



An IBSC Recognized Category S-5B Program Brought to Your Doorstep:

New Paths, New Approaches

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Overview

- Motivation
- Hydrographic Certification Schemes
- Global S-5B/S-8B – Design considerations
- IIC Academy / Deakin University
- Participants
- Practicals & Final Field Project
- Future



Motivation

Institutional

- Demand for personnel has exceeded supply
- Loss of trained personnel to other markets
- Increased contracting out by HO's to Industry
- Employee retention / career path / marketability
- Hydrographic Certification

Individual

- Cost of training travel, accommodations.
- Pressure of life / work / education balance
- Career growth, Hydrographic Certification, CPD
- Connected globally



Hydrographic Certification (Level 0, 1 and 2)

- 7.1 It is recommended that an ACLS Certified Hydrographer (CH or CHTech) or equivalent Certification recognized by the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC), be employed as part of the onsite team, for the duration of a project. These certifications will constitute part of the technical rating criteria of this RFSA.

Canadian Hydrographic Service

UKHO Hydrographic Survey Specifications

Charge Surveyor

“The Charge Surveyor must be accredited to HPAS Level 1 or 0 (or equivalent) and/or degree level hydrographic surveying qualification from an IBSC Category A recognised course

Australian HydroScheme Industry Partner Program - Statement of Requirement:

3.2 Surveyor in Charge (SIC)

The Contractor shall identify the SIC in their Survey Management Plan (SMP). The SIC is to be an AHSCP certified Level 1 Surveyor (CPHS1) and in date for Continual Professional Development (CPD) as per the list of certified Surveyors on the SSSI website. The SIC will be responsible for:

Hydrographic Certification Schemes





Approaches to Certification

Generally

Fast Track – Provides a concise and clear path to certification whereby the applicant has graduated from an IBSC recognized **Category A or Category B** educational program.

Medium Track – Provides a more complex approach to certification. The applicant has graduated with **a BSc in Geospatial Sciences (or equivalent) and has taken additional focused hydrographic surveying subjects.**

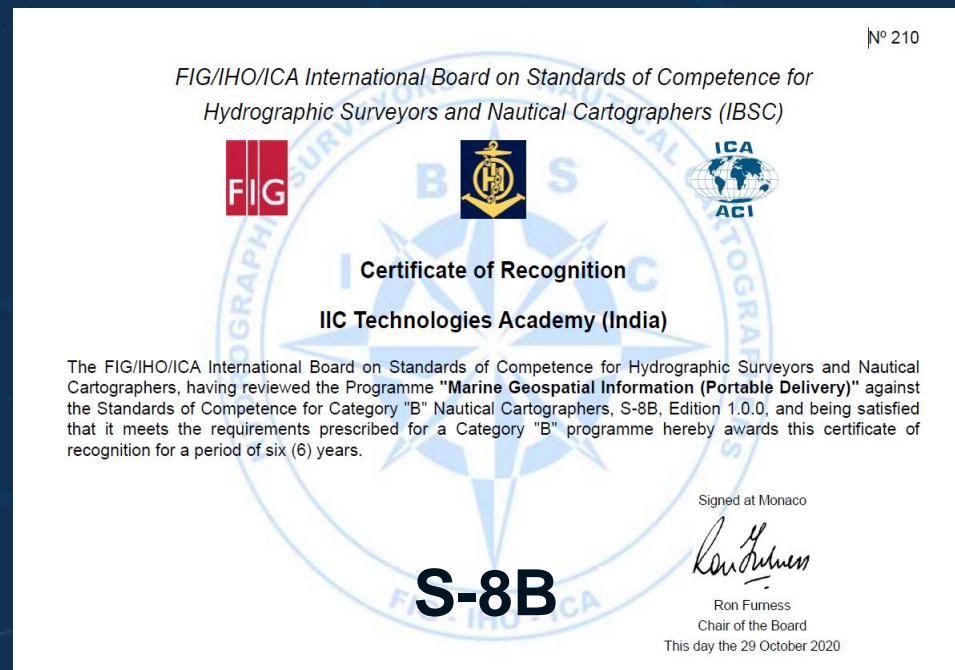
Slow Track – Provides a complicated, but achievable, approach to certification. **The applicant has graduated from a technical college or similar.** In this situation, the applicant is required to show proof of significant additional geospatial and hydrographic learning.

PLUS..... experience and Continuous Professional Development



IBSC Recognized Programs

- 3-year time frame for completion
- Global Delivery (anywhere, anytime)
- Partnering with local institutions

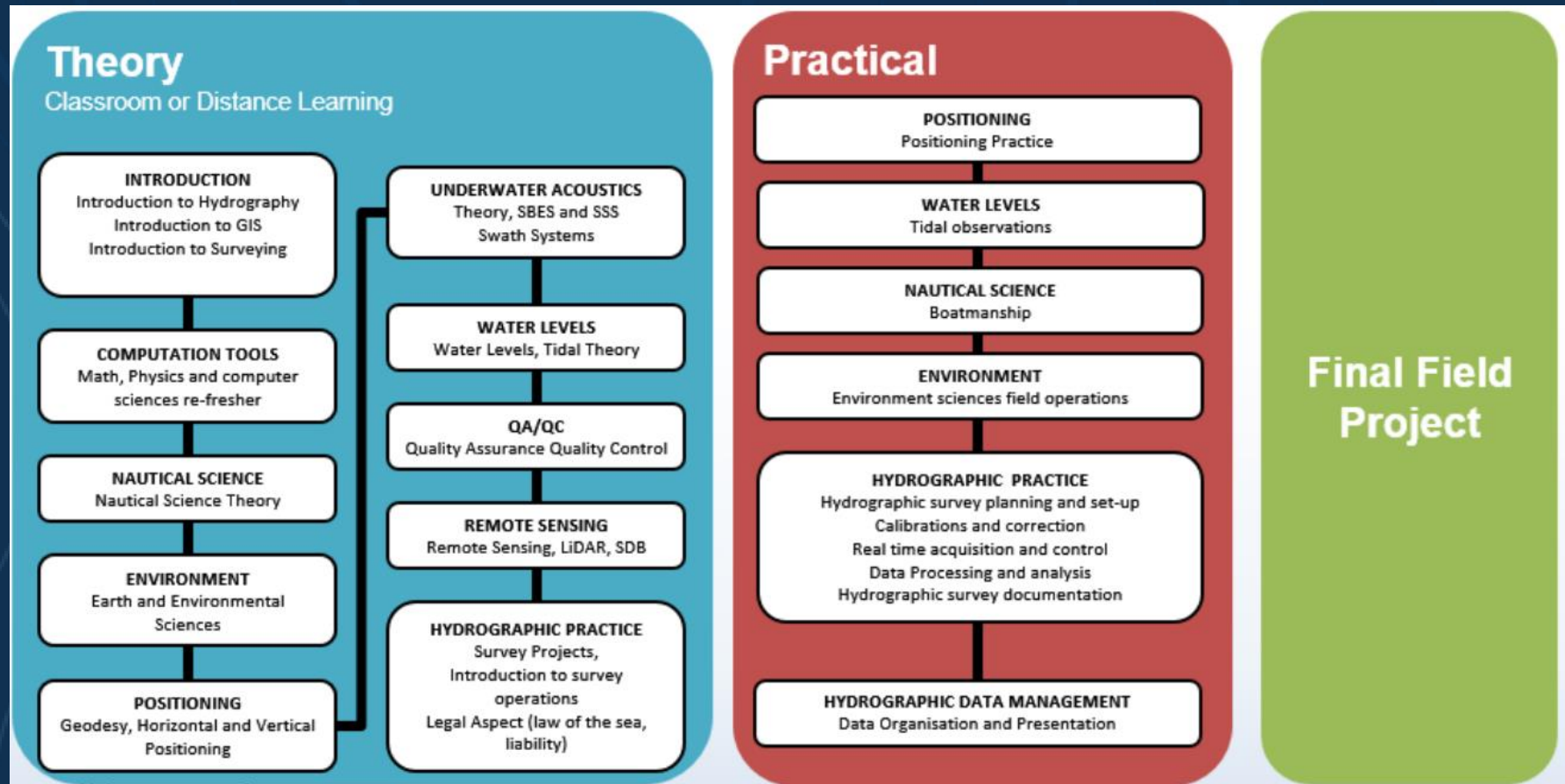




IIC Academy Cat S-5B Course Design and Delivery

On-line
(13 weeks content /
30 weeks to complete)

On-Site (Globally)
3 weeks 4 weeks





IIC Academy Cat S-8B Course Design and Delivery

On-line

(22 weeks content / 30++ weeks to complete)

Foundations of Marine Geospatial Information (10 Days)

- Introduction to Nautical Cartography
- Charting International framework and organizations
- Basic concepts of Cartography

Data Assessment, Compilation and Production (32 Days)

- Essential aspects of Nautical Chart production
- S-57 Object Catalogue
- Data Sources and Production Tools

Production and Validation (32 Days)

- Evaluation and Categorization of Bathymetric Surveys, CATZOC
- Workflow and Process Design
- ENC Production, Quality Management and S-65
- Chart Proofing and Printing, Raster Chart Production

Marine Environment: Physical Characteristics and Legal Issues (6 Days)

- Elements of Geology, Geophysics, Oceanography and Maritime Law
- Marine Environment and Cartography

Marine Spatial Data Infrastructure (5 Days)

- Concepts, Evolution
- Practical Deployments
- Role of MSDI in National and Regional Development

Remote Sensing (5 Days)

- Concepts, Sensors
- Data Formats and Preparations
- Remote Sensing in Cartography



Web-based Learning Components



Webinars

Instructor led



Presentations
Contents
Videos

Self-paced reading
Instructor monitors
progress time



Quizzes
Short Tests

Self-paced
Instructor monitors
re-takes
Instructor validates
results



Assignments
Exercises

Interaction with
instructor
Instructor corrects
and guides



Forum

Instructor
moderated
Instructor assesses
student participation




Tutoring
(if required)

Instructor led
Individual students
or small groups



Talent LMS Platform

 **IIC ACADEMY**

0 POINTS





D. PEYTON | LEARNER


MESSAGES


HELP

Home

Search my courses

  Name  

 **COURSE CATAL...**
Find new courses

 **PROGRESS**

20
courses in progress

0
completed courses

42m
training time

0
badges

0
points

S-5B: HYDROGRAPHIC SURVEYING PROGRAM

LESSON UNITS

Introduction to Surveying

UNIT 1	Introduction
UNIT 2	Bathymetry
UNIT 3	Hydrographic Systems
UNIT 4	GNSS and Positioning
UNIT 5	Water Levels
UNIT 6	Survey Mobilisation
UNIT 7	Data Collection
UNIT 8	Data Processing
UNIT 9	Survey Products

Introduction | 2- Introduction to Surveying | 2- Bathymetry

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Course info






IN_02: Introduction to Surveying


An initial approach to hydrographic surveying. Basic concepts and aspects of surveying the oceans.

CONTENT


INTRO

-  PDF IN_02_Intro_Survey_LessonPlan
-  PDF IN_02_01_Intro_bathymetric_data_collection
-  Zip file of PDFs IN_02 Lectures in PDF

BATHYMETRY

-  SCORM IN_02_02_Bathymetry_SCORM

HYDRO SYSTEMS

-  SCORM IN_02_03_HydrographicSystems_SCORM





Category S-5B Program (2021-22)



Partnership



1st On-line

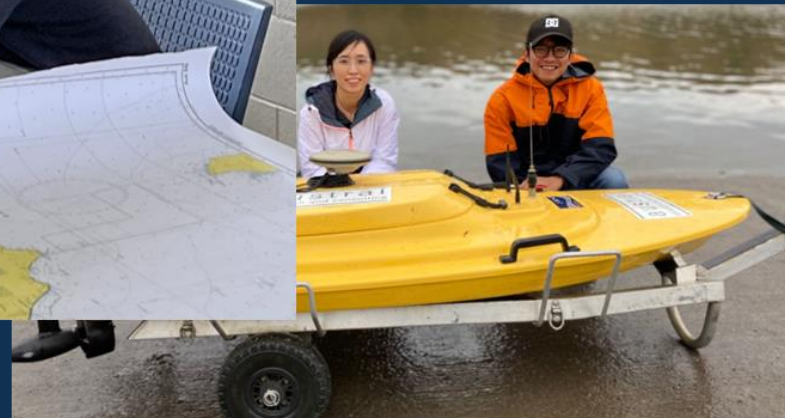
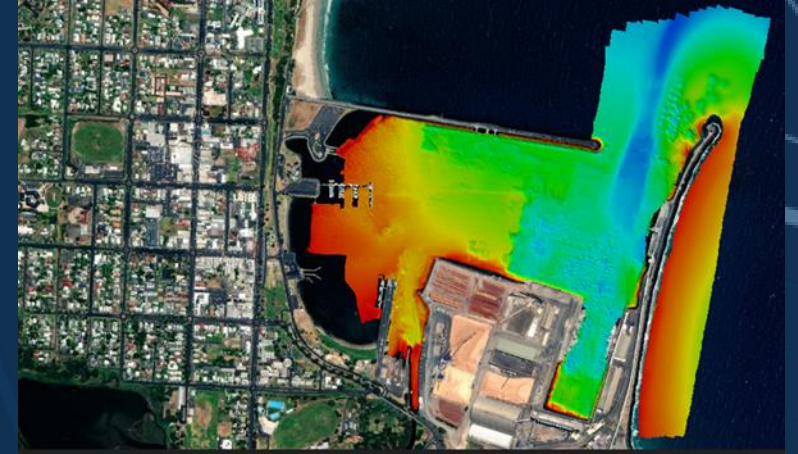
- Commenced September 2021
- Practical & Final Field Project – May 2022

2nd On-line

- Commenced September 2022
- Practical & Final Field Project – May 2023



S-5B Practicals and Final Field Project



Final Field Project, Portland Harbour



Final Field Project 2022 S-5B Hydrographic Survey Program



Rod Tansley & Jenna Kiggins | Team 1

Survey Objectives

Hydrographic Multi Beam Echo Sounder survey of the outer Port of Portland harbour and approaches, outside of K. S. Anderson Berth and Smelter Berth breakwater. The area of 0.75 sq km to be surveyed to International Hydrographic Organization (IHO) S-44 Special Order specification as part of the S-5B Hydrographic Survey Final Field Project. The survey was completed 25th - 26th May 2022 by Team 1 utilising Deakin University's 0.2m Bluebeam survey vessel Volo.

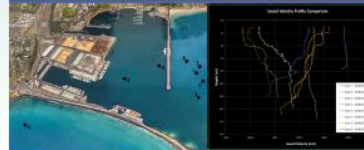
Survey Equipment Used

ITEM	Model / Version	Manufacturer	Notes
Multibeam	EM240C	Kongsberg	
GPS system	R10 MC	Trimble	
IMU	RS2-MN	Applanix	
SVP (surface)	Si-Motion S	Si-Motion	
SVP (bottom)	Si-Motion S	Si-Motion	
SVP (depth)	Si-Motion S	Si-Motion	

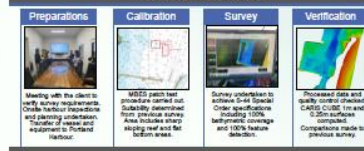
Survey Plan

The survey area was broken into two areas for planning purposes. Survey lines were dynamically calculated with the vessel running along the adjacent seabed edge to achieve 100% overlap. Total of 56 survey lines and 2 quality control crosslines were observed over 2 survey days including all SVP casts to achieve IHO Special Order.

SVP Locations & Data



Survey Conduct



Data Quality



Final Field Project 2022 S-5B Hydrographic Survey Program

Jeremy M, Maggie C | Team 3

Survey Objectives

Survey of Portland harbour area at IHO special order for the Global S-5, as part of the Hydrographic Survey Training Comprehensive Final Field Project. Moreover, this Multi Beam Echo Sounder (MBES) survey is also aimed to collect the seabed data for identifying the geospatial features and have basic understanding at the seabed at Port of Portland.

Overview

Based on the survey, which was conducted on the 25th and 27th of May 2022, we managed to comply with Special Order survey limits designated for a full sea floor search. This resulted in a 100 percent seabed coverage being achieved in this survey. The value for the Total Horizontal uncertainty shown in the error budget table is better than 1m.

Survey Plan

Due to the shallow water depth, the survey was planned to start at various run lines from the relatively deeper water due to dynamic depth changes. The survey lines run as parallel as possible to the seabed contours and to avoid with the traffic around the docks. These are to ensure a full seabed coverage will be achieved within the survey area.

Mobilisation / Calibration

Mobilization: From Deakin University Warrambool campus to Port of Portland.

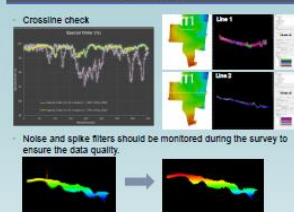
Survey Equipment

ITEM	Model / Version	Manufacturer	Product
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GPS system	RS2-MN	Trimble	
IMU	RS2-MN	Applanix	
SVP (surface)	Si-Motion S	Si-Motion	
SVP (bottom)	Si-Motion S	Si-Motion	

Survey Conduct



Data Quality



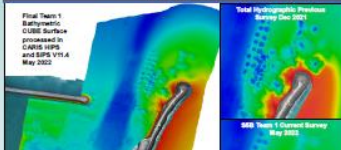
Conclusion

The survey is done in the Portland Harbour at IHO special order for the Global S-5 as the Comprehensive Final Field Project for S-5B Hydrographic Survey course. The field work produced good coverage. The group was able to carry out the field work under the supervision from the tutor.

Lesson Learned

During the survey, there is a vessel bermed at the jetty, hence, to avoid that, one survey line was deviated from the original plan. The survey team tried to run the line as close as possible to ensure no gap. However, there is some room for improvement, such as more attempts should be performed to fill the tiny gap between the jetty and the vessel.

Results



FINAL FIELD PROJECT 2022 S-5B Hydrographic Survey Program



JEHRO FERNANDEZ | GABRIELA BALLA | TEAM 2

OVERVIEW

Survey Date:	25 May 2022
Survey Time:	08:00 - 16:00
Survey Area:	Portland Harbour, Victoria, Australia
Survey Vessel:	Deakin University Survey Vessel
Survey Team:	Jehro Fernandez, Gabriela Balla, Team 2
Survey Report:	Final Report
Survey Status:	Completed

SURVEY PLAN

JD Survey was engaged to conduct a multibeam bathymetric survey of Portland Harbour at IHO S-44 special order. Survey area covered the middle part of the harbour, between Team 1 and Team 2 and was conducted on board Deakin's research vessel, MY Volo. The survey area was split into two Area A and Area B, due to the shape within Portland Harbour.

SURVEY REQUIREMENTS/PARAMETERS			
Horizontal Datum:	GD4300	Ellipsoid:	GRS 1980
Sounding Datum:	LWT	Tide:	87% GWS Tide
Sound Depth for GWS:	Time	AWD Separation Value:	<0.50m
IHO S-44:	Special Order	Survey Area:	0.50km ²
Min Depth:	2m	Max Depth:	20m
Overlap:	100%	Swath Angle:	120 degrees
Frequency:	700kHz	Chart:	Admiralty
Transducer:	Si-Motion S	Acoustic:	Si-Motion S
Charting:	Si-Motion S	Charting:	Si-Motion S
Charting:	Si-Motion S	Charting:	Si-Motion S
Charting:	Si-Motion S	Charting:	Si-Motion S

Mobilisation

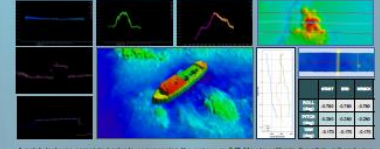
OFFSETS			
GPS:	0.007	0.003	0.006
IMU:	1.040	1.060	0.006
Water Line:	0	0	0

REQUIREMENTS			
Equipment:	Equipment:	Equipment:	Equipment:
Multibeam:	EM240C	GPS:	R10 MC
Positioning:	Applanix	IMU:	RS2-MN
Water:	Applanix	Water:	Applanix
SVP:	Si-Motion	SVP:	Si-Motion
Charting:	Si-Motion	Charting:	Si-Motion
Charting:	Si-Motion	Charting:	Si-Motion
Charting:	Si-Motion	Charting:	Si-Motion

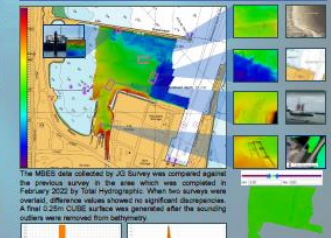
SURVEY



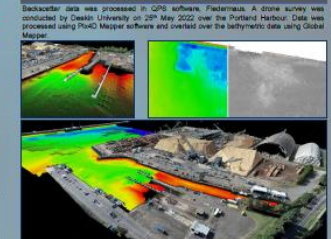
CALIBRATION / DATA QUALITY



RESULTS



ANCILLARY DATA



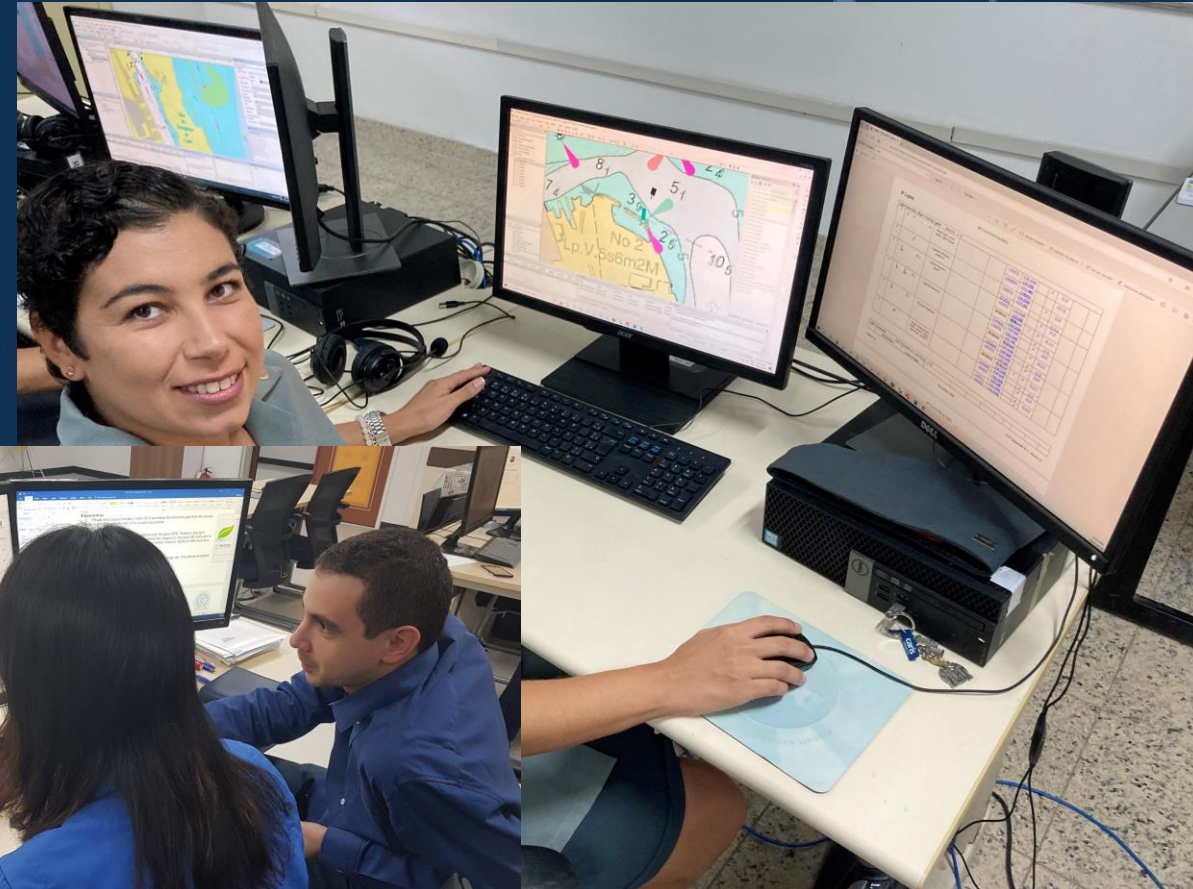
CONCLUSION

Weather conditions were favorable and did not impact the day to day survey activities. The survey area has been comprehensively mapped and is considered to have met the following IHO S-44 Special Order, Port of Portland requirements and CPTF standards and deliverables. Due to project schedule, shipboard movements and vessels at berth, some areas were not surveyed. To achieve full coverage around berths it is recommended that in future surveys, the project team coordinate with Port of Portland to undertake the survey activities when no vessels are berthed or transiting the survey area.





S-8B Practicals and Comprehensive Cartographic Project





2023 and Beyond (Partnering)



Partnership



- Australia 2023 – 2024 program registration has commenced
 - On-Line starts September 2023 (www.iicacademy.com)
 - Partnering: With O2 METOCEAN and Deakin University
 - Engagement with Govt, Pacific Islands and CB bodies
-
- North America, Europe, South America
 - Seeking Partnering, Teaming, Delivery



NEW PATHS. NEW APPROACHES

Thank You

www.iicacademy.com

For more information on the S-5B course or to register:

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