# NATIONAL REPORT OF KINGDOM OF SAUDI ARABIA

**14th Meeting North Indian Ocean Hydrographic Commission (NIOHC)**

26 – 28 February 2014

**Bangkok, Thailand**

Prepared by Hydrography Department, General Commission for Survey, Kingdom of Saudi Arabia

# NATIONAL REPORT OF KINGDOM OF SAUDI ARABIA

## 1. Hydrographic Office/Service:

The General Commission for Survey (GCS) has been mandated by the Government of Kingdom of Saudi Arabia (KSA) for land & hydrographic surveys and hence nautical & electronic charting within the Saudi marine areas. The budget requirement for the national service is met by the government. GCS is headed by the 'President of the GCS' and the hydrographic department is headed by the 'Director General of Hydrography Department'.

Comprehensive development has been taking place within the organizational structure of hydrographic department to perform the functions of a national hydrographic service in KSA fulfilling the obligations of SOLAS convention in particular chapter V safety of navigation under IMO/IHO regulations.

## 2. Hydrographic Surveys:

Coverage of Hydrographic Survey Projects (HSP) in Red Sea – (See Annex A)

### a. Red Sea

I. HSP-1 area from Shaab Nazar to Shi'b Al-Kabir covering area of 3,956 $km^2$, with coastline length 244 km.
II. HSP-2 area from Shi'b Al-Kabir to Qut'at Umm Al-Jadd covering area of 3,819 $km^2$, with coastline length 181 km.
III. HSP-3 area from Qut'at Umm Al-Jadd to Al-Lith covering area of 3,490 $km^2$, with coastline length 218 km.

### b. Projects in Progress

I. HSP-4 area covering from Shi'b Al-Kabir to Yanbu covering area of 8,164 $km^2$, with coastline length 446 km.
II. HSP-5 area from Al-Muwassam to North of Jizan & Farasan Island covering area of 11,426 $km^2$, with coastline length 824 km (including the islands).

### c. Future Planning – Arabian Gulf

HSP-6 Area covering from Al-Khafji to North of Jubail and covering area of 6,773 $km^2$, with the length of coastline of 530 km.

**Note**:
All HSPs are carried out to ensure the charting scheme of ports and harbors are in scale of 1:10,000 – 20,000 and approaches to ports are in scale of 1:50,000.


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### d. Hydrographic Survey Launch (HSL)

The HSL is a 16 m twin hulled vessel specified and designed which fitted out with state of the art navigational and communication systems, hydrographic, oceanographic and geo-physical survey equipment for the following functions:

I. Hydrographic survey
II. Marine geophysical survey
III. ROV and towed systems deployments
IV. Oceanographic profiling
V. Environmental and grab sampling;
VI. Search and rescue (towing of another small vessel in an emergency)

## 3. New Charts & Updates:

| | |
|---|---|
| ENCs → | 4 (From HSP-1) |
| PNCs → | 4 (From HSP-1) |
| INT charts → | None |
| Base nautical charts → | 7 (From HSP-1) in scale 1: 25,000 for government agencies |

7 more ENCs/PNCs from HSP 2 and 3 are under production.
Estimated date of completion → May 2014

13 Base Nautical charts from HSP 2 and 3 will be produce in 2014

## 4. New Publications and Updates:

The nautical publication program is scheduled to commence early in 2015. It is intended to publish fortnightly notices to mariners as soon as the distribution arrangements of ENCs are finalized by mid-2014. Annual predicted tide tables for 10 ports in KSA based on data from national tide gauges network are ready for field verification. All this information will be made available on GCS website. Required manpower for sustainable approach to gain comprehensive skill for MSI is in progress where GMDSS area A1 and A2 equipment are already installed at HTC Jeddah.

## 5. MSI:

Master plan of shore-based facilities for the global maritime distress and safety system (GMDSS master plan) as per 25th July 2013 GMDSS.1/Circ.15

**Status of shore-based facilities for the GMDSS**

*O = Operational* *P = Planned or to be decided*

| COAST STATIONS | | | MSI BROADCAST SERVICE NAVTEX | COSPAS-SARSAT | |
|---|---|---|---|---|---|
| DSC | | | | | |
| A1 | A2 | A3 & A4 | | MCC | LUT |
| O | O | P | O | O | O |

*Note: GMDSS equipment has been installed in GCS branch at Jeddah*

# 6. C-55:

## a. Hydrographic Surveying

Status of hydrographic survey of all navigable waters, including internal waters, out to the limits of the EEZ:

*(Please refer to the guidance given in the introductory text 'Analysis of the Status of Surveys'.)*

Survey coverage, where:

*A = percentage which is adequately surveyed.*
*B = percentage which requires re-survey at larger scale or to modern standards.*
*C = percentage which has never been systematically surveyed.*

| | A | B | C |
|---|---|---|---|
| **Depths < 200m** | 40% | | |
| **Depths > 200m** | | | **60%** |

## b. Nautical Charting

**If you do have a nautical charting capability, complete the details below**
*(Please refer to the guidance given in the introductory text 'Analysis of the Status of Charting')*:

Status of nautical charting within the limits of the EEZ

*Coverage of charts published by your organisation, where:*

*A = percentage covered by INT series, or a paper chart series meeting the standards in M-4.*
*B = percentage covered by raster navigational charts (RNCs) meeting the standards in S-61.*
*C = percentage covered by ENCs meeting the standards in S-57.*

| Purpose/Scale | A | B | C |
|---|---|---|---|
| **Offshore passage/Small** | | | |
| **Landfall and Coastal passage/Medium** | | | |
| **Approaches and Ports/Large** | | | **5%** |
| **Percentage of Group A showing depths in metres** | | | |
| **Percentage of Group A referenced to a satellite datum** | | | |

Amplifying notes: We have created our own national chart scheming and we have submitted some of our proposed charts to include in INT chart series before the NIOHC and RSAHC.

## 7. Capacity Building:

**a.** Following courses as part of capacity building have been completed:

| No. | Course Title | Duration | No. of Participants |
|---|---|---|---|
| 1 | **Marine Cartography (I)** | 21 Feb 2011 to 31 Aug 2011 | 10 |
| 2 | **Hydrography Cat-B (I)** | 12 Apr 2012 to 25 July 2013 | 06 |
| 3 | **Caris Paper Chart Composer and Caris S57 Composer (S100 Conversion)** | 02 Feb 2013 to 27 Feb 2013 | 15 |
| 4 | **Caris LOTS Training** | 02 Mar 2013 to 21 Mar 2013 | 04 |
| 5 | **Marine Cartography (II)** | 11 May 2013 to 06 Dec 2013 | 10 |
| 6 | **Hydrography Cat-B (II)** | 15 June 2013 to 10 Feb 2014 | 12 |
| 7 | **In-house QC/QA** | April to June 2013 | 04 |
| 8 | **MSDI Database Design & Management (For Managers & Practitioner)** | 15 Dec 2013 to 19 Dec 2013 | 10 |

**b.** The hydrographic survey unit of hydrographic training centre (HTC) at Jeddah is fully operational with its own hydrographic survey launch and equipment suite for trained manpower.

## 8. Oceanographic Activities:

**a.** General Commission for Survey collects geophysical and oceanographic information from various sources. Most of this information is collected while undertaking hydrographic surveys. GCS operates a national tide gauge network (NTGN) at Red Sea and Arabian Gulf for advanced prediction of tides (for navigation) and sea level studies. GCS also supports collaboration projects for collecting oceanography data with Saudi universities.

**b.** A marine sciences data buoy (MSDB1) has been sanctioned for execution in Red Sea in collaboration with King Abdullah University of Science and Technology (KAUST).

## 9. Other Activities:

**a.** Several projects are being implemented which enable seamless database from deep seas to coastal topography to provide nautical charts and publications and other value added products and services such as marine sciences data/information to MSDI development integrated to national geographical information center (GIC). GCS has been implementing a project to acquire necessary infrastructure and develop human resources as a sustainable approach to MSDI. A hydrographic data management (HDM) project is planned to be implemented in 2014.

**b.** A full oceanographic/hydrographic survey vessel (HSV) with 2 hydrographic survey launches (HSLs) has been contracted for delivering early 2015 to enable undertake deep

sea survey work till national maritime boundaries to enable provision of charts of scales 1:150,000 and 1:500,000. Two HSLs with complete equipment suite as part of capacity building are tendered to establish operational hydrographic survey unit (HSU) with required manpower at two more GCS branches in KSA are under plans in 2014.

**c.** National tide gauge network II with additional 12 tide gauge stations is planned to be implemented in 2014.

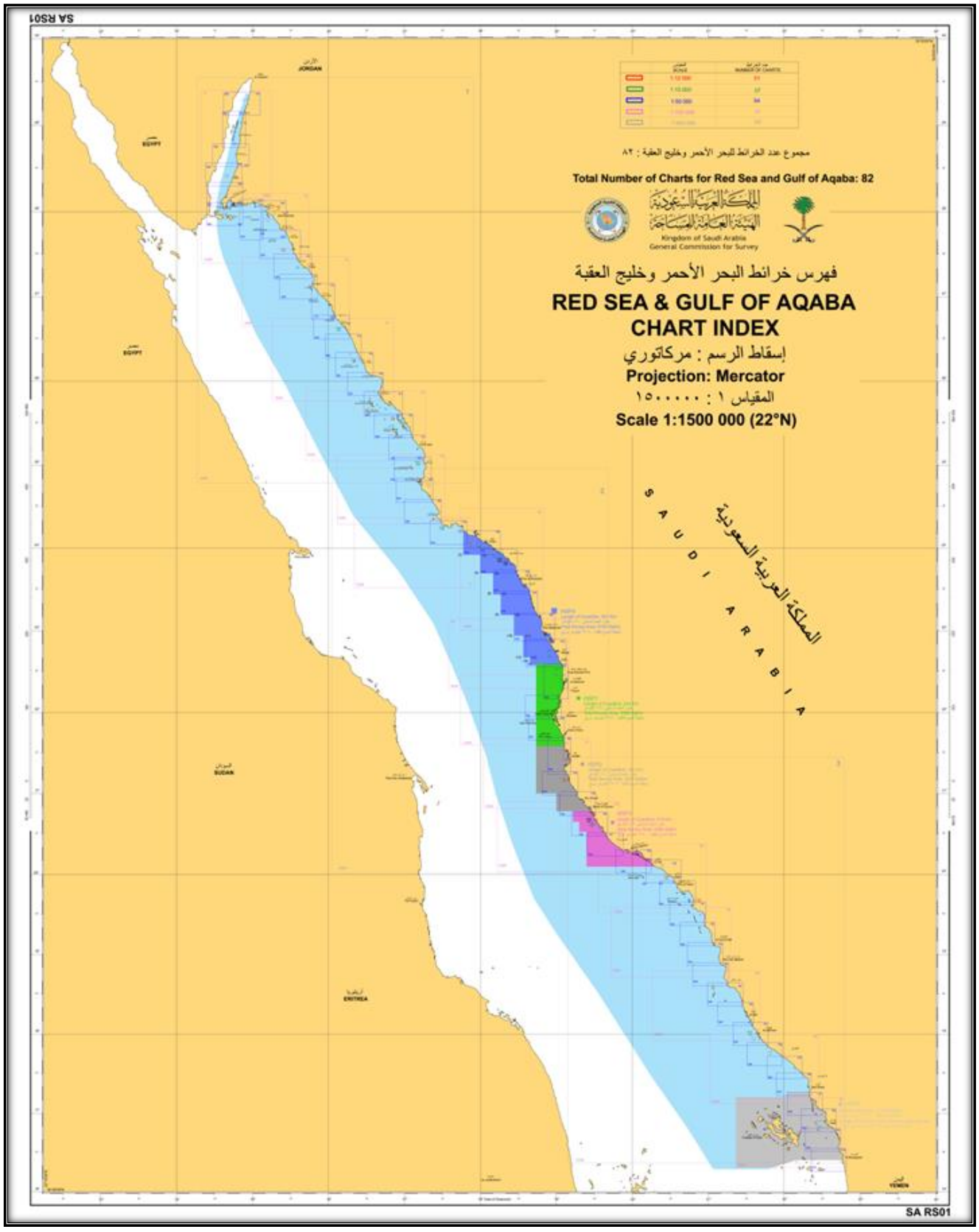
**d.** A project of delineating the islands and shoreline in part of Red Sea, along with an island Atlas is also for execution in 2014.

**e.** A project for suitable aircraft with bathymetric LiDAR/hyper spectral imagery (HSI) is planned to be sanctioned by mid-2014.

## 10. Conclusions:

'Directorate of Hydrography' of 'General Commission for Survey' in Kingdom of Saudi Arabia continues to develop and gain experience adapting state of the art technologies for hydrographic surveying and nautical publication, committing to assure safety of navigation under IHO/IMO regulations. It is expected that the coastal series of nautical charts will be completed by 2017 for entire KSA coast.

**Annex A**


SA RS01
JORDAN
EGYPT
SUDAN
ERITREA
YEMEN
مجموع عدد الخرائط للبحر الأحمر وخليج العقبة : ٨٢
Total Number of Charts for Red Sea and Gulf of Aqaba: 82
المملكة العربية السعودية
الهيئة العامة للمساحة
Kingdom of Saudi Arabia
General Commission for Survey
فهرس خرائط البحر الأحمر وخليج العقبة
RED SEA & GULF OF AQABA
CHART INDEX
إسقاط الرسم : مركاتوري
Projection: Mercator
المقياس ١ : ١٥٠٠٠٠٠
Scale 1:1500 000 (22°N)
S A U D I A R A B I A
المملكة العربية السعودية
SA RS01