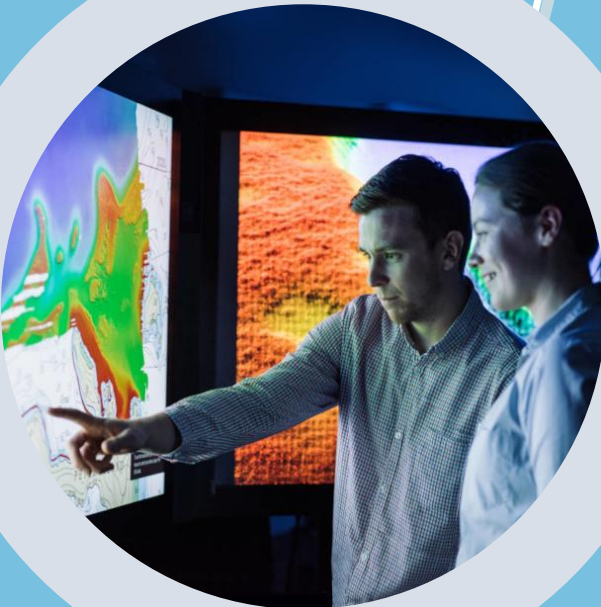




IFHS



Hydrographic Professional Accreditation Scheme

Scheme Framework

August 2021 | Revision C

Foreword

Hydrography is a complex activity, of critical importance to shipping, construction, environmental monitoring, military activities and a wide range of other applications within the wider Blue Economy. It is therefore critical that professionals engaged in hydrography and similar seabed mapping activities are suitably educated, trained and have appropriate experience. The Hydrographic Professional Accreditation Scheme (HPAS) described in this document aims to recognise and categorise such individuals to ensure appropriate personnel are engaged and to safeguard appropriate professional standards.

National and regional schemes already in place have already demonstrated the importance of professional accreditation in promoting and recognising the education, experience and skills of hydrographic professionals as well as raising the profile of the profession overall. HPAS aims to extend the concept of hydrographic professional accreditation beyond a national and regional footprint and, in combination, create a more international footprint. It is also intended that an equivalency agreement will be established between schemes to ensure our truly international industry is supported.

In that scope, IFHS national hydrographic societies have developed a system to provide a valuable service to individuals and the profession, as well as the end users of our profession's skills and services. HPAS will contribute to the promotion of the highest levels of professionalism within the hydrographic sector, providing improved recognition of skills and experience and providing a clear professional development route. There is a strong demand for such a scheme from our individual, public sector and corporate members and we are proud to make this important contribution to the international hydrographic profession.

We hope that professionals within the Hydrographic sector appreciate the opportunity and benefits of this scheme: promotion of the highest levels of Hydrographic expertise, improved recognition of skills and experience and supporting a clear professional development route. We are also confident that organisations will recognise these same advantages, while expanding the pool of professionals within a rigorous framework and increasing the number of accredited professionals that can be deployed. This scheme will provide a framework for contracting organisations to measure a set of minimum standards for individual professionals.

Finally, we would like to thank our HPAS Working Group and the many individuals who have enthusiastically supported the development of the scheme, as well as the multiple organisations that have already endorsed our initiative.

<i>Eric Langlois</i> President International Federation of Hydrographic Societies (IFHS)	<i>David Parker</i> Chief Executive The Hydrographic Society UK and Ireland (THS:UKI)
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Item	Reference
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Document Control

Revision	Date	Amendments
A	Jan 2021	Initial release.
B	Jul 2021	<ul style="list-style-type: none">• Minor corrections.• Level 3 pathway removed, and Affiliate pathway added.• Definitions for Affiliate pathway added.• Expanded guidance for critique requirements.• Critique guidelines added as appendix section.• Entry pathways amended (removal of experience only route).• Interview guidelines added as appendix section.• CPD – reduced to 40 hours per year, and explanation expanded on informal CPD to improve clarity.
C	Aug 2021	<ul style="list-style-type: none">• Minor amendments to wording throughout

Definitions and Abbreviations

Term	Definition
Accredited Individual	Somebody who has successfully applied, been assessed and accredited to one of the four levels of HPAS.
ACLS	The Association of Canadian Land Surveyors. ACLS operate an IBSC compliant certification scheme in Canada.
Affiliate	A person under training joining the Scheme at entry level but not formally accredited.
AHSCP	The Australasian Hydrographic Surveyor Certification Panel. AHSCP operate an IBSC compliant certification scheme in Australasia.
Applicant	An individual who is applying to become an Accredited HPAS member.
Arbitration Team	The team who would undertake any analysis as requested by the HPAS Panel chairperson because of an appeal being lodged.
At-sea time/on/in-water time	Time spent on field activities on, in or over water and related to IBSC S-5 subject competencies. Will normally be away from an office environment unless operating remote operations with robotic in/on-water systems or related to data processing.
Candidate	The Candidate is an individual who is applying for membership of the HPAS Panel.
Category A/B	See Standards
Conflict of interest	A situation in which a person is able to derive personal benefit, or able to confer preferential treatment, from actions or decisions made in their official capacity.
Course	The general term used for a formal educational plan that usually involves a series of lectures, tutorials, labs, practical exercises, study and field project work leading to a certificate.
CPD	Continuing Professional Development. A requirement of professional organisations for their members to maintain their knowledge and understanding of current technologies and practices. This is usually set, in terms of several hours each year, made up of relevant types of study, work and events.
Currency	The term applied to the need for a person's experience and knowledge to remain up to date and current within the terms of HPAS or general professional work.
CV	Curriculum Vitae
Evidence	Material being submitted by an applicant including reports, data, logbook, references, CV's and other items. The evidence forms the information an applicant relies upon when being assessed by the HPAS Panel.
Fees	To become Accredited there is an administration fee, thereafter there is an annual fee to retain Accreditation. Due at the start of January each year.
FIG	International Federation of Surveyors (Federation International Geometric).

GDPR	<p>The General Data Protection Regulation.</p> <p>An instrument created in 2018 to assist in keeping data relating to an individual that might identify that person secure and confidential. It only applies to information which relates to an identifiable living individual. If data is released or inadvertently allowed to be made publicly available, then an organisation could be fined a significant amount.</p>
GIS	Geographic Information System.
HPAS	Hydrographic Professional Accreditation Scheme (see also Scheme).
HPAS Panel	The group of professionals appointed to review, assess and approve (or not) applications and associated evidence provided by applicants applying for Accreditation into HPAS (See also: Applicant).
Hydrography	The branch of applied sciences which deals with the measurement and description of the physical features of oceans, seas, coastal areas, lakes and rivers, as well as with the prediction of their change over time. (source: www.ohi.int).
Hydrographic related activity	Any employment which involves the planning, acquisition, processing and presentation of data on physical marine topography and water bodies.
IBSC	The International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers is a body set up by FIG, IHO and ICA to develop and maintain International Standards of competence, primarily for formal training and educational courses/programmes. (see also FIG, IHO and ICA).
ICA	International Cartographic Association.
IFHS	<p>The International Federation of Hydrographic Societies.</p> <p>IFHS is a unique partnership of worldwide national and regional learned societies that acts to promote hydrographic expertise and careers and to foster the world hydrographic community around common initiatives and projects. IFHS has overall responsibility for HPAS.</p>
IHO	International Hydrographic Organization.
In charge time	<p>Time spent in a senior role overseeing personnel on a project; includes time taking responsibility for elements of a survey project; managing a survey project or key aspects of a large project.</p> <p>This type of experience can be gained on a survey project either in the field with at-sea/in/on-water time, or alternatively as a surveyor in charge of the aspects of a project completed in an office: planning, coordination and logistics, data processing, rendering and reporting etc. (See also: At-sea time/on/in-water time).</p>
Logbook	The logbook provides evidence of experience. An applicant's experience is a core element in gaining Accreditation and so it is critical that this is described in as complete and full a manner as possible to support the application. It will

	include the time, that activity and level of responsibility and the associated subject elements of the IBSC Standards.
MBES	Multi Beam Echo Sounder. A key system for data collection and potentially complex so there are various short courses that specialise in this system.
MRA	Mutual Recognition Agreement. A bi-lateral agreement between IFHS (as HPAS responsible body) and similar national, regional, or international Individual Schemes.
Panel	See HPAS Panel above.
Pathway	The route and progression of an individual through the Hydrographic Professional Accreditation Scheme.
Programme	The term applied by the IBSC to a formal educational plan involving a series of lectures, tutorials, labs, practical exercises, studies and field project work leading to a certificate. It is recognised by the IBSC as meeting the minimum International S-5 Standards at Category A or Category B level. (See also: IBSC S-5 Standards).
Relevant surveying experience	The term relates to the activities that an individual participates in during their time (years of experience) to accumulate sufficient coverage and variety to meet the Level requirements. Note: It includes all activities related to the practise of hydrographic surveying including planning, project oversight, mobilisation and demobilisation; calibration; reporting; management, coordination and logistics, operations, data related (acquisition, processing, QC, rendering deliverables) and can be onshore or sea going time (see also: In-charge time).
Retention	The status of a HPAS Accredited Individual is maintained through the annual renewal of their membership by maintaining CPD, payment of fees and if requested, submitting evidence of activities and competences at the necessary time. The certificate will be retained if the evidence supports the re-application after the initial term.
Standards	In this context, Standards of competence developed by FIG, IHO and ICA to indicate the minimum competencies necessary for hydrographic surveyors. Standards recognise two levels of competence: Category A (S-5A) introduces competencies from a senior professional level. Category B (S-5B) introduces competences from a practical level. HPAS Panel refers to the current version of the S-5A and S-5B Standards by the IBSC and published online at the IHO website (www.iho.int).
Scheme	The system to review, validate and monitor an individual's professional competencies with respect to hydrographic surveying and related activities. Individual Accreditation or Certification Schemes can be recognised by the IBSC (see also: IBSC). The IFHS Hydrographic Professional Accreditation Scheme is referred to as HPAS (see also HPAS).

Society	The general overall term to describe the IFHS, its national Society members and their membership (individual and corporate).
Survey Report	<p>A report submitted by the Applicant to allow the HPAS Panel to understand and appreciate the quality and level of competency being applied in an applicant's work.</p> <p>The report may be whole or part of a survey report/project report/report of survey or similar.</p>
STCW	<p>Standards of Training, Certification and Watchkeeping.</p> <p>This is the acronym for the offshore safety training introduced in the late 1970's by the International Maritime Organization. The training is composed of 5 sub courses according to the 2010 training regulations.</p>
Steering Committee	A group comprised of IFHS representatives which gives strategic direction and guidance to HPAS with respect to the operational, managerial and administrative aspects of HPAS.
Transition - Individual	The process to transfer an Individual applicant from one level to another (upwards) based upon the evidence submitted. (Experience, qualifications evidence, logbook and CPD). The process may include an interview by the HPAS Panel (See also Evidence, HPAS Panel).
Transition - Scheme	<p>The process of changing from one IBSC Standard edition to another newer one, by HPAS. (See also: IBSC S-5 Standards).</p> <p>When initiated by a new release of the S-5 Standard, it is expected to require a transition period to allow Accredited Individuals to migrate from an old to a new element.</p>
THS:UKI	<p>The Hydrographic Society United Kingdom & Ireland.</p> <p>As a member of the International Federation of Hydrographic Societies, THS:UKI has the delegation to operate HPAS on its behalf.</p>

1. Introduction and Background

1.1 Introduction

The International Federation of Hydrographic Societies (IFHS) has developed a Hydrographic Professional Accreditation Scheme (HPAS) to assist and support individual qualified and experienced hydrographic professionals in demonstrating their competency, capability and development of their careers.

It is the aim of HPAS to be recognised by the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC). Primarily HPAS is designed to evaluate and assess applicants against the IBSC S-5 Standards with pathways and competency levels developed to reflect knowledge and experience. In addition, HPAS will support reciprocal mutual recognition agreements with the other individual schemes, such as the Canadian (ACLS) Scheme and the Australasian (AHSCP) scheme, already in place.

The IFHS has overall responsibility of HPAS, whose delivery is supervised by THS:UKI and overseen by the HPAS Steering Committee. Hydrographic professionals will be able to apply for one of three levels of Accreditation and will be assessed by a panel of experts drawn from IFHS society members against a published framework. As well as providing a valuable international framework to individual hydrographic professionals, the hydrographic community and wider profession, the scheme aims to raise the profile and relevance of the IFHS and the national member societies to support sustainable capacity building and development.

1.2 Rationale for HPAS

Hydrography is a complex activity, of critical importance to shipping, safety of mariners, the blue economy, and environmental monitoring. It is therefore critical that professionals engaged in hydrography and similar seabed mapping activities are suitably educated, trained, have appropriate experience and offer supporting evidence. HPAS is designed to recognise and categorise such individuals to ensure appropriate personnel are engaged, to protect and promote appropriate professional standards and to support capacity development efforts.

No employer would employ hydrographic professionals based only on their individual accreditation status alone. The employer will also look at their specific experience to ensure they are fully suited and have a specific skill set which may be needed for a required role.

More recently the introduction of the ACLS scheme and the recognition of the AHSCP Certification scheme has reinforced IFHS's view that an international individual scheme would be of benefit for the hydrographic community.

Consequently, HPAS will adhere to the IBSC standards but will also allow an alternate route, or pathway, to the advanced levels for those not fortunate enough to have completed a

Category A, or Category B, programme. HPAS aims to ensure that the different routes are clearly designated in the Accreditation awarded.

1.3 General Objectives and Context of HPAS

The proposed accreditation scheme seeks to promote and acknowledge the education, experience, skills and on-going CPD of individual hydrographic professionals and accredit them to accepted (and IBSC recognised) levels. This, in turn, will be valuable to industry to ensure the right capabilities for hydrographic survey roles are met across a range of sectors, including surveys for nautical charting, offshore construction and infrastructure, offshore energy, environmental mapping and ports and harbours.

Canada and Australia have had individual professional accreditation schemes for several years. HPAS administration will seek to agree a reciprocal process based upon equivalency with these schemes. In addition to the equivalent levels (Level 1 and Level 2) seen in other schemes, HPAS will also include levels which identify professionals at an undergraduate or trainee level (Affiliate) and senior supervisory and management level (Level Ø).

1.3.1 Overview of HPAS

The scheme is being created as there is a need for the hydrographic surveying profession to maintain some form of recognition of the skills and competencies required and promote these to the sector clients and organisations. HPAS is for individuals who have gained some formal education, training or experience in hydrographic surveying and wish to have their capability and competency assessed and acknowledged through Accreditation. The intention being that the Accreditation would enhance their standing in the hydrographic profession and support their career by representing the individual to organisations, companies and institutions.

HPAS is primarily aimed at the individual members of the IFHS national hydrographic societies but is also open to all other hydrographic professionals.

a) Levels of competence

See section 2. HPAS Levels and Pathways for Entry for further details.

The scheme aims to cover the whole career of an individual with three discrete levels being established, plus one affiliate entry level.

Affiliate No experience is required, so not considered as an accreditation level. This entry level is designed for Student, apprentice, or survey assistant. It aims to raise awareness of young professionals on the importance of individual accreditation and provide the framework for future professional development.

Level 2 Designed for Junior Surveyor or Survey Technician.

Requires IHO-FIG-ICA Category A education plus 1 year experience or IHO-FIG-ICA Category B education or similar plus a minimum of 2 years' experience.

Level 1 Designed for Project or Charge Surveyor, Party Chief.

Requires IHO-FIG-ICA Category A education plus 2 years' experience or Category B education with added qualifications plus 3 years' experience or similar education plus a minimum of 5 years' experience.

Level Ø Designed for National Hydrographer, Director, Manager or similar.

Requires IHO-FIG-ICA Category A education plus 10 years' experience or Category B education with added qualifications plus 15 years' experience or similar education plus a minimum of 16 years' experience (typically Manager or similar).

The periods of experience, for Level 2 and above, can often be considered as a minimum as the emphasis is on the completeness of the experience across distinct types of activity.

b) Eligibility

HPAS is open to any hydrographic surveyor or person who is planning to become a hydrographic surveying professional. Although the initial region of coverage for HPAS focuses on IFHS member societies it is planned to allow as wide a membership as possible.

c) Minimum entry requirements

The minimum entry requirements, summarised here, are quite generic, so it is important to remember that a variety of distinct types of experience, training courses and ongoing development can contribute to the required coverage of the subjects.

The three main elements of entry will include:

1. **Educational** – an IHO-FIG-ICA Category A or Category B recognised programme, or the applicant will be required to show how the subjects of S-5 have been covered, normally by a relevant graduate or postgraduate qualification;
2. **Experience** – usually this is evidenced by a personal CV, an up-to-date logbook covering the period of experience, an example project and, if already enrolled, an up-to-date CPD which is required to be maintained;
3. **Certification** – certified copies of relevant certificates for the completed courses and studies will be required (see Appendix L). Numerous courses could contribute to an applicant's portfolio. Short term specialist courses such as MBES, STCW, Acoustics or GIS or longer more comprehensive courses such as Project Management, Data Analytics or Ocean Science could be appropriate.

2. HPAS Levels and Pathways for Entry

The objective of HPAS is to provide a system that enables individuals, through their knowledge and experience of hydrographic surveys and associated activities, to demonstrate they are competent and remain so for their period of enrolment/registration/membership.

Through its levels and pathways for entry, HPAS is open to any hydrographic surveyor or person who is planning to become a hydrographic surveying professional.

HPAS considers that competence is a combination of knowledge and experience gained which gives an individual the ability to apply that knowledge to successfully undertake and complete hydrographic survey projects and related activities.

2.1 Standards for Accreditation

HPAS primary source and reference for individual competencies is the IHO-FIG-ICA Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (Standards). Therefore, the adherence to the IHO-FIG-ICA S-5 Standards is critical for an applicant willing to meet HPAS criteria.

Figure 2.1 below presents an overview of the pathways an applicant may take to gain accreditation at each of the three levels. This should be viewed in conjunction with the following sections that further detail the requirements and pathways for each HPAS level.

Applicant Qualification and Experience				
	Category A	Category B	Surveying Degree	Certificates/Diplomas
Affiliate	Certificate or proof of study.	Certificate or proof of study.	Certificate or proof of study.	Certificate or proof of study.
Level 2	1 years relevant experience.	2 years relevant experience.	Additional formal courses. 3 years relevant experience.	Additional formal courses. 4 years relevant experience.
Level 1	2 years relevant experience including supervisory time.	Additional formal courses. 3 years relevant experience including supervisory time.	Additional formal courses. 5 years relevant experience including supervisory time.	Additional formal courses. 7 years relevant experience including supervisory time.
Level Ø	10 years relevant experience including supervisory time.	15 years relevant experience including supervisory time.	16 years relevant experience including supervisory time.	N/A

Figure 2.1: Pathways overview

2.2 Affiliate

An Affiliate applicant will have an interest in working in hydrography and will likely be just starting out on such a career.

Although this level does not provide Accredited Hydrographic Professional status, joining HPAS as an Affiliate shows commitment to the profession and provides a framework for building up a formal portfolio of continued professional development.

Considered starting points include:

- A student on an IBSC recognised Category A or Category B programme;
- A student on a non IBSC recognised hydrographic themed course;
- A student on a surveying or related subject;
- A trainee or apprentice;
- An experienced surveyor adapting to specialise in hydrography.

Each of these can have varied levels of understanding but at Affiliate, no significant experience is required. However, to enable progress and to rise to Level 2 or beyond, and

therefore formal Accreditation, would require a period of appropriate hydrographic practical experience along with completion of the relevant qualifications.

2.2.1 Applying for Affiliate

An application to be an Affiliate of HPAS Accreditation is made by submitting several items of documentation including:

- A signed letter of application including Society membership number or reference;
- A letter of support from an educational institution or employer confirming status;
- A HPAS Application Form;
- A full and up to date CV including one referee;
- A certified copy of any original certificates received from relevant formal education may be included but is not mandatory at this stage.

As an Affiliate, the hydrographic professional is at an early stage of a career in hydrography and related activities and commencing the accumulation of work experience, there is no requirement for a logbook or survey report. At the time of applying the CPD will be activated in order that this may be recorded, and the applicant will be required to follow the rules and codes of HPAS.

Table 2.1: Affiliate application summary

Administration	Completed online application form (hydrography.earth/hpas)
Educational Qualifications	Not required
Relevant Experience	Not required
Documentation	Up-to-date CV A letter on headed paper from the educational institution confirming the applicant's status, start date and expected completion date. Note an email will not suffice. Or If already working in the profession, a letter of confirmation and support from the employer organisation, along with a start date, is required.
References	One nominated referee or reference with the application, who is known to them and will formally support the application.
<i><u>Note:</u> Refer to section 4 for further details on completing the application documentation.</i>	

2.3 Level 2

Level 2 is the first HPAS level providing an Accredited Hydrographic Professional status. An Accredited Level 2 hydrographic professional will be a practical surveyor capable of performing various survey tasks and executing survey instructions for field survey projects. A Level 2 hydrographic professional will have maintained a logbook of relevant applied

experience on top of qualifications and have attained Accreditation through one of 5 pathways, namely:

1. Completion of an IHO-FIG-ICA Category A recognised programme and 1 year of relevant experience;
2. Completion of an IHO-FIG-ICA Category B recognised programme and a minimum of 2 years' relevant experience;
3. Completion of a Surveying degree and additional formal courses plus a minimum of 3 years' relevant experience (2 of which should be in practical hydrographic surveying). The combined education achieved between the Surveying degree and additional formal courses shall allow the candidate to meet the S-5 requirements as stated above;
4. Completion of a non-cognate degree, certificate course or diploma course and additional formal courses plus a minimum of 4 years' relevant experience (3 of which should be in practical hydrographic surveying). The combined education achieved between the non-cognate degree, certificate course or diploma course and additional formal courses shall allow the candidate to meet the S-5 requirements as stated above;

Being Accredited at Level 2 enables the holder to use the post-nominal AH-L2.

2.3.1 Applying for Level 2

The requirements for HPAS Level 2 applications are dependent on the pathways stated above. For each pathway stated above a CV, referees, logbook, example survey project(s), critique and Experience Matrix Form would be required to be submitted. If applying as a HPAS Affiliate, the application must also be supported by a compliant CPD record.

Applicants who have not completed an IHO-FIG-ICA Category A or Category B programme, described in pathway 3 and 4 above, will be required to complete a Qualification Mapping Form in addition to the documentation stated above.

Further information and considerations for Non-Category A and Category B pathways is given below and in section 2.7.

Table 2.2: Level 2 application summary

Administration	Completed online application form (hydrography.earth/hpas)
Educational Qualifications	A certified true copy of all certificates plus additional certification as appropriate (e.g., STCW, MBES, etc.)
Minimum Relevant Experience	1 year (IHO-FIG-ICA Category A) 2 years (IHO-FIG-ICA Category B) 3 years (Surveying degree) 4 years (Certificate/Diploma)
Documentation	CV with two referees A logbook of hydrographic surveying activities and experience (covering appropriate period) Example of a survey report(s)

	<p>Critique (see Appendix F)</p> <p>Completed Experience Matrix</p> <p>Completed Qualification Mapping Form, section S-5B (for applicants who have not completed an IHO-FIG-ICA Category A or Category B programme)</p> <p>CPD record (Affiliate transition applicants)</p>
References	Two nominated referees with the application, who is known to them and will formally support the application.
<p><i>Nota: Refer to section 4 for further details on completing the application documentation. For Further information and considerations for Non-Category A and Category B pathways, refer to section 2.7.</i></p>	

2.3.1.1 Surveying Degree

The graduate will have completed a course that includes a considerable amount (or all) of the various syllabus topics and subjects required of a IHO-FIG-ICA Category A or Category B programme. However, the considered course has not received the IHO-FIG-ICA certification.

Therefore, the applicant should provide as much supporting information as possible to demonstrate:

- The level of knowledge of the considered course (Master of Science, Bachelor of Science, Engineering degree, etc);
- The relevant subjects and their learning outcomes with regards of IHO-FIG-ICA S-5 competencies.

This education plus the experience of relevant hydrographic survey work will form the main portion of an application. The logbook and CV will demonstrate coverage of topics and the example survey report (with description, data examples and critique) will also consolidate this into a practical form. The evidence should include an indication of the levels of responsibility and seniority of the applicant.

Additional formal qualifications are often specialised in their nature and therefore details of content and the course syllabus or subject modules should also be included in the supporting documentation.

2.3.1.2 A Non-affiliate Degree, Certificate Course or Diploma Course

The graduate, certificate holder or diploma holder, will have completed a course that does not include all the necessary syllabus topics and subjects required of an IHO-FIG-ICA Category A or Category B programme. However, some coverage of Basic subjects (such as mathematics, ocean sciences) or Foundation subjects may have been possible. Courses that involve affiliate subjects (such as engineering, ocean sciences, geography etc.) should be described. The applicant should provide as much supporting information as possible to demonstrate:

- The level of knowledge of the considered course (Master of Science, Bachelor of Science, Engineering degree, etc);
- The relevant subjects and their learning outcomes with regards of IHO-FIG-ICA S-5 competencies.

If the course completed is at a diploma or certificate level, made up of distinct options and multiple modules then a list of these completed and being relied upon as evidence of subject knowledge is required.

A verified true copy of the original certificate of completion for a non-cognate course will not suffice if the course is relied upon for coverage of the subjects. Clear descriptions of any modules or course content that provides key subject matter cover, should be supplied.

The formal education and extra formal training and educational courses and modules, plus the experience of relevant hydrographic survey work, will form the main portion of an application. Building on these theoretical bases, the logbook and CV will be required to demonstrate that all the necessary coverage of topics has been achieved as well as the role of the applicant and the level of responsibility. HPAS requires recent example, survey reports (to include description, deliverables, critique and report) to demonstrate the level of work being undertaken in a practical form including an indication of the levels of responsibility and seniority of the applicant.

2.4 Level 1

Level 1 is an advanced survey level for those who have the required educational basis and have maintained their experience through CPD and a logbook. They will have built upon their initial formal survey qualifications, gained relevant experience, and developed their career which should have progressed to a supervisory or senior level. A Level 1 hydrographic survey professional will be able to plan, execute and lead complex multi-disciplinary field projects for a variety of different sectors.

There are four pathways to attaining Accreditation at Level 1, namely:

1. Completion of an IHO-FIG-ICA Category A recognised programme and 2 years of relevant experience. A proportion of 60 % of the practical time should demonstrate the applicant gaining relevant in-charge experience;
2. Completion of an IHO-FIG-ICA Category B recognised programme and additional formal courses plus a minimum of 3 years' relevant experience. A proportion of 60 % of the practical time should demonstrate the applicant gaining relevant in-charge experience;
3. Completion of a Surveying degree course with options or specialist modules in hydrographic surveying and additional formal courses plus a minimum of 5 years' relevant experience (2 of which should be in practical hydrographic surveying). A proportion of 60 % of the practical time should demonstrate the applicant gaining relevant in-charge experience;

4. Completion of a non-cognate degree, certificate course or diploma course and additional formal courses plus a minimum of 7 years' relevant experience (4 of which should be in practical hydrographic surveying). A proportion of 60 % of the practical time should demonstrate the applicant gaining relevant in-charge experience.

Being Accredited at Level 1 enables the holder to use the post-nominal AH-L1.

2.4.1 Applying for Level 1

The requirements for HPAS Level 1 applications are dependant on the pathways stated above. For each pathway, a CV, referees, logbook, example survey projects, critique and Experience Matrix Form would be required to be submitted. If applying from Level 2 or as a HPAS Affiliate, the application must also be supported by a compliant CPD record.

Applicants who have not completed an IHO-FIG-ICA Category A programme will be required to complete a Qualification Mapping Form in addition to the documentation stated above. Refer to section 4 for further details on completing the application documentation.

Further information and considerations for Non-Category A and Category B pathways is given below and in section 2.7.

Table 2.3: Level 1 application summary

Administration	Completed online application form (hydrography.earth/hpas)
Educational Qualifications	A certified true copy of all certificates plus additional certification as appropriate (e.g., STCW, MBES, etc.)
Minimum Relevant Experience	2 years (IHO-FIG-ICA Category A) 3 years (IHO-FIG-ICA Category B) 5 years (Surveying degree) 7 years (Certificate/Diploma)
Documentation	CV with two referees A logbook of hydrographic surveying activities and experience (covering appropriate period) Two examples of survey reports Critique (see Appendix F) Completed Experience Matrix Completed Qualification Mapping Form, section S-5A (for applicants who have not completed an IHO-FIG-ICA Category A recognised programme) CPD record (Affiliate and Level 2 transition applicants)
References	Two nominated referees with the application, who is known to them and will formally support the application.

***Nota:** Refer to section 4 for further details on completing the application documentation. For Further information and considerations for Non-Category A and Category B pathways, refer to section 2.7.*

2.4.1.1 Surveying Degree

The graduate will have completed a course that includes a considerable amount (or all) of the various syllabus topics and subjects required of a IHO-FIG-ICA Category A or Category B programme. However, the considered course has not received IHO-FIG-ICA recognition.

Therefore, the applicant should provide as much supporting information as possible to demonstrate:

- The level of knowledge of the considered course (Master of Science, Bachelor of Science, Engineering degree, etc);
- The relevant subjects and their learning outcomes with regards of IHO-FIG-ICA S-5 competencies.

For Level 1 this education plus the experience of relevant hydrographic survey work will form the main portion of an application describing the progress in roles and responsibilities and seniority. The logbook and CV will demonstrate coverage of topics and the example survey report (with description and data examples and critique) will also consolidate this into a practical form. The evidence should include an indication of the levels of responsibility and seniority of the applicant.

Additional formal qualifications are often specialised in their nature and therefore details of content and the course syllabus or subject modules should also be included in the supporting documentation.

2.4.1.2 A Non-Cognate Degree, Certificate Course or Diploma Course

The graduate, certificate holder or diploma holder, will have completed a course that does not include all the necessary syllabus topics and subjects required of an IHO-FIG-ICA Category A or Category B programme. However, some coverage of Basic subjects (such as mathematics, ocean sciences) or Foundation subjects may have been possible. Courses that involve affiliate subjects (such as engineering, ocean sciences, geography etc.) should be described. The applicant should provide as much supporting information as possible to demonstrate:

- The level of knowledge of the considered course (Master of Science, Bachelor of Science, Engineering degree, etc);
- The relevant subjects and their learning outcomes with regards of IHO-FIG-ICA S-5 competencies.

If the course completed is at a diploma or certificate level, made up of distinct options and multiple modules then a list of these completed and being relied upon as evidence of subject knowledge is required.

A verified true copy of the original certificate of completion for a non-cognate course will not suffice if the course is relied upon for coverage of the subjects. Clear descriptions of any modules or course content that provides key subject matter cover, should be supplied.

The formal education and extra formal training and educational courses and modules, plus the experience of relevant hydrographic survey work, will form the main portion of an application. Building on these theoretical bases, the logbook and CV will be required to demonstrate that all the necessary coverage of topics has been achieved as well as the role of the applicant and the level of responsibility. HPAS requires recent example, survey reports (to include description, deliverables, critique and report) to demonstrate the level of work being undertaken in a practical form including an indication of the levels of responsibility and seniority of the applicant.

2.5 Level Ø

Level Ø is the most advanced or highest level attainable. It is for those hydrographic survey professionals who have continued to develop and advance their technical skills and knowledge whilst also developing management and leadership attributes that have allowed them to become people of repute and influence in the profession. There are three routes to attaining Accreditation at Level Ø, namely:

1. Completion of an IHO-FIG-ICA Category A recognised programme and 10 years suitable experience involving hydrographic surveys and management. The applicant would have relevant in-charge experience for 8 years of that time;
2. Completion of an IHO-FIG-ICA Category B recognised programme and additional formal courses plus a minimum of 15 years of suitable experience involving hydrographic surveys and management. The applicant would have relevant in-charge experience for at least 12 years;
3. Completion of a Surveying degree with options or specialist modules. The minimum appropriate period of experience required is 16 years of experience of which 12 years would be relevant in-charge practical hydrographic surveying and management.
Successful completion of additional hydrographic training courses may be expected.

Being Accredited at Level Ø enables the holder to use the post-nominal AH-LØ.

2.5.1 Applying for Level Ø

For applicants on this pathway, an extended CV, referees, a critique and two examples of delivered material, findings, or survey reports would be required to be submitted and if applying from a lower level, the application must be supported by a compliant CPD record. At level Ø the logbook is optional as for some roles it may no longer be relevant instead the extended CV should show the breadth of experience throughout an applicant's career.

Table 2.4: Level Ø application summary

Administration	Completed online application form (hydrography.earth/hpas)
Educational Qualifications	A certified true copy of all certificates, plus additional certification as appropriate (e.g., Project Management, STCW)
Minimum Relevant Experience	10 years (IHO-FIG-ICA Category A) 15 years (IHO-FIG-ICA Category B) 16 years (Surveying degree)
Documentation	A short form CV An extended CV with details of relevant projects and descriptions of roles and responsibilities Two examples of delivered material, findings, or survey reports Critique (see Appendix F for guidelines) Completed Qualification Mapping Form, section S-5A (for applicants who have not completed an IHO-FIG-ICA Category A programme) Completed Experience Matrix CPD record (for applicants transitioning from another level) <u>Optional:</u> The applicant's logbook (or equivalent records) of hydrographic surveying experience if within the last five years.
References	A minimum of three references and referees from recent projects

2.6 Post Nominals

The use of post-nominals is for applicants who have met the required standard for the level they have applied for and is applicable at Level 2, Level 1 and Level Ø only. There are no post-nominals for a HPAS Affiliate. The abbreviation used for the post-nominal is Accredited Hydrographer (AH).

The following table summarises the post-nominals designation.

Table 2.5: Summary of HPAS post nominals

Level	Postnominal
Level 2	AH-L2
Level 1	AH-L1
Level Ø	AH-LØ

2.7 Non-Category A or Category B Applicant Pathways

Although HPAS follows the main framework of the IHO-FIG-ICA Standards of Competence (the IHO-FIG-ICA S-5A and S-5B) for the Accreditation of an individual's competencies, it is acknowledged that not all persons can attend and complete such programmes.

The applicant must provide evidence that they have covered the necessary hydrographic survey subjects to meet the desired Accreditation level of competency. This evidence can be

accumulated through various means including completion of relevant training courses, mentored and supervised project work recorded on a survey logbook or similar and CPD. HPAS Qualification Mapping Form provides a listing of the subjects and their level of knowledge that is required. The applicant should complete this form as completely as possible, noting how the competency has been achieved (education, experience etc.).

2.8 Experience in Hydrographic Surveying

The emphasis in HPAS is on compliance with the IHO-FIG-ICA S5 Standards and individuals who have successfully completed one of the IHO-FIG-ICA recognised programmes. Consequently, HPAS has had to determine an approach that allows the inclusion of other certificate holders, diploma holders and graduates from other courses and experienced individuals. The approach has been designed in an appropriate manner with qualification mapping, to maintain the status and preferred IHO-FIG-ICA Category A and Category B pathways. Evidence therefore includes the project work as demonstrated in a logbook, a minimum of one example report, a CV and referees. The evidence is to be summarised in the Experience Matrix Form.

For Level 2 and Level 1 applicants, the evidence supplied should include coverage of all the required technical subjects of the appropriate knowledge level.

For Level 1 applicants, the logbook, Survey Project example and CV should also indicate progress of the applicant's responsibility and seniority with respect to decision making, leadership and management of operational project situations.

Certain aspects of an individual's progress to completing the required competencies and subjects mean that there may be some variations in their assessment which includes contacting the referees supplied and an interview of the applicant by members of the HPAS Panel. The HPAS Panel will review and incorporate all evidence in determining their decision.

3. Applying to HPAS

3.1 Making an Application

All applications are submitted to the HPAS Secretariat and must be deposited by the published deadline. Online application forms and associated documentation are available on the HPAS website (hydrography.earth/hpas).

On receipt of an application, by the stated deadline, the HPAS Secretariat shall inform the applicant of receipt of their submission and shall inform the HPAS Panel of the application's availability for assessment.

An application comprises the following (some items dependent upon levels):

- **A signed letter of application** including either your Society membership number or reference where appropriate;
- The completion of **HPAS online application Form** (hydrography.earth/hpas);

- **A full and up to date CV** including appropriate number of referees (refer to appropriate Level in section 2 for full details);
- **A logbook of your experience.** It must cover the appropriate period and demonstrate your work experience of hydrographic subjects. Activities and experience will normally be expected to have been witnessed or supervised to indicate completion and any specific outcomes or learnings. An example logbook is included on the HPAS website;
- **Sample survey reports.** These should be restricted to the technical aspects of the project, the requirements and objectives, the methods, critical reasoning and lessons learnt. It should avoid repetitive operational and data descriptions and listings. It is acknowledged by the HPAS Panel that some surveys may involve work of a sensitive nature or be subject to security restrictions thereby limiting some of the context of the content. However, with planning and appropriate editing, it should still be possible to provide a useful example project;
- **Critique** (see Appendix F for guidelines);
- **Experience Matrix Form** (see Section 4 for guidelines);
- **Completed HPAS Qualification Mapping Form** that lists all the hydrographic survey subjects completed, showing which subjects have been covered and to what level of competency (refer to appropriate Level pathway in section 2);
- **A certified copy of any original certificates** received from relevant formal education or qualifications. For non-Category A or Category B courses, the application must be accompanied by a description of the course and the subjects that are covered (refer to Appendix L for more details);
- **Individual CPD records** should be up to date and submitted where appropriate. Note that the CPD includes a compliance list of the hydrographic survey subjects that should be covered, and the applicant can indicate the level (see Appendix N for further details);

These documents should be compiled and submitted along with the online HPAS application form in time for the HPAS Secretariat to carry out a check against the required application items. Note this is purely an administrative check and not any form of technical assessment.

Each item of the documentation should be clearly marked with the name of the applicant.

To assist with the application, a HPAS checklist is available on the HPAS website (hydrography.earth/hpas) and provided in Appendix I of the document. It includes the normal items expected but applicants should ensure they have checked their documentation is complete. Failure to include all the necessary elements for an application could delay the review or, in a worst case, mean the application is not considered by the HPAS Panel.

3.2 Review of Applications

The HPAS Panel shall meet regularly, at least once per year and most likely twice per year. The dates shall be publicised for the meeting and the deadline for any applications prior to that. Usually two months prior to the meeting.

Once the applicant has provided all the evidence and fees the review period commences.

Between 6 weeks and not later than 3 weeks before the HPAS Panel meeting an applicant may be asked for more evidence or to attend an interview.

The HPAS Panel may contact the applicant prior to the HPAS Panel meeting, if they require to check and verify any materials, request further reports, more detailed explanations, or evidence to support the claim. If an applicant is to be interviewed, they will be contacted, not less than 3 weeks prior to the interview to arrange a time.

The interview itself will take place before the HPAS Panel meeting. The interview will last no longer than 90 minutes.

Once the HPAS Panel has met, all decisions regarding applications will be issued to the individuals not later than two weeks after the meeting. The HPAS Panel may require to check and to verify submitted evidence and could therefore request some further material. Such a request for further reports, or evidence to support the claim would be made within two weeks of the HPAS Panel meeting.

Any additional material should be submitted within 3 weeks of the request. A final decision by the HPAS Panel will be issued within two weeks of receipt.

3.3 Maintaining Competencies and Accreditation Status

From the time of entry, an applicant can accumulate experience that should be recorded in a logbook (or equivalent) and a record of CPD maintained.

Accreditation remains current if the members continue to maintain their CPD up to date and submit, when requested, a logbook of their work experience. For examples of the CPD activities, see Appendix N.

Further details on the Retention of Individual Accreditation Status can be found in section 7.

3.4 Timelines

For an individual assembling the documentation and evidence for an application there is a schedule that illustrates the application timeline and should assist in appreciating the process of submitting, assessment and the possible request by the HPAS Panel for additional information or clarifications.

Table 3.1: The submission timeline

Week -8	Week -6 to -3	Week. -3 to 0	Week 0	Week 1	Week 4	Week 6	Week 7
Applicant	HPAS Panel	HPAS Panel	HPAS Panel	HPAS Panel	Applicant	HPAS Panel	HPAS Panel
Applies	Requests	Interviews	Meets	Replies	Submits	Meets	Replies
CV, logbook, example report, certificates and fees	Extra evidence and or Interview		Reviews evidence	Approves applicant or Requests evidence or Rejects Accreditation	Extra evidence	Reviews evidence	Approves applicant or Rejects Accreditation

4. Completing the Application Documentation

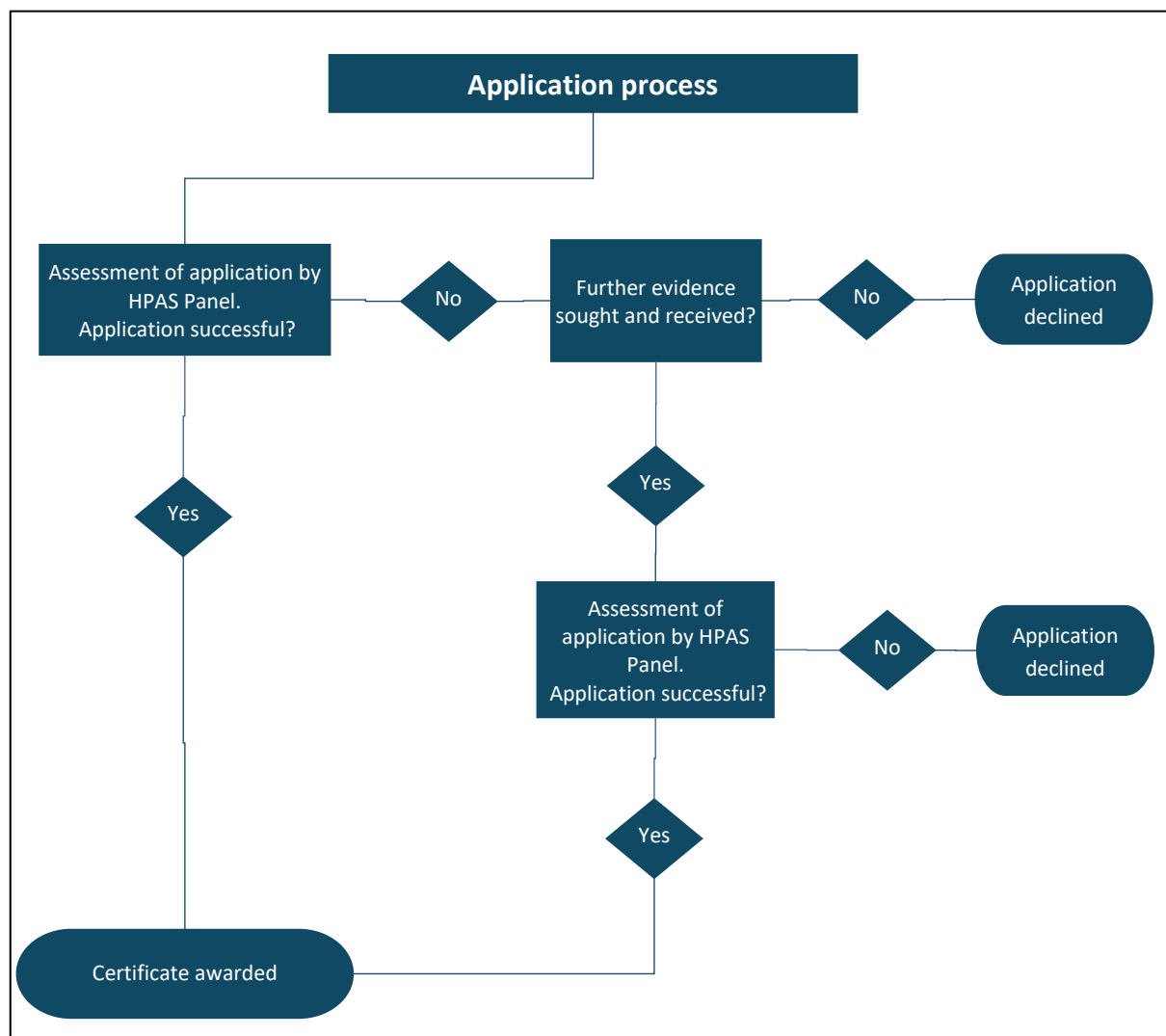


Figure 4.1: HPAS application process overview

In this section the material for an application is described. Personal information should be limited to a contact email and telephone number which can be provided as part of the application form. The CV, logbook and other documentation do not need to have any specific personal details (though see the section on the Certified copy of a document).

4.1 The CV

The CV should provide a professional work profile of the general tasks, responsibilities and actions undertaken, the employer organisations and the technical systems of which relevant experience has been gained. An example is provided in Appendix O. Other items can include training and educational courses, publications and affiliations. The CV should include the appropriate number of references or referees, that you know and who may be contacted by the HPAS Panel. Personal information should be limited as much as possible.

4.2 Referees

Hydrographic professionals whom you can use as referees should be included on the Application documentation. The number of required referees is dependent on the Level of application, applicants should refer to the requirements detailed for each level in section 2. The HPAS Panel will normally contact referees for some information and to answer some questions about the applicant. The Referees should be known to you but should not be members of your family or immediate work colleagues or supervisor.

If you feel you are not able to obtain the support of the required number of referees, then please contact the HPAS Secretariat to inform them of the situation.

4.3 The Logbook

To provide the necessary evidence to maintain currency, an individual must maintain a record of work, methods, technologies, roles and responsibilities along with critical elements in a logbook. The logbook could be an item that is already used by the individual or provided by their employer organisation, however if an applicant requires a pro forma template to use as the basis of a logbook there is an example provided in Appendix P. Note a key element of the logbook will be its subject listing mapped to the S-5 hydrographic survey subjects and the signatures and comments of the supervisors, mentors and witnesses. The example template provided includes a project supervisor signature as well as an overall logbook signature by a manager or professional mentor.

4.4 Survey Reports

The requirement to submit an example survey report(s) is so that the HPAS Panel may understand and appreciate the quality and level of competency being applied in an applicant's work. When only one report is requested, an applicant may choose to submit more than one survey report to better demonstrate the areas of competency being covered. The key elements that the HPAS Panel members wish to see demonstrated in the reports are indicators as to the level of competency being applied by the applicant.

The applicant should describe their personal role and responsibility in the project and provide an associated critique of the survey project (see below). The main survey project should include the whole project from the initial instructions and requirements, specifications, planning and mobilisation, operations, data rendering, data QC, data deliverables and a summary of the conclusions.

4.5 Critique

Each HPAS Applicant (Level 2 to Ø) is required to submit a critique for one of the surveys undertaken where the sample survey report or relevant alternative document has been submitted as part of the application. This needs to provide a clear context for the survey requirements, the rationale for the survey methodology adopted and a critique of any aspects considered relevant to demonstrate the competency of the applicant are required. There is also an opportunity at the end of the critique to describe more widely your overall contribution to the profession.

The critique is intended to give the panel a view as to the competencies and experiences of the applicant and how those competencies and experiences are applied to real-world survey issues. Where the CV, logbook and experience matrix describe the competencies in a more quantitative form, the purpose of the critique is to describe them in a qualitative sense.

The critique should cover the whole project from the initial instructions, planning and preparation to data deliverables and conclusions with a clear context for the survey requirements, the rationale for the survey methodology adopted, a general assessment of the risks and how these were mitigated as well as an appraisal of the performance and suitability of the survey, including data examples where possible. Aspects considered relevant and demonstrate the knowledge, understanding and competency of the applicant are key.

In some cases, for a Level Ø application, an applicant may not be able to use recent survey examples. In such cases, applicants can choose an alternative project or activity with a written report output to demonstrate their competence and experience and should adapt the framework below for their critique accordingly.

Further guidance is provided in Appendix F.

4.6 Experience Matrix Form

A key element of any application for Accreditation is the documented experience and how they match to the IHO-FIG-ICA S-5 Standards.

An applicant will be required to complete the Experience Matrix Form (shown in Appendix G) to show that they have had sufficient practical experience. Refer to section 5.1.9. Learning Outcomes Experience – HPAS Experience Matrix for further details on how the HPAS Panel will view the Experience Matrix during the assessment process.

The Experience Matrix Form is available on the HPAS website and included in Appendix G.

4.7 Qualification Mapping Form

Evidence of qualifications is stated as being a certified copy of the original certificate. For courses or programmes that may have elective and other less common modules the applicant must provide as much supporting information to assist the HPAS Panel in their assessment of the qualifications achieved and being claimed with respect to the IHO-FIG-ICA S-5 subjects (refer to Appendix L for more details).

Where an applicant does not hold a primary qualification (see section 5.1.1) they will need to show that they have covered the same subjects as laid out in the IBSC S-5 Standards.

The Qualification Mapping Form is available on the HPAS website and included in Appendix H. It lists the S-5 subjects, along with the standards of knowledge required of each subject, namely Advanced, Intermediate or Basic. Applicants will be required to list the course and qualifications they hold that most closely meets the subject covered. The form only shows the subject, for full details of the learning outcomes reference should be made to the full S-5 Standards text.

HPAS Panel shall check the alternatives offered by the applicant against their own knowledge of the courses and may need further verification of the subjects covered. Applicants applying for Level Ø or Level 1 who do not have an IHO-FIG-ICA Category A qualification must complete the S-5A section of Qualification Mapping Form.

Applicants applying for a level 2 who do not have an IHO-FIG-ICA Category A or Category B qualification must complete the S-5B section of the Qualification Mapping Form.

The HPAS Secretariat will maintain a list of relevant courses noted for their coverage of surveying subjects. If the applicant has completed one of these courses, then the appraisal will consider the course as being appropriate for the HPAS level applied for. If on the other hand the applicant has completed another graduate course that is not listed, then the applicant will be asked to provide as much detail as possible regarding the surveying subjects covered and to what level of knowledge and learning they achieve with respect to the IBSC S-5 Standards.

4.8 Individual CPD Records

As part of the rules of Accreditation, an accredited individual must keep a record of CPD, this should be maintained and submitted annually. However, it is a requirement of entry that a logbook be provided and it may be beneficial to also maintain CPD prior to that point. The form required to be completed (see an example in Appendix N) includes notes to assist the entry of CPD events, the learning objectives and outcomes as well as the subjects, aligned with the IBSC S-5 Standards hydrographic subjects. The time is recorded in hours and over the annual period of return a minimum of 40 hours of CPD must be accumulated. These could be formed of both informal and formal events and some should comprise of the various hydrographic survey subjects of the Standards whilst others will reflect a wider portfolio of topics and related subjects.

4.9 Certifying Documentation

Certify a document as a true copy of the original by getting it signed and dated by a professional person, like a solicitor. The HPAS Accreditation application will accept a certified document if the person authenticating it is independent. In some cases, the person certifying the document may charge a fee. Appendix L has more details on obtaining a certified document. A photocopy of the signed document will not be accepted.

5. HPAS Assessment

This section details the means of assessment of applications to HPAS. There are two types of assessment, one for academic qualifications and one for experience and these are different in scope and application.

The same methodology will be applied to applications at all four levels of accreditation. As assessment is based on quantitative methods, particularly in experience and CPD, the scores will help determine the final level awarded. This methodology will also provide a fair audit trail and in combination with CPD, a record for progression through HPAS to higher levels.

Whilst a large part, if not all, of the assessment will be made on the submitted materials and documentary evidence (forms, cross references, projects, logbooks, certificates etc.), the HPAS Panel may invite the applicant to a written test or interview, to clarify and respond to queries raised by the HPAS Panel.

5.1 Qualifications and Academic Achievement

5.1.1 Primary Qualification – IHO-FIG-ICA Category A or Category B

The primary qualifications for HPAS are the IBSC S-5A and S-5B (Category A and Category B) courses.

For the purposes of HPAS assessment an applicant will be deemed to have a Category A, or Category B, qualification if they have successfully completed a course which was IBSC Recognised during their attendance of the course.

5.1.2 Secondary Qualification – Degrees and Tertiary Education

It is recognised that there are many other reputable educational programmes and further education courses that will meet the standards set by the IBSC in many respects.

Unfortunately, whilst these courses may have high standards and wide coverage, they have not been through the scrutiny of the IBSC, so the HPAS Panel will need to determine the competencies covered and any gaps in an applicant's knowledge. Academic courses which may be submitted for evidence, in whole or part, of Category A or Category B subjects, shall include graduate and postgraduate degrees, diplomas and specialised courses. These courses should offer certificates to show a certain level of knowledge has been achieved, normally by test/exam and coursework. Such courses, or a combination of them, can be

submitted to augment Category B (Level 1) or as an alternative (Levels 1 and 2), provided in the last case that further vocational training courses have been attended.

5.1.3 Further Training Courses

Academic and non-academic training courses will be required to augment an applicant's knowledge (who has not followed a Recognised course). As non-academic courses do not have testing, applicants will be required to provide evidence of attendance and learning outcomes.

5.1.4 Qualification Mapping

Where an applicant does not hold a primary qualification (see section 5.1.1)) they will need to show that they have covered the same subjects as laid out in the required IBSC S- 5 Standard. To this end a form (see Appendix H) is provided which lists the S-5 subjects, along with the standards of knowledge required of each subject, namely Advanced, Intermediate or Basic. Applicants will be required to list the course and qualification they hold that most closely meets the subject covered. The form only shows the subject, for full details of the learning outcomes reference should be made to the full S-5 text.

The HPAS Panel will be checking the alternatives offered by the applicant against their own knowledge of the courses and may need further verification of the subjects covered.

Applicants applying for Level Ø or Level 1 who do not have an IHO-FIG-ICA Category A qualification must complete the S-5A section of Qualification Mapping Form.

Applicants applying for a level 2 who do not have an IHO-FIG-ICA Category A or Category B qualification must complete the S-5B section of the Qualification Mapping Form.

5.1.5 Submission Requirements

Applications to HPAS should include evidence of successful course completions. Academic award certificates, details of courses, attendance certificates (where no award has been made) and the Qualification Mapping Form can all contribute to the coverage of hydrographic surveying subjects.

5.1.6 Determine Level of Qualification

Once an applicant's qualifications and courses have been assessed against IBSC S-5 Standards (A or B as appropriate), using the completed Qualification Mapping Form, the HPAS Panel will determine how the results comply with the rules and there can be three outcomes, namely:

1. The applicant meets the educational requirements for the level being applied for;
2. The applicant meets the requirements of a lesser level, in which case the applicant will be informed of the knowledge gap and either offered to progress at a lower level or invited to take further studies;
3. The applicant does not meet the requirements at any level other than Affiliate.

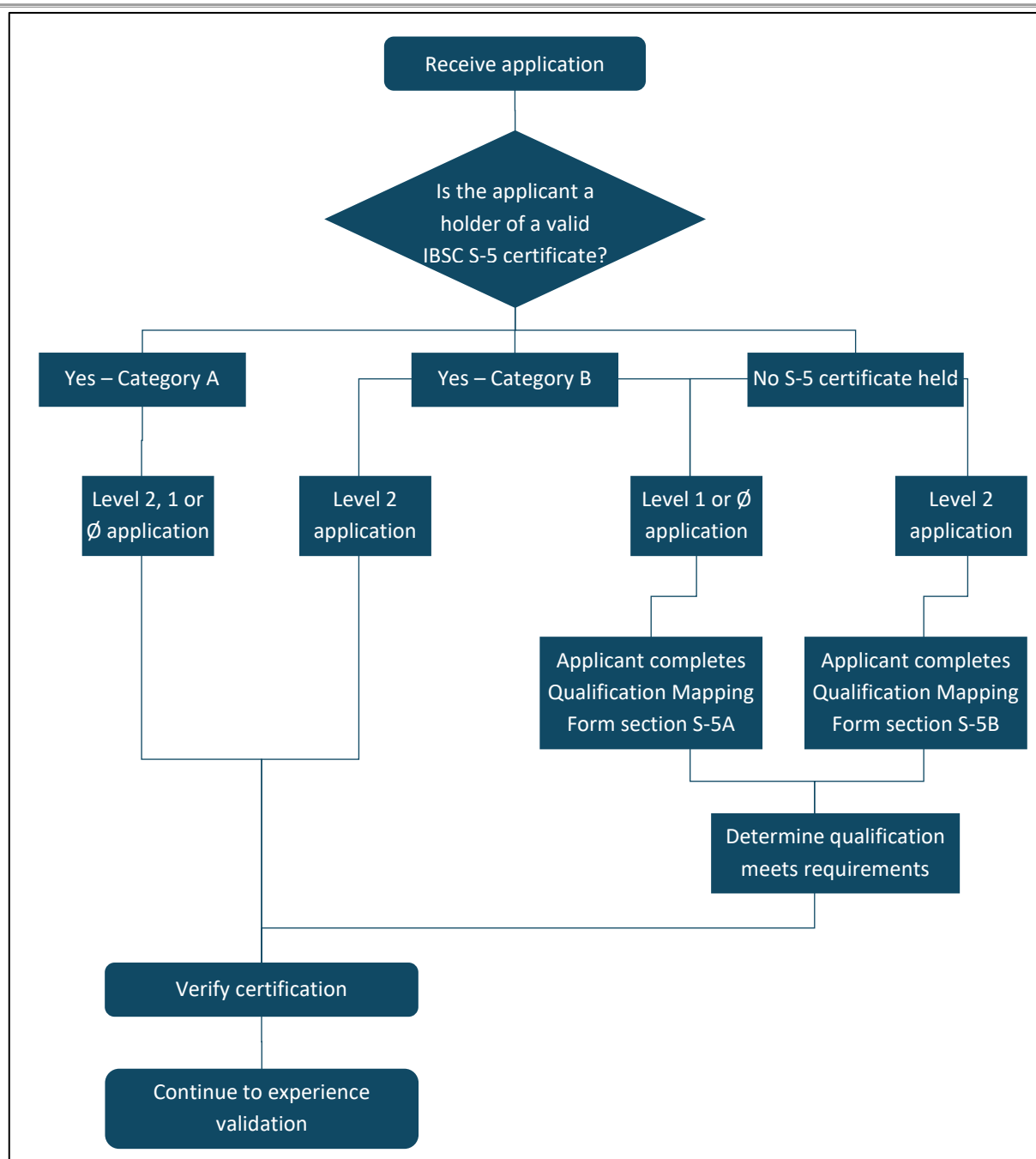


Figure 5.1: HPAS assessment process overview

5.1.7 Experience

Experience to be considered for HPAS will come in two forms, practical on the job work experience with particular systems to augment the learning outcomes from the qualifications (i.e., what they have done) and time served as a surveyor at certain levels (how long they have done it). Whilst it might be argued that these are mutually compatible, HPAS requires that applicants provide evidence of having covered a considerable proportion of the S-5 subjects. The submission of a logbook and CV together with examples of work projects represent the main evidence for assessment. However, the HPAS Panel may contact referees to gain further insight.

5.1.8 Time Served Experience

Applicants will need to provide evidence of their time served in the capacity of some form of hydrographic surveying activity that meets the requirements set out in HPAS Pathways and Transition rules. The evidence can be in the form of HPAS applicant's logbook, other logbooks, employment records or extended CVs, and should include the company, nature of employment, position, main tasks and time frame. The HPAS Panel will be looking at the time served in three separate ways, depending on the level being sought, namely:

- Practical employment, both ashore and afloat, in the planning, acquisition, processing and presentation of surveys;
- As above but, in the case of Level 1, in a position of a Charge Surveyor/Party Chief;
- For Level Ø, time spent in project management, including specification, procurement, resource management and education.

The HPAS Panel will examine the documentation, including references, to determine if they meet the standards and qualifying time set out in HPAS and may seek clarification on certain aspects of the applicant's experience.

5.1.9 Learning Outcomes Experience – HPAS Experience Matrix

To ensure that applicants have a sufficiently broad base of experience, especially as HPAS does not offer specialisations, they will need to provide evidence that they have had practical experience of several tasks covered by the Advanced subjects in the S-5A syllabus (Essential in S-5B). To this end applicants will need to complete an Experience Matrix Form (Appendix G). In addition, an Experience Matrix for cross reference to any projects with which they have been involved in, which they feel will materially help their application, i.e., if several projects covered the same activities, they need not provide a completed experience matrix for these activities. The minimum number of survey reports required is described in HPAS Pathways and Transition section, though more might be needed to complete the Experience Matrix.

The Experience Matrix lists those subjects which require Advanced knowledge (Category A) or Intermediate knowledge (Category B) and the HPAS Panel will be looking for experience in a number of these technologies, depending on the level sought. In addition to the subjects, IBSC S-5 lists 11 distinct types of surveys (Category A: H4.1 and Category B: E5.1), any one of which might involve several different technologies and skills and the HPAS Panel will be looking for projects relating to these, again cross referenced to the Experience Matrix. For these 11 survey types, the applicant will also need to list, on the matrix, the position of responsibility held during the project, for Levels 1 and Ø.

The following table lists the number of survey types and tasks (as listed in the Experience Matrix) that applicants will be expected to demonstrate, through logbooks/survey reports, that they have experience of.

Table 5.1: Assessment guidelines for coverage of IBSC S-5 subjects

HPAS Level	Survey Type (11)	Tasks Achieved S-5 (23)
Ø	7	16
1	5	12
2	3	8

In exceptional circumstances, where a candidate demonstrates outstanding experience in a narrower specialism but is not able to demonstrate the range of experience described above, the Panel may decide to accept a lower number of Survey Types and Task Achieved.

5.2 Other Documentation

For applications based upon non IBSC qualifications, these will need to be mapped using the Qualification Mapping tool to show that the subject matter has been covered to the standards of Category A (Levels Ø and 1) or Category B (Level 2). Evidence of courses and certificates will need to be provided to support his mapping.

In support of the experience described in an application, evidence of employment in hydrographic related work for the required number of years (in HPAS pathways/ transition documents) will need to be submitted with CVs. This may be a logbook but it is also envisaged that an employee would be supported by a letter that confirms basic details such as period covered and the level of work experience gained. This could then tie in with the appropriate Experience Matrix that will need to be completed, to provide information against submitted projects and the IBSC S-5 Standard subjects.

6. Transition of Levels

6.1 HPAS Transition of Levels

HPAS has four levels. The general entrance process is for an applicant to apply and if successful gain entry directly into that level. However, at the lower three levels, it is possible to gain more experience, education and additional qualifications to enter the next higher level. Differences between the various levels of HPAS are summarised in section 2. The following outlines the requirements for a HPAS Accredited Individual at one level who wishes to progress from that level to the next higher level. Depending upon the transition levels, it will involve the applicant submitting evidence of some, or all, of the following:

- Additional education and qualifications gained (shown on Qualification Mapping Form);
- Relevant experience, listed in Experience Matrix Form;
- CPD records covering the period with details of experience;
- Example of appropriate survey report(s) including the whole project from the initial instructions and requirements, specifications, planning and mobilisation, operations, data rendering, data QC, data deliverables and a summary of the conclusions. indicators as to the level of competency being applied by the applicant;
- An updated CV;

- Additional (not previously listed) referees and references.

Note: The times and periods required to gain the appropriate coverage of experience and to demonstrate adequate competency for transition from one level to another level are a guide only. It should be accepted that often the period will be quite varied among individuals as they develop their experience, work portfolios and competencies. All applicants must consider their subject matter experience and coverage of the competencies, not in terms of time but rather, in terms of the required S-5 subjects, their knowledge levels and coverage.

6.1.1 Affiliate to Level 2

Table 6.1: Summary of transition requirements – Affiliate to Level 2

Administration	Completed Online HPAS Application Form (Level 2)
Qualification	Where appropriate supply the certificate from the completed course. If not a Category A or Category B programme, complete Qualification Mapping Form, section S-5B. Additional hydrographic training courses to be listed and certificates provided (certified copy).
Experience	This will depend upon the qualifications gained. 1 year (IHO-FIG-ICA Category A) 2 years (IHO-FIG-ICA Category B) 3 years (Surveying degree) 4 years (Certificate/Diploma)
Project	At least one completed survey project description and report accompanied by appropriate supporting documentation or outputs.
Critique	See Appendix F for guidelines
CPD Records	a compliant CPD record.
CV	Updated.
References	Two referees are required.

6.1.2 Level 2 to Level 1

Applicants in employment and undertaking relevant tasks and work items that can contribute to their experience will not become eligible for Level 1 unless they have also successfully completed a formal educational surveying course. There must have been some formal training components to their time.

All applicants from Level 2 must have maintained CPD, after achieving Level 2 Accreditation. Then as a Level 2 professional the applicant must gain at least a further three years of experience, of which a minimum of two years is in practical hydrographic surveying in charge. This period is only a guide see note in section 6.1. A proportion of 60 % of the practical time should demonstrate the applicant gaining relevant in-charge experience.

Table 6.2: Summary of transition requirements – Level 2 to Level 1

Administration	Completed Online HPAS Application Form (Level 1)
Qualification	Where appropriate supply the certificate from the completed course. If not a Category A programme, complete Qualification Mapping Form, section S-5A.
Experience	This will depend upon the qualifications gained. 2 years (IHO-FIG-ICA Category A) 3 years (IHO-FIG-ICA Category B) 5 years (Surveying degree) 7 years (Certificate/Diploma) Additional hydrographic training courses to be listed and certificates provided (certified copy).
Project	Two completed survey project descriptions and reports accompanied by appropriate supporting documentation or outputs.
Critique	See Appendix F for guidelines
CPD Records	Compliant CPD record.
CV	Updated.
References	Two referees are required.

6.1.3 Level 1 to Level Ø

All applicants in employment must undertake some tasks and work items that can contribute to their experience demonstrating in-charge and management time. There may have been some formal training components to their time as a Level 1 professional. Experienced applicants must have accumulated relevant experience and maintained evidence of CPD. Then as a Level 1 professional have gained at least 10 years of experience, or more, of which 8 years would be relevant in-charge practical hydrographic surveying and management. Again, this period is a guide only and the applicant should concentrate on ensuring the coverage of the IBSC S-5 subjects rather than the time accrued. The period is a guide only, see note in section 6.1.

Table 6.3: Summary of transition requirements – Level 1 to Level Ø

Administration	Completed Online HPAS Application Form (Level Ø)
Qualification	Where appropriate supply certificates from the completed courses. Additional hydrographic training courses to be listed and certificates provided (certified copy).
Experience	This will depend upon the qualifications gained. 10 years (IHO-FIG-ICA Category A) 15 years (IHO-FIG-ICA Category B) 16 years (Surveying degree) This can be listed in the Experience Matrix form.
Project	Two completed survey project descriptions and reports accompanied by appropriate supporting documentation or outputs

Critique	See Appendix F for guidelines
CPD Records	Compliant CPD record
CV	A detailed and extended CV is required to outline the work experience, how it represents the knowledge and learning, related to hydrographic surveying and the levels of responsibility and seniority. The CV should provide evidence through a narrative description of projects of the competencies covered by the IBSC S-5 Standards. The CV should demonstrate some progression of responsibility and management. See Appendix O.
References	Two referees are required.

6.2 Notes on Transitions

The concept of the Levels is to support those who develop their careers and so the transitions are intended as a one way, upwards, process only.

It is appreciated that it may not always be possible to gain access to experience acting at a Level above your stated competency and Accreditation. However, the range of survey related subjects and activities is sufficient to enable individuals to develop their skills and competencies across their work and professional life, building the necessary portfolio of experience. Individuals are encouraged to seek out employers and companies who are supporters of HPAS as well as senior personnel within the organisation who may be able to advise, mentor and provide additional support.

If an applicant lacks experience and is unlikely to gain further exposure in their current role the HPAS Panel may elect to offer a process of assessment including an interview and examination.

7. Retention of Individual Accreditation Status

7.1 General Retention Requirements

Retaining the status of an Accredited Hydrographic Professional requires a commitment and obligation to maintain the required standards and adherence to the code of ethics. In general, each individual will maintain the Accreditation by maintaining their competencies, paying the Hydrographic Society membership annual subscription and completing the required summary forms.

For levels that require field survey experience this will be recorded in a logbook which is to be available for submission each year, at the request of the HPAS Panel, along with any other accompanying documentation.

7.2 Continuing Professional Development (CPD)

For an individual to retain their Accreditation they must demonstrate that their competencies remain current. To do this the individual must commit to the CPD

requirements and achieve the minimum CPD hours required each year. Accredited CPD is required each year and must be recorded by the end of January following the year end. That is, by example, all CPD recorded for 2021 must be posted onto to the CPD record by 31 January 2022. The CPD includes themes that cover the IBSC S-5 syllabus subjects. At least three different subjects must be covered and recorded each year in the CPD.

The CPD requirements are published by the HPAS Panel and involve both informal and formal quotas of time for each. Overall an Accredited Hydrographic Professional should accumulate a minimum of 40 hours per year.

Examples of formal CPD include evening courses and short training modules where a stated learning objective can be obtained, and a certificate provided to those successfully completing the module or event.

Informal CPD is very flexible and could be the revision and study involved in preparing a presentation to colleagues or work associated about a particular technology, data challenge or other hydrographic related topic.

CPD record Forms require to be signed by the meeting or event Chairperson/ Manager.

More details may be found in Appendix N.

7.3 Logbook

For recording hydrographic survey work and projects a formal logbook should be maintained that lists the work in chronological order, allows for a brief description of the work, the key subjects involved and the period to which the work applies. The logbook should be signed and reviewed by a supervisor, mentor or manager and any comments or notes included along with their signature.

A logbook may be inspected in any year by the request of the HPAS Panel to ensure it is maintained properly and reflects the appropriate levels of competence. An Accredited Individual may subscribe to an online logbook system maintained on the HPAS website. Once established it will allow the individual to record the subject and time for each period of the year with the secure HPAS website.

7.4 Fees

HPAS application requires the payment of appropriate fees while completing the online HPAS application form.

The appropriate fees are dependent upon the status of the applicant :

- Renewal fees for registered HPAS accredited individual;
- Application fees for new HPAS applicant.

All the timings and deadlines for submitting information are posted on the website. All applicants should familiarise themselves with the application process and if unsure, contact the HPAS Secretariat.

7.5 Register of Accredited Individuals

Once an applicant has fulfilled the requirements of HPAS they will be added to the HPAS Register of Accredited Individuals. See Appendix R for further details.

8. Transition with a New Standard

8.1 Transition Processes for the Introduction of a New IHO-FIG-ICA Standard

HPAS shall be based upon the current IHO-FIG-ICA Standards and shall maintain its Accreditation Scheme currency by updating HPAS compliance when a new IBSC Standard is issued.

When this occurs HPAS will have individual Accredited members who are concurrent with the outgoing Standard meaning that they are going to have to apply some additional, new and specific effort to cover the new Standards elements.

Initially the HPAS Panel will update the Qualification Mapping Form, Experience Matrix, the logbook and CPD subjects for experience and all new applicants will be required to adhere to these revised documents.

8.2 Existing Accredited Individuals

The previously Accredited members shall be given a period to transition from the outgoing Standards and compliance to the incoming Standards. To facilitate their transfer HPAS will allow individual Accredited members to submit their completed experience on the CPD and logbook taking up to 3 years to complete the experience matrix for the new Standards. This period will commence from the date of publication of the new HPAS documents based upon the new Standards.

8.3 New Applicants

In an equivalent manner to the Accredited members, new applicants will have been referencing their experience on the outgoing Standards and so again HPAS will allow a transition period of 3 years from the date of publication of the new HPAS documents based upon the new Standards, to convert their logbook and CPD information to align with the incoming and newly established Standards.

9. Governance and Ethics

9.1 Governance

Governance and management of HPAS is achieved through several bodies detailed in Figure 9.1.

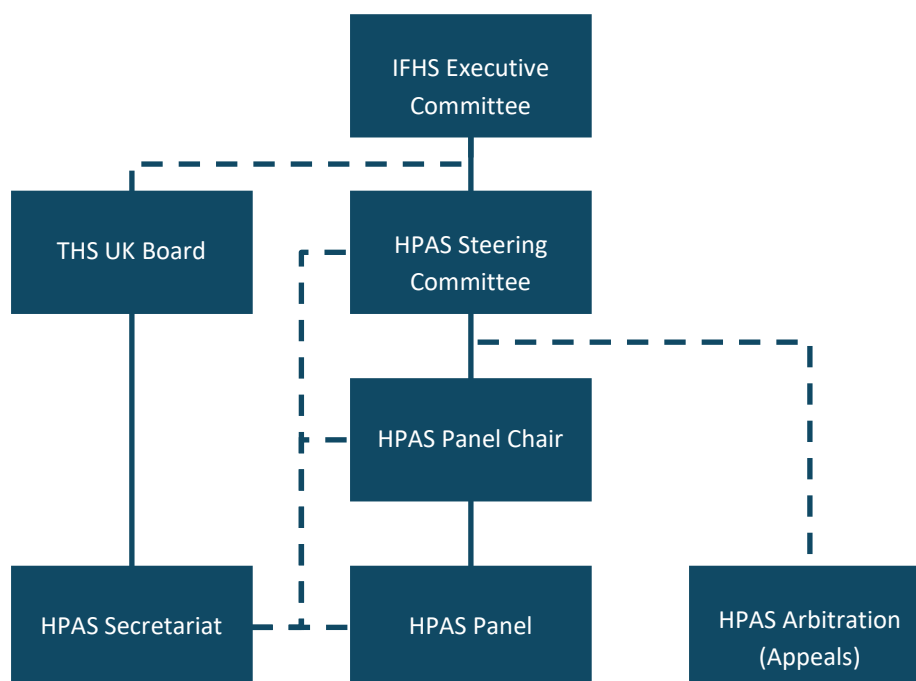


Figure 9.1: Governance overview

Roles and responsibilities toward the governance and management of HPAS are described hereafter:

1. The governance of HPAS and its activities shall be placed under the authority of IFHS;
2. Considering IFHS's legal status as a registered charity in England and Wales, the monitoring of HPAS activities is to be operated under English law;
3. The management and the monitoring of HPAS activities will be delegated to The Hydrographic Society UK & Ireland;
4. The framework of this delegation is to be formalised through a Memorandum of Understanding between IFHS and THS:UKI.

9.1.1 HPAS Panel

See section 10 for further details.

The HPAS Panel shall operate under and report to the HPAS Steering Committee. HPAS Panel shall comprise at least 8 members drawn from academia, industry and government. The HPAS Panel is usually to be chaired by a designated Hydrographic professional as nominated by one of the IFHS national society members. Alternatively, the Chair and deputy could be decided by election by the HPAS Panel members themselves. The deputy role would be required to deputise for the Chair at a meeting in the event of the Chair being unable to attend.

Once HPAS is fully established, all HPAS Panel members are expected to be, as a minimum, HPAS Level 1 accredited. The composition of the HPAS Panel shall be representative of a

variety of hydrography and related disciplines and of geographical areas represented through IFHS society members:

- Nautical charting and related activities;
- Industrial and offshore exploration, development and construction support;
- Academic, education and training in marine sciences;
- Ports management, coastal engineering, coastal zone management;
- Environmental and oceanography activities;
- Inland waters surveying;
- Airborne and satellite remote sensing (i.e., Lidar, satellite derived bathymetry);
- Defence and military environmental assessment.

To achieve its assessment and related tasks, the HPAS Panel shall be assisted by the HPAS Secretariat provided by THS:UKI.

9.2 Ethics of Accredited Individuals

Individuals are required to abide by the Code of Ethics as a condition of their participation in HPAS. The Code of Ethics provides a statement of principles which has been adopted by the IFHS and the HPAS Steering Committee as the basis upon which Individuals shall conduct their activities. The Code of Ethics is included in Appendix E.

10. The HPAS Panel

The HPAS Panel is the key body in HPAS delivery process. As such the members shall uphold the IFHS Standards and Ethics and demonstrate the values and professional approach to their general activities and their work on the panel. The HPAS Panel shall comprise of eight members selected from Society members apart from the sitting Chair who will be a recognised qualified Hydrographic professional individual within the community.

The HPAS Panel shall be expected to review applications for accreditation and to sit formally at least once per year to assess.

10.1.1 Commencing the Accrediting Panel

Once HPAS is fully established, HPAS Panel members will be drawn from the pool of previously Accredited professionals. Until that point, the HPAS Panel shall be formed from invited experts and experienced hydrographic professionals from government, industry and academia. The IFHS Board shall determine this initial HPAS Panel. Retired members may be invited onto the HPAS Panel but limited to not more than three years and have experience within the last four years of appointment. IFHS and THS UK Boards shall each have one HPAS Panel member. As individuals get established into HPAS, appropriate Level 1's or above will become the HPAS Panel members.

Once HPAS is established, it is intended that the new HPAS Panel members will be appointed to the HPAS Panel, having applied through an open competition process. This shall involve

IFHS advertising the HPAS Panel positions and inviting Society members to apply each year for vacant seats.

10.1.2 Selection of HPAS Panel Members

The HPAS Panel shall comprise of eight members from IFHS national societies and be chaired by a recognised qualified hydrographic professional. The term of office of the elected HPAS Panel members is three years.

The IFHS shall advertise annually the HPAS Panel positions and invite IFHS national society members to apply each year for vacant seats. To be eligible, a Panel candidate needs to be a member of one of IFHS society members and be HPAS Level 1 accredited (AH-L1) or above.

The nominees shall be supported by two other national society members on the entry form and shall be required to be submitted to the HPAS Secretariat by the deadline of the vacancy notice. Once the vacancy notice is published there will be a period for nominees to submit their application.

Once all nominations are received accordingly, the Steering Committee will proceed with the selection of Panel members among the proposed candidates. In the event of a vote, the Steering Committee Chair will have the casting vote.

If a Panel member is no longer available for duty the vacancy may be filled temporarily by another suitably qualified Hydrographic Surveyor, appointed by the Steering Committee, until the next HPAS Panel members selection.

10.1.3 HPAS Panel Membership Period

The HPAS Panel members shall sit for three years if they have not resigned beforehand. On completion of three years the seat of the HPAS Panel member shall become vacant. Exceptionally if there are no nominees to replace an ordinary HPAS Panel member that Panel member may be invited to continue to sit for another year.

The Chair shall sit on the HPAS Panel for the period they are in National office or six years whichever is the shorter period.

HPAS Panel members are expected to attend each meeting. Should a HPAS Panel member not attend two successive formal meetings, without leave, they will have been deemed to have resigned their seat on the HPAS Panel.

A HPAS Panel member may re-apply for HPAS Panel membership for a second (i.e., consecutive) 3-year term of office if supported by two nominees. Otherwise, a HPAS Panel member can re-apply, after a calendar year, through the normal process.

10.1.4 Technical and Geographical Coverage

The HPAS Panel is required to review applications from different hydrographic sectors and across differing geographical areas. Consequently, the HPAS Panel is expected to have

appropriate experience and qualifications that reflect the diversity and variation in potential applications.

10.1.5 HPAS Panel Member Experience and Qualifications

Each HPAS Panel member shall represent some aspect of hydrographic surveying expertise and have a background in government, academia, or commercial and industrial sectors. Once HPAS is established, each HPAS Panel member shall be a Level 1 or Level Ø and so qualified and experienced in a variety of hydrographic survey areas. In terms of the experience the HPAS Panel member shall have a minimum of 10 years of experience after qualifying. The HPAS Panel members shall represent different hydrographic disciplines and sectors and geographical areas of the IFHS member organisations, namely:

- Nautical charting and related activities;
- Industrial and offshore exploration, development and construction support;
- Academic, Education and training in marine sciences;
- Ports management, coastal engineering, coastal zone management;
- Environmental and Oceanography activities;
- Inland waters surveying;
- Airborne and Satellite remote sensing (i.e., Lidar, satellite derived bathymetry);
- Defence and military environment assessment.

HPAS Panel members are expected to attend the HPAS Panel meetings which would occur at least once per year and usually twice per year. Inter-sessional events, meetings and discussions will also likely take place to accomplish the aims and objectives of the HPAS Panel each year.

10.1.6 Meetings, Conduct and Quorum

The chair of the meeting shall convene the meeting and ensure that the work of the HPAS Panel is completed. Should the chair be unavailable the meeting will either be re-scheduled, or a temporary chair (the deputy) will be appointed by the chair to oversee the meeting.

A quorum for the meeting of the HPAS Panel will be the chair (or deputy) and four Panel members. If the quorum is not reached for a Panel meeting, another meeting of the HPAS Panel is to be called within one month.

HPAS Panel members are expected to attend meetings and to review applicant assessments. Panel members shall submit their reviews and assessment forms (in respect of assessment of applicants) prior to the meeting. A HPAS Panel member who does not submit reviews, or contribute to action items, for two consecutive meetings, without leave, may be dismissed by the HPAS Panel. All HPAS Panel members shall be required to sign a statement to comply with HPAS Panel rules and procedures, in particular its code of conduct and ensuring confidentiality of each application.

The intention is that the HPAS Panel will meet at, or close to, the published date and to review and determine the outcome and decisions with respect to applications. The meeting shall be recorded by the HPAS Secretariat, who shall be in attendance to note the attendees present, notify the HPAS Panel of any apologies, take the minutes and summarise the agreed actions. Prior to each meeting an agenda shall be distributed to the HPAS Panel members that will list the main topics to be covered. Previous meeting minutes shall be reviewed. The meetings are planned to be held virtually but it is accepted that there may be instances where a face-to-face meeting is preferable.

The main requirement of the HPAS Panel meetings is to enable the HPAS Panel members to review the submitted evidence supplied by each applicant. The review and assessment of an application must be completed in a timely manner in order that the decisions can be finalised at a formal HPAS Panel meeting. The qualifications, if not a Category A or Category B recognised programme, should be checked on a comparison table with the IBSC S-5 Standards. Noting that the assessment of the individual may also involve interviews, tests and contacting referees. On assessing an application, if the HPAS Panel members are unable to determine an individual's competency level, the HPAS Panel may opt to invite the applicant for an interview. The formal interview, if required, will be held with the applicant and a minimum of three HPAS Panel members. The HPAS Panel shall contact references and referees for additional input and to answer any specific questions.

On completion of an initial assessment, the HPAS Panel member will submit a short report. Based upon these initial reports on the applicant a formal interview may be arranged, in order to complete the assessment process. The interview will last no longer than 90 minutes and will be held virtually whenever possible.

After the reviews, interviews and checks are completed the formal HPAS Panel meeting shall determine the eligibility of the applicant reaching a decision through consensus or a majority vote.

The applicant shall then be informed of the decision of the HPAS Panel.

HPAS Panel members are not allowed to receive funds or otherwise compensation from an applicant or an applicant's organisation.

10.1.7 Assessments, Decisions and Appeals

Each HPAS Panel member will conduct an independent assessment of an Individual application based on the presented material. Prior to the HPAS Panel meeting a Reviewer must declare any prior professional relationship with the applicant. The HPAS Panel will determine if the Reviewer will be included or excluded from deliberations and the decision noted in the HPAS Panel minutes.

An assessment will be submitted by each Reviewer to the HPAS Panel for consideration in a closed meeting. Normally the decisions of the HPAS Panel will be by consensus of the eligible participating HPAS Panel members. Members are bound by the decision of the HPAS Panel.

Once the HPAS Panel has reached a decision the applicant shall be notified of the decision, the reasons for any failure and recommendations to alter, improve and develop the application. Notification will be from the HPAS Secretariat.

In case of a rejection of an application for accreditation by the HPAS Panel, the applicant has the possibility to appeal the HPAS Panel decision and to have the application reconsidered. This has two stages, an initial stage to question and check the decision of the HPAS Panel and then, if requested, a more formal appeal for a full reassessment. The request for a check shall be formally notified through a letter of referral to the HPAS Secretariat. Such a request shall then be submitted to the HPAS Panel chair for reconsideration and approval. The concerned applicant will be notified of the decision and any recommendations from the HPAS Panel.

If the applicant is still unsatisfied with the process of the HPAS Panel they may seek a further and final assessment review by an independent Arbitration Team appointed by the Steering Committee. No further appeal will be possible beyond this stage.

10.1.8 Confidentiality

The HPAS Panel will maintain documentation for the governance and procedures relating to the operation of the HPAS Panel in accordance with the GDPR, privacy and document retention rules. These documents include:

- HPAS Terms of Reference, Procedures and Governance;
- The Guidelines for HPAS;
- A full copy of each Accreditation application, review, correspondence, decisions taken and certificates;
- Assessment and review forms;
- List of Accredited Hydrographic Professionals;
- HPAS meeting agenda, minutes, the record of the meeting; and
- Re-certification procedures.

All documentation, correspondence and material relating to applications, including Panel meeting reviews and notes, application forms, CV's, survey reports, logbooks and qualifications will be held confidential and not shared outside of the HPAS Panel and HPAS Secretariat. All documentation and material submitted by an applicant will be treated as confidential and will not be released, passed nor disclosed to any third party without prior approval. On completion of the period of validity of any data or documents they will be destroyed. Data and documents will be retained in line with IFHS retention policy.

The process will adhere to the privacy policy of the IFHS.

The disposal of application forms, documents, data and all confidential information will be by secure and controlled methods.

HPAS Panel members shall securely dispose of all records, held by them personally, of HPAS proceedings and applicant documentation once a Panel member ceases to be a member of the HPAS Panel.

The Secretariat of the HPAS Panel shall maintain an archive of applicant documentation with controlled access.

10.1.9 HPAS Secretariat and Panel

A HPAS Secretariat will be supervised by THS UK on behalf of the IFHS to administer the work of the HPAS Panel, including:

- Applications: an initial system check for compliance and distribution to HPAS Panel members;
- Correspondence: to act as a focal point for HPAS Panel correspondence between applicants, referees and HPAS Panel members;
- Minutes: at formal meetings and HPAS Panel discussions take notes and produce minutes;
- Fees: manage the payment of fees by applicants;
- Renewals: issue reminders and update the HPAS Panel on status of fees from the Accredited members;
- Appeals: the HPAS Secretariat shall support the HPAS Panel Chair in addressing any complaints or appeals levied at the HPAS Panel.

Documentation to include:

- HPAS Terms of Reference, Procedures and Governance;
- The Guidelines for HPAS;
- A full copy of each Accreditation application, review, correspondence, decisions taken and certificates;
- Assessment and Review forms;
- List of Accredited Hydrographic Professionals;
- HPAS meeting agenda, minutes, the record of the meeting; and
- Re-certification procedures.

10.1.10 HPAS Panel Language

The working language of the HPAS Panel shall be English (United Kingdom).

10.1.11 HPAS Panel Conduct, Ethics and Compensation

Each HPAS Panel member shall comply with the HPAS Code of Conduct and maintain an appropriate level of confidentiality, fairness, diligence and professional standards. On joining the HPAS Panel each member will agree and sign the general HPAS Code of Ethics.

HPAS Panel members shall not be reimbursed for their time on the HPAS Panel business, meetings, or assessments of applications. Where possible, meetings will be held virtually, at

the discretion of the Chair. However, third party expenses will be available (subject to submitting a claim in line with IFHS policy) for travel and accommodation.

HPAS Panel members are not allowed to receive funds or otherwise compensation from an applicant or an applicant's organisation.

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A Terms of Reference and Rules of Procedure

A.1 HPAS Accreditation Panel - Terms of Reference (ToR) and Rules of Procedure (RoP)

A.1.1 Terms of Reference

The Hydrographic Professional Accreditation Scheme (HPAS) Panel adopts and adheres to the following:

1. Conduct formal reviews and assessments of applicants for HPAS on a regular basis, not less than once per year.
2. The HPAS Panel shall publish documentation and information regarding the Rules and Procedures of HPAS and the application deadlines and the results dates on the IFHS and member societies' websites.
3. The HPAS Panel shall review at appropriate intervals (not less than two years) the HPAS Accreditation documentation, requirements, assessments and various HPAS processes taking account of developments in hydrography, current practices, international standards and recommendations and comments received.
4. Review the procedures for submission and accreditation.
5. The HPAS Panel shall comprise nine members selected from IFHS members and represent the geographical region of HPAS.
6. The HPAS Panel shall be chaired by a National Hydrographer or a nominated representative who is qualified in hydrographic surveying.
7. The HPAS Panel shall have a Secretariat provided by THS UK.
8. All documentation relating to applications will be held confidential and not shared outside of the HPAS Panel and Secretariat.
9. All fees and charges related to submissions for Accreditation shall be reviewed each year.
10. Proposals from the HPAS Panel to modify these Terms of Reference must be ratified by IFHS and member societies boards following the procedures of these bodies.
11. The internal functioning of the HPAS Panel shall be ruled by Rules of Procedure issued and approved by the HPAS Panel members, as deemed necessary.

A.1.2 Rules of Procedure

1. Conduct reviews and assessments of applicants for HPAS on a regular basis, not less than once per year.
2. The HPAS Panel members are expected to attend each meeting. Failure to appear for two successive meetings will be considered to have resigned.
3. The HPAS Panel shall comprise nine members selected from IFHS members and chaired by a National Focal Point Hydrographer (typically a National Hydrographer), or their nominated representative who is qualified in hydrographic surveying. The HPAS Panel shall be comprised of experienced and competent individuals from Government, industry and academia to represent the relevant sectors of hydrographic surveying and to represent competencies in the IBSC Standards. Each Panel member shall be appointed

- for a three-year term. A second follow on term may be offered but an additional third period is not allowed. In exceptional circumstances the HPAS Panel may extend a membership for a further one year if a suitable new replacement HPAS Panel member is not available.
4. Decisions of the HPAS Panel shall be made by a simple majority. In the event of a tied vote the Chair of the HPAS Panel will have the casting vote.
 5. The HPAS Panel shall publish the submission deadlines on the IFHS and THS UK websites.
 6. Review the applications of individuals submitting documentation and evidence for membership of HPAS in an objective, balanced and professional manner adhering to the expected time limits.
 7. Review the submitted evidence: CV, experience and qualifications by applicants in comparison with the IBSC S-5 Standards and associated HPAS documents.
 8. The HPAS Panel shall have the option to interview applicants as required. A formal interview will be held with the applicant and a minimum of three HPAS Panel members.
 9. The HPAS Panel shall contact references and referees, when considered appropriate, for additional input and to answer any specific questions.
 10. All documentation, correspondence and material relating to applications, including HPAS Panel meeting reviews and notes, application forms, CV's, survey reports, logbooks and qualifications will be held confidential and not shared outside of the HPAS Panel and Secretariat. Information and data shall be kept securely for a period of four years or until the Accredited Individual resigns or leaves HPAS. The process will adhere to the GDPR rules of IFHS.
 11. The HPAS Panel shall review, agree and publish minutes of each meeting not later than one month after a HPAS Panel meeting.
 12. The HPAS Panel shall review at appropriate intervals (not less than two years) HPAS documentation, requirements, assessments and various HPAS processes taking account of developments in hydrography, current practices, international standards and recommendations and comments received.
 13. The HPAS Panel shall get support from the HPAS Secretariat.
 14. The working language of the HPAS Panel shall be English (United Kingdom).
 15. The HPAS Panel will set fees for submissions. The Secretariat will receive and hold for the use of the HPAS Panel, THS UK and IFHS monies received from fees levied.
 16. The internal functioning of the HPAS Panel shall be ruled by Rules of Procedure issued and approved by the HPAS Panel members, as deemed necessary.

A.1.3 Code of Conduct (To the Rules of Procedure)

Code of Conduct for the Hydrographic Professional Accreditation Scheme Panel members. All HPAS Panel members and Secretariat commit to the highest ethical and professional conduct and agree:

1. To accept responsibility as HPAS Panel members and to make decisions consistent with the best practices of hydrographic surveying.

2. To accept responsibility in making Accreditation decisions consistent with the International Standards of Competence (IBSC S-5) and the advancement of the hydrographic profession.
3. To act as faithful agents or trustees of the IFHS.
4. To keep confidential all matters relating to Accreditation applications and decisions unless required to disclose information by law or THS UK/IFHS Terms of Reference or Rules of Procedure.
5. To make or issue either public or internal statements only in an objective and truthful manner.
6. To conduct themselves honourably, responsibly, ethically, and lawfully to enhance the reputation and effectiveness of the IFHS organisations.
7. To report concerns regarding accounting, internal accounting controls or auditing matters without fear of retaliation.
8. To treat all persons involved in recognition activities with fairness and justice.
9. To declare interest and recuse themselves from board deliberations and decisions where conflict of interest might arise.
10. To support a process for the prompt and fair adjudication of alleged violations of this code.

Costs for visits and meetings related to the work of the HPAS Panel shall not be covered by any individuals applying for Accreditation.

B Rules of Conduct

B.1 Rules of Conduct for Individuals

B.1.1 Introduction

The Rules of Conduct for Individuals apply to all HPAS individuals. They cover those matters for which individuals are responsible and accountable in their professional lives.

The Rules focus on regulatory goals and adopt the five principles of better regulation:

1. Proportionality;
2. Accountability;
3. Consistency;
4. Targeting;
5. Transparency.

These Rules provide a solid foundation for the Hydrographic Society, HPAS and its individuals, helping to protect the public and uphold the reputation of the hydrographic profession.

These Rules of Conduct for HPAS individuals are made by IFHS Board.

B.1.2 Scope

These Rules of Conduct set out the standards of professional conduct and practice expected of individuals of HPAS. These Rules do not cover obligations placed on individuals by the general law, for example in the areas of discrimination and employment.

A failure to follow any guidance associated with the Rules of Conduct is a factor that will be considered should it be necessary to examine the behaviour of an Individual. In such circumstances an Individual may be asked to justify the steps they have taken and this may be considered. An individual should be guided as much by the spirit of the Rules as by the express terms.

B.1.3 General

1. Interpretation

In these Rules, Individual means an Individual practicing as a Hydrographic professional.

2. Communication

HPAS will communicate with Individuals by any of the following:

- a. Post;
- b. Email;
- c. Telephone;
- d. In person.

B.1.4 Personal and Professional Conduct

3. Ethical Behaviour

Individuals shall at all times act with integrity and avoid conflicts of interest and avoid any actions or situations that are inconsistent with their professional obligations. To act as faithful agents of the IFHS and its member societies.

4. Competence

Individuals shall carry out their professional work with due skill, care, diligence and with proper regard for the technical standards expected of them.

5. Service

Individuals shall carry out their professional work in a timely manner and with proper regard for standards of service and customer care expected of them.

6. Continuing Professional Development (CPD)

Individuals shall comply with HPAS requirements of the IFHS and its member societies in respect of continuing professional development.

7. Solvency

Individuals shall ensure that their personal and professional finances are managed appropriately.

8. Information to HPAS

Individuals shall submit in a timely manner such information, and in such form, as the Standards and HPAS may reasonably require.

9. Cooperation

Individuals shall cooperate fully with HPAS and any person appointed by the HPAS Panel.

C GDPR and Privacy Policy

Introduction

Personal data is any information about any individual which can identify them such as their name, postal address, email address and telephone number.

Protecting your personal data is extremely important to IFHS. We aim to only collect data which we need to deliver membership and/or the other products and services offered by IFHS. What information we collect depends on the reason for processing (using) it. We will not sell or share your data with any other organisation, except when legally obliged to.

You have the right to access, update or amend your personal data held by IFHS at any time. In some circumstances, you also have the right to object, request that we delete or restrict processing, to withdraw consent for your data to be stored and processed and to data portability. However, you should be aware that deletion or restricted processing of certain data may prevent IFHS from delivering even the most fundamental benefits of membership and/or some of its other services.

This document sets out how we collect, use and protect your personal information in accordance with the General Data Protection Regulation (GDPR). It will be subject to change in the future. The most recent version can be found at www.ths.org.uk.

Who can you contact?

If you require any additional information about our data protection practices or your information rights, or you have any questions or concerns regarding our processing your personal data, please contact our:

Operations Manager by email to gdpr@ths.org.uk, or by writing to The Hydrographic Society UK, Senate Court, Southernhay Gardens, Exeter, Devon EX1 1NT United Kingdom.

What personal data do we collect, why and what is the lawful basis?

Almost all of the personal data we process is supplied to us by the individual to whom it applies.

We only store and use personal data for the reason(s) we originally collected it and in ways you would reasonably expect us to. Namely, to provide services, products, or information you have requested, for administration of those purposes or for future business planning (so that we can continue to provide you with those services and products).

We will never sell your details to third parties. If, other by being required by law, we share your data with anyone else (e.g., an external processor or another member) then we will either ask for your permission first or it will be clearly stated as part of the service you have requested.

The personal data we collect and process may relate to Individual Members or key personnel within Corporate Member organisations, HPAS individuals, non-members who regularly attend events within one or more of IFHS's Regions, delegates attending past or future seminars, conferences and other events organised by IFHS, e-Bulletin subscribers, non-member subscribers to Soundings, e-Message service users (including those wishing to be notified when new vacancies are advertised on IFHS's website), advertisers, employees, Directors, Trustees, Board members and other Officers of IFHS, those who follow, post to or interact with our social media account(s) and other relevant group of members or contacts.

It is important that the personal data we hold about you is accurate and current. Throughout our relationship with you, please contact us whenever you need to change any of this information.

Individual Members

Data pertaining to Individual Members of IFHS is initially collected as part of the membership application process in accordance with the GDPR provision of legitimate interests. IFHS only collects the basic information required to administer their membership and to provide the associated benefits (e.g., communication of information including mailing copies of Soundings, subscription renewals, verifying membership categories and discounts for conference delegate registrations and participation in AGMs).

Members may also provide additional optional information which assists IFHS to tailor its services to the current membership. For example, to identify widely held topics of interest which might be suitable themes for papers in Soundings or seminars, or to monitor the membership demographics for a specific Region (or IFHS as a whole) for purposes such as utilising the most age-appropriate communication methods, selection of meeting venues or the establishment of new Regions.

Individual Members are sent a copy of their own personal data profile along with their annual subscription renewal notice. This enables them to update, amend or delete any of the data processed by IFHS. On request, members are also able to update, amend or delete data at any other stage throughout the year.

Data routinely collected from Individual Members (including Retired and Student/Graduate) comprises:

- Full name;
- Membership number;
- Category of membership;
- Choice of Regional affiliation;
- Qualifications and professional affiliations;
- Correspondence address;
- Telephone number(s);
- Email address(es);

Optionally, members may also provide the following:

- Demographic information such as, but not limited to, nationality, date of birth and areas of interest and expertise;
- Employer/company details and job title.

Members are also offered the opportunity to opt in/out of inclusion in a mailing list which may, from time-to-time, be used to communicate relevant marketing material from Corporate Members of IFHS. Members may change their mind at any time and withdraw consent to being processed on this list, either by 'unsubscribe' from the list themselves or by contacting gdpr@ths.org.uk.

Officers of IFHS's active Regions have restricted access to some of this data relating only to those members who have opted to affiliate themselves to that Region. Information forwarded to the Regions is limited to the member's full name, category of membership, email address and, on occasion their employer/company name and/or postcode. This information is primarily used to communicate with members about events and activities taking place within that Region. The demographic data may also be used to assist in the selection of suitable meeting venues or other similar planning and decision-making.

Key personnel within Corporate Member organisations

As part of the application process, Corporate Members are asked to provide limited personal details relating to a few key personnel under the GDPR provision of legitimate interests. In each case, only the first name and surname of these individuals is requested, along with their business telephone number and email address. IFHS collects and uses this information to assist with effective administration of their membership (e.g., ensuring that communications and subscription renewals are addressed to the most appropriate person or verifying correct representation at AGMs).

Members may opt to omit key personnel data if they prefer but it may impact on IFHS's ability to administer their membership and/or deliver some or all the membership benefits.

Corporate Members are sent a copy of their membership data profile along with their annual subscription renewal notice. This enables them to update, amend or delete any of the data processed by IFHS. On request, they may also update, amend and delete data at any other stage throughout the year.

Personal data collected from Corporate Members (including Associate Corporate) comprises:

- Full name, telephone number and email address of preferred contact for general communications;
- Full name of subscription renewal addressee;
- Full name of person authorised to vote on behalf of the organisation's behalf at IFHS's AGM;

- Full names, telephone numbers and email addresses of the Personnel Manager, Marketing Manager, Technical Manager and Chief Executive (or equivalent roles).

Individual Hydrographic Professional Accreditation Scheme (HPAS) Members

Data pertaining to individual members, of IFHS's HPAS, is initially collected as part of HPAS membership application process in accordance with the GDPR provision of legitimate interests. HPAS only collects the information required to administer their application, an individual's Accreditation and HPAS membership and associated communication of information including, Continual Professional Development (CPD) and subscription renewals, verifying the individual's Accreditation level as well as any discounts for conference delegate registrations and participation in meetings. Once an application has successfully completed a restricted subset of the information is held securely until HPAS Accredited Individual re-validates Accreditation.

HPAS Accredited Members may also provide additional optional information which assists HPAS to identify widely held topics of interest which might be suitable themes for CPD. The information may be used to provide membership demographics for a specific Region (or HPAS as a whole) for the annual report to the International Board on the Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC) also for the establishment of new themes or Regions.

HPAS Accredited Members are sent a copy of their own personal data profile along with their annual Accreditation fee renewal notice. This enables them to update, amend or delete any of the data processed by HPAS. On request, HPAS Accredited Members are also able to update, amend or delete data at any other stage throughout the year.

Data routinely collected from Individual HPAS Accredited Members (including Retired and Student/Graduate) comprises:

- Full name;
- Membership number and Accreditation Level status;
- Areas of interest and expertise;
- Choice of regional affiliation (if appropriate);
- Qualifications and professional affiliations;
- Ongoing Continual Professional Development (CPD) record;
- Correspondence address;
- Telephone number(s);
- Email address(es);
- Application information, including academic qualifications, CV, employer/company details, logbook;
- Related information provided at the time of application including job title, References, survey work project example(s), Competency Compliance Form.

Optionally, members may also provide the following:

- Demographic information such as, but not limited to, nationality, date of birth.

HPAS Accredited Members are also offered the opportunity to opt in/out of inclusion in a mailing list which may, from time-to-time, be used to communicate relevant marketing material from Corporate Members of IFHS. HPAS Accredited Members may change their mind at any time and withdraw consent to being processed on this list, either by 'unsubscribe' from the list themselves or by contacting gdpr@ths.org.uk.

Sitting members of the HPAS Panel that review, assess and evaluate applications have restricted access to some of this data relating only to those HPAS applicants who have opted to apply for individual Accreditation from HPAS. Information is limited to the applicant's full name and contact details; the Level of Competence applied for; a full work CV with employment history and references; an up-to-date work logbook and the example survey project(s) information and documentation. This information is primarily used to support the HPAS Panel in reviewing and assessing an individual's application for Accreditation. The demographic data may also be used to assist in the selection of suitable meeting venues or other similar planning and decision-making.

Regional mailing lists

Under the GDPR provision of legitimate interests, a restricted subset of the data pertaining to Individual Members and Corporate Member contacts who have opted to affiliate themselves to one of IFHS's Regions may be held and used by the (voluntary) Officers of that Region. This information may include the member's full name, category of membership, email address and, on occasion their employer/company and/or postcode.

This information is primarily used as the basis of the Regional mailing list, in order to inform members about local events and activities. The demographic data may also be used to assist in the selection of suitable meeting venues or other similar planning and decision-making processes.

In addition, under the GDPR provision of consent, non-members and members primarily affiliated to other Regions may also opt to be added to one or more Regional mailing lists. In so doing, they consent to the Officers of that Region collecting their full name, email address and, on occasion, their employer/company.

Individuals have the right to request that their data be updated or deleted at any time. They should do so by contacting the Region directly, using the relevant email address found at www.ths.org.uk/content.asp?page=3 or, depending on the Region, it may be possible to 'unsubscribe' from a list directly using a link in a previously received communication. If an individual has any concerns about updating or deleting their data held on a Regional mailing list, they may also contact gdpr@ths.org.uk.

e-Bulletin subscribers

In accordance with the GDPR provision of consent, the first names, surnames and email addresses of individuals who have registered to receive IFHS's free e-Bulletins are captured within the content management software used to generate and distribute these newsletters.

All members were offered the opportunity to opt-in to the e-Bulletin service prior to its launch. Since then, all new members and non-members have been able to register via a link on IFHS's website.

All recipients must manage their own subscriptions. They may delete themselves from the distribution list altogether clicking on the 'unsubscribe' link in the bottom right corner of any previous issue. To amend their receiving email address, they must unsubscribe their old address and then re-register with their new email address using the link at www.ths.org.uk.

Non-member Soundings subscribers

In accordance with the GDPR provision of legitimate interests, data pertaining to non-member Soundings subscribers is collected during the annual application/subscription renewal process. IFHS only collects the basic information required to administer the subscription and mail copies of Soundings to the subscriber. Data collected includes:

- Subscriber's full name and delivery address;
- Invoicing name and address (if different);
- Contact telephone number;
- Contact email address.

Jobseekers register

In accordance with the GDPR provision of consent, IFHS stores the names and email addresses of individuals who have asked to be added to the Jobseekers register and, thereby, receive e-Messages whenever new hydrographic employment vacancies are advertised at www.ths.org.uk/Jobs.asp

Delegates

Data pertaining to delegates attending conferences, seminars and some other events organised by IFHS is collected as part of the registration process, following the GDPR provisions of legitimate interests, and consent. IFHS only collects the basic information required to administer delegates' participation in that event and provide the associated benefits (e.g., communication of information, verifying membership category and applicable discounts). During the registration process, delegates have the option to consent to their data being stored and processed for that event only and/or to consent to limited specified data (e.g., name, job title, employer) being published on the delegate list which may be accessed by other delegates attending the event.

Delegates may also be offered the option to consent to their personal data (first name, surname and email address) being added to one or more of IFHS's relevant mailing lists in

order to be kept informed about future events or receive non-commercial communications from IFHS and International Federation of Hydrographic Societies (IFHS).

e-Message subscribers

Under the GDPR provision of consent, IFHS maintains a granular mailing list for its e-Message service. This service uses the Mail Chimp email delivery service to communicate with members and non-members who have opted to receive updates on a range of optional topics, including details of forthcoming conferences and seminars and/or relevant non-commercial news and updates from IFHS, IFHS or the wider hydrographic community.

The personal data stored and processed for this purpose is initially supplied by the subscriber during the registration process. It is restricted to their first name, surname and email address plus their message category preferences. Subscribers may also optionally supply the name of the company or the organisation they represent.

Using the links at the foot of previous e-Messages, subscribers can then manage their own data and message preferences, or remove themselves from the mailing list all together, whenever they wish.

If you have previously consented to us using your personal information for direct marketing on behalf of our Corporate Members, you may change your mind at any time – either using the links at the foot of previous e-Messages or, for postal communications, by contacting gdpr@ths.org.uk.

We will not sell, distribute, or lease your personal data to third parties unless we have your prior permission or are required to do so by law. We may use your data to send you promotional information about third parties which we think you may find interesting, but only if you have already consented to this.

Employees

As an employer, The Hydrographic Society UK has both legal obligation and contract bases, as defined in the GDPR, for collecting and processing personal data relating to its employee(s). This information is used for management and administrative purposes only. Such data will be used effectively, lawfully and appropriately during the recruitment process, whilst individuals are working for us, when their employment ends and after they have left IFHS. This includes using data to enable IFHS to issue and comply with an individual's contract of employment, comply with any legal requirements, pursue the legitimate interests of IFHS and protect its legal position in the event of legal proceedings. If an employee does not supply this data, in some circumstances, IFHS may be unable to comply with its obligations and will need to notify the employee of the implications of that decision.

From time-to-time, IFHS may also have a need to process employee data in pursuit of its legitimate interests, for example, for administrative purposes or to prevent fraud.

Much of this personal data will be provided by the employee but some many come from other sources e.g., referees, the employee's line manager or external sources such as HM Revenue and Customs.

Data collected from employees typically includes:

- Name, date of birth, home address and other information required for payroll and pension contributions;
- Emergency contact details;
- Application form, references;
- Academic and employment history, qualifications and skills;
- Contract of employment and job description and/or objectives;
- Pay review policy, documents relating to appraisals and pay rises;
- Timesheets and records of leave, sickness and other absence;
- Health information (where appropriate or necessary);
- Disciplinary and grievance records (as appropriate);
- Other relevant correspondence and records.

Employees will inevitably be referred to in many Society documents, records, publications and online resources produced by both themselves and others during IFHS's normal activities.

IFHS does not currently process special categories of employee data (e.g., racial or ethnic origin, religious beliefs, trade union memberships and biometric data). Neither, unless required to do so by law, will it process such data in the future without the explicit consent of the employee(s).

Employees may request updates and corrections to their data at any stage by contacting their line manager or the Operations and Publications Manager, as appropriate.

Directors, Trustees, Board members and Officers of IFHS

As a registered company and charity, The Hydrographic Society UK has a legal obligation, as defined in the GDPR, to collect and process personal data relating to its voluntary Directors and Trustees. Such data is provided by the individual when they agree to serve in one, or both, of these capacities. The information is required for management and administrative purposes and is be used effectively, lawfully and appropriately to enable IFHS to comply with any legal requirements.

If a Director, or Trustee does not supply this data, in some circumstances, IFHS may be unable to comply with its obligations and will need to notify the individual of the implications of that decision.

Data typically collected from Directors, and Trustees includes:

- Full name, date of birth and nationality;

- Home/correspondence address and country of residence, telephone number, email address;
- Profession;
- Details of directorships of other registered companies.

In addition, in pursuit of legitimate interests in accordance with the GDPR, additional basic personal data is also collected and processed for these individuals, as well as other voluntary co-opted Board Members and Officers of IFHS and its Regions (e.g., members of sub-Committees, HPAS Panel members, Chairperson and Honorary Secretaries or Treasurers of Regions). This data is used to manage and administer IFHS, its sub-Committees and Regions, and to communicate with and keep the members informed, for example, about their appropriate point of contact.

Data typically collected from Directors, Trustees, HPAS Panel members, Board members and Officers of IFHS for legitimate interests includes:

- Name and role;
- Email address (depending on circumstances, this may be a Society, private or business account);
- If appropriate, Skype VComm name and/or telephone number (e.g., Skype, Zoom, MS Team etc).

Directors, Trustees, HPAS Panel members and Board members may request amendments to their data at any stage by contacting gdpr@ths.org.uk. Other Officers of IFHS and its Regions may request changes to their data by contacting the Operations and Publications Manager and/or the Chairperson of the relevant sub-Committee or Region, as appropriate.

Special categories

The GDPR refers to sensitive personal data as special category data. This may include information such as an individual's race, ethnic origin, religion, politics, biometrics, or health. Unless required to do so by law, IFHS does not process such data without an individual's explicit consent.

An example of a purpose for which personal data may be collected and processed, with explicit consent, is to ensure that the access (or other special needs) or dietary requirements of delegates attending conferences and events organised by IFHS can be met. In certain circumstances, we may also need to process the nationality and passport details of a non-EU national requesting a letter from us in support of their visa application to attend a conference organised by IFHS.

List of Fellows

In accordance with the GDPR provision of legitimate interests, IFHS maintains an online list of members who have been awarded Fellowship. This details the individual's first name,

surname and the year of award only. Fellows may ask to be deleted from this list at any time by contacting gdpr@ths.org.uk.

Photographic material

In accordance with its legitimate interests, IFHS holds a photographic and (small) video archive of many of its events, activities and key personalities. Historically, in many cases only the details of an event were recorded, although in some cases the individual(s) are, or may be, identified too.

An individual who does not wish to be photographed, or no longer wishes to have their photograph(s) stored or processed in any way, has the right to refuse and/or request that relevant images are deleted by contacting gdpr@ths.org.uk.

Audio recordings

With the knowledge and consent of all participants, IFHS sometimes makes digital audio recordings of Board meetings, sub-Committee meetings (e.g., Education Committee) and its Annual General Meetings. These files are used to assist in the preparation of Minutes and may also be referred to, if required, to clarify the more detailed discussions which gave rise to a particular decision recorded in the Minutes and/or to resolve any disagreements or misunderstandings arising from the Minutes.

An individual has the right to refuse to be recorded and/or later ask to have any/all copies of an audio file securely deleted by contacting gdpr@ths.org.uk.

Miscellaneous

On occasion, IFHS may also store personal data relating to other contacts who have supplied their details when making enquiries, applying to HPAS for Accreditation, requesting information or advice, purchasing goods or services, entering the Alan Ingham Award, submitting contributions to Soundings, or providing press releases. Such data will only be processed in accordance with any consent given by the individual or legitimate interests or contract which applies.

Whenever we store or process your information for our legitimate interests, we will also consider any potential impact on you. Our legitimate interests do not automatically override yours. Unless we have other grounds to do so (e.g., your consent or legal obligation), we will not use your information if we believe your interests should override ours.

If you have any concerns about our processing on your personal data, please refer to What are your rights?

D Endorsements

The concept of HPAS is to develop a sustainable system that enables individuals to demonstrate their competence and capability in hydrographic surveying. For the Hydrographic Society itself it provides a key element in supporting the profession and assists in the self-regulation of the sector through the four levels of Accreditation. The aim of having rigorous adherence to the International Standards is to ensure that the global aspect of hydrographic surveying is catered for. And to further this aim, IFHS seeks to gain recognition, mutual agreements and endorsements from associated groups and organisations. HPAS shall seek to gain endorsements for this strategic effort to broaden awareness and develop relationships across the profession.

Letters of endorsement will be displayed on the HPAS web site.

E Ethics

E.1 The Code of Ethics

HPAS individual members shall be bound by a commitment to maintain and promote hydrography and are expected, always, to act with integrity and avoid conflicts of interest and avoid any actions or situations that are inconsistent with their professional obligations. HPAS individuals shall carry out their professional work with due skill, care and with proper regard for the technical standards expected of them.

The Ethical principles are:

- **Integrity:** Act in an honest, fair and trustworthy manner and avoid conflicts of interest;
- **Service:** Provide a high standard of advice, support and work, acting within your competences;
- **Development:** Maintain knowledge and currency of methods to support and participate in the continuing development of the hydrographic profession;
- **Trust:** Promote trust by acting in a professional and positive way, fulfilling your obligations and adhering to professional Standards;
- **Respect:** Be fair, inclusive and diverse by treating people without bias and without discrimination;
- **Responsibility:** Take ownership of actions, accept responsibility and commit to resolve any complaints in a professional manner.

And in relation to the IFHS:

- Act in the best interests of the IFHS, national hydrographic Societies and HPAS aims;
- Protect the reputation of the IFHS and national societies, as well as the profession overall;
- Aim to create a positive impact on society in general.

F Survey Critique Guidelines

Each HPAS Applicant (Level 2 to Ø) is required to submit a Critique for one of the surveys undertaken where the sample Report of Survey or relevant alternative document has been submitted as part of the application. This needs to provide a clear context for the survey requirements, the rationale for the survey methodology adopted and a critique of any aspects considered relevant to demonstrate the competency of the applicant are required. There is also an opportunity at the end of the Critique to describe more widely your overall contribution to the profession.

The Critique is intended to give the panel a view as to the competencies and experiences of the applicant and how those competencies and experiences are applied to real-world survey issues. Where the CV, logbook and experience matrix describe the competencies in a more quantitative form, the purpose of the critique is to describe them in a qualitative sense.

The critique should cover the whole project from the initial instructions, planning and preparation to data deliverables and conclusions with a clear context for the survey requirements, the rationale for the survey methodology adopted, a general assessment of the risks and how these were mitigated as well as an appraisal of the performance and suitability of the survey, including data examples where possible. Aspects considered relevant and demonstrate the knowledge, understanding and competency of the applicant are key.

In some cases, for a Level Ø application, an applicant may not be able to use recent survey examples. In such cases, applicants can choose an alternative project or activity with a written report output to demonstrate their competence and experience and should adapt the framework below for their critique accordingly.

As a guide, your word count should be between 1000 and 1500 words. The maximum permissible word count is 2000 words. Use the following headings/sections to structure your document:

Heading/Section	Description/Content
1. Context for the Survey Requirements	Describe the primary (and secondary if appropriate) purpose of the survey, the end products needed and the requirements which needed to be achieved. Refer to standards and specifications. Consider clients and end users. Demonstrate how this relates to the bigger-picture.
2. Rationale for the Selected Survey Methodology and Equipment	Briefly describe the environment and how the requirements and other considerations drove the choice of equipment. Explain any alternative approaches and why these were discounted or not adopted.

Heading/Section	Description/Content
3. Risk and Risk Mitigation	Briefly describe risks to the successful completion of the project which were considered and how these were mitigated throughout the project cycle.
4. Planning	Briefly describe the planning process undertaken and all operational factors considered prior to deployment.
5. Operational Issues	Briefly describe the general approach to the works, detailing the personnel and equipment deployed including any problems encountered and how these were overcome to ensure a successful delivery. Referencing any unexpected events and challenges that may have impacted on the survey, provide an analysis of how you would avoid these in future similar projects.
6. Post Fieldwork Activity	Briefly describe the general approach to the processing of data and observations, detailing any problems encountered and how these were overcome to ensure a successful delivery. Clearly describe your input at this stage, and how you influenced the final outcomes.
7. Appraisal of the Survey and its Suitability to the Requirement	Briefly describe the outcome of the survey, compliance with standards/specification and any deficiencies. Assess the suitability of the survey deliverables to the initial stated requirement and user needs. If any written independent assessment already exists, this can also be provided to support your application.
8. My Role and Contribution	This section should be the main focus of your critique. Clearly describe your role within the project, the key contributions you made and how this helps demonstrate your competencies. For levels 1 and Ø, this should include information on knowledge transfer to less experienced personnel.
9. Conclusion	Provide your overall conclusions for the activity and outcomes noting the key successes as well as any improvements that you would advise or recommend to a future survey team.
10. Wider Contribution to Hydrography	For levels 1 and Ø only. This is a final opportunity to expand beyond your example projects into your wider career. Describe how you have successfully influenced the projects you have worked on, the organisations you have worked for/with and how you have influenced the hydrographic profession in general.

G Experience Matrix Form

Hydrographic Professional Accreditation Scheme



Experience Matrix

This form is a summary of your career to date. The fields list the practical surveying activities covered by the subjects in S5 (A & B) which are required to be completed as per the Assessment Guidelines. Additional experience outside of the S5 activities can be recorded in other.

Name:	Membership No:
Period From	To

Section 1: Weeks on project. Enter the number of weeks in the appropriate box below

IHO S5A ref.	Task	Position				
		Prog. Mngr.	Party Chief	Senior Svyr	Surveyor	Survey Asst't
H4.1a	Hydrographic Survey Projects					
	Nautical charting survey					
	Boundary Delimitation					
	Ports, harbour & waterways					
	Engineering works & dredging					
	Coastal engineering					
	Inland					
	Erosion & coastal interface					
	Oceanographic					
	Deep sea					
	ROV / AUV					
	Seismic, gravity & geomagnetic					
	Pipeline route, installation, inspection & cable lay					
	Wreck & debris					
Other						

Section 2: Survey tasks. To indicate tasks performed during project and in what capacity, enter an 'X' in each appropriate box.

IHO S5A ref.	Task	Position				
		Prog. Mngr.	Party Chief	Senior Svyr	Surveyor	Survey Asst't
H4.1b	Project Management					
	Hydrographic instructions & tenders					
	Estimate & draft survey workplan					
	Produce tenders					
	Risk assess survey operations associated with work plan					
	Asses & report on survey progress against the plan					
	Maintain H&S compliance					

Hydrographic Professional Accreditation Scheme




	Determine environmental impact of activities					
	Produce an Emergency Response Plan					
H4.2a	Survey Planning.... Plan survey lines and schedule to accommodate environmental and topographic considerations for the survey platform					
H4.2b	Single beam operations Conduct single beam survey					
H4.2c	MBES operations Dimension control for MBES Conduct MBES survey to specification					
H4.2d	Magnetic surveys Plan & deployment for magnetometer / gradiometer survey Conduct mag survey to specification					
H4.2f	Side Scan Sonar Operations Conduct SSS survey Interpret SSS imagery					
H5.2	Water Level Measurements Evaluate water level site, determine level and datum Install water level recording instrument					
H5.5	Currents Select instrumentation and plan for current monitoring surveys Make current observations and process and present results					
H6.1	Real-time data acquisition Integrated survey system configuration Airborne LIDAR Acoustic positioning ROV MASS/ASV	(in addition to 4.1)				

H Qualification Mapping Form

Applicants applying for Level 1 or Level Ø, who have not attended a Category A recognised programme, must complete Section S-5A of the Qualification Mapping Form:

Hydrographic Professional Accreditation Scheme



International Federation of
Hydrographic Societies
setting the standard for the world's hydrographic community

Qualification Mapping Levels Ø and 1

Instructions	
1.	Applicants applying for accreditation without completing a IBSC Cat A programme need to map their education and training qualifications against the S-5A syllabus using the table below.
2.	Applicants should enter the name of their highest level (Degree / Diploma / Training Course etc) qualification and subject completed against each module of the relevant matching S-5A subject to demonstrate the areas of the S-5A syllabus they have achieved.
3.	Subject areas not covered by formal education or training should be left blank.
4.	Applicants should refer to the IBSC S-5A Standard for details on the content and learning outcomes expected for each subject.
5.	Applicants are expected to provide full evidence of satisfactory study of ALL Advanced (A) subjects, 80% of Intermediate (I) and Basic (B) subjects

Summary of relevant courses attended

Learning Institution/ Training Course Provider	Location	Program Title	Dates Attended	
			From	To

IHO S-5B Subjects	Degree / Diploma / Course Subject
Basic Subjects and Knowledge Level (B/I)	
B1: Mathematics, Statistics, Theory of Observations	
B1.1 Geometry and Linear Algebra	
B1.1a B	Geometry
B1.1b I	Linear Algebra
B1.1c I	Numerical methods for linear systems of equations
B1.2 Differential calculus and differential equations	
B1.2a B	Differential and integral calculus
B1.2b I	Differential equations
B1.2c B	Numerical solutions of non-linear equation
B1.3 Probability and statistics	
B1.3a I	Probabilities and Bayesian estimation
B1.3b I	Statistics
B2: Information and Communication Technology	
B2.1 I	Computer Systems
B2.2 B	Office work software suites
B2.3 B	Programming
B2.4 B	Web and network services
B2.5 B	Databases
B3: Physics	
B3.1 B	Kinematics
B3.2 B	Gravity

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B3.4	B	Waves	
B3.5	B	Electromagnetic waves	
B3.6	B	Geometrical optics	
B3.7	B	Lasers	
B3.8	B	Transducers and Clocks	
B4: Nautical Science			
B4.1	B	Conventional aids to navigation	
B4.2	B	GMDSS	
B4.3	B	Nautical charts	
B4.4	B	Navigation publications	
B4.5	B	Compasses	
B4.6	B	Emergency procedures	
B4.7	B	Safe Working Practice	
B4.8	B	Rope and wires	
B4.9	I	Towed and over the side instruments	
B4.10	B	Anchoring	
B4.11	I	Instrument moorings	
B5: Meteorology			
B5.1	B	Weather fundamentals and observations	
B5.2	B	Wind, waves and seas	
B5.3	B	Weather forecasting	
Foundation Science Subjects and Knowledge Level (B/I/A)			
F1: Earth Models			
F1.1 Physical geodesy			
F1.1a	B	The gravity field of the Earth	
F1.1b	B	Gravity observations and their reduction	
F1.1c	B	Height systems and height determination	
F1.1d	B	Geopotential and geoidal Modelling	
F1.2 Coordinate Systems			
F1.2a	I	Coordinate Systems for Positioning	
F1.2b	A	Datum transformation techniques	
F1.2c	I	Geodetic computations on the ellipsoid	
F1.2d	A	Three-Dimensional Geodetic Modelling	
F1.3 Land surveying methods and techniques			
F1.3a	I	Trigonometric surveys	
F1.3b	I	Existing survey control	
F1.3c	I	Establishing survey control	
F1.3d	I	Instrument tests	
F1.3e	B	Historical surveys	
F1.4 Levelling			
F1.4a	I	Levelling instruments	
F1.4b	A	Height reduction	
F1.5 Map Projections			
F1.5a	A	Map Projections	
F1.6 Trigonometry and least-squares			
F1.6a	B	Trigonometry	
F1.6b	I	Theory of observations	
F1.6c	A	Least squares	
F2: Oceanography			

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F2.1 Physical Oceanography and measurements		
F2.1a	I	Water masses and circulation
F2.1b	A	Physical properties of sea water
F2.1c	I	Oceanographic measurements
F2.1d	B	Waves
F3: Geology and geophysics		
F3.1 Geology		
F3.1a	B	Earth structure
F3.1b	A	Geomorphology
F3.1c	I	Substrates
F3.2 Geophysics		
F3.2a	B	Gravity fields and gravity surveys
F3.2b	B	Magnetic fields
F3.2c	I	Seismic surveys
Hydrographic Science Subjects and Knowledge Level (B/I/A)		
H1: Positioning		
H1.1 Vessel and sensor reference frames		
H1.1a	A	Common reference frames for sensors
H1.1b	A	Integration of reference frames
H1.2 GNSS positioning		
H1.2a	I	GNSS Signals
H1.2b	A	GNSS observables
H1.2c	A	Relative and absolute techniques
H1.2d	A	Installation and operation
H1.2e	A	Quality control
H1.3 Inertial navigation systems		
H1.3a	A	Accelerometers and gyroscopes, inclinometers, and
H1.3b	A	Strap down inertial measurement units
H1.3c	I	Kalman filtering
H1.3d	I	Aided inertial navigation
H1.4 Subsea positioning		
H1.4a	A	Acoustic positioning principles
H1.4b	A	Acoustic positioning systems
H1.4c	I	Acoustic positioning error analysis
H1.4d	B	Acoustic positioning applications
H1.5 Line keeping		
H1.5a	B	Track guidance
H2: Underwater Sensors and Data Processing		
H2.1 Underwater acoustics		
H2.1a	I	Transducers and generation of acoustic waves
H2.1b	A	Propagation of acoustic waves
H2.1c	I	Acoustic noise
H2.1d	I	Reflection, scattering and system performance
H2.1e	A	Refraction and ray-tracing
H2.2 Single beam systems		
H2.2a	I	Single beam echo sounders principles
H2.2b	A	Single beam returns interpretation
H2.2c	A	Single beam survey system
H2.2d	A	Processing of single beam data

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H2.3 Sonar imagery systems		
H2.3a	A	Side-scan sonar systems
H2.3b	I	Synthetic Aperture Sonar
H2.4 Swath echo sounder systems		
H2.4a	A	Multi-beam echo sounders
H2.4b	A	Multi-beam system parameters
H2.4c	A	Multi-beam systems
H2.4d	A	Multi-beam data processing
H2.4e	A	Interferometric Sonar
H2.5 Backscatter		
H2.5a	A	Backscatter from side scan and MBES
H3: LiDAR and Remote Sensing		
H3.1 LiDAR		
H3.1a	A	Airborne LiDAR systems
H3.1b	A	Airborne LiDAR data products
H3.1c	B	Terrestrial LiDAR
H3.2 Remote Sensing		
H3.2a	I	Remotely sensed bathymetry
H3.2b	B	Satellite altimetry
H3.2c	I	Optical methods of shoreline delineation
H4: Survey Operations and Applications		
H4.1 Hydrographic survey projects		
H4.1a	A	Hydrographic survey requirements
H4.1b	A	Hydrographic survey project management
H4.2 Hydrographic survey operations		
H4.2a	A	Survey planning
H4.2b	A	Single Beam operations
H4.2c	A	Multi-beam and Interferometric operations
H4.2d	I	Magnetic surveys
H4.2e	I	Airborne LiDAR surveys
H4.2f	A	Side scan sonar operations
H4.2g	A	Side-scan sonar data interpretation
H4.3 Seabed characterization		
H4.3a	I	Classification from acoustic data
H4.3b	B	Classification from optical data
H4.3c	I	Seabed sampling
H4.3d	I	Seabed characterization
H5: Water Levels and Flow		
H5.1 Principles of Water Levels		
H5.1a	I	Tide theory
H5.1b	I	Non-tidal water level variations
H5.2 Water level measurements		
H5.2a	A	Water level gauges
H5.2b	A	Tidal measurement
H5.2c	I	Uncertainty in water level
H5.3 Tide modelling		
H5.3a	I	Harmonic analysis
H5.3b	B	Ocean water level
H5.4 Ellipsoid separation models and vertical datums		
H5.4a	I	Separation models


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H5.4b	A	Vertical Datums	
H5.4c	A	Sounding reduction	
H5.5 Currents			
H5.5a	B	Tidally induced currents	
H5.5b	I	Current measurement, portrayal and surveys	
H6: Hydrographic Data Acquisition and Processing			
H6.1 Real-time data acquisition and control			
H6.1a	A	Hydrographic Data acquisition	
H6.1b	A	Real-time data monitoring	
E6.1c	A	Survey data storage and transfer	
H6.2 Bathymetric data filtering and estimation			
H6.2a	A	Filtering and estimation of single beam data	
H6.2b	A	Filtering and estimation of multi-beam data	
H6.2c	A	Spatial data quality control	
H6.2d	A	Spatial data interpolation	
H6.2e	A	Spatial data representation	
H7: Management of Hydrographic Data			
H7.1 Data organization and presentation			
H7.1a	I	Databases	
H7.1b	B	Marine GIS basics	
H7.2 Marine data sources and dissemination			
H7.2a	B	MSDI	
H7.2b	B	Open access marine data	
H7.3 Spatial data integration and deliverables			
H7.3a	I	Spatial data integration	
H7.3b	A	Spatial data visualisation	
H7.3c	A	Deliverables	
H8: Legal Aspects			
H8.1 Product liability			
H8.1a	I	Responsibilities of the hydrographic surveyor	
H8.1b	I	Contracts	
H8.2 Maritime zones			
H8.2a	B	Delimitations	
E8.2b	I	Impact of surveys	

Applicants applying for Level 2, who have not attended a Category A or Category B recognised programme, must complete Section S-5B of the Qualification Mapping Form:

Hydrographic Professional Accreditation Scheme


International Federation of
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serving the interests of the world hydrographic community

Qualification Mapping Level 2

Instructions	
1.	Applicants applying for a Level 2 certification without completing a IHO Category B course need to map their education and training qualifications against the S-5B syllabus using the table below.
2.	Applicants should enter the name of their highest level (Degree / Diploma / Training Course etc) qualification and subject completed against each module of the relevant matching S-5B subject to demonstrate the areas of the S-5B syllabus they have achieved.
3.	Subject areas not covered by formal education or training should be left blank.
4.	Applicants should refer to the IHO S-5B standard for details on the content and learning outcomes expected for each subject.
5.	Applicants are expected to provide full evidence of satisfactory study of ALL Essential subjects with Intermediate knowledge level and 70% of the remaining subjects (at I and B level).

Summary of relevant courses attended

Learning Institution/ Training Course Provider	Location	Program Title	Dates Attended	
			From	To

IHO S-5B Subjects	Degree / Diploma / Course Subject
Basic Subjects and Knowledge Level (B/I)	
B1: Mathematics, Statistics, Theory of Errors	
B1.1 B	Linear Algebra
B1.2 B	Differential Calculus
B1.3 B	Trigonometry
B1.4 I	Statistics
B1.5 B	Theory of Errors
B1.6 B	Least Squares
B1.7 B	Interpolation
B2: Information and Communication Technology	
B2.1 I	Computer Systems
B2.2 I	Office work software suites
B2.3 I	Programming
B2.4 B	Web and network services
B2.5 B	Databases
B3: Physics	
B3.1 B	Kinematics
B3.2 B	Gravity
B3.3 B	Waves
B4: Earth Sciences	
B4.1 B	Geography and geology
B4.2 B	Substrates
B5: Nautical Science	

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B5.1	B	Conventional aids to navigation	
B5.2	B	GMDSS	
B5.3	B	Nautical charts	
B5.4	B	Navigation publications	
B5.5	B	Compasses	
B5.6	B	Emergency procedures	
B5.7	B	Safe Working Practice	
B5.8	B	Rope and wires	
B5.9	B	Towed and over the side instruments	
B5.10	B	Anchoring	
B5.11	B	Instrument moorings	
B6: Meteorology			
B6.1	B	Weather fundamentals and observations	
B6.2	B	Wind, waves and seas	
B6.3	B	Weather forecasting	
Essential Subjects and Knowledge Level (B/I)			
E1: Underwater Acoustics			
E1.1 Acoustic Theory			
E1.1a	B	Generation of acoustic waves	
E1.1b	I	Propagation of acoustic waves	
E1.1c	B	Reflection, scattering and system performance	
E1.1d	B	Reception of acoustic waves	
E1.2 Single Beam Systems & Side Scan Sonar			
E1.2a	I	Single beam echo sounders	
E1.2b	I	Single beam echo sounder data recording	
E1.2c	I	Range uncertainty	
E1.2d	I	Side scan sonar	
E1.3 Swath Systems			
E1.3a	B	Beam characteristics	
E1.3b	B	Backscatter and water column returns	
E1.3c	I	Bottom spatial coverage	
E1.3d	B	Installation and configuration	
E1.3e	I	Range and angle uncertainty	
E1.3f	I	Operation	
E2: Remote Sensing			
E2.1 LiDAR			
E2.1a	B	Airborne LiDAR systems	
E2.1b	B	Airborne LiDAR data products	
E2.1c	B	Terrestrial LiDAR	
E2.2 Remote Sensing			
E2.2a	B	Remotely sensed bathymetry	
E2.2b	B	Shoreline delineation	
E3: Water Levels and Flow			
E3.1 Principles of Water Levels			
E3.1a	B	Tidal fundamentals	
E3.1b	B	Tidal information	
E3.1c	B	Non-tidal water level variations	
E3.2 Water Level Measurement			
E3.2a	I	Water level gauges	

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E3.2b	I	Tidal measurement	
E3.2c	B	Water level datums	
E3.2d	B	Uncertainty in water level	
E3.3 Water Level Reduction			
E3.3a	I	Water level reduction of soundings	
E3.3b	I	Reduction of soundings using GNSS observations	
E3.4 Currents			
E3.4a	B	Tidal streams and currents	
E3.4b	B	Current measurement and portrayal	
E4: Positioning			
E4.1 Geodesy			
E4.1a	B	Introduction to Geodesy	
E4.1b	B	Coordinate systems, frames and datums	
E4.1c	B	Geodetic transformations and associated computations	
E4.1d	B	Ellipsoidal computations	
E4.2 Principles of Cartography			
E4.2	B	Map projections	
E4.3 Positioning Measurements, Methods and Techniques			
E4.3a	I	Positioning fundamentals	
E4.3b	I	Satellite positioning	
E4.3c	I	Positioning systems	
E4.3d	B	Historical surveys	
E4.3e	I	Survey control	
E4.4 Vertical Positioning			
E4.4a	B	Height systems	
E4.4b	I	Elevation measurements and computation	
E4.5 Acoustic Positioning			
E4.5a	B	Acoustic positioning concepts	
E4.5b	B	Acoustic positioning systems	
E4.6 Inertial Navigation			
E4.6a	B	Inertial Measurement Units	
E4.6b	B	Inertial Navigation Systems	
E4.7 Uncertainty in Positioning			
E4.7	I	Sources of uncertainty	
E5: Hydrographic Practice			
E5.1 Hydrographic Survey Projects			
E5.1a	I	Hydrographic survey purposes	
E5.1b	I	Hydrographic survey execution requirements	
E5.1c	B	Hydrographic survey project organization	
E5.2 Hydrographic Survey Operations			
E5.2a	I	Operational survey data transfer	
E5.2b	I	Survey systems	
E5.2c	I	Calibration and corrections	
E5.2d	I	Line planning	
E5.2e	B	Line keeping	
E5.2f	B	Survey operations	
E5.2g	I	Quality control	
E5.3 Hydrographic Survey Documentation			
E5.3a	I	Documentation	

Hydrographic Professional Accreditation Scheme



E5.4 Legal Aspects		
E5.4a	B	Liability of the hydrographic surveyor
E5.4b	B	Delimitations
E6: Hydrographic Data Management		
E6.1 Real-Time Data Acquisition and Control		
E6.1a	I	Hydrographic Data acquisition
E6.1b	I	Real-time data monitoring
E6.1c	I	Data transfer and storage
E6.2 Data Processing and Analysis		
E6.2a	I	Spatial data cleaning
E6.2b	I	Spatial data quality control
E6.2c	I	Spatial data representation
E6.3 Data Organization and Presentation		
E6.3a	B	Databases
E6.3b	I	Marine GIS basics
E6.3c	I	Visualization and presentation
E6.3d	I	Deliverables
E7: Environment		
E7.1 Oceanography		
E7.1a	I	Physical properties of sea water
E7.1b	I	Oceanographic measurements
E7.1c	B	Waves
E7.2 Marine Geology and Geophysics		
E7.2a	B	Seabed characteristics
E7.2b	B	Magnetic surveys
E7.2c	B	Seismic surveys
E7.3 Environmental impact		
E7.3a	B	Impact of surveys

I Application Checklist

To assist the application a checklist has been compiled. It includes the normal items expected but applicants should ensure they have checked their documentation is complete. Failure to include all the necessary elements for an application could delay the review or, in a worst case, mean the application is not considered by the HPAS Panel.

Checklist for Applications

- | | | |
|----|------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1 | General information on the Individual | <input type="checkbox"/> |
| 2 | Certified course certificates | <input type="checkbox"/> |
| 3 | For Non-Category A and Category B programmes - information about each module in the programme with the respective module breakdown | <input type="checkbox"/> |
| 4 | Application form completed | <input type="checkbox"/> |
| 5 | Up to date CV | <input type="checkbox"/> |
| 6 | Referees (see Level requirements for appropriate number) | <input type="checkbox"/> |
| 7 | Logbook of activities | <input type="checkbox"/> |
| 8 | Example Survey Reports/Deliverables | <input type="checkbox"/> |
| 9 | Critique | <input type="checkbox"/> |
| 10 | Experience Matrix | <input type="checkbox"/> |
| 11 | Qualification Mapping Form (see Level requirements) | <input type="checkbox"/> |
| 12 | Compliant CPD (If required) | <input type="checkbox"/> |
| 13 | Fees paid | <input type="checkbox"/> |

J Interview Guidelines

J.1 Introduction

HPAS has several Levels. For each there is a required minimum standard of qualifications and experience that provides the basis for the Level of competence.

On the occasion where an applicant has submitted evidence of competence at a desired level but the HPAS Panel has found difficulty in completing its review and assessment, one option is for the HPAS Panel to request the applicant to attend a formal interview. This document is designed to guide both the Applicants and the Panel on the interview process.

The interview is an option that the HPAS Panel may wish to undertake to clarify the competence of an applicant to support the overall accreditation process. It is therefore necessary to make this element of the assessment as consistent as practical and to adopt a standard procedure, to afford the applicant as fair an assessment as possible. However, the interview on its own is not the whole assessment and it must be considered along with the evidence submitted as part of the complete application.

J.2 The Interview Process

The interview will be held at an agreed time with all HPAS Panel members and interviewee. The meeting itself will be held in English unless agreed prior to the meeting that an alternate language has been requested by the applicant and agreed by the Panel.

The interview will normally be made up of three Panel members (a minimum of two), who all share equal responsibility for the interview. One is to act as Chair and is responsible for supervising the interview timings and the assessment process. The interview will last up to 60 minutes.

J.3 Virtual Platform

It is expected that the interview will take place remotely using Teams, Zoom or similar.

Interviewees will be asked in advance to confirm they are able to use the proposed medium.

For the virtual meeting and interview, the applicant must have their video and microphone on throughout the video call so the HPAS panel can be assured they do not have access to any support that provides, or could be perceived as providing, them with an advantage during the interview.

Before the interview starts the Chair will ask the applicant to confirm that they are on their own.

J.4 Interview Chair

The role of the Interview Chair is as follows:

- Initiate the pre-interview discussion of the Panel;

- Agreeing the interview approach and structure and who will lead each aspect of questions with respect to competencies;
- Adhering to a consistent assessment approach;
- Maintaining appropriate timings, from the agreed start time to conclusion; • Initiating the post-interview discussion of the HPAS Panel and the decision making;
- Writing the post-interview notes and outcome.

The pre-interview discussion is mandatory for the interviewing HPAS Panel members.

J.5 Structure of Interview

The Chair shall arrange for all participants to be available and present (online or face to face) at the appropriate time.

The interview will take the following structure:

- | | |
|-----------------------------------------|------------|
| • Applicant Presentation | 10 minutes |
| • Panel Questions | 40 minutes |
| • Chair's questions and interview close | 10 minutes |

Once everything is ready the Chair shall make the introductions and then ask the applicant to make a short presentation.

The applicant will be given a maximum of 10 minutes to present their case for accreditation including references to their survey report critique and/or a case study (work activity critique). Slides or visual aids such as slides are not required – a verbal presentation is adequate. However, if applicants wish to show any supporting material in slides they can do so.

The Panel shall ask questions in relation to the presentation, case study and survey report critique. A further period follows for discussion on the overall experiences of the applicant.

A final period of general questions by the chair will conclude the session.

In the 60-minute interview it is not possible to cover the full extent of an applicant's experience and qualifications so the HPAS Panel must cover the identified areas of concern in as much detail as required in the time allocated.

J.6 Timing

It is the chair's responsibility to maintain time and to ensure the timings of the interview conform to the allocated periods.

It is important to use the allocated interview period and not to shorten or lengthen it. This may cause undue expectation or send the wrong signal. Fairness is maintained by ensuring that each applicant is given the same opportunity.

Only if there is an interruption in the meeting due to an unforeseen technological problem should any extension be considered.

Any extension to the interview in order to achieve the allocated time is at the sole discretion of the interview Chair.

J.7 Evidence of Competence

The option to interview an applicant is due to some uncertainty in their application and evidence. The candidate needs to demonstrate their problem-solving abilities and their standard of professional and technical competency for the Level being sought. If relying upon a case study or survey critique then the presentation must contain a description of their role, an evaluation of the survey outcome, their own reflection on the experience gained and the lessons learnt.

From the presentation and the application evidence provided, the HPAS Panel will wish to determine:

- Is the applicant's contribution to surveys and work activities evident at the appropriate level?
- Has the applicant identified the relevant key issues across their example activities?
- Have options been considered, explained and has the applicant provided good reasons for the decisions made and why other options were rejected?
- Are the chosen solutions supported by reasoned judgement and has the applicant demonstrated appropriate competencies?
- Does the conclusion contain an evaluation and an understanding of the lessons learned?
- Has the applicant demonstrated good communication skills?
- Are you satisfied that the overall evidence now demonstrates competencies to the required HPAS level?

Panel members will not decide whether the application along with the presentation, questions, critique and case study is a pass, or fail, before the interview with the applicant is complete. The applicant will not be advised of any Panel decision at the interview – this will be provided by the HPAS Secretariat at a later date.

The interview is one element of the overall assessment and Panelists will make a final judgement in a holistic manner considering all the evidence and various elements together.

K Example Certificate



International Federation of Hydrographic Societies

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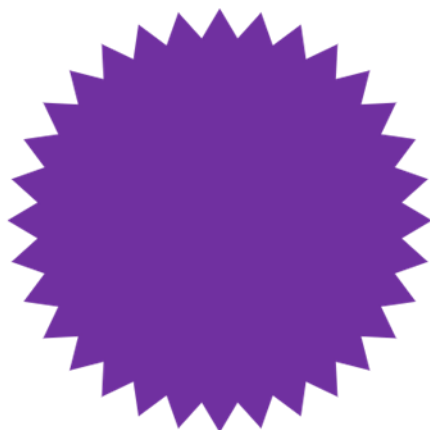
*Having completed a Category 'A' programme recognised by the IBSC
and having been successfully assessed by the HPAS the
International Federation of Hydrographic Societies grants*

Insert Name

Accredited Hydrographer Level Ø

1st January 2021

*'This Assessment Scheme has been recognised as meeting the
requirements for professional certification or individual recognition in
the FIG/IHO/ICA Standards of Competence for Hydrographic
Surveyors'.*



Chairperson
Hydrographic Professional
Accreditation Scheme Panel

Certificate Number:

This certificate remains current subject to meeting the Continual Professional Development (CPD) requirements of the HPAS scheme guidelines.



International Federation of Hydrographic Societies

Hydrographic Professional Accreditation Scheme (HPAS)

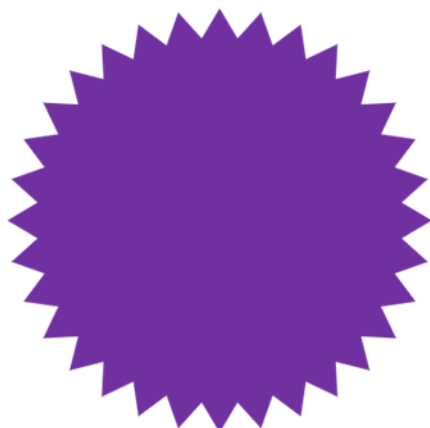
*Having completed a Category 'B' programme recognised by the IBSC
and having been successfully assessed by the HPAS the
International Federation of Hydrographic Societies grants*

Insert Name

Accredited Hydrographer Level Ø

1st January 2021

*'This Assessment Scheme has been recognised as meeting the
requirements for professional certification or individual recognition in
the FIG/IHO/ICA Standards of Competence for Hydrographic
Surveyors'.*



Chairperson
Hydrographic Professional
Accreditation Scheme Panel

Certificate Number:

This certificate remains current subject to meeting the Continual Professional Development (CPD) requirements of the HPAS scheme guidelines.



International Federation of Hydrographic Societies

Hydrographic Professional Accreditation Scheme (HPAS)

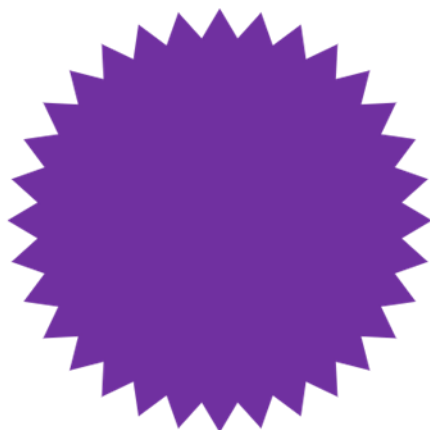
*Having been successfully assessed by the HPAS the
International Federation of Hydrographic Societies grants*

Insert Name

Accredited Hydrographer Level Ø

1st January 2021

*'This Assessment Scheme has been recognised as meeting the
requirements for professional certification or individual recognition in
the FIG/IHO/ICA Standards of Competence for Hydrographic
Surveyors'.*



Chairperson
Hydrographic Professional
Accreditation Scheme Panel

Certificate Number:

This certificate remains current subject to meeting the Continual Professional Development (CPD) requirements of the HPAS scheme guidelines.



International Federation of Hydrographic Societies

Hydrographic Professional Accreditation Scheme (HPAS)

*Having completed a Category 'A' programme recognised by the IBSC
and having been successfully assessed by the HPAS the
International Federation of Hydrographic Societies grants*

Insert Name

Accredited Hydrographer Level 1

1st January 2021

*'This Assessment Scheme has been recognised as meeting the
requirements for professional certification or individual recognition in
the FIG/IHO/ICA Standards of Competence for Hydrographic
Surveyors'.*



Chairperson
Hydrographic Professional
Accreditation Scheme Panel

Certificate Number:

This certificate remains current subject to meeting the Continual Professional Development (CPD) requirements of the HPAS scheme guidelines.



International Federation of Hydrographic Societies

Hydrographic Professional Accreditation Scheme (HPAS)

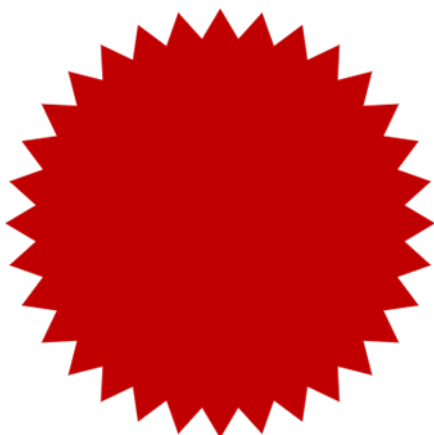
*Having completed a Category 'B' programme recognised by the IBSC
and having been successfully assessed by the HPAS the
International Federation of Hydrographic Societies grants*

Insert Name

Accredited Hydrographer Level 1

1st January 2021

*'This Assessment Scheme has been recognised as meeting the
requirements for professional certification or individual recognition in
the FIG/IHO/ICA Standards of Competence for Hydrographic
Surveyors'.*



Chairperson
Hydrographic Professional
Accreditation Scheme Panel

Certificate Number:

This certificate remains current subject to meeting the Continual Professional Development (CPD) requirements of the HPAS scheme guidelines.



International Federation of Hydrographic Societies

Hydrographic Professional Accreditation Scheme (HPAS)

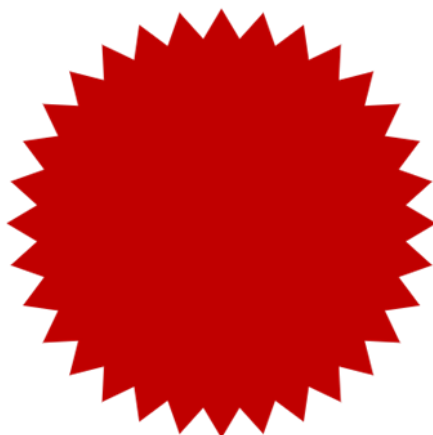
*Having been successfully assessed by the HPAS the
International Federation of Hydrographic Societies grants*

Insert Name

Accredited Hydrographer Level 1

1st January 2021

*'This Assessment Scheme has been recognised as meeting the
requirements for professional certification or individual recognition in
the FIG/IHO/ICA Standards of Competence for Hydrographic
Surveyors'.*



Chairperson
Hydrographic Professional
Accreditation Scheme Panel

Certificate Number:

This certificate remains current subject to meeting the Continual Professional Development (CPD) requirements of the HPAS scheme guidelines.



International Federation of Hydrographic Societies

Hydrographic Professional Accreditation Scheme (HPAS)

*Having completed a Category 'A' programme recognised by the IBSC
and having been successfully assessed by the HPAS the
International Federation of Hydrographic Societies grants*

Insert Name

Accredited Hydrographer Level 2

1st January 2021

*'This Assessment Scheme has been recognised as meeting the
requirements for professional certification or individual recognition in
the FIG/IHO/ICA Standards of Competence for Hydrographic
Surveyors'.*



Chairperson
Hydrographic Professional
Accreditation Scheme Panel

Certificate Number:

This certificate remains current subject to meeting the Continual Professional Development (CPD) requirements of the HPAS scheme guidelines.



International Federation of Hydrographic Societies

Hydrographic Professional Accreditation Scheme (HPAS)

*Having completed a Category 'B' programme recognised by the IBSC
and having been successfully assessed by the HPAS the
International Federation of Hydrographic Societies grants*

Insert Name

Accredited Hydrographer Level 2

1st January 2021

*'This Assessment Scheme has been recognised as meeting the
requirements for professional certification or individual recognition in
the FIG/IHO/ICA Standards of Competence for Hydrographic
Surveyors'.*



Chairperson
Hydrographic Professional
Accreditation Scheme Panel

Certificate Number:

This certificate remains current subject to meeting the Continual Professional Development (CPD) requirements of the HPAS scheme guidelines.



International Federation of Hydrographic Societies

Hydrographic Professional Accreditation Scheme (HPAS)

*Having been successfully assessed by the HPAS the
International Federation of Hydrographic Societies grants*

Insert Name

Accredited Hydrographer Level 2

1st January 2021

*'This Assessment Scheme has been recognised as meeting the
requirements for professional certification or individual recognition in
the FIG/IHO/ICA Standards of Competence for Hydrographic
Surveyors'.*



Chairperson
Hydrographic Professional
Accreditation Scheme Panel

Certificate Number:

This certificate remains current subject to meeting the Continual Professional Development (CPD) requirements of the HPAS scheme guidelines.

L Certifying a Document

L.1 Advice on Certifying a Document

Certify a document, as a true copy of the original, by getting it signed and dated, by a professional person, like a solicitor. The document must be certified by a professional person or someone well-respected in your community ('of good standing'). Various options could exist where you live, including the following brief list:

A bank or building society official, councillor, minister of religion, dentist, chartered accountant, solicitor, or a notary, a teacher or lecturer, or Chair of National Society.

HPAS Accreditation application will accept a certified document as long as the person authenticating it is independent and not one of the following:

- Related to you;
- Living at the same address;
- A working colleague;
- In a relationship with you.

To comply with HPAS application a full size, clearly legible, colour copy of the original document is required to be signed and the person signing should:

- Write in their own hand the following mention or equivalent in its own official language:
'Certified to be a true copy of the original seen by me' (English);
'Copie certifié conforme à l'original' (French);
- Sign and date it;
- Print their name under the signature;
- Add their occupation, address and contact telephone number (not email address).
- Scan the certified documents to create a PDF.

M Mutual Recognition Agreement

Any HPAS Mutual Recognition Agreements (MRAs) will be displayed on the HPAS Web Site.

N CPD

N.1 Overview

HPAS requires that all enrolled members complete and maintain a record of their relevant professional, educational or volunteering activity related to Hydrography and HPAS framework. Such records is currently designated as Continuing Professional Development (CPD). It involves maintaining and enhancing the knowledge, skills and experience related to your professional activities following completion of your formal training. Just as importantly, it involves the development of those personal qualities that are required for carrying out professional and technical duties during a professional's life. Both technical and non-technical skills can be included into an individual CPD record.

It is a commitment of each Accredited Individual to continually update skills and knowledge to remain professionally competent. Although the CPD should include various IBSC S-5 Standard subjects being covered, it is expected that the ethical and professional aspects of an individual's activity be included.

N.2 Objectives

The objective of maintaining CPD is to ensure members of HPAS maintain currency of knowledge and practical experience of the latest developments in survey technology and the requirements and uses for data.

To manage progression through the levels of the Scheme such that an Accredited Individual following the CPD guidelines would be building the evidence of experience required to move to the next level.

N.3 Qualifying Summary

Members will need to show that they have been employed in hydrographic related activity for at least 6 months of the last 12. Evidence of employment and professional experience will be in the form of employment records and professional logbooks/journals.

In addition to a stated related activity through professional logbooks, members should have accumulated at least 40 hours of CPD related to hydrography (qualifying activities) in the previous 12 months. In each calendar year the Accredited professional surveyor must complete both formal and informal CPD time. The time is recorded in hours with the minimum set as 40 hours of which a minimum of 20 hours must be formal or structured with an outcome and supporting attendance or completion certificate. The remaining 20 hours of CPD may be made up from a variety of activities and is very flexible. The examples below describe several of the possible activities that could be included in a CPD diary. The list is not exhaustive but provides some examples to assist in understanding the difference between informal and formal activities.

N.4 Formal CPD

Formal CPD can be any form of structured learning that has a clear learning objective. A professional course, technical authorship or a learning activity that includes assessment measures. This can include self-managed learning so long as it has a clear link to the member's development needs and the IBSC Standards. The HPAS Panel may request to see evidence of a formal CPD activity such as supporting documentation.

N.5 Informal CPD

Informal CPD is a self-managed learning that is relevant or related to your professional role. This could include activities such as private study, on-the-job practical training, attendance at informal seminars or events where the focus is on knowledge sharing.

N.6 Qualifying Activities

To qualify as CPD an activity must be related to the job of providing hydrographic services. This does not mean that it must be specifically on surveying; workshops on human resources, procurement, general management and so on can also be beneficial, particularly for levels Ø and 1.

The following is a list of the most common qualifying events that one would expect to attend and the maximum number of hours allowed.

- Conferences, workshops, exhibitions and seminars. Day 6 hrs, evening 2 hrs;
- Generic training courses (e.g., UNB MBES). Day 6 hours;
- Manufacturers training courses. Day 6 hrs, part day 3 hours;
- Equipment demonstrations. Up to 6 hours per day;
- Reading professional publications (Hydro Intl, IHR, Soundings). Up to 12 hours p.a.;
- Lecturing/training. Day 6 hrs, part day 3 hours.


The online training CPD log shall detail the date, venue, organiser, subject matter, time claimed and learning outcomes. The Scheme provides a pro-forma logbook (**Appendix P**) for members to use.

N.7 Non-qualifying CPD Activities

Any CPD activity, whether formal or informal, should be planned wherever possible and be relevant to your role or sector. An activity that does not have a clear learning objective that relates to your role or sector would not be considered as an appropriate CPD. Other activities such as networking, social events, informal team building or planning events and involvement on boards, committees or clubs that have little or no relevance to your hydrographic professional activities and sector will not be able to count towards CPD.

N.8 CPD Activity Log

Hydrographic Professional Accreditation Scheme
Continuing Professional Development Activity Log



ACTIVITY CODES

Formal CPD

A1. Courses, conferences, seminars, workshops attended
A2. Training/studying for credential(s)
A3. Distance-education courses/modules you completed
A4. Presentations you gave, articles/books published, posters presented, courses you taught
A5. Other

Informal CPD

B1. Consulting with peers, informal rounds with colleagues, mentoring (mentor or mentee)
B2. Reading journals/texts, CVO publications; reviewing videos/DVDs for specific goals
B3. Independent research or using other resources
B4. Professional contributions (committee work, peer reviews)
B5. Other

Name.....

Membership Number.....

Period From..... To

LEARNING OUTCOME CODES

1. I changed or modified/plan to modify my practice based on this learning activity
2. I pursued/will pursue additional information
3. The findings of this activity reaffirmed or enhanced my knowledge, and no change to my practice is needed at this time

Date	Activity Venue / Organiser	Activity Code	Subject Matter	Learning Outcome	Code (1,2,3)	Hours (Formal)	Hours (Informal)
Total hours for this page							

Hydrographic Professional Accreditation Scheme
Continuing Professional Development Activity Log



Date	Activity venue / organiser	Activity Code	Subject matter	Learning Outcome	Code (1,2,3)	Hours (Formal)	Hours (Informal)
Total hours for this page							
Total hours claimed							

I declare that the information provided in this Record is true and correct. (Note: Proof of attendance may be requested)

SIGNATURE: _____ DATE _____

O Example CV

O.1 Example CV – Level 2 Applicant

Ellen P Lee

Profile

An experienced Hydrographic surveyor with good operational project and offshore surveying experiences. Has gained experience of hydrographic survey planning, field operations (mobilisation & calibration) as well as data processing and QC. Experience working in the UK and overseas in Europe, North & East Africa. Projects include various hydrographic surveys for ports, coastal management groups and government agencies to support transportation and maritime safety.

Career

2010 to Present Navy

Petty Officer Surveyor

Responsible for the day to day running of the Survey Operations and Chartroom on board the survey ship. Expertise gained in the Calibration and QC of systems, QC of the data collection, processing. Project management of daily data and project work records. Systems including MBES, SS, SBES and magnetometer used and positioning & navigation equipment.

Responsible for the compilation of the survey report and supporting documents for the senior officer. This would involve stringent checking procedures of all aspects of the report and collating all relevant calibration certificates. On completion I would then be responsible for ensuring safe arrival of the report and data to the national charting office.

As a Petty Officer Surveyor was responsible for training plans and professional development of junior members of the team, ensuring that new members receive the appropriate on job training and supervision. **See Logbook, section 4.**

2007 – 2009 Navy

Leading Hand Surveyor

Assistant to the Port Surveyor with his day to day duties, providing cover whilst he was on leave and providing hydrographic data to the relevant parties within the dock and port areas.

Assisted and supervised checking the position of marker buoys, light signals and Pilot instructions on approaches to port.

Survey operations supervisor, mentoring and assisting junior surveyors with SV observations whilst processing MBES data.

Instruction of survey methods and use of equipment to locals and ran the training program, under supervision, for all junior surveyor crew onboard ship.

Survey Motor Boat Coxswain including the planning, execution and processing of a SBES survey during a detached boat camp with multiple areas to be surveyed and estimation of timings, providing a full brief to the senior surveyor. **See Logbook, section 3.**

2002 – 2005 Navy
Junior Surveyor

Duties included online monitoring of MBES, SBES, SSS and Magnetometer and assisted with the preparation and deployment of towed bodies, tide gauges. SV probes and CTD probes.

The installation, calibration of gauges and tidal data recording. The collection and classification of Seabed samples and Oceanographic data. **See Logbook, section 1.**

2006 – 2007 Attended training college to complete a foundation degree and Category B Hydrographic Survey course. **See Logbook, section 2.**

Software & Hardware Experience

Caris, Hypack, Kongsberg MBES & USBL, Simrad EA600 SBES, GeoAcoustics systems
CHIRP SSS, Seabird CTD, Valeport Tide gauges, InterOcean S4 current meter, Trimble GNSS. **See Logbook, sections 1,3 & 4.**

Qualifications

- IBSC Cat B surveyor Feb 2006
- Foundation Degree in Maritime Sciences 2007
- ILM level 3 diploma first line management Dec 2010
- Personal Survival Techniques May 2010
- Fire Prevention & Fire Fighting May 2010
- Certificate in GMDSS radio communication May 2008
- ECDL Apr 2008
- National power boat certificate Apr 2008
- ILM level 2 certificate in team leading Jul 2007
- Personal Safety & Social responsibility Jan 2005
- Level 1, First Aid Training Jan 2007

O.2 Example CV – Level 1/Level 2 Applicant

Jill Jackson-Browne

Profile

An experienced Hydrographic surveyor with good operational project and offshore surveying experiences. Has gained experience of hydrographic survey planning, field operations (mobilisation & calibration) as well as data processing and QC. Experience working in the UK and overseas in Europe, North & East Africa. Projects include various hydrographic surveys for ports, coastal management groups and offshore. Site surveys and route surveys as well as some data processing for nautical charting surveys. Experience of MBES and associated peripheral devices as well as side scan sonar, magnetometer and profilers. Data processing, data management and the use of Caris & GIS to create data deliverables.

Education and Training:

BSc in Environmental Sciences 2002

MSc in Geomatics (Hydrography) 2007 (Category A Recognized)

Training Course Certificates:

Y Advanced Survival

Y Advanced Firefighting

Y Advanced First Aids

Y Fire Protection, Detection and Extinction.

Affiliations:

Member of the national Hydrographic Society

Member of local Diving Club

Associate member of the Environmental Institute

Career History

2013-2021 Hydrographic Manager - Hydrospatial Corporation (HyCo)

HyCo is an international surveying group specialising in topographical and hydrographical data collection, processing, validation and management.

As manager developed a range of offshore surveying competencies and capabilities with a small team created to support HyCo and offer services to clients. Experience gained in environmental, energy, civil infrastructure, defence, renewables and marine transport projects.

As Global Hydrographic Manager responsible for the department of 9 that provided inhouse specialist services in relation to hydrographic and offshore surveying for various projects. **See Logbook, section 1.**

2008 – 2013 Hydrographic Surveyor

Initially a Hydrographic Surveyor and then promoted to Senior Surveyor and then Technical Team Lead of surveys in hydrographic and offshore projects collecting and delivering Data. Participated in varied types of survey projects including port, coastal and offshore surveys to assist environmental and hazard assessments, archaeological conservation and port engineering development works. Activities involve the planning, execution and delivery of the projects.

See Logbook section 2 for more details of specific projects that cover key subjects related to the IBSC Standards.

2005 to 2007 Hydrographic Surveyor

Trainee and Junior Surveyor gaining international field and operational experience on numerous small and major hydrographic surveys for government agencies, International Corporations and port authorities throughout the United Kingdom, Middle East Asia and Far East. Developed knowledge and expertise in systems for delivery of hydrographic data within tight deadlines, cost restraints and in harsh environments.

See Logbook section 3

Professional Papers

- 2005 EBS methods over time – A review of temporal aspects of hydrographic surveys
- 2011 MBES Training course
- 2014 Data Processing with CARIS
- 2016 Comparison of object detection and location by different methods
- 2018 Chair of National Hydrographic Conference - Graz

O.3 Example CV – Level 1 Applicant

John Survey

Profile

A highly experienced Hydrographic surveyor with emphasis on project and offshore construction management related to initial hydrographic survey planning, operations and related contract administration. Extensive international experience in the Middle East, Europe, North & East Africa, with extensive knowledge of relevant Geodetic and Hydrographic systems in use. Has been involved in developing key spatial datasets across a spectrum of hydrographic and geoscience sectors including: pipeline route investigation, hydrocarbon exploration & production, transport and environmental resources. Experienced in the data collection, data management and the use of GIS to create data deliverables.

Key Transferable Skills

Hydrographic Survey & mapping	Planning, Problem solving
Digital data and charting	Integrity
Remote Sensing/metocean	Management, logistics
Environmental survey	Project planning, training
Photogrammetry and Cartography	Diversity –people relations
Geosciences –geology and geography	Appreciation to detail

Education and Training:

BSc in Nautical Sciences 1990

MSc in Ocean Mapping 1996

Training Course Certificates:

- Y Basic Hydrographic Survey Short Course
- Y Certificate of competency, Class 1, STCW 95 unlimited
- Y Helicopter Landing Officer
- Y Advanced Survival
- Y Advanced Firefighting
- Y Advanced First Aids
- Y Introduction to International Safety Management (ISM)
- Y Introduction to International Ship and Port facility Security (ISPS)
- Y Global Maritime Distress and Safety System (GMDSS-GOC)
- Y Electronic Chart Display System (ECDIS)
- Y RADAR and ARPA Quality Management.
- Y Port Stay Control.
- Y Oil Tanker Safety and Pollution Prevention.
- Y Fire Protection, Detection and Extinction.

Affiliations:

Member of the local Port and Maritime Advisory Group

Career History

2018-2021 Hydra Survey Solutions Ltd

Set up my own Hydrographic and survey consultancy. Worked as a hydrographic surveyor and analyst for past twelve years looking at the spatial integrity of hydrographic databases in various parts of the world including Europe, Middle East Region, North and East Africa, Australasia; seconded to various energy and construction companies. This included many administrative, contractual, operational tasks – data management of hydrographic and related data, exploration and production spatial data, subsurface spatial analysis, spatial data mining, integrity checks on hydrographic operations and projects as verification of quality and accuracy. **See Logbook, section 3 for more specific IBSC related activities.**

2013-2018 Hydrographic Consultant Overseas Construction International (OCI-Int'l)

OCI-UK is an international technology based engineering and construction company which provides a full range of offshore industry leading services for civil infrastructure, defence, petrochemical, renewables and oil and gas projects with an annual turnover of \$1 billion dollars.

As Global Senior Hydrographic Consultant I was responsible for the department that provided inhouse specialist services in relation to hydrographic and offshore surveying for various projects. **See Logbook, section 2.**

2004 – 2013 Hydrographic Director

Technical lead in hydrographic Data & Geomatics for OCI-UK. Participating in many varied port, coastal and offshore surveys and related data projects to assist construction and development works. Some projects were planned executed and completed within a year, other took up to 5 years from inception and planning to the delivery of final chart, data and written reports.

Project teams involved in Renewables and energy field developments; pipeline routing studies, Offshore field developments – far east, East African EBS, route and pipeline studies, and various site surveys for Geohazards and UXO recovery and removal. African, European and Asian based projects and project teams managed with respect to Hydrographic standards, data collection and delivery. Responsible for preparation of hydrographic survey and charting specifications and standard documentation for company projects globally.

See **Logbook, section 1** for more details of specific projects that cover key subjects related to the IBSC Standards.

2001-2003 Survey Manager (Europe, Africa, Middle East)

Hydrographic survey technical advisor for EAME region reporting to Regional Director. Responsible for the survey content of various Front End Engineering Design (FEED) stage projects, with appraisal of and specification of hydrographic survey resources. Interfaces included environmental, hydrographic, GIS, pipeline and topographic surveys through National Mapping Authority, Environment and Transport Organisations. Initiating and monitoring of internal data management system to support the hydrographic survey division. Projects delivered in South Africa, Middle East, West Africa, Mediterranean and North Africa.

Responsible for total survey delivery; management of 55 surveyors, 20 cartographers and 8 geoscientists in over 10 offices; Review and verification of contracts, design drawings and associated survey documentation, hydrographic surveys at a variety of scales.

1996-2000 Survey Manager (Europe)

Responsible for department involved in collection, administration of hydrographic surveys, environmental, remote sensing, geographical and geological spatial data in a GIS database to support the organisation. Business development and technical delivery of hydrographic techniques and methods to numerous offshore projects in the Caspian and Black Sea regions, North Sea, Mediterranean and Atlantic margins.

Responsible for total survey delivery; management of 35 surveyors, 10 cartographers and geoscientists; Review and verification of contracts, design drawings and associated survey documentation, hydrographic surveys at a variety of scales.

Prior to 1996 Hydrographic Surveyor

International field and operational experience on numerous small and major hydrographic surveys for government agencies, International Corporations and port authorities throughout the United Kingdom, Middle East and North Africa. Seconded to numerous clients to assist in delivery of hydrographic data within large infrastructure projects.

Professional Papers

Hydrographic Surveying in shallow estuarine environments – MSc thesis

1998 Hydrographic Surveying for Construction in Deep Water

2001 Comparison of techniques to position and locate seabed objects

2005 New use of GIS in hydrographic surveys

2012 Training and management of hydrographic teams for new systems

P Logbook

Hydrographic Professional Accreditation Scheme
Logbook of Practical Hydrographic Surveying Experience



The HPAS does not require applicants to use a particular logbook format as it is understood that many may already be using a company format. The HPAS log submitted should complement the applicant's CV and project reports and should also relate to the competencies in the Experience Matrix. This template is provided as an example of the content the HPAS Panel will be looking for.

Name.....

Membership Number.....

Project	Date From	Date To	Sea/Shore based	Position	Main Responsibilities	Technologies used	S-5 Competencies Exercised (See Experience Matrix)

Supervisor: Signature:

Position:

Company:

Date: ...

Q HPAS Panel Job Description

Q.1 HPAS Panel Chair Description

The HPAS Panel chair has responsibility for the following:

- To chair HPAS Panel meetings, ensuring that all items of business are covered and that the HPAS Panel operates in accordance with regulations and the policies and procedures of the IFHS.
- To liaise with the HPAS Secretariat in the preparation of HPAS Panel meetings, reviewing HPAS papers, meeting and HPAS correspondence and the applications by individuals for Accreditation.
- Setting and approving the agenda and the dates of the HPAS Panel meetings.
- To facilitate the active participation of all HPAS Panel members in contributing to the HPAS Panel's consideration of applications and determining an outcome by consensus.
- To ensure that all those attending HPAS meeting are treated with respect and courtesy.
- To address diversity issues and to promote anti-discriminatory practices, at all times.
- To ensure that clear and accurate minutes are recorded, which record any serious reservations which HPAS members may have, regarding an individual's application.
- To be involved in checking draft minutes before they are sent to the Steering Committee.
- To liaise with the HPAS Steering Committee and with other HPAS and IFHS Directors as required.
- To be involved in the recruitment and appointment of new HPAS Panel members and in any consideration about terminating the appointment of a Panel member in line with the procedures of HPAS and IFHS.
- To assist in developing and planning, identified training for HPAS Panel members.
- To safeguard the confidentiality of all HPAS documents and discussions.
- Deciding on the participation of a Panel member who declares an interest in an application.
- The preparation of an annual report on the HPAS Panel's work to the HPAS Steering Committee.

Q.2 HPAS Member Description

- Attend and contribute to the HPAS Panel meetings.
- To liaise with the HPAS secretariat in respect of HPAS Panel meetings, reviewing HPAS papers, meeting and HPAS correspondence and the applications by individuals for Accreditation.
- Reviewing the agenda and confirming to Secretariat availability for the dates of the HPAS Panel meetings.
- Active participation in all HPAS Panel's consideration of applications and determining an outcome by consensus.
- Treat those attending HPAS meeting with respect and courtesy.

-
- To maintain diverse, inclusive and anti-discriminatory practices, at all times.
 - Review the draft minutes of meetings to ensure that an accurate record is made.
 - On request support and advise the Chair in checking draft documents prior to their release.
 - To safeguard the confidentiality of all HPAS documents and discussions.

Declare any conflicts of interest in an application if the Individual is a colleague or is well known to the HPAS Panel member.

R Register of Accredited Individuals

proposed REGISTER OF ACCREDITED INDIVIDUAL HYDROGRAPHIC PROFESSIONALS

Key

	Public Domain
	HPAS Only
	At discretion of Individual

Accreditation Number	Surname	Given Name	IFHS Membership Number	National Society	Level	Date of Accreditation	Employment Sector	CPD Status	CPD Assessed	Logbook Status	Logbook Assessed	Contact Details (1)	Contact Details (2)
10001	Abel	Chris		UK	1	Sep. 2021	Industry	Y	June'21	Y	June'21	ca@uk	4479669373
10002	Cain	Stephane		France	1	Sep. 2021	Government	Y		Y			
10003	Jones	John		UK	1	Sep. 2021	Industry	Y		Y			
20001	Smith	Sue		UK	2	Sep. 2021	Government	Y		Y			
20002	Paters	Colin		S Africa	2	Sep. 2021	Government	Y		Y			
10005	St. Paul	Jack		Benelux	1	Sep. 2021	Government	Y		Y			
20003	Michaels	Tom		UK	2	Sep. 2021	Government	Y		Y			
20004	Johns	Dick		S Africa	2	Sep. 2021	Industry	Y		Y			
20005	Lucan	Dirk		Benelux	2	Sep. 2021	Industry	Y		Y			
10006	Bergmann	Ingrid		Germany	1	Sep. 2021	Industry	Y		Y			
30001	Patel	Jas		S Africa	3	Sep. 2021	Industry	Y		Y			
30002	Achmed	Raz		UK	3	Sep. 2021	Industry	Y		Y			
30003	Hughes	Jane		UK	3	Sep. 2021	Industry	Y		Y			
30004	Parker	Graham		UK	3	Sep. 2021	Industry	Y		Y			
0	Rae	John		UK	0	Sep. 2021	Government	Y		Y			
1	Ritchie	Steve		UK	0	Sep. 2021	Industry	Y		Y			
2	Cousteau	Jacques		France	0	Sep. 2021	Government	Y		Y			