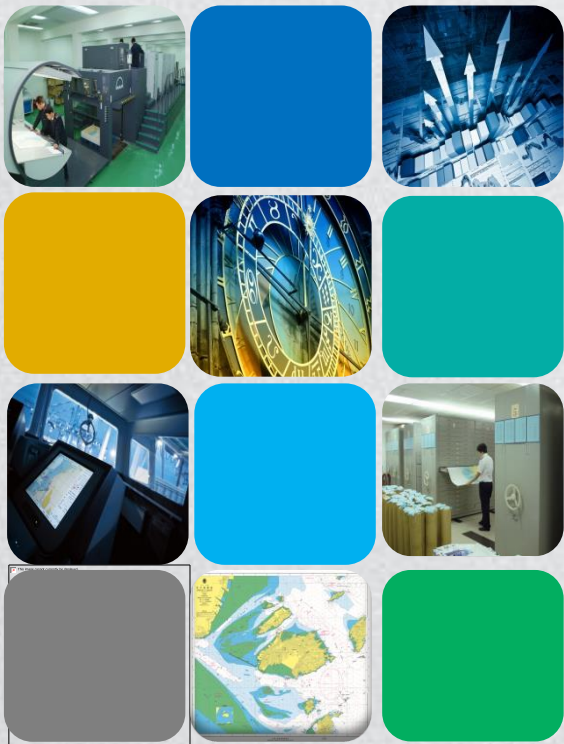


Progress Report of the HDENC Depth Contours Auto-generation

China MSA





1. In January 2020, IHO released S-65 Annex A, High Density (HD) ENC Production and Maintenance Guidance (Edition 1.0.0) . At the ENCWG-6 meeting held in June 2021, China MSA submitted the document ENCWG6-11.1d, which introduced the manual processing experience about the auto-generation of HDENC depth contours and suggested that other HDENC producing authorities share their experience as reference information for potential HDENC producing authorities.

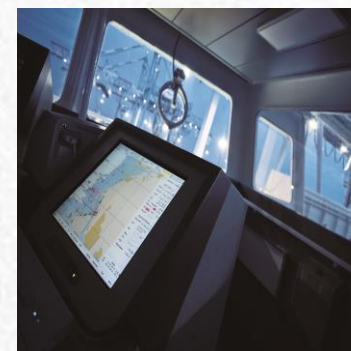
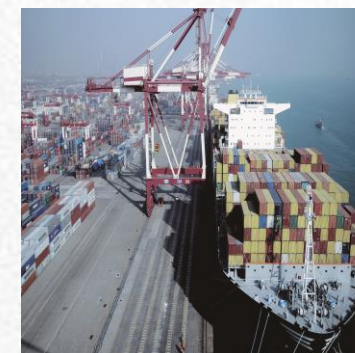
2. ENCWG-6[Action6/17]suggested “*ENCWG members interested in providing information on their process for generating contours for HDENCs and/or participating in a small group to compile this information into a single document for reference to notify the Chair at their earliest convenience.*” According to this suggestion, China MSA took the lead in setting up a small group on HDENC depth contours auto-generation, with the participation of UKHO, CHS, I4insight, SevenCS and Caris.

Overview of test data

File name	HDENC-TESTDATA-NEW.000
Number of soundings	582,541
Average sounding density	1 meter
File size	93.869 MB
Coordinate reference system	WGS-84
Longitude and latitude resolution	0.00000001
Depth resolution	0.1

Test requirements

Contours interval	0~30m: 1m; Above30m:5m.
Other requirements	Depth contours are auto-generated by software without manual processing.
	Provide the software and its version.
	Provide appropriate introduction documents.
	Manual processing experience are welcomed to provide.



At the end of October 2021, China MSA provided a testdata file named "HDENC-TESTDATA-NEW.000" . The test data is multi beam scanning soundings, and some soundings are manually modified.

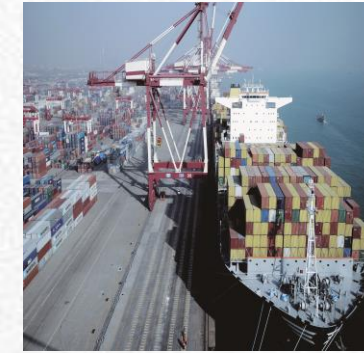


List of test results

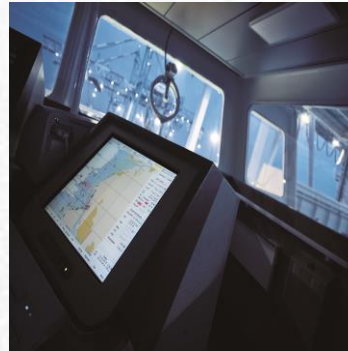
I4insight	CN5DEPCN.000
SevenCS	7CSMSA12.000
Caris	MSA_Compilation _Dec152021
UKHO	GB5CH001_000
CHS	CHS_HDENC_contours.000
CHINA MSA	TEST-DEP.000

List of test softwares

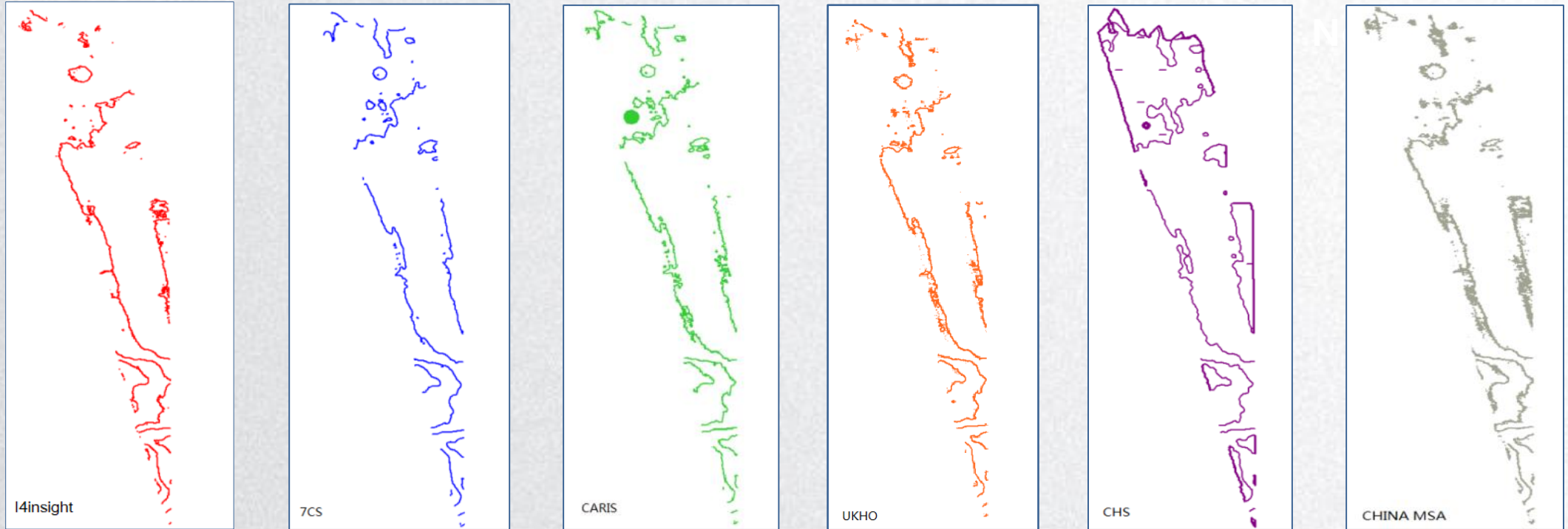
I4insight	Dkart Bathy System 1.16.7Dkart Editor 3.4.2
SevenCS	ENC Designer 4.7.0FME 2021ENC Bathymetry Plotter 2.0.07Cs Analyzer 5.0.1
Caris	Caris Base Editor
UKHO	Caris Base Editor v5.4.5Caris HPD Product Editor v3.2.13
CHS	Caris Base Editor v5.5.19
CHINA MSA	Caris Base Editor v5.4.5



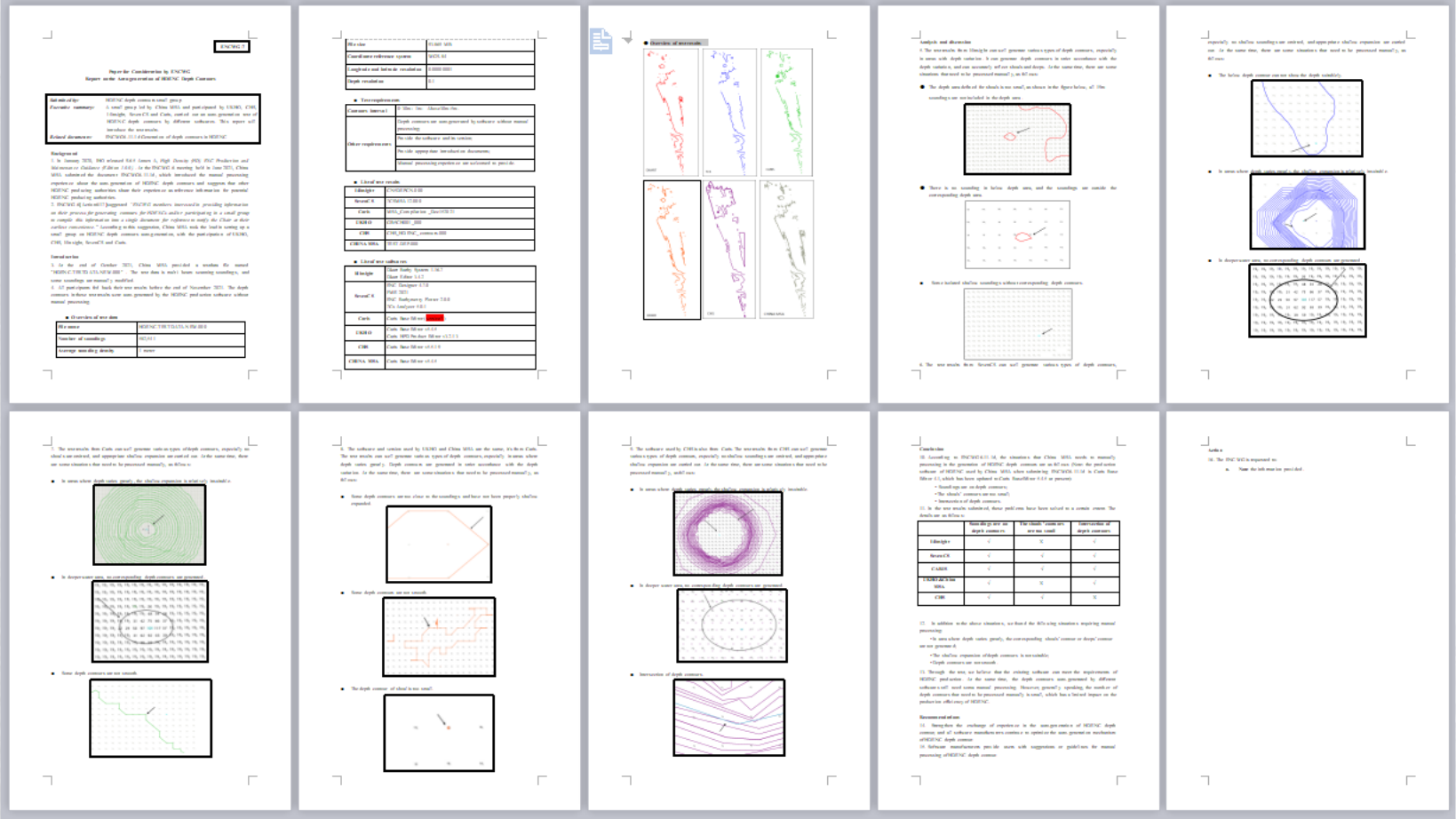
All participants fed back their test results before the end of November 2021. The depth contours in these test results were auto-generated by the HDENC production software without manual processing.



Overview of test results



Generally speaking, we believe that the existing softwares can meet the requirements of HDENC production. At the same time, the depth contours auto-generated by different softwares are still different in some areas, and some of them need manual processing. However, the number of depth contours that need to be processed manually is small, which has a limited impact on the production efficiency of HDENC.



Next step

The draft report has been preliminarily prepared. Next, we will send it to the small group members for comments and submit the final report to ENCWG-7 meeting.

