

**Work And Budget Plan**  
**FA1301 Grant Agreement Period 3**  
 01/09/2015 to 30/04/2016

**Section I: Action Profile**

**Action General Information**

Action Code	FA1301	MC Chair	Dr Giovanna Ponte
Action Title	FA1301 - A network for improvement of cephalopod welfare and husbandry in research, aquaculture and fisheries (CephInAction)		
MOU	015/13	Draft MOU	oc-2012-2-13105
CSO Approval Date	2013-05-16		
Action Start Date	2013-10-14	Action End Date	2017-10-13
Science Officer	Dr Ioanna Stavridou	Administrative Officer	Mr Christophe Peeters

**Participating COST Member Countries and Cooperating State:**

	ITC		Non-ITC		Total
Cost Countries having accepted the MOU	Number	6	Number	13	19
	% of all ITCs	31.58%	% of all non-ITCs	68.42%	
Number of MC Members	10		24		34

Country and Acceptance Date		
AT 28/02/2014	IE 28/06/2013	PT 11/09/2013
BG 03/07/2014	IL 11/06/2013	RS 22/01/2015
HR 14/02/2014	IT 09/07/2013	ES 04/06/2013
DK 20/04/2015	MT 12/02/2014	UK 30/05/2013
FR 17/06/2013	ME 29/05/2015	MK 14/05/2014
DE 17/06/2013	NL 03/09/2013	
EL 01/10/2013	NO 26/08/2013	

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## International cooperation

	NNC	IPC	Specific Organisation	Total
Number of entities formally approved to join Action	0	1	0	1
Number of countries	0	1	0	1

## Working Groups

	WG Title	WG Leader	Number of Members
WG1	Research Needs in Cephalopods Welfare	Dr Michael Kuba	125
WG2	Stress & Disease	Dr Camino Gestal	115
WG3	Neurophysiology, Anaesthesia and Humane-end-points	Prof Binyamin Hochner	111
WG4	Development of a Cephalopod Welfare Index (CWI)	Dr Lars Helge Stien	110
WG5	Education and training	Prof Nadav Shashar	116

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## Section II: MoU objectives and Grant Agreement Period Goals and Activities

### Action Objectives from MoU

Aim/primary Objective	The main objective of the Action is to provide the scientific basis for advancing knowledge about cephalopod welfare in research, aquaculture and public displays and promote their conservation.
Secondary objectives	<ul style="list-style-type: none"> <li>• Provide proper training on newly established cephalopod husbandry guidelines and experimental practices</li> <li>• Improve and implement existing general guidelines and experimental practices</li> <li>• Identify gaps of knowledge in cephalopod welfare, so that these can be addressed through the coordination of on-going national research projects</li> <li>• Review existing knowledge on species-specific differences in husbandry and treatment and develop species-specific guidelines</li> <li>• Further develop and establish new experimental practices for emerging scientific demands in cephalopod research</li> <li>• Promote cephalopod research and conservation</li> <li>• Promote information exchange and international cooperation</li> <li>• Advance the use of the 3 R's (replace, reduce, refine) principle in cephalopod research</li> <li>• review the best practices of anaesthetics currently used with cephalopods and systematically investigate dose- and species-specific responses, mode of action, depth and length of anaesthesia and recovery time and cardio-circulatory performance</li> <li>• test potential analgesics and evaluate their efficacy</li> <li>• assess long-term effects of anaesthetics and different environmental conditions on brain development</li> <li>• characterize behavioural responses to noxious stimuli and define behavioural indices of pain</li> <li>• characterize physiological parameters linked to stress, suffering or pain, including biomarkers of immune response linked to disease</li> <li>• review optimal and species-specific rearing conditions, including environmental and nutritional factors</li> <li>• develop non-invasive and if possible automated techniques for assessing physiological parameters, for monitoring brain changes and effects of treatments</li> <li>• develop a model for assessing cephalopod welfare through integration of all influencing factors and available indices</li> </ul>

### Grant Agreement Period

Grant Agreement Period Start Date	01/09/2015	Grant Agreement Period End Date	30/04/2016
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### Grant Agreement Period Goals

Number	Grant Agreement Period Goal	MoU Objective(s) it relates to
GAPG 1	Synthesize and analyze the available knowledge on cephalopod biology, physiology and welfare	Aim/Primary objective Secondary objective 1 Secondary objective 2 Secondary objective 3 Secondary objective 4 Secondary objective 7 Secondary objective 8 Secondary objective 9 Secondary objective 14 Secondary objective 16
GAPG 2	Monitoring the application of "Guidelines for the Care and Welfare of Cephalopods in Research", the improvement of experimental practices, and the impact of the transposition of Directive 2010/63/EU and MFSD in Member States.	Aim/Primary objective Secondary objective 1 Secondary objective 2 Secondary objective 5 Secondary objective 6 Secondary objective 7 Secondary objective 8 Secondary objective 14
GAPG 3	Evaluate the environmental, biological and behavioral needs of different cephalopod species to increase success of caring, maintenance, growth and rearing aimed to reduce stress and increase welfare in research and aquaculture establishments.	Aim/Primary objective Secondary objective 1 Secondary objective 2 Secondary objective 3 Secondary objective 4 Secondary objective 6 Secondary objective 7 Secondary objective 14 Secondary objective 16
GAPG 4	Increase knowledge on nutritional requirements of different cephalopods species at various developmental stages including those required to improve health and welfare in aquaculture.	Aim/Primary objective Secondary objective 2 Secondary objective 3 Secondary objective 4 Secondary objective 5 Secondary objective 6 Secondary objective 7 Secondary objective 8 Secondary objective 14
GAPG 5	Increase the knowledge of biological and physiological indicators (e.g. biomarkers) of welfare for cephalopods, also by increasing the use of alternatives to live animals in research, and the use of non-invasive approaches.	Aim/Primary objective Secondary objective 1 Secondary objective 3 Secondary objective 5 Secondary objective 6

		<p>Secondary objective 7          Secondary objective 8          Secondary objective 13          Secondary objective 15          Secondary objective 16</p>
GAPG 6	<p>Increase of knowledge and identification of pathogens, mechanical damages, signs of stress and diseases in cephalopods. Study of the trophic relationship for cephalopods, with special attention to the transmission of parasites, thus allowing evaluation of animals well-being and ecosystem health. Development of protocols for assessment of health status of cephalopods, thus providing guidance for researchers, veterinarians and regulators.</p>	<p>Aim/Primary objective          Secondary objective 1          Secondary objective 2          Secondary objective 3          Secondary objective 5          Secondary objective 6          Secondary objective 7          Secondary objective 13          Secondary objective 16</p>
GAPG 7	<p>Evaluation of the impact of underwater human noise on cephalopods (in compliance with Directive 2010/63/EU and MSFD).</p>	<p>Aim/Primary objective          Secondary objective 3          Secondary objective 5          Secondary objective 6          Secondary objective 7          Secondary objective 8          Secondary objective 12          Secondary objective 13          Secondary objective 14          Secondary objective 16</p>
GAPG 8	<p>Development and application of consensus Severity Assessment of procedures (compliant with Directive 2010/63/EU) utilized with cephalopods.</p>	<p>Aim/Primary objective          Secondary objective 1          Secondary objective 2          Secondary objective 3          Secondary objective 4          Secondary objective 5          Secondary objective 6          Secondary objective 7          Secondary objective 8          Secondary objective 9          Secondary objective 10          Secondary objective 11          Secondary objective 12          Secondary objective 13          Secondary objective 16</p>
GAPG 9	<p>Analysis of biological and physiological findings relevant to stress, nociception, pain assessment and management relevant to cephalopods. Evaluation of alternative methods to be utilized in experimental procedures. Evaluation of physiological and stress response during anesthesia. Development of humane end-point.</p>	<p>Aim/Primary objective          Secondary objective 1          Secondary objective 2          Secondary objective 3          Secondary objective 5          Secondary objective 6          Secondary objective 7          Secondary objective 8          Secondary objective 9          Secondary objective 10</p>

		<p>Secondary objective 12          Secondary objective 13          Secondary objective 15          Secondary objective 16</p>
GAPG 10	Evaluation of the current effort/interest for physiology and neurophysiological studies on cephalopods.	<p>Aim/Primary objective          Secondary objective 1          Secondary objective 3          Secondary objective 6          Secondary objective 7          Secondary objective 8          Secondary objective 9          Secondary objective 11          Secondary objective 15          Secondary objective 16</p>
GAPG 11	Contribution to the development of noninvasive/automated techniques for assessing physiological status of cephalopods.	<p>Aim/Primary objective          Secondary objective 1          Secondary objective 2          Secondary objective 3          Secondary objective 6          Secondary objective 7          Secondary objective 8          Secondary objective 15</p>
GAPG 12	Development of online databases as guidance and inventory of alternatives.	<p>Aim/Primary objective          Secondary objective 1          Secondary objective 4          Secondary objective 6          Secondary objective 7          Secondary objective 8          Secondary objective 14          Secondary objective 15          Secondary objective 16</p>
GAPG 13	Further development of the CephInAction CWI (Cephalopod Welfare Index) database-project by collection of statements (from scientific literature and best-practice), identification of animals' needs, thus facilitate the linking of 'statements' to biological 'needs' in order to determine indicators of cephalopods welfare.	<p>Aim/Primary objective          Secondary objective 1          Secondary objective 2          Secondary objective 3          Secondary objective 4          Secondary objective 6          Secondary objective 7          Secondary objective 8          Secondary objective 9          Secondary objective 14          Secondary objective 16</p>
GAPG 14	Dissemination and Educational activities. Development of an EU accredited Training School Programme for Cephalopod Biology and Care in compliance with Directive 2010/63/EU.	<p>Aim/Primary objective          Secondary objective 1          Secondary objective 2          Secondary objective 4          Secondary objective 5</p>

		Secondary objective 6 Secondary objective 7 Secondary objective 8 Secondary objective 14 Secondary objective 15 Secondary objective 16
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## Section IV: Work and Budget Plan for the Grant Agreement Period

### Work and Budget Plan Summary

A. COST Networking Tools	EUR
(1) Meetings	77,836.76
(2) Training Schools	21,393.92
(3) STSMs	17,129.00
(4) Dissemination	12,620.00
(5) Other Expenses Related to Scientific Activities	434.22
<b>B. Total Science Expenditure (sum of (1) to (5))</b>	<b>129,413.90</b>
<b>C. FSAC (max. of 15% of B)</b>	<b>19,412.09</b>
<b>D. Total Expenditure (B+C)</b>	<b>148,825.99</b>

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## Meetings

### Overview

Meeting Title	Meeting Type	Dates	Location	ITC	Total Cost(EUR)
CephsInAction meets Conference on Disease of Fish and Shellfish	Working Group Meeting	10/09/2015 - 11/09/2015	Las Palmas de Gran Canaria (Spain)	No	7,256.40
CephsInAction@Aquaculture	Working Group Meeting	23/10/2015 - 24/10/2015	Rotterdam (Netherlands)	No	6,312.32
Dissemination Meeting CIAC2015	Dissemination Meeting	09/11/2015 - 14/11/2015	Hakodate (Japan)	No	1,717.32
CephsInAction@Lisbon	Management Committee Meeting, Working Group Meeting, Workshops/Conferences	24/11/2015 - 27/11/2015	Lisbon (Portugal)	Yes	32,310.72
CephsInAction for Directive 2010/63/EU	Workshops/Conferences	27/01/2016 - 29/01/2016	Berlin (Germany)	No	18,000.00
CephsInAction Strategies	Working Group Meeting	29/01/2016 - 30/01/2016	Berlin (Germany)	No	12,240.00
				Total	77,836.76

### Details

Meeting Type	Working Group Meeting
Title of the Meeting	CephsInAction meets Conference on Disease of Fish and Shellfish
Grant Period Goal(s) it will address	Synthesize and analyze the available knowledge on cephalopod biology, physiology and welfare, Evaluate the environmental, biological and behavioral needs of different cephalopod species to increase success of caring, maintainance, growth and rearing aimed to reduce stress and increase welfare in research and aquaculture establishments., Increase the knowledge of biological and physiological indicators (e.g. biomarkers) of welfare for cephalopods, also by increasing the use of alternatives to live animals in research, and the use of non-invasive approaches., Increase of knowledge and identification of pathogens, mechanical damages, signs of stress and diseases in cephalopods. Study of the trophic relationship for cephalopods, with special attention to the transmission of parasites, thus allowing evaluation of animals well-being and ecosystem health. Development of protocols for assessment of health status of cephalopods, thus providing guidance for researchers, veterinarians and regulators., Contribution to the development of noninvasive/automated techniques for assessing physiological status of cephalopods., Development of online databases as guidance and inventory of alternatives., Further development of the CephsInAction CWI (Cephalopod Welfare Index) database-project by collection of statements (from scientific

	literature and best-practice), identification of animals' needs, thus facilitate the linking of 'statements' to biological 'needs' in order to determine indicators of cephalopods welfare.,Dissemination and Educational activities. Development of an EU accredited Training School Programme for Cephalopod Biology and Care in compliance with Directive 2010/63/EU.		
Description	The 17th International Conference on "Diseases of Fish and Shellfish"™ organized by the European Association of Fish Pathologists is a key event for the 2015 for the scientific community (researchers, veterinarians, etc) related with pathologies of major taxa of marine organisms. The participation of members of FA1301 COST Action will i. facilitate networking between FA1301 'science' and compatible/complementary scientific endeavours, ii. allow beneficial interaction with other aspects of compatible disciplines and research done in other taxa, iii. extend the potential of research efforts on biology and welfare of cephalopods. We plan to contribute with: 1. symposium included in the main program 2. oral and poster presentations included in different sessions of the main program 3. a WG2 satellite meeting. During the meeting we plan to discuss approaches, strategies and possible collaborations for the achievement of important deliverables, and results of FA1301 WG2 and WG4. The participation of selected members of WG1, WG4 and WG5 will be also facilitated.		
Output(s)	Tangible outputs: report on website as input for WGs; at least a review paper to be published after the meeting. Less/non- tangible outputs: knowledge exchanges including strategic information, planning, technical know-how, policy development, and expected decisions to be taken.		
Location	Las Palmas de Gran Canaria (Spain)	ITC	No
Start Date	2015-09-10 09:00:00	End Date	2015-09-11 19:00:00
Duration	2 days		
Number of expected total participants	10	Number of participants to be reimbursed from COST funds	10
Average reimbursement(per participant)(EUR)	685.64	Total Reimbursement costs (EUR)	6,856.40
Local Organiser Support (EUR)	400.00		
Total cost of the meeting (EUR)	7,256.40		

Meeting Type	Working Group Meeting
Title of the Meeting	CephsInAction@Aquaculture
Grant Period Goal(s) it will address	Synthesize and analyze the available knowledge on cephalopod biology, physiology and welfare,Evaluate the environmental, biological and behavioral needs of different cephalopod species to increase success of caring, maintainance, growth and rearing aimed to reduce stress and increase welfare in research and aquaculture establishments.,Increase knowledge on nutritional requirements of different cephalopods species at various developmental stages including those required to improve health and welfare in aquaculture.,Increase

	<p>the knowledge of biological and physiological indicators (e.g. biomarkers) of welfare for cephalopods, also by increasing the use of alternatives to live animals in research, and the use of non-invasive approaches. Analysis of biological and physiological findings relevant to stress, nociception, pain assessment and management relevant to cephalopods. Evaluation of alternative methods to be utilized in experimental procedures. Evaluation of physiological and stress response during anesthesia. Development of humane end-point. Development of online databases as guidance and inventory of alternatives. Further development of the CephsInAction CWI (Cephalopod Welfare Index) database-project by collection of statements (from scientific literature and best-practice), identification of animals' needs, thus facilitate the linking of 'statements' to biological 'needs' in order to determine indicators of cephalopods welfare. Dissemination and Educational activities. Development of an EU accredited Training School Programme for Cephalopod Biology and Care in compliance with Directive 2010/63/EU.</p>		
Description	<p>FA1301 WG1 meeting for the 2015 is joining Aquaculture Europe2015 organized by the European Aquaculture Society in cooperation with IMARES (Institute for Marine Resources &amp; Ecosystem Studies) and AFI Wageningen UR (a collaboration between Wageningen University &amp; Research centre and DLO foundation). This will facilitate networking with specialists and SME working on topics of relevance to rearing and aquaculture of cephalopods, discuss approaches, strategies and possible collaborations for the achievement of important deliverables and results. We plan to contribute with: 1. symposium included in the main program 2. oral and poster presentations included in different sessions of the main program 3. a WG1 satellite meeting. During the meeting we plan to discuss approaches, strategies and possible collaborations for the achievement of important deliverables, and results of FA1301 WG1. The participation of selected members of WG2, WG4 and WG5 will be also facilitated.</p>		
Output(s)	<p>Tangible outputs: report on website as input for WGs; at least a review paper to be published after the meeting. Less / non- tangible outputs: knowledge exchanges including strategic information, planning, technical know-how, policy development, and expected decisions to be taken.</p>		
Location	Rotterdam (Netherlands)	ITC	No
Start Date	2015-10-23 09:00:00	End Date	2015-10-24 19:00:00
Duration	2 days		
Number of expected total participants	10	Number of participants to be reimbursed from COST funds	8
Average reimbursement(per participant)(EUR)	745.19	Total Reimbursement costs (EUR)	5,961.52
Local Organiser Support (EUR)	350.80		
Total cost of the meeting (EUR)	6,312.32		

Meeting Type	Dissemination Meeting
Title of the Meeting	Dissemination Meeting CIAC2015

<p>Grant Period Goal(s) it will address</p>	<p>Synthesize and analyze the available knowledge on cephalopod biology, physiology and welfare, Monitoring the application of "Guidelines for the Care and Welfare of Cephalopods in Research", the improvement of experimental practices, and the impact of the transposition of Directive 2010/63/EU and MSFD in Member States., Evaluate the environmental, biological and behavioral needs of different cephalopod species to increase success of caring, maintenance, growth and rearing aimed to reduce stress and increase welfare in research and aquaculture establishments., Increase knowledge on nutritional requirements of different cephalopods species at various developmental stages including those required to improve health and welfare in aquaculture., Increase the knowledge of biological and physiological indicators (e.g. biomarkers) of welfare for cephalopods, also by increasing the use of alternatives to live animals in research, and the use of non-invasive approaches., Increase of knowledge and identification of pathogens, mechanical damages, signs of stress and diseases in cephalopods. Study of the trophic relationship for cephalopods, with special attention to the transmission of parasites, thus allowing evaluation of animals well-being and ecosystem health. Development of protocols for assessment of health status of cephalopods, thus providing guidance for researchers, veterinarians and regulators., Evaluation of the impact of underwater human noise on cephalopods (in compliance with Directive 2010/63/EU and MSFD)., Development and application of consensus Severity Assessment of procedures (compliant with Directive 2010/63/EU) utilized with cephalopods., Analysis of biological and physiological findings relevant to stress, nociception, pain assessment and management relevant to cephalopods. Evaluation of alternative methods to be utilized in experimental procedures. Evaluation of physiological and stress response during anesthesia. Development of humane end-point., Evaluation of the current effort/interest for physiology and neurophysiological studies on cephalopods., Contribution to the development of noninvasive/automated techniques for assessing physiological status of cephalopods., Development of online databases as guidance and inventory of alternatives., Further development of the CephInAction CWI (Cephalopod Welfare Index) database-project by collection of statements (from scientific literature and best-practice), identification of animals' needs, thus facilitate the linking of 'statements' to biological 'needs' in order to determine indicators of cephalopods welfare., Dissemination and Educational activities. Development of an EU accredited Training School Programme for Cephalopod Biology and Care in compliance with Directive 2010/63/EU.</p>		
<p>Description</p>	<p>Dissemination Meeting The Cephalopod International Advisory Council (CIAC) is the most 'antique' scientific society embracing biologists working on cephalopods. The participation of COST Action FA1301 members to the CIAC2015 Conference (Japan) will facilitate dissemination of our activities and objectives, and the increase our network capabilities. In addition, it is noteworthy to mention that we have been solicited by the current President of CIAC (Professor Louise Allcock) to organize a symposium at CIAC2015 Conference. This will be a key deliverable of the activities of the first two years of CephInAction, and represents a grant of the international consideration our community is acquiring.</p>		
<p>Output(s)</p>	<p>Tangible outputs: report on website as input for WGs; increase of the international visibility of FA1301. Less/non-tangible outputs: knowledge exchanges including strategic information</p>		
<p>Location</p>	<p>Hakodate (Japan)</p>	<p>ITC</p>	<p>No</p>
<p>Start Date</p>	<p>2015-11-09 09:00:00</p>	<p>End Date</p>	<p>2015-11-14 19:00:00</p>

Duration	6 days		
Number of expected total participants	120	Number of participants to be reimbursed from COST funds	1
Average reimbursement(per participant)(EUR)	1,717.32	Total Reimbursement costs (EUR)	1,717.32
Local Organiser Support (EUR)	0.00		
Total cost of the meeting (EUR)	1,717.32		
Derogations			

Meeting Type	Management Committee Meeting, Working Group Meeting, Workshops/Conferences
Title of the Meeting	CephInAction@Lisbon
Grant Period Goal(s) it will address	<p>Synthesize and analyze the available knowledge on cephalopod biology, physiology and welfare. Monitoring the application of "Guidelines for the Care and Welfare of Cephalopods in Research", the improvement of experimental practices, and the impact of the transposition of Directive 2010/63/EU and MSFD in Member States. Evaluate the environmental, biological and behavioral needs of different cephalopod species to increase success of caring, maintenance, growth and rearing aimed to reduce stress and increase welfare in research and aquaculture establishments. Increase knowledge on nutritional requirements of different cephalopods species at various developmental stages including those required to improve health and welfare in aquaculture. Increase the knowledge of biological and physiological indicators (e.g. biomarkers) of welfare for cephalopods, also by increasing the use of alternatives to live animals in research, and the use of non-invasive approaches. Increase of knowledge and identification of pathogens, mechanical damages, signs of stress and diseases in cephalopods. Study of the trophic relationship for cephalopods, with special attention to the transmission of parasites, thus allowing evaluation of animals well-being and ecosystem health. Development of protocols for assessment of health status of cephalopods, thus providing guidance for researchers, veterinarians and regulators. Evaluation of the impact of underwater human noise on cephalopods (in compliance with Directive 2010/63/EU and MSFD). Development and application of consensus Severity Assessment of procedures (compliant with Directive 2010/63/EU) utilized with cephalopods. Analysis of biological and physiological findings relevant to stress, nociception, pain assessment and management relevant to cephalopods. Evaluation of alternative methods to be utilized in experimental procedures. Evaluation of physiological and stress response during anesthesia. Development of humane end-point. Evaluation of the current effort/interest for physiology and neurophysiological studies on cephalopods. Contribution to the development of noninvasive/automated techniques for assessing physiological status of cephalopods. Development of online databases as guidance and inventory of alternatives. Further development of the CephInAction CWI (Cephalopod Welfare Index) database-project by collection of statements (from scientific literature and best-practice), identification of animals' needs, thus facilitate the linking of 'statements' to biological 'needs' in order to determine indicators of</p>

	cephalopods welfare.,Dissemination and Educational activities. Development of an EU accredited Training School Programme for Cephalopod Biology and Care in compliance with Directive 2010/63/EU.		
Description	Annual Scientific Conference of COST Action FA1301; includes WGs meeting, workshop on 'Physiology of Cephalopod Digestive System', and FA1301 MC Meeting. Aims are: 1. to collect the results and achievements of the two first years 2. to facilitate collaborative work and networking among all participants 3. the identification of missing expertise and research priorities 4. the definition of the new GP goals, the plan of the networking activities for the achievement of the GP goals 5. definition of the budget plan 6. delivery of reports from the WG leaders on the achievements of the WG for the year (including what was not achieved and the reasons behind).		
Output(s)	Tangible outputs: publication of abstracts and proceedings; white paper on the identification of gaps in the newly established guidelines. Less / non- tangible outputs: knowledge exchanges including strategic information, planning, technical know-how, policy development, and expected decisions to be taken.		
Location	Lisbon (Portugal)	ITC	Yes
Start Date	2015-11-24 08:00:00	End Date	2015-11-27 13:00:00
Duration	4 days		
Number of expected total participants	45	Number of participants to be reimbursed from COST funds	48
Average reimbursement(per participant)(EUR)	610.64	Total Reimbursement costs (EUR)	29,310.72
Local Organiser Support (EUR)	3,000.00		
Total cost of the meeting (EUR)	32,310.72		

Meeting Type	Workshops/Conferences
Title of the Meeting	CephsInAction for Directive 2010/63/EU
Grant Period Goal(s) it will address	Synthesize and analyze the available knowledge on cephalopod biology, physiology and welfare,Monitoring the application of "Guidelines for the Care and Welfare of Cephalopods in Research", the improvement of experimental practices, and the impact of the transposition of Directive 2010/63/EU and MFSD in Member States.,Evaluate the environmental, biological and behavioral needs of different cephalopod species to increase success of caring, maintainance, growth and rearing aimed to reduce stress and increase welfare in research and aquaculture establishments.,Increase of knowledge and identification of pathogens, mechanical damages, signs of stress and diseases in cephalopods. Study of the trophic relationship for cephalopods, with special attention to the transmission of parasites, thus allowing evaluation of animals well-being and ecosystem health. Development of protocols for assessment of health status of cephalopods, thus providing guidance for researchers, veterinarians and regulators.,Evaluation of the impact of underwater human noise on cephalopods (in compliance with Directive 2010/63/EU and MSFD).,Development and application of consensus Severity Assessment of procedures (compliant with

	Directive 2010/63/EU) utilized with cephalopods.,Analysis of biological and physiological findings relevant to stress, nociception, pain assessment and management relevant to cephalopods. Evaluation of alternative methods to be utilized in experimental procedures. Evaluation of physiological and stress response during anesthesia. Development of humane end-point.		
Description	Directive 2010/63/EU places cephalopods as the sole representatives among invertebrates in the list of 'Laboratory Animals'. The recent publication of the "Guidelines for the Care and Welfare of Cephalopods in Research" as output of the 'community effort' within COST Action FA1301 and endorsed by FELASA, prompted a contact from the European Commission that solicited the proposals for additions to Annex 3 (care and accommodation) and Annex 4 (humane-killing) of the Directive specifically designed for cephalopods. These "recommendations" are missing in the current version of the Annexes of the Directive. The Meeting will provide mandated minima for care, accommodation, humane-killing etc for the most the common species used in research. The results of the meeting will be transferred to a white-paper complementing Guidelines, and this will be presented to a meeting of the Commission/National Contact Points for consideration, expected to occur during the late summer of the 2016. A representative acting as Technical Expert for the European Commission will attend to the meeting in Berlin and provide guidance. FA1301 participants will attend and be selected from those that developed "Guidelines" and those that produced reviews on the currently available best-practices from laboratory- aquaculture-rearing of animals for. Experts on welfare of animals belonging to CephslnAction will be also invited to contribute.		
Output(s)	Tangible outputs: report on website; publication of white paper as reporting tool for European Commission for the update of Annexes of Directive 2010/63/EU. Less / non- tangible outputs: knowledge exchanges including strategic information, planning, technical know-how, and policy development.		
Location	Berlin (Germany)	ITC	No
Start Date	2016-01-27 09:00:00	End Date	2016-01-29 13:00:00
Duration	3 days		
Number of expected total participants	30	Number of participants to be reimbursed from COST funds	25
Average reimbursement(per participant)(EUR)	680.00	Total Reimbursement costs (EUR)	17,000.00
Local Organiser Support (EUR)	1,000.00		
Total cost of the meeting (EUR)	18,000.00		

Meeting Type	Working Group Meeting
Title of the Meeting	CephslnAction Strategies
Grant Period Goal(s) it will address	Synthesize and analyze the available knowledge on cephalopod biology, physiology and welfare,Monitoring the application of "Guidelines for the Care and Welfare of Cephalopods in Research", the improvement of experimental practices, and the impact of the transposition of Directive 2010/63/EU and MFSD

	<p>in Member States.,Evaluate the environmental, biological and behavioral needs of different cephalopod species to increase success of caring, maintenance, growth and rearing aimed to reduce stress and increase welfare in research and aquaculture establishments.,Increase knowledge on nutritional requirements of different cephalopods species at various developmental stages including those required to improve health and welfare in aquaculture.,Increase the knowledge of biological and physiological indicators (e.g. biomarkers) of welfare for cephalopods, also by increasing the use of alternatives to live animals in research, and the use of non-invasive approaches.,Increase of knowledge and identification of pathogens, mechanical damages, signs of stress and diseases in cephalopods. Study of the trophic relationship for cephalopods, with special attention to the transmission of parasites, thus allowing evaluation of animals well-being and ecosystem health. Development of protocols for assessment of health status of cephalopods, thus providing guidance for researchers, veterinarians and regulators.,Evaluation of the impact of underwater human noise on cephalopods (in compliance with Directive 2010/63/EU and MSFD).,Development and application of consensus Severity Assessment of procedures (compliant with Directive 2010/63/EU) utilized with cephalopods.,Analysis of biological and physiological findings relevant to stress, nociception, pain assessment and management relevant to cephalopods. Evaluation of alternative methods to be utilized in experimental procedures. Evaluation of physiological and stress response during anesthesia. Development of humane end-point.,Evaluation of the current effort/interest for physiology and neurophysiological studies on cephalopods.,Contribution to the development of noninvasive/automated techniques for assessing physiological status of cephalopods.,Development of online databases as guidance and inventory of alternatives.,Further development of the CephInAction CWI (Cephalopod Welfare Index) database-project by collection of statements (from scientific literature and best-practice), identification of animals' needs, thus facilitate the linking of 'statements' to biological 'needs' in order to determine indicators of cephalopods welfare.,Dissemination and Educational activities. Development of an EU accredited Training School Programme for Cephalopod Biology and Care in compliance with Directive 2010/63/EU.</p>		
Description	<p>The FA1301 WGs meeting will strategically review how CephInAction meets its objectives at its half way point. Aims of the meeting is to: i. review the work-plan, and the currently available results; ii. to extend our networking further towards the worldwide cephalopod science community and plan a joined meeting as suggested by the former President of the CIAC (Cephalopod International Advisory Network; Professor Louise Allcock); iii. to provide a revision of our future goals and plan measurable deliverables in order to meet the COST Action objectives with significant impact and outcomes. The meeting will also aim to prepare for the application to other possible grant calls available through H2020 and other sources</p>		
Output(s)	<p>Tangible outputs: report on website. A short paper will appear after the meeting describing impact and forecasted outcomes of CephInAction Less / non-tangible outputs: knowledge exchanges including strategic information, planning, policy development, and expected decision to be taken.</p>		
Location	Berlin (Germany)	ITC	No
Start Date	2016-01-29 15:00:00	End Date	2016-01-30 19:00:00
Duration	2 days		
Number of expected total	20	Number of participants to	17



participants		be reimbursed from COST funds	
Average reimbursement(per participant)(EUR)	680.00	Total Reimbursement costs (EUR)	11,560.00
Local Organiser Support (EUR)	680.00		
Total cost of the meeting (EUR)	12,240.00		

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## Training School

### Overview

Title of the Training School	Dates	Location	ITC	Total Cost(EUR)
Training School CBC 2015	26/10/2015 - 30/10/2015	Vico Equense, Naples (Italy)	No	8,793.92
CBC: Anesthesia and Scientific Procedures	14/03/2016 - 16/03/2016	Barcelona (Spain)	No	12,600.00
			Total	21,393.92

### Details

Title of the Training School	Training School CBC 2015		
Grant Period Goal(s) it will address	<p>Synthesize and analyze the available knowledge on cephalopod biology, physiology and welfare, Monitoring the application of "Guidelines for the Care and Welfare of Cephalopods in Research", the improvement of experimental practices, and the impact of the transposition of Directive 2010/63/EU and MFSD in Member States., Evaluate the environmental, biological and behavioral needs of different cephalopod species to increase success of caring, maintenance, growth and rearing aimed to reduce stress and increase welfare in research and aquaculture establishments., Increase knowledge on nutritional requirements of different cephalopods species at various developmental stages including those required to improve health and welfare in aquaculture., Increase the knowledge of biological and physiological indicators (e.g. biomarkers) of welfare for cephalopods, also by increasing the use of alternatives to live animals in research, and the use of non-invasive approaches., Development and application of consensus Severity Assessment of procedures (compliant with Directive 2010/63/EU) utilized with cephalopods., Contribution to the development of noninvasive/automated techniques for assessing physiological status of cephalopods., Development of online databases as guidance and inventory of alternatives., Dissemination and Educational activities. Development of an EU accredited Training School Programme for Cephalopod Biology and Care in compliance with Directive 2010/63/EU.</p>		
Description	<p>Training School on the best practice in husbandry, maintenance and care of cephalopods. This Training School is part of the Cephalopod Biology and Care Training Program, initiated in 2014; the School is acquiring official accreditation towards FELASA that acts as official accreditation board among Member States and is the most-renowned accreditation agency for training and education programs designed in compliance with Directive 2010/63/EU.</p>		
Output(s)	<p>tangible output: European Accreditation (FELASA); less tangible output: knowledge exchanges including strategic information, technical know-how</p>		
Location	Vico Equense, Naples (Italy)	ITC	No
Start Date	2015-10-26 09:00:00	End Date	2015-10-30 19:00:00
Number of trainers	6	Number of trainees	18
Number of trainers to be reimbursed	4	Number of trainees to be reimbursed	7

Average trainer Reimbursement(EUR)	524.84	Average reimbursement per trainee(EUR)	828.57
Total trainer Reimbursement(EUR)	2,099.36	Total trainee Grant(EUR)	5,799.99
Local Organiser Support (EUR)	894.57		
Total cost of the Training School(EUR)	8,793.92		

Title of the Training School	CBC: Anesthesia and Scientific Procedures		
Grant Period Goal(s) it will address	<p>Synthesize and analyze the available knowledge on cephalopod biology, physiology and welfare, Evaluate the environmental, biological and behavioral needs of different cephalopod species to increase success of caring, maintainance, growth and rearing aimed to reduce stress and increase welfare in research and aquaculture establishments., Increase knowledge on nutritional requirements of different cephalopods species at various developmental stages including those required to improve health and welfare in aquaculture., Increase the knowledge of biological and physiological indicators (e.g. biomarkers) of welfare for cephalopods, also by increasing the use of alternatives to live animals in research, and the use of non-invasive approaches., Development and application of consensus Severity Assessment of procedures (compliant with Directive 2010/63/EU) utilized with cephalopods., Analysis of biological and physiological findings relevant to stress, nociception, pain assessment and management relevant to cephalopods. Evaluation of alternative methods to be utilized in experimental procedures. Evaluation of physiological and stress response during anesthesia. Development of humane end-point., Dissemination and Educational activities. Development of an EU accredited Training School Programme for Cephalopod Biology and Care in compliance with Directive 2010/63/EU.</p>		
Description	<p>Training School on experimental procedures with and without anaesthesia developed for cephalopods (cuttlefish, squid and octopus) will be held in Barcelona and will be authorized in purpose by the National Competent Authority of the country (Spain) in compliance with Directive 2010/63/EU. Professor Patrocinio Vergara, current President of ICLAS, of the Faculty of Veterinary (Universitat Autònoma de Barcelona) and the Institute de Ciències del Mar will act as Local Organizer. This TS will be the first one operating in Europe specifically designed for training (including vocational training) on “procedures” for cephalopods in agreement with definitions provided in the Directive 2010/63/EU and the “Guidelines” (<a href="http://lan.sagepub.com/content/49/2_suppl/1.abstract">lan.sagepub.com/content/49/2_suppl/1.abstract</a>). The event of this COST FA1301TS will be also included by the Local Organizer within the framework of the currently running training program, and operating in other dates by the Veterinary School in Barcelona, as one of the few FELASA accredited courses running in Europe; this will provide additional mutual benefits.</p>		
Output(s)	Tangible outputs: development of European Accredited (FELASA) training program; Less tangible output: knowledge exchanges including strategic information, technical know-how.		
Location	Barcelona (Spain)	ITC	No

Start Date	2016-03-14 09:00:00	End Date	2016-03-16 19:00:00
Number of trainers	6	Number of trainees	18
Number of trainers to be reimbursed	4	Number of trainees to be reimbursed	13
Average trainer Reimbursement(EUR)	700.00	Average reimbursement per trainee(EUR)	660.00
Total trainer Reimbursement(EUR)	2,800.00	Total trainee Grant(EUR)	8,580.00
Local Organiser Support (EUR)	1,220.00		
Total cost of the Training School(EUR)	12,600.00		

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## STSM

Number	7
Average cost per STSM(EUR)	2,447.00
Total cost(EUR)	17,129.00

How will the STSMs contribute to the achievement of the Grant Period Goals?

## Disseminations

Title	Type	Publisher/provider	Expected date of Release	Cost(EUR)
Guidelines for the Care and Welfare of Cephalopods in Research	Printed publication	SAGE Publishers	23/11/2015	2,000.00

How will this Dissemination contribute to the achievement of the Grant Period Goals?
Synthesize and analyze the available knowledge on cephalopod biology, physiology and welfare, Dissemination and Educational activities. Development of an EU accredited Training School Programme for Cephalopod Biology and Care in compliance with Directive 2010/63/EU.

Title	Type	Publisher/provider	Expected date of Release	Cost(EUR)
Special Issue CephsInAction	Electronic publication	Elsevier or Springer	23/12/2015	3,000.00

How will this Dissemination contribute to the achievement of the Grant Period Goals?
Synthesize and analyze the available knowledge on cephalopod biology, physiology and welfare, Evaluate the environmental, biological and behavioral needs of different cephalopod species to increase success of caring, maintainance, growth and rearing aimed to reduce stress and increase welfare in research and aquaculture establishments., Increase knowledge on nutritional requirements of different cephalopods species at various developmental stages including those required to improve health and welfare in aquaculture., Increase the knowledge of biological and physiological indicators (e.g. biomarkers) of welfare for cephalopods, also by increasing the use of alternatives to live animals in research, and the use of non-invasive approaches., Increase of knowledge and identification of pathogens, mechanical damages, signs of stress and diseases in cephalopods. Study of the trophic relationship for cephalopods, with special attention to the transmission of parasites, thus allowing evaluation of animals well-being and ecosystem health. Development of protocols for assessment of health status of cephalopods, thus providing guidance for researchers, veterinarians and regulators., Development and application of consensus Severity Assessment of procedures (compliant with Directive 2010/63/EU) utilized with cephalopods., Analysis of biological and physiological findings relevant to stress, nociception, pain assessment and management relevant to cephalopods. Evaluation of alternative methods to be utilized in experimental procedures. Evaluation of physiological and stress response during anesthesia. Development of humane end-point., Evaluation of the current effort/interest for physiology and neurophysiological studies on cephalopods., Contribution to the

development of noninvasive/automated techniques for assessing physiological status of cephalopods.,Further development of the CephInAction CWI (Cephalopod Welfare Index) database-project by collection of statements (from scientific literature and best-practice), identification of animals' needs, thus facilitate the linking of 'statements' to biological 'needs' in order to determine indicators of cephalopods welfare.,Dissemination and Educational activities. Development of an EU accredited Training School Programme for Cephalopod Biology and Care in compliance with Directive 2010/63/EU.

Title	Type	Publisher/provider	Expected date of Release	Cost(EUR)
To be defined	Multi-media	To be defined	23/12/2015	5,000.00

How will this Dissemination contribute to the achievement of the Grant Period Goals?

Contribution to the development of noninvasive/automated techniques for assessing physiological status of cephalopods.,Development of online databases as guidance and inventory of alternatives.,Further development of the CephInAction CWI (Cephalopod Welfare Index) database-project by collection of statements (from scientific literature and best-practice), identification of animals' needs, thus facilitate the linking of 'statements' to biological 'needs' in order to determine indicators of cephalopods welfare.,Dissemination and Educational activities. Development of an EU accredited Training School Programme for Cephalopod Biology and Care in compliance with Directive 2010/63/EU.

Title	Type	Publisher/provider	Expected date of Release	Cost(EUR)
To be defined	Leaflet / Brochure	to be defined	23/12/2015	600.00

How will this Dissemination contribute to the achievement of the Grant Period Goals?

Dissemination and Educational activities. Development of an EU accredited Training School Programme for Cephalopod Biology and Care in compliance with Directive 2010/63/EU.

Title	Type	Publisher/provider	Expected date of Release	Cost(EUR)
Action Website maintenance	Action Website	to be defined	23/12/2015	1,400.00

How will this Dissemination contribute to the achievement of the Grant Period Goals?

Development of online databases as guidance and inventory of alternatives.,Further development of the CephInAction CWI (Cephalopod Welfare Index) database-project by collection of statements (from scientific literature and best-practice), identification of animals' needs, thus facilitate the linking of 'statements' to biological 'needs' in order to determine indicators of cephalopods welfare.,Dissemination and Educational activities. Development of an EU accredited Training School Programme for Cephalopod Biology and Care in compliance with Directive 2010/63/EU.

Title	Type	Publisher/provider	Expected date of Release	Cost(EUR)
Technical Support/Maintenance	Action Website	LuxApps, Luxembourg	15/10/2015	320.00

How will this Dissemination contribute to the achievement of the Grant Period Goals?

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Title	Type	Publisher/provider	Expected date of Release	Cost(EUR)
Action Website main tenance/Monitoring and installation of wordpress and Plugins updates	Action Website	LuxApps	23/12/2015	300.00

How will this Dissemination contribute to the achievement of the Grant Period Goals?	
Total Disseminations	12,620.00

#### OERSA

Item	Cost(EUR)
Conference fee for dissemination meeting CIAC2015	275.38
Bank charges	126.18
Bank charges LOS AE2015	32.66

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