



NATIONAL REPORT OF KINGDOM OF SAUDI ARABIA

16th North Indian Ocean Hydrographic Commission Meeting

14 – 16 March 2016

Chittagong, Bangladesh

NATIONAL REPORT OF KINGDOM OF SAUDI ARABIA

1. Hydrographic Office Service

Changes from IHO yearbook – (refer Enclosure 1)

2. Hydrographic Surveys (refer Enclosure 2)

- Coverage of new surveys (2015-2016) in Red Sea:-
 - Hydrographic Survey Project (HSP) 4: area covering from Yanbu to Rabigh, approx. 8,164 km² with coastline length 450 km was completed.
 - HSP 5: area covering from Al-Muwassam to Jazan North, approx. 11,426 km² with coastline length 824 km was completed.
- Coverage of new surveys (2015-2016) in Arabian Gulf:-
 - HSP 7: area covering from Ad-Dammam to As-Salwa, approx. 4,005 km² with coastline length 396 km completed.
- Under Planning (2016)
 - HSP 8-9; area covering from Jazan North to Al-Lith, approx. 30,855 km² with coastline length 565 km to cover 1:50,000 scale charts as per charting plans.
 - HSP 10-11; area covering from Yanbu to Al-Muwaylih, approx. 16,925 km² with coastline length 735 km, to cover 1:50,000 scale charts as per charting plans.
- Induction of Hydrographic Survey Vessel (HSV):-
 - HSV ALMASHE ALBAHRI SULTAN is 43.7 m long oceangoing vessel designed and equipped with state of the art navigational and communication system, hydrographic, oceanographic and other survey equipment for the following functions was commissioned into service on 22 Jun 2015 at Jeddah :
 - Hydrographic survey
 - Marine Geophysical survey
 - Oceanography survey
 - Environmental and grab sampling
 - Shallow water diving
 - Marine Data Buoy Servicing

3. New Charts & Updates

General Commission for Survey (GCS) has produced following charts till 2015 from results of Hydrographic Survey Project (HSP) 1-5:-

Chart Status	Completed			In Progress	Completed	
	HSP-1	HSP-2	HSP-3	HSP-4	HSP-5	Total
Area in sq kms →	3,956	3,819	3,490	8,164	11,426	30,855
ENCs →	5	4	2+1 *	8	12	32
PNCs →	5	4	2+1 *	8	12	32
INT charts →	None	None	None	None	None	
Coastal Zone Management Charts →	7	7	7	14	38	73

* in progress

QC/QA, encryption and distribution arrangements for the charts are under active consideration at the GCS.

A chartlet showing the coverage by ENCs/PNCs is placed at Enclosure 2.

4. New Publications/Updates

The nautical publication program is scheduled to commence in mid-2016. Necessary studies preparations are underway to publish fortnightly notices to mariners, once ENCs/PNCs are released. This information will be available for distribution under IHO regulations.

Annual predicted tide tables for the 12 tide gauge stations for 2016 from the National Tide Gauge Network has been published for the first time.

Human resource development for sustainable approach to gain comprehensive skill sets (particularly for MSI aspects related to notices to mariners), are under implementation.

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				MCC	LUT
A1	A2	A3 & A4			
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:

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	55	35	10
Depths > 200m	38	40	22

B. Nautical Charting

Status of nautical charting within the limits of the EEZ.

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 ENC's meeting the standards in S-57.

Purpose/Scale	A	B	C
Offshore passage/Small	-	-	-
Landfall and Coastal passage/Medium	33%	Nil	33%
Approaches and Ports/Large	30%	N/A	30%
Percentage of Group A showing depths in metres	100%		
Percentage of Group A referenced to a satellite datum	100%		

A National Charting Scheme has been devised and fresh hydrographic surveys are being carried out. GCS have submitted some of the planned charts to be included in INT Chart series. (refer Enclosure 3)

7. Capacity Building (CB):-

Following courses as part of capacity building have been completed or underway:

No.	Course Title	Duration	No. of Participants
1	CARIS HPD Production	Feb 2015 – Feb 2017	24
2	Marine Cartography (III)	May 2014 to Dec 2014	10
3	Hydrography Cat-B (III)	Jun 2015 to Feb 2016	11
4	In-house QC/QA	2015	04
5	Validation of ENCs/ Encryption	21 Feb – 11 Mar 2016	6
6	MSDI Database Design & Mgt.	2015	18

8. Oceanographic Activities:-

General Commission for Survey (GCS) collects geophysical and oceanographic information from various sources. Most of this information is collected while undertaking hydrographic surveys and from the National Tide Gauge Network (NTGN) and the Marine Science Data Buoy projects.

GCS operates 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.

9. Other Activities:-

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, spatial data information under Hydrographic Data Management (HDM) Project duly integrated to the 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.

10. Conclusion:-

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 2020 for entire KSA coast.

Enclosure 1: Changes to IHO Yearbook

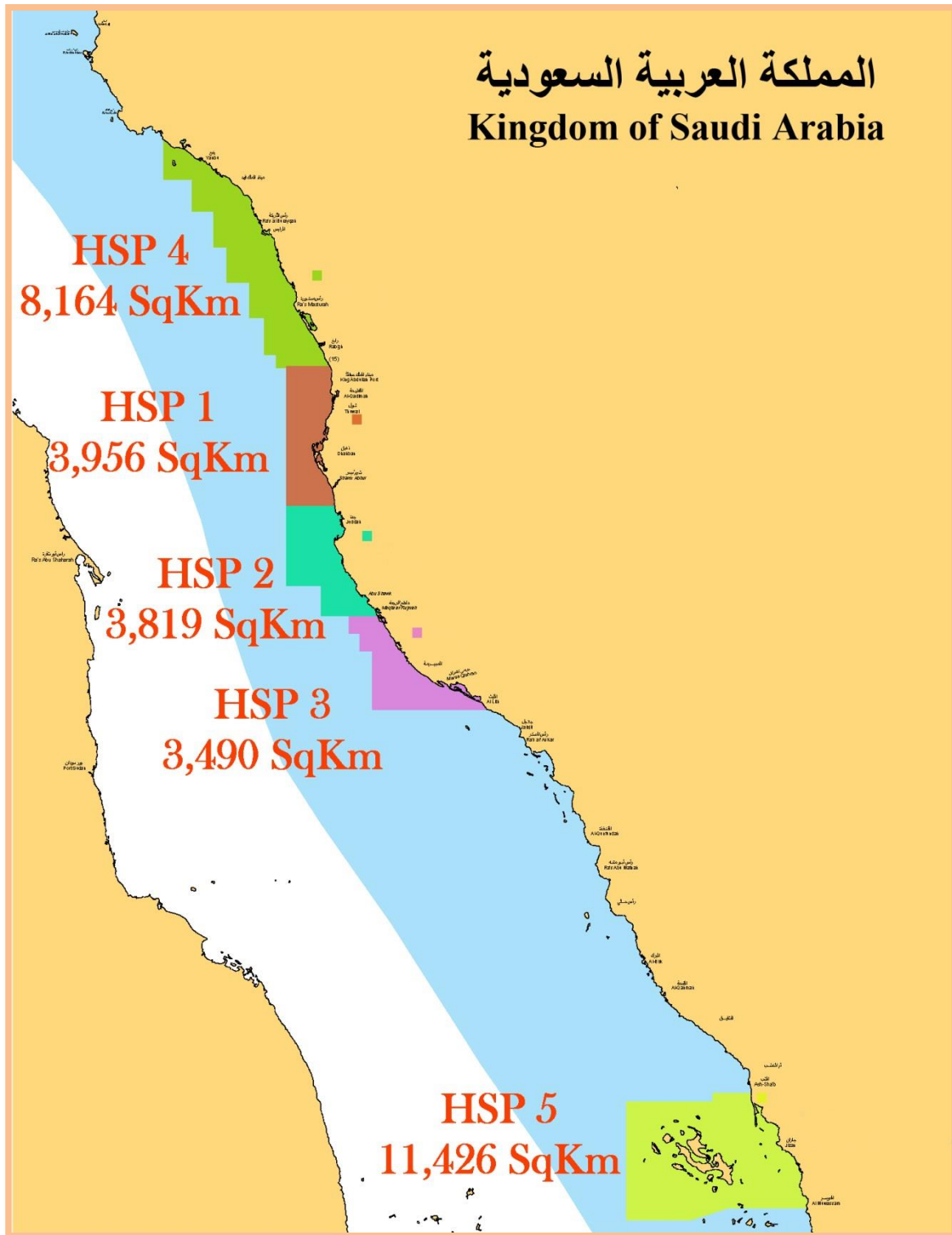
IHO/OHI Yearbook/Annuaire/Anuario	
Country name / nom du pays	Saudi Arabia
Agency name / nom d'agence:	General Commission for Survey (GCS)
Contact information/ Informations de contact / Información de contacto	
-National Hydrographer or equivalent -Directeur du service hydrographique ou équivalent -Director del Servicio Hidrográfico o equivalente	Post: PRESIDENT, GCS Name: His Excellency Major General (retd.) Dr. Abdul Aziz Ibn Ibrahim Ibn Abdullah Al Saab Postal address: Ishara Al Olaya Road and Prince Abdul Malek Bin Marwan Street, PO Box 87918, Riyadh, 11652, KSA Tel: +966 920000427 ext. 1700 Fax: +966 11 4647589 Email: hydro@gcs.gov.sa
-Head of the Hydrographic Office (if different from the person indicated above) -Directeur du Service Hydrographique (si différent de la personne indiquée ci-dessus) -Director del Servicio Hidrográfico (si diferente de la persona indicada anteriormente)	Post: Director General Hydrography Name: Mohammed Hamed Al-Harbi Postal address: Ishara Al Olaya Road and Prince Abdul Malek Bin Marwan Street, PO Box 87918, Riyadh, 11652 Tel: +966 920000427 ext. 1500 Fax: +966 11 464 7692 Email: m.alharbi@gcs.gov.sa
-Other point(s) of contact -Autre(s) point(s) de contact -Otros punto(s) de contacto	Mr. Zaher Al Shehri, Manger (Operations and Training, Hydrography) Tel: +966 920000427 ext. 1501 Fax: +966 11 464 7692 Email: z.alshehri@gcs.gov.sa
-Web site -site web -sitio web	www.gcs.gov.sa
Country information / Informations sur le pays/ Información sobre el país	
-Declared National Tonnage -Tonnage national déclaré -Tonelaje Nacional Declarado	Tonnage: 1,678,474 Date: 2011
-National day -Fête nationale -Fiesta nacional	23 rd September.
-Date of establishment and Relevant National Legislation -Date de mise en place et législation nationale pertinente -Fecha de constitución y legislación nacional pertinente	Saudi Cabinet Resolution dated 13 Feb 2006.
-Date first joined IHO -Date d'adhésion à l'OHI -Fecha de adhesión a la OHI	2007

-Date ratification Convention -Date de ratification de la Convention -Fecha de ratificación de la Convención	27/02/2007
-Remarks on membership -Remarques sur l'adhésion -Comentarios sobre la adhesión	Full member.
Agency information/ Information sur l'agence/ Información sobre la agencia	
-Top level parent organisation -Organisme mère -Organización asociada de nivel superior	Hydrographic Department is part of the national mapping agency, namely GCS.
-Principal functions of the organisation or the department -Attribution principales de l'organisme ou du département -Principales funciones de la Organización o departamento	Hydrographic Surveys, related Marine Sciences, nautical charts and publications, tide gauge network and MSDI.
-Annual operating budget -Budget annuel -presupuesto anual	Approx. 80 million Saudi Riyal.
-Total number of staff employed -Effectifs totaux -Número total de personal empleado	92
-Number of INT charts published -Nombres de cartes INT publiées -Número de cartas INT publicadas	NIL
-Total number of paper charts published -Nombre total de cartes papier publiées -Número total de cartas de papel publicadas	NIL (30 charts awaiting distribution arrangements) on scale 1:50,000 or larger.
-Number of ENC cells published -Nombres de cellules ENC publiées -Número de células ENC publicadas	Nil – 30 charts awaiting distribution arrangements on scale 1:50,000 or larger.
-Number of Other charts -Nombre d'Autres cartes -Número de Otras cartas	60 coastal management charts on scale 1:25,000 for special applications
-Type of publications produced -Type d'ouvrages produits -Tipo de publicaciones producidas	Saudi Tide Tables for 2016.

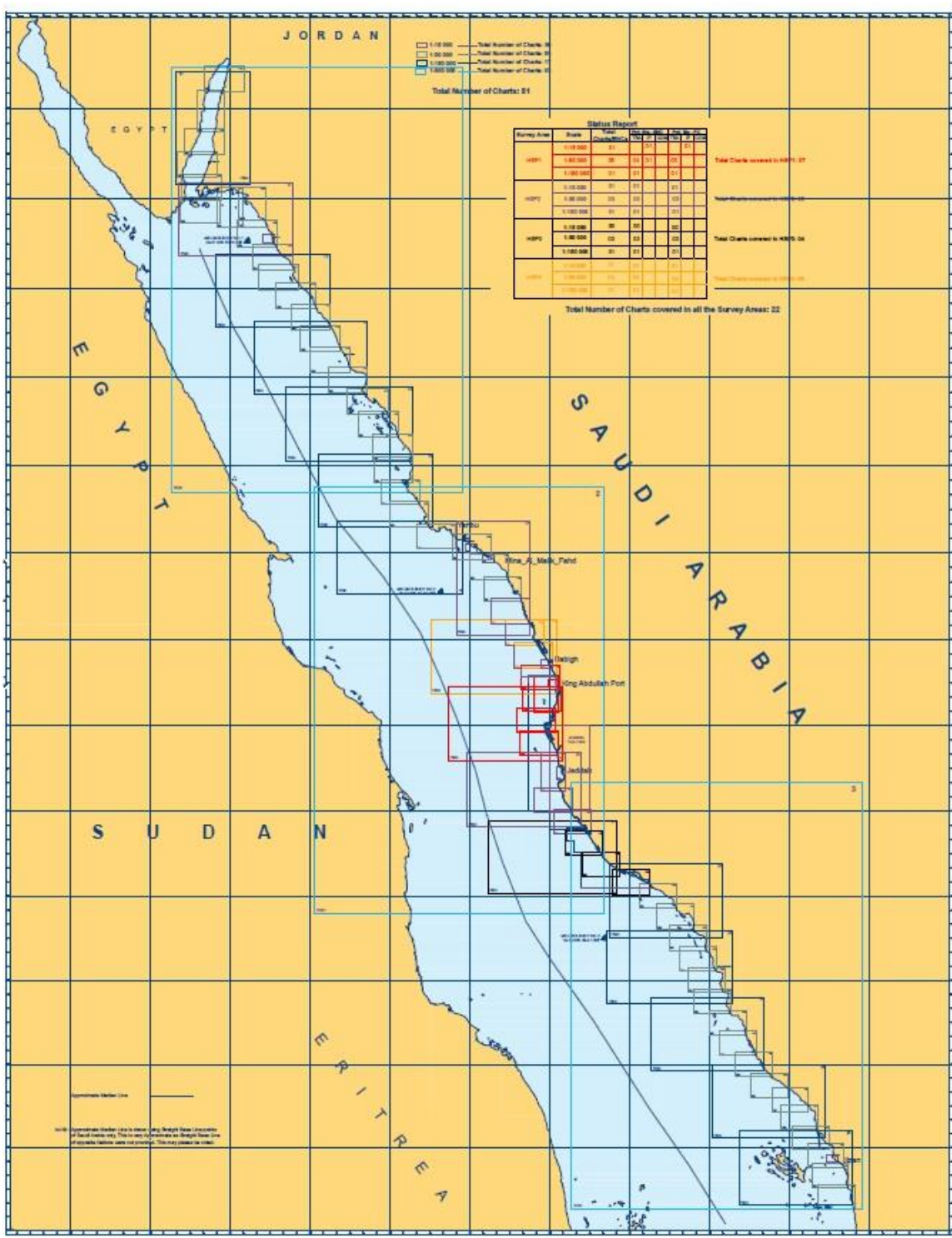
-Detail of surveying vessels/ aircraft -Détail des bâtiments hydrographiques / aéronefs -Detalle de los buques hidrográficos / aeronaves	-Name -Nom -Nombre	-Displacement -Déplacement -Desplazamiento	-Commissioning Date -Date de mise en service -Fecha de puesta en servicio	-Number of crew -Equipage -Tripulación
	HSV ¹ AlMaseh AlBahri Sultan with	499 grt	22 Jun 2015	24 (including survey team)
	two survey launches	4.6 tons each	22 Jun 2015	3 each
	AlMaseh AlBahri 1 survey launch	25 tons	Apr 2013	8 (including survey crew)
-Other information of interest -Autres informations utiles -Otra información de interés	(A) Saudi Ports Authority (SPA) for Management of Ports Activities (B) Presidency of Meteorology and Environment (PME) for Management of Weather and Marine Environment within Saudi Marine areas. (C) Aramco for offshore oil and gas explorations. With National mandate for hydrography, GCS has embarked upon national capacity building in the form of modern hydrographic surveys, production of ENCs, and training in hydrography/ related marine sciences and marine cartography, with substantial progress in meeting the national responsibilities with a progressive charting scheme and under international, regional and national obligations. King Abdullah Economic City.			

¹ Hydrographic Survey Vessel

Enclosure 2: Surveyed Areas in Red Sea



Enclosure 3: National Charting Scheme in Red Sea



Enclosure 4.

IHO PUBLICATION C-55

“STATUS OF HYDROGRAPHIC SURVEYING AND NAUTICAL CHARTING WORLD-WIDE” QUESTIONNAIRE

Country: [Kingdom of Saudi Arabia](#)

Date of validity of information: [29 February 2016](#)

Are any amendments required to your entry in the IHO Year Book? Yes – see Enclosure 1.

Update is particularly important on your outsourcing strategy and on your ability to provide contract survey or charting support to other states in your RHC area.

1. Hydrographic Surveying

1.1 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	55	35	10
Depths > 200m	38	40	22

Amplifying information:

1. Special national circumstances which influence the statistical break-down above (e.g. geographical factors such as narrow continental shelf or fringing reefs, or constraints such as areas of unstable seabed which require a routine resurvey program): [Regular planned 100% insonified surveys in progress since 2011 for Red Sea and Arabian Gulf in Saudi Marine Areas.](#)
2. Significant shortfalls in sea areas of high priority for maritime traffic:
 - a. Maritime Shipping Routes:
 - (1) International (i.e. between hub ports): [GB charts in use.](#)
 - (2) Regional (i.e. between hub ports and feeder ports): [GB charts in use.](#)
 - (3) Internal (i.e. from feeder ports to other national ports; cruise liner routes): [GB charts in use.](#)
 - b. Ports and Approaches: [Systematic new surveys being progressed.](#)
 - c. Other (fisheries; offshore industry): [Coastal Zone Management \(CZM\) charts on scale 1:25,000 under progress for non-navigational purposes.](#)

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

Territory: NA.

Survey coverage, where:

A = percentage which is adequately surveyed.

B = percentage which requires re-survey at larger scale or to modern standards.

C = percentage EEZ which has never been systematically surveyed.

	A	B	C
Depths < 200m			
Depths > 200m			

Amplifying information: nil

1. Special national circumstances which influence the statistical break-down above (e.g. geographical factors such as narrow continental shelf or fringing reefs, or constraints such as areas of unstable seabed which require a routine resurvey program):

2. Significant shortfalls in sea areas of high priority for maritime traffic:

a. Maritime Shipping Routes:

(1) International (i.e. between hub ports):

(2) Regional (i.e. between hub ports and feeder ports):

(3) Internal (i.e. from feeder ports to other national ports; cruise liner routes):

b. Ports and Approaches:

c. Other (fisheries; offshore industry):

1.3 Status of hydrographic survey of all navigable waters, including internal waters, out to the limits of the EEZ of developing countries where surveys have been, or are being carried out by your hydrographic service:

Country: Not Applicable.

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			
Depths > 200m			

Amplifying information: not applicable

1. Special national circumstances which influence the statistical break-down above (e.g. Geographical factors such as narrow continental shelf or fringing reefs, or constraints such as areas of unstable seabed which require a routine resurvey program):

2. Significant shortfalls in sea areas of high priority for maritime traffic:

a. Maritime Shipping Routes:

(1) International (i.e. between hub ports):

- (2) Regional (i.e. between hub ports and feeder ports):
- (3) Internal (i.e. from feeder ports to other national ports; cruise liner routes):
- b. Ports and Approaches.
- c. Other (fisheries; offshore industry).

2. Nautical Charting

If you do not have a nautical charting capability, but know which country/countries has/have assumed responsibility for the charting of your sea areas, please indicate details here: [GB charts are being used by mariners with old source data. KSA charts under production area wise along the coast \(up to 1:50,000\) with 100% insonified surveys for distribution through a RENC is under active consideration.](#)

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”*):

2.1 Status of nautical charting within the limits of the EEZ

Coverage of charts published by your organization, 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 ENC’s meeting the standards in S-57.

Purpose/Scale	A	B	C
Offshore passage/Small	-	-	-
Landfall and Coastal passage/Medium	33%	Nil	33%
Approaches and Ports/Large	30%	N/A	30%
Percentage of Group A showing depths in meters	100%		
Percentage of Group A referenced to a satellite datum	100%		

Amplifying notes: [WGS84 Datum.](#)

Significant gaps in coverage: [Nil.](#)

2.2 Status of nautical charting within the limits of the EEZ of dependent territories

Coverage of charts published by your organization, where: [NA.](#)

- A = percentage covered by INT series, or a paper chart series meeting the standards in M-4.
- B = percentage covered by RNCs meeting the standards in S-61.
- C = percentage covered by ENC’s meeting the standards in S-57.

Territory: [NA.](#)

Purpose/Scale	A	B	C
Offshore passage/Small	0	0	0
Landfall and Coastal passage/Medium	0	0	0
Approaches and Ports/Large	5	40	40
Percentage of Group A showing depths in meters	100		
Percentage of Group A referenced to a satellite datum	100		

Amplifying notes: nil

Significant gaps in coverage: nil

Territory: NA.

Purpose/Scale	A	B	C
Offshore passage/Small			
Landfall and Coastal passage/Medium			
Approaches and Ports/Large			
Percentage of Group A showing depths in meters			
Percentage of Group A referenced to a satellite datum			

Amplifying notes:

Significant gaps in coverage:

Territory: NA.

Purpose/Scale	A	B	C
Offshore passage/Small			
Landfall and Coastal passage/Medium			
Approaches and Ports/Large			
Percentage of Group A showing depths in meters			
Percentage of Group A referenced to a satellite datum			

Amplifying notes:

Significant gaps in coverage:

2.3 Status of nautical charting produced by mutual agreement within the limits of the EEZ of other coastal states

Coverage of charts produced by your organization, where: Nil.

A = percentage covered by INT series, or a paper chart series meeting the standards in M-4.

B = percentage covered by RNCs meeting the standards in S-61.

C = percentage covered by ENC's meeting the standards in S-57.

Country: NA.

Purpose/Scale	A	B	C
Offshore passage/Small			
Landfall and Coastal passage/Medium			
Approaches and Ports/Large			
Percentage of Group A showing depths in meters			
Percentage of Group A referenced to a satellite datum			

Amplifying notes:

Significant gaps in coverage:

Country: NA.

Purpose/Scale	A	B	C
Offshore passage/Small			
Landfall and Coastal passage/Medium			
Approaches and Ports/Large			
Percentage of Group A showing depths in meters			
Percentage of Group A referenced to a satellite datum			

Amplifying notes:

Significant gaps in coverage:

Country: NA.

Purpose/Scale	A	B	C
Offshore passage/Small			
Landfall and Coastal passage/Medium			
Approaches and Ports/Large			
Percentage of Group A showing depths in meters			
Percentage of Group A referenced to a satellite datum			

Amplifying notes:

Significant gaps in coverage:

3. Maritime Safety Information (MSI)

Fill in the tables to indicate the status of implementation of the services: Yes, No, Partial.

Use the Notes Columns to indicate services which are provided by another state, and facilities co-ordinated and/or shared with other coastal states. (Please refer to the guidance given in the introductory text "Analysis of the status of MSI".): **Partial**

Navigational Information (S-53)

SERVICE	Yes	No	Partial	NOTES
Local Warnings	<input checked="" type="checkbox"/>			SPA*
Coastal Warnings	<input checked="" type="checkbox"/>			SPA
NAVAREA Warnings	<input checked="" type="checkbox"/>			SPA
Information on Ports and Harbors ¹	<input checked="" type="checkbox"/>			SPA

GMDSS IMPLEMENTATION (IMO Publication 970 - GMDSS Handbook²)

SERVICE	Yes	No	Partial	NOTES
Master Plan			<input checked="" type="checkbox"/>	SPA/CG**
A1 Area ³				
A2 Area ³				
A3 Area ³				
NAVTEX				
SafetyNET				

* Saudi Port Authority

** Coast Guard

4. National Priorities for International and or Regional Cooperation or Assistance

4.1 If international or regional projects are underway in your waters, please indicate here:
INT charting scheme for red sea area for Saudi waters under discussion at NIOHC (ICCWG).

4.2 Indicate below any priorities for co-operation or assistance:

a. Projects meriting IHO liaison with international funding agencies:

(1) Regional co-operative projects: Nil.

- indicate involvement of RHC, or other Member and non-Member states. Nil.

(2) National projects:

- indicate any bilateral co-operation with Member or non-Member states. Capacity Building within NIOHC.

b. Requirements for training assistance:

- use M-5 and S-47 to identify level of qualification and course required.

(1) Hydrographic surveying: Yes for IBSC Cat 'A' Hydrographic Course.

(2) Nautical cartography: Nil.

(3) MSI: Hydrographic Data Management project under implementation.

c. Requirements for assistance with procurement of equipment:

(1) Technical advice on procurement options: Nil.

(2) Transfer of equipment: Nil.

¹ Confirm that a system exists for passage of information on changes in ports and harbours to the responsible charting authority.

² See also the guidance in Navigational Publications published by Hydrographic Offices e.g. ALRS 5.

³ For description of Sea Areas A1, A2 and A3 see S-55 "Status of MSI" on the IHO web site.

5. General Comments or Additional Information

1. GCS is actively implementing Hydrographic Survey Projects (HSPs) for nautical charting of Saudi Marine Areas with 100% insonification using LiDAR and MBES etc. since 2011. The first round of fresh Hydrographic Surveys for entire Saudi Marine Areas is planned to be completed by 2020 with full charts by 2019.
2. Surveys have been completed for 44% of the coastal belt along Red Sea coast. Approx. 40% of the planned ENC's are likely to be completed by 2016.
3. The Hydrographic Data Management (HDM) project (includes MSDI) is under execution to manage the vast amount of Hydrographic and Oceanographic data for use of stakeholders.
4. Distribution of ENC's worldwide is under discussion with a reliable and efficient RENC under IHO regulations.

Enclosure 5:

Signature:

Date: 10 March 2016

Mohammed Hamed Al-Harbi
 Director General, Hydrography
 General Commission for Survey
 Kingdom of Saudi Arabia