iMarine - a Hybrid Data Infrastructure for an ecosystem approach to fisheries management and the conservation of marine living resources

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Short biography

Dr Pasquale Pagano is a Senior Researcher at the Networked Multimedia Information Systems Laboratory of the "Istituto di Scienza e Tecnologie della Informazione A. Faedo" (ISTI) of the Italian National Research Council (CNR). He received his M.Sc. in Information Systems Technologies from the Department of Computer Science of the University of Pisa (1998), and the Ph.D. degree in Information Engineering from the Department of Information Engineering: Electronics, Information Theory, Telecommunications of the same university (2006). The aim of his research is the study and experimentation of models, methodologies and techniques for the design and development of distributed Virtual Research Environments (VREs) which require the handling of heterogeneous resources provided by Grid and Cloud based e-Infrastructures. He has a strong background on distributed architectures. Currently, he is the Technical Director of the Data e-Infrastructure Initia-

tive for Fisheries Management and Conservation of Marine Living Resources (iMarine), is a member of the GRDI2020 expert working group, and serves EUBrazilOpenBio initiative as consultant.

Abstract of the Flash Presentation

iMarine (www.i-marine.eu) operates a hybrid data infrastructure to support the principles of the Ecosystem Approach to Fisheries (EAF) management and the conservation of marine living resources. This infrastructure is provided by D4Science (www.d4science.org), a large-scale infrastructure for Virtual Research Environments. The infrastructure can interface with existing infrastructures and services including grid (EGI), cloud (VENUS-C, Hadoop, MS Azure) and data sources (based on OAI-PMH, SDMX, TAPIR). It can manage the entire data life cycle, i.e. capture-validate-analysis, where data can be from any domain; from species observations to socio-statistical data, documents and environmental monitoring data. To exemplify its capabilities, iMarine now supports ecological niche modelling, species capture time-series harmonization, statistical data analysis with R, data mining with WEKA, and data access e.g. SDMX repositories and GBIF Species occurrence datasets. With iMarine, users have access to real-time, accessible information for use in the analysis of possible impacts on biodiversity and individual species occurrence in the marine environment, an essential element in the EAF.