



## PART 2

### SUBMISSION MODEL



#### IDENTIFICATION

**Project Number :** \_\_\_\_\_ /2016

Project Name:	<b>Bathymetry training course using RTK technology</b>
Submitting RHC (Priority)	SWAtHC/Brazil Priority: 1
Date:	SECOND SEMESTER 2017
Institution executing the project:	Directorate of Hydrography and Navigation (DHN)
Name of responsible:	Capt. (Ret.) HELBER CARVALHO MACEDO DHN CB Adviser
Address:	Av. Barão de Jaceguay, s/n Ponta da Armação, Niterói, RJ Brazil CEP 24048-900
Telephone:	55-21-2189-3512 (Office)
WEB:	55-21-2189-3580
e-mail:	<a href="mailto:carvalho@dhn.mar.mil.br">carvalho@dhn.mar.mil.br</a>


#### GENERAL SPECIFICATIONS

<b>Background information</b>	On the 10 <sup>th</sup> meeting of the SWAtHC it was decided that the Member-States (MS) would propose to CBSC, in 2016, the necessary training course to improve the regional skills on bathymetry, specifically using RTK positioning technology. The final approval to this training will be decided by CBSC under the present formal submission.
<b>Justification of the project</b>	The objective of this course is to improve the practical and theoretical skills developed by Latin America hydrographers in performing bathymetry using RTK Technology and its main issues, such as: installation of ground reference stations, datums to be used, calibration, equipment configuration and operation, data management, quality of results and scale application.
<b>Countries involved</b>	Brazil, Argentina and Uruguay are the main participants to be supported by CBSC funds. After a detailed study of costs, SWAtHC would like to suggest CBSC to expand the invitation to Paraguay and Bolivia, 1 person each, as well as, the other two Latin American Hydrographic Commissions, MACHC and SEPHC, 2 persons each. In addition, the course would be opened to any other public or private Hydrographic Organization that decides to send its participants.
<b>Exposition of the problem</b>	The MS that produce INT/ENC charts need to be aware about new technologies arising in Hydrography. Positioning is an issue that

	influences on the accuracy of the soundings, so as to achieve the level orders of surveying established by S-44 OHI Publication. A better quality of bathymetric data leads to a more reliable database, which will improve consistency and quality of INT/ENC and paper chart products.										
<b>General objective</b>	To increase the capacity of Latin American hydrographers to perform bathymetry using RTK technology.										
<b>Specific objectives</b>	1) To provide the opportunity for participants to exchange experiences, which is useful to solve common problems. 2) To offer the training in Latin America to stimulate its countries to participate. 3) To provide a forum to discuss the needs, in order to improve the quality of hydrographic surveys.										
<b>Outputs/Products</b>	More qualified hydrographers using bathymetric methods and its correct positioning within the South American region.										
<b>Other deliverables</b>	Build a net of regional users to solve common problems related to bathymetry using RTK technology.										
<b>Achievements and awaited benefits</b>	The main purpose is to achieve the IHO S-44 standards on bathymetric data, especially on positioning, improving the quality of nautical charts. This training will allow the Hydrographic Services to develop products INT/ENC with better accuracy.										
<b>Schedule of activities</b>	DHN intends to follow the lectures as described below: <table border="1" data-bbox="564 965 1402 1357"> <tr> <td>First day</td><td>An overview about bathymetry using RTK technology, and installation of ground reference stations.</td></tr> <tr> <td>Second day</td><td>Datums to be used, calibration, and equipment configuration and operation.</td></tr> <tr> <td>Third Day</td><td>Data management.</td></tr> <tr> <td>Fourth Day</td><td>Use of scale.</td></tr> <tr> <td>Fifth Day</td><td>Results and quality analysis. Accuracy verification.</td></tr> </table> This tentative approach can be modified due to further evaluation of course preparations.	First day	An overview about bathymetry using RTK technology, and installation of ground reference stations.	Second day	Datums to be used, calibration, and equipment configuration and operation.	Third Day	Data management.	Fourth Day	Use of scale.	Fifth Day	Results and quality analysis. Accuracy verification.
First day	An overview about bathymetry using RTK technology, and installation of ground reference stations.										
Second day	Datums to be used, calibration, and equipment configuration and operation.										
Third Day	Data management.										
Fourth Day	Use of scale.										
Fifth Day	Results and quality analysis. Accuracy verification.										

## RESOURCES

<b>Contribution by countries involved</b>	€ 3,000. The SWAtHC host country (Brazil) will provide the meeting room, TI assistance, didactic material, meals (lunch) and personal to organize the several activities.
<b>Contribution by other parties</b>	Not programmed.
<b>Contribution expected from CBFund</b>	€ 18,000. Hotels, air flights tickets and local transportation for the SWAtHC participants and guests from Paraguay, Bolivia, MACHC, and SEPHC.
<b>Total Cost (euros)</b>	€ 21,000.
<b>Breakdown of costs</b>	

<b>From CBFund (item and amount)</b>	Item	Per person	Number of persons	Total
	SWAtHC host country (Brazil) DHN: Meeting room, TI assistance, di- dactic material and meals (lunch)	€ 250	12	€ 3,000
	Accomodation (Hotel)	€ 800	10 	€ 8,000
	Air flights tickets	€ 800	10	€ 8,000
	Meals	€ 100	10	€ 1,000
	Local transportation	€ 100	10	€ 1,000
	Final amount			€ 21,000
	These costs do not include 2 participants from host country.			