

## **National Report of UKRAINE to the 20th Conference of the Mediterranean and Black Seas Hydrographic Commission (MBSHC)**

### **1. Hydrographic Office/Service**

#### *a. General*

The State Hydrographic Service of Ukraine (SHSU) is a national hydrographic office established within the framework of the Ministry of Infrastructure of Ukraine.

The main tasks of the SHSU are as follows:

- Fulfilment of international commitments of Ukraine pertaining to safety of navigation, in particular hydrographic surveying of seas in accordance with the IHO standards, provision of the seas and inland waterways within zone of responsibility of Ukraine with AtoNs, their maintenance and ensuring of AtoNs' continuous operation in conformity with the IALA requirements;
- Compilation and distribution of nautical and pilot inland charts, Sailing Directions, Notices to Mariners;
- Acting as a national navigational warnings coordinator and a national NAVTEX coordinator in Ukraine;
- Development of the AtoN system by means of creation and implementation of new methods, techniques and technologies in the fields of navigation, hydrography and nautical cartography;
- Lighthouses renovation involving the energy-saving technologies (solar batteries, wind power stations, LEDs, etc.), modernization of floating AtoNs through use of plastics, flasher mechanisms with LED modules and implementation of the Automatic Identification System (AIS);
- development and maintenance of the consistent system of hydrographic support of navigation in the seas and inland waterways of Ukraine.

Due to the Russian Federation's occupation and annexation of the part of Ukrainian territory, from March 2014 the SHSU doesn't have access to Ukraine's inland waters and territorial sea in the area of Crimean Peninsula.

The sea ports of Kerch, Sevastopol, Feodosiia, Yalta, Yevpatoriia are closed until the restoration of the constitutional order of Ukraine within the territory of the Autonomous Republic of Crimea and Sevastopol city that are temporarily occupied by the Russian Federation (in accordance with the Order of the Ministry of Infrastructure of Ukraine No 255 of June 16, 2014).

Aids to navigation on the Crimean coast have been out of the SHSU's control. Mariners are requested to exercise caution.

In compliance with the Law of Ukraine No 1207-VII of 15 April 2014 'On Securing the Rights and Freedoms of Citizens and the Legal Regime on the Temporarily Occupied Territory of Ukraine', inland waterways and territorial sea of Ukraine around Crimean Peninsula, as well as



the territory of exclusive (maritime) economic zone of Ukraine along Crimean coastline have been defined as temporarily occupied territories.

- b. *Updates for the IHO Yearbook, e.g. reorganization (please, see below the updates to the IHO Yearbook as of 18 January 2017; all updated information is in **red bold**)*

<b>STATE HYDROGRAPHIC SERVICE OF UKRAINE</b> <b>23, Gagarina Avenue</b> <b>Kyiv 02094</b> <b>UKRAINE</b>	
<b>Department of which the Hydrographic Office is part</b>	Ministry of Infrastructure of Ukraine
<b>Principal functions of the H.O.</b>	Hydrographic surveys, oceanography, nautical charts and inland charts in paper and digital form, cells, nautical publications (Notices to Mariners, Sailing Directions, List of Lights, etc.), radio navigational warnings, aids to navigation.
<b>National day</b>	24 August
<b>Telephone:</b> <b>Fax:</b> <b>E-mail:</b>	+38 (044) 296 60 40 +38 (044) 292 12 17 <a href="mailto:office@hydro.gov.ua">office@hydro.gov.ua</a>
<b>Date of establishment and Relevant National Legislation</b>	February 9, 1994 Ordinance of the Cabinet of Ministers of Ukraine No 84 of February 9, 1994
<b>Name and rank of the Director or Head</b>	<b>Mr. Dmytro PADAKIN, PhD</b> <b>Acting Head</b>
<b>Tonnage</b>	<b>2017 = 496 423</b>
<b>Staff employed</b> - <b>Hydrographers</b> <b>(Name and rank of managing staff)</b>	Mr. Mykola GOLODOV, PhD – Deputy Head of the State Hydrographic Service of Ukraine  <b>Mr. Sergii OSYPOCHUK, PhD – Deputy Head of the State Hydrographic Service of Ukraine</b>  <b>Mr. Oleg Marchenko</b> – Head of <i>Ukrmorcartographia</i> (charting branch of the State Hydrographic Service of Ukraine)
<b>Nº of charts published</b>	176 paper charts 129 paper charts for inland waterways
<b>Nº of INT charts published</b>	<b>15</b>

<b>№ of ENC cells published</b>	<b>238</b> ENCs 77 cells 181 IENCs
<b>Type of publications produced (e.g.; Tide Tables, Sailing Directions, List of Lights etc.)</b>	<ul style="list-style-type: none"> <li>- Notices to Mariners (in Ukrainian and English) No.907.00;</li> <li>- <i>'Sailing Directions on Ukrainian Waters of the Black Sea and the Sea of Azov'</i> No.101 (in Ukrainian);</li> <li>- <i>'Lights and Beacons of the Black Sea and Sea of Azov'</i> No.201 (in Ukrainian);</li> <li>- <i>'Regime of Navigation in Ukrainian Waters of the Black Sea and the Sea of Azov'</i> (summary description) No.402 (in Ukrainian);</li> <li>- Catalogue <i>'Nautical Charts and Publications'</i> No.701 (in Ukrainian and English);</li> <li>- <i>'Nautical Charts Symbols'</i> No.902 (in Ukrainian and English);</li> <li>- <i>'Description of Maritime Buoyage System in Ukrainian Waters. IALA System. Region A'</i> No.903 (in Ukrainian);</li> <li>- <i>'Maritime Buoyage System in Ukrainian Waters. IALA System - Region A'</i> No. 904 (in Ukrainian);</li> <li>- <i>'Symbology for Inland Waterways Charts'</i> No. 908 (in Ukrainian, English and Russian);</li> <li>- <i>'Lights and Beacons of the Danube River. Kiliiske Mouth Delta to the Prut River Mouth'</i> No.202 (in Ukrainian and Russian);</li> <li>- <i>'Sailing Directions of the Danube River. Kiliiske Mouth Delta to the Prut River Mouth'</i> No.103 (in Ukrainian and Russian);</li> <li>- <i>'Instructions on Producing of Field Updates to Navigational Charts, Manuals and Publications (IKM-2005)'</i> No.918 (in Ukrainian);</li> <li>- <i>'Instructions for Compilation of Technical Orders and Technical Reports Resulting from Hydrographic Surveys (ITII-2005)'</i> No.932 (in Ukrainian);</li> <li>- <i>'Instructions on Requirements and Methods of Bottom Features Surveying for Navigational Purposes'</i> No.933 (in Ukrainian);</li> <li>- <i>'Regulation on Aids to Navigation on the Inland Waterways, in the Territorial Sea and Exclusive (Maritime) Economic Zone of Ukraine'</i> No.937 (in Ukrainian);</li> <li>- <i>'Regulation on the Numbering System for Paper Nautical Charts, Electronic Navigational Charts and Inland Waterways Charts, Books, Sailing Directions and Blank Technical Documentation'</i> No.934 (in Ukrainian);</li> <li>- <i>'General Provisions for Compilation of Notices to Mariners'</i> No.935 (in Ukrainian);</li> <li>- <i>'Regulation on Procedure for Conducting of Oceanologic Surveys in the Black Sea and the Sea of Azov'</i> No. 920 (in Ukrainian);</li> <li>- <i>'Instructions on Compilation and Preparation of Coastal Warnings and Appropriate Informing of Mariners'</i> No. 944</li> </ul>



	(in Ukrainian); - 'Instructions on Input Expertise of Hydrographic Surveys Materials for the Purpose of Charting' No. 936 (in Ukrainian); - 'Oceanographic Atlas of the Black Sea and the Sea of Azov' No. 601 (in Ukrainian and English); - 'The List of Current Temporary and Preliminary NtMs of State Hydrographic Service of Ukraine' No. 910 (in Ukrainian and English); - 'Navigational and Reference Tables for Navigators' No. 909 (in Ukrainian); - 'Dnipro River Pilot' No.105; - Navigational-Hydrographic Dictionary (in Ukrainian, English and Russian); - 'Charting Support for Navigation' (in Ukrainian); - 'Navigational Support of Sailing' (in Ukrainian); - 'Nautical Hydrography' (in Russian); - 'Oceanography' (in Russian); - ' <b>Navigational Hydrometeorology' (in Russian).</b>		
Surveying vessels / Aircraft	Displacement	Date Launched	Crew
GS – 82	807.0	1969	23
GS – 273 *	713.0	1972	23
A. LYSENKO	52.7	2003	4
A. SOLODUNOV	52.7	2005	4
V. ZARUDNIY *	53.0	2006	4
ODESA *	320.0	2007	10
SHLIAHOVYK	92.0	2010 (remanufactured)	6
<b>BGK-334</b>	<b>127</b>	<b>1974</b>	<b>11</b>
KAPITAN ZIBER	133	2015 (remanufactured)	7
KAPITAN BASHEV	133	2014 (remanufactured)	6
KAPITAN CHEREMNYKH	133	2017 (remanufactured)	6
MGK-catamaran *	2.5	2013	2
MGK-catamaran	2.5	2013	2
MGK-catamaran	2.5	2014	2
MGK-catamaran	2.5	2014	2
MGK-catamaran	2.5	2014	2
* Temporarily detained in the occupied territory.			

## 2. Surveys

### a. Coverage of new surveys



Within Ukrainian zone of responsibility the SHSU routinely performs hydrographic surveys in the water areas of commercial ports, approaches to ports, places of anchorage and areas of high-density vessel traffic.

The hydrographic surveys at scales of 1:5 000 and 1:1 000 were performed regularly in the water areas of Buzko-Dniprovsko-Lymanskyi channel, Khersonskyi sea channel, Spaskyi channel, sea approach channel to Bystre Estuary, water areas, anchorages and approach channels to the commercial sea ports of Odesa, Chornomorsk (also, the fishing port), Mykolaiv (also, the river port), Yuzhnyi, Khersonskyi, Dnipro-Buzkyi, Bilhorod-Dnistrovskyi, Ochakiv port, as well as the Olviia Stevedoring Company.

Since March 2014 the State Hydrographic Service of Ukraine has not carried out hydrographic surveys in water areas and approaches to Crimean ports, inland waterways and territorial sea of Ukraine in the vicinity of the Crimean Peninsula, due to occupation and annexation of the Autonomous Republic of Crimea by the Russian Federation. Consequently, depths in these areas can be different from those specified on charts.

During the years 2015-2016 it was carried out integrated hydrographic surveys of Ukrainian sea areas intended for reissuing of nautical navigational charts and preparation for issuing of the ENC cells in compliance with the IHO standards:

- hydrographic surveying of the north-western part of the Black Sea on approaches to the Traffic Separation Scheme No. 2 (approaches to the ports of Chornomorsk, Odesa and Yuzhnyi) and to the recommended routes Nos. 44, 60 within the limits of the territorial waters (12 miles);
- hydrographic surveying of the coastal 12-mile area from the Dnistrovskyi Firth to the Zhebriianska Bay;
- hydrographic surveying of the north-west of the Black Sea southwestward from the Tendrivska Beak Island;
- hydrographic surveying of the Ukrainian part of the Danube fairway from the Reni port to the mouth;
- hydrographic surveying of the Pivdennyi Buh River from Voznesensk to Mykolaiv;
- hydrographic surveys of the recommended routes Nos. 44, 60 (approaches to the ports of Chornomorsk, Odesa and Yuzhnyi);
- depth soundings in areas of riffles on the Danube River's fairway.

It was performed an areal multibeam survey of the Dnipro River navigable pass from the mouth to the Kyiv city and Kyivske Reservoir inclusive.

We have also carried out hydrographic surveys in the areas of main recommended routes for vessel traffic in the Azov Sea and in the north-western Black Sea.

The State Hydrographic Service of Ukraine routinely fulfils examination of sunken wrecks and other navigational dangers by means of multi-beam echosounders and side-scan sonars. The SHSU also disseminates in the coastal warnings and in the Ukrainian Notices to Mariners the information about detected dangers and changes in navigational conditions.

For the purpose of hydrographic surveys fulfilment, the SHSU permanently modernizes its hydrographic fleet and equipment.



In 2015-2017 it was put to use 4 new multi-beam echosounder systems SONIC 2024 to supply the needs in hydrographic surveys and surveying of navigable waterways, port waters, anchorages and areas with minimum depths, detection of navigational dangers, in conformity with requirements of the IHO S-44 Standard's Special Order.

The hydrographic surveying and data processing are fulfilled employing the HYPACK software.

*b. New technologies and/or equipment*

The SHSU possesses modern technical facilities for fulfilment of hydrographic surveys. By now, 5 multibeam echosounder systems have been put into service and are operated that allow carrying out hydrographic surveys in the Ukrainian maritime zone of responsibility in conformity with the most recent standards of the International Hydrographic Organization. We use R2Sonic (USA) and Teledyne Reson (USA) multibeam systems.

Two SONIC 2024 multibeam systems have been installed onboard big hydrographic vessels. Small hydrographic catamarans are equipped with 2 portable multibeam systems based on SeaBat T20-P echosounders that can be repositioned easily to other crafts depending on the tasks to be performed. SeaBat 7101 multibeam echosounder is used on the SHSU's Danube Section for the purpose of monitoring of the Danube River's fairway.

The multibeam echosounder complexes comprise state-of-the-art inertial navigation systems, which ensure hydrographic surveys performance even under unfavourable weather conditions of a certain level and obtaining of high-quality data about a bottom contour.

The surveys in water areas with less critical depths are carried out by means of single-beam echosounders and side-scan sonars.

We use the Trimble DSM 232 and SPS 461 DGPS receivers for horizontal positioning of surveys. The planimetric base of hydrographic surveys is maintained by means of geodetic GPS receivers of Trimble R10, Trimble 5700 accuracy class. The SHSU uses the SET 3130R3 electronic total stations for topographic and geodetic surveys of coastal areas, as well as for creation of planimetric base of the surveys.

In 2016 the SHSU has purchased and put to use the StrataBox bottom profiler intended for examination of bottom sediment layers and G-882SX marine magnetometer for detection of metal submerged objects on the seabed that are covered with a layer of mud and could create a danger to navigation.

*c. New ships*

Surveying vessel 'Kapitan Cheremnykh'  
Surveying vessel 'Kapitan Ziber'

*d. Problems encountered*

The State Hydrographic Service of Ukraine is not able to carry out hydrographic surveys in the area of the Crimean Peninsula due to obstacles described above in paragraph 1(a).

### **3. New Charts & Updates**

*a. ENC's*



74 updated ENC's  
4 new nautical ENC's.

*b. ENC's distribution method*

Distribution Agreements with PRIMAR and UKHO.

*c. RNC's*

The SHSU does not produce RNC's.

*d. INT Charts*

Updated:

3410	INT 3883	UA	50 000	Simeiz to Hurzuf
3439	INT 3819	UA	75 000	Approaches to Zmiinyi Island and Bystre Mouth
3506	INT 3888	UA	25 000	Stanislav Cape to Kizomys Settlement
3507	INT 3885	UA	25 000	Kizomys Settlement to Kherson Port

Approved by the Region F Coordinator and being prepared for issue in 2017:

3405	INT 3890	UA	50 000	Ochakiv to Pivdennyi Buh River
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It has been scheduled work on the following INT charts to be updated in 2017:

3226 INT3816 Zmiinyi Island to Tarkhankut Cape, 1:300 000
3615 INT3884 Mykolaiv Port, 1:10 000

4 more INT Charts are currently under consideration of the Region F Coordinator:

3417	3897	UA	50 000	Kerchenska Strait
3421	3899	UA	50 000	Approaches to Mariupol Port
3632	3903	UA	10 000	Kerch Port
3229	3818	UA	350 000	Sea of Azov

*e. National paper charts*

60 paper charts of the national portfolio were updated.

*f. Other charts, e.g. for leisure craft*

- No. 3002 'Protected Areas and Objects in Ukrainian Waters of the Black Sea and the Sea of Azov';
- No. 3003 'World Time Zones Chart'.

#### 4. New publications & updates

##### a. *New publications*

- 'Oceanography'
- 'Cartographic Support for Navigation'
- 'Navigational Support of Sailing'
- 'Nautical Hydrography'
- 'Navigational Hydrometeorology' (in Russian language).

##### b. *Updated publications*

Re-issued:

- No. 910 'List of Current Temporary and Preliminary Notices to Mariners of the State Hydrographic Service of Ukraine' (annual edition);
- No. 944 'Instruction on Compiling and Issuance of Coastal Warnings and Broadcasting to Mariners'.

##### c. *Means of delivery, e.g. paper, digital*

Publications are delivered in paper form.

Notices to Mariners are provided on the users' requests either in paper or in digital form.

The technology "Print-on-Demand" has been implemented for production, maintenance and dissemination among users of paper navigational nautical charts from national portfolio.

#### 5. MSI

##### a. *Existing infrastructure for transmission*

General supervision over MSI dissemination has been fulfilled by the National Coordinator – the State Hydrographic Service of Ukraine, through its Centre of Navigational and Hydrographic Information, which operates in Kyiv. Its tasks include informing mariners on changes in navigational conditions and regime of navigation in the sea area of Ukraine by means of:

- broadcast of coastal warnings in English via NAVTEX at frequencies of 518 and 490 kHz;
- broadcast of coastal warnings in English and Russian via radiotelephone at frequency 2650 kHz;
- transmission to ship-owners and mariners via Internet of daily In-force Bulletins including: texts of coastal warnings for the past 24 hours, current coastal warnings and NAVAREA III navigational warnings for 031 region (the Black Sea and the Sea of Azov), 24-hour weather forecast, ice conditions, meteorological warnings for the past 24 hours, as well as other information concerning safety of navigation;
- dissemination of Notices to Mariners.

Coastal warnings (navigational information) in NAVTEX mode are transmitted by Odesa-NAVTEX and Berdiansk-NAVTEX stations.

Coastal warnings are transmitted on schedule only for their operative range, while *vital* and *important* coastal warnings (including information about distresses, drifting mines and storm warnings) are transmitted out of schedule.



Nation/Area	Service MSI		GMDSS	
Ukraine	a. Local warnings	Yes	a. Master plan	Yes
	b. Coastal warnings	Yes	b. A1 Area	Yes
	c. Navarea warnings	Yes	c. A2 Area	Yes
	d. Information about ports	Yes	d. A3 Area	No
			e. NAVTEX	Yes
			f. SafetyNET	No

Currently, Ukraine has three separate AIS networks:

- SHSU - 19 stations (7 base stations are on the temporarily occupied territory of the Crimea);
- Delta-Pilot Branch within State Enterprise «Ukrainian Sea Ports Authority» - 11 stations (3 base stations are on the temporarily occupied territory of the Crimea);
- Maritime Search and Rescue Service within State Enterprise «Ukrainian Sea Ports Authority» - 5 stations (3 base stations are on the temporarily occupied territory of the Crimea).

Implementation of the automated system for navigational situation monitoring in Ukrainian waters has allowed to the State Hydrographic Service of Ukraine to complete the following tasks:

- to broadcast differential corrections from Differential Reference Stations via AIS channels;
- to broadcast vital NAVTEX navigational warning, distress and disasters alerts and storm warnings via AIS channels;
- to use AIS as AtoN.

*b. New infrastructure in accordance with GMDSS Master Plan*

NtR

*c. Problems encountered*

NtR

## 6. C-55 latest update (Tables)

The table below describes the hydrographic surveys for the depth ranges 0-200m and > 200m (--/--) out to the limits of Exclusive Economic Zone:

Nation/Area	A	B	C	Amplifying notes including significant gaps in coverage
Ukraine	75%/100%	25%/0%	0%/0%	High-priority tasks: a. Regional routes: water areas of sea ports and their approach channels, in particular in the north-western part of the Black Sea, Kerchenska Strait and approaches to it. b. Internal routes: surveys for inland charts of the Dnipro, Danube and Pivdennyi Buh rivers.



In accordance with the IHO C-55 Annex B, the latest update on the status of Ukrainian charts portfolio coverage in Ukrainian zone of responsibility in the International Charting Region F is as follows:

Nation/Area	Offshore passage/ Small			Landfall and Coastal passage/ Medium			Approaches and ports/ Large			Amplifying notes
	A	B	C	A	B	C	A	B	C	
Ukraine	100%	-	100%	100%	-	100%	100%	-	99%	Ukraine does not produce RNCs. A number of large-scale charts needs to be updated.

## 7. Capacity Building

### a. *Offer of and/or demand for Capacity Building*

According to the Standards of Competence for Hydrographic Surveyors (M-5 IHO Publication) the SHSU has implemented the program of training and advanced training for hydrographic surveyors using facilities of the Odesa Maritime Academy. However, the State Hydrographic Service of Ukraine has been constantly looking for supplementary ways of its personnel training, such as visiting by our hydrographic surveyors various specialized courses under the auspices of the International Hydrographic Organization.

### b. *Training received, needed, offered*

During the period from 26 June to 15 December 2017, two SHSU employees (1 cartographer and 1 hydrographic surveyor) will take part in the theme-focused training course 'Hydrography for Charting and Disaster Management (Internationally Accredited Category B)', which take place in Japan and is organized by the Japan International Cooperation Agency (JICA).

From 4 September to 15 December 2017, one nautical cartographer will participate in the 9<sup>th</sup> training course in Marine Cartography and Data Assessment (Internationally Accredited Category B), which is organized by the IHO and funded by the Nippon Foundation and will take place in the United Kingdom Hydrographic Office in Taunton.

The HYPACK training seminar on hydrographic survey software took place in Odesa in October 2016. The seminar was presented by Mr. Patrick Sanders, the President of HYPACK Inc.

2 hydrographic surveyors from the SHSU took part at the Multibeam Echosounder and Side Scan Sonar Systems Workshop that was organized by the International Hydrographic Organization and the Turkish Navy Office of Navigation, Hydrography and Oceanography in Istanbul, Turkey, in 2016.

3 SHSU cartographers participated at Electronic Navigational Charts (ENC) Validation Training Course / Workshop, which was arranged by the PRIMAR Regional ENC Coordinating Center in Split (Croatia) in December of 2015.



The State Hydrographic Service of Ukraine in its capacity of IALA National Member and, correspondingly, the Ukrainian Competent Authority, has accredited in 2015 the National University 'Odesa Maritime Academy' (ONMA) of the Ministry of Education and Science of Ukraine (Odesa, Ukraine) to perform AtoN personnel training. The accreditation process has been performed in compliance with SOLAS Convention, Chapter V, Regulation 13, and in line with IALA guidelines and recommendations as regards to Aids to Navigation (AtoN) service delivery, including recommendations on training and qualification of AtoN personnel (i.e., IALA Guidelines 1014, 1100; IALA Recommendations E-141, E-141/1).

*c. Status of national, bilateral, multilateral or regional development projects with hydrographic component (in progress, planned, under evaluation or study):*

To date the SHSU has concluded the agreement on exchange of navigational information with the United Kingdom Hydrographic Office. For the purpose of the ENC's distribution, the agreements have been signed with PRIMAR, C-MAP Italy S.r.l., Jeppesen (Boeing Company), Navionics S.r.l., Tresco Ltd, Periskal CVBA, Transas Marine and Garmin companies.

*d. Definition of bids to IHO CBC*

The State Hydrographic Service of Ukraine is in want of training its personnel through participation at the following courses/workshops/seminars:

- hydrographic surveys by a multibeam echosounder, 2 students during 2016-2017;
- up-to-date methods and instruments for hydrographic surveys, 2 students during 2016-2017;
- nautical cartography, 2 students during 2016-2017.

## **8. Oceanographic Activities**

*a. General*

In 2015 the SHSU has purchased and put into use a data buoy with the purpose of monitoring of meteorological and oceanographic findings aimed to safety of navigation support in approaches to the ports of Odesa, Chornomorsk and Yuzhnyi.

A digital version of Oceanographic Atlas of the Black Sea and the Sea of Azov has been developed and produced by the State Hydrographic Service of Ukraine.

*b. GEBCO/IBC's activities*

NtR

*c. Tide gauge network*

SHSU uses hydrological probes for performance of oceanographic researches.

In 2016 it has been purchased automatic Valeport TideMaster-D tide gauges designed for continuous monitoring of sea level on the coast of the Black Sea.

*d. New equipment*

Data buoy SW Midi 185  
 Valeport Model 106 current meters  
 CTD profiler (hydrological probe) MIDAS CTD+



Valeport TideMaster-D automatic tide gauges.

*e. Problems encountered*

NtR

**9. Other activities**

*a. Participation in IHO Working Groups*

The employees of the State Hydrographic Service of Ukraine take part in the activities conducted by MBSHC, BASWG, S-100WG, ENCWG, NIPWG, NCWG, TWCWG and MSDIWG.

*b. Meteorological data collection*

Using the data buoy, the SHSU collects meteorological data (air temperature, atmospheric pressure, wind velocity and direction, visibility) in approaches to the ports of Odesa, Chornomorsk and Yuzhnyi.

*c. Geospatial studies*

NtR

*d. Disaster prevention*

NtR

*e. Environmental protection*

NtR

*f. Astronomical observations*

NtR

*g. Magnetic/Gravity surveys*

NtR

*h. MSDI*

NtR

*i. International*

NtR

*j. Other*

NtR.



## 10. Conclusions

- 1 In 2015-2017 the SHSU has successfully ensured the fulfilment of international obligations of Ukraine as pertaining to aids to navigation and, in particular, in development of aids to navigation system through implementation of new navigational, hydrographical and charting methods, techniques and technologies.
- 2 All SHSU divisions and branches have been provided with modern watercraft and facilities for hydrographic surveying of the bottom contour, instrumentation for positioning of hydrographic surveys and maintenance of planimetric base. All the aforementioned together with specialized software ensure compliance of the level of accuracy, including that in the critical shallow waters, with the international standards.
- 3 The high-priority tasks with regard to hydrographic surveys are hydrographic soundings in the areas of recommended and actual vessel traffic routes, harbour waters and approach channels to ports, heavy traffic areas and critical shallow waters.
- 4 The important condition for hydrographic surveys is a need in resurveying for the purposes of nautical charts re-edition and/or updating.
- 5 At the same time, due to the Russian Federation's occupation and annexation of the part of Ukrainian territory since March 2014, the State Hydrographic Service of Ukraine has not had access to Ukraine's inland waters and territorial sea in the area of the Crimean Peninsula. According to the Law of Ukraine No. 1207-VII 'On Securing the Rights and Freedoms of Citizens and the Legal Regime on the Temporarily Occupied Territory of Ukraine' as of April 15, 2014, these waters have been defined as temporarily occupied territories.

The sea ports of Kerch, Sevastopol, Feodosiia, Yalta, Yevpatoriia will remain closed until the restoration of the constitutional order of Ukraine within the territory of the Autonomous Republic of Crimea and the City of Sevastopol in accordance with the Order of the Ministry of Infrastructure of Ukraine No 255 of June 16, 2014.

However, in order to keep national charts and publications updated and to monitor changes in navigational and hydrographic situation in the area of the Kerchenska Strait and the Autonomous Republic of Crimea, the SHSU arranges comprehensive remote sensing of the earth surface in the area for the purpose of obtaining modern high-accuracy data based on the Earth's remote sensing.

Aids to navigation on the Crimean coast have been temporarily out of control of the State Hydrographic Service of Ukraine. Mariners are requested to exercise caution.

**Date:** June 01, 2017

