



<i>Project Acronym</i>	<i>iMarine</i>
<i>Project Title</i>	<i>Data e-Infrastructure Initiative for Fisheries Management and Conservation of Marine Living Resources</i>
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Abstract:

Application Programming Interface Software contains the description and pointers to the design and architecture of components and services delivered up to M6 as part of the Integration and Interoperability Framework.

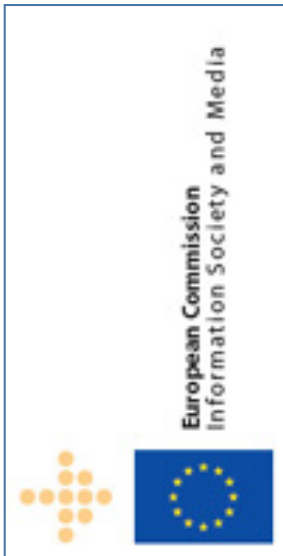
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DISCLAIMER



iMarine (RI – 283644) is a Research Infrastructures Combination of Collaborative Project and Coordination and Support Action (CP-CSA) co-funded by the European Commission under the Capacities Programme, Framework Programme Seven (FP7).

The goal of iMarine, *Data e-Infrastructure Initiative for Fisheries Management and Conservation of Marine Living Resources*, is to establish and operate a data infrastructure supporting the principles of the Ecosystem Approach to Fisheries Management and Conservation of Marine Living Resources and to facilitate the emergence of a unified Ecosystem Approach Community of Practice (EA-CoP).

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

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GLOSSARY

ABBREVIATION	DEFINITION
iMarine	Data e-Infrastructure Initiative for Fisheries Management and Conservation of Marine Living Resources
HTTP	Hyper Text Transfer Protocol
API	Application Programming Interface

DELIVERABLE SUMMARY

1. INTRODUCTION

This deliverable describes the novelties and evolution of the Application Programming Interface Software up to M6 (Apr.'12).

2. TARGET RELEASE(S)

This deliverable reports on the software released as part of the following gCube releases:

- gCube 2.9.0

3. OBJECTIVES

The new version of components belonging the Application Programming Interface released as part of gCube 2.9.0 covers the following objectives:

- Decrease development costs

Implementing sets of common utilities within shared libraries, aims at decreasing the development costs within Integration and Interoperability Framework, which include both first-time costs and maintenance costs. Applications within Integration and Interoperability Framework are dealing with implementation of individual functionality covering the application logic needs, while core functionality is developed in one place and uniformly accessed through shared framework utilities.

- Transparency

One of the goals of the Integration and Interoperability framework is to implement design solutions that simplify client usage, particularly with respect to requirements that are specific to our system. The framework implementation is designed to wrap gCube's complexity by packing and interfacing standard procedures like discovery, context management, streaming, etc. The final objective is to decrease the overall learning curve associated with the use of the system.

- Coverage

The model for the Integration and Interoperability framework addresses a wide range of issues that transcend the semantics of individual services, including scoping issues, replica discovery and management issues, and fault management issues. The software related to this objective will provide the means for covering those topics of general use and make them dispensable within the clients of the framework.

- HTTP/S Front End as a layer of the Integration and Interoperability Framework

The Application Services Layer offers HTTP/S APIs (the supported protocol depends on the application server configuration) to expose a subset of its JAVA API facilities for supporting high level standards. The retrospection of the existing architecture and principles of those interfaces guides the steps towards the formalization into a framework for this layer of the system. The need for extensibility of the framework drives the decision to divide the monadic application (ApplicationSupportLayerHttp) into a set of smaller applications that can proliferate within the framework. In the new version of this layer, an HTTP/S application logically groups related functionality.

- Support consumers of gCube features

Clients of gCube software now have new tools for developing consumers of features offered by gCube Services: (i) common-clients, an API for client library development, and (ii) common-gcore-clients, a specialization of the common-clients API for clients of gCube services

4. COMPONENTS

In the target releases, the following components have been updated or newly introduced:

- to decrease development costs, support transparency and coverage, and have the HTTP/S Front End as a layer of the Integration and Interoperability Framework:
 - ApplicationSupportLayerHttpAccessManagement 1.0.0
 - ApplicationSupportLayerHttpInfrastructureLogin 1.0.0
- to support consumers of gCube features (in collaboration with WP8):
 - common-clients 1.0.0
 - common-gcore-clients 1.0.0

5. DOCUMENTATION

A comprehensive documentation of the described components belong to is available at [6] and [7].

Technical documentation covering all the aspects of the software is available at:

- Admin's Guide [2]
- Developer's Guide [4]
- User's Guide [5]

Finally, for development purpose, Javadoc documentation for each component, along with a direct link to the associated section in Developer's Guide, is available at [2].

6. DOWNLOAD

The components described in this deliverable are available for download at [1]. Direct links to each component are available at [2].

REFERENCES

- [1] gCube Maven Repository RELEASES:
<http://maven.research-infrastructures.eu/nexus/index.html#view-repositories;gcube-releases~browsestorage>
- [2] gCube Distribution Site:
https://www.gcube-system.org/index.php?option=com_distribution&view=distribution&Itemid=23
- [3] Administrator's Guide:
https://gcube.wiki.gcube-system.org/gcube/index.php/Administrator%27s_Guide
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