

ACLS International Hydrographer Certification Scheme (ACLS IHCS)

Candidate Handbook

April 2023



Table of Contents

Contents

1.	Introduction	4
2.	The ACLS International Hydrographic Certification Scheme – What is it?	5
3.	What Hydrographic Certification Levels are Available?	7
4.	CBEPS – Canadian Board of Examiners for Professional Surveyors	11
5.	Qualifications for Hydrographic Certification Levels	12
6.	IBSC Recognized Category S-5A / S-5B Programs in North America	20
7.	COMREN (Canadian Ocean Mapping Research and Education Network)	21
8.	Oral Test	26
9.	Practical Experience Requirements (Logbook)	26
10.	Project Reports	29
11.	Procedures for Submission	30
12.	Appeals.....	37
13.	Code of Ethics.....	37
14.	Certificate and Designation.....	37
15.	Continuing Professional Development	38
16.	Certification Renewal	40
17.	Applicable Fees.....	43

Appendix

Example of a Certified Hydrographer certificate

Abbreviations

ACLS IHCS	ACLS International Hydrographic Certification Scheme
ACLS	Association of Canada Lands Surveyors
CBEPS	Canadian Board of Examiners for Professional Surveyors
ACLS IHCP	ACLS International Hydrographic Certification Panel
FIG	International Federation of Surveyors
IBSC	International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers

ACLS IHCS Candidate Handbook – April 2023

ICA International Cartographic Association

IHO International Hydrographic Bureau

1. Introduction

The purpose of this document is to provide guidance through the hydrographic certification process as it pertains to the ACLS International Hydrographic Certification Scheme (ACLS IHCS) administered by the Association of Canada Lands Surveyors (ACLS).

The document attempts to provide the following information:

- A clear understanding of the ACLS International Hydrographic Certification Scheme (ACLS IHCS), which is recognized by the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC).
- A roadmap with respect to the practical experience required for Hydrographic Certification under the ACLS IHCS.
- A “how to” approach on filling out the necessary forms and logbooks for acquiring a Hydrographic Certification against the ACLS IHCS.

2. The ACLS International Hydrographic Certification Scheme – What is it?

The **ACLS International Hydrographer Certification Scheme (ACLS IHCS)** provides a pathway for certification of hydrographic surveyors to international standards.

The certification process is designed to award Hydrographic Certification to individuals aspiring to be hydrographic surveying specialists and professionals. The ACLS IHCS ensures certified hydrographers have the appropriate skill, knowledge, experience, and continuous professional development to meet contemporary demands on a global basis.

The ACLS IHCS applies Fédération Internationale des Géomètres (FIG) International Hydrographic Organization (IHO) and International Cartographic Association (ICA) competency standards for hydrographic surveyors by confirming evidence of the following criteria;

- academic study
- relevant employment history and work experience,
- continuous professional development

The international standards to which the ACLS IHCS adheres to are the “Guidelines for the Implementation of the FIG-IHO-ICA Standards of Competence for Hydrographic Surveyors and Nautical Cartographers. Edition 2.1.2 – July 2021”. The standards are published by the International Hydrographic Bureau and administered by the FIG/IHO/ICA International Board of Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC) <https://iho.int/en/ibsc>.

The IBSC reviews hydrographic certification schemes for individuals as administered by regional organizations and professional associations and awards recognition of those hydrographic certification schemes that comply with the IBSC standards.

The ACLS International Hydrographic Certification Scheme is presently recognized by the IBSC.

In Canada, the ACLS IHCS is administered by the Association of Canada Lands Surveyors (ACLS). The ACLS is a non-profit, non-government organization, and the only federally enacted self-regulated professional surveying association in Canada. The ACLS is multi-disciplinary encompassing all geomatics related services, including hydrographic and offshore surveying.

For the purpose of clarification, it is important to define and understand the context of “Canada Lands” as it is disclosed in the Association of Canada Lands Surveyor. “Canada Lands” encompass all of the offshore areas of Canada, from sea to sea to sea, as shown in Figure 1. The ACLS is the national licensing.

body for all surveyors carrying out property rights and boundary related surveys on and under the surface of Canada's oceans and in the three Canadian territories (Yukon, Northwest Territories and Nunavut), as well as in federal national parks and on First Nations lands. Further information on the ACLS can be found at <https://www.acls-aatc.ca/>.

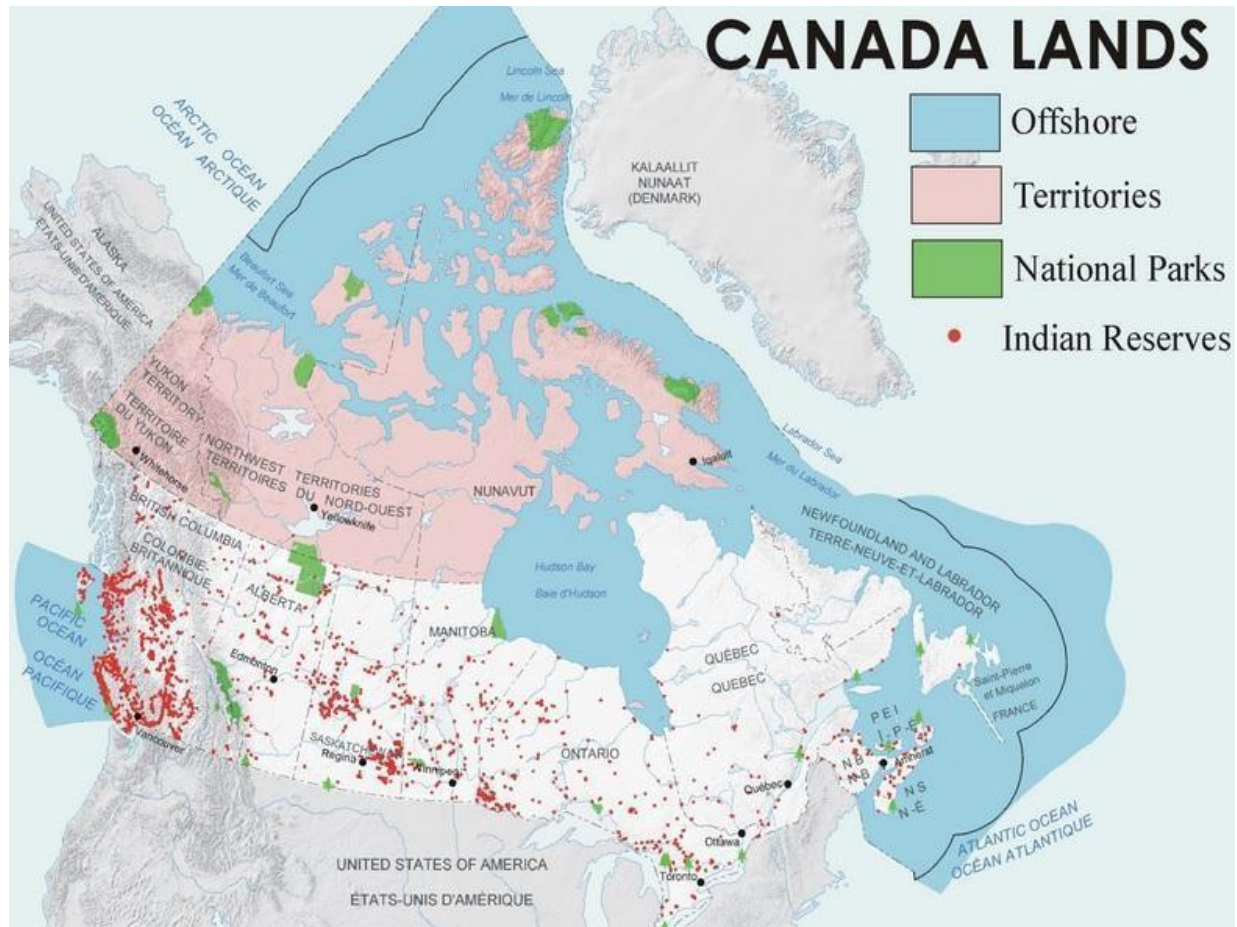


Figure 1 Canada Lands

The ACLS IHCS has implemented an ACLS International Hydrographer Certification Panel (ACLS IHCP) to review and assess candidates against the ACLS IHCS. The ACLS IHCP comprises of professional individuals from Government, Academia and the private sector who are experts in various fields of hydrographic and offshore surveying. Within the ACLS IHCP, for each candidate, there will be a Candidate Assessment Committee of three members that will review a particular candidate's application.

Take Home Messages....

The **ACLS International Hydrographer Certification Scheme (ACLS IHCS)** provides a pathway for certification of hydrographic surveyors to international standards.

The ACLS IHCS is recognized by the FIG/IHO/ICA **International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC)**.

The ACLS IHCS has implemented an **ACLS International Hydrographic Certification Panel (ACLS IHCP)** to review and assess candidates against the ACLS IHCS.

3. What Hydrographic Certification Levels are Available?

The ACLS International Hydrographic Certification Scheme (ACLS IHCS) has three (3) levels of certification as detailed on the following pages.

A Certified Hydrographer in Training (CH in Training) and a Certified Hydrographic Technician (CH Tech in Training) are also available for students presently enrolled in a geomatics related academic program and wish to have a career path towards hydrography.

The following descriptions are provided to assist the reader in determining which certification level they wish to obtain.

3.1 CHE Level - (Certified Hydrographic Executive)

Generally, the CHE is a person who has a senior role in a company or organization and has demonstrated strategic leadership characteristics within the organization and/or the hydrographic community. For example, that person could be a senior program manager or corporate executive. The CHE would demonstrate a passion towards contributing to the advancement of hydrography.

The CHE would have had, in the past, significant experience in geomatics and/or hydrographic operations. For example, the CHE would be someone who, in the past, has designed, conducted, and managed various types of hydrographic surveys. The CHE would be a person who may no longer be able to undertake a complex hydrographic survey, but is quite knowledgeable of the processes, procedures, and risk associated with a hydrographic survey.

The CHE would have an advanced education in geomatics, especially in the field of hydrographic surveys. For example, the CHE would have graduated from a IBSC recognized Category S-5A program or has acquired a BSc and/or MSc in Geomatics or equivalent.

Finally, the CHE would be presently leading and/or steering technical and professional development, international standards, outreach programs, etc. through supporting hydrographic research and development, international hydrographic conferences and forums, professional standards committees, and other activities that contributes to the advancement of the hydrographic profession.

3.2 Level 1 - CH (Certified Hydrographer)

Generally, the CH hydrographer is fully competent to design, undertake and manage various types of hydrographic surveying projects. For example, the CH hydrographer would lead a present-day team of hydrographers in the mobilization and execution of a complex hydrographic survey. The CH will demonstrate a desire to lead, teach, and enable younger hydrographers to acquire new knowledge and acquire competencies.

The CH has an in-depth, and up-to-date understanding of hydrographic theory and operations through advanced post-secondary education. For example, the CH would have recently graduated from an IBSC recognized Category S-5A program or a BSc and/or an MSc in Geomatics.

The CH would have excellent knowledge, and ability to recognize and solve complex hydrographic problems. For example, the CH would be able to apply their education and experience to resolve a complex tidal problem encountered in a hydrographic survey. Another example is the CH would be able to resolve, and possibly recover, data that could have been erroneously collected. The CH would have an excellent knowledge of the error budget of various types of hydrographic systems.

3.3 Level 2 - CHTech (Certified Hydrographer Technician)

Generally, the CHTech hydrographer is competent to support hydrographic surveying projects. For example, the CHTech receives guidance and procedures from a Level 1 CH in the execution of hydrographic operations. Another example is, once a system has been fully mobilized and calibrated, the CHTech is able to relieve a fellow worker from a hydrographic survey and continue the collection of hydrographic data by themselves. The CHTech will demonstrate a desire to learn and improve their competencies in hydrographic surveying.

The CHTech has a good understanding of hydrographic theory and practice. For example, the CHTech would have graduated from a IBSC recognized Category S-5B education program or a geomatics technical college that has a strong focus on hydrographic sciences.

The CHTech will be able to understand the operations of the various components of a hydrographic system. For example, the CHTech would have the ability to understand the difference between good and bad data being collected and be able to do initial troubleshooting analysis on data in order to explain problems to a CH for resolution.

3.4 CH in Training, or CHTech in Training

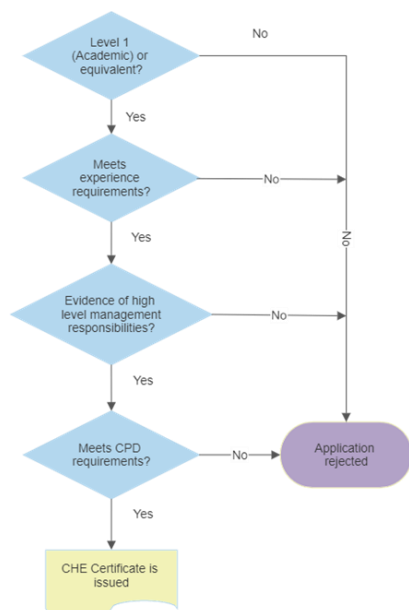
It should be noted that candidates enrolled in a first-year post-secondary education program can apply for a Level 1 or 2 “in training” designation.

The student must provide proof of registration in a geomatics program and will subsequently be informed that they can use the title CH (in training) or CHTech (in training) until the review of the academic file is completed. If they do not complete their studies in the geomatics field, or do not complete all other conditions for certification within 5 years after graduation, they are no longer a CH or CHTech in training.

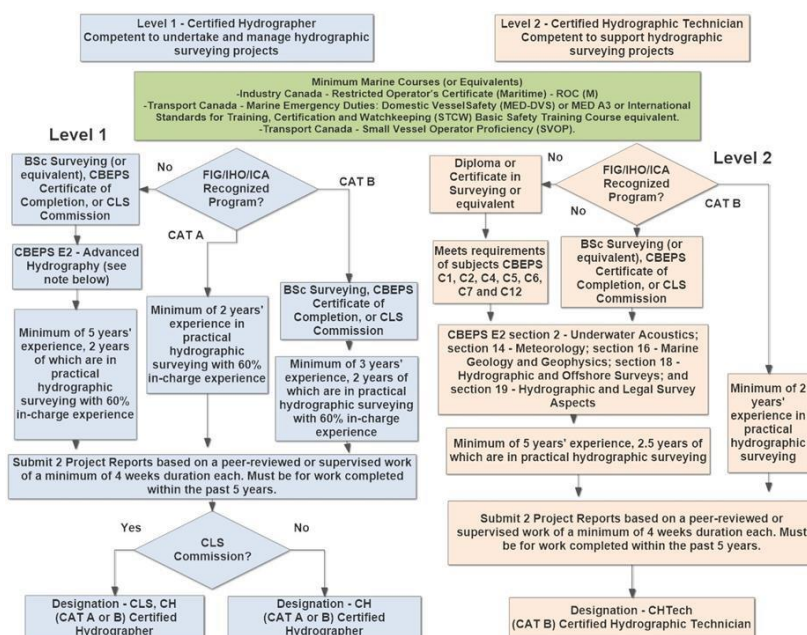
Figure 2 gives a general overview of the process, requirements, and procedure for hydrographic certification under the ACLS International Hydrographic Certification Scheme (ACLS IHCS). Each “path” to Hydrographic Certification is based on candidate’s academic qualifications and work experience. Future sections of this document will provide details as to the requirements, processes and procedures outlined in Figure 2.

CH in Training or CHTech in Training designation can also be applied to candidates who have completed all the requirements for the certification except for the practical hydrographic surveying. This designation can be used until they have accumulated the required practical time as which point the logbooks will be reviewed and the CH or CHTech certification will be granted as appropriate.

Level Executive Certification



Level 1 and Level 2 Certification



Note: If the candidate holds a CBEPS Certificate of Completion but did not select subject E2 as an elective, will have to qualify for that subject.

To be clear, no person shall be allowed to use the FIG / IHO / ICA Cat A or Cat B designation unless that person has completed an IBSC recognized Category A or Category B academic program.

Figure 2 Overview of the ACLS International Hydrographic Certification Scheme

Take Home Messages....

There are three (3) Levels of Hydrographic Certification under the ACLS International Hydrographic Certification Scheme (ACLS IHCS).

- 1 **The Certified Hydrographic Executive (CHE)**
- 2 **Level 1: Certified Hydrographer (CH)**
- 3 **Level 2: Certified Hydrographic Technician (CHTech)**

Each Level has a set of requirements that are based on both the applicants educational background and work experience. In regards of the educational background, the **Canadian Board of Examiners for Professional Surveyors (CBEPS)** has exams on relevant subject matter that can assist applicants in bridging.

the gap from their existing academic qualifications to those required under the guidelines of the ACLS IHCS.

There is also available a “CH in Training” and a “CHTech in Training” level to accommodate students interested in acquiring hydrographic certification.

4. CBEPS – Canadian Board of Examiners for Professional Surveyors

In the above flow chart (Figure 2), and in many of the sections in this document, several references are made to the Canadian Board of Examiners for Professional Surveyors - CBEPS (see <https://www.cbeps-cceag.ca/>).

The CBEPS is a non-profit, non-governmental organization presently housed in the same locale as the ACLS (with same Registrar).

CBEPS role is to establish, assess and certify the academic qualifications of individuals who apply to become surveyors and/or geomatics professionals in Canada, except for Québec (which has its own very similar systems). Each CBEPS candidate has his or her academic files assessed by a committee of volunteers composed of a mix of licensed professional surveyors and members from academia.

The objective of CBEPS is to bring all candidates to the same (university) academic level of a bachelor’s degree in surveying.

For the purpose of Hydrographic Certification under the ACLS IHCS, the role of the CBEPS is to assist applicants in bridging the gap from their existing academic qualifications to those required under the guidelines of the ACLS IHCS.

Courses taken by the candidate from their past learning institution are compared with 12 core subjects and one of the electives subjects. A **Certificate of Completion** is awarded to an individual who has taken and passed exams for all of the Core Syllabus subjects and one Elective Syllabus subject.

Core Syllabus Items

- Item C1: Mathematics
- Item C2: Least-Squares Estimation and Data Analysis
- Item C3: Advanced Surveying
- Item C4: Coordinate Systems and Map Projections
- Item C5: Geospatial Information Systems

- Item C6: Geodetic Positioning
- Item C7: Remote Sensing and Photogrammetry
- Item C8: Cadastral Studies
- Item C9: Survey Law
- Item C10: Land Use Planning and Economics of Land Development
- Item C11: Business Practices and the Profession
- Item C12: Hydrographic Surveying

Elective Syllabus Items

- Item E1: Spatial Databases and Land Information Systems
- Item E2: Advanced Hydrographic Surveying
- Item E3: Environmental Management
- Item E4: Advanced Remote Sensing
- Item E5: Advanced Photogrammetry

5. Qualifications for Hydrographic Certification Levels

5.1 Minimum Requirements

In all Levels of Hydrographic Certification, it is required that the hydrographer have the skills, knowledge and ability that are important for the safety of the worker, protection of the environment, as well as property.

As such, as a minimum, the candidate shall also be required to show proof of successful completion of the following marine courses, or equivalents:

Restricted Radio Operator's Certificate

Industry Canada – Restricted Operator Certificate – Maritime (ROC-M)

<https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01014.html#s4.2>

Marine Safety at Sea

Transport Canada – Marine Emergency Duties: Domestic Vessel Safety MED-DVS, MED A1 or MED A3 or International Standards for Training, Certification and Watchkeeping (STCW) Basic Safety Training Course equivalent.

<https://tc.canada.ca/sites/default/files/migrated/tp4957e.pdf>

Small Vessel Operator Proficiency

Transport Canada – Small Vessel Operator Proficiency (SVOP)

<https://tc.canada.ca/en/marine-transportation/marine-safety/small-vessel-operator-proficiency-training-course-tp-14692-e>

Information on the scope of these marine courses is provided on the quoted Canadian government websites. The candidate is encouraged to show where other similar or compatible training was undertaken which achieved the same goals as listed in the **ACLS IHCS Marine Courses or Equivalents Instructions and Form** (available on the forms section of the ACLS Web site: <https://www.acls-aatc.ca/forms-non-members/>).

These skills can be acquired through appropriate Canadian training centers or other compatible training which achieves the same goals. For instance, power boat squadron (or similar) training, yachting association (or similar) training, applicable offshore training, naval or coast guard training, or an affidavit showing suitable coxswain experience.

The candidate should provide copies of any relevant certificates and descriptions of the training received along with hyperlinks to training courses quoted. If the training courses have been taken prior to the current online hyperlink, the candidate should provide that hyperlink as well as any supporting documentation about the training course to taken ensure the ACLS IHCP can be satisfied of the candidate's training is adequate.

For Level CHE applicants (discussed further in this document), the Minimum Marine Courses or Equivalent is not mandatory. However, it is mandatory that the Level CHE applicant show that their experience shows they have a strong understanding of marine safety, boat handling and marine communications.

Take Home Messages....

In all levels of Hydrographic Certification, the hydrographer must have the skills, knowledge and ability that are important for the safety of the worker, protection of the environment, as well as property. Therefore, the candidate shall be required to show proof of successful completion of the following marine courses, or equivalent:

- 1 **Restricted Radio Operator's Certificate**
- 2 **Marine Safety at Sea**
- 3 **Small Vessel Operator Proficiency**

5.2 CHE Level – (Certified Hydrographic Executive)

A Certified Hydrographic Executive (CHE) is involved in hydrographic or offshore survey project management and/or is a hydrographer who has become office-based with senior level responsibilities.

Generally, such hydrographic leaders and/or offshore surveying senior managers and other senior office-based personnel can be far removed from day-to-day execution of technical surveys. However, the CHE may have equivalent or better than Level 1 academic training, extensive experience earlier in their careers, and may have maintained their Continuing Professional Development (CPD) but would typically lack the current experience to become certified.

Such a person would have some of the following attributes:

- Has a senior role in a company or organization.
- Has had, at some time in the past, the same qualification and experience as a Level 1 certified individual, but no longer is actively involved in executing a hydrographic or offshore survey project (including mobilization, particularly working on boats or in planes, with remotely operated underwater and/or surface and/or aerial operated vehicles or flying drones).
- Is responsible for leading and developing the careers of the Level 1 and Level 2 personnel.
- Is responsible for leading and/or working with the Level 1 in the planning of the hydrographic or offshore survey for the purposes of preparing or assessing complex submissions and/or proposals for bidding on projects.
- Has demonstrated a high level of corporate maturity and fully understands the purpose of the hydrographic or offshore survey and how each fit into the corporation's or organization's strategy.
- Has demonstrated being a strategic leader.

Table 1 below outlines the qualifications required for acquiring a Certification Hydrographic Executive.

Table 1 also provides three (3) pathways to acquire the Certified Hydrographic Executive level.

The **“Fast Track”**, as it implies, provides a clear and concise path for certification. Candidates who have these qualifications will experience little complications and delays from the assessment process.

The **“Medium”** and **“Slow Track”** pathways are slightly more complex for evaluation under the ACLS IHCS. Consequently, candidates who submit for certification under these qualifications may expect to receive slight delays in their evaluation as the assessment process will require in-depth investigation into the information submitted to the reviewing committee.

Paths	Academic	Experience	Reporting
Fast Track	Graduated from an IBSC recognized Category S-5A program.	Has had at least 2 years working in hydrography of which 60% as a Hydrographer in Charge. Provides a Logbook chronology of relevant work experience and detailed CV.	Evidence of high-level management (e.g. Project Charter, Field Instructions, Policy and/or Standards Development, National and/or International Committees, Publications)
Medium Track	Has graduated from an IBSC recognized Category S-5B program. AND, Has completed a BSc Degree in geomatics (or equivalent). OR, Holds a Certification of Completion from CBEPS, OR, Has a CLS Commission.	Has had at least 3 years working in hydrography of which 60% as a Hydrography in Charge. Provides a Logbook chronology of relevant work experience.	Evidence of high-level management (e.g. Project Charter, Field Instructions, Policy and/or Standards Development, National and/or International Committees, Publications)
Slow Track	Has completed a BSc Degree in geomatics (or equivalent) and has completed the CBEPS E2 Advanced Hydrographic Surveying course. OR, Holds a Certification of Completion from CBEPS and has completed the CBEPS E2 Advanced Hydrographic Surveying course. OR, has a CLS Commission and has completed the CBEPS E2 Advanced Hydrographic Surveying course.	Has had at least 5 years working in hydrography of which 60% as a Hydrography in Charge. Provides a Logbook chronology of relevant work experience	Evidence of high-level management (e.g. Project Charter, Field Instructions, Policy and/or Standards Development, National and/or International Committees, Publications)

Table 1: Qualifications for Certified Hydrographer Executive (CHE)

Once a Level Exec (CHE) status had been awarded, the applicant would only be allowed to reverse the process to obtain or claim Level 1 or Level 2 status, if they can produce evidence that they have met the necessary experience required for Level 1 or Level 2.

5.3 Level 1 - CH (Certified Hydrographer)

A Level 1 Certified Hydrographer (CH) is competent to design, undertake and manage hydrographic surveying projects. The Certified Hydrographer will have an in-depth, and up to date, understanding of hydrographic theory and operations through a combination of advanced post-secondary education and Continuous Professional Development (CPD). The CH will have skills, knowledge, and ability to recognize and solve complex hydrographic problems. There are three pathways to this level.

Table 2 below provides the qualifications required for acquiring a Certified Hydrographer.

Table 2 also provides three (3) pathways to acquire the Certified Hydrographer level.

The “**Fast Track**”, as it implies, provides a clear and concise path for certification. Candidates who have these qualifications will experience little complications and delays from the assessment process.

The “**Medium**” and “**Slow Track**” pathways are slightly more complex for evaluation under the ACLS IHCS. Consequently, candidates who submit for certification under these qualifications may expect to receive slight delays in their evaluation as the assessment process will require in-depth investigation into the information submitted to the reviewing committee.

ACLS IHCS Candidate Handbook – January 2023

Paths	Academic	Experience	Reporting
Fast Track	Graduated from an IBSC recognized Category S-5A program. to	Has had at least 2 years working in hydrography of which 60% as a Hydrographer In Charge. Submit Logbook providing the candidate's achievement of specific hydrographic competencies acquired against the Level 1 criteria	Submit 2 (two) Project Reports to demonstrate the candidate's skills, knowledge, and ability as they pertain to the competency required by the Level 1 criteria.
Medium Track	Has graduated from a IBSC recognized Category S-5B program. to AND , Has completed a BSc Degree in geomatics (or equivalent). OR , Holds a Certification of Completion from CBEPS or, has a CLS Commission.	Has had at least 3 years working in hydrography of which 60% as a Hydrography in Charge. Submit Logbook providing the candidates achievement of specific hydrographic competencies acquired against the Level 1 criteria.	Submit 2 (two) Project Reports to demonstrate the candidate's skills, knowledge, and ability as they pertain to the competency required by the Level 1 criteria.
Slow Track	Has completed a BSc Degree in geomatics (or equivalent) and has completed the CBEPS E2 Advanced Hydrographic Surveying course. OR , Holds a Certification of Completion from CBEPS and has completed the CBEPS E2 Advanced Hydrographic Surveying course. OR , has a CLS Commission and has completed the CBEPS E2 Advanced Hydrographic Surveying course.	Has had at least 5 years working in hydrography of which 60% as a Hydrography in Charge. Submit Logbook providing the candidates achievement of specific hydrographic competencies acquired against the Level 1 criteria.	Submit 2 (two) Project Reports to demonstrate the candidate's skills, knowledge, and ability as they pertain to the competency required by the Level 1 criteria.

Table 2: Qualifications for Certified Hydrographer (CH)

5.4 Level 2 - CHTech (Certified Hydrographic Technician)

A Certified Hydrographic Technician (CHTech) is competent to support hydrographic surveying projects. The CHTech will have a good understanding of hydrographic theory and practice. The CHTech will be able to collect hydrographic information and recognize good data vs bad data. The CHTech will have acquired a technical level of hydrographic education and have demonstrated a commitment to Continuous Professional Development (CPD). There are three pathways to this level.

Table 3 below provides the qualifications required for acquiring a Certified Hydrographic Technician.

Table 3 also provides three (3) pathways to acquire the CHTech level.

The “**Fast Track**”, as it implies, provides a clear and concise path for certification. Candidates who have these qualifications will experience little complications and delays from the assessment process.

The “**Medium**” and “**Slow Track**” pathways are slightly more complex for evaluation under the ACLS IHCS. Consequently, candidates who submit for certification under these qualifications may expect to receive slight delays in their evaluation as the assessment process will require in-depth investigation into the information submitted to the reviewing committee.

Paths	Academic	Experience	Reporting
Fast Track	Graduated from an IBSC recognized Category S-5B program.	Has had at least 2 years working in hydrography. Submit Logbook providing the candidate's achievement of specific hydrographic competencies acquired against the Level 2 criteria.	Submit 2 (two) Project Reports to demonstrate the candidate's skills, knowledge, and ability as they pertain to the competency required by the Level 2 criteria.
Medium Track	Has completed a 2, to 3, year college diploma or certificate in surveying (or equivalent) AND, Has completed the following CBEPS subjects: C1, C2, C4, C5, C6, C7, C12, E2 (Sections 2, 14, 16, 18 and 19). Exemptions from some of the courses are possible if approved by the ACLS IHCP.	Has had at least 5 years working in geomatics of which 50% has been in hydrography. Submit Logbook providing the candidate's achievement of specific hydrographic competencies acquired against the Level 2 criteria	Submit 2 (two) Project Reports to demonstrate the candidate's skills, knowledge, and ability as they pertain to the competency required by the Level 2 criteria.
Slow Track	Has completed a BSc Degree in geomatics (or equivalent) and has completed the CBEPS E2 Advance Hydrographic Surveying course (sections 2, 14, 16, 18 and 19) or has received an exemption from ACLS IHCP. OR, Holds a Certification of Completion from CBEPS and has completed the CBEPS E2 Advance Hydrographic Surveying course (sections 2, 14, 16, 18 and 19) or has received an exemption from ACLS IHCP. OR, Holds a CLS Commission and has completed the CBEPS E2 Advanced Hydrographic Surveying course (sections 2, 14, 16, 18 and 19) or has received an exemption from ACLS IHCP.	Has had at least 5 years working in geomatics of which 50% has been in hydrography. Submit Logbook providing the candidate's achievement of specific hydrographic competencies acquired against the Level 2 criteria	Submit 2 (two) Project Reports to demonstrate the candidate's skills, knowledge, and ability as they pertain to the competency required by the Level 2 criteria.

Table 3: Qualifications for Certified Hydrographic Technician (CHTech)

Take Home Messages....

There are three (3) Levels of Hydrographic Certification under the ACLS International Hydrographic Certification Scheme (ACLS IHCS).

- 1 **The Certified Hydrographic Executive (CHE)**
- 2 **Level 1: Certified Hydrographer (CH)**
- 3 **Level 2 Certified Hydrographic Technician (CHTech)**

In all three levels, the candidate will be required to show proof of work experience through a Logbook and show competencies through comprehensive Project Reports (2).

There are three (3) approaches by which a candidate can achieve their desired level of Hydrographic Certification:

- 1 **Fast Track** – has graduated from an IBSC recognized Category S-5A educational program
- 2 **Medium Track** -
 - a. graduated from an IBSC recognized Category S-5B educational program, and
 - b. graduated from a BSc educational program focused on geomatics, or
 - c. has a CBEPS Certificate of Completion (or has exemptions to CBEPS courses), or
 - d. holds a CLS Commission
- 3 **Slow Track** –
 - a. has graduated from a BSc educational program focused on geomatics **and** has completed the CBEPS E2 Advanced Hydrographic Surveying course, or
 - b. has a CBEPS Certificate of Completion (or has exemptions to CBEPS courses) **and** has completed the CBEPS E2 Advanced Hydrographic Surveying course, or
 - c. has a CLS Commission **and** has completed the CBEPS E2 Advanced Hydrographic Surveying course.

6. IBSC Recognized Category S-5A / S-5B Programs in North America

An up-to-date list of all the international programs recognized by the IBSC as Category S-5A and Category S-5B can be found on the homepage of the International Hydrographic Organization (IHO).

<https://iho.int/en/ibsc-recognized-programmes>

The Canadian academic institutions presently recognized are provided in Table 4. The status of their recognition may change from year to year. The reader is encouraged to monitor the IHO web page for the most up-to-date information.

As indicated by the academic qualification requirement, any person who has graduated from an IBSC recognized Category S-5A, or a Category S-5B, program is in a good position to qualify for a Level 1 or Level 2 Hydrographic Certification.

Academic Institution	Program	IBSC Recognized Program
University of New Brunswick	Geodesy and Geomatics Engineering	Category S-5A
Marine Institute of Memorial University	Ocean Mapping	Category S-5B
IIC Academy	Hydrographic Surveying Program (Global Delivery)	Category S-5B
CIDCO	Category B Course	Category S-5B

Table 4: IBSC Recognized Category S-5A and S-5B Academic Program in Canada

7. COMREN (Canadian Ocean Mapping Research and Education Network)

The **Canadian Ocean Mapping Research and Education Network (COMREN)** aims to provide an improved structure and sharing capabilities in terms of research interest and academic activities in ocean mapping. It brings together the following institutions:

- [British Columbia Institute of Technology](#)
- [CIDCO](#)
- [Université Laval](#)
- [Marine Institute / Memorial University](#)
- [Nova Scotia Community College | NSCC](#)
- [University of New Brunswick](#)

- [University of Ottawa](#)
- [York University](#)

Each of the academic institutions listed above have, as a component of their academic offering, a unique focus on ocean mapping research and education.

As shown in Table 4, three of the COMREN members have IBSC recognized Category S-5A or Category S-5B programs.

7.1 Exemptions to CBEPS examinations

Exemptions to writing some, or all, CBEPS examinations are granted to candidates who have graduated from a CBEPS accredited University degree program or from a Technical Institute diploma program that has been granted equivalencies by the CBEPS.

A list of the Canadian academic institutions that have received CBEPS exemptions, and the relevant CBEPS courses, is provided at the CBEPS website, on the “Become a Candidate” page via the “Exemptions” button at <https://www.cbeps-cceag.ca/exemptions>. Please note the respective “Effective Dates” when a CBEPS subject was exempt.

It is important that the reader visit the CBEPS exemption web page (<https://www.cbeps-cceag.ca/exemptions>) in order to obtain the most relevant and up-to-date list of exemptions for the academic institution of interest.

In cases where a candidate wishes to seek exemption from writing some, or all, of the C1, C2, C4, C5, C6, C7, C12 and/ or E2 examination(s), then the candidate shall submit a completed ACLS IHCS Self Assessment using the **ACLS IHCS Self Assessment Form** (available on the ACLS Web site, bottom right of home page, then “Public Forms” under “Resources”). Pages 3 and 4 of the form provide the instructions on how to complete the self assessment. After assessment by the ACLS IHCP, if any gaps are identified, the candidate is required to pass a CBEPS examination to cover the missing subject(s) to meet the requirements to obtain a Certificate of Completion.

Complete Learning Outcomes and Study Guides for CBEPS Subjects C1, C2, C4, C5, C6, C7, C12 and E2 are available on CBEPS Web site at: <http://cbeps-cceag.ca/learning-outcomes-and-study-guides>.

To be clear, CBEPS has no role in the ACLS IHCP candidate's evaluation. The above CBEPS subjects are used to assess the candidate's education and training, by either the candidate providing evidence of having passed or being eligible to receive an exemption for the CBEPS subject in question.

7.1.1 CBEPS E2 – Advanced Hydrographic Surveying Examination – Level 1

For Level 1 candidates, who cannot provide evidence of having graduated from a FIG/IHO/ICA recognized CAT A or CAT B program, will have to pass the CBEPS E2 - Advanced Hydrographic Surveying examination, or receive a IHCP exemption for E2. Detailed instructions will be sent to the candidate by the ACLS Registrar should this examination have to be taken.

The IHCP Candidate Assessment Committee for that candidate will determine where the candidate's weaknesses are in relation to the E2 Learning Outcome based on that particular candidate's application, resume, academic training, CACP Self-Assessment form (if any), and logbook entries.

The E2 exam is composed of an open book take home exam followed by oral examination. The questions will be structured so that the candidate has to demonstrate an understanding of the topic with nuanced answers not just a listing of facts.

The examination will be marked by the IHCP Candidate Assessment Committee for that candidate. The results of the marking will be provided to the candidate as soon as possible according to availability of IHCP members. The pass mark is sixty percent (60%) of the total value of marks for the examination.

7.1.2 CBEPS E2 – Advanced Hydrographic Surveying Limited Examination – Level 2

For Level 2 candidates, who cannot provide evidence of having graduated from a FIG/IHO/ICA recognized CAT B program, will have to pass a limited CBEPS E2 – Advanced Hydrographic Surveying examination, or receive a IHCP exemption for the E2 sections required. Detailed instructions will be sent to the candidate by the ACLS Registrar should this examination have to be taken.

The E2 – Advanced Hydrographic Surveying sections that will be tested are as follows:

- Section 02 – Underwater Acoustics
- Section 14 – Meteorology
- Section 16 – Marine Geology and Geophysics
- Section 18 – Hydrographic and Offshore Surveys and
- Section 19 – Hydrographic and Legal Survey Aspects

Candidate Assessment Committee for that candidate will determine where the candidate's weaknesses are in relation to these E2 sections based on that particular candidate's application, resume, academic training, IHCS Self-Assessment form (if any), and logbook entries.

The E2 exam is composed of an open book take home exam followed by an oral examination.

The examination will be marked by the IHCP Candidate Review Subcommittee for that candidate. The results of the marking will be provided to the candidate as soon as possible according to availability of IHCP members. The pass mark is sixty percent (60%) of the total value of marks for the examination.

7.1.3 E2 examination process

An E2 examination will be available each year in the 3rd week of January and the 2nd week of June. A candidate must apply to write the E2 exam directly with the Registrar no later than 6 weeks before the above dates i.e., 3rd week of January and the 2nd week of June and pay the fee.

The exam will be provided to each candidate as appropriate on the Monday morning of the **3rd week of January at 8:00am EST and returned by the candidate on the Friday of the same week at 5:00pm EST.**

OR

The exam will be provided to each candidate on the Monday morning of the **2nd week of June at 8:00am EDT and returned by the candidate on the Friday of the same week at 5:00pm EDT.**

The exam will be marked by the candidate assessment committee for that candidate on the weekend following its writing.

The Monday after the exam marking and review, there will be a 3-hour oral exam of the candidate based on the examination just written by the same candidate assessment committee and the ACLS IHCP Chair.

7.2 Foreign Academic Credentials

Where the candidate has any foreign academic credential(s), the candidate will provide an international credential evaluation report (basic) (see <http://www.canalliance.org/> for details) where the original is to be mailed or e-mailed directly to the ACLS Registrar. The ACLS Registrar will review the international credential evaluation report and inform the candidate if any further education or training is required.

The resume (or curriculum vitae [CV]) should provide sufficient details to describe the candidate's background and experience.

Take Home Messages....

The following educational programs are recognized by the IBSC as Category S-5A or Category S-5B:

- 1 **The University of New Brunswick, Category S-5A**
- 2 **Marine Institute of Memorial University, Category S-5B**
- 3 **IIC Academy, Category S-5B**
- 4 **CIDCO, Category S-5B**

The following **Canadian Ocean Mapping Research and Education Network (COMREN)** educational institutions have received relevant CBEPS exemptions that pertain to Hydrographic Certification under the ACLS IHCS:

- 1 **York University – Lassonde School of Engineering**
- 2 **University of New Brunswick**
- 3 **British Columbia Institute of Technology**
- 4 **Nova Scotia Community College / College of Geographic Science**

Foreign Academic Credentials are also accommodated with the ACLS IHCS whereby the candidate must provide an international credential evaluation report (basic) (see <http://www.canalliance.org/>)

In cases where a candidate wishes to seek CPEBS exemptions then the candidate shall submit a completed ACLS IHCS Self-Assessment using the **ACLS IHCS Self-Assessment Form**

8. Oral Test

Even in cases where a Level 1 or 2 candidate has received a ACLS IHCS exemption for E2, the candidate may be interviewed by the ACLS IHCP Candidate Assessment Committee to ensure academic compliance with Category S-5 (A or B) and, if necessary, advised to undertake further training or undertake the E2 examination. The same option is available to ACLS IHCP Candidate Assessment Committee reviewing the candidate's Project Reports.

Level Executive (CHE) applicants may also be interviewed to confirm the evidence presented by the candidate.

9. Practical Experience Requirements (Logbook)

9.1 Practical Experience Defined

Hands-on (or practical) experience in hydrographic surveying is a critical component of the certification of individual hydrographic surveyors. In the past, the ACLS IHCS defined this experience as sea-time; time spent surveying whilst embarked in a hydrographic survey platform (sea-going vessels; a fixed wing aircraft or helicopter undertaking remote sensing hydrographic surveys, etc.). However, many hydrographic surveys today include other methods and procedures such as the use of remotely operated hydrographic survey vessels, and satellite derived bathymetry. Consequently, the certified hydrographic surveyor experience will be based on "hands-on" whereby the applicant is able to demonstrate that they have had extensive experience in the planning, collection, processing and analysis of the various aspect of hydrographic surveying. We also realize that the majority of hydrographic surveys are still conducted by traditional at-sea survey vessel operations. Consequently, it is required that 75% of the hands-on experience include sea-time as previously defined.

Based on a realistic assessment of full-time employment, one-year hands-on experience has been defined as 112 days based upon a 12-hour workday.

The candidate shall be obliged to provide sufficient information to determine the candidate's achievement of the specified hydrographic experience criteria and achievement of the requisite degree of hydrographic surveying competence for the level of certification sought.

9.2 Level 1 and Level 2 Logbook Requirements

The experience for each Level 1 or 2 candidate shall be detailed in the **ACLS IHCS Experience Logbook** for initial application [hereinafter Logbook] (Available on the ACLS Web site, bottom right of home page, then “Public Forms” under “Resources”).

The purpose of the Logbook is to provide the ACLS IHCP with sufficient information to determine the candidate’s achievement of specific hydrographic and/or offshore experience criteria, and the candidate’s achievement of the requisite degree of hydrographic and/or offshore surveying competence for the certification level sought. The candidate is expected to closely follow the **ACLS IHCS Logbook Instructions** (available on the ACLS Web site, bottom right of home page, then “Public Forms” under “Resources”) when completing the logbook forms. In addition, the **ACLS IHCS Logbook Summary** is to be completed and submitted as part of the application.

The Logbook should contain comprehensive descriptions of specific hydrographic and/or offshore surveying tasks or projects undertaken including the following information:

- Task or projects description and their aim.
- The candidate’s personal responsibilities.
- Equipment used or supervised by the candidate.
- A brief description of the work undertaken in order that the ACLS IHCP can determine the practical requirements of the work undertaken.
- Independent authentication of a candidate’s involvement in these projects.

The IHCP considers authentication by signature on the candidate’s Logbook by the candidate’s immediate supervisor to be the preferred option.

Level 1 candidates will be assessed as competent to undertake and manage hydrographic or offshore survey projects. Hence it is essential that, for certification at this level, the candidate has to clearly articulate in their logbook, experience in charge of the planning, management and conduct of a variety of practical hydrographic and/or offshore surveying activities.

As each Candidate is different, the number of sea time days in the Candidate’s respective required years of experience has not been specifically defined. For most Candidates, obtaining sea days is expected to be straight forward as part of the Candidate’s usual work.

Note that for hydrographic or offshore survey project managers and other office-based personnel, some sea time days may be required to show a necessary understanding of the technical aspects of the hydrographic or offshore survey components respective to the Level for which the Candidate is applying.

9.3 Level Executive (CHE) logbook requirements

The experience for level Executive candidate shall be detailed in the ACLS IHCS Experience Logbook for Initial Application [hereinafter Logbook]. The purpose of the Logbook is to provide the ACLS IHCP with sufficient information to determine the candidate's achievement of specific hydrographic and/or offshore experience criteria, and the candidate's achievement of the requisite degree of hydrographic and/or offshore surveying competence in an executive position for the certification level sought. The candidate is expected to closely follow the ACLS IHCP Logbook Instructions when completing the logbook forms. In addition, the ACLS IHCP Logbook Summary is to be completed and submitted as part of the application.

The Logbook should contain comprehensive descriptions of specific hydrographic and/or offshore executive tasks or projects undertaken including the following information:

- Task or projects description and their aim.
- The candidate's personal responsibilities.
- A brief description of the work undertaken in order that the ACLS IHCP can determine the practical requirements of the work undertaken.
- Independent authentication of a candidate's involvement in these projects. The ACLS IHCP considers authentication by signature on the candidate's Logbook by the candidate's immediate supervisor or peer.

Based on a realistic assessment of full-time employment, the candidates for CHE activities should be at least 100 days based upon a 7.5 hour work day.

Take Home Messages....

The Certified Hydrographic surveyor experience is based on "hands-on" whereby the applicant is able to demonstrate that they have **had extensive experience in the planning, collection, processing, and analysis of the various aspect of hydrographic surveying**. These include, but are not limited to, the following,

- 1 airborne bathy lidar
- 2 satellite derived bathymetry
- 3 remote operations of autonomous vehicles (surface or subsurface)
- 4 multibeam, singlebeam, sidescan, etc.

Note, the majority of hydrographic surveys are still conducted by traditional at-sea survey vessel operations. Consequently, it is required that **75% of the hands-on experience include sea-time whereby the hydrographer is physically conducting survey operations on board a hydrographic survey vessel.**

The experience for all candidates shall be detailed in the **ACLS IHCS Experience Logbook for Initial Application**

The purpose of the Logbook is to provide the ACLS IHCP with sufficient information to determine the candidate's achievement of specific hydrographic and/or offshore experience criteria, and the candidate's achievement of the requisite degree of hydrographic and/or offshore surveying competence for the certification level sought.

10. Project Reports

With the initial application, the Level 1 or Level 2 applicant is expected to submit completed **ACLS IHCS Project Report Approval Request** forms (available on the ACLS Web site, bottom right of home page, then "Public Forms" under "Resources") for **two (2) projects**, which has instruction imbedded in the forms. The subject of the proposed Project Reports **MUST** be approved by the ACLS IHCP before the Project Reports are submitted. The purpose of the Approval Request submission is to ensure the projects are of sufficient merit before the Candidate proceeds with writing the Project Reports.

The projects shall be related to hydrographic or offshore surveying and be of such a nature, extent, and level of complexity as to demonstrate clearly, the professional competence and judgment required of a professional hydrographic or offshore surveyor, including project management skills for those candidate's seeking the Level 1 CH designation.

The **ACLS IHCS Project Report Guidelines** (available on the ACLS Web site, bottom right of home page, then "Public Forms" under "Resources") provide detailed guidance on what constitutes an acceptable project, the required level of involvement by the candidate and general project report requirements. It is highly recommended that the candidate structure's the project reports in accordance with these

guidelines. However, the ACLS IHCP recognizes that following the required report structure may not be suitable for the selected project, in which case the candidate should explain in a covering letter the reason(s) for the different report structure and content.

The candidate should demonstrate a critical analysis of the work performed from a technical and management perspective. The goal of the Project Reports is to test the candidate's knowledge, implementation, and evaluation of procedures, standards, contracts, logistics, and survey equipment; assess the candidate's ability to liaise with the project team, client, and exterior organizations; and project management skills.

For the CHTech designation the candidate should follow the above guidelines, but the Project Reports should be more focused on technical, equipment and logistic aspects.

Take Home Messages....

The Hydrographic Certification candidate will be required to submit two (2) comprehensive **Project Reports** that are approved for submission by the ACLS IHCP.

The goal of the Project Reports is to test the candidate's knowledge, implementation, and evaluation of procedures, standards, contracts, logistics, and survey equipment; assess the candidate's ability to liaise with the project team, client, and exterior organizations; and project management skills.

The **ACLS IHCS Project Report Submission Guidelines** provides detailed guidance on what constitutes an acceptable project, the required level of involvement by the candidate and general project report requirements.

11. Procedures for Submission

The ACLS IHCP meets at least every four months to review applications and notify the ACLS Council of its decision. The deadline for the submission is one month prior to each ACLS IHCP meeting. Dates of meetings can be obtained from the ACLS Registrar (registrar@acsls-aatc.ca).

It should be noted that all the necessary form are available from <https://www.acsls-aatc.ca/members-home/forms>.

It is expected that all documentation that is submitted is clear and well laid out and in PDF format. Should that not be the case, then the ACLS Registrar can request the candidate to resubmit, providing the candidate with instructions for improvement, so that the work of the ACLS IHCP can proceed smoothly.

The candidate will be provided, by the ACLS Registrar, the appropriate web link to transfer documentation.

Initially, the ACLS Registrar will conduct a review of all the documentation to ensure its' completeness, appropriate file layout, and general fit for purpose as detailed in the ACLS IHCS – Candidate Application – Instructions.

Applications will be evaluated in terms of the overall hydrographic and/or offshore surveying competence, considering the candidate's relevant academic qualifications and practical experience.

For the submission of these documents and for further information please contact the following:

ACLS Registrar

Association of Canada Lands Surveyors

900 Dynes Road, Suite 100E

Ottawa, Ontario, K2C 3L6, Canada Tel: 613-723-9200

Email: registrar@acsl-aatc.ca

Once the candidate is approved to become a CH, CHTech or CHE, then if the candidate is not a member of the ACLS, the ACLS IHCS – Solemn Affirmation form with respect to the ACLS IHCS Code of Ethics will have to be completed, which will be provided to the Candidate by the ACLS Registrar at that time.

11.1 Documents to provide for Level 1 or Level 2 applications:

In all cases, candidates must provide the following documents:

- a) A completed copy of the following Application forms which adhere to the **ACLS IHCS Application Instructions** (available on the ACLS Web site, bottom right of home page, then “Public Forms” under “Resources”):
 - I. the **ACLS IHCS Application**, and
 - II. **ACLS IHCS Application Checklist**, and
 - III. Including full payment of the application fee.
 - IV. Details of their educational background in support of their application.

Where required by the relevant certification level, the candidate’s application must include the following appropriate documentation with the application:

 - Copy of certificate for the completion of a Category S-5A or S-5B program
 - Copy of BSc. in Surveying (or equivalent)
 - Copy of CBEPS Certificate of Completion

Where the candidate for Level 1 or Level 2 has a BSc in Surveying (or equivalent) educational qualifications then the candidate shall provide at least the following:

 - An official transcript(s) of marks (official copy mailed, faxed or e-mailed directly to the ACLS Registrar by the learning institution(s)).
 - Detailed course description of material covered in each course during the year taken, together with a breakdown of the number of hours spent on each major part.
 - Number of hours in the academic term that were reserved for (a) classes and (b) laboratory assignments.
 - List of prerequisite courses for each course taken.
- b) Completed copies of Logbook information following the **ACLS IHCS Logbook Instructions**;
 - I. **ACLS IHCS Logbook for Initial Application**, and
 - II. **ACLS IHCS Logbook Summary**.
- c) Project Reports;
 - I. **Project Reports** as per the **ACLS IHCS Project Submission Guidelines**, and
 - II. **ACLS IHCS Project Report Approval Request**.
- d) **Marine Courses or Equivalents as per the ACLS IHCS Marine Course or Equivalent Instructions**.
- e) Copy of recent resume (or curriculum vitae (CV)).

Candidates applying for Level 1, and do not have Category S-5A or S-5B academic credentials, must also provide a completed **ACLS IHCS Self-Assessment Form** for E2 following the **ACLS IHCS Self-Assessment Instructions** (included with the form).

Candidates applying for Level 2 and who do not have Category S-5A or S-5B academic credentials, must also have to provide a completed **ACLS IHCS Self-Assessment** for C1, C2, C4, C5, C6, C7, C12 and/or E2 (limited for a CHTech (see flowchart)) following the **ACLS IHCS Self-Assessment Instructions** (included in the form).

Foreign Academic Credentials

In addition, where the candidate has any foreign academic credential(s), the candidate will provide an international credential evaluation report (basic) (see <http://www.canalliance.org/> for details) where the original is to be mailed directly to the ACLS Registrar. The ACLS Registrar will review the international credential evaluation report and inform the candidate if any further education or training is required.

The resume (or curriculum vitae [CV]) should provide sufficient details to describe the candidate's background and experience.

11.2 Documents to provide for CHE applications:

Candidates applying for Level Certified Hydrographic Executive (CHE) shall provide:

- a) A completed copy of the following Application forms following the **ACLS IHCS Application Instructions** (available on the ACLS Web site, bottom right of home page, then "Public Forms" under "Resources"):
 - I. **ACLS IHCS Candidate Application**, and
 - II. **ACLS IHCS Candidate Application Checklist**, and
 - III. Including full payment of the application fee.
- b) Details of their educational background support of their application.
 - I. Copies of diplomas, degrees, certificates
- c) Completed **ACLS IHCS CHE Logbook** form following the **ACLS IHCS CHE Logbook Instructions**.
- d) Evidence of high-level management responsibilities such as:
 - I. Project charter

- II. Field instructions
- III. Policy development
- IV. Standards development
- V. Proof of chairing national or international committees
- VI. Papers, publications
- e) Copy of recent resume (or curriculum vitae (CV))
- f) Two reference letters
- g) Evidence of meeting the ACLS IHCS CPD requirements

If required by the ACLS IHCP, candidates may be expected to provide copies of any official transcripts and certificates, which should be translated into English or French by a certified translator. The ACLS IHCP will communicate with candidates in the language of their choice between English and French.

Applications will be evaluated in terms of the overall hydrographic and/or offshore surveying competence, considering the candidate's relevant academic qualifications and practical experience.

Figure 3 provides a general overview of the submission process by a candidate.

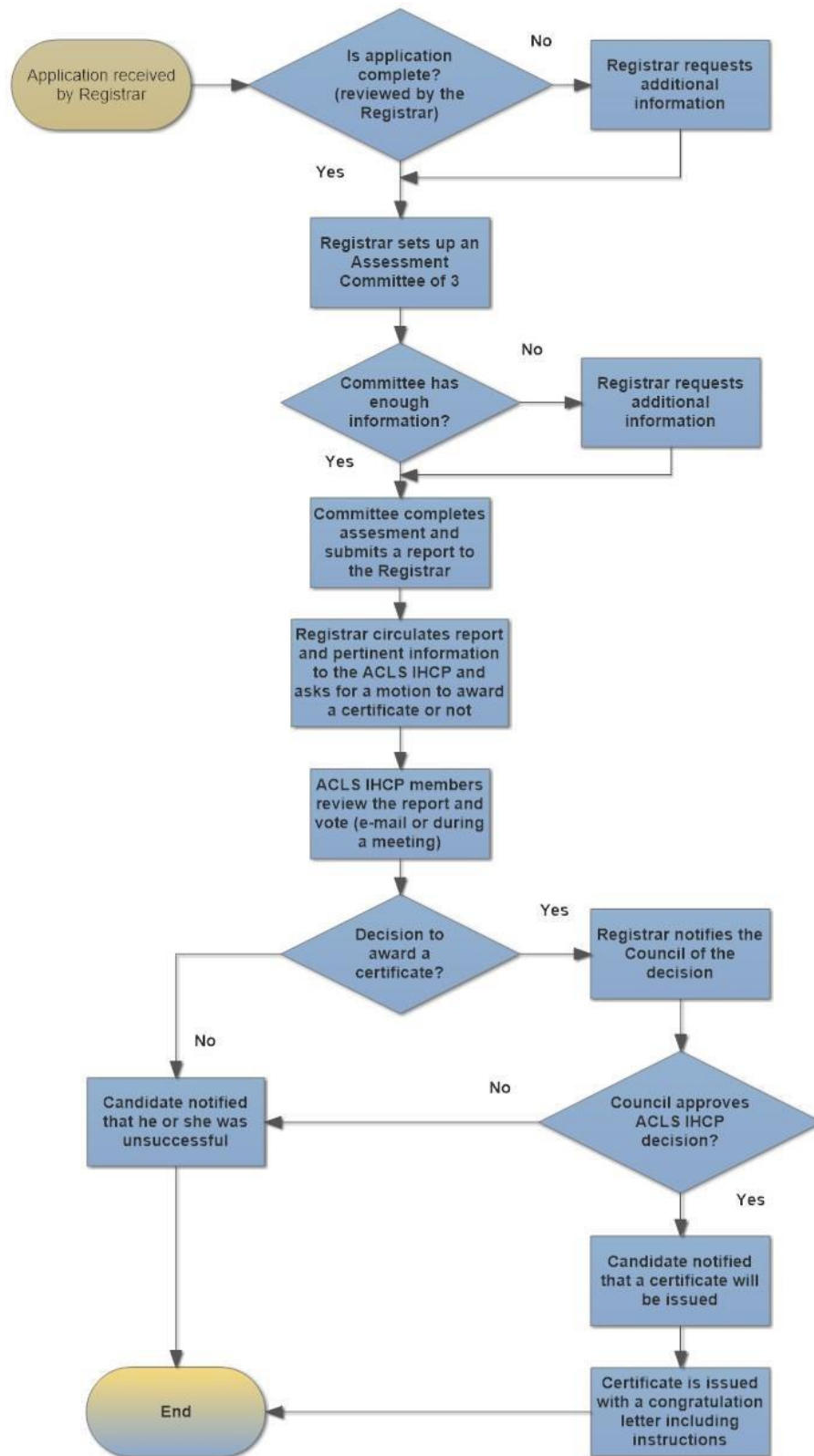


Figure 3: General Overview of the Application Process

11.3 Documents to provide for CH (in training) and CHTech (in training)

First year post-secondary students can apply for Level 1 or 2 after providing proof of registration in a geomatics program. After registration is completed, the student candidate will be informed that they can use the title CH (in training) or CHTech (in training) until the review of the academic file is completed by the ACLS IHCP, and they fulfill the necessary conditions to obtain Hydrographic Certification under the ACLS IHCS. If they do not complete their studies in the geomatics field, or do not complete all other conditions for certification within 5 years after graduation, they are no longer CH or CHTech in training. Figure 4 provides an overview of the CH (in training) and/or the CHTech (in training) application process.

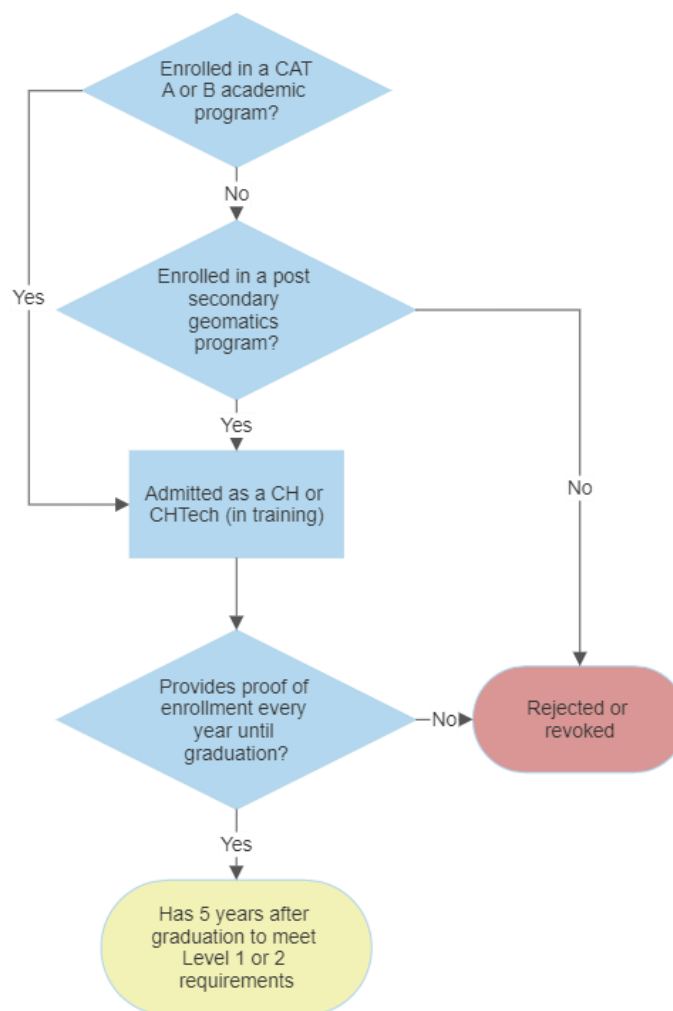


Figure 4: CH (in training) / CHTech (in training) flow chart

12. Appeals

If a candidate has been denied certification by the ACLS IHCP, the candidate can request their application to be reviewed by alternative assessment committee. Only one appeal per individual is permitted.

The basis for appeal would be if the candidate believed they were evaluated unfairly, believed that mistakes have been made in the assessment process, or believed that results of any examination were flawed. The appeal shall be made in writing to the ACLS Registrar, within one (1) year from the date of the ACLS IHCP's accreditation evaluation notification to the candidate.

13. Code of Ethics

All persons with CHE, CH or CHTech designations are expected to abide by the ACLS IHCS Code of Ethics. If the CHE, CH or CHTech are members of the ACLS as defined by the *Canada Lands Surveyors Regulations*, then they are required to abide by the ACLS Code of Ethics set out in the *Canada Lands Surveyors Regulations*.

If the person is not a "member" of the ACLS, then the candidate is required to abide by the ACLS IHCS Code of Ethics.

The ACLS and ACLS IHCS Codes of Ethics are identical.

14. Certificate and Designation

Candidates having met all requirements to the satisfaction of the ACLS IHCP for a particular level will be issued a certificate indicating the Level attained and using either the CHE, CH or CHTech designation. In addition, those who have demonstrated academic training as either FIG/IHO/ICA Category S-5A, or S-5B, will have it mentioned on their certificate.

Individuals having completed all the CHE requirements will be able to use the designation CHE. If the candidate also completed a Category A or B course, the candidate will be able to use the designation CHE CAT A or CHE CAT B depending on the IBSC recognized course taken.

Individuals having completed all the Level 1 requirements will be able to use the designation CH. If the candidate also completed a Category A or B course, the candidate will be able to use the designation CH CAT A or CH CAT B depending on the IBSC recognized course taken.

Individuals having completed all the Level 2 requirements will be able to use the designation CHTech. If the candidate also completed a Category B course, the candidate will be able to use the designation CHTech. CAT B.

Once a Level Exec status had been awarded, the applicant would only be allowed to reverse the process to obtain or claim Level 1 or Level 2 status, if they can produce evidence that they have met the necessary experience required for Level 1 or Level 2.

The Appendix provides examples of Certified Hydrographer certificates issued under the ACLS IHCS.

15. Continuing Professional Development

For the purposes of the ACLS IHCS, all CHE, CH and CHTech designation holders will have to meet the ACLS IHCS mandatory CPD conditions.

The ACLS Registrar manages the ACLS IHCS CPD program. The minimum required CPD credit hours are 45 hours over the previous 3 calendar years.

For the ACLS IHCS, a certified individual who is unable to comply with the requirements of the ACLS IHCS CPD program due to extenuating circumstances may apply to the ACLS IHCP via the ACLS Registrar for an exemption.

Where a CHE, CH or CHTech does not meet the minimum CPD requirements, the ACLS Registrar will contact this person to determine if there are extenuating circumstances which may give rise to an exemption. Should there be none and this person does not take reasonable steps to meet the minimum requirements, then this person's certificate will not be renewed.

For the purposes of the ACLS International Hydrographer Certification Scheme, the Certified Hydrographer's CPD must be focused on any activity that is linked to a subject contained within the S-5A or S-5B syllabus.

15.1 CPD Credits Towards Hydrographic Certification

The following activities are acceptable for CPD credits towards hydrographic certification.

15.1.1 Courses and Seminars

Training and seminars provided by academic institutions, the ACLS or other surveying or related professional associations or bodies, vendors, or any other educator, provided the content is related to the member's professional practice. The training may be classroom or online.

A minimum of 5 CPD credits per year is required.

1 hour of activity = 1 CPD credit

15.1.2 Participation

Participation on Council, Board of Management, committees, or task forces of the ACLS or other surveying or related professional associations or bodies (including registered student mentoring).

2 hours of activity = 1 CPD credit

15.1.3 Presentations and Papers

Presentations and related preparation, and authored papers and research related to the professional practice of hydrographic surveying are acceptable for CPD credits.

1 hour of activity = 1 CPD credit

15.1.4 Meeting Attendance

Attendance at annual general meetings or regional meetings of the ACLS or other surveying or related professional associations.

1 hour of activity = 1 CPD credit

15.1.5 Self-Study and Professional Practice Research

Self-initiated study directly related to the hydrographic profession:

- To research new or historical surveying techniques or legislative requirements, issues, or concerns. OR
- To acquire accreditation in any survey jurisdiction.

A maximum of 10 CPD credits is expected to ensure the CPD credits are not skewed.

2 hours of activity = 1 CPD credit

15.2 CPD Documentation

The candidates Continuous Professional Development (CPD) must be recorded via the GeoEd website at <https://www.geood.ca>, Figure 5. To log into the site, click on “User Login” on the right side of the Homepage. When logging in, for the Username or Email Address, it is best to use your email address for more efficient communications with the ACLS. ACLS members should already have a password, and the ACLS Registrar will provide a password for non-ACLS members.

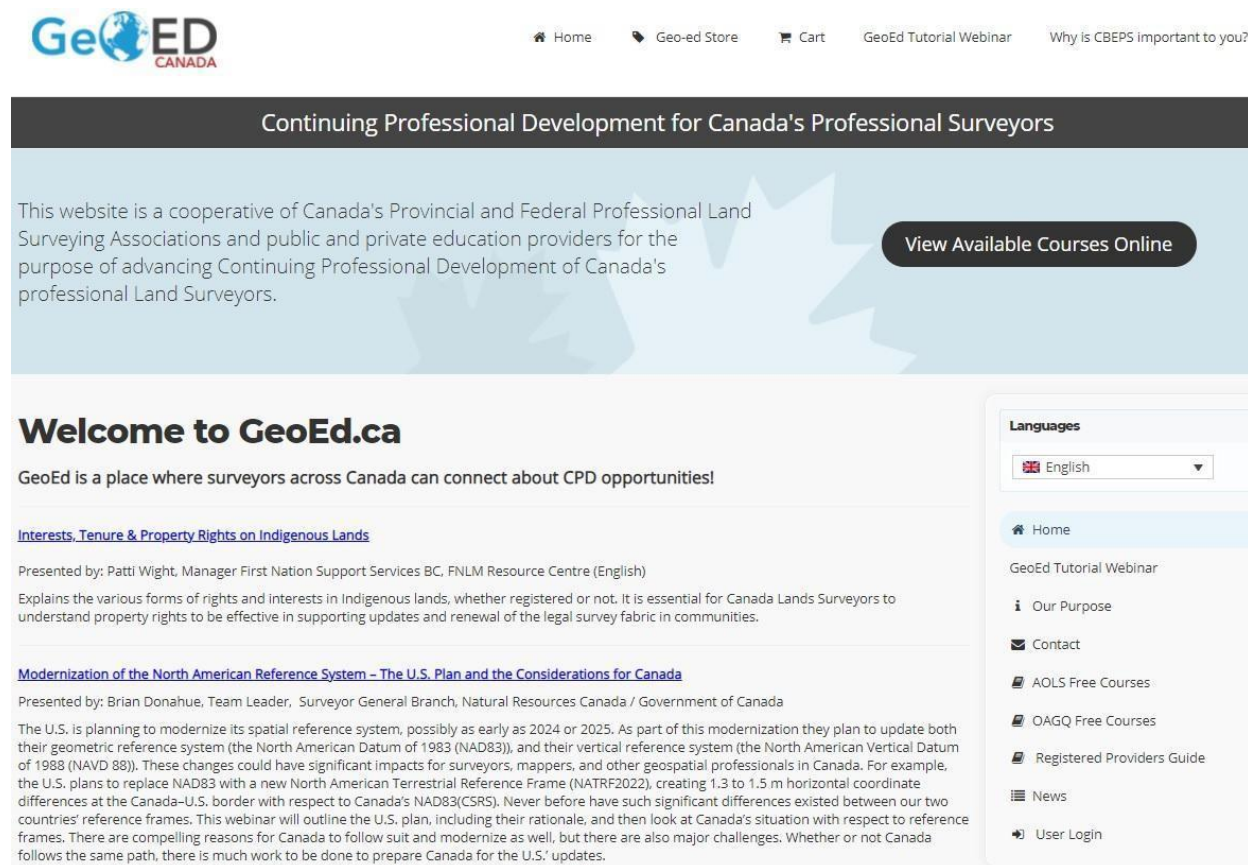


Figure 5: GeoEd Portal for Logging CPD

16. Certification Renewal

The ACLS IHCP shall require for renewal of either the CHE, CH or CHTech designation, to show that the individual is maintaining certification currency. Certification is valid for the year in which it was conferred, and all renewals commence on 01 January. Unless the individual's certification is renewed, then that person cannot use the CHE, CH or CHTech designation, nor be able to sign off any survey for which they are responsible.

Once approved by the ACLS IHCP, the individual will receive an ACLS IHCS sticker for the appropriate

year, which can be affixed to an individual's CHE, CH or CHTech certificate. The applicable certification renewal fee is due on 01 January.

All individuals with a CHE, CH or CHTech designation, shall be required to ensure that their CPD has been entered via the GeoEd website prior to 01 January for the previous calendar year (01 January to 31 December) which will be scrutinized by the ACLS Registrar.

As mentioned in the above CPD section, for CHE, CH and CHTech designations there shall be a minimum of 5 CPD credits per year for courses and seminars; and there should only be a maximum of 10 CPD credits for self-study and professional practice research, to ensure the CPD credits are not skewed. The ACLS IHCP will be mindful that the certification for most individuals will have been granted at some time during the year. However, the goal of 45 hours of CPD over the previous 3 calendar years should still be achievable, as the individual should be undertaking relevant CPD even before applying for certification.

Prior to 01 January of each renewal year, individuals who are NOT a member of the ACLS, shall be required to provide for the previous calendar year a completed ACLS IHCS – Experience Logbook for Certificate Renewal forms for each project.

In addition, each holder of the CHE, CH or CHTech designation is required to provide a covering letter. The covering letter requesting renewal should provide information on any significant professional developments in the individuals' career such as a job change, a change in a practicing speciality area of hydrographic or offshore surveying, other professional designations received, and/or further education undertaken.

Each renewal will be reviewed by the Registrar.

Take Home Messages....

All applicants for Hydrographic Certification under the ACLS IHCS are required to submit a comprehensive set of documentation as per the ACLS IHCS set of guidelines and forms (see Appendices). The reader is advised to visit the ACLS webpage for the most up-to-date set of documentation. <https://www.acls-aatc.ca/members-home/forms/>

- ACLS IHCS Application, and ACLS IHCS Application Checklist
- ACLS IHCS Logbook Instructions for Initial Application and Logbook Summary
- ACLS IHCS Project Report Submission Guidelines and ACLS IHCS Project Report Approval Request

Request

- ACLS IHCS Marine Course or Equivalent Instructions and Marine Course Equivalents
- ACLS IHCS Self-Assessment Form and Instructions

Applicants can **appeal** the decision of the ACLS IHCP. In all cases the certified hydrographer is required to follow a **Code of Ethics** that governs the professional conduct of a hydrographer.

Successful candidates will be issued a certificate indicating the Level attained and using either the CHE, CH or CHTech designation. Those who have demonstrated academic training as either FIG/IHO/ICA Category S-5A, or S-5B, will have it mentioned on their certificate.

All CHE, CH and CHTech designation holders will have to meet the ACLS IHCS mandatory **Continuous Professional Development** (CPD) conditions. CPD must be recorded must be recorded via the GeoEd Canada website at <https://www.geoed.ca>,

17. Applicable Fees

Table 6 provides the applicable fees payable based on current ACLS IHCS fee structures. The ACLS IHCS may amend this schedule of fees from time to time.

Service	ACLS Regular Member Fees	Non ACLS Regular Member Fees
Candidate Initial Application	C\$ 175	C\$ 175
Certification fee (once awarded)	C\$ 225	C\$400
Fee for CH (in training) and CHTech (in training)	C\$ 0	C\$ 0
Yearly renewal fee for either CHE, CH or CHTech designation due on 01 January	C\$ 225	C\$ 450

Table 6: Current Hydrographic Certification Fee Structure

A CH who holds a BSc in Surveying (or equivalent); a CBEPS Certificate of Completion; or a CAT A or CAT B designation would have to pass the ACLS criteria to become a CLS before they could become a Regular ACLS member.

APPENDIX:



This is to certify that: **La présente atteste que:**

John Smith

has been recognized under the ACLS Guidelines for Hydrographic Surveyors, as adopted by the Association of Canada Lands Surveyors, and as such has been certified as a

a été reconnu selon les lignes directrices du programme de certification des hydrographes de l'AATC, tel qu'adopté par l'Association des Arpenteurs des Terres du Canada, et comme tel, a été certifié en tant que

Certified Hydrographer Executive
CHE

This certificate was issued by the Registrar on May 3, 2021 and remains in force subject to annual validation and continuing compliance with the Association of Canada Lands Surveyors Hydrographic Surveying Certification Program including meeting the Continuing Professional Development requirements.

Hydrographe certifié exécutif
H.c.e.

Ce certificat a été délivré par le registraire le 3 mai, 2021 et demeure en vigueur sous réserve d'une confirmation annuelle et de la conformité au programme de certification des hydrographes de l'Association des arpenteurs des terres du Canada, y compris aux exigences de perfectionnement professionnel continu.

999

Registrar

Registraire