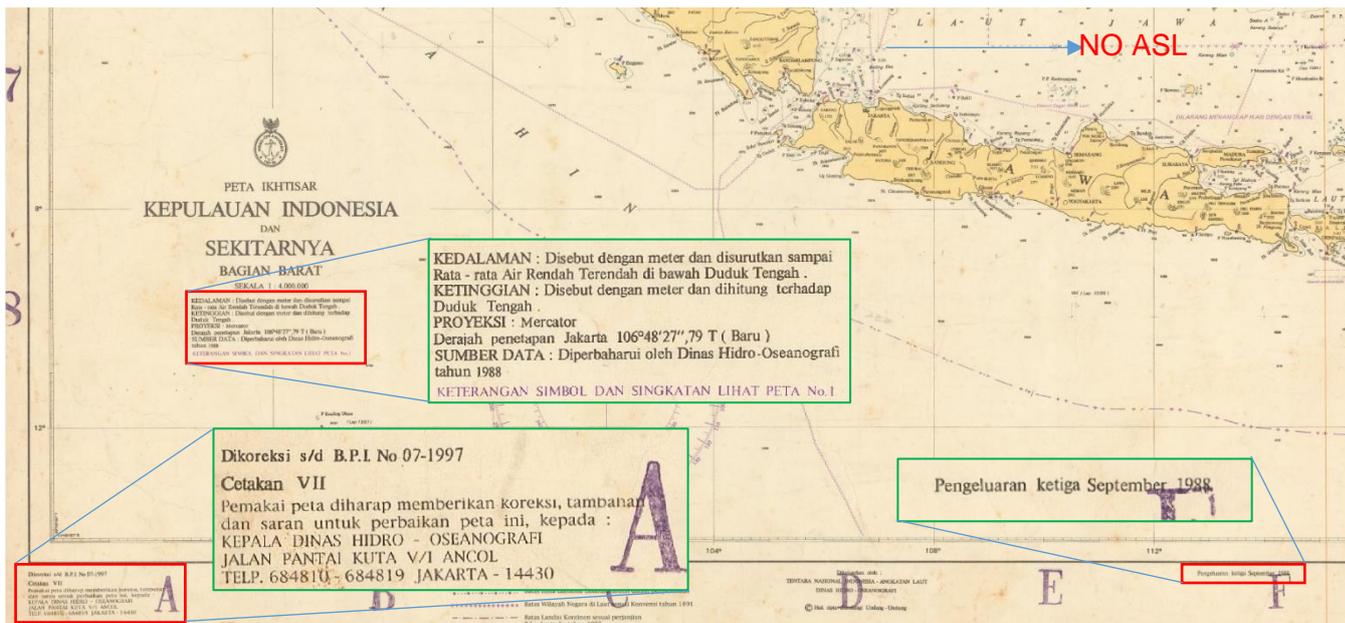


Figure 1: Clip of chart No. 2, third edition September 1988, corrected to NtM Week 07, 17 February 1997 (issued by Indonesian Navy Hydrographic Office)

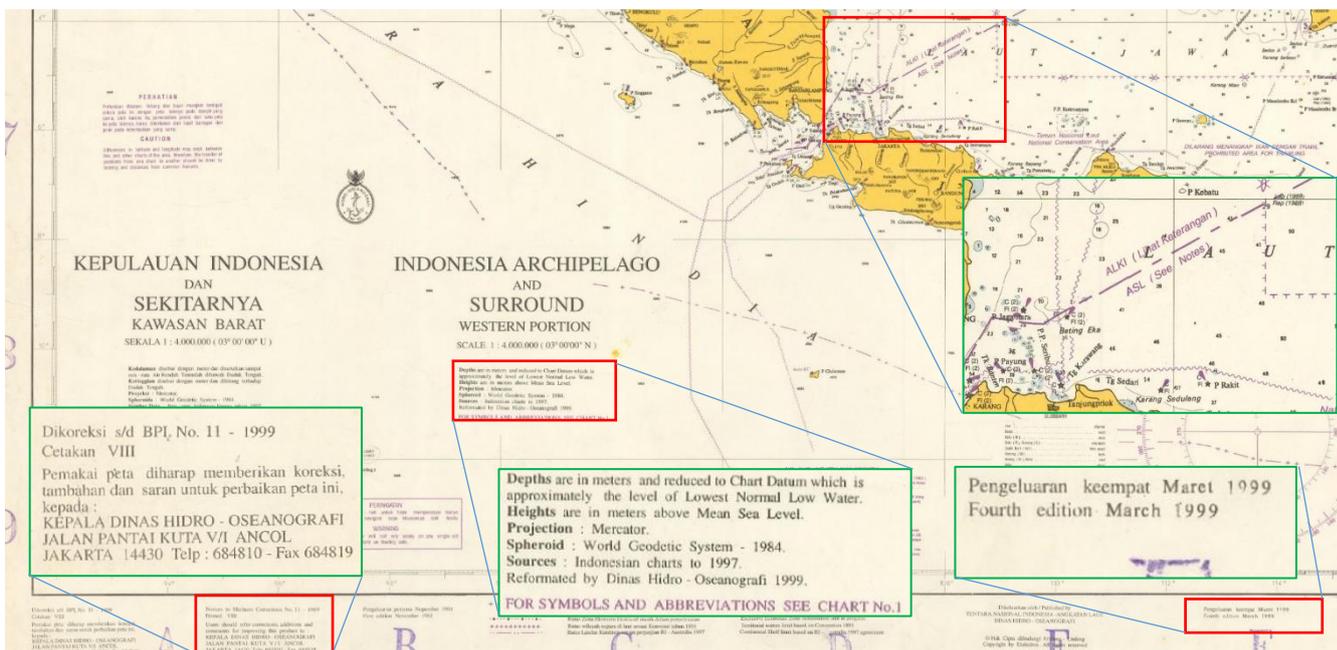


Figure 2 Clip of chart No. 2, fourth edition March 1999, corrected to NtM Week 11, 15 March 1999, using WGS-84 Datum (issued by Indonesian Navy Hydrographic Office)

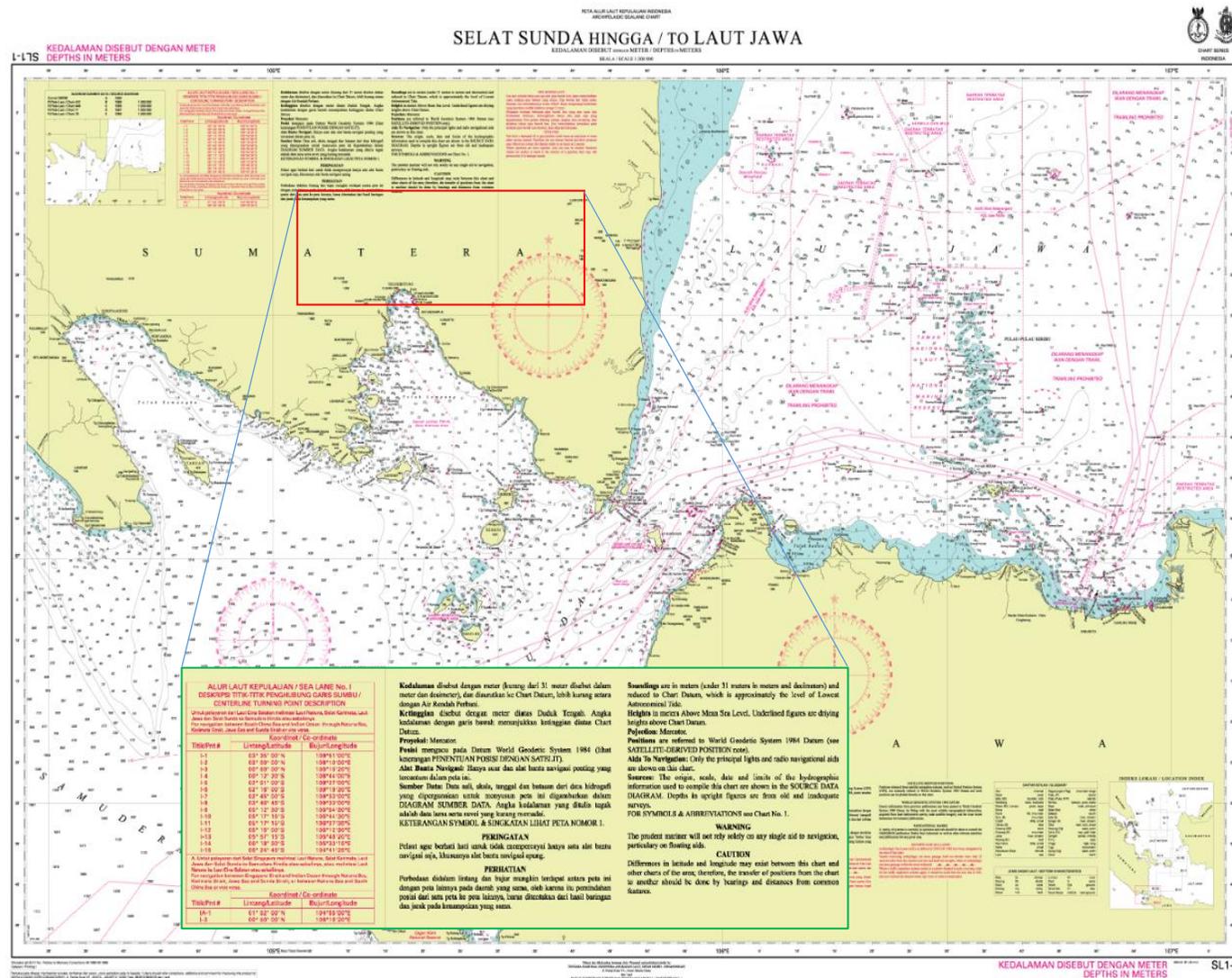


Figure 3: ASL chart no. SL1-1, first edition, October 1999, corrected to NtM Week 40, 4 October 1999, using Datum WGS-84 within the list of ASL axis line geographical coordinates (issued by Indonesian Navy Hydrographic Office)

5 At the time of adoption in May 1998 there were on going production of new ASL charts which were released in 1999 within axis line geographical coordinates drawn on WGS-84 charts and enriched with new modern hydrographic survey data (see figure 3). Additionally, with the existence of an electronic navigational charts (ENCs) which has datum WGS-84, all Indonesian waters which also cover Indonesian ASL have been electronically charted since 2009.

6 Figures 1, 2 and 3 indicate that axis line geographical coordinates are in WGS-84 datum references.

### **Summary**

7 Indonesian nautical charts metadata which includes the ASL axis lines listed in resolution MSC.72(69) and IMO *Ships' Routeing*, part H, are no longer relevant. Therefore, this information needs to be updated with the most up-to-date nautical charts information that already adopted WGS-84 datum reference and most recent data. On the other hand, the ASL axis line geographical coordinates listed in resolution MSC.72(69) and IMO *Ships' Routeing*, part H, are on WGS-84 datum. In conclusion, Indonesia has re-compiled and published a new edition of Indonesia ASL charts in a format which complies the IHO review. Therefore, there shall be no longer issues related to the datum status of Indonesian ASL especially on the establishment of ships' routeing associated with the ASL axis line.

### **Action requested of the Sub-Committee**

8 The Sub-Committee is invited to note the information provided.

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