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English version

Big Data in Aquaculture

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The formal process followed by the Workshop in the development of this Workshop Agreement has been endorsed by the National Members of CEN but neither the National Members of CEN nor the CEN-CENELEC Management Centre can be held accountable for the technical content of this CEN Workshop Agreement or possible conflicts with standards or legislation.

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Contents

Page

European foreword	3
Introduction	5
1 Scope.....	6
1.1 Policy Relevance.....	6
1.2 Scope.....	6
2 Normative references.....	6
3 Terms and definitions	7
3.1 General.....	7
3.2 Input Variables	8
3.3 Abbreviations and acronyms.....	9
4 Role of big data in aquaculture	10
5 Data flows and architecture	12
5.1 General.....	12
5.2 Aquaculture Knowledge Framework.....	14
5.3 Aquaculture Glossaries or Thesaurus	14
5.4 Aquaculture Domain Ontology.....	15
5.5 Aquaculture Training Ontology.....	15
5.6 Aquaculture IT Infrastructure Ontology	15
5.7 Aquaculture Knowledge Mechanisms	16
6 Methodology	16
7 Conclusions	17
Bibliography	18

European foreword

This CEN Workshop Agreement (CWA) was discussed at the Kick-off meeting of the CEN Workshop on Big Data. It sets out the data being used and the standardisation approach to be used for Big Data standards in the Aquaculture sector.

CWA 17239 was developed in accordance with CEN-CENELEC Guide 29 “CEN/CENELEC Workshop Agreements – The way to rapid agreement” and with the relevant provisions of CEN/CENELEC Internal Regulations - Part 2. It was agreed on 2017-01-24 in a Workshop by representatives of interested parties for approval following an approval period. It does not necessarily reflect the views of all stakeholders that might have an interest in its subject matter.

The formal decision to start work on this CEN Workshop Agreement “Big data Standards for Aquaculture” was taken at the kick off meeting for the Aquasmart Project in Luxembourg 2015.



The development of this CEN Workshop Agreement took place in the framework of the H2020 Aquasmart project.

The Approach to Big data for Aquaculture was agreed by the CEN Workshop on Big Data to identify the requirements for standards in the related area for use by the aquaculture industry, certifying organisations, regulatory authorities and individuals. The aims of the project are to assist in having an effective understanding of the structure of data available, to make proposals for developing analytics and to outline the associated tools that could benefit the aquaculture users.

Driven by the business needs of the European aquaculture companies and supporting the EU’s Blue Growth Strategy for marine and maritime sustainable growth Strategy, AquaSmart aims to radically enhance the innovation capacity within the aquaculture sector by helping companies to transform the large volumes of heterogeneous captured data into knowledge, through identification and analysis of this production data, and subsequently using this harvested knowledge to improve performance.

The CWA was developed by the following:

	WATERFORD INSTITUTE OF TECHNOLOGY (TSSG) COORDINATOR	IRELAND
	INTERGRATED INFORMATION SYSTEMS (I2S)	GREECE
	UNINOVA - INSTITUTO DE DESENVOLVIMENTO DE NOVAS TECNOLOGIAS (UNINOVA)	PORTUGAL
	GRAMMOS S.A. (GRAMMOS)	GREECE
	ARDAG COOPERATIVE AGRICULTURAL SOCIETY LTD (ARDAG)	ISRAEL

	NIORDSEAS SL (ANDROMEDA)	SPAIN
	Q-VALIDUS LIMITED (Q-VALIDUS)	IRELAND
 Institut "Jožef Stefan" Ljubljana, Slovenija	INSTITUT JOZEF STEFAN (JSI)	SLOVENIA

The CEN Workshop on Big Data had a Kick-off meeting on 24th January 2017.

Wide ranging consultation has taken place and it has been concluded that a sectoral approach to Big Data standards will meet the needs of this project and also meet the requirements and restrictions of CEN.

Introduction

The creation of this CEN Workshop on Big Data was conceived following the identified need for standardisation in the domain of Big Data. The rationale behind this project is sector relevant policy on Big Data and aquaculture plus the EC research programme.

Big Data concerns data sets so large or complex that traditional data processing applications are inadequate. Challenges include analysis, capture, search, sharing, storage, transfer, visualization, and information privacy. The term often refers simply to the use of predictive analytics or other certain advanced methods to extract value from data, and seldom to a particular size of data set. Accuracy in big data may lead to more confident decision making and better decisions can mean greater operational efficiency, cost reductions and reduced risk.

Analysis of data sets can find new correlations, to "spot business trends, prevent diseases, and combat crime and so on." Scientists, business executives, practitioners of media and advertising and governments alike regularly meet difficulties with large data sets in areas including Internet search, finance and business informatics. Data sets grow in size in part because they are increasingly being gathered by cheap and numerous information-sensing mobile devices, aerial (remote sensing), software logs, cameras, microphones, radio-frequency identification (RFID) readers, and wireless sensor networks. The world's technological per-capita capacity to store information has roughly doubled every 40 months since the 1980s. Relational database management systems and desktop statistics and visualization packages often have difficulty handling big data. The work instead requires "massively parallel software running on tens, hundreds, or even thousands of servers". What is considered "big data" varies depending on the capabilities of the users and their tools, and expanding capabilities make Big Data a moving target. Thus, what is considered to be "Big" in one year will become ordinary in later years. For some organizations, facing hundreds of gigabytes of data for the first time may trigger a need to reconsider data management options. For others, it may take tens or hundreds of terabytes before data size becomes a significant consideration. However, in spite of the relevance of the Big Data today, there is a clear lack and need for regulation concerning its reference Architectures, Technologies, Methods and Applications.

1 Scope

1.1 Policy Relevance

The CWA is relevant to EU legislation, policies and actions relating to ICT standardisation, as set out in the 2016 EU ICT Rolling Plan for ICT Standardisation. The creation of sector specific standards for big data in the aquaculture business will bring benefits to a number of stakeholders. The occupations followed will be those defined in ESCO (European Skills, Competences, Occupations and Qualifications) framework. These are used as targets in the training modules created by the Aquasmart Project.

The target stakeholders are listed below.

- Fish Farm Owners
- Fish Farm Managers
- Fish Farm Operatives
- Fish Farm Veterinarians
- Fish Farm Suppliers
- Researchers
- Government organizations (like environmental agencies)

1.2 Scope

The scope of this CWA contains six key objectives:

1. To facilitate technology transfer in multi-lingual data collection and analytical solutions and services;
2. To implement a multi-lingual Open Data framework that enables companies to seamlessly access global data in order to make knowledgeable decisions;
3. To promote best practices for aquaculture production management in core activities;
4. To develop innovation and deliver state of the art services in the aquaculture sector by tackling the new opportunities to access global data integrated from heterogeneous sources;
5. To develop a training programme and training activities;
6. To deliver a CEN Workshop Agreement on Big data for Aquaculture.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

There are no normative references in this document.