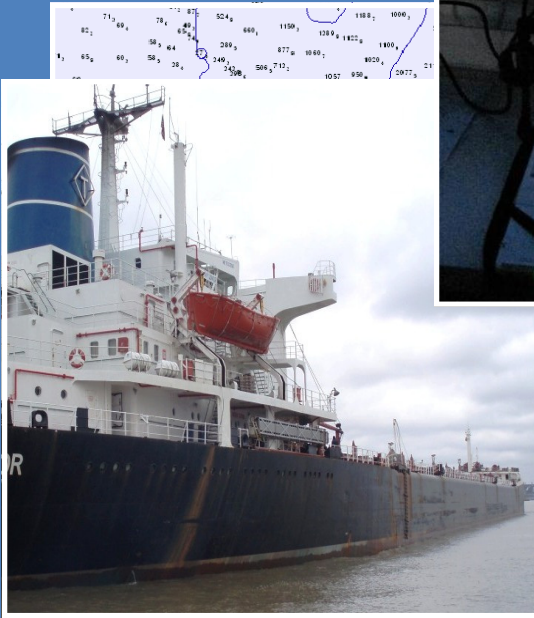
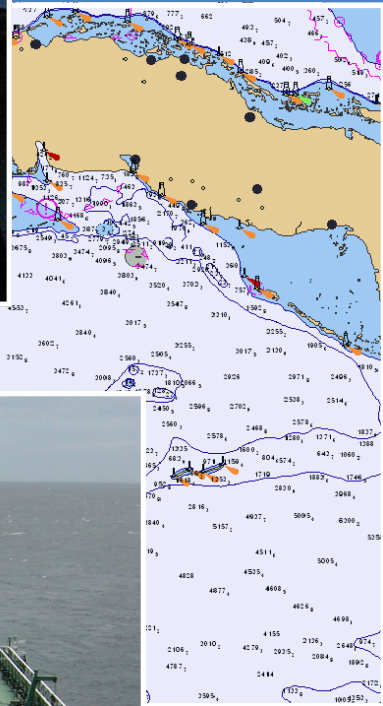




# ENC COVERAGE FOR THE MACHC REGION

MACHC ELECTRONIC CHART COMMITTEE  
WORKING GROUP 2

SUBMITTED TO  
THE XI MACHC



NOVEMBER  
2010  
SURINAME

REPORT OF THE MACHC ELECTRONIC CHART COMMITTEE  
WORKING GROUP 2

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## ENC Coverage for the MACHC Region

SUBMITTED TO THE XI<sup>TH</sup> MACHC MEETING  
NOVEMBER 2010, SURINAME

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The purpose of the Meso American and Caribbean Sea Hydrographic Commission's (MACHC) Electronic Chart Committee Working Group 2 (ECC/WG2) is to facilitate the production and promote the availability of official electronic chart data for safe, efficient, and environmentally sensitive maritime navigation within the MACHC Region.

In order to ensure that adequate regional ENC coverage will be available to meet IMO ECDIS carriage requirements in a timely manner, the MACHC ECC was tasked at the 10<sup>th</sup> MACHC conference to assess ENC coverage and develop an ENC scheme (see Resolutions and Actions MACHC 10-30 to 10-35).

At its November 2009 meeting in Barbados, the MACHC endorsed the goal of the ECC/WG2 to:

*“Achieve adequate regional ENC coverage by December 31, 2010 (using the medium scale INT chart scheme as the baseline for adequate medium scale ENC coverage--usage bands 2/3).”*

This report and its annexes summarize the status of ENC coverage for the MACHC region, depicts a regional ENC scheme (Annex A) agreed to by the MACHC Member States in a format similar to that of the paper INT Chart Scheme found in Ed. 2.003 of S-11, and contains recommendations for future action.

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### BACKGROUND

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Several drivers, explained below, have heightened the need for the successful completion of the ECC/WG2 work program.

#### INTERNATIONAL MARITIME ORGANIZATION (IMO) CARRIAGE REQUIREMENTS

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In 2009, the IMO announced the six-year timeframe for implementing ECDIS as a carriage requirement for large passenger, tanker, and cargo ships from the year 2012, according to the following timeline:

- new passenger ships above 500GT, from July 1, 2012
- new tankers above 3,000GT, from July 1, 2012
- new cargo ships above 10,000GT, from July 1, 2013
- new cargo ships above 3,000GT, from July 1, 2014

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## IHO CONFERENCE DECISIONS

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At its 17<sup>th</sup> International Hydrographic Conference in May 2007, the IHO adopted two resolutions:

*IHO Member States should adhere and comply with the IHO's Worldwide Electronic Navigational Database (WEND) principles, which provide technical details and procedures, in order to achieve adequate coverage, availability, consistency and quality of ENC's by 2010.*

*The IHO strongly supports the efforts by IMO to introduce mandatory carriage requirements for ECDIS, emphasizing that a significant coverage of ENC's is already in place and will be further improved by 2010, as indicated in the DNV report (NAV 53/INF.3) and supported by IHO assessments.*

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## IHO WEND PRINCIPLES

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The purpose of WEND is to ensure that high quality, updated, official ENC's are provided through integrated services that support chart carriage requirements of SOLAS Chapter V<sup>1</sup>. According to the IMO performance standards for ECDIS:

- Member States will strive to ensure that mariners, anywhere in the world, can obtain fully updated ENC's for all shipping routes and ports across the world.
- Member States will strive to ensure that their ENC data are available to users through integrated services, each accessible to any ECDIS user (i.e., providing data in S-57 form), in addition to any national distribution or system-specific SENC delivery.
- Member States are encouraged to distribute their ENC's through an RENC in order to share in common experience and reduce expenditure, and to ensure the greatest possible standardization, consistency, reliability, and availability of ENC's.

In response to these drivers, the ECC recognized the need to improve regional ENC coverage in the short to medium term, and encouraged national hydrographic offices to produce and distribute ENC's that will improve maritime and environmental safety. This year, the ECC focused its efforts on medium-scale (Usage Bands 2 and 3) ENC's, based on the equivalent medium scale (1:300,000, 1:400,000, 1:500,000-scale) INT chart schemes of the region.<sup>2</sup>

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## WORK PLAN AND PROCESS

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At the 2009 MACHC meeting, the ECC/WG2 agreed to:

- utilize the INT Chart Scheme as the "footprint" to guide ENC construction/coverage of the MACHC Region;
- assess present MACHC Region ENC coverage in comparison with the "footprint;"

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<sup>1</sup> SOLAS Chapter V, Regulation 9, requires Contracting Governments to ensure that hydrographic data are available in a suitable manner in order to satisfy the needs of safe navigation. Once the carriage of ECDIS becomes mandatory, there will be a consequential requirement to ensure that such data, as agreed by IMO, are available in a form suitable for use in ECDIS.

<sup>2</sup> Information on Usage Band 1 is included in Annex A for reference purposes.

- coordinate action plans for addressing gaps and overlaps in ENC coverage between countries; and
- establish a communication strategy to track progress and resolve issues.

The ECC/WG2 participants developed a work plan (see Annex C). The group held three conference calls (February 24, May 26, and September 14) and one face-to-face meeting on June 16 in New Orleans, USA. Between calls and meetings, participants used e-mail and a Google group, where all WG documents were posted for review and discussion. The meeting results are also archived on the MACHC website at: [http://www.iho-machc.org/documents/ecctg2\\_doc.html#A](http://www.iho-machc.org/documents/ecctg2_doc.html#A).

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## DATA ANALYSIS METHODOLOGY

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To successfully and accurately report on regional ENC coverage, and to appropriately plan to address regional ENC deficiencies, the UKHO and the ECC/WG2's technical coordinator produced a baseline assessment of regional ENC coverage by breaking this assessment into two components: officially distributed data; and data not yet distributed. The UKHO first assessed regional Usage Bands 1, 2, and 3 ENC coverage for ENCs currently distributed through the Regional Electronic Navigational Chart Coordinating Center (RENC) and compared it to the data footprint of the small to medium scale INT Charts for the MACHC Region. Then the UKHO analyzed Usage Bands 1, 2, and 3 ENC coverage for ENCs produced, but *not* currently distributed through the RENC, and compared that to the data footprint of the small to medium scale INT Charts for the MACHC Region.

In the baseline assessment, the UKHO adhered to a pre-defined set of guidelines (Annex D) for ENC analysis. The guidelines required the identification and documentation of ENC deficiencies, such as:

- gaps in planned ENC coverage;
- overlapping ENCs with the same Usage Band between MACHC Member States;
- overlapping same Usage Band ENCs within national suites; and
- other data anomalies that could affect the use of ENCs in ECDIS.

The UKHO documented this information and, in conjunction with the ECC's technical coordinator, delivered this report to representatives of ECC Member States before its June 16 meeting in New Orleans, USA.

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## PROGRESS ON MS REGIONAL ENC CONSISTANCY ACTIONS

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At the June 16 meeting, Member State representatives developed detailed action plans (see Annex B) to address these deficiencies, which were subsequently implemented. Due to time constraints at that meeting, the Group focused on the overlaps and gaps between nations. However, the national deficiencies identified in the analysis, such as internal gaps, overlaps, and ENC scales that appear

inconsistent with IHO recommended navigational purpose designations<sup>3</sup>, are receiving ongoing attention by the respective Member Countries

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## CONCLUSION

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The ECC/WG2 has made significant progress towards its goal to “ensure adequate regional ENC coverage (Usage Bands 2 and 3) by December 31, 2010, using the medium scale INT chart scheme as the baseline for adequate medium scale ENC coverage.” The group established a regional scheme (see Annex A) that shows ENC coverage along with a tabulation of ENC cells and status, based on the format of the paper INT Chart Scheme found in Ed. 2.003 of S-11. The tables identify ENCs that are currently distributed and the anticipated distribution dates of the majority of those not yet available for use by the mariner.

When all of the ENCs identified in the scheme are officially distributed, the region will technically meet the definition of “adequate” coverage, i.e., where there is a paper chart (as identified in the INT chart footprint) there is a corresponding ENC. However, the Group acknowledges that adequate coverage is not necessarily optimal. For example, there is a significant gap in Usage Band 3 coverage for Haiti, both for paper and electronic charts. This gap should receive particular focus for MACHC capacity building efforts.

The Group further acknowledges that some Member States may encounter circumstances, despite the best intentions, which may preclude them from completing their planned ENC coverage. These circumstances may include technical issues, resource constraints, or capacity building setbacks.

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## RECOMMENDATIONS

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The WG makes the following recommendations for 2011:

1. MACHC ECC finalizes/completes the Region B, Atlantic Ocean side, ENC scheme for small to medium scales (UB2 to UB3), per the timetables indicated in Annex A.
2. MACHC ECC develops the Region B, Pacific side, ENC scheme for small to medium scales (UB1 to UB3).
3. MACHC ECC explores options for providing a means to depict ENC schemes on a webpage in an interoperable manner and appropriate format for GIS, as a pilot project. Additionally it should allow MACHC ENC schemes to be uploaded into a web service application for the MACHC Region and allow for easy updating by MACHC Members.
4. MACHC ECC corresponds with WEND-WG RHC representatives to ensure that ENC schemes fit seamlessly with adjacent areas (i.e. SEPHC, USCHC).
5. As a permanent task, MACHC Member States are invited to provide the ECC with their UB4 to UB6 production plans taking into account:

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<sup>3</sup> As per IHO Circular Letter 31-2007 and Standard Publication S-66, page 33.

- the need to cover the routes used by High Speed Crafts (ECDIS mandatory carriage July 1, 2010) and priority regional ports;
- the availability of adequate survey data for ENC production (keeping in mind that, in some areas, HOs may deem necessary not to produce ENCs if data are out-of-date or not compliant with S-44 standards); and
- the need to address national overlaps and consistency for all UBs.

6. MACHC Chair is invited to provide this report to the IHB as the region's contribution to global ENC coverage so that it may be conveyed accordingly to the IMO.

7. In order to create the IHO worldwide ENC database, all ENC producers are encouraged to make their ENCs available to the RENCs, even if they are distributed by different channels.

8. If Member Countries are unable to complete their ENC coverage in 2011, the MACHC should consider options to address this situation, ranging from focused capacity building assistance to identification of interim producers (other nations) until the nation concerned is able to do it themselves.

8. If MACHC Member States are unwilling either to distribute ENCs or to have another country produce for them, this situation will be communicated via the MACHC Chair to the IRCC. The IRCC will take appropriate action with the WEND Working Group, the IHB, and IMO.

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### ACTIONS REQUIRED OF THE MACHC

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MACHC Member States are invited to note and endorse this report and its recommendations. We request that the MACHC Chair then transmit the report to the IHB no later than December 31, 2010, for ultimate communication of the results to the IMO.

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### ANNEXES

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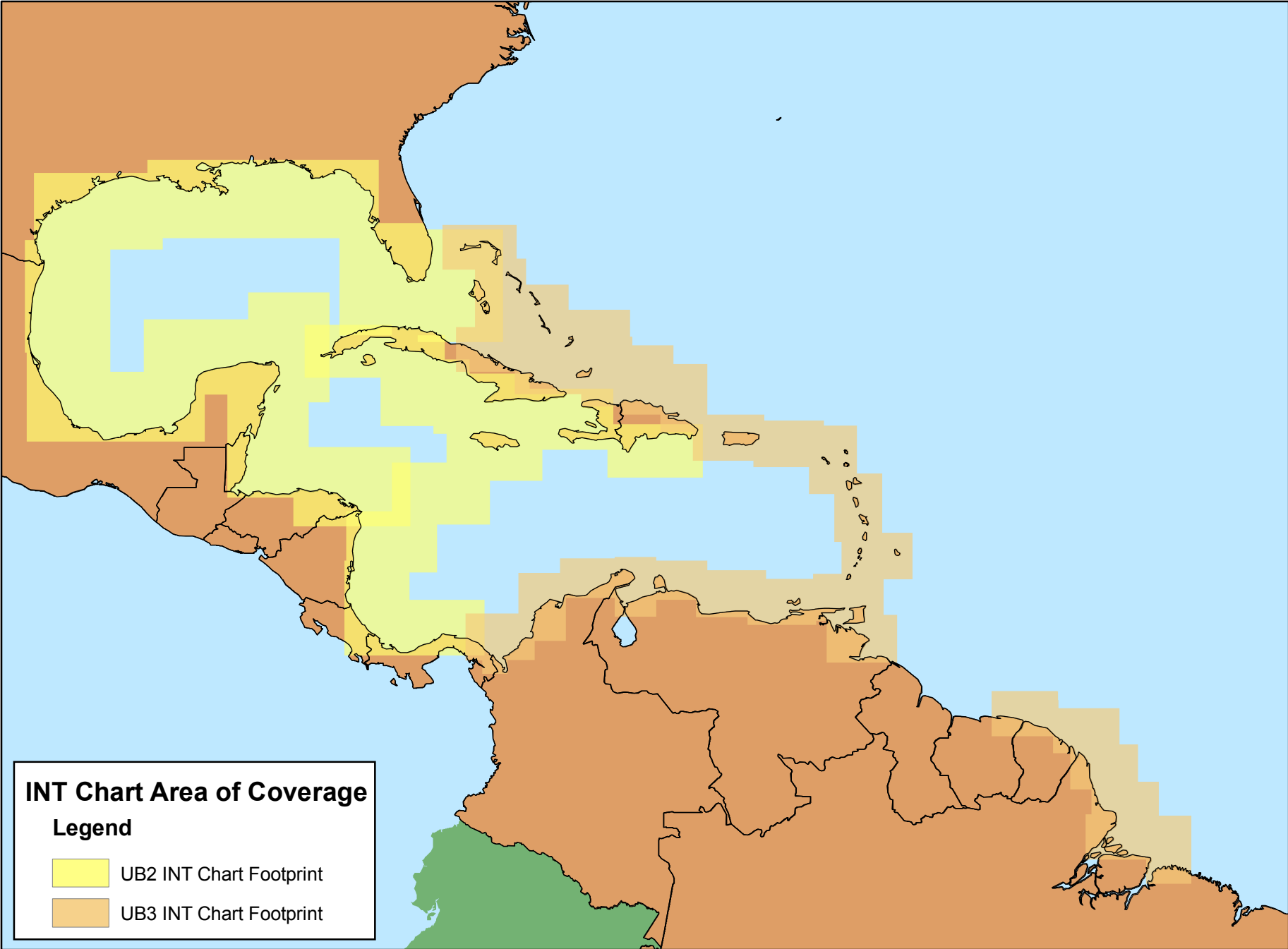
A: MACHC ENC Scheme

B: Member States Actions Addressing Scheme Gaps/Overlaps

C: Work Plan Milestones

D: Guidelines for Analyzing M\_Covr

E: List of WG Participants



Annex A.2



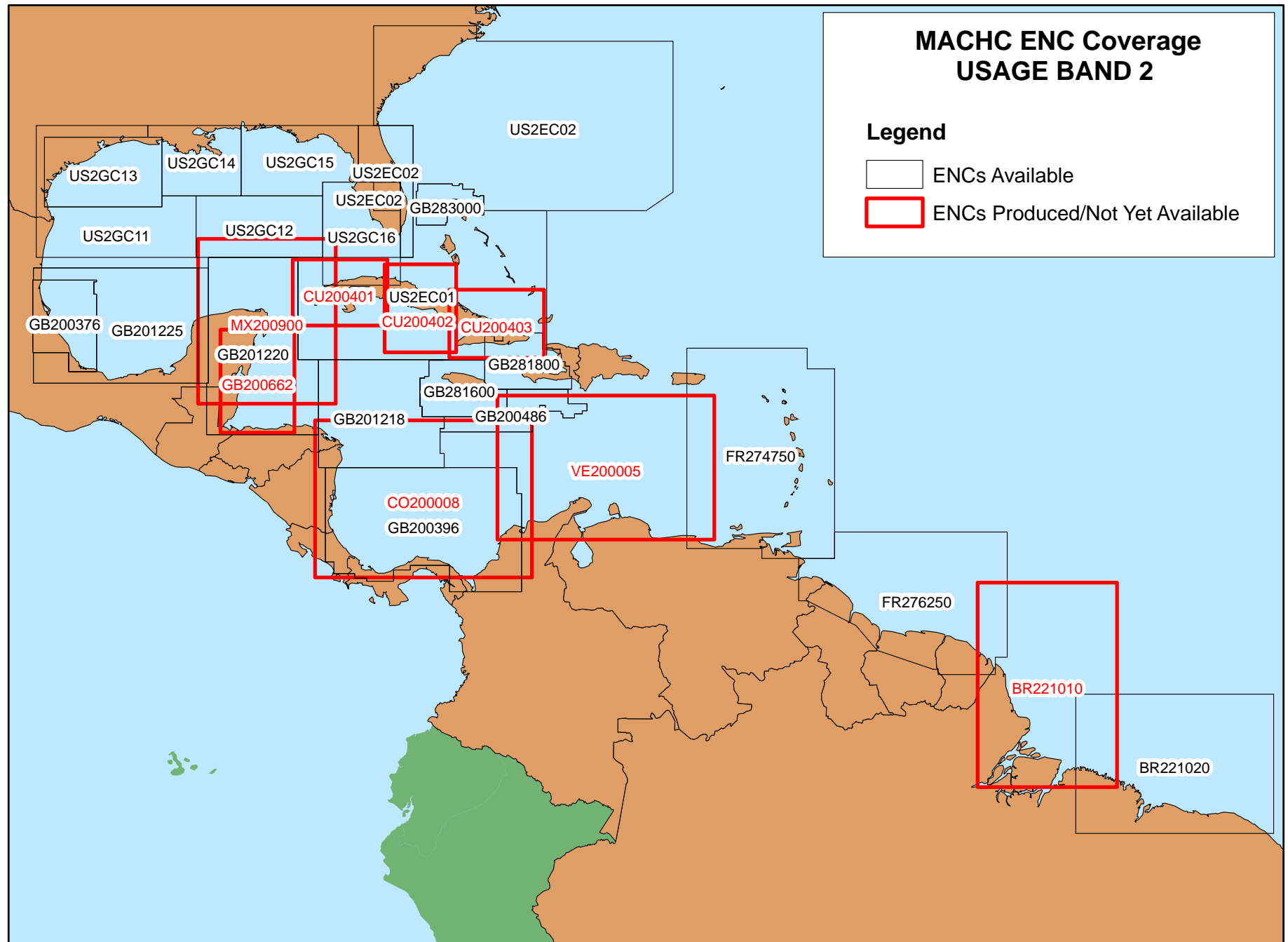


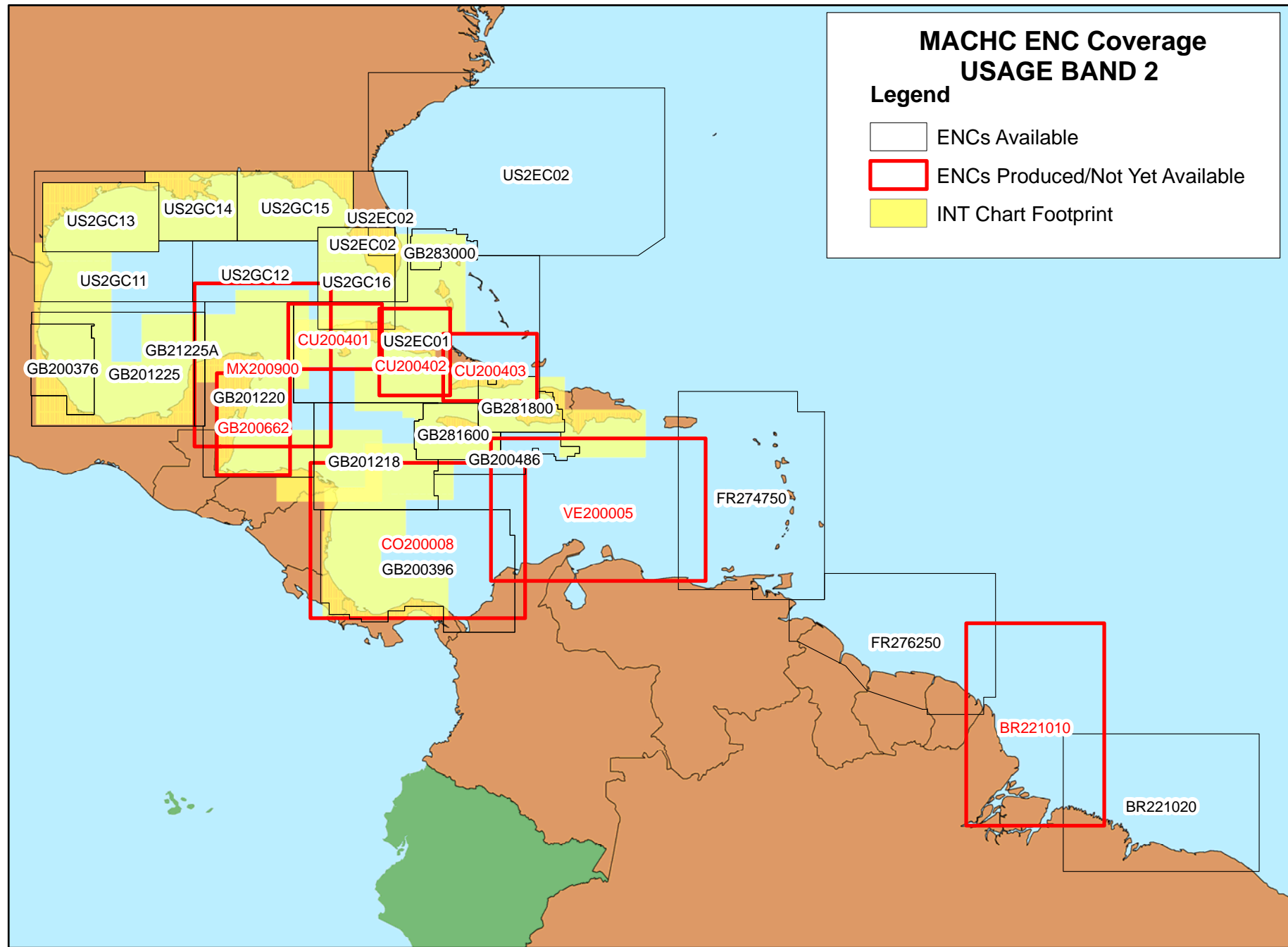
ANNEX A.3 – CATALOGUE OF ENC CELLS USAGE BAND 1 – MACHC REGION

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ENC Cells

Cell Name	Producing Authority	Title	Scale	Status	Distributed by
			1:		
GB104215	UKHO	Atlantic Ocean - Gambia Basin to Brazil Basin	3500000	Available	VAR
GB104216	UKHO	Atlantic Ocean - North East Coast of South America	3500000	Available	IC-ENC
GB104401	UKHO	North Atlantic Ocean - Gulf of Honduras to Haiti	2750000	Available	IC-ENC
GB104402	UKHO	North Atlantic Ocean – Caribbean Sea	1500000	Available	IC-ENC
GB104403	UKHO	North Atlantic Ocean - South East Coast of North America - Brunswick to Philadelphia including Bermuda	3500000	Available	IC-ENC
GB104407	UKHO	North Atlantic Ocean - New England Seamounts to the Mid-Atlantic Ridge	3500000	Available	IC-ENC
GB104618	UKHO	Clipperton Fracture Zone to Bauer Basin	3500000	Available	IC-ENC
GB104802	UKHO	North Pacific Ocean - West Coast Of Mexico - Cabo San Quintin To Punta San Telmo	3500000	Available	IC-ENC
GB104811	UKHO	Pacific Ocean - Central America - Mexico To Ecuador	3500000	Available	IC-ENC
US1GC09	NOAA	Gulf Of Mexico	2160000	Available	NOAA



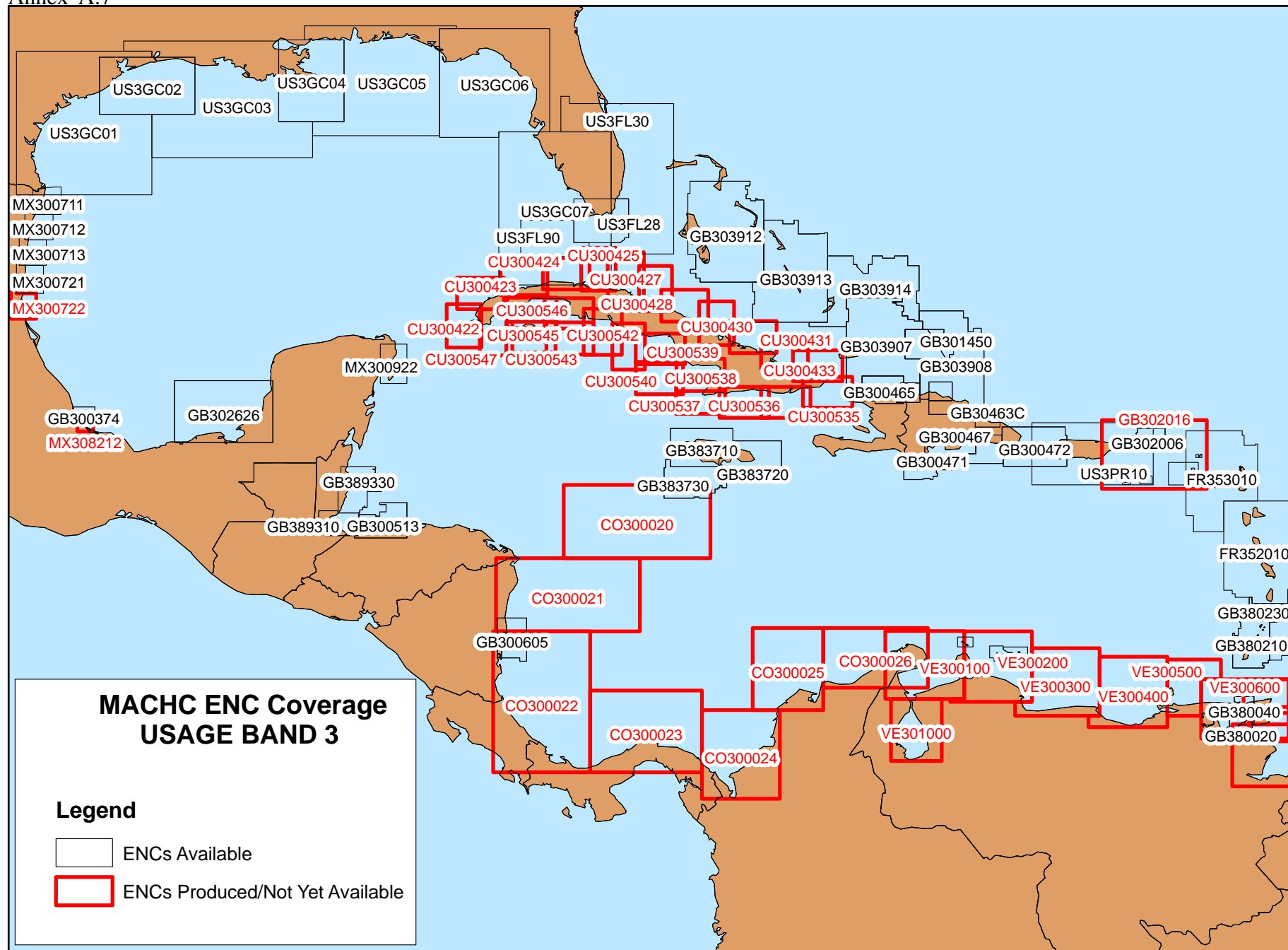


**ANNEX A.6 – CATALOGUE OF ENC CELLS USAGE BAND 2 – MACHC REGION**

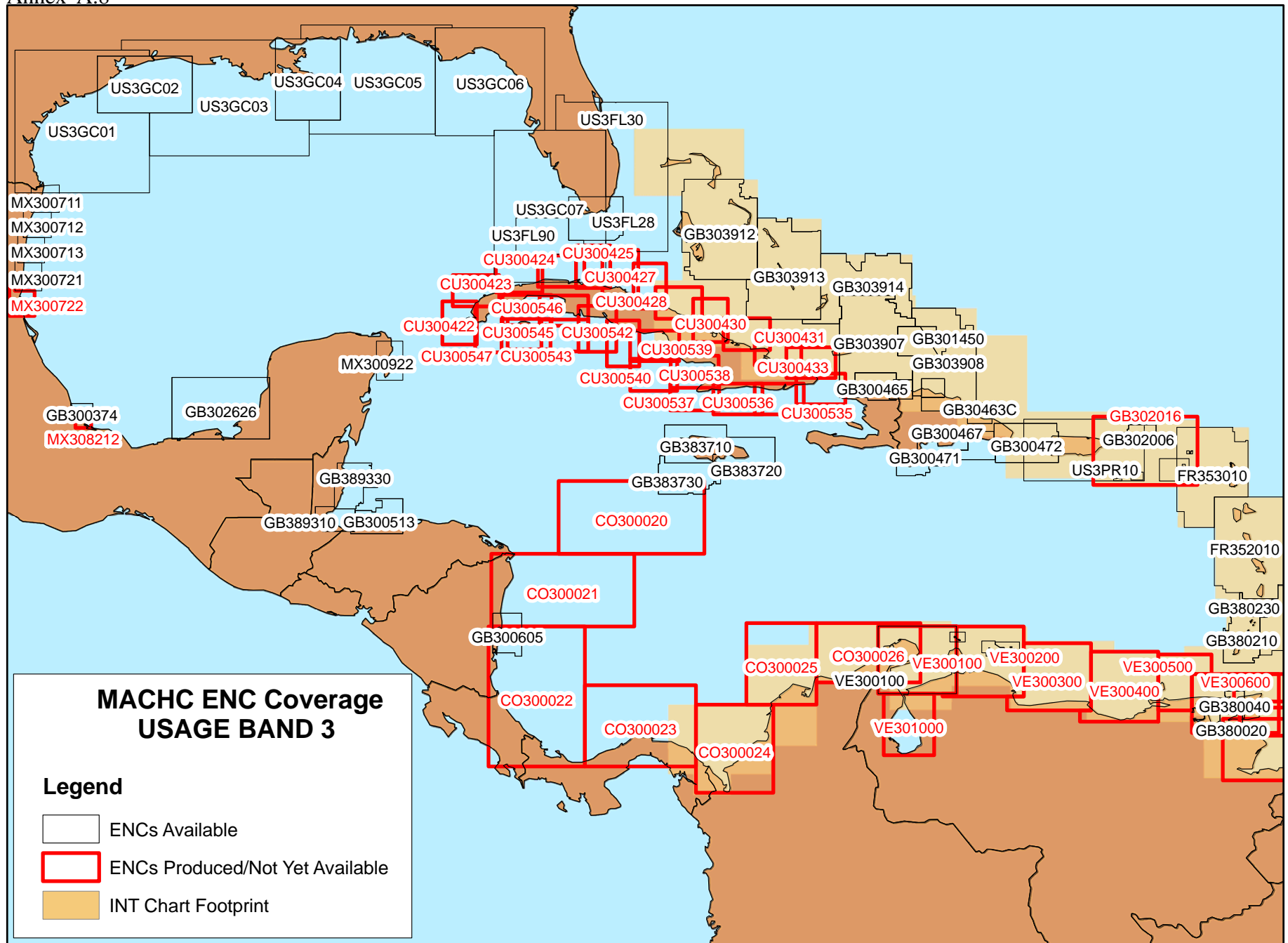
ENC Cells

Cell Name	Producing Authority	Title	Scale	Status	Distributed by
			1:		
BR221010	DHN	Cayenne to Gurupi Cape	700000	Nov.2011	IC-ENC/ PRIMAR VARs
BR221020	DHN	De Salinópolis a Fortaleza	700000	Nov.2011	IC-ENC/ PRIMAR VARs
CO200008	CIOH	Carta General del Caribe Colombiano	700000	Dec. 2010	IC-ENC
CU200401	ONHG				
CU200402	ONHG				
CU200403	ONHG				
FR274750	SHOM	Puerto Rico to Trinidad	700000	Available	PRIMAR
FR276250	SHOM	Delta Del Orinoco to Cayenne	700000	Available	PRIMAR
GB200376	UKHO	Mexico – East Coast - Veracruz to Altamira	350000	Available	IC-ENC
GB200396	UKHO	Caribbean Sea - Barranquilla to Miskito Bank	700000	Available	IC-ENC
GB200486	UKHO	Bajo Nuevo to South of Haiti	700000	Available	IC-ENC
GB200662	UKHO	Central America - East Coast - Isla de Guanaja to Isla Cozumel including The Gulf of Honduras	350000	In Production	VAR
GB201218	UKHO	Caribbean Sea - Cuba to Miskito Bank	700000	Available	IC-ENC
GB201220	UKHO	Gulf of Honduras	700000	Available	IC-ENC
GB201225	UKHO	Gulf of Campeche	700000	Available	VAR

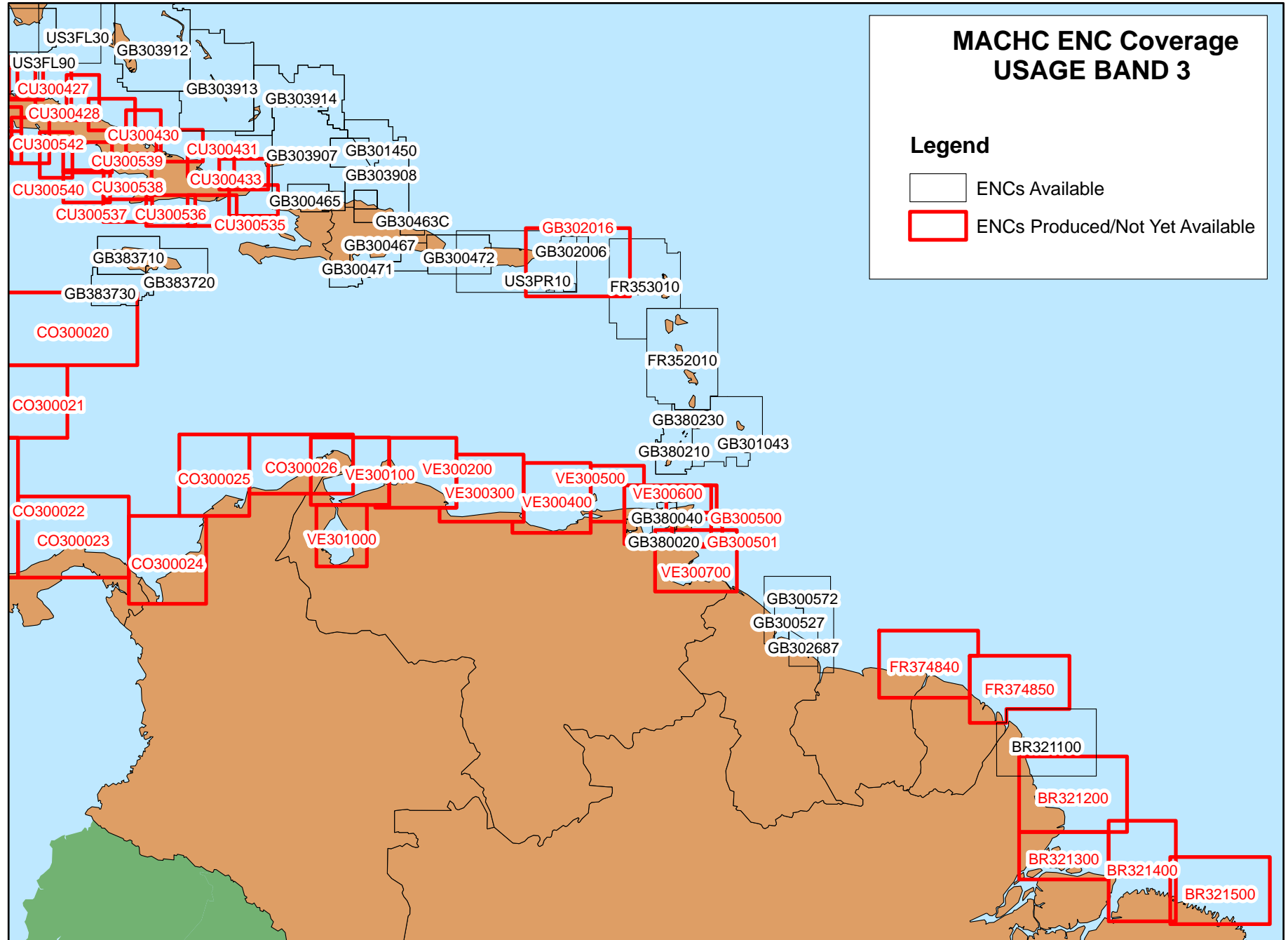
Cell Name	Producing Authority	Title	Scale	Status	Distributed by
			1:		
GB21225A	UKHO	Gulf of Mexico Campeche	700000	Available	VAR
GB281600	UKHO	Approaches to Jamaica	350000	Available	IC-ENC
GB281800	UKHO	Windward Passage and Southern Approaches.	350000	Available	VAR
GB283000	UKHO	Bahamas - Little Bahama Bank Including North West Providence Channel	180000	Available	IC-ENC
MX200900	SEMAR	Canal de Yucatan y Proximidades	TBD	Produced/Not yet Available Expected by 12/10	SEMAR
US2EC01	NOAA	Straits of Florida and Approaches	1200000	Available	IC-ENC
US2EC02	NOAA	Cape Hatteras to Straits of Florida	1200000	Available	NOAA
US2GC11	NOAA	Mobile Bay to Mexico	1000000	Available	NOAA
US2GC12	NOAA	New Orleans to Jacksonville	1000000	Available	NOAA
US2GC13	NOAA	Vermilion Bay to Corpus Christi	500000	Available	NOAA
US2GC14	NOAA	Louisiana	500000	Available	NOAA
US2GC15	NOAA	Tampa Bay to Mobile	500000	Available	NOAA
US2GC16	NOAA	Tampa Bay to Cuba	500000	Available	NOAA
VE200005	DHN	Cabo Codera a Punta Canoas e Islas Adyacentes	700000	Produced in Mar. 2011 and will be distributed in Apr. 2011	IC-ENC



Annex A.8

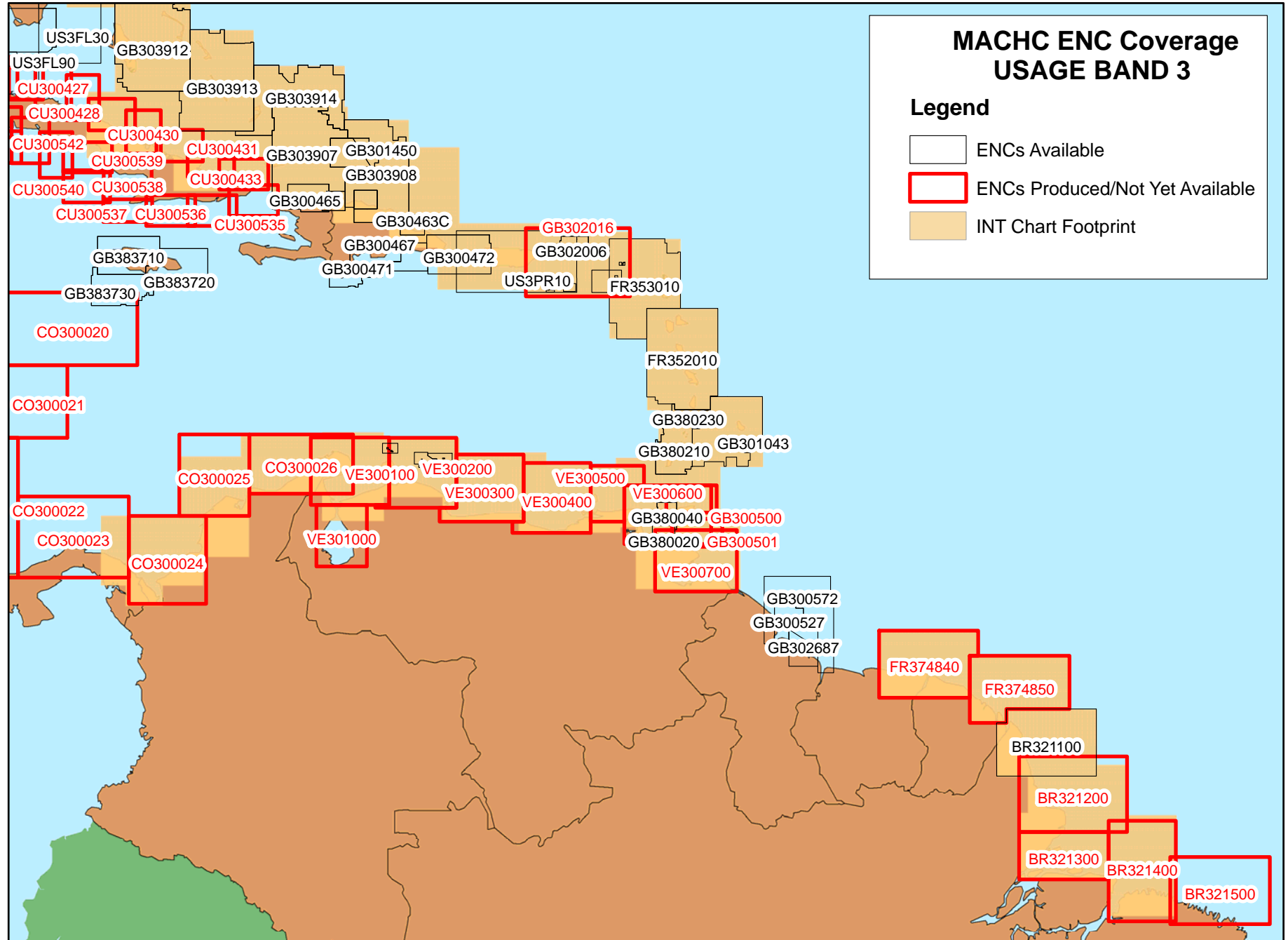


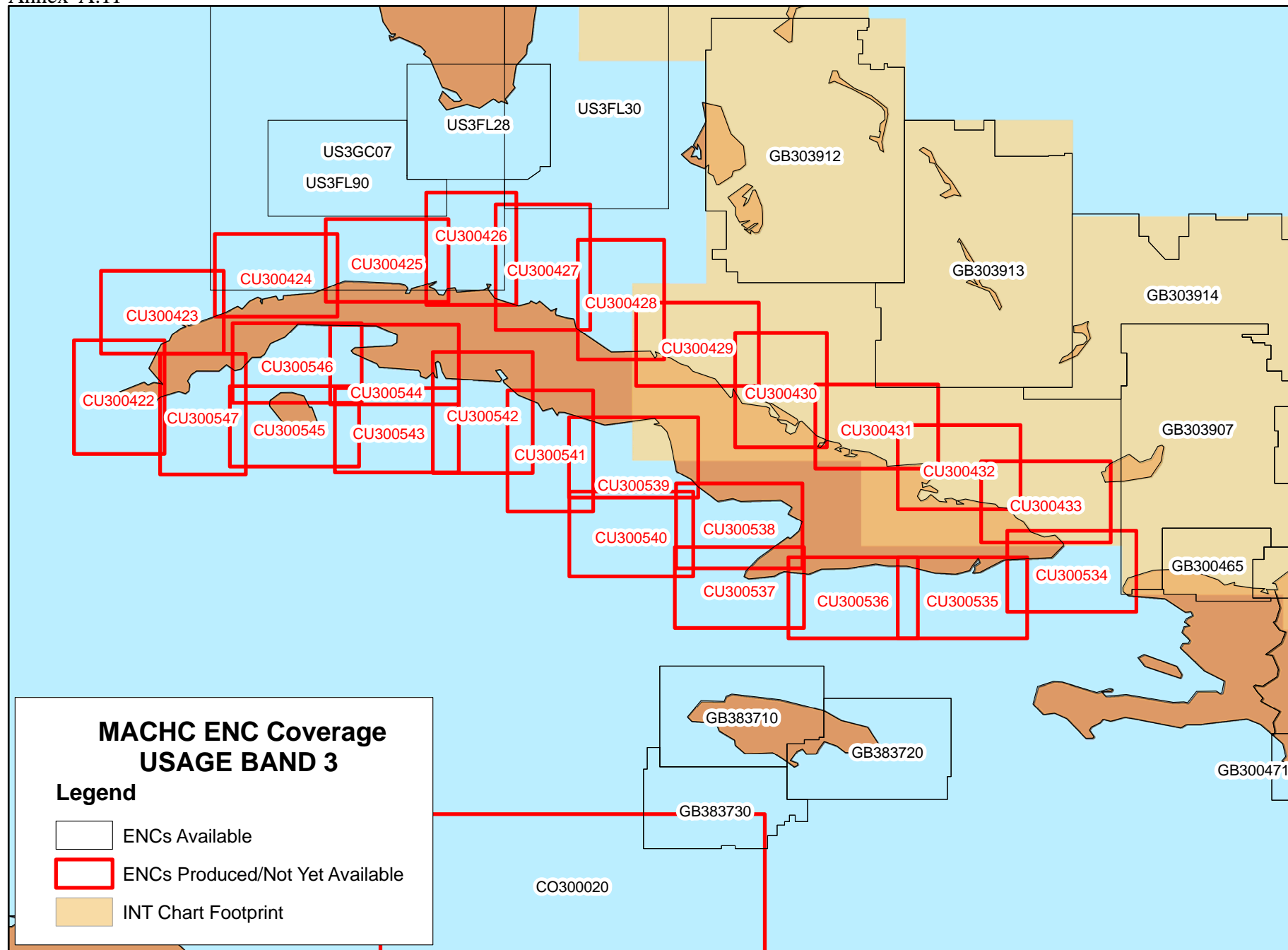
Annex A.9





Annex A.10





ANNEX A.12 - CATALOGUE OF ENC CELLS USAGE BAND 3 – MACHC REGION

ENC Cells

Cell Name	Producing Authority	Title	Scale	Status	Distributed by
			1:		
BR321100	DHN	De Belém ao Cabo Guarirí		Nov.2011	IC-ENC/ PRIMAR VARs
BR321200	DHN	Tucumã Point to Guará Point	180000	Nov.2011	IC-ENC/ PRIMAR VARs
BR321300	DHN	Norte Cape to Maguari Cape	180000	Nov.2011	IC-ENC/ PRIMAR VARs
BR321400	DHN	Maguari Cape to Boiuçucanga Point	180000	Nov.2011	IC-ENC/ PRIMAR VARs
BR321500	DHN	Boiuçucanga Point to Manguça Island	180000	Nov.2011	IC-ENC/ PRIMAR VARs
CO300020	CIOH	Pedro Bank a Quitasueño.	180000	Dec. 2010	IC-ENC
CO300021	CIOH	Cabo Gracias a Dios a Isla de Providencia	180000	Dec. 2010	IC-ENC
CO300022	CIOH	Isla de San Andrés a Golfo de Morrosquillo	180000	Dec. 2010	IC-ENC
CO300023	CIOH	Golfo de los Mosquito a Punta Mosquito	180000	Dec. 2010	IC-ENC
CO300024	CIOH	Archipiélago de San Blas a Bahía de Cartagena	180000	Dec. 2010	IC-ENC
CO300025	CIOH	Isla Fuerte a Santa Marta	180000	Dec. 2010	IC-ENC
CO300026	CIOH	Santa Marta a Punta Gallinas	180000	Dec. 2010	IC-ENC
CU300422	ONHG				
CU300423	ONHG				
CU300424	ONHG				
CU300425	ONHG				
CU300426	ONHG				
CU300427	ONHG				
CU300428	ONHG				
CU300429	ONHG				
CU300430	ONHG				
CU300431	ONHG				
CU300432	ONHG				

ANNEX A.12 - CATALOGUE OF ENC CELLS USAGE BAND 3 – MACHC REGION

ENC Cells

Cell Name	Producing Authority	Title	Scale	Status	Distributed by
			1:		
CU300433	ONHG				
CU300534	ONHG				
CU300535	ONHG				
CU300536	ONHG				
CU300537	ONHG				
CU300538	ONHG				
CU300539	ONHG				
CU300540	ONHG				
CU300541	ONHG				
CU300542	ONHG				
CU300543	ONHG				
CU300544	ONHG				
CU300545	ONHG				
CU300546	ONHG				
CU300547	ONHG				
FR352010	SHOM	Montserrat to Saint Lucia	304405	Available	PRIMAR
FR353010	SHOM	Anguilla to Montserrat	301202	Available	PRIMAR
FR374840	SHOM	Iles du Salut to Baie de l'Oyapok	299000	Oct. 2010	PRIMAR
FR374850	SHOM	Paramaribo to Iles du Salut	299000	Sept. 2010	PRIMAR
GB300374	UKHO	Mexico - East Coast - Punta El Coyol to Punta Zempoala	90000	Available	VAR
GB300465	UKHO	West Indies - Haiti - Baie Caracol to Ile de la Tortue	180000	Available	IC-ENC
GB300467	UKHO	West Indies - Dominican Republic - Isla Catalina to Boca Chica	180000	Available	VAR
GB300471	UKHO	Dominican Republic - South Coast - Cabo Caucedo to Isla Alto Velo	180000	Available	VAR
GB300472	UKHO	Dominican Republic and Puerto Rico - Mona Passage	180000	Available	VAR
GB300500	UKHO	West Indies - North East Approaches to Trinidad	90000	In Production	VAR
GB300501	UKHO	West Indies - South East Approaches to Trinidad	90000	In Production	VAR
GB300513	UKHO	Central America - East Coast - Honduras - Isla de Roatan to Punta Ulua	180000	Available	VAR
GB300527	UKHO	Approaches to Demerara and Essequibo Rivers	90000	Available	IC-ENC

ANNEX A.12 - CATALOGUE OF ENC CELLS USAGE BAND 3 – MACHC REGION

ENC Cells

Cell Name	Producing Authority	Title	Scale	Status	Distributed by
			1:		
GB300572	UKHO	South America - North-East Coast - Essequibo River to Corentyn River	350000	Available	IC-ENC
GB300605	UKHO	False Bluefields to Man of War Cays	90000	Available	VAR
GB301043	UKHO	Barbados	180000	Available	IC-ENC
GB301450	UKHO	Turks And Caicos Islands - Turks Island Passage And Mouchoir Passage	90000	Available	IC-ENC
GB302006	UKHO	West Indies - Virgin Islands - Anegada to Saint Thomas	90000	Available	VAR
GB302016	UKHO	West Indies - Puerto Rico to Leeward Islands	180000	In Production	IC-ENC
GB302626	UKHO	Mexico – East Coast - Bay of Campeche	180000	Available	IC-ENC
GB302687	UKHO	South America – Guyana – Approach to the Berbice River	90000	Available	IC-ENC
GB303907	UKHO	Bahama Islands And Hispaniola - Passages Between Mayaguana Island & Turks & Caicos Islands	180000	Available	IC-ENC
GB303908	UKHO	West Indies - Passages Between Turks & Caicos Islands & Dominican Republic	180000	Available	IC-ENC
GB303912	UKHO	Bahamas - North East Providence Channel & Tongue of the Ocean	180000	Available	IC-ENC
GB303913	UKHO	Bahamas - Crooked Island Passage & Exuma Sound	180000	Available	IC-ENC
GB303914	UKHO	Bahamas - North East Approaches to Acklins Island & Samana Cay	180000	Available	IC-ENC
GB30463A	UKHO	West Indies - Dominican Republic - North Coast - Punta Cabarete to Punta Brimball	180000	Available	IC-ENC
GB30463B	UKHO	West Indies - Dominican Republic - North Coast - Punta Mangle to Pointe Yaguezi	350100	Available	IC-ENC
GB30463C	UKHO	Plans on the North Coast of the Dominican Republic - Bahia de Samana and Approaches	180000	Available	VAR
GB380020	UKHO	Trinidad and Venezuela - Serpent's Mouth	90000	Available	VAR
GB380040	UKHO	Trinidad and Venezuela - Gulf of Paria	90000	Available	VAR
GB380210	UKHO	West Indies - Saint Vincent to Grenada	90000	Available	IC-ENC
GB380230	UKHO	West Indies - Southern St Lucia to Northern St Vincent	90000	Available	IC-ENC
GB383710	UKHO	West Indies - Western Approaches to Jamaica	180000	Available	IC-ENC
GB383720	UKHO	West Indies - Eastern Approaches to Jamaica	180000	Available	IC-ENC
GB383730	UKHO	West Indies - Pedro Bank to the South Coast of Jamaica	180000	Available	IC-ENC
GB389100	UKHO	Panama - Gulf of Panama	180000	Available	IC-ENC
GB389310	UKHO	Central America – East Coast - Gulf of Honduras	180000	Available	IC-ENC
GB389320	UKHO	Belize - Monkey River to Colson Point	90000	Available	IC-ENC
GB389330	UKHO	Belize - Colson Point to Belize City	90000	Available	IC-ENC
MX300711	SEMAR	Brazos Santiago a El Mezquital	TBD	Available	IC-ENC
MX300712	SEMAR	El Mezquital a Boca Jesus Maria		Available	IC-ENC

ANNEX A.12 - CATALOGUE OF ENC CELLS USAGE BAND 3 – MACHC REGION

Cell Name	Producing Authority	Title	Scale	Status	Distributed by
			1:		
MX300713	SEMAR	Boca Jesus Maria a La Pesca		Available	IC-ENC
MX300721	SEMAR	La Pesca a Punta Jerez		Available	IC-ENC
MX300722	SEMAR	Punta Jerez a Tampico		Produced/Not Yet Available	
MX308212	SEMAR	El Mezquital a Boca Jesus Maria	90000	Produced/Not Yet Available	
MX300922	SEMAR	Isla Mujeres a Isla Cozumel		Available	IC-ENC
US3FL28	NOAA	Fowey Rocks to American Shoal	180000	Available	NOAA
US3FL30	NOAA	Cape Canaveral to Key West	466940	Available	NOAA
US3FL90	NOAA	Florida Keys Sombrero Key to Dry Tortugas	180000	Available	NOAA
US3GC01	NOAA	Galveston to Rio Grande	460732	Available	NOAA
US3GC02	NOAA	Mermentau River to Freeport	250000	Available	NOAA
US3GC03	NOAA	Mississippi River to Galveston	458596	Available	NOAA
US3GC04	NOAA	Approaches to Mississippi River	250000	Available	NOAA
US3GC05	NOAA	Cape St. George to Mississippi Passes	456394	Available	NOAA
US3GC06	NOAA	Tampa Bay to Cape San Blas	456394	Available	NOAA
US3GC07	NOAA	Havana to Tampa Bay	470940	Available	NOAA
US3PR10	NOAA	Puerto Rico And Virgin Islands	326856	Available	NOAA
VE300100	DHN	Golfo de Venezuela	80000	Produced in Dec. 2010 and distributed in Jan. 2011	IC-ENC
VE300200	DHN	Punta Cardon a Tucacas	80000	Produced in Dec. 2010 and distributed in Jan. 2011	IC-ENC
VE300300	DHN	Punta San Juan a Cabo Codera	80000	Produced in Dec. 2010 and distributed in Jan. 2011	IC-ENC
VE300400	DHN	Cabo Codera a Cumana	80000	Produced in Dec. 2010 and distributed in Jan. 2011	IC-ENC
VE300500	DHN	Cumaná a Cabo Tres Puntas	80000	Produced in Dec. 2010 and distributed in Jan. 2011	IC-ENC
VE300600	DHN	Golfo de Paria	180000	Produced in Dec. 2010 and distributed in Jan. 2011	IC-ENC

ANNEX A.12 - CATALOGUE OF ENC CELLS USAGE BAND 3 – MACHC REGION

Cell Name	Producing Authority	Title	Scale	Status	Distributed by
			1:		
VE300700	DHN	Delta del Orinoco	180000	Produced in Dec. 2010 and distributed in Jan. 2011	IC-ENC
VE301000	DHN	Lago de Maracaibo	180000	Produced in Dec. 2010 and distributed in Jan. 2011	IC-ENC

ANNEX B.1 - MEMBER STATES ACTIONS ADDRESSING GAPS

Responsible Member States		Data Discrepancy/ Usage Band/ Datum Issues	Affected Cells	Status	Status Statement	Completion Date
<b>UB2 Gaps</b>						
Brazil (UB2)		Gap (Area between FR 250010 and BR 221020)	BR221010	Resolved	Already covered by Brazilian Cell BR221010	Completed. Chart anticipated available Dec 2010
			FR250010, FR276250	Resolved	The new France Cell is available. FR 250010 has been withdrawn and replaced by FR276250 and clipped at BR boundaries	Completed
<b>UB3 Gaps</b>						
Venezuela	Guyana		Charts INT 4102 and INT 4100	Follow up action from ECC Chair	<p>INT Charts INT 4102 and 4100 to be produced by VE. This means that equivalent cells should logically be produced by VE. ECC/MACHC Chair to propose to VE to produce equivalent ENCs clipped at the FR374840</p> <p><i>Status update 8/23/10: After conferring with both France and Venezuela, there is no need to determine where to clip the cells as they do not touch.</i></p> <p><i>VE to provide ENC cell limits (equivalents of INT Charts INT 4102 and 4100) to Chair ECC.</i></p>	Completed
Suriname Fr Guyana	Brazil	Gap (southward from Guyana, including Suriname, Fr Guyana to Brazil)	FR374840 and FR374850. BR321200; BR321300; BR321400 and BR321500	Pending	Covered by FR 374840 and FR374850. Cells will clip with Brazil Cell BR 321100 at south, which is available.	FR cells to be released in Oct 2010 .BR 321300, 321400 and 321500 cells to be released in 2010 and 2011.



Responsible Member States		Data Discrepancy/ Usage Band/ Datum Issues	Affected Cells	Status	Status Statement	Completion Date
Colombia		GAP (UB3)	CO200008	Proposal	This cell will cover the gap-no need for a UB 3 cell in that area.	December 2010
US	Mexico	Gap	US1GC09	Resolved	Covered at scale band 1	June 2010
			MX300711	Resolved	Coastal area covered at band 3 by Mexico	June 2010
			MX300712	Resolved	Coastal area covered at band 3 by Mexico	June 2010
			MX300713	Resolved	Coastal area covered at band 3 by Mexico	June 2010
			MX300721	Resolved	Coastal area covered at band 3 by Mexico	June 2010
				Pending	MX will asses if UB1 (US1GC09) would be enough for this gap.	November 2010
Cuba				Pending	ECC Chair and UKHO representative to continue efforts to engage Cuba, including requesting support from MACHC Chair, if necessary.	November 2010
UK		Gap Honduran coast		Pending	Covered by GB201220; GB300513 will cover North West side of Honduran coast, UK to confirm if that is enough in UB3. US also to explore whether the data from US28150 can be made available for ENC production to improve coverage.	November 2010
		Gap for Haiti		Pending	Covered by GB281800; UB3 requirement and related data availability to be assessed by US NOAA/NGA.	November 2010

**ANNEX B.2 - MEMBER STATES ACTIONS ADDRESSING OVERLAPS**

Affected Member States		Data Discrepancy/ Usage Band/ Datum Issues	Affected Cells		Status	Status Statement	Completion Date
Brazil	France	Overlap	BR221020	FR276250	Pending	Solved when BR221020 is made available. (FR 250010 has been withdrawn and replaced by FR276250 and clipped at BR boundaries).	December 2010
Colombia	Venezuela	Overlap	CO300026	VE300100	Proposal	CO proposes to produce their cell and VE to clip theirs at the CO limits. Proposal to be sent to VE thru ECC/MACHC Chair.  Venezuela provided an answer to Colombia on September 9. Colombia is now considering its response. Both countries hope to arrive at a mutually satisfactory solution before the end of the year.	December 2010
Colombia	UKHO	Overlap	CO200008	GB200486 GB200398	Pending	For GB200486, UK will clip their cell at the CO limits and GB200396 will be withdrawn.	December 2010
Mexico	USA	Overlap	MX300711	US3GC01M	Pending	Mexico will send M_Covr limits to USA (NOAA); USA (NOAA) will mock up proposed solution for Mexico's review. Telecon to agree to a solution. Investigate vert. inconsistency issues.  Mexico has sent their proposal to the U.S. The U.S. is preparing response.	October 2010
Mexico	USA	Overlap	MX200900	US2GC12	Pending	U.S. and Mexico will develop proposed solution that MACHC Chair can send to Cuba for consensus. Once approved and cells are available, solution will be implemented.  Mexico has sent their proposal to the U.S. The U.S. is preparing response.	October 2010

Affected Member States		Data Discrepancy/ Usage Band/ Datum Issues	Affected Cells		Status	Status Statement	Completion Date
UK	USA	Overlap	GB104802	US1WC07M	Pending	UK sent copies to U.S.; U.S. preparing response.	November 2010
UK	USA	Overlap	GB1A20M2	US1WC07M	Pending	UK sent copies to U.S.; U.S. preparing response.	November 2010
UK	USA	Overlap	GB281800	US2EC01M	Pending	UK sent copies to U.S.; U.S. preparing response.	November 2010
UK	USA	Overlap	GB283000	US2EC02M	Pending	UK sent copies to U.S.; U.S. preparing response.	November 2010
UK	France	Overlap	GB283800	FR250020	Resolved	GB283800 has been cancelled. FR20020 has been replaced by FR274750.	May 2010
USA	UK	Overlap	US2EC01M	GB283000	Pending	UK sent copies to U.S.; U.S. preparing response.	November 2010
UK	USA	Overlap	GB302006	US3PR10M	Pending	UK sent copies to U.S.; U.S. preparing response.	November 2010
UK	France	Overlap	GB380230	FR352010	Resolved	Overlap is <5m on the ground and so is within tolerance. No further action is required.	June 2010
USA	UK	Overlap	US3PR10M	GB300472	Pending	UK sent copies to U.S.; U.S. preparing response.	November 2010
Colombia	UK	Overlap	CO200008	GB200486	Pending	GB will review and confirm, but no overlap at this time.	November 2010
Colombia	UK	Overlap	CO200008	GB200396	Proposal	GB will clip cell to accommodate CO cell when distributed.	November 2010

## ANNEX C - WORKPLAN MILESTONES

Delivery Date (2010)	Actions
January 31	Develop base polygons representing adequate ENC coverage derived from medium scale INT scheme
January 31	Acquire MCOVR for MACHC Member States (MS) from the RENC.
January 31	MS points of contact (POC) provide MCOVR data when not available from the RENC.
February 24	Hold quarterly conference call, tentative time 10AM EST, to discuss current coverage, gaps, next steps.
March 12	Forward omitted MCOVR information so that the graphic properly reflects existing and planned ENC coverage.
April 9	Complete the follow-up data analysis to include the new information.
April 16	Countries receive data analysis results, including targeted guidance on areas of primary focus and action.
May 21	Produce draft of final report. (Start now and supplement with new data analysis as appropriate.)
May 26	Hold quarterly conference call to review WG2 MACHC ENC coverage report outline, tentative time 10 AM EST.
May 28	All countries look at data analysis (provided by UK) and forward any omissions and/or updates to Paul Bradley.
June 1	U.S. populates template, based on UK data analysis, and distributes to countries for consideration.
June 9	Countries respond to data analysis via "reporting template."
June 16	Face-to-face meeting for MS POCs to review, discuss and finalize draft WG2 report on the status of adequate ENC coverage. Address any outstanding issues.
July 2	Draft sections of report sent to Chair.
August 25	Expanded draft report sent to WG members for comment.

September 8	Comments on report, and specific comments on the annexes, back to technical coordinator and communications coordinator.
September 14	Hold quarterly follow-up conference call to review and discuss MS response to the WG2 Report.
September 20	Distribute WG2 Report to MACHC Chair; copy to MACHC National Hydrographers for review and endorsement.
October 8	Comments back to ECC Chair; copy to MACHC Chair.
October 18	Submit final report to MACHC.
November 8-12	Seek approval of final report at MACHC meeting in Suriname.
December 15	MACHC Chair to distribute final <i>ENC Coverage for the MACHC Region</i> to the IHB.

## ANNEX D - GUIDELINES FOR ANALYZING M\_COVR IN THE MACHC REGION

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1. Assess deficiencies in ENC Coverage for Navigation Purpose 1, 2, and 3 Electronic Navigational Charts (ENC).
  - a. Collect polygon/polygons representing areas lacking Navigation Purpose 1 coverage as defined by the small scale INT Scheme.
  - b. Note any other ENC coverage by other navigation purposes of any Navigation Purpose 1 deficient areas.
  - c. Collect polygon/polygons representing areas lacking Navigation Purpose 2 coverage as defined by the medium scale INT Scheme.
  - d. Note any other ENC coverage by other navigation purposes of any Navigation Purpose 2 deficient areas.
  - e. Collect polygon/polygons representing areas lacking Navigation Purpose 3 coverage as defined by the medium scale INT Scheme.
  - f. Note any other ENC coverage by other navigation purposes of any Navigation Purpose 3 deficient areas.
2. Assess deficiencies in coverage within National ENC suites.
  - a. Identify small gaps or slivers existing between same navigation purpose ENC cells within the same national suite.
  - b. Identify small gaps or slivers existing between same navigation purpose ENC cells that junction with ENCs of other national suites.
3. Identify overlapping areas of same navigation purpose ENC Cells
  - a. Collect polygons representing areas of overlap.
  - b. List affected overlapping cells
4. Identify any other data anomalies, such as navigation purposes that are inconsistent with the scale of the ENC cell.
5. Prepare a report of all identified data deficiencies for the MACHC region.
  - a. Report all data gaps
  - b. Report all data overlaps
  - c. Report all data anomalies
  - d. Propose recommendations to fix data deficiencies

## ANNEX E - LIST OF WG 2 PARTICIPANTS

### MACHC ELECTRONIC CHART COMMITTEE

Country	Contact	Email
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