

## 25th November, Wednesday

9:30 –Welcome and Introduction - **G. Ponte, D. Osorio, J. Pereira**

### 9:45 CephInAction welcomes new members

**M. Schmidt\*** (AT) – Biosafety, bioethics, science communication and art-science collaborations. A short summary of Biofaction's activities

**L.R. Cagliani** (IT) – The potentiality of the NMR spectroscopy in the metabolic characterization

**S. Kolkovski** (AU) – Octopus Aquaculture Development in Western Australia

**G. Ostojic & S. Stankovski** (RS) – Outline of University of Novi Sad, Faculty of Technical Sciences and group of Mechatronics, Automation and Identification Technology

~ Coffee Break ~

### 11:00 CephInAction Projects – PAS-C

**P.L.R. Andrews** (UK) - Prospective Assessment on Severity of procedures in Cephalopods (PAS-C) A FA1301-WG4 activity

~ Lunch ~

### 14:30 Cephalopod Science

*Contributions from the worldwide scientific community* presented and facilitated by

**J. Pereira** (PT) and **G. Fiorito** (IT)

**A. El Nagar** (UK) - Perception of depth in cuttlefish; testing the influence of real 3D and shadows

**V. Penicaud** (FR) - The common cuttlefish, *Sepia officinalis*, as an ecotoxicological model for trophic and dissolve heavy metal contamination in the context of global change

### 15:15 FA1301 most significant results, an overview

**G. Ponte** (Chair of the COST Action)

*Discussion with short reports from participants and leaders*

### 15:45 FA1301 WG2

**C. Gestal** (ES, WG Leader)

*report from WG leader and their delegates*  
*on the outcome of meetings and activities*

#### STSMs of relevance

**P. Tedesco** (IT) – Ultrastructural and molecular characterization of *Aggregata* spp. from Central Mediterranean

**C. Gestal** (ES) – Identification and cell location of the expression of specific immune-related genes in the common octopus *Octopus vulgaris* using immunohistochemical and RNA in situ hybridization (ISH) techniques

### FA1301 WG2 - continue

**J. Moura** (PT) – Study of the expression of different genes of the polyunsaturated fatty acid metabolism of octopus paralarvae (*Octopus vulgaris*) through quantitative PCR (qPCR)

**J. Estefanell** (ES) –Growth of *Octopus vulgaris* under 3 levels of confinement: effect on corticosterone levels

#### Discussion on Goals for the period (whenever the case)

~ Coffee Break ~

### 17:30 FA1301 WG1

**A. Sykes** (PT, WG Vice Leader)

*report from WG leader and their delegates*  
*on the outcome of meetings and activities*

**K. Perkins** (UK) – SeaLife and cephalopods

#### STSMs of relevance

**P. Amodio** (IT) – Two novel methodological approaches to investigate the social behaviour of the octopus in the wild

**R. Fernández-Gago** (ES) – Histology and 3D characterization of the digestive system paralarvae of *Octopus vulgaris* Cuvier, 1797 at different stages of development

**D. Garrido** (ES) – Molecular and functional characterization and assessment of gene expression of genes involved in lipid metabolism

**S. Lourenço** (PT) – Application of Molecular Analysis of Trophic Interactions (MATI) methodologies to study the diet benthopelagic squids

#### Discussion on Goals for the period (whenever the case)

### 18:30 CephInAction, Goals for the period

#### Group Discussion and Suggestions from participants for the future time frame

~ Free Dinner ~

## 26th November, Thursday

### 9:30 Guidance documents for the cephalopod community and their impact on Policies

presented and facilitated by

**R. Villanueva** (ES) and **G. Fiorito** (IT)

~ Coffee Break ~

### 10:45 FA1301 WG4

**L. Stien** (NO, WG Leader)

*report from WG leader and their delegates*  
*on the outcome of meetings and activities*

**T. Kristiansen** (NO) – Overall animal welfare assessment

#### STSMs of relevance

**R. Fernández-Gago** (ES) – A preliminary study of the digestive gland of *Octopus vulgaris* paralarvae as a new nutritional conditional index

### 12:00 FA1301 WG3

**G. Fiorito** (IT, MC member for Italy)

*report from WG leader and their delegates*  
*on the outcome of meetings and activities*

**C. Pugliese** (IT) – Anesthesia and cephalopods: cardiovascular responses

**A. Sykes** (PT) – The use of different anaesthetics as welfare promoters during short-term human manipulation of European cuttlefish juveniles

**H. van De Vis** (NL) - Stunning of fish for protection of welfare at killing

**J. Pereira** (PT) - Can those easy killed octopus die easy in Portuguese and Italian fisheries? - Ways to die and numbers killed in small scale fisheries in both countries

#### STSMs of relevance

**F. Maiole** (IT) – A Effect of the exposure of *Sepia officinalis* embryo specimens to a pesticide: AChE as biomarker?

#### Discussion on Goals for the period (whenever the case)

~ Lunch ~

### 14:30 Cephalopod Science and Young Generations

**R. M. Franco-Santos** (DE) The Young Cephalopod Researchers (YCR) group: Origin and expectations for the future –

**26th November, Thursday**

**14:45 FA1301 WG5**

**G. Ponte**, *rapporteur and chairing discussion report from WG leader and their delegates on the outcome of meetings and activities*

**G. Ponte & G.Fiorito** – Ceph*sIn*Action Dissemination Activities

**STSMs of relevance**

**J. Culligan** (UK) – Cuttlefish Database

**FA1301 databases and other initiatives**

**G. Fiorito** (IT) – collection of data and call for contributions from the community

**A. Smith** (NO) – 3R resources: where to look and what's missing for cephalopods?

~ *Coffee break* ~

**R. Nakajima** (US) – Cephalopods for cephalopod community

**17:00 Ceph*sIn*Action, Goals for the period**

*Group Discussion and Suggestions from participants for the future time frame*

**18:00 Ceph*sIn*Action, wrapping up**

## **Goals of Ceph*sIn*Action for the year**

- 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
- Monitoring 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 animals' welfare
- 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 as applied to cephalopods
- 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
- Development of a Ceph*sIn*Action CWI (Cephalopod Welfare Index) by identification of animals' needs, thus to determine indicators of cephalopods welfare
- Dissemination and Educational activities.



**Ceph*sIn*Action**  
**A network for improvement of cephalopod welfare and husbandry in research, aquaculture and fisheries**

**COST Action FA1301**  
**Cascais, Lisbon - Portugal**  
**25-26 November 2015**  
**Hotel Baía**

**Ceph*sIn*Action@Cascais**  
**FA1301 WGs meeting**