Occupational Scientific Diving requirements facilitating safe mobility of scientific divers within Europe

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ESDP consultation document 06, v.1

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* *In this document, the term Scientific Diving always refers to an **occupational activity** in the framework of science*

An ESDP's contribution to the mutual recognition of each member state's standards and the establishment of equivalence making possible the mobility of scientists in Europe and collaborations.

This document is a summary of the situation in each country that responded to the survey conducted by the panel. As the situation of countries with respect to the use of diving techniques may change over time, the content of this document will be updated as information becomes available.

The aspects that are retained are the following:

The European Scientific Diving Panel (ESDP) acts as an operational platform to advance underwater scientific excellence and to promote and implement a practical support framework for **occupational scientific diving related activities.**

The purpose of Scientific diving is the undertaking and delivery of underwater science.

Definition and rationale for Occupational Scientific Diving

Occupational Scientific Diving is diving that is science-led and is needed to support professional research and education and for the protection, conservation and monitoring of the natural and cultural heritage environment.

It is not recreational nor commercial diving.

Scientific Diving exists in a health and safety framework that involves certified scientific divers, diving officers, hyperbaric physicians, scientific project leaders, heads of laboratories, administrators and legislators.

Occupational Scientific Diving is a highly productive, cost-effective "*in situ*" research tool that supports and advances marine research and archaeology through providing efficient, innovative and targeted techniques and methodologies for selective and efficient sampling and complex experimental work underwater (quantitative survey, quantitative observation, making in situ measurement, undertaking impact studies, performing ecological analyses, evaluating new techniques, mapping underwater areas, profiling subtidal geology/geochemistry, and accurate deployment/retrieval of underwater apparatus).

This is particularly effective for undertaking science in coastal or restricted/remote environments e.g., polar regions and under ice where Scientific Diving can offer an accurate and reliable method for deploying, maintaining, and retrieving equipment in remote locations. Scientific Diving can be used to research global scientific questions including climate change, ocean acidification, seafloor ecosystem functioning, paleoclimate reconstruction.

Scientific Diving is becoming increasingly important as a relevant monitoring tool in support of policy needs, more particularly to address the monitoring requirements.

Scientific diving is also consistent with the international demand for a responsible, resource-conserving, and sustainable research methodology in Europe.

Definition of Citizen Scientific Diving

Diving for the Citizen Science: legal framework, aims, actors, and public are different

Citizen Science (= community science, crowd science, crowd-sourced science, civic science, volunteer monitoring) is scientific research conducted, in whole or in part, on a voluntary basis, by amateur (or nonprofessional) scientists.

Citizen science is sometimes described as public participation in scientific research, participatory monitoring, and participatory action research whose outcomes are often advancements in scientific research by improving the scientific communities capacity, as well as an increasing the public's awareness and understanding of science.

The training of **volunteer recreational divers** to scientific specialties (such as marine biology or oceanology certifications) as organised by recreational diving agencies like CMAS or PADI is an added value. Aiming at the conscientisation of a broad public, it is a clear advantage for further participation to citizen science projects.

ESDP is encouraging such training aiming at providing valuable data to scientific research. However, those "*scientific specialities certifications*" like marine biology, fresh water biology, oceanology or geology, ..., are not qualifying the owner to be contracted and employed as a scientific diver as defined above.

ESDP standards

The requirement to establish standard competencies throughout Europe was foreseen, and in the late 1980s scientists who used diving in their research sought to initiate the **harmonization of the rules and procedures for scientific diving in Europe**, gathered in a European Scientific Diving Committee (ESDC).

In 2000, during the final meeting of ESDC in Banyuls-sur-Mer, France, this effort finally resulted in the **acceptance and development of two European Scientific Diving standards: that of European Scientific Diver (ESD), and of Advanced European Scientific Diver (AESD)**. The quality and widespread acceptance of these draft standards by much of the European scientific community has resulted in them already becoming adopted within the health and safety legislation of several EU countries.

This is developed in the **ESDP Consultation Document Number 1**: ***Common Practices for Recognition of European Competency levels for Scientific Diving at work*** (October 2009, revised April 2017)

The need of a legal status

"Professional" **scientific divers do not actually receive a salary for diving**. They are paid to work as researchers, teachers, professors, technicians or engineers. It is the fact of having **to penetrate the underwater environment that requires the use of diving techniques adapted to the scientific discipline in question**. As this activity is carried out within a professional framework, it is necessarily governed by the law, under the control of a ministry (education, research, labour, sometimes the army). However, it is clear that not all European countries have the necessary legal arsenal. This sometimes-contrasting situation between European states must be managed to allow mobility and collaboration. One of the aims of the ESDP is to facilitate and advise countries wishing to engage in a process of recognition, acceptance and protection of scientific diving and its practitioners. The ultimate aim is not to direct anyone, but to ensure that as many memberships as possible can be achieved in order to facilitate international relations.

Years of concrete experience and success (legal recognition of diving and above all the possibility of practising it in complete safety) have made it possible to define a certain number of objective and practical criteria allowing a classification of the states in three categories (currently) and initiate and develop mutual recognition between states having such policies and rules.

The main difficulty to be solved is to bridge the gap that almost always exists between the analysis and the wish for concreteness of the members of the different national committees (NSDC) and the legal and political reality of each country (which of course wants to be independent and does not accept interference in its internal affairs). This leads to the heterogeneity of the current situations and therefore to the urgent need to find ways to build those bridges. The aim is to establish lists of equivalence and to have them recognised by a maximum number of states, which is only possible within the framework of a seamless coherence.

The purpose of this consultation document is to take stock of the situation of the countries that are members or statutory members and of the voluntary candidate countries. It is clear that this version will be followed by others, as they are updated, until it becomes a document with an workable equivalence list.

Current ESDP membership:

Candidate member: Creating a NSDC; on the way to implement ESD and AESD as minimum initial training standards

Requirement:
- Updated list of members and involved institutions
- Quality control of the initial training]

Member: Having in place a NSDC in contact with a national authority that has responsibility for occupational SD and having already implemented the ESD and AESD qualifications as the primary standards

Supplementary requirement:
- Published status,
- Minutes of meetings and/or newsletter
- Name of the national certification
- Authority issuing certification]

Statutory member: SD and NSDC recognized by law, as well as ESD and AESD or equivalent

Supplementary requirement:
All legal texts
Official list of the agreed formation centres

CURRENT SITUATION OF EUROPEAN COUNTRIES (January 2022)

CONTACT	CANDIDATE MEMBER	MEMBER	STATUTORY MEMBER
Austria	Cyprus	Bulgaria	Belgium
Ireland	Gibraltar	Croatia	Finland
Monaco	Greece	Italy	France
Spain	Poland	Portugal	Germany
	Slovenia		Norway
	The Netherlands		Sweden
			United Kingdom

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Analysis of the different criteria in each country

	SD national legal status	SD association*	Supervisory authority	National Committee (NSDC)	Supervisory authority	Condition for initial training	ESD and AESD in force by law	Compatible standards by law
Belgium	YES	NO		BWGSD	BELSPO	YES	YES	n/a
Bulgaria	NO	BNAUA		NO		NO	NO	NO
Croatia	NO	CSDC		NO		YES	NO	NO
Cyprus	NO	NO		*in progress*		NO	NO	NO
Finland	YES	FSDSA/STOY		FSDSA board	Ministry of education	YES	YES	n/a
France	YES	Colimpha	Prefecture	CNPS	Ministry of labour	YES	NO	YES
Germany	YES	KFT		KFT	BMBF	YES	NO	YES
Gibraltar	NO	NO		GSDC	DESCCH	YES	NO	YES
Greece	NO	NO		*in progress*		NO	NO	NO
Italy	YES	AIOSS		AIOSS		NO	NO	NO
Norway	YES	NSD		NSD		YES	YES	n/a
Poland	YES	PCSD		NO		YES	NO	YES
Portugal	YES	APorMC		NO		NO	NO	NO
Sweden	YES	NO		SSDC	Swedish work environment authority	YES	NO	YES
The Netherlands	NO	DSDP		*in progress*		NO	NO	NO
United Kingdom	YES	NO		SDSC	HSE	YES	YES	n/a

National Committes [***bolded***: *National Committee by law*]

BE **BWGSD: Belgium working group on scientific diving / BELSPO: PS Employment, Labour and Social Dialogue, training agency**
BG BNAUA: Bulgarian National Association of Underwater Activity (CMAS)
DE **KFT: Die Kommission Forschungstauchen / BMBF: Deutschland Bundesministerium für Forschung und Technologie**
FI **FSDSA/STOY: Finnish Scientific Diving Steering Association**
FR **CNPS: National Committee for Scientific Diving**
FR Colimpha: French Scientific Divers Association
GI **GSDC: Gibraltar Scientific Diving Committee / DESCCH: H.M. Governments Department of the Environment, Sustainability, Climate Change and Heritage**
HR CSDC: Coordination of Scientific Divers of Croatia
IT AIOSS: Italian Association of Scientific Divers
NL DSDP: Dutch Scientific Diving Platform
NO **NSD: Norwegian Scientific Divers**
PL PCSD: Polish Committee on Scientific Diving
PT APorMC: Associação Portuguesa de Mergulho Científico
SE **SSDC: Swedish Scientific Diving Committee / HSE: UK Health and Safety Executive**
UK **SDSC: UK Scientific Diving Supervisory Committee**

*__SD association__: Even if recognised by law, and whatever benefits may be attached to it, the legal status and representativeness of an association is different from that of a national committee representing the authorities responsible for scientific diving at national level. Historically, and depending on the country, an association could, and may, become a NSDC, or a national committee could, and may, be designated by the state authorities

Initial training conditions: Most surveyed countries do not provide initial technical training for scientific diving. Recreational levels are generally considered to be CMAS equivalent ***. The actual training may be partly carried out by private professional agencies (e.g. France), supplemented by peer training, often specialised according to the discipline. It may also be provided by nationally or internationally organised training (e.g. Sweden or Finland), recognised if the organiser is a statutory member. These trainings are at least in line with the ESD or ESDA minimum standards. CMAS scientific trainings are not recognised in the occupational framework of statutory members.

Initial minimum standards: The statutory members have all specified in their law this notion of minimum standards of initial training. For countries such as Germany, France and the United Kingdom, which had legislated on scientific diving prior to the adoption of the ESD and AESD Standards in 2000, this minimum appears in other terms. As the standards were built on what already existed, these countries which served as a model are in line with this precedent. It should be noted that the evolution of laws sometimes changes the conditions. For example, in France, the last update created a category of scientific diver which does not fall within the ESD/AESD framework (maximum depth 12 m), limiting for the moment the mobility of these divers, who are otherwise very few in number.

	SD national certification	Name	Issuing authority	Validity	Card/logbook
Belgium	YES	BSD/ABSD	BELSPO	5 yrs	YES/YES
Bulgaria	NO	n/a	n/a	n/a	n/a
Croatia	NO	n/a	n/a	n/a	n/a
Cyprus	NO	n/a	n/a	n/a	n/a
Finland	YES	Sukellusalan ammattitutkinto, tutkimussukelluksen osaamisala	Finnish National Agency for Education	5 yrs	YES/YES
France	YES	CAH* (4 classes), HSE	BCS certification	5 yrs /10 yrs**	NO/YES
Germany	YES	Geprüfter Forschungstaucher	Prüfungskommision Forschungstaucher	?	YES/YES
Gibraltar	NO	n/a	n/a	n/a	n/a
Greece	NO	n/a	n/a	n/a	n/a
Italy	NO	n/a	n/a	n/a	n/a
Norway	YES				
Poland	NO	n/a	n/a	n/a	n/a
Portugal	?				
Sweden	YES	S30, A40, SSD	Armed forces	Lifetime S30, A40/5yrs for SSD	YES/YES
The Netherlands	NO	n/a	n/a	n/a	n/a
United Kingdom	YES		HSE		

FI Sukellusalan ammattitutkinto, tutkimussukelluksen osaamisala = AESD equivalent, national professional examination for scientific divers.
FI FSDSA issues certificates to Finnish scientific divers that their training meets the AESD or ESD standards.
FR * CAH: Certificat d'Aptitude à l'Hyperbarie, 4 classes: 0: max 12m, I: max 30m, II: max 50m, III: beyond 50m / HSE approved
FR BCS: Centers certified by the French Committee for Accreditation (fulfils the requirements of the standard NF EN ISO/CEI 17065:2012)
SE SSD: Swedish Scientific Diver / S30: SCUBA 30m / A40: diving to greater depth than 30m, but compatible with AESD only additional training
SE EDTC: The European Diving Technology Committee
BE BELSPO: Belgian Science Policy Office / BSD: Belgian Scientific Diver / ABSD: Advanced Belgian Scientific Diver
UK, FR HSE: Health and Safety Executive

FR ** general validity 5 yrs, specific validity for archaeology 10 yrs

	Medical issue*	Specific certification	Reciprocity		First aid certification	Validity
Belgium	YES	1 yr	YES		All divers	1 yr
Bulgaria	YES	5 yrs	?		Desirable	5 yrs
Croatia	YES	1 yr	?		All divers	1 yr
Cyprus	Advised	1 yr	n/a		Advised	n/a
Finland	YES	1 yr/3 yrs**			All divers	1 yr/3 yrs****
France	YES	1 yr/5 yrs **			All divers	?
Germany	YES	3 yrs			All divers	1 yr
Gibraltar						
Greece	YES	1 yr			All divers	?
Italy	YES	1 yr			Advised	
Norway	YES	1 yr			Desirable	3 yrs
Poland	YES	1 yr/2 yrs**			Team leaders	5 yrs
Portugal	NO	n/a	n/a		Advised	1 yr
Sweden	YES	2 yrs/5 yrs***			All divers	?
The Netherlands	NO *(in progress)*	n/a	n/a		n/a	n/a
United Kingdom	YES	1 yr			Desirable	3 yrs

** See also ESDP consultation document 05*

FI, FR, PL ** depends on the hyperbaric physician

SE *** depends on age 5 yrs up to 40, 2 yrs if more than 40

FI **** depends on certification

	Liability issues	Liability insurence	Specific insurence	Risk assessment for dive mission
Belgium	YES	compulsory	compulsory	
Bulgaria	YES	strongly advisable	strongly advisable	
Croatia	YES	compulsory	compulsory	
Cyprus	YES	compulsory	optional	advisable
Finland	YES	compulsory	optional	
France	YES	compulsory	compulsory	
Germany	YES	compulsory	optional	compulsory
Gibraltar	YES	compulsory	advisable	advisable
Greece	YES	compulsory	compulsory	
Italy	YES	strongly advisable	compulsory	
Norway	YES	compulsory	optional	
Poland	YES	strongly advisable	compulsory	compulsory
Portugal	YES	compulsory	compulsory	
Sweden	YES	compulsory	compulsory	compulsory
The Netherlands	NO *(in progress)*	n/a	n/a	n/a
United Kingdom	YES	compulsory	compulsory	

	Deco issues*	Deco tables	Deco chamber
Belgium	YES	US-Navy	
Bulgaria	YES	Employer choice	
Croatia	YES	Any deco table	
Cyprus	YES	Any deco table	
Finland	YES	National deco tables, Employer choice	Risk assessment
France**	YES	National deco tables, Employer choice*	2 h, if stop(s) required ***
Germany	YES	National deco tables	3 h
Gibraltar			
Greece	YES	Any deco table	
Italy	YES	Any deco table	
Norway	YES	Any deco table	
Poland	YES	Employer choice	
Portugal	YES	Any deco table	
Sweden	YES	L-table	6 h if no stops required/ 30 min if planned stops/ On site if planned surface deco
The Netherlands	NO *(in progress)*	n/a	n/a
United Kingdom	YES	Any deco table	

* Also concerns the choice of dive computer by the employer who thus assumes the choice of the decompression table

FR ** in the case of diving by nationals of several countries with different laws, or by any scientist diving abroad, the rule is to use the most restrictive table

FR *** the legislation currently in force does not indicate a limit in the case of remote field work

	Breathing gas issues	Air diving Depth limit	Trimix	Nitrox	Oxygen deco (0-6 m)	Oxygen emergency
Belgium	YES		YES	YES	YES	YES
Bulgaria	YES		YES		YES	YES
Croatia	YES	40 m/55 m	YES	YES	YES	YES
Cyprus	YES		YES	YES	YES	
Finland	YES	30 m/50 m surface supply	YES	YES	YES	YES
France	YES	Class dependent	YES	YES	YES	YES
Germany	YES	50 m	YES	YES	YES	YES
Gibraltar						
Greece	YES	30 m/max. 50 m	YES	YES	YES	
Italy	YES		YES	YES	YES	YES
Norway	YES	18 m/30 m surface supply.		YES	YES	
Poland	YES	33 m	YES	YES	YES	YES
Portugal	YES		YES	YES	YES	YES
Sweden	YES	30m on S30 and SSD/ deeper require A40 certificate	YES	YES	YES	YES
The Netherlands	NO *(in progress)*	n/a	n/a	n/a	n/a	n/a
United Kingdom	YES		YES	YES	YES	YES

	Special applications	CCR*	Surface supply	Apnea	Cold waters****	Physical ceiling*****	Water temperature
Belgium	YES	YES	NO	NO	YES	YES	any temperature
Bulgaria	YES	YES	NO	NO	NO	NO	n/a
Croatia	YES	YES	NO	NO	NO	YES	n/a
Cyprus	YES	YES	NO	YES	n/a	YES	n/a
Finland	YES	YES	YES	YES	YES	YES	any temperature
France	YES	YES	YES	YES**	YES	YES	>10°C & <30°C Special equipment + training required if <10°C
Germany	YES	YES	YES	YES***	YES	YES	depending on the risk assessment
Gibraltar	NO						
Greece	YES	YES	*NO*	*NO*	YES	YES	>13°C
Italy	YES	YES	NO	YES	YES	YES	n/a
Norway	YES	YES	YES	NO	YES	NO	-1.8°C
Poland	YES	YES	NO	YES	YES	NO	polar 0-6°C/4-17°C
Portugal	YES	YES	NO	YES	YES	YES	n/a
Sweden	YES	YES	NO	YES	YES	YES	depending on the risk assessment
The Netherlands	NO *(in progress)*	n/a	n/a	n/a	n/a	YES	n/a
United Kingdom	YES	YES	NO	NO	YES		n/a

* CCR: Mixed gas closed circuit rebreather

FR ** max 10 m

DE *** under condition

**** polar seas, mountain lakes

***** cave, ice, wreck diving

	SD visitors	Mission Order (MO) for SD visitors	SD must be specified on the MO	Certified scientists	Diving medical *see consultation document 05*	SD visitor can be diver team leader	SD visitor can be rescue team leader	Max duration in the country before needing host regulation
Belgium	Under conditions	compulsory	compulsory	under conditions (Belgian certificat or ESD/AESD)	YES	YES	YES	
Bulgaria	Under conditions	optional	optional	under conditions depending of the host lab		NO	YES	Not stated
Croatia	Under conditions	compulsory	optional	under conditions		NO	NO	Not stated
Cyprus	YES	optional	optional	YES		YES	YES	No limit
Finland	Under conditions	NO	n/a	YES		YES	YES	n/a
France	Under conditions	compulsory	compulsory	under conditions depending of the host lab	YES	YES	YES	Validity of the national certification
Germany	Under conditions	compulsory	compulsory	Under conditions	YES	YES	YES	No limit
Gibraltar	Under Conditions	NO	n/a	n/a		YES	YES	No limit
Greece	NO	compulsory	compulsory	YES		NO	NO	
Italy	Under conditions	optional	optional	under conditions depending of the host lab		YES	YES	Not stated
Sweden	Under conditions	optional	comppulsory	Under conditions		YES, need 2 weeks course	NO	No limit
The Netherlands	Under conditions	compulsory	optional	Under conditions		NO	NO	No limit
Portugal	YES	optional	optional	YES		YES	YES	No limit
Sweden	Under conditions	NO	n/a	Under conditions	YES	YES with knowledge of Swedish regulation	YES	Not stated
The Netherlands	NO *(in progress)*	n/a	n/a	n/a	n/a	n/a	NO	n/a
United Kingdom	Under conditions	compulsory	compulsory	under conditions (CMAS*** equivalent)	YES	YES	YES	HSE criteria for short visits

	Uncertified diver (occupational SD)	Postdoc	PhD	Other student	Volunteer
Belgium	Under conditions	YES if resident in Belgium	YES if resident in Belgium	YES if resident in BE	YES if resident in Belgium
Bulgaria	Under conditions	YES, based on certification and experience	YES, based on certification and experience	under conditions, based on certification and experience	YES, based on certification and experience
Croatia	Under conditions	Under conditions	Under conditions	NO	Under conditions
Cyprus	YES	YES	YES	YES	YES
Finland	Under conditions	YES	YES	NO	If meets standards
France	Under conditions	NO	NO	NO	only permitted in archaeology (under conditions)
Germany	Under conditions	YES	YES	YES	YES
Gibraltar	NO				
Greece	Under conditions	YES if affiliated with GR institution	YES if affiliated with GR institution	YES if affiliated with GR institution	YES if affiliated with GR institution
Italy	YES	YES	YES	YES	YES
Norway	Under conditions	YES	YES	YES	NO
Poland	Under conditions	Under conditions	Under conditions	Under conditions	Under conditions
Portugal	Under conditions	YES	YES	Under conditions	YES
Sweden	Under conditions	NO	NO	Under conditions during training and if supervised	NO
The Netherlands	NO *(in progress)*	n/a	n/a	n/a	n/a
United Kingdom	Under conditions	YES, but default to UK regulation for long stay	YES, but default to UK regulation for long stay	YES, but default to UK regulation for long stay	YES, but default to UK regulation for long stay

APPENDIX

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Welcome to dive for science in *** !

Summaries of the national requirements for scientific diving

(published under the responsibility of the national representative)

Welcome to dive for science in Belgium! (2020)

All dives are operated from large vessels and the weather, water temperature, visibility and tidal current make the scientific dive very specific.

In case you have to come with us in field work and operate scientific diving in the Belgian part of the North Sea, you are welcome to contact the Belgian Federal North Sea Research Programme - Scientific diving
scientific_diving@belspo.be

Welcome to dive for Science in Cyprus! (2022)

Legal status of scientific diving
There are no legal standards regulating scientific diving in Cyprus though efforts are underway to establish these.

Medical examinations
It is highly recommended to undergo medical examinations, either in Cyprus or abroad, prior to any dive, preferably by a physician specializing in hyperbaric medicine.

Insurance
If you are employed for diving at work by a Cypriot employer, they should have an accident insurance, but you should check that this insurance also covers diving. However, it is a good idea to remind the employer to declare your work profile to the insurance company to avoid any penalty fees. If you are working with a grant or acting as a volunteer, you should get an insurance yourself.

Decompression issues
The choice of decompression planning method should be decided by the team leadership prior to the dive, preferably based on a risk assessment. It is highly recommended to use diving computers during dives.

First Aid
It is preferable for all divers to have a valid first aid (CPR) qualification for treating diving casualties. All SD team members should have a training for, or at least be familiar with all first aid equipment available, including oxygen administration to diving accident casualties.

Breathing gas
Air diving limit for professional scientific diving should dependent on the risk assessment and the divers' qualification. Mixed gases should be used according to the qualifications and risk assessment.

Volunteers
Volunteers may join SD teams, if accepted by the dive leaders.

More information
Scientific diving in Cyprus is currently being formulated following ESDP standards. For any further information or questions concerning scientific diving in Cyprus, you can contact the scientific diving team representatives at the Cyprus Marine and Maritime Institute. https://www.cmmi.blue/

Contact: Louis.Hadjioannou@cmmi.blue

Welcome to dive for Science in Finland (2020)

Legal status of scientific diving
There is a professional examination for scientific diver that follows the standard for Advanced European Scientific Diver (AESD). Whether it is necessary to hold a professional SD certificate, depends on the employer or head of the unit responsible for the SD activity. Certificates that comply with the ESD and AESD standards are generally accepted, but a check-out dive is a common practice for new members joining a SD team.

Medical examinations
Medical examinations obtained in other countries apply also in Finland, as long as they comply with the local level of scrutiny. The examinations for professional diving are generally valid for 12 months, but in special cases, such as scientific diving, the doctors may extend the validity up to 36 months.

Insurance
If you are employed to dive by a Finnish employer, you are automatically covered by a statutory accident insurance. However, it is a good idea to remind the employer to declare your work profile to the insurance company to avoid any penalty fees. If you are working with a grant or acting as a volunteer, you need to get an insurance yourself.

Decompression issues
The choice of decompression planning method is for the team leadership to decide, based on a risk assessment. Diving computers are generally used during dives.

First Aid
All divers must have a valid first aid (CPR) qualification for treating diving casualties. Dive mission leaders need to have an advanced level (Finnish Red Cross Level 2) qualification. All SD team members also need to have a training for all he first aid equipment available, including oxygen administration to diving accident casualties.

Breathing gas
Air diving limit for professional scientific diving is dependent on the risk assessment and the divers' qualification. The Professional SD certificate allows diving down to 30 meters with air. Mixed gases may be used according to the qualifications and risk assessment.

Volunteers
Volunteers may join SD teams, if accepted by the dive mission leaders. Finnish work legislation may consider volunteers as employees, if any kind of compensation such as food or accommodation is provided.

More information
The coordinating body for Finnish scientific diving is FSDSA. For any further questions concerning scientific diving in Finland, you can contact us. Please find the contact information of the board ("Hallitus" in Finnish) on these pages.
https://www.facebook.com/tutkimussukellus/

Welcome to dive for science in France! (2022)

Legal status of scientific diving

There is a professional certification for “diving scientists” [Certificat d’Aptitude à l’Hyperbarie - CAH, mention B] defined by law [Decree n° 2011-45 ETST1023798D of January 11th, 2011]. For foreign scientists who don’t have a CAH, it is necessary to hold a professional scientific diver (SD) certificate issued by a relevant national SD authority and a written authorization of their employer. Certificates that comply with the ESD and AESD standards are generally accepted, but a check-out dive is a common practice for new members joining a SD team.

Medical examinations

Medical examinations obtained in other countries apply also in France, as long as they comply with the local level of scrutiny. The examinations for professional diving are generally valid for 12 months, but in special cases hyperbaric physicians may extend the validity up to 5 years (e.g. blood, spirometry, hearing, ECG). The validity period must cover all of the planned days/weeks/months of stay.

Insurance

As an employee occupying a scientific position in a French laboratory you are covered by a statutory accident insurance throughout the duration of your contract. In all other cases a SD must be covered by an insurance that does not exclude risks of professional diving. Do not forget to remind the employer to declare your work profile to the insurance company to avoid any penalty fees. In all other cases the SD must get a specific accident insurance covering the risks of professional diving. Colimpha (see below), the French association of scientific divers, can provide insurance covering risks specific to the practice of diving (except apnea).

Decompression issues

The choice of the decompression planning method depends on the diving techniques to be used and is for the team leadership to decide, based on a risk assessment. In France, the reference decompression tables are those annexed to the decree n° MTRT1901237A of May 14th, 2019 (Journal officiel of May 24th, 2019) relating to hyperbaric work carried out in underwater environment. However, diving computers, embedding an algorithm compliant with reference tables, may be used depending on acceptance of the French employer.

First Aid

All divers must have a valid first aid (CPR) qualification for treating diving casualties. Dive mission leaders need to have an advanced level qualification. All SD team members also need to have a training for all the first aid equipment available, including oxygen administration to diving accident casualties.

Scientific Diving Procedures

General SD procedures are defined by law [Decree n° MTRT1901237A of May 14th, 2019]. Instructions on procedure and rules for archaeology are detailed in the ministerial order n° MCCC1610914A of April 21st, 2016.
Collection Permits: in France, collecting samples by diving require prior authorization delivered by governmental competent authorities (Maritimes Affairs).

In all cases, visitor scientists are invited to seek advice from the local diving officer. All their dives will be carried out under the responsibility of a hyperbaric operations manager who will ensure the proper application of the rules.

Breathing gas

Air diving limit for SD depends on the risk assessment and the divers' qualification. The French SD certificate allows diving down to 50 meters with air; however mixed gases can be used at any depth and must be used for greater depth. Mixed gases or pure oxygen may be used according to specific qualifications and risk assessment.

Volunteers

Non SD certified volunteers are currently not accepted.
An exception is made for the employment of volunteers in the context of an archaeological workcamp. The DRASSM may grant a temporary authorisation.

More information

The coordinating body for French SD is the CNPS (Comité National de la Plongée Scientifique). For any further questions concerning SD in France, please contact us.

- Gérard Thouzeau: gerard.thouzeau@univ-brest.fr (Chairman of the CNPS): https://www.imbe.fr/comite-national-de-la-plongee.html?lang=en

You can also contact:

- Jean-Pierre Féral: jean-pierre.feral@imbe.fr (Chairman of the ESDP - European Scientific Diving Panel): http://ssd.imbe.fr/ESD-European-Scientific-Diver
- Catherine Perrette: catherine.perrette@gmail.com (Secretary of the Colimpha, Association Française des Plongeurs Scientifiques): http://colimpha.com/
- Sébastien Legrand: sebastien.legrand@culture.gouv.fr (hyperbaric control - DRASSM, http://archeologie.culture.fr/fr/drassm147http://archeologie.culture.fr/fr/drassm.

(*also published in the CNPS' Newsletter: Féral J.-P. 2019. A propos de la mobilité professionnelle en Europe et de l'accueil des scientifiques plongeurs en France. La Lettre du CNPS 5 : 15-17*)

Welcome to dive for science in Gibraltar! (2022).

Legal status of scientific diving
There are currently no legal standards regulating scientific diving in Gibraltar although these are currently being drafted. Any research efforts in British Gibraltar Territorial Waters (BGTW) require a licence from the Ministry for the Environment.

Medical examinations
It is highly recommended to undergo medical examinations, prior to any dive.

Insurance
Divers are required to be insured for any diving activities.

Decompression issues
Decompression planning is not a requirement but should be implemented by the diving team.

First Aid
It is desirable, but not currently a requirement for all divers to have a valid first aid (CPR) qualification.

Breathing gas
Breathing gases should be relevant to the dive team expertise and qualifications, these would be implemented by the dive team.

Volunteers
Volunteers may join SD teams, if accepted by the dive leaders.

More information
Scientific diving legislation in Gibraltar is currently being drafted to ESDP standards. Further information can be obtained by contacting the Department of the Environment, Sustainability, Climate Change and Heritage.

email: marine.monitoring@gibraltar.gov.gi or clive.crisp@gibraltar.gov.gi

Welcome to dive for science in Italy! (2020)

Legal status of scientific diving

Scientific dive is not currently and explicitly regulated by law, however, being work activities, they are subject to different laws concerning work safety and the specific obligations of the profession carried out by the worker. Some categories of professionals are required by law to be enrolled in their professional order (e.g., biologists, geologists, chemists, engineers, physician, etc.). Foreign workers can work as long as they or their employers are qualified to work in Italy, or they are guests of an Italian employer (public or private) who takes responsibility for them (based on signed agreements). All workers undergo occupational safety and health regulations (L. 81/2008). This means that all work activities are subjected to a risk assessment for which the employer is responsible. Although no explicit law applies to scientific dive, employers are called to regulate and supervise the safety of their work activities. In this context, the Higher Institute for Environmental Protection and Research and the Regional Environmental Protection Agencies have published the handbook of Good Practice for the safe conduct of underwater activities, which has been approved by the Ministry of Labour and Social Policies in 2013. This manual forms the basis for the rules applied by many Universities, Research Institutes and other public and private institutions. All these manuals provide that the minimum training of scientific divers is that defined by the European Scientific Diving Panel (ESDP) for European and Advanced European Scientific Divers, with the exception of students and trainees, for whom specific derogations, strict limitations and trainer supervisions are provided.

Medical examinations

Italian law requires workers to undergo annual health surveillance and the certificate of suitability for the job is issued by the occupational doctor. This also applies to self-employed workers and foreign workers. All Good Practice manuals recommend that the occupational doctor seeks the prior advice of a hyperbaric physician. For more information, please contact the Italian Society of Underwater and Hyperbaric Medicine. A provisional list of Medical Examiner of Divers that may serve as consultants for occupational doctors can be find on the site of the International Diving Medical Expert Board-IDMEB.

Insurance

All employers must provide insurance coverage to their workers. The “Istituto Nazionale per l’Assicurazione contro gli Infortuni sul Lavoro” (INAIL) is the Italian statutory (and compulsory) insurance against accidents at work and professional diseases. The “Istituto Nazionale della Previdenza Sociale” (INPS) is the main entity of the Italian public retirement system. All waged labourer and most of self-employed, without a proper autonomous social security fund, must be subscribed to INPS.

Decompression issues

The team leader has the responsibility to choose decompression planning method, based on the (mandatory) risk assessment and to the adopted good practice rules. All Good Practice manuals recommend the use of dive computers.

First Aid

In Italy, first aid is assigned by law to the national health system and the European emergency number, 112, is progressively adopted by all the Regions, unifying the other emergency number : 112 (Carabinieri), 113 (State Police), 115 (Fire Fighters) and 118 (medical aid). For safety and accidents at sea you can call the coast guard emergency number (1530) and use the international VHF channel 16. In case of injury, everyone that are able to, must give assistance, otherwise they are guilty of distress omission. As compliant with the ESDP training standards, all Good Practice manuals provide that members of diving teams (including designated surface assistants) are qualified for first aid (CPR) and oxygen administration in case of diving issues.

Breathing gas

Air diving limit for professional scientific diving is dependent on the risk assessment and the divers' qualification. Mixed gases may be used according to the qualifications, risk assessment and to the adopted good practice rules.

Volunteers

Volunteers may join SD teams, if accepted by the dive mission leaders. However, Italian work legislation always applies to volunteers and students whenever they formally participate to a working activity. Therefore, they undergo to all the workplace safety laws. Note that Citizen Science programs are exempt from the working context as long as the participants carry out their activities independently and in their free time.

More information

The coordinating body for Italian SD is the Italian Association of Scientific Divers (Associazione Italiana Operatori Scientifici Subacquei, AIOSS). For any further questions concerning SD in Italy, please contact us at info@aioss.info.

Welcome to dive for science in Norway! (2020)

Legal status of scientific diving

Norway has implemented the most restrictive rules and legislations within Europe, perhaps also on a worldwide basis. According to Norwegian Labour Inspection Authority, only commercial diving licenses are approved from 2021, i.e. “klasse A” for easy diving and “klasse B” for working with heavier instruments under water. More information is available here: https://www.arbeidstilsynet.no/tema/dykking/ . As of now, the Norwegian Labour Inspection Authority does not provide any information in English about diving on their homepage though. Whether international scientific and/or other work dive certifications are allowed in Norway is under discussion. Whether EU dive certifications should be allowed or not is also debated, and it is unclear whether restrictions on EU dive certifications is in accordance with EU legislations or not. For questions regarding legislations, please contact the authorities directly: post@arbeidstilsynet.no.

A dive team need to consist of at least 4 persons, where 3 persons have a “klasse A” Norwegian working dive certificate or higher. One of these persons also need to have a course in dive teal leading, focusing on rescue operations. For questions regarding this course or validation of international courses, please contact the authorities directly: post@arbeidstilsynet.no. No information is available from the authorities in English as of today.

Medical examinations

Medical examinations obtained in other countries apply also in Norway, as long as they are conducted by doctors approved having diving as a specialty, the same as applies for Norwegian doctors. The examinations for professional diving are generally valid for 12 months. A list of approved doctors can be found here: https://www.fylkesmannen.no/globalassets/fm-rogaland/dokument-fmro/helse-og-sosial/oversyn-og-statistikk/dykkerleger.pdf There are very few international doctors on this list.

Insurance

If you are employed to dive by a Norwegian employer, they have an accident insurance, but you must check that this insurance also covers diving. If you are acting as a volunteer, or self-employed, you need to arrange your own insurance. All companies conducting work dives need to register at the Norwegian Labour Inspection Authority.

Decompression issues

Diving computers are generally used during dives. Only dives without planned decompression stops are allowed within normal scientific diving.

First Aid

All SD team members should be familiar with all first aid equipment available and needed, including oxygen administration to diving accident casualties. All scientific divers should conduct regular emergency exercises.

Breathing gas

Air diving limit for professional scientific diving is dependent on the risk assessment and the divers’ qualification. The “klasse A” certificate allows diving down to 30 meters

with air. Diving below 18m and in confined spaces has to be conducted with surface air supply.

Volunteers

Volunteers are in general not allowed to join SD teams. However, non-employed divers with correct certification may join (e.g. students) if accepted by the dive mission leader and institute.

More information

The legislation for scientific diving in Norway is the same as for any kind of working diving in Norway: https://www.arbeidstilsynet.no/tema/dykking/ Unfortunately, the authorities have not made much of this (if any) information available in English. For questions regarding legislations, please contact the authorities directly: post@arbeidstilsynet.no

Welcome to dive for science in Poland! (2021)

Legal status of scientific diving
From July 2014 scientific diving, i.e. diving for research purposes organized by universities and research institutes; referred to in art. 1. paragraph 3 points 3 of the Act of 17 October 2003 on underwater works (i.e. OJ of 2014, item 1398, as amended) is recognized by law and no longer subjected to the strict regulations applied to commercial diving. At the same time no other regulations governing scientific diving have been issued. Therefore different institutions introduce their own internal rules and code of practice, like the Institute of Oceanology Polish Academy of Sciences (IO PAN, presented briefly below), on the basis of the existing ESD and AESD standards. A check-out dive is a common practice for new members joining a SD team.

Medical examinations – fitness to dive
The examinations for professional diving are generally valid for 12 months, but in special cases the doctors may extend the validity up to 24 months. The hosting institutes decides if your medical examination is valid or not.

Insurance
Institution provides a professional diving insurance for employees and doctoral students participating in the dives covered by their internal regulations. The institution can provide insurance to external persons participating in the dives, if possible. In the event of failure to provide insurance by the host institution, external persons are obliged to deliver the Diving Officer the original and a copy of the current diving insurance. Its coverage cannot be less than that of host institution employees. Diving of uninsured persons is not allowed.

Decompression issues
Within internal IO PAN regulations dives with formal decompression are entitled to persons with a minimum “Advanced Nitrox level”. In regions remote from civilization, where the distance from the nearest decompression chamber is significant (i.e. transport of a person will exceed one hour), diving with a formal decompression exceeding 15 minutes is prohibited. The choice of decompression planning method is for the Diving Officer to decide, based on a risk assessment. There must be at least one dive computer used per diving pair.

First Aid
All SD team members should be familiar with all first aid equipment available and needed, including oxygen administration to diving accident casualties. Diving may be performed by a diver who has completed first aid training in the last five years.

Breathing gas
It is allowed to dive up to 33 meters with air. Mixed gases may be used according to the qualifications and risk assessment.

Volunteers and students
External people can take part in diving if all of the following conditions are met:

- such a person has at least the minimum qualifications established for employees and doctoral students (i.e. CMAS* / Level 2 "Autonomous Diver"

according to EN 14153-2 standard) ,

- has a valid medical certificate confirming that there are no contraindications to participate in diving
- has a diving insurance. Its coverage is not less than that of employees
- has equipment with a current service inspection and legalization
- will read the Regulations and undertake to comply with them
- The Diving Officer agrees to her participation in the dive

Welcome to dive for science in Sweden! (2020)

Legal status of scientific diving

In Sweden, scientific diving (SD) is classified as occupational diving. Any diving performed by an employee as part of their work classifies as occupational diving.

Regulations on occupational diving (at all levels) are governed by The Swedish Work Environment Authority's Provisions on Diving Work and General Recommendations on the implementation of the Provisions (AFS 2010:16), which states how occupational diving is to be conducted in Sweden. The Armed Forces is the certifying authority in Sweden, and they specifiy the Swedish training standards and issues all Swedish professional diver certificates. The Swedish certificate S30 (short for SCUBA 30) covers most scientific diving work (e.g. sampling, conducting experiments, inventories and documentation) down to a maximum depth of 30 m. The basic scuba skills within the S30 certificate are harmonized with the minimum scuba skills standards for the European Scientific Diver (ESD) and to the standards of IDSA level 1. A Swedish diver with a S30 certification that want's to attain the Swedish Scientific Diver certification (which corresponds to the ESD standards) needs to show proof of additional scientific diving skills to apply for the Swedish SD. In terms of certification you are therefore able to conduct SD in Sweden to a maximum depth of 30 meters simply by providing your ESD documentation. Other occupational dive certification from other countries may be permitted if they are in agreement with the basic standard for the S30 or ESD, but this must be validated by the hosting institute where the diving will be conducted. Diving deeper than 30 m requires additional training and certification. The Swedish A40 certificate allows you to dive to greater depth than 30m and there are several other occupational dive certificates and dive competences that can be obtained. Note that A40 is not comparable to Advanced ESD which means that you cannot dive deeper than 30m in Sweden on your AESD certification if you do not have additional training.

To supervise diving, you need a separate dive-leader/dive supervisor certificate (sv : "dykarledarcertifikat"). In Sweden you can supervise a dive that corresponds to your training level if you have an AESD certification, provided that you have approved knowledge of Swedish work environment regulations. The hosting institute has to approve you as a dive supervisor.

The S30 certificate can be obtained by training at several occupational diving schools, but the certificate is formally issued by The Swedish Armed Forces. The Swedish Armed Forces can also convert your certificate according to ESD and/or AESD standards (or other approved occupational dive certificates) and documented knowledge of the Swedish work environment regulations to a Swedish S30 certificate. The following three diving schools are approved by the Armed forces to provide you with S30 training:

1. The Armed forces own diver school FM DNC in Karlskrona
2. YRGO (Higher occupational education in Gothenburg) diver school in Svanesund
3. Greater Stockholm Fire department divers school in Stockholm.

When diving occupationally in Sweden, the minimum dive team consists of 3 persons: 1 dive supervisor (having a Dive leader certification or approved AESD see above) and 2 divers that act as each other's standby divers (both with at least S30/ESD-level

certification or equivalent). The two divers should stay connected with a buddy-line (if the risk assessment does not entail greater risk using the line). In the scenario where you only have one diver in the water. The standby diver can then be on land or in the boat, but each of these 2 divers still need to have their own dive tender. The dive team is therefore increased to 4 persons. Note that this also means that the dive supervisor tends one of the divers. The diver in the water should in this scenario stay connected with the surface using a tending line, communication line or surface supplied air. The risk assessment dictates whether more persons need to be included in the dive team.

A lot of responsibility resides with the dive leader/supervisor, who is in charge of the dive plan and risk assessments that govern whether the work is conducted with, e.g. tethered divers, buddy lines or both. For additional reading, both AFS 1977:1160 The work environment act and AFS 2010:16 The Swedish Work Environment Authority's Provisions on Diving Work and General Recommendations on the implementation of the Provisions are available from the authorities in English.

Medical examinations

Medical examinations (certificate of Fitness id health for work diving) obtained in other countries may be valid in Sweden, as long as they apply with- and are conducted by approved doctors with hyperbaric medicine training according to the EDTC's Training standards for diving and hyperbaric medicine. However, the hosting institutes decide if your medical examination is valid. When you make the examination in Sweden for occupational diving, this is valid in Sweden for 5 years until you reach age 40. After age 40, the examinations are valid for 2 years. When you first arrive, the hosting institute may require that you make a new medical examination or that your examination should not be older than 1 year. Details are provided in the working environment regulations for medical controls (AFS 2019:3) [*in Swedish*]

Insurance

If you are employed for diving at work by a Swedish employer, they should have an accident insurance, but you should check that this insurance also covers diving. All Universities in Sweden have insurances that cover any kind of work accidents. If you are acting as a volunteer, if you are employed by a non-Swedish employer, or if you are self-employed, you or your employer need to arrange your own insurance.

Decompression issues

Diving is planned and conducted according to dive-tables (Nordic-Standard Table, NST, modelled from Royal Navy). Diving computers are generally used during dives as a bottom timer, but as to date there is no dive computer algorithm approved in Sweden for planning dives. Only dives without planned decompression stops are allowed within the S30 certification and SSD. The work regulations (AFS 2010:16) require the dive team to have access to treatment with hyper-baric oxygen in a two-compartment decompression chamber within 6 hours from breaking the surface after a dive. Help from Emergency Rescue Services can normally be relied upon to provide help but the emergency line must be accounted for in the dive plan and risk assessment. The only public pressure chamber operating on a 24:7 basis in Sweden is the one at Östra hospital in Gothenburg. Emergency contact in Sweden is 112.

First Aid

All SD team members should be familiar with all first aid equipment available and

needed, including oxygen administration to diving accident casualties. All scientific divers should conduct regular emergency exercises. A First aid including CPR course certificate no older than three years is required.

Breathing gas

The limit for professional scientific diving with air is dependent on the risk assessment and the divers' qualifications. The S30/ESD certificate allows diving down to 30 meters with air, the A40 certificate allows diving at greater depth than 30m. Diving below 30 m and/or in confined spaces must be conducted with surface supplied air, and divers performing such tasks are expected to be trained in these techniques. Using a breathing gas other than air is not standard but allowed if you have the adequate training and equipment is available.

Volunteers and students

Volunteers from outside the University or research institutes are in general not allowed to join SD teams since they are not protected by the employer insurances. However, students are always protected by insurance during their studies and may therefore join such dive activities that is a part of their studies even though they are not employed. This is provided it is accepted by the dive mission leader and the institute. Note that the institutes themselves decide what certification is required to dive during e.g., university studies.

More information

The legislation for scientific diving in Sweden is the same as for any kind of professional diving in Sweden, and these are regulated by the Swedish Work Environment Authority: https://www.av.se/arbetsmiljoarbete-och-inspektioner/publikationer/foreskrifter/dykeriarbete-afs-201016-foreskrifter/,

Work environment act AFS 1977:1160 (in English): https://www.government.se/government-policy/labour-law-and-work-environment/19771160-work-environment-act-arbetsmiljolagen/

Work environment act AFS 2010:16 (in English): http://www.yh-dyk.se/wp-content/uploads/2017/03/AFS-2010_-16-ENGLISH-TRANSLATION.pdf

Welcome to dive for science in the United Kingdom! (2020)

Legal status of scientific diving

Scientific and Archaeological Diving is recognised as one of the five main diving at work sectors in the UK. All UK diving at work must adhere to the 1997 Diving at Work Regulations (http://www.legislation.gov.uk/uksi/1997/2776/contents/made) with specific advice and guidance on scientific diving (SD) being provided by the Scientific and Archaeological diving projects Approved Code of Practice (2014 edition: https://www.hse.gov.uk/pubns/books/l107.htm). The ESD and AESD standards are approved qualifications to dive as are some other national qualifications and some recreational qualifications (https://www.hse.gov.uk/diving/qualifications/approved-list.pdf). A check-out dive is a common practice for new members joining a SD team.

Medical examinations – fitness to dive

Medical examinations suitable for diving at work in obtained in other EU countries apply also in the UK, as long as :
- they comply with the local level of scrutiny ;
- have been carried out by a medical practitioner ;
- have been carried out within 3-months of coming to the UK.

The examinations can only remain valid for 12 months from the date of examination irrespective if the medical is valid for longer in the other country. If staying longer than 12 months, it would be expected that the diver obtains a UK diving medical.

Insurance

If employed by an UK institution, the diver would be covered by that institution's liability and indemnity insurances. If not, then the diver would have to provide their own. Medical insurance would depend on the country of origin. At present, all healthcare in the UK for citizens of the EEA and Switzerland is covered by the European Health Insurance Card (EHIC) scheme; this includes recompression of divers. This remains valid until 31 December 2020; arrangements for people travelling to the UK after 31 December 2020 are subject to the current negotiations on the future UK-EU relationship

Decompression issues

There are no specified methods for controlling decompression. All the regulations state is that "Decompression procedures (including the use of a decompression computer) should be appropriate for the type of diving technique undertaken and their use included in the diving project plan. For surface-orientated diving, decompression procedures should be consulted to determine whether the dive requires 'in-water' decompression. All decompression procedures should be designed to take into account the risks of a particular type of dive and should include the various rules and procedures needed in order to reduce the risk of decompression illness (DCI)."

First Aid

Although it is recommended that all divers possess certified training in first aid at work, the regulations state that there should be sufficient people in the team qualified for first aid. This would be determined by risk assessment.

Scientific Diving Procedures

All UK diving at work must adhere to the 1997 Diving at Work Regulations with specific advice and guidance on scientific diving (SD) being provided by the 2014 Scientific and Archaeological diving projects Approved Code of Practice. Additional guidance notes on SD are recognised by the UK regulators but are currently being revised.

Breathing gas / equipment / depth limitations

All diving equipment must be CE marked but there are no other limits on what diving equipment or breathing gases can be used if the divers and dive supervisors are all competent in their use.
Although no depth limitations are stipulated in the regulations, any dives deeper than 50 metres require a suitable, operational, two-person, two-compartment chamber on site.

Volunteers

The situation for accepting volunteers for SD is complex in the UK and should be assessed on a case-by-case basis.

More information

The coordinating body for UK SD is the SDSC (Scientific Diving Supervisory Committee). For any further questions concerning SD in UK, please contact us via the website at : www.uk-sdsc.com