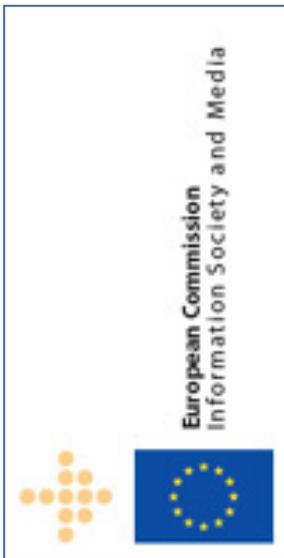| Project Acronym	**BlueBRIDGE**
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DISCLAIMER

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The goal of BlueBRIDGE*, Building Research environments for fostering Innovation, Decision making, Governance and Education to support Blue growth*, is to support capacity building in interdisciplinary research communities actively involved in increasing the scientific knowledge of the marine environment, its living resources, and its economy with the aim of providing a better ground for informed advice to competent authorities and to enlarge the spectrum of growth opportunities as addressed by the Blue Growth societal challenge.

This document contains information on BlueBRIDGE core activities, findings and outcomes and it may also contain contributions from distinguished experts who contribute as BlueBRIDGE Board members. Any reference to content in this document should clearly indicate the authors, source, organisation and publication date.

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The European Union (EU) was established in accordance with the Treaty on the European Union (Maastricht). There are currently 27 member states of the European Union. It is based on the European Communities and the member states' cooperation in the fields of Common Foreign and Security Policy and Justice and Home Affairs. The five main institutions of the European Union are the European Parliament, the Council of Ministers, the European Commission, the Court of Justice, and the Court of Auditors (http://europa.eu.int/).

GLOSSARY

ABBREVIATION	DEFINITION
BFT-Assessment	VRE in support of Blue-Fin Tuna assessment work of IRD
BlueAssessment	VRE offering specialized services for stock assessment. It can be adapted to meet specific groups (e.g. IRD Tuna Atlas, FAO Tuna Atlas, IRD BFT Stock Assessment, ICES Data poor stocks, etc.)
BlueBRIDGE	Building Research environments for fostering Innovation, Decision making, Governance and Education to support Blue growth
CMSY	A stock assessment software jointly developed by CNR and GEOMAR
Ecopath	A stock assessment software owned by the Ecopath consortium; to be integrated in a VRE for IRD
EwE	Ecopath with Ecosim; a software for stock assessment requiring integration of C++ computing resources in an infrastructure
GRSF	Global Record of Stocks and Fisheries; a VRE offering an integrated view on top of three existing and sometimes overlapping knowledge bases on stocks and fisheries
VPA	Virtual Population Analysis; a type of stock assessment
VRE	Virtual Research Environment

DELIVERABLE SUMMARY

Deliverable D5.1 – "Blue Assessment VRE Specification" aims to provide a detailed description of the requirements, the specifications, the effort and the design of the Blue Assessment VREs within Work Package 5.

The Blue Assessment Work Package develops and exploits two 'generic' VREs, each of which will be customizable to meet community needs for specific functionality: Stock Assessment VRE and the Global Record of Stocks and Fisheries. Those VREs have been set-up to offer environments where experts in the domain can identify the data sources to exploit, select the candidate models, identifies the software frameworks and applications to exploit, and perform validations of the chosen resources.

All VREs applications, data management services and portals will use the same infrastructure. Given the wide variety of data needs in the stock assessment VRE, the large size of the community, the degree of modularity of algorithms, and the variety of skills and developers involved in the implementation, a set of VREs is proposed to stem from the initial two VREs. They will share a common layer of services, but each will implement a different subset of specialized algorithms. These specializations allow to coordinate the actions and the timing of the different actors to successfully release new VREs respecting time and quality constraints.

This deliverable type is "Other" and it consists of a set of wiki pages hosted by the BlueBRIDGE Wiki (1).

The full version of the deliverable is available at the following URL:

https://support.d4science.org/projects/bluebridge/wiki/Blue_Assessment

The plans, specification and design of the stock assessment VRE is available here:

https://support.d4science.org/projects/bluebridge/wiki/Stock_Assessment_VRE_Work_plan

The plans specification and design of the GRSF is available here:

https://support.d4science.org/projects/bluebridge/wiki/GRSF_VRE_plan

References to the tickets accompanying the implementation and exploitation of the VREs are included in the wiki pages.

The VREs resulting from the plans are briefly described below:

- The **FAO stock assessment VRE** will contain the data, algorithms and data management services for FAO HQ and supported projects. The requirements are expected to be offered through the Statistical Manager and Tabular Data Manager, and effort, specifications and design will have to be provided by prospective customers in 2016;
- The **ICES stock assessment VRE** requirements are under review by ICES experts. It will contain 3 algorithms initially, which may require individual VREs for MSE for western horse mackerel; a Mixed fisheries assessment model and an Ensemble model;
- The **IRD BFT assessment VRE** will support a team of scientists to perform and persist a stock assessment on Blue-Fin Tuna. The requirements cover the computational resources and an advanced reporting mechanism. The effort is difficult to assess ex-ante, as the assessment team is still reviewing requirements and schedule;

- The ***IRD Tuna Atlas VRE*** is included here, although it is a co-funded effort building on the FAO Tuna Atlas, and assessing if it can be adapted to IRD needs;
- The ***IRD Ecopath with Ecosim VRE*** The requirements for this VRE are to serve the EwE desktop software (runs on Windows only) with information processed in the e-Infrastructure. The EwE computational core is system independent and can run on different OSs. It has been already integrated in the infrastructure via an integrated runtime environment (Mono) and it is currently exploitable in typical applications requiring a high-throughput-computing (HTC) approach (running multiple independent instances of software on multiple processors at the same time);
- The ***Global record of Stocks and Fisheries VRE*** brings together 3 distinct, but sometimes overlapping knowledge bases, in one semantic KB.

The intended readers of this deliverable are mainly community representatives working on the development of the VREs such as developers, data managers and validators / testers. They can find in the deliverable references to the work plan, the implementation status, and the steps they need to perform to contribute to the development process.

REFERENCES

1. [Online] https://support.d4science.org/projects/bluebridge/wiki/Blue_Assessment.