

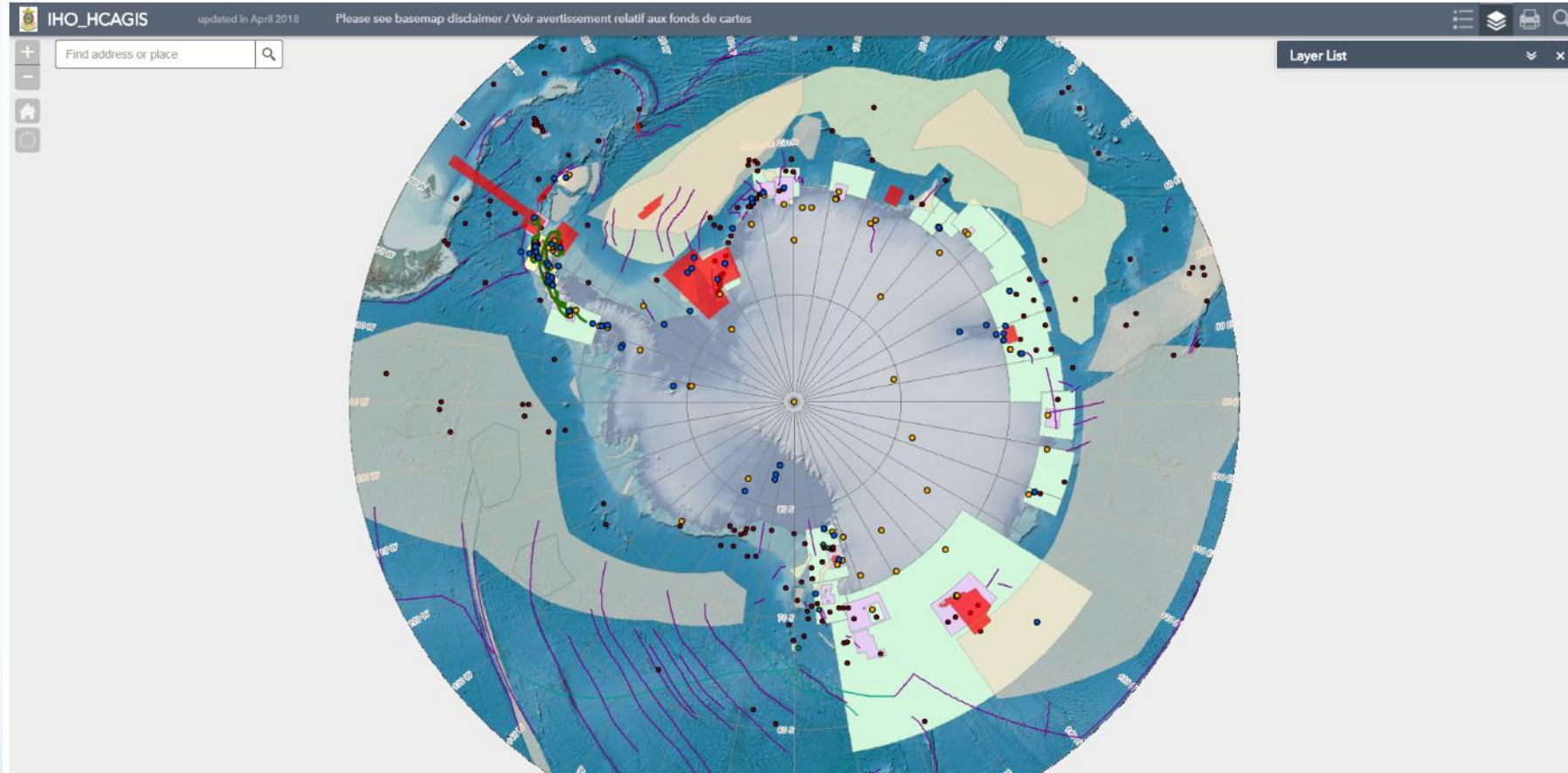
IHO Hydrographic Commission on Antarctica (HCA)

HCA-GIS and relevant progress reports



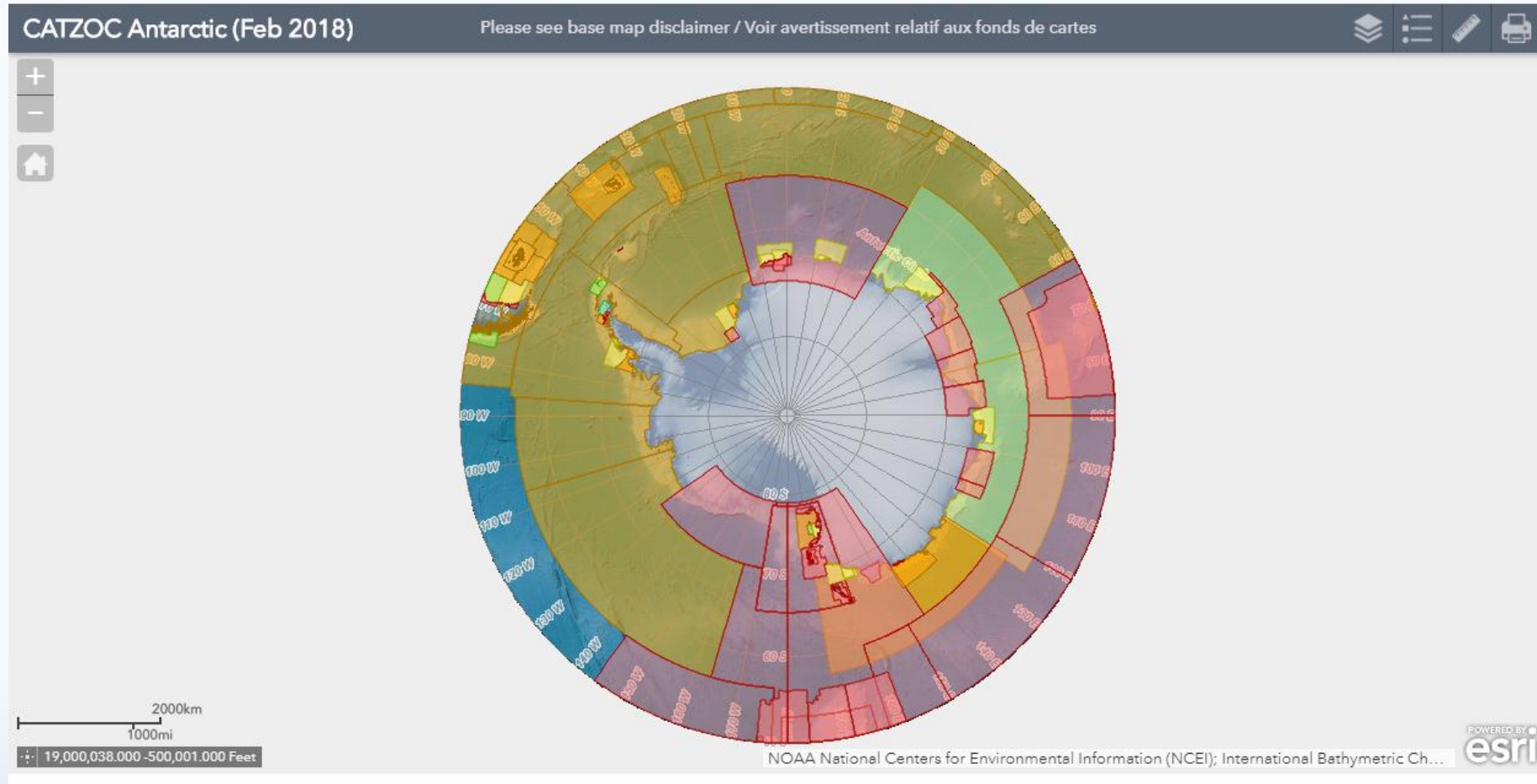
HCA GIS

<<https://www.iho.int/gis/antarctic.gis.html>>



HCA GIS CATZOC Information

Internal use for IHO Secretariat

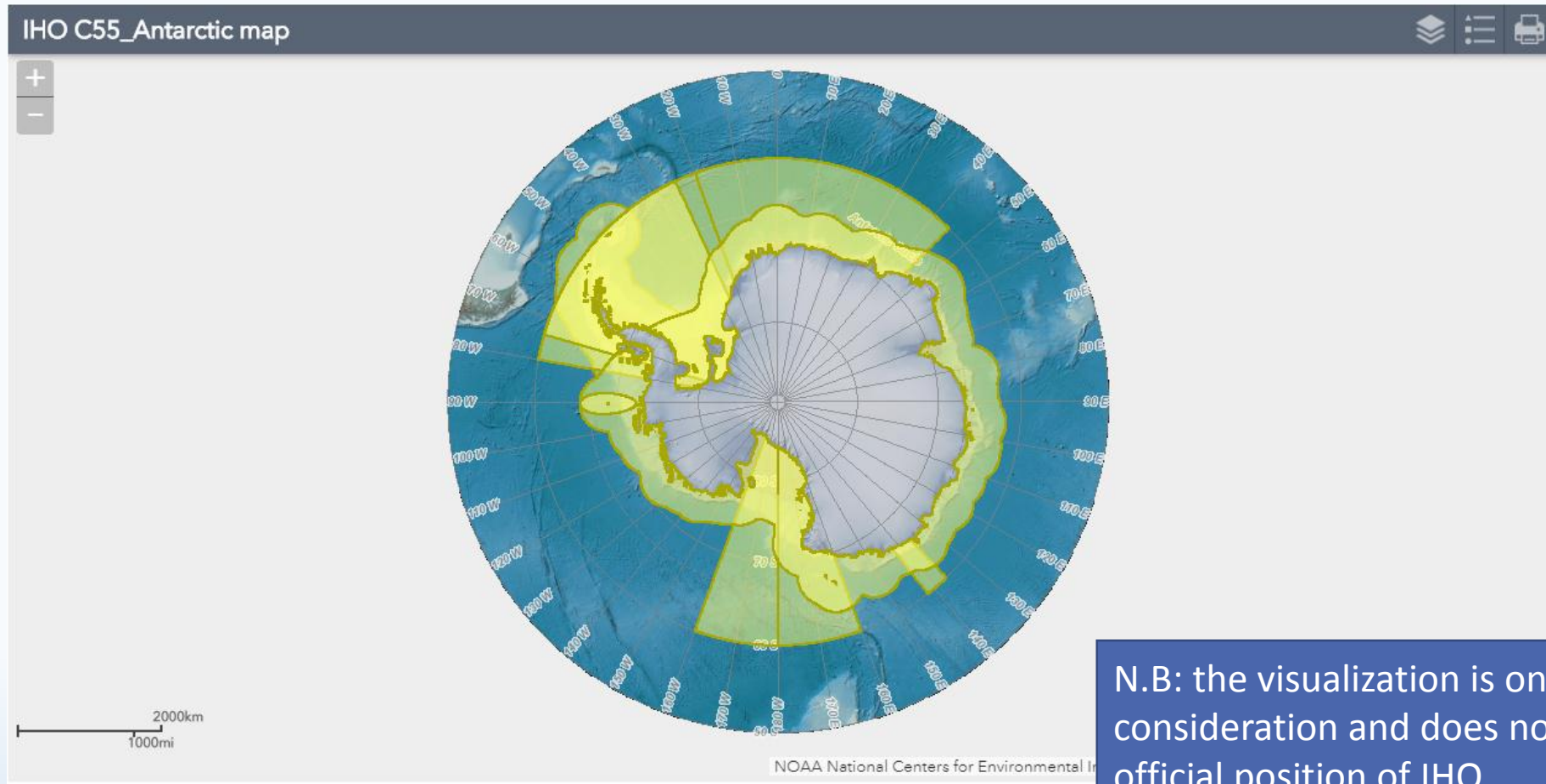


International Hydrographic Organization
Organisation Hydrographique Internationale

HCA-15, Niteroi, Brazil, 26 – 28 June 2018

HCA GIS C-55 Information

Internal use for IHO Secretariat



N.B: the visualization is only for technical consideration and does not reflect any official position of IHO.



Survey Information added into HCA GIS

March 2017	Brazil	South Shetland Islands operated in 2015
April 2017	Chile	Foster Port to Fuelles de Neptuno Passage operated in 1989, Ravn Rock operated in 2005
May 2017	Colombia	Mikkelsen Bay operated in 2017, Cierva Cove Bay operated in 2017
(Pending) January 2018	Chile	Bismark Strait etc. 24 areas operated in 2010-2015 (including polygons with spikes)
(Pending) June 2018	France	12 surveys from 1992 to 2013 (metadata is to be considered)



Progress report from the HCA14 (14/07)

HCA 14/07: "IAATO to consider the possibility of providing metadata of vessels traffic patterns to the IHO for inclusion as a layer into the IHO HCA GIS."

Reminder sent to IAATO (Ms Lisa Kelley). Provision of data still under consideration (May 2018)



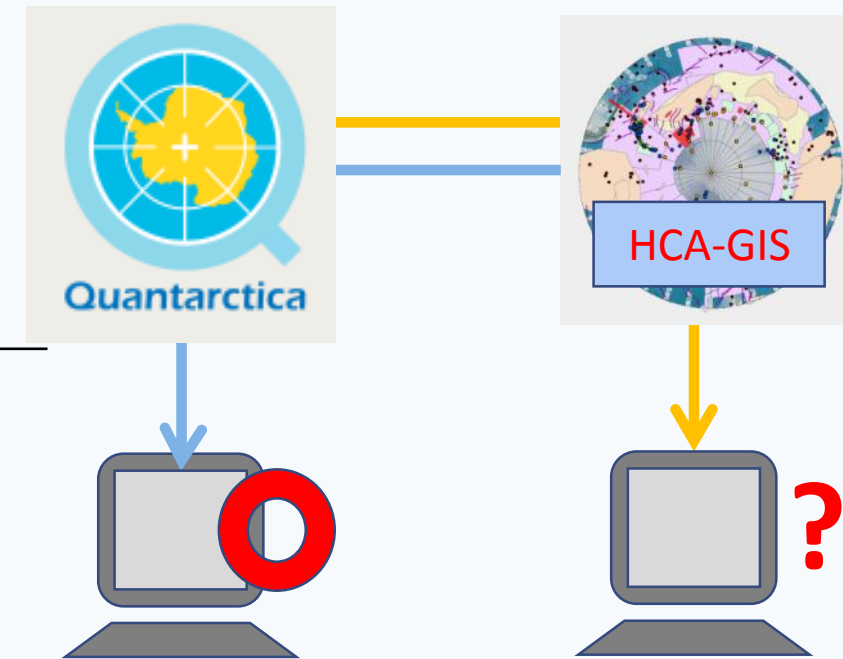
Progress report about HCA14/12

HCA 14/12: “HCA Sec. to consider how to provide an example of a data discovery portal by implementing the offer made by Colombia to display relevant wms, wfs data on the IHO Antarctica GIS, and to liaise with France and Korea (Rep. of) for the same purpose.”

IHO Secretariat has considered a way to mash up relevant information among GIS services.

At the moment, the Quantarctica users can display the HCA-GIS data into their own GIS environment.

On the other hand, importing other data flows (WMS, WFS) into HCA-GIS still needs to be considered (see outcome of HCA-letter 2/2017 on the use of HCA-GIS). This is due to limitation of ArcGIS Online.



Progress report about HCA14/12

An experiment of GIS mash-up visualization with Quantarctica.

Stand-alone GIS **full service** package:
<http://quantarctica.npolar.no/>

Quantarctica

Rechercher

- Commandes GRASS GIS 7[314 géotraitements]
- GDAL/OGR[48 géotraitements]
- Géotraitements QGIS[117 géotraitements]
- Modèles[0 géotraitements]
- SAGA (2.3.2)[353 géotraitements]
- Scripts[0 géotraitements]

Vous pouvez ajouter plus d'algorithmes à la boîte à outils, autorisez des fournisseurs de services supplémentaires. [Ajouter]

Identifier les résultats

Entité	Valeur
TideRec	
name	001 FARADAY
(Dérivé)	
(Actions)	
OBJECTID_1	1
OBJECTID	1
name	001 FARADAY
record_len	365
sample_int	3600
instrument	BPR
additional	ACCLAIM: http://www.pol.no
country	
agency_name	
Agency_id	
horizontal	
vertical_d	
web_address	
name	002 FORSTER
name	003 ROTHERA
name	004 SIGNY
name	005 PTC_4_2_01
name	006 PTC_4_2_02
name	007 PTC_4_2_03
name	008 PTC_4_2_05 GEORG...
name	009 PTC_4_2_06 KAPP N...
name	010 PTC_4_2_07 WESTK...
name	012 PTC_4_2_19 SIGNY ...
name	013 PTC_4_2_20

Mode: Couche a | Ouvrir le formulaire automatiquement

Vue: Arbre

Coordonnées: -97.4790, -44.6969 | Échelle: 1:26 030 797 | Loupe: 100% | Rotation: 0,0 | Rendu: EPSG:3031 (ALV)

15:29
30/05/2018



Internasjonal
Organisat

Progress report about HCA14/12

The screenshot shows the QGIS 2.18.17 interface with the 'Ajouter une couche' (Add Layer) menu open. The 'Ajouter une couche d'entités ArcGIS' option is highlighted. Two dialog boxes are overlaid on the map:

- Modifier la connexion ArcGisFeatureServer:** Shows the URL field containing `/services.arcgis.com/CuKhy9lf5rURr3il/arcgis/rest/services/IHO_HCAGIS/FeatureServer`.
- Add ArcGisFeatureServer Layer from a Server:** Shows a table of layers with 'Cache Feature' checked for several items.

Titre	Name	Abstract	Cache Feature	Filter
0	TideRec		<input checked="" type="checkbox"/>	
1	SoBase		<input checked="" type="checkbox"/>	
2	ShipRoute		<input checked="" type="checkbox"/>	
3	SurveyArea		<input checked="" type="checkbox"/>	
4	GEBCO_point	GEBCO_point	<input checked="" type="checkbox"/>	
5	GE...		<input checked="" type="checkbox"/>	
6	GEB...		<input checked="" type="checkbox"/>	
7	CE...		<input checked="" type="checkbox"/>	

It is necessary for users to refer the URL of HCA-GIS as `<https://services.arcgis.com/CuKhy9lf5rURr3il/arcgis/rest/services/IHO_HCAGIS/FeatureServer>`



Progress report about HCA14/12

The screenshot displays the QGIS 2.18.17 interface with the Quantarctica3 project. The main map area shows a bathymetric map of Antarctica with various layers overlaid, including the 'SurveyArea' and 'schemed_overview'. A yellow arrow points to a specific area on the map, with a text box stating: "The data from HCA-GIS is now shown in Quantarctica." The right-hand side of the interface features a 'Boîte à outils de traitements' (Processing Toolbox) and a 'Rechercher' (Search) panel. Below the search panel, a table of results is visible, listing various data records.

deRec	Valeur
name	001 FARADAY
(Dérivé)	
(Actions)	
OBJECTID_1	1
OBJECTID	1
name	001 FARADAY
record_len	365
sample_int	3600
instrument	BPR
additional	ACCLAIM: http://www.pol.no
country	
agency_name	
Agency_id	
horizontal	
vertical_d	
web_address	
name	002 FORSTER
name	003 ROTHERA
name	004 SIGNY
name	005 PTC_4_2_01
name	006 PTC_4_2_02
name	007 PTC_4_2_03
name	008 PTC_4_2_05 GEORG...
name	009 PTC_4_2_06 KAPP N...
name	010 PTC_4_2_07 VESTK...
name	012 PTC_4_2_19 SIGNY ...

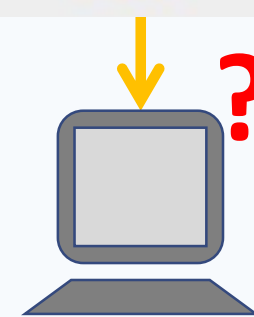
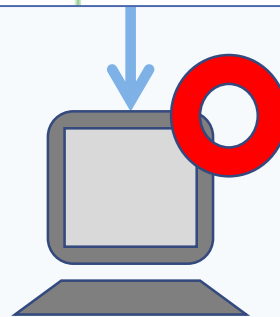
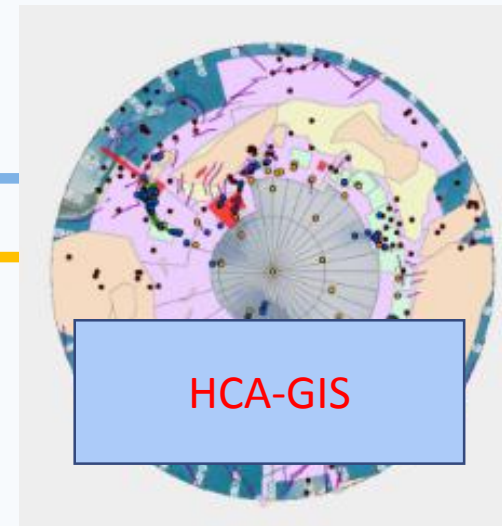
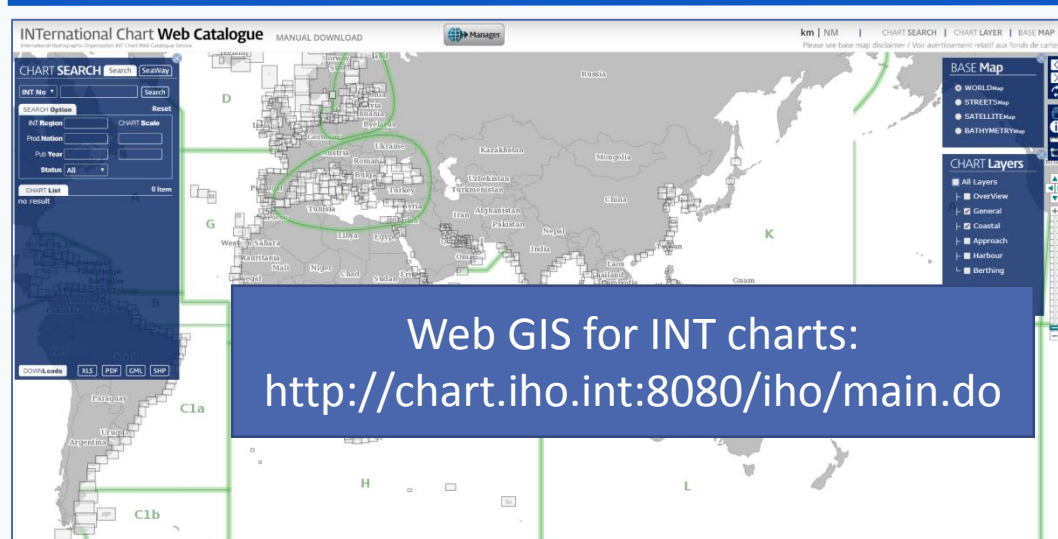


Related to HCA14/12 (WMS, WFS data)

- HCA-GIS is based on ArcGIS Online of which the standard projection is WebMercator. It is also possible to display in Polar projection on ArcGIS Online but it is not a true projection. It seems that ArcGIS Online cannot handle more than two projections at the same time (WebMercator + Polar). **Which is the main limitation of ArcGIS online to display features for Polar regions. Since there aren't many users for polar region related information improvement is not likely.**
- Some SHOM's WMS, WFS are available for Antarctica:
<http://services.data.shom.fr/INSPIRE/wms/r> or <http://services.data.shom.fr/INSPIRE/wfs>
 - Toponymy
 - World sedimentology map
 - Tidal types
 - Archives (old fair sheets or charts)



Related to HCA14/12 (INternational Chart Web Catalogue)



As mentioned, **full service** GISes can connect to and draw the HCA-GIS data into their GIS. **The full service INT-GIS probably supports this dataflow from HCA-GIS. (Still to be investigated.) The opposite direction from INT-GIS to HCA-GIS does not seem to work because of principal technical limitations of ArcGIS Online.**



Progress report about HCA14/15

HCA 14/15: “HCA Members and Observers to evaluate the existing data layers available in the IHO HCA GIS database and to propose: additional layers (and the sources), any duplicate layers that could be linked from other databases rather than maintained by IHO, and any other comments“

No particular comments

Argentina, Chile, Norway, New Zealand, South Africa, Spain and US

Suggestions

Brazil

Color tones (possible), UI (partly possible), and Data Download function (possible)

(comments from Secretariat)

France

New layer such as geographical name, historical archives (projections issues to be solved), tidal records to be distinguished whether permanent or not (possible)

Italy

More metadata needed for Tidal records and Scientific Stations (possible)

Japan

HCAGIS method can be more widespread for other RHC (possible).

ROK

Update needed for Scientific Stations and GEBCO features (possible), basemap resolution (not possible)

UK

Mercator projection when zoomed in (not possible), MSRs to be updated (done), new layers for Nav-aids etc (possible).



Actions to be considered by HCA

→ **HCA15/xx**: HCA Members to decide on the way forward for HCA GIS:

- - **option 1**: leave it « as it is »,
 - maintenance of **existing** layers on case-by-case basis on HCA Members request
 - Publicise the (limited) provision of HCA GIS layers for adoption by full service GIS with a focus on Polar regions and indicate their existence under www.iho.int



Actions to be considered by HCA

→ HCA15/xx: HCA Members to decide on the way forward for HCA GIS:

- - **option 2:** Complete decommissioning of HCA GIS,
 - incorporation of native IHO content such as ENC and INT chart coverage into INTtoGIS II (capable for true polar projection),
 - instead of the provision of a native IHO system, make reference to specialized full service systems such as
 - Quantartica,
 - national geospatial portals,
 - GEBCO Gazetteer for feature names,
 - IHO DCDB for surveys and bathymetry (to GEBCO Seabed 2030),
 - to IBCSO
 - As part of this option, IHO Secretariat to register as Quantarctica user

Option 2 is IHO Chair's recommended option:

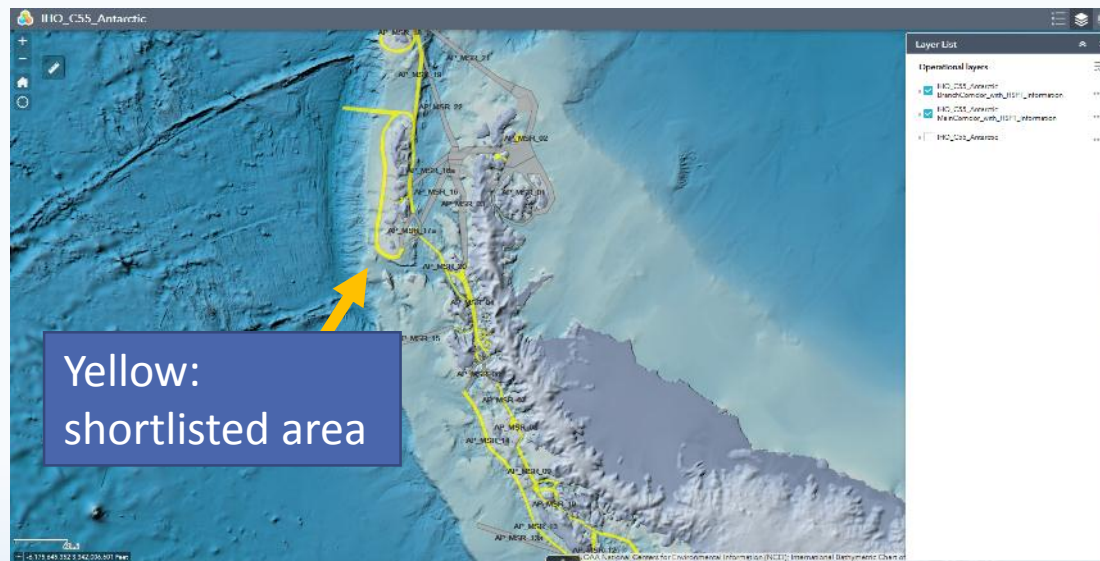
- cost-effective, no duplication,
- reliability and long term sustainability,
- interoperability with the scientific community,
- better recognition and visibility than a stand-alone HCA GIS viewer only, providing poor and mostly out-of-date information



Progress report about HCA14/24

HCA 14/24; "IHB to consider the possibility of supplementing C-55 with survey and charting statistics in relation to agreed MSR, and find a way of posting the relevant information within the IHO GIS environment."

UKHO provided the GIS file of MSR area. IHO Secretariat has integrated the data with HPWG shortlist and long plan and compared with the C-55 data.



https://www.iho.int/mtg_docs/hc/HCA/HCA_Misc/HCA_HPWG/HCA_Hydrography_Priorities_WG.htm

Hydrographic Commission on Antarctica (HCA)

HCA Hydrography Priorities Working Group (HPWG)

Last update: 3 August 2016

At its 4th Meeting (Kythnos, Greece, Sept. 2004), the IICA established a new Working Group: *IICA Survey Programme Working Group* with the specific aim is to establish co-operation and collaboration between hydrographic organisations and scientific institutions in hydrographic surveying in Antarctica. The WG was renamed *IICA Survey Prioritization Working Group* at IICA-8 (Niteroi, RJ, Brazil, Oct. 2008), then *HCA Hydrography Priorities Working Group (HPWG)* at IICA-12 (Montevideo, Uruguay, Oct. 2012) with revised Terms of Reference. As a result, in addition to addressing hydrographic surveying in Antarctica, HPWG is also in charge of coordinating INT chart and ENC schemes.

Chair: Mr. Andrew Willett (andy.willett@ukho.gov.uk), United Kingdom

Membership (in 2004): Argentina, Australia, Chile, Germany, Greece, South Africa, Spain, United Kingdom, USA, COMNAP (observer) and IAAATO (observer).

Membership (since IICA-14, June 2016): The IICA Chair proposed that, because of its key coordinating role in the IICA, all HCA Members and Observers should be considered as participants in the HPWG in future (Decision&Action HCA14/16).

[Terms of Reference](#)

The WG conducts its work by correspondence, through [HCA-HPWG Letters](#).

Guidelines and Forms: The following documents have been developed and/or are being maintained by the IICA HPWG:

- [Guidelines for the collection and rendering of hydrographic data by Ships of Opportunity operating in the Antarctic Region](#)
- Form for [Collection and Rendering of Hydrographic Data](#), for use by ships' captains on Antarctic vessels.
- Form [Request for Bathymetric Data](#), for use by Hydrographic Office when preparing a new Edition or a new INT chart.
- Revised Survey Plan for Antarctica (version HCA-14, June 2016): [Short List of High Survey Priorities](#) - [Long Term Survey](#)



Progress report about HCA14/24

The screenshot displays the IHO_C55_Antarctic software interface. On the left, a bathymetric map of the Antarctic Peninsula shows several Main Corridor (MSR) routes highlighted in yellow and labeled AP_MSR_02 through AP_MSR_22. A metadata window is open over the map, showing details for the 'South Shetlands MSR' (AP_MSR_17). On the right, a 'Layer List' window is open, showing a table of categories and a main corridors table. A blue arrow points from the metadata window to the table, with the text 'Metadata is reflected.' below it.

MainCorridor_with_HSPT_Information: South Shetlands MSR

AREA_ID	AP_MSR_17
AREA_ID_1	AP_MSR_17
Name	South Shetlands MSR
HSPT_ShortList_highlighted_LongPlan_June2016_	x
Usage_category	A
Survey_category	A+C
Notes_and_INT_chart_coverage_Published_and_proposed_	INT 9151. SW corridor surveyed by UK, Livingstone Island to Penguin Island complete. Blocks surveyed by UK 2005-11, Brazil 2007-08 & Spain 2011/16

I. ANTARCTIC PENINSULA

Categories

Category	Usage
A	Frequent
B	Regular
C	Infrequent

Category	Current survey status
A	Adequately surveyed
B	Requires re-survey at larger scale or to S-44 standard
C	Has not been systematically surveyed/Unsurveyed

Main corridors (see diagram on last page for MSR references)

MSR #	Name	Usage category	Survey category	Notes and INT chart coverage. Published and proposed.
1	James Ross Island circular route	B+C	A + C	Prince Gustav Channel & Eastern corridor 55% surveyed 45% unsurveyed. <i>Blocks surveyed by UK 2005-07. Blocks planned by UK for future seasons. INT 9153</i>
2	Joinville Island circular route	A+B	A + C	45% surveyed (Antarctic Sound), 55% unsurveyed. <i>Blocks surveyed by UK, 2005-07 and Uruguay & Venezuela 2008. Blocks planned by UK for future seasons. INT 9154</i>
3	Orleans Strait to Antarctic Sound	B	B + C	INT 9155
4	Gerlache strait	A	A + C	97% surveyed. <i>INT 9103, 9104, 9156 & 9157. Blocks surveyed by Chile 2010-16, Colombia 2015, Spain 2016 & UK 2005-07 also Flandres Bay 35% surveyed</i>
5	Bismarck Strait	A+B	A + B	Approaches to Palmer Station and Port Lockroy. INT 9158. <i>Block surveyed by UK 2005-06, 2011 & Chile 2010, 2011 & 2016</i>
6	Lemaire Channel	A	A+B	Petemann Is, Pleneau Is, Argentine Is, Yalour Is. 75% surveyed. INT 9106 INT9118. <i>Block surveyed by UK 2005/06 & 2012/13 & Xplore expeditions/SHOM 2013</i>
7	Granddier Channel	A+B	B	INT 9158, INT9132 & 9159 15% surveyed. <i>Blocks surveyed by UK</i>
8	Cape Garcia to Jagged Island	B	C	15% surveyed. INT9107 & INT 9159 <i>Blocks surveyed by UK 2006/07</i>
9	Crystal Sound	B	B	Numerous reports of uncharted rocks. <i>INT 9160</i>
10	Liard Island to Rothera	B	C	<i>INT 9161, 9108 AND 9163</i>
11	Marguerite Bay	C	B + C	<i>INT 9163 & 9164</i>
			B	<i>INT 9163</i>
			C	<i>INT 9162 & 9160</i>

Metadata is reflected.



Progress report about HCA14/24

https://www.iho.int/iho_pubs/CB/C-55/c55.pdf

ORGANISATION HYDROGRAPHIQUE INTERNATIONALE

ORGANIZACION HIDROGRAFICA INTERNACIONAL



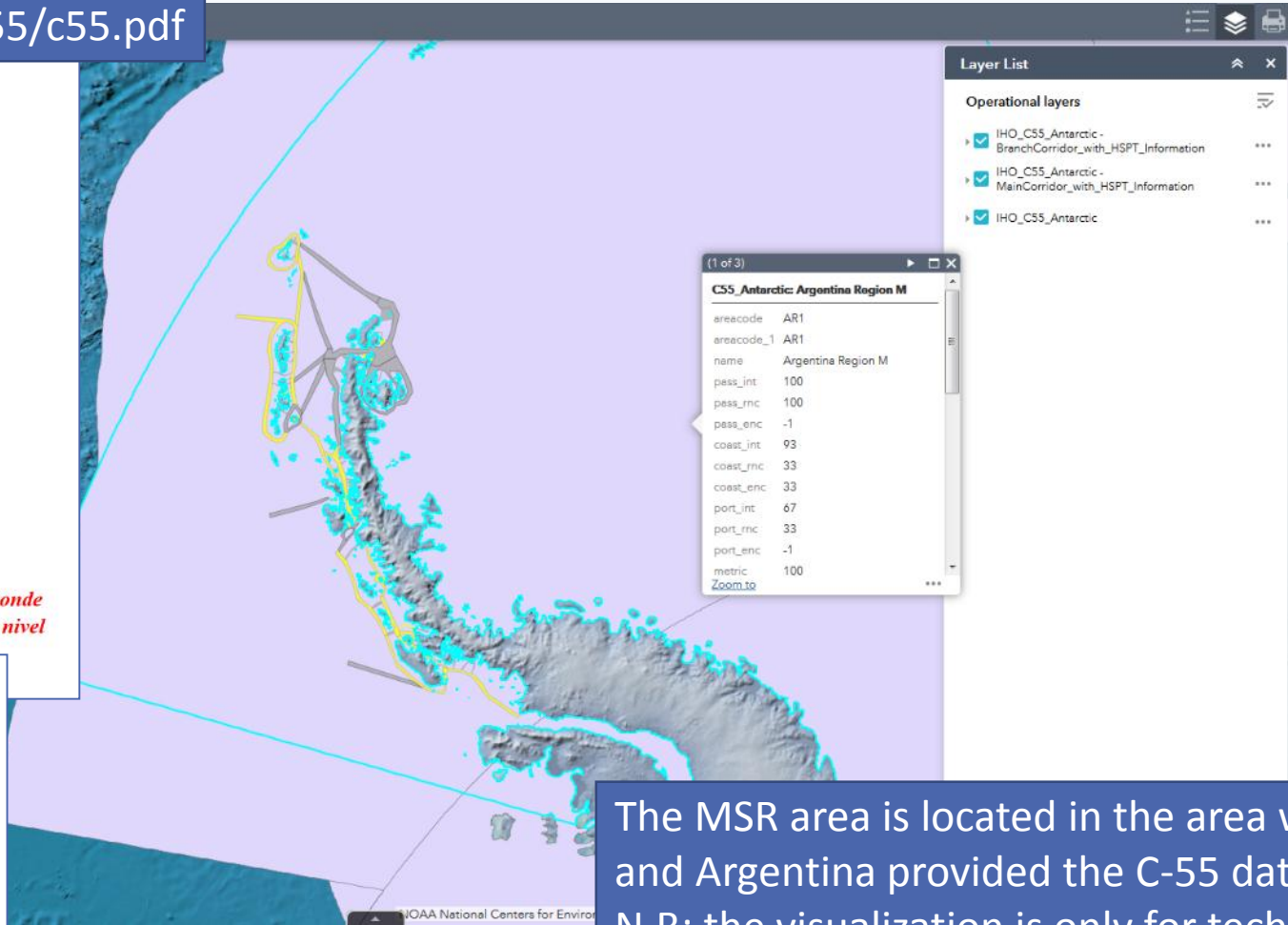
IHO/OHI Publication C-55

Status of Hydrographic Surveying and Charting Worldwide
 Etat des levés hydrographiques et de la cartographie marine à travers le monde
 Estado de los Levantamientos Hidrográficos y de la Cartografía Náutica a nivel mundial

United Kingdom of Great Britain and Northern Ireland - S Orkney and S Shetland Islands (M)

Hydrographic coverage / Levés hydrographiques / Levantamientos hidrográficos	Depth < 200m Profondeur < 200m Profundidad < 200m			Depth > 200m Profondeur > 200m Profundidad > 200m		
	<ul style="list-style-type: none"> ■ Adequately surveyed / Correctement hydrographié / Adecuadamente levantado ■ No survey required / Nécessitant de nouveaux levés / Requiere nuevo levantamiento ■ Never systematically surveyed / Jamais hydrographié systématiquement / Nunca levantado sistemáticamente 	15	20	65	2	30

Notes / Notes / Notas: Data is inadequate except around the most frequented tourist sites in the S Shetlands and Signy I in S Orkney.



The MSR area is located in the area where UK and Argentina provided the C-55 data to IHO. N.B: the visualization is only for technical consideration and does not reflect any official position of IHO.



Progress report about HCA14/24

HCA 14/24: "IHB to consider the possibility of supplementing C-55 with survey and charting statistics in relation to agreed MSR, and find a way of posting the relevant information within the IHO GIS environment."

The current C-55 segmentation does not have enough resolution for the Peninsula for further analysis of survey priority concerning the MSR area.



Actions to be considered by HCA

→ **HCA15/xx**: HCA Members to decide on the way forward for C-55 Antarctica Peninsula

- - **option 1**: leave it « as it is »
- - **option 2**: breakdown into MSR segments the « C-55 responsibility » of which, being allocated to HCA « Peninsula » Members, common metric to be agreed by HCA « Peninsula » Members, annual updates to be provided.

Option 1 is IHO Chair's recommended option: as the practice implementation of option 2 looks quite unrealistic and provides poor added value. CATZOC values (real values) can provide detailed information if required for the Peninsula...which means however that HCA ENC Producers in this area should « harmonize » their production for consistency purposes → ENC data exchange to be set up in overlapping areas

