



CROATIA

Report to MBSHC24

Constanta, Romania 2 – 4 July 2024



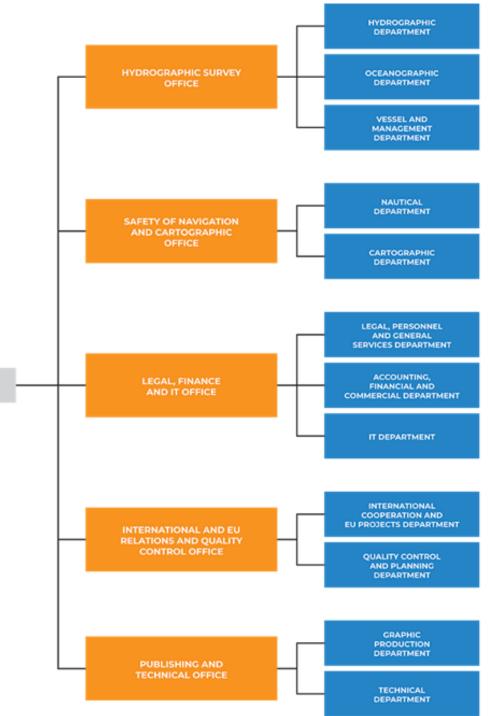




DIRECTOR

INTRODUCTION – HO STRUCTURE IN NATIONAL MARITIME ADMINISTRATION

- Under Ministry of the Sea, Transport and Infrastructure
- Public institution
- Law on Hydrographic Activity
- Management Board (8 members)





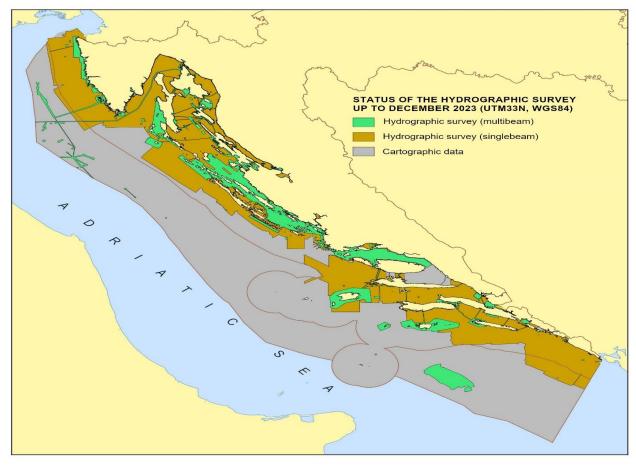


KEY ACHIEVEMENTS BETWEEN TWO CONFERENCES

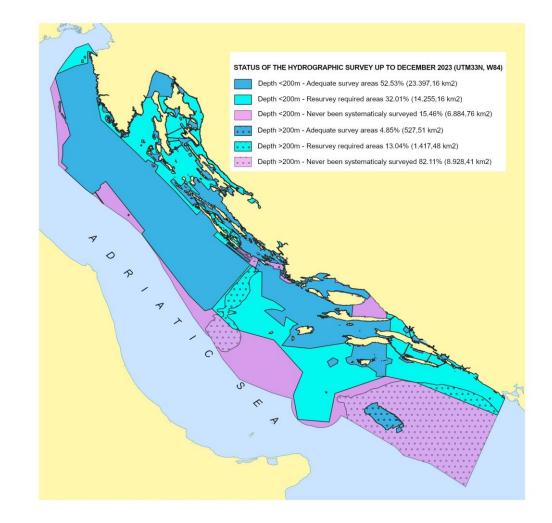
- At the 23rd MBSHC Conference the Republic of Croatia took over the two-year chairmanship of the regional Mediterranean and Black Seas Hydrographic Commission from the Kingdom of Spain.
- > Chair of the PRIMAR Advisory Committee (PAC) finished in November 2022.
- > For the first time Croatia was selected as a permanent IHO Council member for the period from 2023- 2026.
- In 2022 and 2023, the CHI participated in the implementation of the project "Service of Mapping Coastal and Seabed Marine Habitats in the Croatian Coastal Sea and Seabed Marine Habitats on the Continental Shelf of Croatia", as part of the OPCC project Mapping of Coastal and Seabed Marine Habitats in the Area of the Adriatic Sea Under National Jurisdiction Group 1: Service of mapping coastal sea areas." This project covered a surface of 51% of coastal and seabed marine habitats in the Croatian territorial sea and continental shelf, and a complete map was produced to improve knowledge on the state of biodiversity, with the purpose of improving the conservation status of marine eco-systems, restoration of biodiversity, conservation and sustainable use of marine resources.
- Performed one strategical project related to the underwater installations all data are imported into the Cadastre of the Infrastructure which combines marine data with the Land Cadastre data.
- > The European Marine Observation and Data Network (EMODnet) Project
- MED OSMoSIS Project under SHOM leadership participation from the side of the CHI
 - Under the project MED OSMoSIS, Pilot study 3 Navigational warning module S-124 API, the CHI presented its own project of web production and presentation of radio navigational warnings.
- Support to Ministry of Defence survey for military purposes and AML for the Adriatic Sea under Croatian jurisdiction



- the status of the hydrographic survey according to the criteria in the IHO C-55 publication, indicating the types of survey

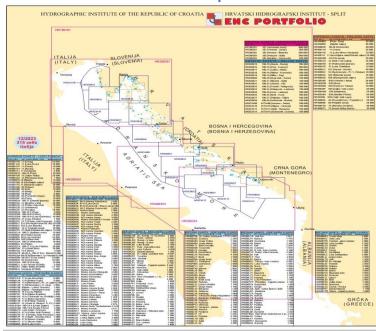


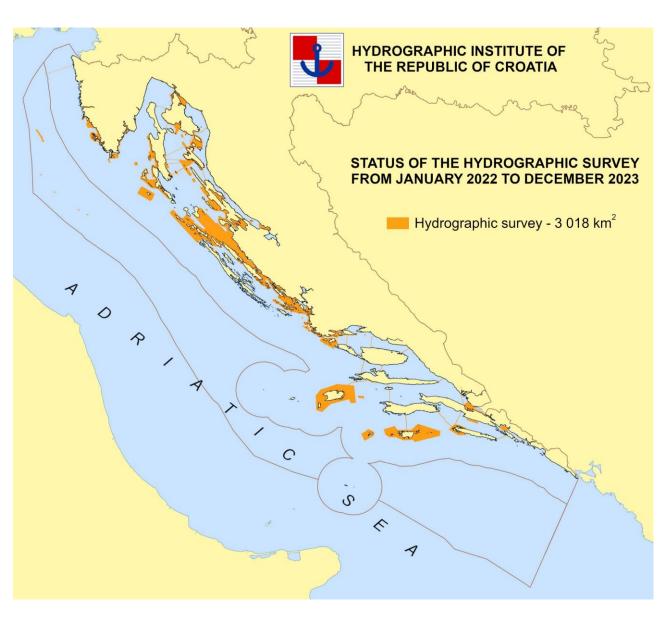
- the status of the hydrographic survey up to 12/2023



NEW HYDROGRAPHIC SURVEY and ENCs

- Hydrographic surveys conducted along the Croatian coast since the 23rd MBSHC Conference were focused to selective parts of the coastal areas and to principal ports and passages according to the defined priorities.
- Total surveyed area measured by the CHI is 3,018 km2.
- New 45 ENCs were released, 134 ENC new editions and 704 updates







CHARTS - STATUS OF THE CHI ENC PRODUCTION

		1 July	2008.	1 Jul	y 2013.	1 May 2017		31. December 2019.		31. December 2020.		31. December 2021.		31. December 2023.	
Usage band	Navigational purpose	No of Cell	Area coverage (%)	No of Cell	Area coverage (%)	No of Cell	Area coverage (%)	No of Cell	Area coverage (%)	No of Cell	Area coverage (%)	No of Cell	Area coverage (%)	No of Cell	Area coverage (%)
1	Overview	1	100 %	1	100%	1	100%	1	100%	1	100%	1	100%	1	100%
2	General	5	100 %	5	100 %	5	100 %	5	100 %	5	100 %	5	100 %	5	100 %
3	Coastal	15	90 %	15	90 %	15	90 %	18	100 %	18	100 %	18	100 %	18	100 %
4	Approach	9	72 %	13	85 %	14	88 %	21	92 %	21	92 %	22	93 %	25	93 %
5	Harbour	31	77 %	37	84 %	40	88 %	44	91 %	44	91 %	45	92 %	49	92 %
6	Berthing	20	74 %	24	85 %	50	87 %	144	95 %	18 3	96 %	210	97 %	218	98 %
Т	OTAL	80	87 %	94	92 %	124	93 %	232	95 %	271	96 %	300	97 %	315	98 %

- Most of the overlaps has been resolved.
- There are some remaining minor overlaps in UB3 with the LOW status regarding overall risk severity.
- There is one overlap with MEDIUM risk status in UB3, which is currently being reviewed and resolved.
- Potential new overlaps are continuously monitored and the process of resolving them through negotiations with the respective countries is immediately initiated.

Overlap Re	port: Cr	oatia					Date:	24.03.2024
Nation	RENC	ENC	UB	Edtn	Updt	Scale	Overlap(km ²)	Comments
Croatia	PRIMAR	HR100101	1	3	30	800000	6,214.895	
	IC-ENC	GR10VER1		2	8	1500000		
Croatia	PRIMAR	HR100101	1	3	30	800000	336,732.916	
	IC-ENC	IT100340		5	18	1500000		
Croatia	PRIMAR	HR100101	1	3	30	800000	1,257.028	
	IC-ENC	IT100350		4	1	1500000		
Croatia	PRIMAR	HR200351	2	1	24	350000	44,910.659	
	IC-ENC	IT200435		5	26	700000		
Croatia	PRIMAR	HR200352	2	1	3	350000	4,683.644	
	IC-ENC	IT200434		7	2	700000		
Croatia	PRIMAR	HR200352	2	1	3	350000	26,680.652	
	IC-ENC	IT200435		5	26	700000		
Croatia	PRIMAR	HR200353	2	1	12	350000	34,671.212	
	IC-ENC	IT200435		5	26	700000		
Croatia	PRIMAR	HR200354	2	1	8	350000	50,661.122	
	IC-ENC	IT200435		5	26	700000		
Croatia	PRIMAR	HR3C0015	3	4	2	100000	2.514	
	IC-ENC	IT300039		5	21	90000		
Croatia	PRIMAR	HR3C0028	3	3	20	100000	1,583.817	
	IC-ENC	ME3CMNE1		2	0	90000		
Croatia	PRIMAR	HR3C3414	3	1	2	100000	0.029	
	IC-ENC	ME3CMNE2		1	0	90000		

NAUTICAL PUBLICATIONS AND OFFICIAL CHARTS

CHI nautical publications series:

- 1. Sailing Directions
- 2. Sailing Directions for Yachts
- 3. Lists of Lights
- 4. Radio Service
- 5. Nautical Almanac
- 6. Nautical Tables
- 7. Symbols and Abbreviations (INT1)
- 8. Notices to Mariners (monthly edition)
- 9. Catalogue
- 10.Tide Tables

Since the 23rd MBSHC Conference the following publications have been issued:

- Tide Tables 2022
- Tide Tables 2023
- Tide Tables 2024
- Nautical Almanac 2022
- Nautical Almanac 2023
- List of Lights and Fog Signals 2022
- Catalogue of Nautical Charts and Publications 2022/2024 (p and digital editions)
- Notice to Mariners (paper and digital monthly edition)
- Radio Service

National official nautical publications series





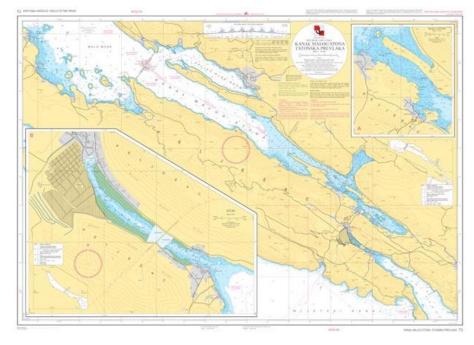


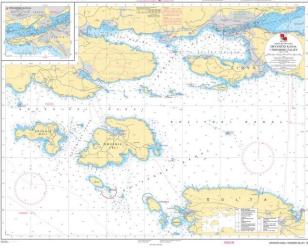
Bartin Britan



- new edition of Small Craft Charts (scale 1:100 000, total of 29 charts) was issued in April 2024 - constructed on Mercator projection WGS 84 ellipsoid

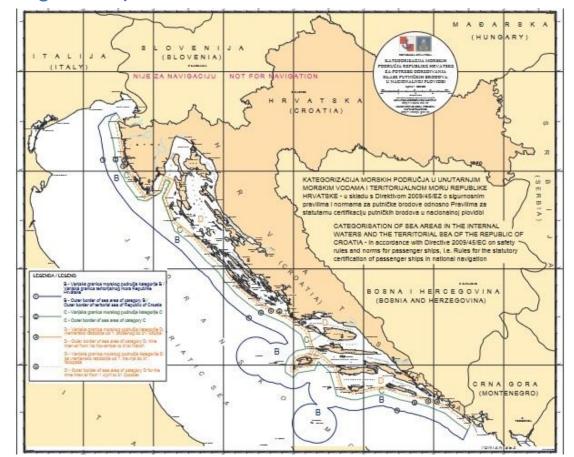
- 2 newly produced charts and 6 new editions of the charts
- Revised reprint:
- 2023: 29 charts and 12 plans
- 2022: 29 charts and 1 plan



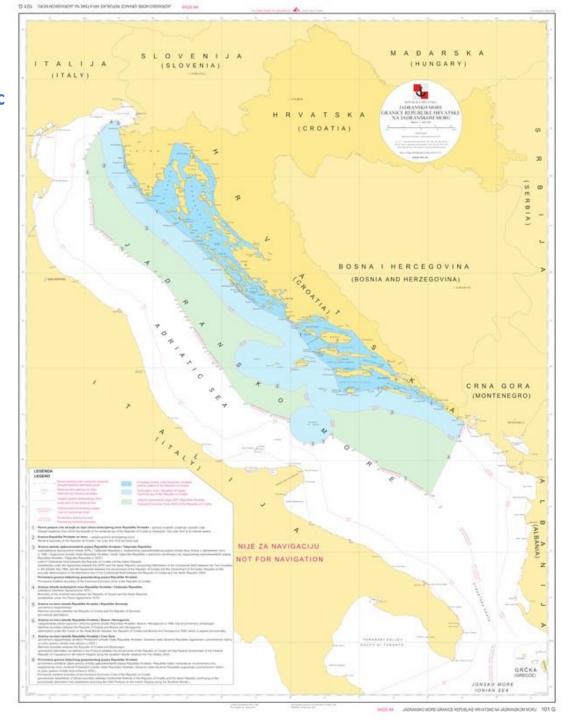


Thematic Charts

- 101G Maritime Boundaries of the Republic of Croatia in the Adriatic Sea, 1:800 000 (produced in cooperation with the Ministry of the Foreign Affairs)



Categorization of sea areas of the Republic of Croatia for the purposes of determining the class of passenger ships in national navigation 1:800 000 (produced in cooperation with the Ministry of the Sea)

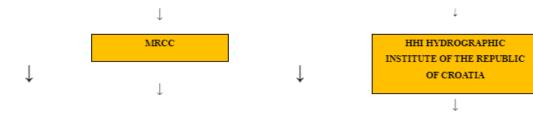




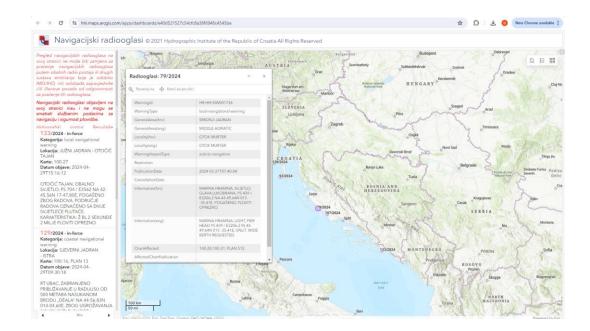


MARITIME SAFETY INFORMATION (MSI)

CROATIAN	CROATIAN	MRCC RIJEKA	HARBOUR MASTER'S OFFICE
METEOROLOGICAL	METEOROLOGICAL AND		
AND HYDROLOGICAL	HYDROLOGICAL	HARBOUR MASTER'S	NAVIGACIJSKI RADIOOGLASI
		OFFICE	(ROUTINE)
SERVICE	SERVICE	NAVIGACIJSKA UPOZORENJA	
REDOVNA VREMENSKA	IZVANREDNA VREMENSKA		
		(VTAL, IMPORTANT)	
IZVJEŠĆA	IZVJEŠĆA		



	COAST RADIO STATION	rs	



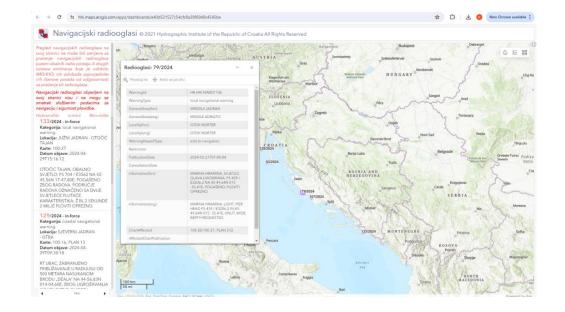
Constanta, Romania, 2 – 4 July 2024







- E-Services of Notice to Mariners and Navigational Warnings are available on the CHI website.
- Navigational warnings are updated promptly on the CHI website, as soon as new information is reported and promulgated to mariners by ordinary means (NAVAREA, NAVTEX or VHF)



e-Services :: Radio Navigational Warnings

Radio Navigational Warnings

The Service of Radio Navigational Warnings on this web site may not be a substitute for the monitoring Radio Navigational Warnings through coastal radio stations, of their responsibility to monitor them masters and/or members of the crew.

Information published on the web pages of Radio Navigational Warnings e-Service shall not be considered as official information for the safety of navigation!

Radio Navigational Warnings in force 29. 04. 2021. 08:19 LT

ISSUE	RNW						
137	Category: Region: Charts: Date:	COASTAL - NAVTEX ADRIATIC SEA 101; 29. 04. 2021.					
	2021 SERIES	/IGATIONAL WARNING5 85/21, 92/21, 97/21, 101/21 ADIONAVIGATIONAL W	, 105/21, 109/21, 1	12/21, 113/21, 122/21, 123/	/21, 128/21, 132/21,	134/21, 136/21.	
136	Category: Region: Charts: Date:	LOCAL NORTH ADRIATIC - C 100-18; 26. 04. 2021.	TOK KRK				
2021.		T ENTRANCE, PRIMARY H AND 100 METERS DIS			REQUESTED.		
134	Category: Region: Charts: Date:	LOCAL MIDDLE ADRIATIC - 6 100-26; 26. 04. 2021.	3AŠKA VODA				
2021		A, BREAKWATER HEAD NSTIC: FL R 5 SECONDS			1,4' N 016-57,1' E,	RE-ESTABLISHED.	





GIS component of RNW Service - Navigational Warnings - (https://geoadriatic.hhi.hr)

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The Service of Radia Navigational Warnings on this website cannot be a substitute for monitoring Radio Navigational Warnings Through coastal radia stations or via other INAO/IHO approved broadcast systems, nor does It relieve masters and/or crew members of their responsibility to monitor these.

Radio Navigational Warnings and all other information published on this page shall not be considered as official information for the sefety of navigation.

Hydrographic institute of the Republic of Croatia will try to keep this site up to date (by adding and cancelling navigational warnings) on warking days from 07:30 to 15:30.

54/2024 - in-force Category: local navigational warning Region: MIDDLE ADRIATIC - ROGOZNICA Charts: 100-21 Date: 2024-03-01107:37-30

ROGOZNICA, LIGHTED MARK HRID ŠKOLJIC, LATERAL STARBOARD SIDE, IN 43-31,768'N 015-57,957'E (WGS 84), ESTABUSHED. CHARACTERISTIC: G FL (2),5 SECONDS 6 METERS 1 MILE (0,5+1; 0,5+3)S. OBSCURED SECTOR: 215-319 (104').

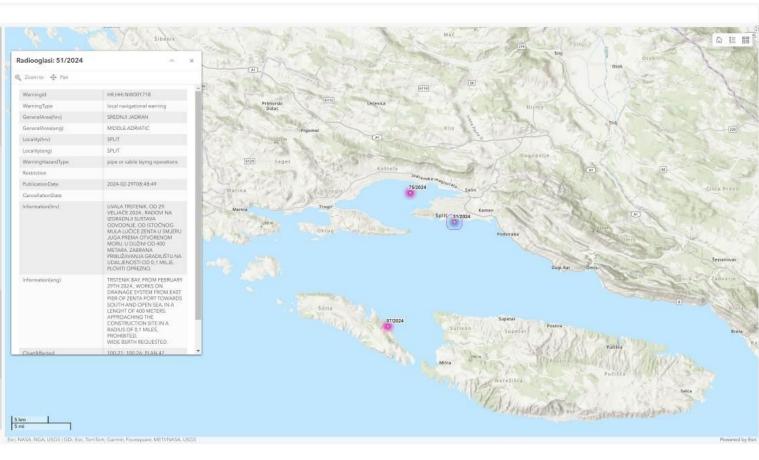
51/2024 - in-force Category: local navigational warning Region: MIDDLE ADRIATIC - SPLIT Charts: 100-21; 100-26; PLAN 47 Date: 2024-02-29708:48.49

TRSTENIK BAY, FROM FEBRUARY 29TH 2024, WORKS ON DRAINAGE SYSTEM FROM EAST PIER OF ZENTA PORT TOWARDS SOUTH AND OPEN SEA. IN A LENGHT OF 400 METERS. APPROACHING THE CONSTRUCTION SITE IN A RADIUS OF 0,1 MILES, PROHIBITED, WIDE BERTH REQUESTED.

47/2024 - In-force Category: local navigational warning Region: NORTH ADRIATIC - SUSAK ISLAND Charts: 100-16; 100-17 Date: 2024-02-21T11:04:01

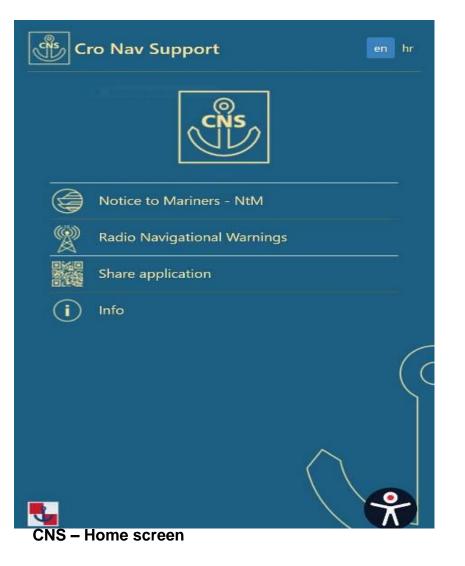
SUSAK PORT, LIGHTED BUOY, SPECIAL MARK IN 44.30,917N 014-18,798E (WGS 84),ESTABLISHED: CHARACTERISTIC: FL Y 2 SECONDS 2 MILES. NAVIGATION BETWEEN RT KURILICA (SUSAK ISLAND) AND BUOY,

Hrv Eng Izjava o pristupačnosti



Mobile application Cro Nav Support

A new Cro Nav Support mobile application has been introduced, which brings the content to smartphones as well. The main contents are NtM and RNW. The application itself is accessible to people with disabilities, especially to people with dyslexia. (https://cns.hhi.hr)



Radio Navigational en hr Warnings Radio Navigational Warnings in force

28. 03. 2024. 09:04 LT COASTAL - NAVTEX 89 Category: ADRIATIC SEA Region: 2024 101; Charts:

28.03.2024.

1. RADIONAVIGATIONAL WARNINGS IN FORCE 280800 UTC MAR 24: 2024 SERIES: 43/24, 47/24, 51/24, 54/24, 75/24, 79/24, 87/24, 88/24. 2023 SERIES: 582/23. 2. RADIONAVIGATIONAL WARNING 89/24 IS CANCELED AFTER FIRST BROADCAST.

88	Category:	LOCAL				
2024	Region:	MIDDLE ADRIATIC - ŠIBENSKI KANAL				
	Charts:	100-21; 533;				
	Date:	25. 03. 2024.				

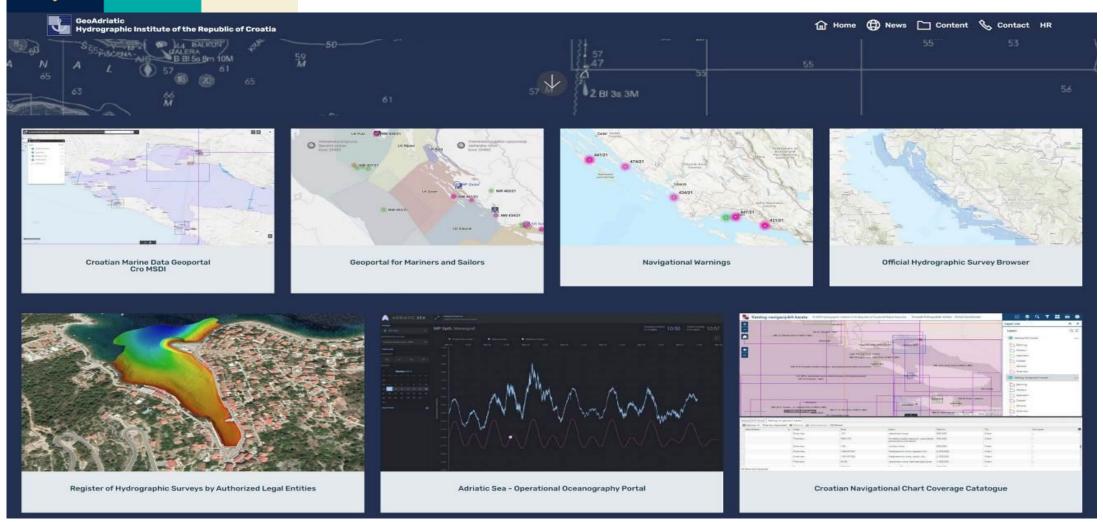
PLIČINA KRAPANJ, M/V "PLOVPUT SPLIT" PERFORMS CONSTRUCTION WORKS ON LIGHTED MARK IN 43-41,100N 015-53,950E (WGS 84), MARKED WITH LIGHTED YELLOW BUOYS. CHARACTERISTIC: FL Y 2 SECONDS 1 MILE WIDE BERTH REQUESTED.



Date:

International Hydrographic Organization

MSDI / Geoportal GeoAdriatic - Croatian Marine Spatial Data Portal

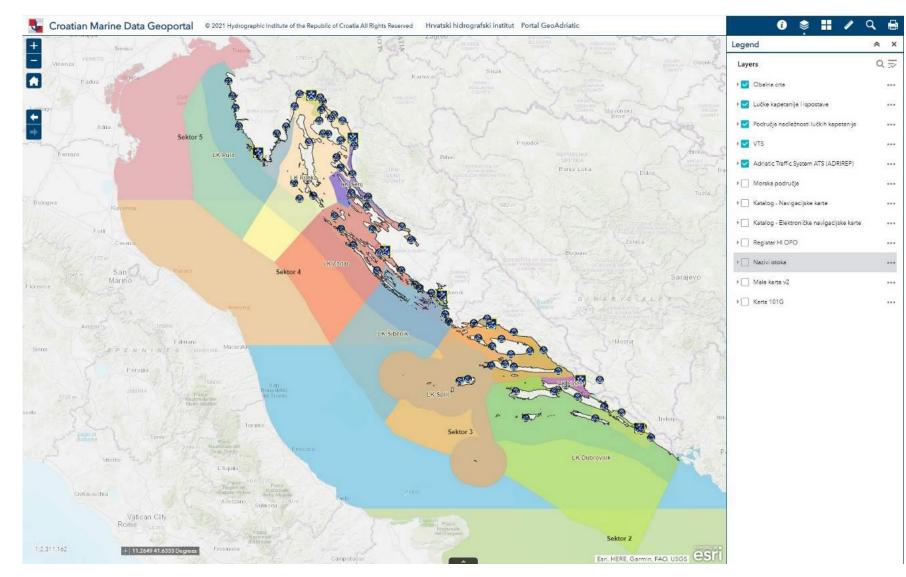


- > The CHI develops and maintains a MSDI, covering all maritime areas under Croatian jurisdiction.
- The information thus compiled is freely accessible on CHI's data portal GeoAdriatic Croatian Marine Spatial Data Portal (https://geoadriatic.hhi.hr/).





Croatian Marine Spatial Data Portal



The data are organized to cover the following topics: – Croatian Marine Data Geoportal Cro MSDI – Geoportal for Mariners and Sailors

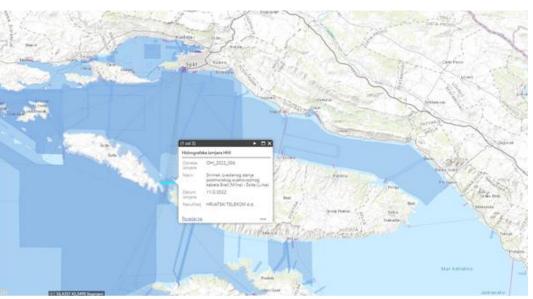
- Navigational Warnings
- Official HydrographicSurvey Browser
- Register of Hydrographic
 Surveys by Authorized Legal
 Entities
- Adriatic Sea OperationalOceanography Portal
- Croatian Navigational
- Chart Coverage Catalogue
- Radio NavigationalWarnings (WEB)
- Notice to Mariners (NtM)

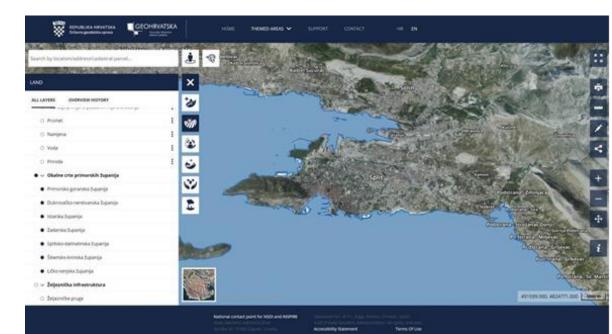


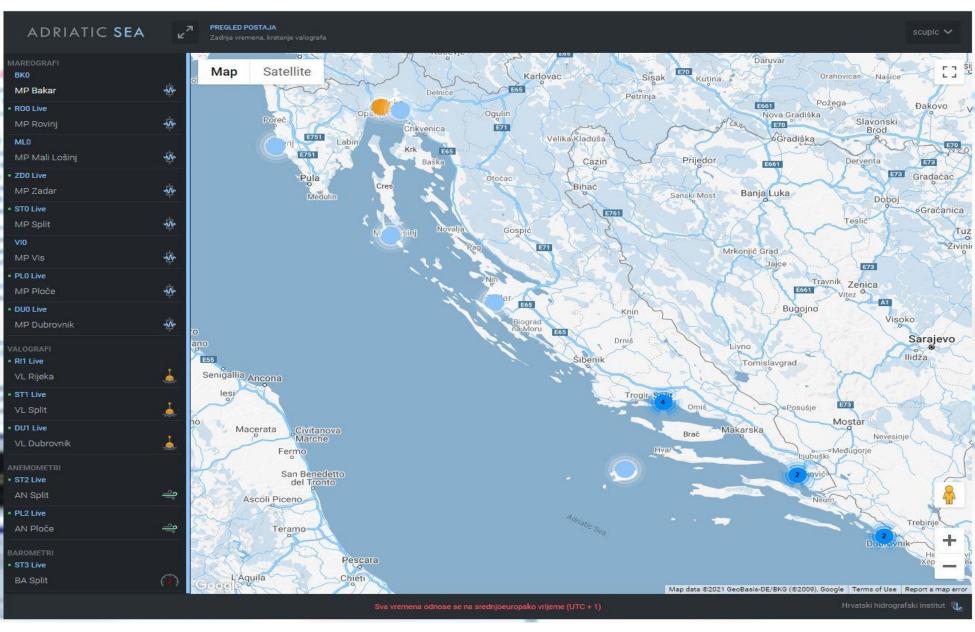


The Portal is constantly populated with new data and services:

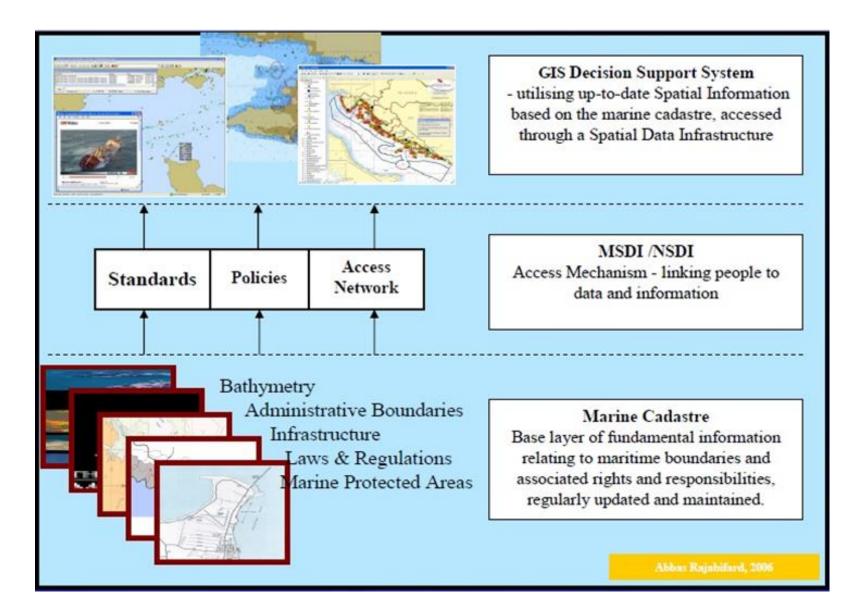
- Small Craft Charts (Adriatic Sea Eastern coast) WMTS
- Harbour master's offices and branch offices WFS
- Harbour master's administrative areas WFS
- Catalogue of Charts WFS
- Catalogue of Official Electronic Navigational Charts (ENC) – WFS
- Catalogue of Official Electronic Navigational Charts (ENC) – WFS
- Marine areas of the Adriatic Sea WFS
- Traffic separation scheme WFS
- Vessel Traffic System administrative areas VTS
- Coastline (by Counties) WFS
- Hydrographic surveys
- Navigational warnings







Oceanographic data acquisition system **Operational Oceanography Portal** – Adriatic Sea Online is available on the new Institute website http://adriaticsea.hhi.hr - real time measurements from tide gauge stations (Rovinj, Zadar, Split, Ploče, and Dubrovnik) - waverider stations in the Adriatic (Dubrovnik, Ploče, Split, and Rijeka) The application provides the ability to download measured data from web page directly. CHI's intention is to establish new measuring stations and further upgrade the web application.



In Croatia, Marine Spatial Data Infrastructure (MSDI) isa component of National Spatial Data Infrastructure, so currently the CHI provides metadata to the Croatian NSDI Geoportal that serves as a starting point for accessing spatial data sources that are, according to the NSDI Act (Official Gazette 56/2013), part of National Spatial Data Infrastructure (http://geoportal.nipp.hr/en).

In future, the CHI plans to set up a conceptual framework for Croatian MSDI with other providers of marine data and partners. This includes building of a MSDI reference model and evaluating Metadata & Data geoportal.





CAPACITY BUILDING ACTIVITIES/TRAINING

- Capacity building activities and training is the most important if we want to be in line with development in hydrographic field. The CHI carries out training and capacity building activities on a continuous basis.
- A total of 16 employees have registered to participate in a series of S-100-based online training courses organized by PRIMAR for its Member States.
- Participation in a training course on Teledyne Reson T-50R Multibeam Sonar System Calibration and Testing (Murter, February 2022).
- > Participation in a training course on EdgeTech 4205 Side-scan Sonar System Training (Split, December 2023).
- > Participation in training courses on cartographic data management and Marine Spatial Data Infrastructure (MSDI).
- > Participation in a four-day seminar Python programming language, one-day seminar about GIMP application.
- Participation in the Short Course on Marine Data Literacy, an intensive preparatory course on marine data offered by the European University of the Seas.
- Participation in the workshop on MSDI Development & Implementation funded by the IHO CB Fund (Istanbul, 7–9 May 2024).
- One CHI employee is participating in Category B Hydrographic Survey Programme at the Korea Hydrographic and Oceanographic Agency (KHOA) in Busan, from 17 June to 1 November 2024. This opportunity was offered by the IHO – Republic of Korea Programme of Technical Cooperation.
- Participation in professional webinars and trainings, conferences, meetings, participation in work of the IHO WG, Hydro 22 Conference and EMODnet Meeting, Hydro 23 Conference, Oceanology International 2024, Third CHART Project Alumni Seminar, participation at IHO Assembly, IHO Council, HSSC etc.



THE MOST IMPORTANT BILATERAL AND MULTILATERAL ACTIVITIES



Meeting of maritime administrations of Croatia, Slovenia, Bosnia and Herzegovina, and Montenegro in Split Meeting with the representatives of the Hydrographic Office of Spain

Meeting with the representatives of the IHO







THE MOST IMPORTANT BILATERAL AND MULTILATERAL ACTIVITIES

CHI-IHO-EMPA-CMPA-MMPI meeting

Following the example of other renowned hydrographic offices, regarding cooperation with maritime pilots, being important end users of S-100 products and participants in implementing the S-100 standard, **the CHI signed an Agreement on technical cooperation with the Croatian Maritime Pilots' Association**, relating specifically to the testing of future S-100 products. The EMPA/CMPA representative praised the initiative and cooperation with maritime pilots, and emphasized the importance of implementing the S-100 model and testing the new products, especially S-101 (ENC) and S-102 (bathymetry)





PAC 29 meeting in Split





MAIN CHALLENGES

- One of the main challenges for the CHI will be transition to the new generation of ENC, produced according to S-101 standard. The issue is almost equally demanding in organisational, technical-technological, and financial terms as the issue of transition from paper versions of navigational charts to digital ones (ENC).
- The transition issue is additionally complicated by the fact that it will be necessary to ensure maintenance and availability of both ENC generations (Dual Fuel) for several years. Some initial tasks are assigned to responsible staff which cooperates closely with PRIMAR and ECC staff through several initiated and approved S-100 projects..
- Training is recognized as a key element for realization of transition from S-57 to S-100 series products and services
- > Renewal of the fleet in the process of conducting a study on the fleet renewal
- Lack of the capacities
- > Awareness rising among different and important stakeholders related to the implementation of the S-100
- > Testing of the future S-100 products, especially S-101 and S-102 in cooperation with Pilots
- MSDI activities
- Further activities and opening of the data through the Geoportal GEOADRIATIC in line with the INSPIRE DIRECTIVE





- Under the circumstances of limitedd overall resources (human, material and financial), it can be concluded that the status of hydrographic-navigational element of the navigational safety is at a good level.
- Entire area of charting responsibility has been covered by relevant official editions of navigational charts and publications – paper and digital ones. This particularly applies to navigation areas of SOLAS ships.
- CHI is continuously oriented towards increasing the number of ENCs by publishing ENCs of marinas and small harbours based on the new hydrographic survey.
- Entire ENC folio has been made available to mariners and to maritime administration worldwide through PRIMAR RENC.
- ENCs have been made available on the Croatian Navy vessels through the Navy Agreement and to the fleet of the Ministry of the Sea, Transport and Infrastructure.
- Agreements have also been concluded with the maritime administrations and Croatian Navy on ENC usage for administrative-office purposes (WMS for ENCs).
- Navigational warning service is in good working order, efficiently cooperating with all navigational safety entities in Croatia, its neighbouring countries and the NAVAREA III coordinator.





- Paper editions of official navigational charts are updated through monthly editions of Notices to Mariners, and ENCs through weekly updates.
- Recognizing a wider use of hydrographic data, CHI maintains and constantly improves established licensing model keeping in mind obligations arising from the public service information regulations.
- CHI continuously participates in multiple projects designated by the competent administrations, providing high quality support.
- By participation in IHO Council, several bodies and WGs of the IHO and PRIMAR RENC, the CHI maintains its role and contributes on realisation of established objectives of those organizations
- Achievement of main strategic and programme objectives in the current and next planned periods will be challenging in every respect, because it is expected to proceed in very restrictive conditions with additional requirements and tasks.





Actions required from the MBSHC

≻Note this presentation.

> Note the full CRO NR.