



Towards an e-infrastructure in agriculture?

Donatella Castelli, CNR-ISTI

CNR-ISTI

donatella.castelli@isti.cnr.it

Euragri Workshop

Big data in agriculture: consequences for
research and research organizations

9 March 2016, Paris

- iMarine & its Virtual Research Environments
- BlueBRIDGE Virtual (Research) Environments
- Final remarks

Terminology (1)

Data infrastructure

“e-Infrastructure” offering services for collection, deposition, storage, preservation, access, retrieval, analysis/mining/processing, publication, etc.

e-Infrastructure

Electronic platform operated by a responsible entity offering an open set of basic enabling services (including access to resources) to a Community of Practice (CoP). Through the e-Infrastructure the CoP realises economy of scale.



Terminology (2)



**The Community of Practice
(the community)**



PARTHENOS
Pooling Activities, Resources and Tools
for Heritage E-research Networking,
Optimization and Synergies



**The e-infrastructure
(the operational platform)**



**The system
(the enabling sw system)**

iMarine

Launch an initiative aimed at **establishing and operating an e-infrastructure** contributing to the implementation of the principles of the **Ecosystem Approach to Fisheries Management and Conservation of Marine Living Resources**



With the support of



Data Infrastructure for the iMarine CoP

Services
“in the style of cloud”



Leveraging others' resources

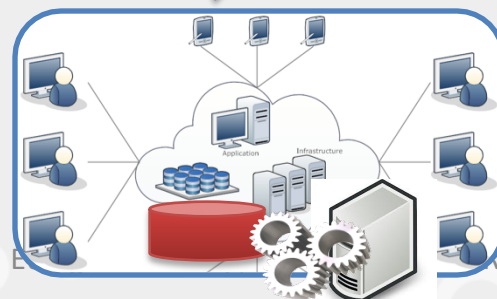
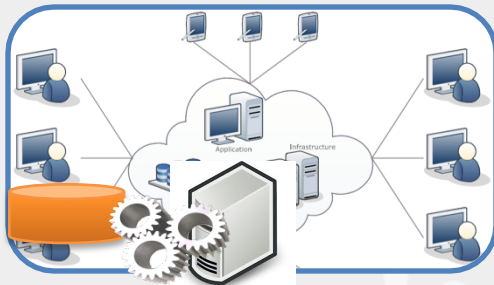


Leveraging others' resources



Own resources

Third-party providers



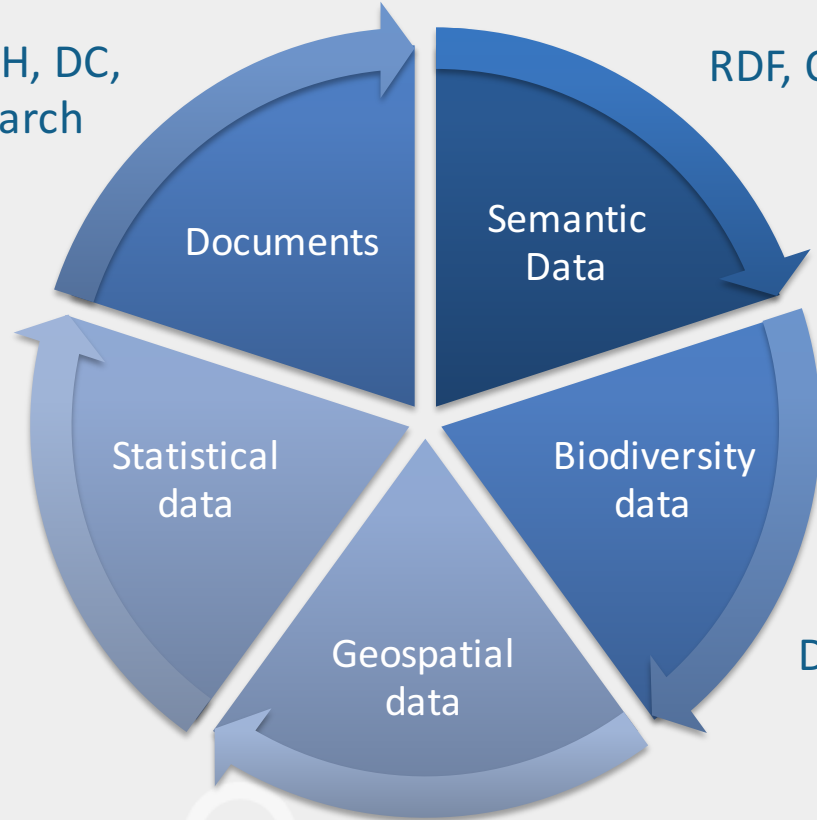
A, Paris

Hetogeneous datasets



OAI-PMH, DC,
OpenSearch

RDF, OWL



DwC, DwC-A

SDMX*

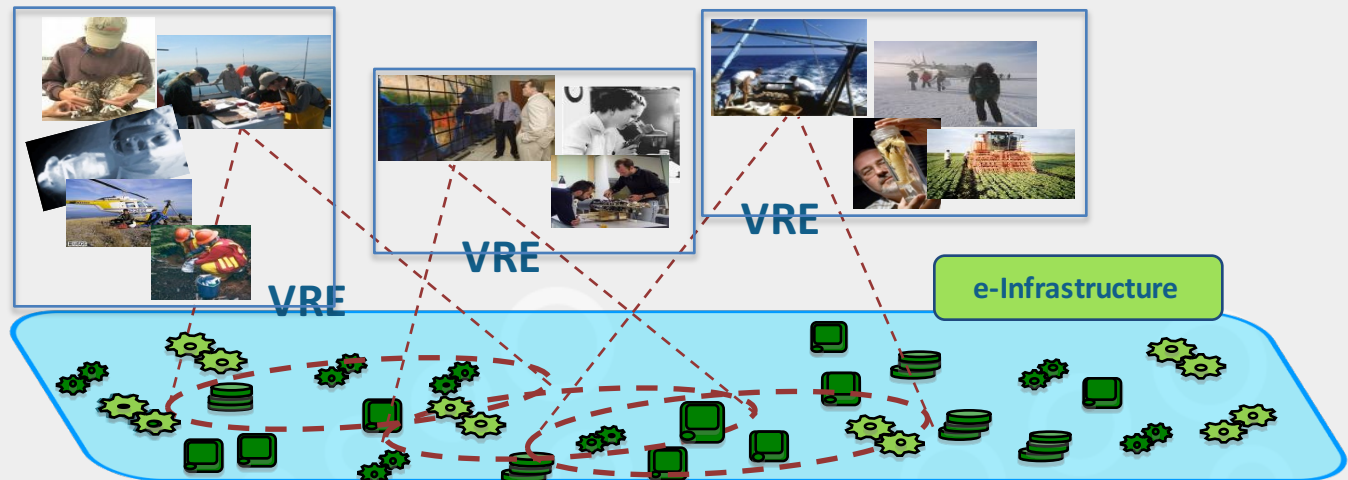
ISO19139 (OGC W*S)



VRE as-a-Service

Virtual Research Environment

- **web-based working environment**
- providing access to services and resources tailored to serve the needs of a community of practice in **accomplishing a specific goal**
- **open and flexible** with respect to service offering and lifetime
- providing fine-grained **controlled sharing** of both intermediate and final research results
- **Very low cost of creation and operation**



Name: MyPersonalVRE
 Designer: Pasquale Pagano (pasquale.pagano)
 VRE Manager: Leonardo Candela (leonardo.candela)
 Description: The environment for my research

Life time
 From: November 22, 2014
 To: November 22, 2015

- Taxonomic Data Comparison
- ConnectCube
 - Enhanced Documents Management
 - Information Objects Discovery
 - Messaging
 - Shared Workspace
 - Social Networking Facilities
- GeosCube
 - Geospatial Data Discovery
 - Geospatial Data Processing
- StatsCube

1. Specify VRE metadata (including policies)

2. Select applications

Available Resources for Occurrence and Taxonomic Data Discovery

Name	Description	Se
CatalogueOfLife	A virtual biodiversity repository of Catalogue of Life...	
GBIF	A virtual biodiversity repository of GBIF data. The...	
BrazilianFlora	A virtual biodiversity repository of List of Sp...	
ITIS	A virtual biodiversity repository of ITIS data. The...	
WoRDSS	A virtual biodiversity repository of WoRDSS data. The...	
OBIS	A virtual biodiversity repository of OBIS data. The...	
WoRMS	A virtual biodiversity repository of WoRMS data. Th...	
ASFIS	Runtime Resource for ASFIS Plugin	
IRMNG	A virtual biodiversity repository of IRMNS data. The...	

Reset Commit char

Available Resources for Statistical Service

Name	Description	Se
..._OBS...	Algorithm returning most observed species in a sp...	
...: OBIS_SPECIES_OBSERVATIONS_PER_MEOW_AREA	Algorithm returning most observed species in a specific years range (from OBIS database).	
..._SCHEMA	Algorithm that allows to view the schema names of...	
Intersection	GIS intersection process. The native algorithm is i...	
Spread	Spread	
SPECIES_OBSERVAT...	Algorithm returning most observed species in a sp...	
OCCURRENCES_DU...	A transducer algorithm that produces a duplicate fr...	
XYEXTRACTOR_TABLE	An algorithm to extract values associated to a table...	

Reset Commit char

4. Select data collections

3. Configure applications

Hardware setup and software deployment completely hidden

Evolving needs of its users completely supported

Collaborative Environment

A single point to

Get status and updates from applications and other users they are interested in;
 Get notifications about messages, jobs completion, new generated products, etc.

Workspace

Notifications Page

Search in your Workspace

Home Social

Powered by **globe BE** NETWORK

Luca Frosini (Sign Out)

Marine Gateway
Data e-Infrastructure Initiative for Fisheries Management and Conservation of Marine Living Resources

Home Profile Contacts Center Join New

Share updates

Share an update or paste a link **Share Updates**

privacy level: My VREs

News feed

All Updates Only Me **User news feed**

Massimiliano Assante Facebook's New Graph Search, check it out

Here Is The Ex-Googler Dream Team That Led Facebook's New Graph Search Tool | TechCrunch - t.co
<http://t.co/9fHajtCx>
 When Facebook unveiled its new Graph Search function earlier today, it also unveiled the two people who spearheaded the new "third pillar" of Facebook: Lars Rasmussen and Tom Stocky, two heavy-hitters that Facebook hired away from the world'...

Reply - Favorite - Message January 20, 3:18 PM

AquaMapsSpeciesView SpeciesDistribution map "Abalistes stellaris" is now available
 Reply - Favorited - go App [devVRE] January 17, 7:57 PM ★ 2

My Virtual Research Environments SHOW LIST

AquaMaps BiodiversityResearchEnv Public

DocumentsWorkflow EcologicalModelling Public


VREs user is a member of

Workspace


A single place to

- Manage data, store and preserve them
- Share data

Workspace Public Link

 Create links to files in your Workspace to download them. You can send the links to anyone by pasting them into Workspace Message, your emails, instant messages, etc.

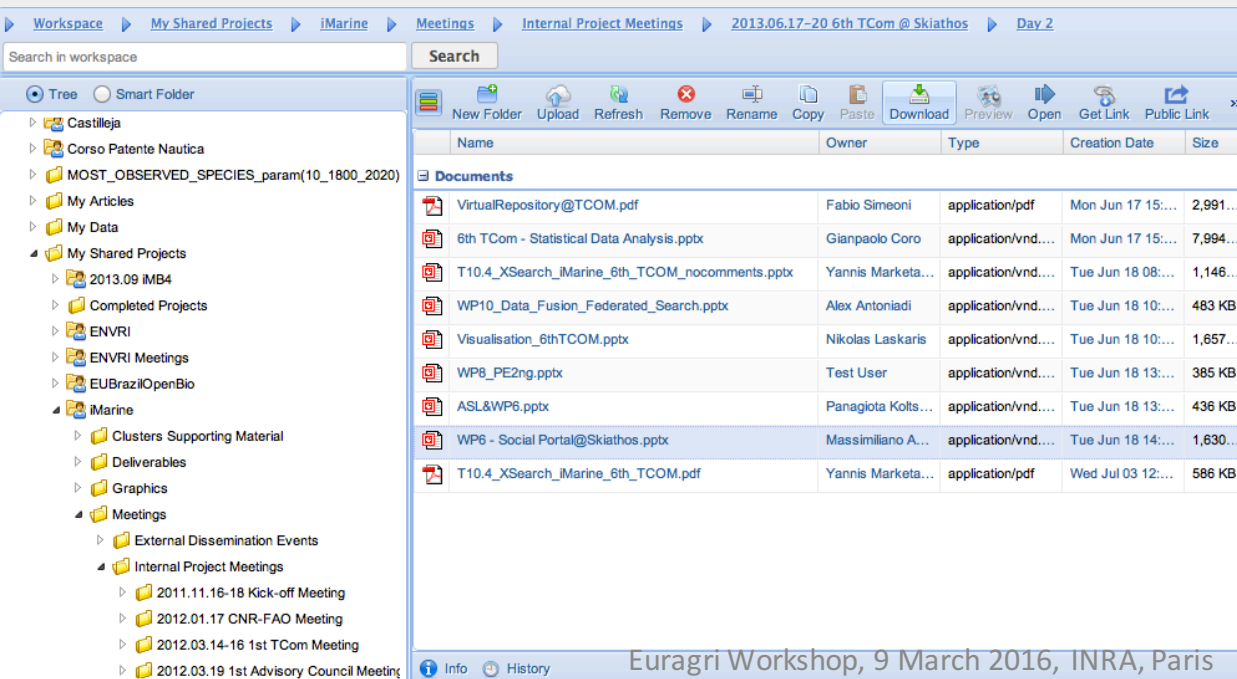
Workspace Share Folders and Files

 The quickest way to share something is using the Share Folder. Locate the folder with the files you want to share and then click 'Share'

Workspace Upload Files and Archives

You can upload files in the Workspace in several ways:

- 1 - Drop your files from Desktop;
- 2 - Click 'Upload' and Browse Files;
- 3 - Upload a zip file to unzip directly its content in the Workspace.



Workspace > My Shared Projects > iMarine > Meetings > Internal Project Meetings > 2013.06.17-20 6th TCom @ Skiathos > Day 2

Search in workspace Search

Tree Smart Folder

- Castilleja
- Corso Patente Nautica
- MOST_OBSERVED_SPECIES_param(10_1800_2020)
- My Articles
- My Data
- My Shared Projects
 - 2013.09 IMB4
 - Completed Projects
 - ENVRI
 - ENVRI Meetings
 - EUBrazilOpenBio
 - Marine
 - Clusters Supporting Material
 - Deliverables
 - Graphics
 - Meetings
 - External Dissemination Events
 - Internal Project Meetings
 - 2011.11.16-18 Kick-off Meeting
 - 2012.01.17 CNR-FAO Meeting
 - 2012.03.14-16 1st TCom Meeting
 - 2012.03.19 1st Advisory Council Meeting

Documents

Name	Owner	Type	Creation Date	Size
VirtualRepository@TCOM.pdf	Fabio Simeoni	application/pdf	Mon Jun 17 15:...	2,991...
6th TCom - Statistical Data Analysis.pptx	Gianpaolo Coro	application/vnd...	Mon Jun 17 15:...	7,994...
T10.4_XSearch_iMarine_6th_TCOM_nocomments.pptx	Yannis Marketa...	application/vnd...	Tue Jun 18 08:...	1,146...
WP10_Data_Fusion_Federated_Search.pptx	Alex Antoniadis	application/vnd...	Tue Jun 18 10:...	483 KB
Visualisation_6thTCOM.pptx	Nikolas Laskaris	application/vnd...	Tue Jun 18 10:...	1,657...
WP8_PE2ng.pptx	Test User	application/vnd...	Tue Jun 18 13:...	385 KB
ASL&WP6.pptx	Panagiota Kolts...	application/vnd...	Tue Jun 18 13:...	436 KB
WP6 - Social Portal@Skiathos.pptx	Massimiliano A...	application/vnd...	Tue Jun 18 14:...	1,630...
T10.4_XSearch_iMarine_6th_TCOM.pdf	Yannis Marketa...	application/pdf	Wed Jul 03 12:...	586 KB

Info History Euragri Workshop, 9 March 2016, INRA, Paris

Working within a VRE (1)

The user

- Stores data in a personal workspace
- Visualizes and harmonizes data
- Saves the results for further exploitations
- Shares with his/her colleagues



Working within a VRE (2)

The user

- Stores software in a personal workspace
- Prepares it for execution with a simple interface (one shot process, never to repeat)
- Executes it and analyses the results
- Modifies the code in the workspace
- Shares software and/or results with his/her colleagues





The screenshot shows the iMarine Gateway website interface. At the top, it says "iMarine Gateway" and "Data e-Infrastructure Initiative for Fisheries Management and Conservation of Marine Living Resources". Below this, there's a navigation bar with "Home", "gCube 3.5.0", and "See Research Environments". The main content area is titled "You can see below the list of Virtual Research Environments iMarine offers, organised by category." and is divided into four sections:

- Must Have:** Contains two VREs: "BiodiversityLab" (Public, Free Access) and "TabularDataLab" (Public, Free Access).
- Recommended:** Contains three VREs: "BiOrnym" (Public, Free Access), "EcologicalModelling" (Public, Free Access), and "ScalableDataMining" (Public, Free Access).
- Exclusive:** Contains five VREs: "AquaMaps" (Request Access), "BOBLME_HilsaAWG" (Request Access), "BlueBridgeProject" (Request Access), "FAO_TunaAtlas" (Request Access), and "TBT_VRE" (Request Access).
- Demonstrative:** Contains three VREs: "DocumentsWorkflow" (Public, Free Access), "VesselActivitiesAnalyzer" (Public, Free Access), and "iSearch" (Public, Free Access).

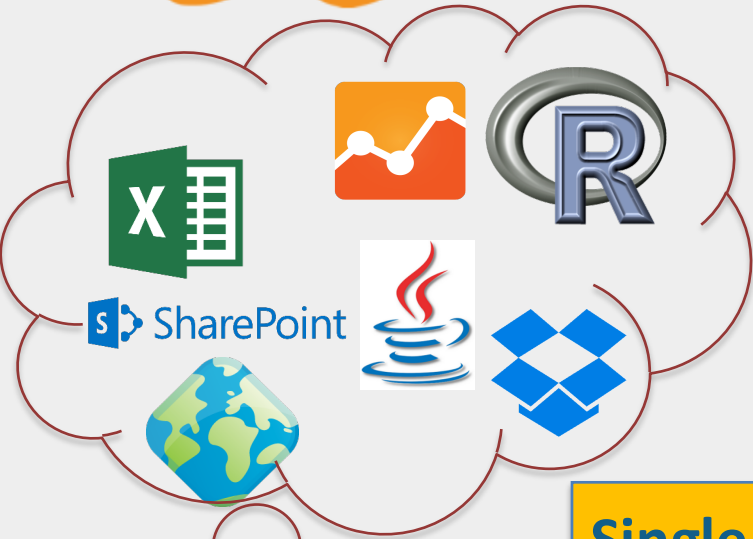
At the bottom of the page, there is a footer with "iMarine Website | Contact Us | Terms of Use | Privacy" and a small logo.

iMarine Gateway

<https://i-marine.d4science.org/>

- *Public VREs* (used to offer an application environment to a subset of users of a community)
- *Private VREs* (used for experiments, data access and preparation, and data analytics)

Scalable Data Mining VRE



Tabular Data Manager (TabMan)

Single environment

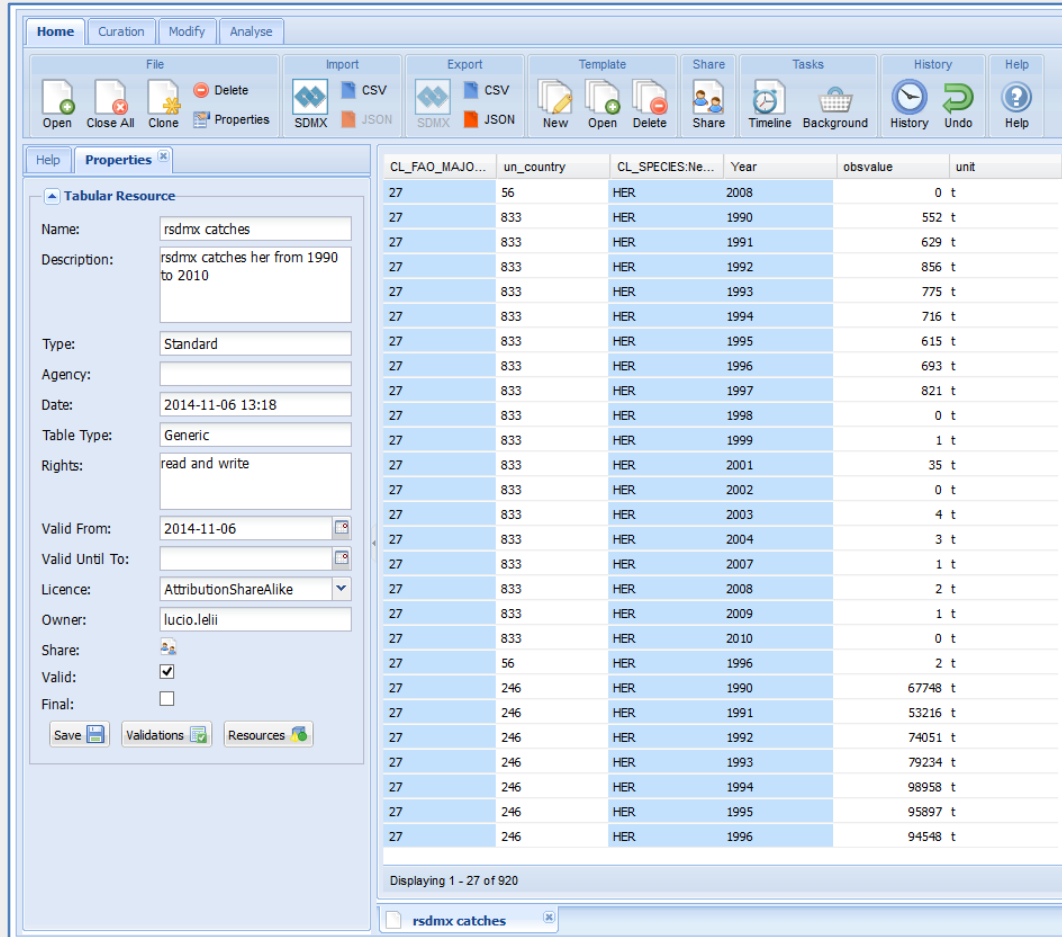
Data preparation & access



Statistical Manager (StatMan)

Monitoring the status of the computation

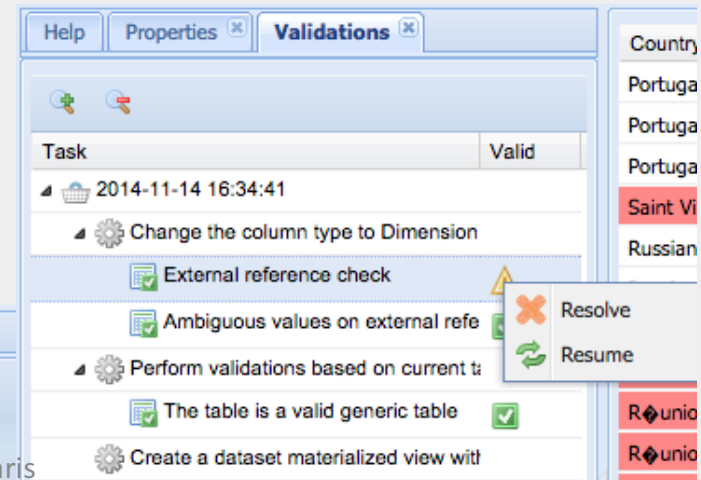
Tabular Data Manager (TabMan)



The screenshot shows the Tabular Data Manager (TabMan) interface. The 'Properties' panel on the left displays metadata for a 'Tabular Resource' named 'rdsdmx catches'. The main area shows a data table with columns: CL_FAO_MAJO..., un_country, CL_SPECIES:Ne..., Year, obsvalue, and unit. The table contains 27 rows of data, including entries for years 2008 through 1996.

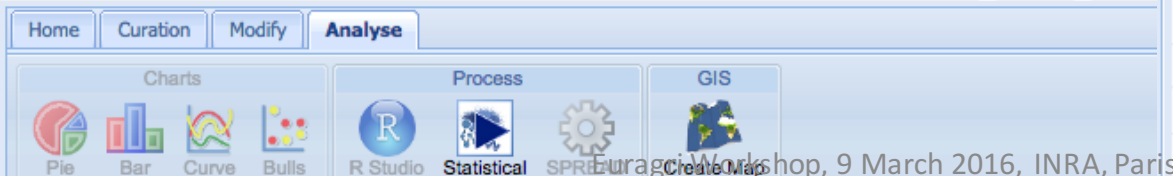
CL_FAO_MAJO...	un_country	CL_SPECIES:Ne...	Year	obsvalue	unit
27	56	HER	2008	0	t
27	833	HER	1990	552	t
27	833	HER	1991	629	t
27	833	HER	1992	856	t
27	833	HER	1993	775	t
27	833	HER	1994	716	t
27	833	HER	1995	615	t
27	833	HER	1996	693	t
27	833	HER	1997	821	t
27	833	HER	1998	0	t
27	833	HER	1999	1	t
27	833	HER	2001	35	t
27	833	HER	2002	0	t
27	833	HER	2003	4	t
27	833	HER	2004	3	t
27	833	HER	2007	1	t
27	833	HER	2008	2	t
27	833	HER	2009	1	t
27	833	HER	2010	0	t
27	56	HER	1996	2	t
27	246	HER	1990	67748	t
27	246	HER	1991	53216	t
27	246	HER	1992	74051	t
27	246	HER	1993	79234	t
27	246	HER	1994	98958	t
27	246	HER	1995	95897	t
27	246	HER	1996	94548	t

- Manipulates Big Tabular Datasets
- Prepares data for analyses
- Makes data compliant with external code lists
- Visualizes, represents and inspects data



The screenshot shows the 'Validations' panel in the Tabular Data Manager (TabMan) interface. The panel displays a list of validation tasks and their status. A context menu is open over the 'External reference check' task, showing options to 'Resolve' or 'Resume'.

Task	Valid
2014-11-14 16:34:41	
Change the column type to Dimension	
External reference check	
Ambiguous values on external refe	
Perform validations based on current t	
The table is a valid generic table	✓
Create a dataset materialized view with	



The screenshot shows the 'Analyse' panel in the Tabular Data Manager (TabMan) interface. The panel displays various analysis tools and options, including 'Charts', 'Process', and 'GIS'.

Home Curation Modify **Analyse**

Charts: Pie, Bar, Curve, Bulls

Process: R Studio, Statistical, SPRI

GIS: Create Map

TabMan imports datasets with tuna catch statistics

FAO Tuna Atlas Members **Tabular Data Manager**

Home Curation **Modify** Analyse

Union Group By Time Aggregation Replace by External Add Row Delete Row Delete Duplicate
C-Square Ocean Area Points

Yellowfin

Skipjack

Properties

Name: AFMA Q1 with Images and GIS

Description: File CSV

Type: Standard

Agency:

Creation Date: 2015-03-10 19:01

Table Type: Generic

Rights: FAO

Valid From: 2015-03-10

Valid Until To:

Licence: Attribution

Owner: gianpaolo.coro

Share:

Valid:

Final:

Save Validations Resources

method	time	quarter	lat	long	number	yft	skj	quarter_of_year	quarter_of_yea...	quarter_of_yea...	
LLP	2007		1	20	100	1	0	0	20071	2007-Q1	1st Quarter of 2...
LLP	2008		1	25	110	1	0	0	20081	2008-Q1	1st Quarter of 2...
LLP	2010		1	25	160	4	0	0	20101	2010-Q1	1st Quarter of 2...
LLP	2009		1	25	160	4	0	0	20091	2009-Q1	1st Quarter of 2...
ML	2007		1	15	145	4	0	0	20071	2007-Q1	1st Quarter of 2...
LLP	2006		1	10	140	1	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2008		1	15	155	4	0	0	20081	2008-Q1	1st Quarter of 2...
LLP	2006		1	10	145	5	3.7378	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	10	150	1	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	15	145	5	38.8806	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	15	150	5	1.551	0.395	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	15	155	2	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	20	100	1	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	20	150	24	28.1358	0.034	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	20	155	19	26.7088	0.09	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	25	100	2	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	25	105	1	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	25	110	3	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	25	150	31	23.0098	0.11	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	25	155	41	40.0928	0.015	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	25	160	13	3.42	0.008	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	25	165	1	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	30	110	3	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	30	150	18	24.2734	0.036	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	30	155	10	2.1133	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	30	160	4	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	30	165	5	3.355	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	35	145	1	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	35	150	15	18.0848	0.218	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	40	145	1	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2007		1	10	145	5	5.5132	0.021	20071	2007-Q1	1st Quarter of 2...

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AFMA Q1 with Images and GIS

Modifying columns

FAO Tuna Atlas Members **Tabular Data Manager**

Home Curation **Modify** Analyse

Union
 Group By
 Time Aggregation
 Replace by External
 Add Row
 Delete Row
 Delete Duplicate

Geospatial: C-Square Ocean Area
 Geometry: Points

Help **Properties** ✕

Name: AFMA Q1 with Images and GIS

Description: File CSV

Type: Standard

Agency:

Creation Date: 2015-03-10 19:01

Table Type: Generic

Rights: FAO

Valid From: 2015-03-10

Valid Until To:

Licence: Attribution

Owner: gianpaolo.coro

Share:

Valid:

Final:

Save Validations Resources

method	time	quarter	lat	long	number	yft	skj	quarter_of_year	quarter_of_yea...	quarter_of_yea...	
LLP	2007		1	20	100	1	0	0	20071	2007-Q1	1st Quarter of 2...
LLP	2008		1	25	110	1	0	0	20081	2008-Q1	1st Quarter of 2...
LLP	2010		1	25	160	4	0	0	20101	2010-Q1	1st Quarter of 2...
LLP	2009		1	25	160	4	0	0	20091	2009-Q1	1st Quarter of 2...
ML	2007		1	15	145	4	0	0	20071	2007-Q1	1st Quarter of 2...
LLP	2006		1	10	140	1	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2008		1	15	155	4	0	0	20081	2008-Q1	1st Quarter of 2...
LLP	2006		1	10	145	5	3.7378	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	10	150	1	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	15	145	5	38.8806	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	15	150	5	1.551	0.395	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	15	155	2	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	20	100	1	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	20	150	24	28.1358	0.034	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	20	155	19	26.7088	0.09	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	25	100	2	0	0	20061	2006-Q1	1st Quarter of 2...
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LLP	2006		1	30	160	4	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	30	165	5	3.355	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	35	145	1	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	35	150	15	18.0848	0.218	20061	2006-Q1	1st Quarter of 2...
LLP	2006		1	40	145	1	0	0	20061	2006-Q1	1st Quarter of 2...
LLP	2007		1	10	145	5	5.5132	0.021	20071	2007-Q1	1st Quarter of 2...

Page 1 of 1

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AFMA Q1 with Images and GIS

Adding Geometries

Table Geospatial **Geometry**

Union
 Group By
 Time Aggregation
 Replace by External
 Add Row
 Delete Row
 Delete Duplicate
 C-Square
 Ocean Area
 Points

Help **Properties**

Name: AFMA Q1 with Images and GIS

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Save Validations Resources

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LLP	2007	1	20	100	1	0	0	20071	2007-Q1	1st Quarter of 2...	POINT(100 20)
LLP	2008	1	25	110	1	0	0	20081	2008-Q1	1st Quarter of 2...	POINT(110 25)
LLP	2010	1	25	160	4	0	0	20101	2010-Q1	1st Quarter of 2...	POINT(160 25)
LLP	2009	1	25	160	4	0	0	20091	2009-Q1	1st Quarter of 2...	POINT(160 25)
ML	2007	1	15	145	4	0	0	20071	2007-Q1	1st Quarter of 2...	POINT(145 15)
LLP	2006	1	10	140	1	0	0	20061	2006-Q1	1st Quarter of 2...	POINT(140 10)
LLP	2008	1	15	155	4	0	0	20081	2008-Q1	1st Quarter of 2...	POINT(155 15)
LLP	2006	1	10	145	5	3.7378	0	20061	2006-Q1	1st Quarter of 2...	POINT(145 10)
LLP	2006	1	10	150	1	0	0	20061	2006-Q1	1st Quarter of 2...	POINT(150 10)
LLP	2006	1	15	145	5	38.8806	0	20061	2006-Q1	1st Quarter of 2...	POINT(145 15)
LLP	2006	1	15	150	5	1.551	0.395	20061	2006-Q1	1st Quarter of 2...	POINT(150 15)
LLP	2006	1	15	155	2	0	0	20061	2006-Q1	1st Quarter of 2...	POINT(155 15)
LLP	2006	1	20	100	1	0	0	20061	2006-Q1	1st Quarter of 2...	POINT(100 20)
LLP	2006	1	20	150	24	28.1358	0.034	20061	2006-Q1	1st Quarter of 2...	POINT(150 20)
LLP	2006	1	20	155	19	26.7088	0.09	20061	2006-Q1	1st Quarter of 2...	POINT(155 20)
LLP	2006	1	25	100	2	0	0	20061	2006-Q1	1st Quarter of 2...	POINT(100 25)
LLP	2006	1	25	105	1	0	0	20061	2006-Q1	1st Quarter of 2...	POINT(105 25)
LLP	2006	1	25	110	3	0	0	20061	2006-Q1	1st Quarter of 2...	POINT(110 25)
LLP	2006	1	25	150	31	23.0098	0.11	20061	2006-Q1	1st Quarter of 2...	POINT(150 25)
LLP	2006	1	25	155	41	40.0928	0.015	20061	2006-Q1	1st Quarter of 2...	POINT(155 25)
LLP	2006	1	25	160	13	3.42	0.008	20061	2006-Q1	1st Quarter of 2...	POINT(160 25)
LLP	2006	1	25	165	1	0	0	20061	2006-Q1	1st Quarter of 2...	POINT(165 25)
LLP	2006	1	30	110	3	0	0	20061	2006-Q1	1st Quarter of 2...	POINT(110 30)
LLP	2006	1	30	150	18	24.2734	0.036	20061	2006-Q1	1st Quarter of 2...	POINT(150 30)
LLP	2006	1	30	155	10	2.1133	0	20061	2006-Q1	1st Quarter of 2...	POINT(155 30)
LLP	2006	1	30	160	4	0	0	20061	2006-Q1	1st Quarter of 2...	POINT(160 30)
LLP	2006	1	30	165	5	3.355	0	20061	2006-Q1	1st Quarter of 2...	POINT(165 30)
LLP	2006	1	35	145	1	0	0	20061	2006-Q1	1st Quarter of 2...	POINT(145 35)
LLP	2006	1	35	150	15	18.0848	0.218	20061	2006-Q1	1st Quarter of 2...	POINT(150 35)
LLP	2006	1	40	145	1	0	0	20061	2006-Q1	1st Quarter of 2...	POINT(145 40)
LLP	2007	1	10	145	5	5.5132	0.021	20071	2007-Q1	1st Quarter of 2...	POINT(145 10)

Csquare codes and FAO Ocean Areas codes

FAO Tuna Atlas Members **Tabular Data Manager**

Home Curation **Modify** Analyse

Table

Union Group By Time Aggregation Replace by External Add Row Delete Row Delete Duplicate

Geospatial

C-Square Ocean Area Points

Help **Properties**

Name: AFMA Q1 with Images and GIS

Description: File CSV

Type: Standard

Agency:

Creation Date: 2015-03-10 19:01

Table Type: Generic

Rights: FAO

Valid From: 2015-03-10

Valid Until To:

Licence: Attribution

Owner: gianpaolo.coro

Share:

Valid:

Final:

Save Validations Resources

method	time	quarter	lat	long	number	yft	skj	quarter_of_year	quarter_of_yea...	quarter_of_yea...	points	csquare_code	fao_ocean_area
LLP	2007		1	20	100	1	0	20071	2007-Q1	1st Quarter of 2...	POINT(100 20)	1210:100:1	120100
LLP	2008		1	25	110	1	0	20081	2008-Q1	1st Quarter of 2...	POINT(110 25)	1211:350:1	125110
LLP	2010		1	25	160	4	0	20101	2010-Q1	1st Quarter of 2...	POINT(160 25)	1216:350:1	125160
LLP	2009		1	25	160	4	0	20091	2009-Q1	1st Quarter of 2...	POINT(160 25)	1216:350:1	125160
ML	2007		1	15	145	4	0	20071	2007-Q1	1st Quarter of 2...	POINT(145 15)	1114:455:1	115145
LLP	2006		1	10	140	1	0	20061	2006-Q1	1st Quarter of 2...	POINT(140 10)	1114:100:1	110140
LLP	2008		1	15	155	4	0	20081	2008-Q1	1st Quarter of 2...	POINT(155 15)	1115:455:1	115155
LLP	2006		1	10	145	5	3.7378	20061	2006-Q1	1st Quarter of 2...	POINT(145 10)	1114:205:1	110145
LLP	2006		1	10	150	1	0	20061	2006-Q1	1st Quarter of 2...	POINT(150 10)	1115:100:1	110150
LLP	2006		1	15	145	5	38.8806	20061	2006-Q1	1st Quarter of 2...	POINT(145 15)	1114:455:1	115145
LLP	2006		1	15	150	5	1.551	20061	2006-Q1	1st Quarter of 2...	POINT(150 15)	1115:350:1	115150
LLP	2006		1	15	155	2	0	20061	2006-Q1	1st Quarter of 2...	POINT(155 15)	1115:455:1	115155
LLP	2006		1	20	100	1	0	20061	2006-Q1	1st Quarter of 2...	POINT(100 20)	1210:100:1	120100
LLP	2006		1	20	150	24	28.1358	20061	2006-Q1	1st Quarter of 2...	POINT(150 20)	1215:100:1	120150
LLP	2006		1	20	155	19	26.7088	20061	2006-Q1	1st Quarter of 2...	POINT(155 20)	1215:205:1	120155
LLP	2006		1	25	100	2	0	20061	2006-Q1	1st Quarter of 2...	POINT(100 25)	1210:350:1	125100
LLP	2006		1	25	105	1	0	20061	2006-Q1	1st Quarter of 2...	POINT(105 25)	1210:455:1	125105
LLP	2006		1	25	110	3	0	20061	2006-Q1	1st Quarter of 2...	POINT(110 25)	1211:350:1	125110
LLP	2006		1	25	150	31	23.0098	20061	2006-Q1	1st Quarter of 2...	POINT(150 25)	1215:350:1	125150
LLP	2006		1	25	155	41	40.0928	20061	2006-Q1	1st Quarter of 2...	POINT(155 25)	1215:455:1	125155
LLP	2006		1	25	160	13	3.42	20061	2006-Q1	1st Quarter of 2...	POINT(160 25)	1216:350:1	125160
LLP	2006		1	25	165	1	0	20061	2006-Q1	1st Quarter of 2...	POINT(165 25)	1216:455:1	125165
LLP	2006		1	30	110	3	0	20061	2006-Q1	1st Quarter of 2...	POINT(110 30)	1311:100:1	130110
LLP	2006		1	30	150	18	24.2734	20061	2006-Q1	1st Quarter of 2...	POINT(150 30)	1315:100:1	130150
LLP	2006		1	30	155	10	2.1133	20061	2006-Q1	1st Quarter of 2...	POINT(155 30)	1315:205:1	130155
LLP	2006		1	30	160	4	0	20061	2006-Q1	1st Quarter of 2...	POINT(160 30)	1316:100:1	130160
LLP	2006		1	30	165	5	3.355	20061	2006-Q1	1st Quarter of 2...	POINT(165 30)	1316:205:1	130165
LLP	2006		1	35	145	1	0	20061	2006-Q1	1st Quarter of 2...	POINT(145 35)	1314:455:1	135145
LLP	2006		1	35	150	15	18.0848	20061	2006-Q1	1st Quarter of 2...	POINT(150 35)	1315:350:1	135150
LLP	2006		1	40	145	1	0	20061	2006-Q1	1st Quarter of 2...	POINT(145 40)	1414:205:1	140145
LLP	2007		1	10	145	5	5.5132	20071	2007-Q1	1st Quarter of 2...	POINT(145 10)	1114:205:1	110145

Page 1 of 1

AFMA Q1 with Images and GIS

STATISTICAL MANAGER

Access to the Data Space

The data space contains the set of input and output data sets of the users. It is possible to upload and share tables. Data sources can be chosen from those hosted by the infrastructure. Outputs of the computations can be even saved in this space.



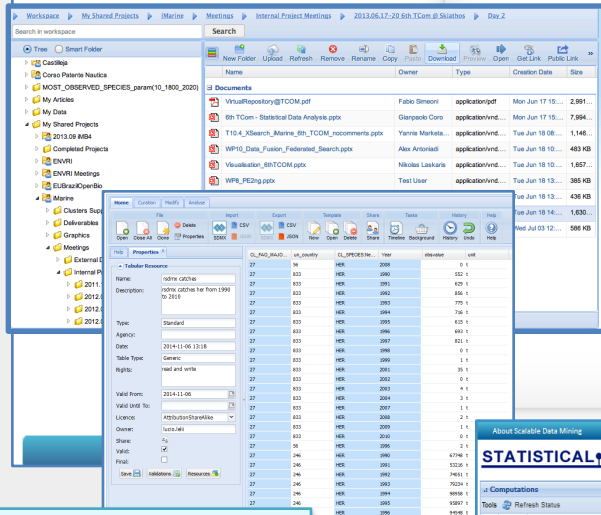
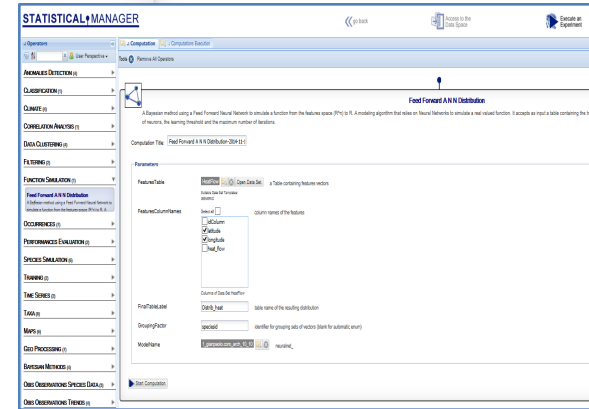
Execute an Experiment

This section allows to execute or prepare a Niche Modeling experiment. The section is endowed with a list of algorithms for training and executing statistical models for biological applications. Evaluation of the performances is possible by means of several kinds of measurement systems and processes.



Check the Computations

This section allows to check the status of the computation. A list of processes launched by the user is shown along with meta-information. By clicking on the completed jobs it is possible to visualize the data set contents.

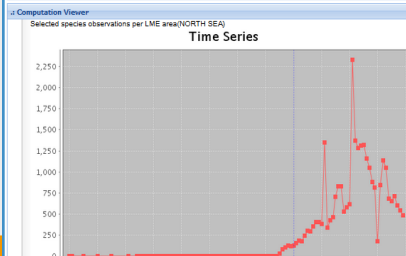


Data access

STATISTICAL MANAGER Access to the Data Space Execute an Experiment Check the Computations

Computations Tools Refresh Status

ID	Cat.	Name	Operator	Infrastructure	Start Date	End Date	Status
2.		Species Observation Lme Area Per Year-2013-10-06 11:31	Gianpaolo Corò	LOCAL	10/06/2013 11:31:44	10/08/2013 11:31:47	Complete
2.		Aquamas Suitable-2013-09-16 15:14	Aquamas Suitable	D4SCIENCE	09/16/2013 03:15:28	09/16/2013 03:16:00	Complete
2.		Mass Comparison-2013-09-12 09:37	Mass Comparison	LOCAL	09/12/2013 09:37:45	09/12/2013 09:43:40	Complete
2.		Taxonomy Observations Trend Per Year-2013-09-09 10:21	Taxonomy Observations Trend Pe...	LOCAL	09/09/2013 10:22:54	09/09/2013 10:22:06	Complete
2.		Fin Taxa Match-2013-09-09 10:20	Fin Taxa Match	LOCAL	09/09/2013 10:20:32	09/09/2013 10:20:32	Complete



Monitoring the status of the computation

- 100+ statistical models
- Transparent use of cloud computing
- Automatically generated interfaces
- Integration with R

Statistical Manager (StatMan)

Statistical services

Access to the Data Space

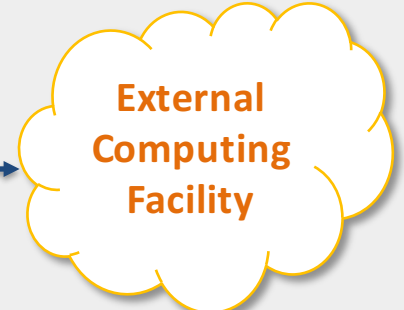
The data space contains the set of input and output data sets of the users. It is possible to upload and share tables. Data sources can be chosen from those hosted by the infrastructure. Outputs of the computations can be even saved in this space.

Execute an Experiment

This section allows to execute or prepare a Niche Modelling experiment. The section is endowed with a list of algorithms for training and executing statistical models for biological applications. Evaluation of the performances is possible by means of several kinds of measurement systems and processes.

Check the Computations

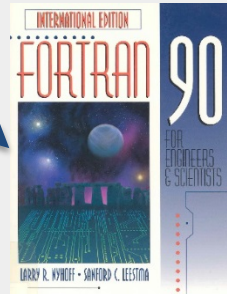
This section allows to check the status of the computation. A list of processes launched by the user is shown along with meta-information. By clicking on the completed jobs it is possible to visualize the data set contents.



WPS

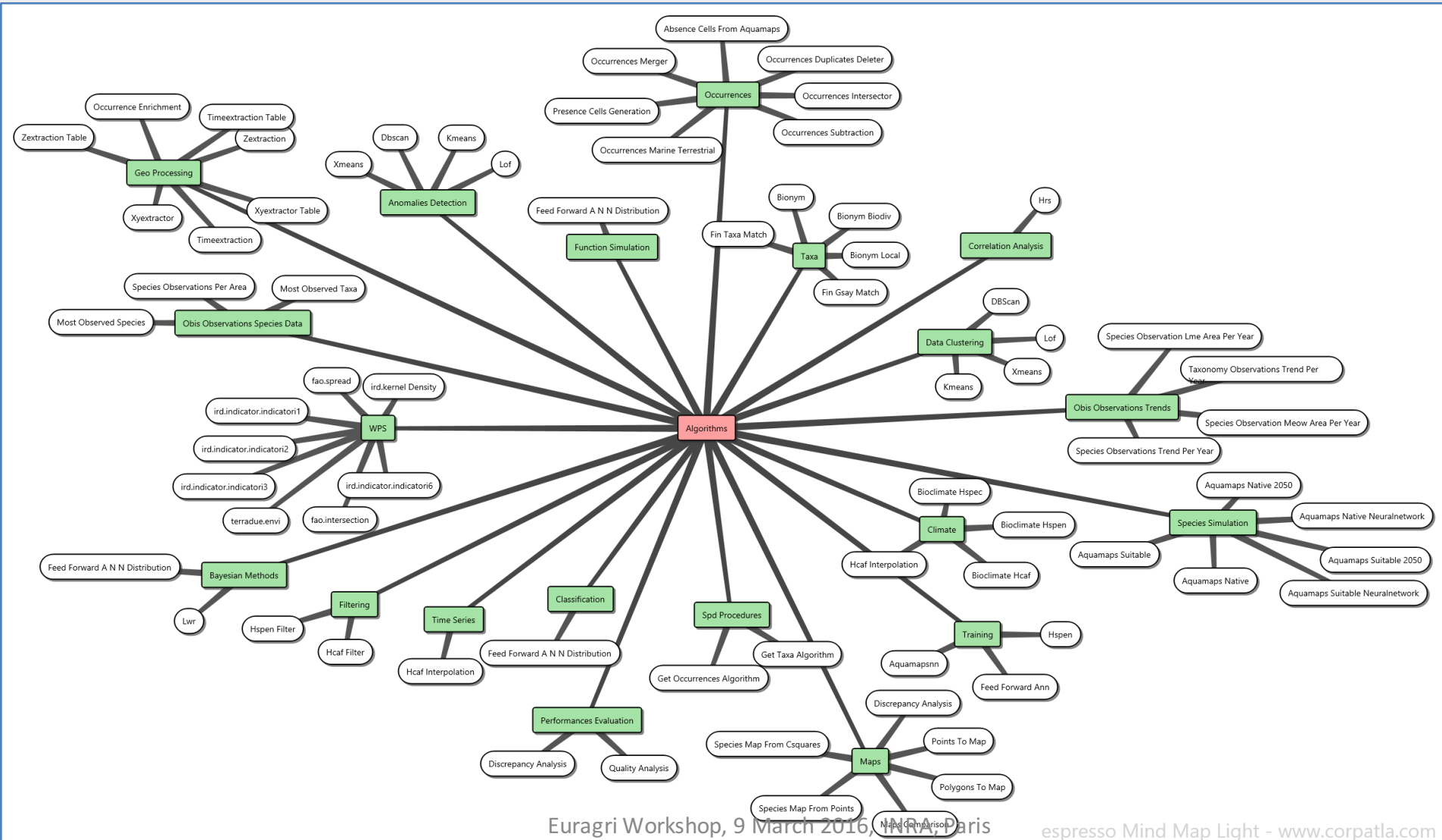


CL_FAO_MAJO	int_country	CL_SIREES	Year	Observation	unit
27	56	HER	2008	0	1
27	833	HER	1980	522	1
27	833	HER	1981	629	1
27	833	HER	1982	856	1
27	833	HER	1983	775	1
27	833	HER	1984	748	1
27	833	HER	1985	613	1
27	833	HER	1986	693	1
27	833	HER	1987	823	1
27	833	HER	1988	0	1
27	833	HER	1989	1	1
27	833	HER	2001	35	1
27	833	HER	2002	0	1
27	833	HER	2003	4	1
27	833	HER	2004	3	1
27	833	HER	2007	1	1
27	833	HER	2008	2	1
27	833	HER	2009	1	1
27	833	HER	2010	0	1
27	56	HER	1996	2	1
27	246	HER	1990	67940	1
27	246	HER	1991	52224	1
27	246	HER	1992	74051	1
27	246	HER	1993	76234	1
27	246	HER	1994	98950	1
27	246	HER	1995	10897	1
27	246	HER	1996	94048	1



Data standardisation services

100+ Hosted algorithms



Algorithms categories

Anomalies Detection (4)

Classification (1)

Climate (4)

Correlation Analysis (1)

Data Clustering (4)

Filtering (2)

Function Simulation (1)

Occurrences (8)

Performances Evaluation (2)

Species Simulation (6)

Training (2)

Time Series (2)

Taxa (5)

Maps (7)

Geo Processing (14)

Bayesian Methods (5)

Obis Observations Species Data (3)

Obis Observations Trends (4)

SPECIES Procedures (2)

Vessels (3)

Databases (9)

Spread (4)






Charts (4)

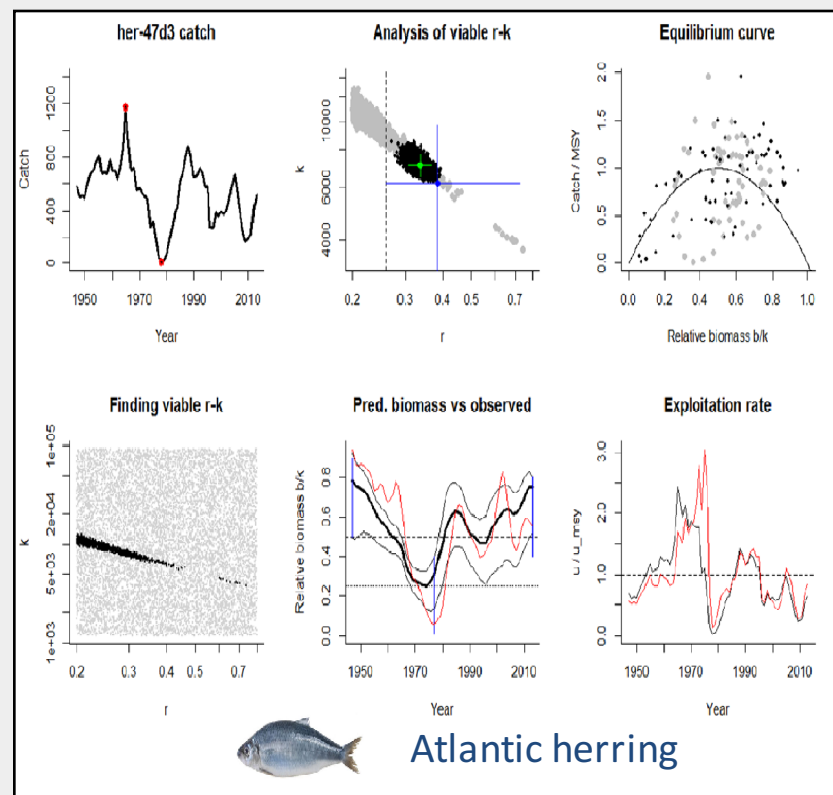
Precipitations (2)

Stock Assessment (7)



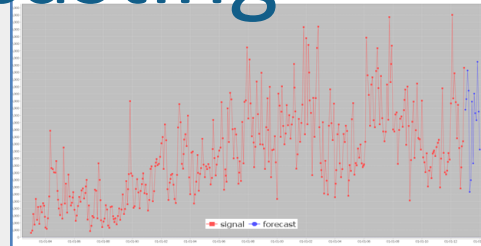
Stock assessment

- 
Length-Weight Relations: estimates Length-Weight relation parameters for marine species, using Bayesian methods. Developed by R. Froese, T. Thorson and R. B. Reyes
- 
SGVM interpolation: interpolation of vessels trajectories. Developed by the Study Group on VMS, involving ICES
- 
FAO MSY: stock assessment for FAO catch data. Developed by the Resource Use and Conservation Division of the FAO Fisheries and Aquaculture Department (ref. Y. Ye)
- 
ICCAT VPA: stock assessment method for International Commission for the Conservation of Atlantic Tunas (ICCAT) data. Developed by Ifremer and IRD (ref. S. Bonhommeau, J. Bard)
- 
CMSY: estimates Maximum Sustainable Yield from catch statistics. Prime choice for ICES as main stock assessment tool. Developed by R. Froese, G. Coro, N. Demirel, K. Kleisner and H. Winker

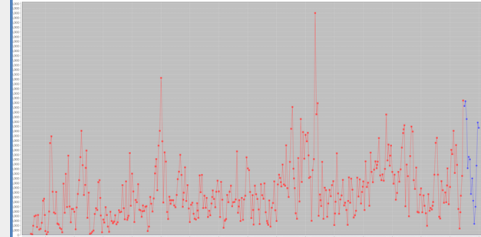


D4Science reduced time-to-market:
 State-of-the-art models to estimate
 Maximum Sustainable Yield
 computational time reduced of 95%
 in average

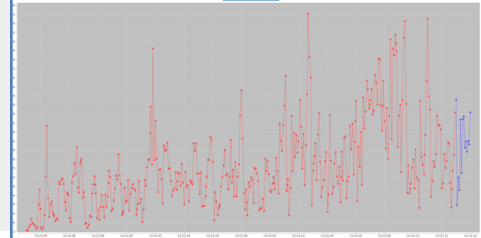
Fishing effort
Time series from 1983 to 2012 with 2013 forecasted



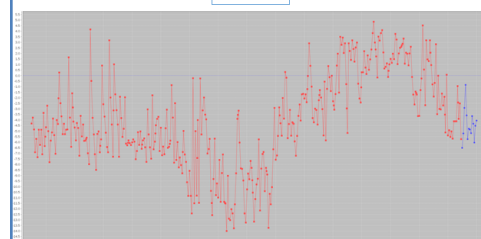
Catch



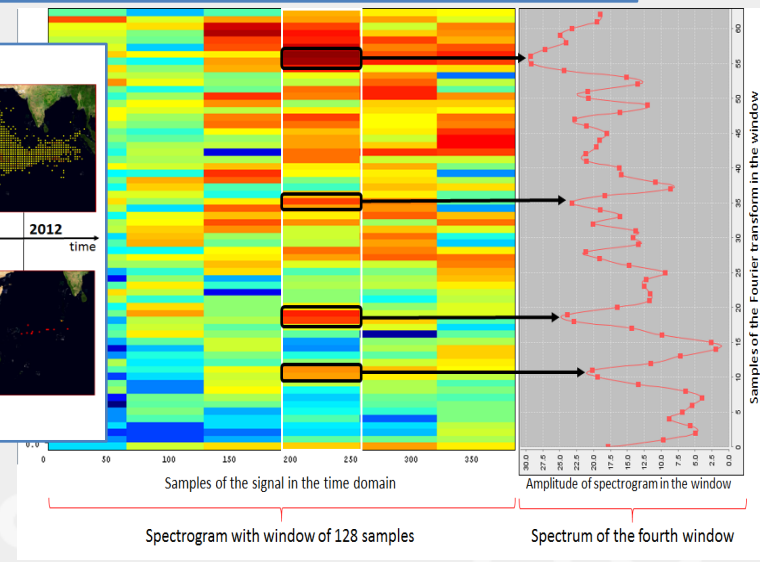
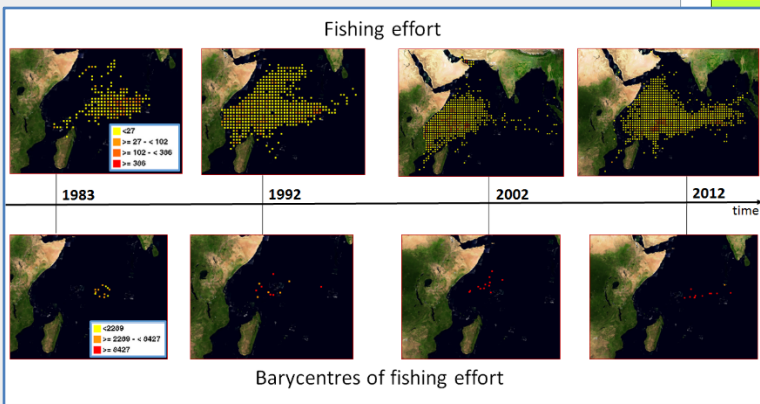
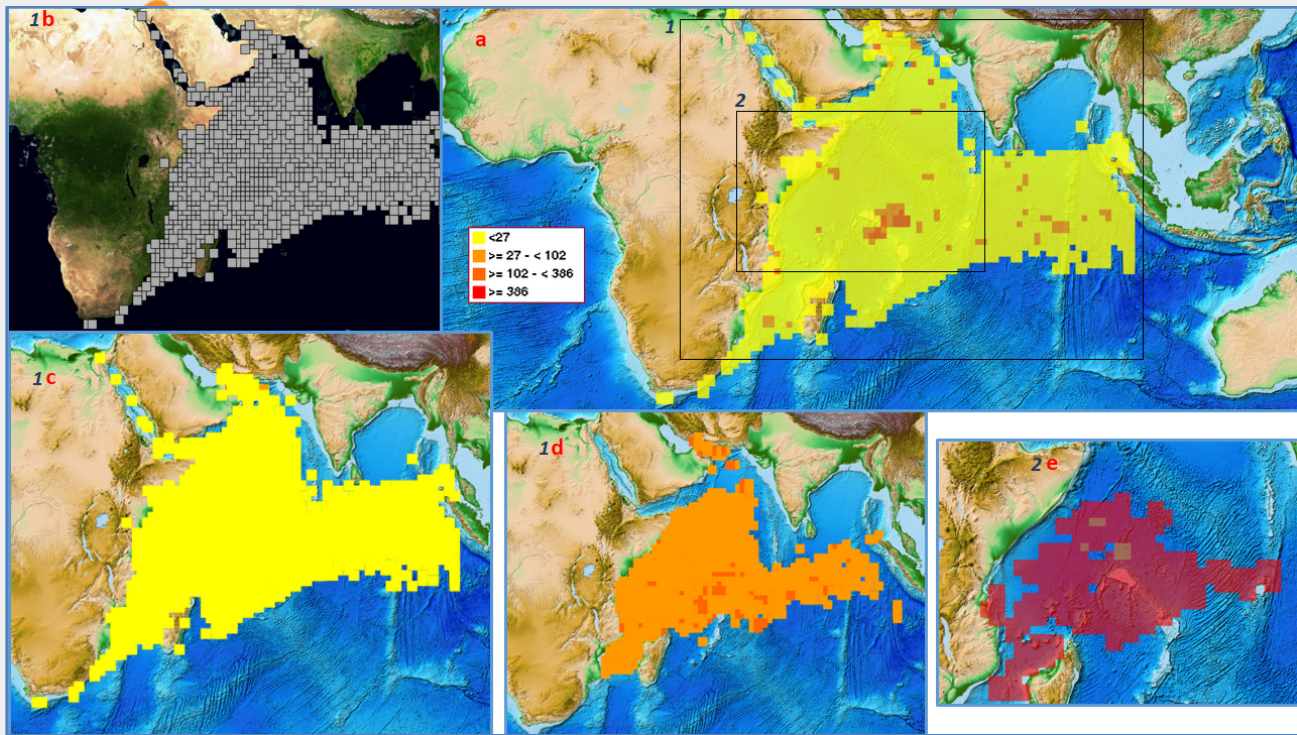
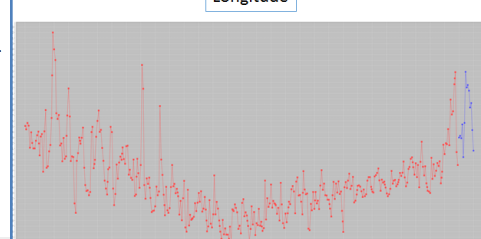
CPUE



Latitude



Longitude

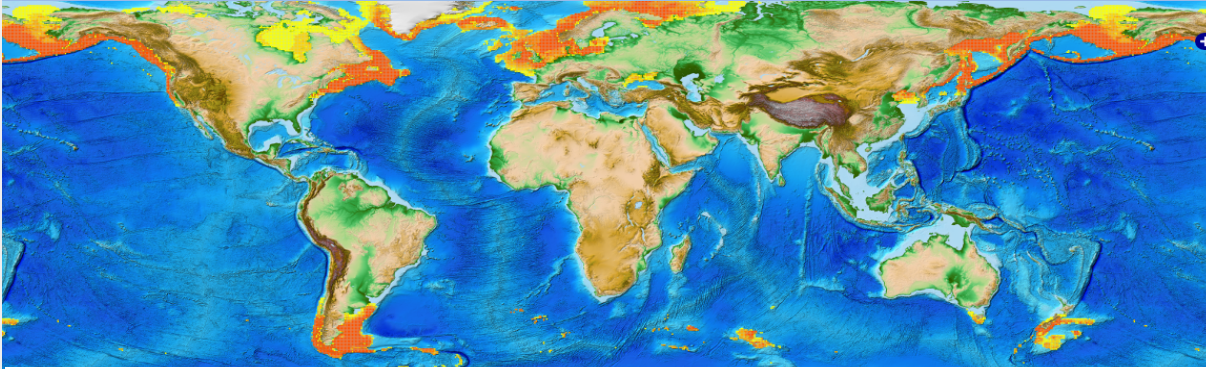


Spectrogram with window of 128 samples

Spectrum of the fourth window



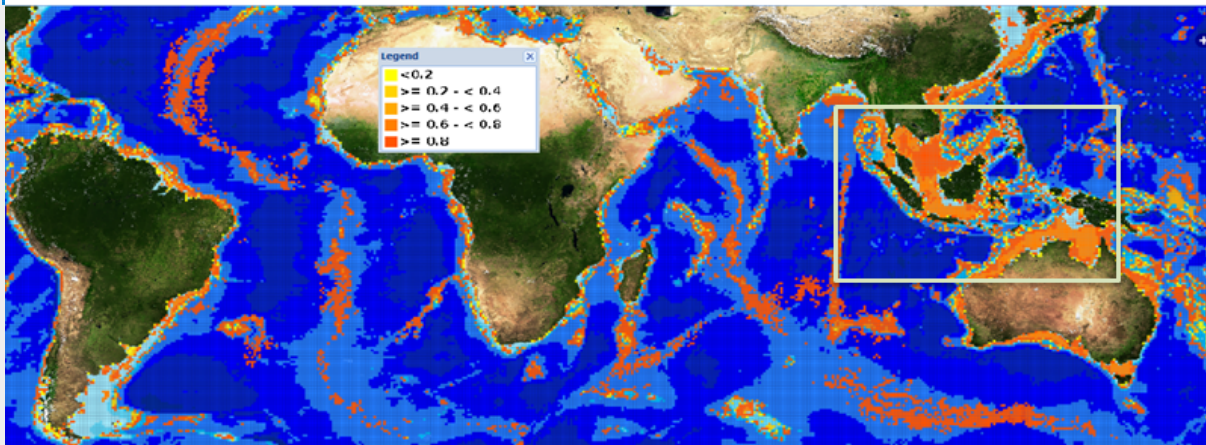
Ecology



AquaMaps



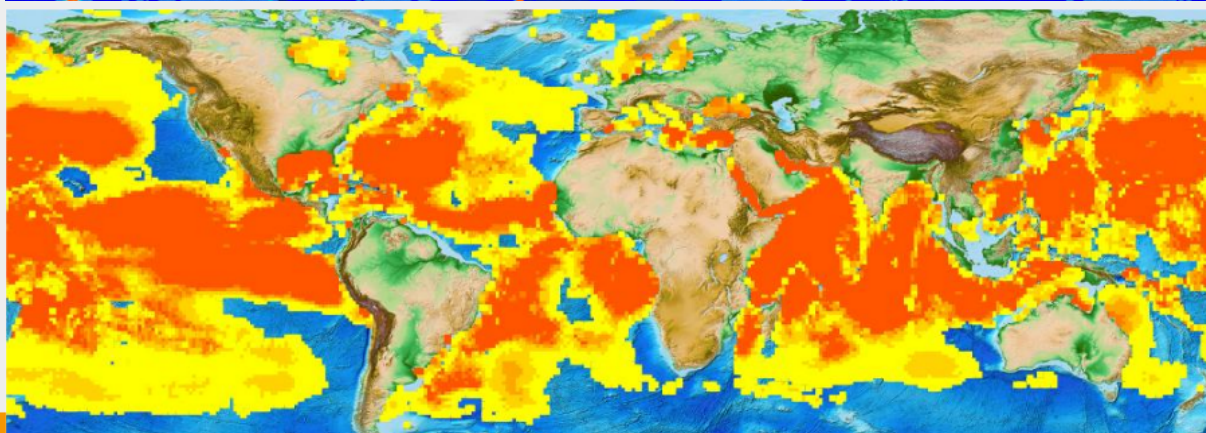
Atlantic cod



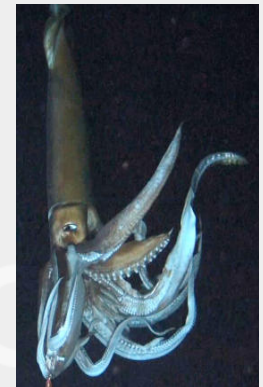
Neural Networks



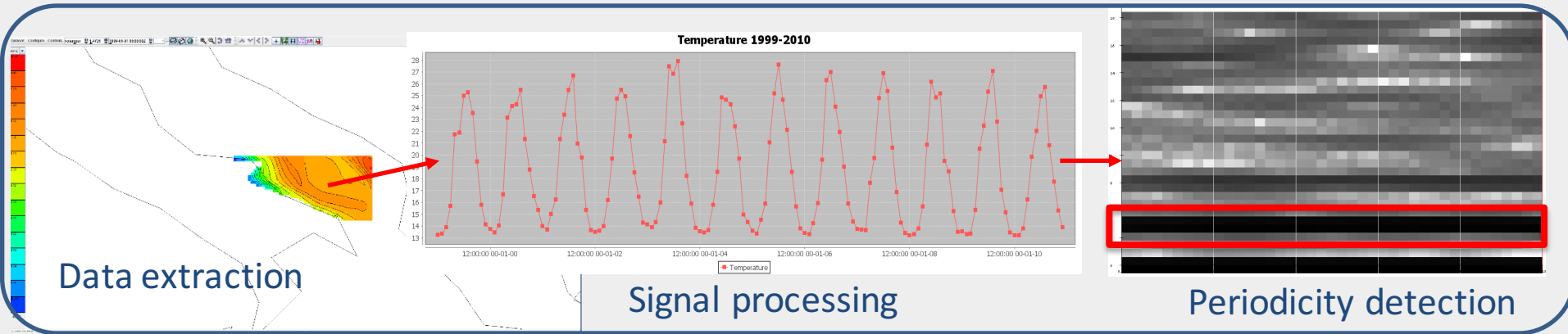
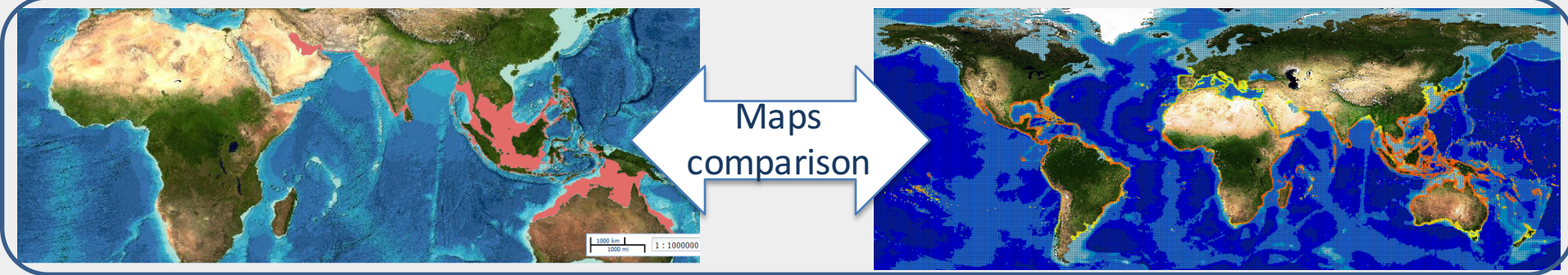
Coelacanth



Neural Networks and MaxEnt



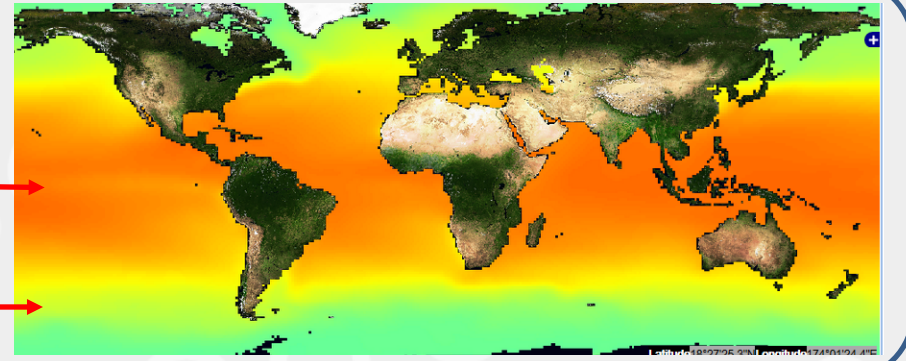
Giant squid



CL_SPECIES No.	Year	observe	unit
56	2008	0	t
833	1990	552	t
833	1991	629	t
833	1992	856	t
833	1993	775	t
833	1994	716	t
833	1995	615	t
833	1996	693	t
833	1997	821	t
833	1998	0	t
833	1999	1	t
833	2001	35	t
833	2002	0	t
833	2003	4	t
833	2004	3	t
833	2007	1	t
833	2008	2	t
833	2009	1	t
833	2010	0	t
56	1996	2	t
246	1990	67748	t
246	1991	53216	t
246	1992	74051	t
246	1993	79234	t

Maps generation

NetCDF file



Statistical Algorithms Importer

Home

Project Resource Software Help

Create
 Open
 Save
 Add
 Create
 Publish
 ZIP Repackage
 Help

Save + Input + Output Main: AbsencesSpeciesList-pr

```

1 =====
2 ===== Absence Generation Script - Gianpaolo Coro and Chiara Magliorini, Cyt 2015, last
3 =====
4
5 rm(list=ls(all=TRUE))
6 graphics.off()
7
8 ## charging the libraries
9 library(osp)
10 library(RpostgreSQL)
11 library(raster)
12 library(maptools)
13
14 # time
15 t0<-Sys.time()
16
17 ## parameters
18 list= "species.txt"
19 specieslist<-read.table(list,header=T,sep="," # my short dataset 2 species
20 #attach(specieslist)
21 r&=1;
22 extent_x=100
23 extent_y=00
24 n=extent_y/2/r&=1;
25 m=extent_x/2/r&=1;
26 Occ_percentage=0.1 #between 0 and 1
27
28 #uncomment for time filtering
29
30 #no time filter
31 timeStart<-"";
32 timeEnd<-"";
33
34 timeStart<-gsub("(^ +)|(+$)", "",timeStart)
35 timeEnd<-gsub("(^ +)|(+$)", "", timeEnd)
36
37 ## opening the connection with postgres
38 cat("Opening the connection with the catalog\n")
39 drv <- dbDriver("PostgreSQL")
40 con <- dbConnect(drv, dbName="obis", host="obisd-stage.vliz.be", port="5432", user="obisread
41
42 cat("Analysing the list of species\n")
43
44
    
```

Input









Name	Description	Type	Default	IO
list	A list of sp...	File	species.txt	Input
res	Spatial res...	Integer	1	Input
occ_perce...	Minimum p...	C		
zipOutput	Output in z...	F		

Project Explorer

+ Set Main Open Delete

Target

- AbsencesSpeciesList-pr
- stat_algo.project

-  Reduce computation time
-  Reduce integration time
-  Publish algorithm as-a-Service
-  Manage access policies
-  Provenance Management
-  Accounting
-  No software required on desktop machines
-  Code is not disclosed

1 - iMarine portal

2- QGIS (via WPS Client)

Identifier	Title	Abstract
org.globe.d.	ZEXTRACTION_TABLE	*
org.globe.d.	XYEXTRACTOR	*
org.globe.d.	TIMEEXTRACTION_TABLE	*
org.globe.d.	TIMEEXTRACTION	*
org.globe.d.	TIME_SERIES_CHARTS	*
org.globe.d.	TIME_SERIES_ANALYSIS	*
org.globe.d.	TIME_GEO_CHART	*
org.globe.d.	SQIM_INTERPOLATION	*
org.globe.d.	PRESSENCE_CELL_GENERATION	*
org.globe.d.	OCCURRENCE_ENRICHMENT	*
org.globe.d.	OBS_TAXA_OBSERVATIONS_PER_YEAR	*
org.globe.d.	OBS_SPECIES_OBSERVATIONS_PER_YEAR	*
org.globe.d.	OBS_SPECIES_OBSERVATIONS_PER_YEAR	*
org.globe.d.	OBS_SINGLE_SPECIES_DISTRIBUTION_PER_A...	*
org.globe.d.	OBS_MOST_OBSERVED_TAXA	*
org.globe.d.	OBS_MOST_OBSERVED_SPECIES	*
org.globe.d.	MAX_ENT_NICHE_MODELING	*
org.globe.d.	HEAF_FILTER	*
org.globe.d.	GEO_CHART	*
org.globe.d.	GENERIC_CHARTS	*
org.globe.d.	FAQ_OCEAN_AREA_COLUMN_CREATOR_FROM...	*
org.globe.d.	FAQ_OCEAN_AREA_COLUMN_CREATOR	*
org.globe.d.	C SQUARE_COLUMN_CREATOR	*
org.globe.d.	BIOYNN_LOCAL	*
org.globe.d.	ABSENCE_CELLS_FROM_AQUAMAPS	*
org.globe.d.	LOCAT_IRA	*
org.globe.d.	CHSY	*
org.globe.d.	BIOYNN	*
org.globe.d.	QUALITY_ANALYSIS	*

3 - WPS

[About Scalable Data Mining](#)
[Administration](#)
[Statistical Manager](#)
[Trendlyzer](#)

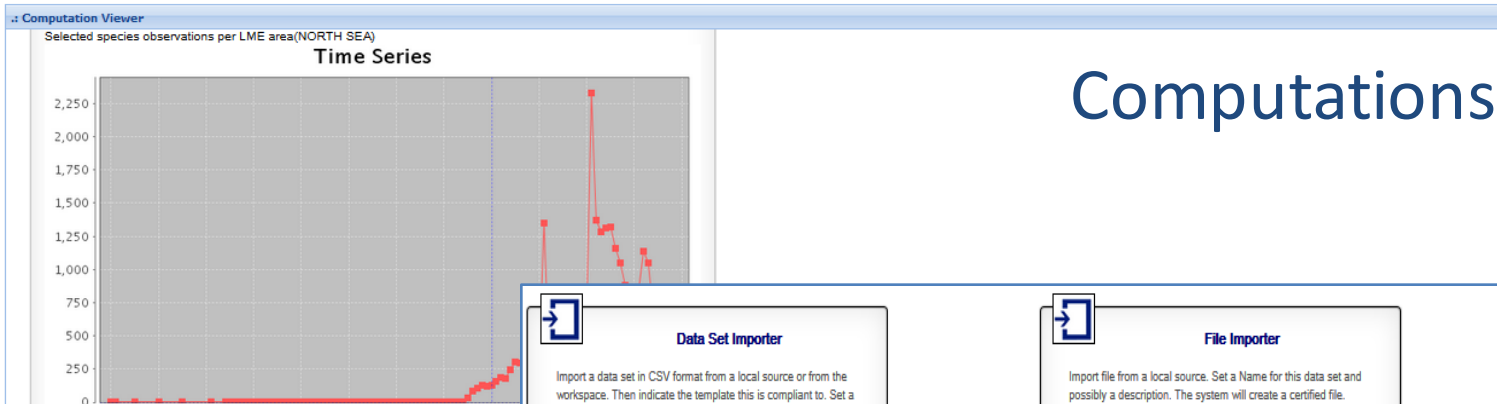
STATISTICAL MANAGER

[go back](#)
[Access to the Data Space](#)
[Execute an Experiment](#)
[Check the Computations](#)

Computations

Tools [Refresh Status](#)

Id	Cat.	Name	Operator	Infrastructure	Start Date	End Date	Status
2...		Species Observation Lme Area Per Year-2013-10-08 11:31	Species Observation Lme Area P...	LOCAL	10/08/20... 11:31:44	10/08/20... 11:31:47	Complete
2...		Aquamaps Suitable-2013-09-10 15:14	Aquamaps Suitable	D4SCIENCE	09/10/20... 03:15:23	09/10/20... 03:16:00	Complete
2...		Maps Comparison-2013-09-12 09:37	Maps Comparison	LOCAL	09/12/20... 09:37:40	09/12/20... 09:43:40	Complete
2...		Taxonomy Observations Trend Per Year-2013-09-09 10:21	Taxonomy Observations Trend Pe...	LOCAL	09/09/20... 10:22:04	09/09/20... 10:22:08	Complete
2...		Fin Taxa Match-2013-09-09 10:20	Fin Taxa Match	LOCAL	09/09/20... 10:20:32	09/09/20... 10:20:32	Complete



Computations history and summary

Data importing facilities

Data Set Importer

Import a data set in CSV format from a local source or from the workspace. Then indicate the template this is compliant to. Set a Name for this data set and possibly a description. The system will validate the template and create a certified data set.

Data Set Name:

[Open CSV Importer Wizard](#)

Select a Template

[Open Template Descriptions](#)

Description:

[Import](#)

File Importer

Import file from a local source. Set a Name for this data set and possibly a description. The system will create a certified file.

File Name:

[Open Importer Wizard](#)

Description:

[Import](#)

Upload Monitor

This panel reports the status of the importing procedure for the data sets below. The system is performing a validation of the data sets, a check for template compliancy and the creation of a data set.

- Upload of Cynodon GBIF [31403]
- Upload of Faospecies2 [31380]
- Upload of Faospecies1 [31379]
- Upload of AID4SUsers [31354]
- Upload of OpenBioUsers [31353]
- Upload of D4SUsers [31352]
- Upload of faoSpecies [31351]
- Upload of D4ScienceUsersPerYear [31334]
- Upload of D4ScienceUsersOrgs [31333]
- Upload of 7500 [29042]
- Upload of csquare ts iotc [29016]
- Upload of Barycenters Month [28781]
- Upload of Barycenter [28660]
- Upload of Purse Seine [28307]
- Upload of PS Time Series [28103]
- Upload of temperatureTS2 [27956]
- Upload of periodicTS [27968]
- Upload of earthquakes [27776]
- Upload of dowjonesdaily [27649]
- Upload of Dowjones [27631]

STATISTICAL MANAGER

Tools Refresh Data Sets Expand groups Collapse groups Group by provenance

Name	Description	Provenance	Id	Creation Date	Operator
Template CLUSTER (3 Items)					
OccCluster_AND	Output cluster table	Computed	ooocluster_id_5e56378f_289b_4a38_89...	06/25/2013 12:16:28	Dbscan
OccCluster_and	Output cluster table	Computed	ooocluster_id_adf5bc33_c7ab_431a_a0...	11/13/2012 12:11:55	Dbscan
OccCluster_hspen_mini	Output cluster table	Computed	ooocluster_id_ofc30973_367a_430a_93...	02/28/2013 05:11:21	Dbscan
Template GENERIC (7 Items)					
AND PORT	AND PORT	Imported	generic_id191d0e8d_7fc7_4310_a813_...	10/29/2012 08:39:33	
LWR4	LWR4	Imported	generic_id6156301d_7f64_4e5f_8ed8_...	08/27/2013 06:48:35	
LWR_06_09_13	LWR_06_09_13	Imported	generic_id8b57e4d7_7b38_41ae_b2aa_...	09/06/2013 01:08:00	
MYANDPORT	MYANDPORT	Imported	generic_iddaeeef4f_10b2_49ad_8fbb_f...	06/25/2013 12:15:08	
NAFO	NAFO	Imported	generic_idc7476baa_cc6d_4700_b5f4_...	10/29/2012 07:58:28	
OUTLWR_06_09_13	Output hspec table	Computed	lwr_id_399795bd_5a3d_4e8b_bee0_c73...	09/06/2013 11:50:28	Lwr
lwrout6	Output hspec table	Computed	lwr_id_9c9d8825_3ba5_40c8_86e7_f84...	08/31/2013 07:21:17	Lwr
Template HCAF (8 Items)					
AbsenceCells_Latimeria	a HCAF table containing Absence Points cells	Computed			
PresenceCells_Latimeria	a HCAF table containing Presence Points cells	Computed			

Data exploring and tables visualisation facilities

Data Set LWR4

subfamily	family	genus	species	fname	speccode	autoctr
Epinephelinae	Serranidae	Epinephelus	poecilnotus	Dot-dash grouper	7357	
Epinephelinae	Serranidae	Epinephelus	episticus	Dotted grouper	7341	
Epinephelinae	Serranidae	Epinephelus	tuamotuensis	Reticulate group...	7370	
Epinephelinae	Serranidae	Epinephelus	trophis	Plump grouper	7369	
Epinephelinae	Serranidae	Epinephelus	trimaculatus	Threespot grou...	7368	
Epinephelinae	Serranidae	Epinephelus	timorensis	Yellowspotted g...	7367	
Epinephelinae	Serranidae	Epinephelus	suborbitalis	Seamount grou...	7365	
Epinephelinae	Serranidae	Epinephelus	stoliczkae	Epaulet grouper	7364	
Epinephelinae	Serranidae	Epinephelus	stictus	Black-dotted gr...	7363	
Epinephelinae	Serranidae	Epinephelus	socialis	Surge grouper	7362	
Epinephelinae	Serranidae	Epinephelus	retouti	Red-tipped grou...	7361	
Epinephelinae	Serranidae	Plectropomus	punctatus	Marbled coralgr...	7373	
Epinephelinae	Serranidae	Epinephelus	posteli	Striped-fin grou...	7359	
Epinephelinae	Serranidae	Triso	dermopterus	Oval grouper	7375	
Epinephelinae	Serranidae	Hyporthodus	perplexus	Puzzling grouper	7356	
Epinephelinae	Serranidae	Hyporthodus	octofasciatus	Eightbar grouper	7355	

Displaying 1 - 16 of 37775

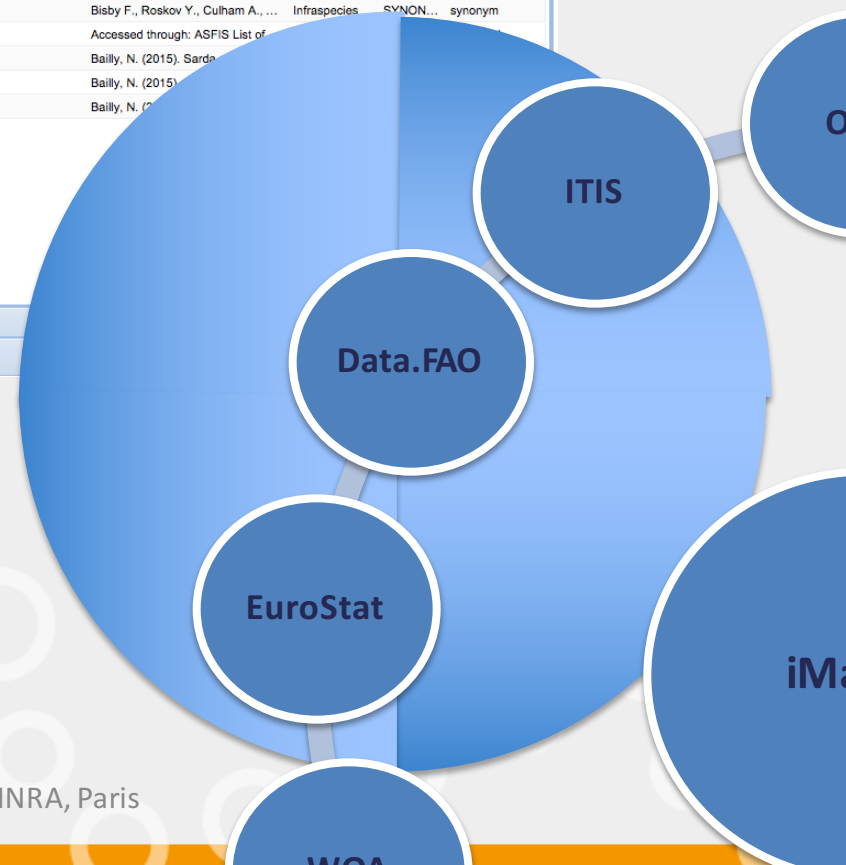
Search: Taxon By: Scientific name Term: sarda sarda

Advanced Option Filter by Source Filter by BBox Filter by Date Synonyms From Expand

Filter your results Filter: None

Scientific Name	S.N. Authorship	Data Source	Citation	Rank	Status ...	Status Remarks
<input type="checkbox"/> Sarda sarda	(Bloch, 1793)	OBIS	Intergovernmental Oceanographi...	Species	ACCEP...	not found
<input type="checkbox"/> Sarda sarda	(Bloch, 1793)	CatalogueOfLife	Bisby F., Roskov Y., Culham A., ...	Species	ACCEP...	accepted name
<input type="checkbox"/> Sarda sarda chilensis	(Cuvier, 1832)	CatalogueOfLife	Bisby F., Roskov Y., Culham A., ...	Infraspecies	SYNON...	synonym
<input type="checkbox"/> Sarda sarda chilensis	(Cuvier, 1832)	CatalogueOfLife	Bisby F., Roskov Y., Culham A., ...	Infraspecies	SYNON...	synonym
<input type="checkbox"/> Sarda sarda	(Bloch, 1793)	ASFIS	Accessed through: ASFIS List of			
<input type="checkbox"/> Sarda sarda	(Bloch, 1793)	WoRMS	Baillly, N. (2015), Sarda			
<input type="checkbox"/> Sarda sarda chilensis	(Cuvier, 1832)	WoRMS	Baillly, N. (2015)			
<input type="checkbox"/> Sarda sarda chilensis	(Cuvier, 1832)	WoRMS	Baillly, N. (2015)			

Page 1 of 1

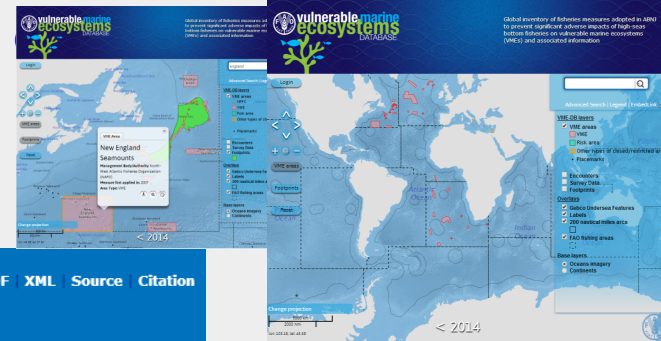




Report production: VME-DB

The International Guidelines for the Management of Deep-Sea Fisheries on the High Seas. VME database to assist in informed decision making and the development sustainability and reduce impacts.

Time



Corner Seamounts Selected year: 2012 Print PDF XML Source Citation

Description **Map** **Management** **Regional overview** **Meeting reports** **Media**

Measures specific to this VME area
 Area closed to bottom fishing until 31 Dec 2014, with exploratory fishing option. Vessels fishing this area shall have a scientific observer onboard. (Art 16.1-3)
 Period in force: 2007 - 2014
 Source of information
 NAFO Conservation and Enforcement Measures 2012 (NAFO FC Doc 12/1 Serial No. N6001) Fisheries Commission 2012

General measures
Fishing areas
 The comprehensive map of existing bottom fishing areas (as delineated by the coordinates shown in Table 1 and illustrated in Figure 4) shall be revised regularly to incorporate any new relevant information. Contracting Parties may, in the future, consider the possibility of refining the comprehensive map on the basis of haul by haul information, if available. (Art.17)
Exploratory fishing protocol
 Exploratory fishing covers all bottom fishing activities (a) outside of the existing bottom fishing area and (b) to fisheries within the existing bottom fishing area that show significant change. (Art 15.8). Exploratory fisheries must be conducted according to an exploratory fisheries protocol (Art 18; Annex 1E.I-IV) and are subject to review FC and SC. Exploratory fisheries will be allowed only if there are adequate mitigation measures to prevent SAI to VMEs (Art 19).
Encounter protocols
 In existing bottom fishing areas, encounters with VME indicator species above a threshold value are reported to the Executive Secretary and trigger a 2 nmile move on rule. In new fishing areas, such encounters also result in temporary closures of 2 nmile radius and require a more detailed report

Management Body/Authority
Northwest Atlantic Fisheries Organization (NAFO)
 The Northwest Atlantic Fisheries Organization's (NAFO) overall objective is to contribute through consultation and cooperation to the optimum utilization, rational management and conservation of the fishery resources of its area of competence, and to ensure the long term conservation and sustainable use of the fishery resources and, in so doing, to safeguard the marine ecosystems in which these resources are found.

Web site
<http://www.nafo.int/>
Regional Fishery Body fact sheet
<http://www.fao.org/fishery/rfb/NAFO/en>

VME record

Description (Habitat & Biology)

Specific measures

Historical information on fishing areas and closed areas

Meetings & other Sources of Information

General Measures

RFMO

iMarine experience

iMarine Gateway Powered by **gCube BE**
Data Infrastructure Initiative for Fisheries Management and Conservation of Marine Living Resources

Home gCube 3.8.0 See Research Environments

You can see below the list of Virtual Research Environments iMarine offers, organised by category.

Must Have

- BiodiversityLab** (Public, Free Access)
- TabularDataLab** (Public, Free Access)

Recommended

- BiOrnym** (Public, Free Access)
- EcologicalModelling** (Public, Free Access)
- ScalableDataMining** (Public, Free Access)

Exclusive

- AquaMaps** (Request Access)
- BOBLME_HisaAWG** (Request Access)
- BlueBridgeProject** (Request Access)
- FAO_TunaAtlas** (Request Access)
- TBTL_VRE** (Request Access)
- TCom** (Request Access)
- VME-DB** (Request Access)
- iMarineBoardVRE** (Request Access)

Demonstrative

- DocumentsWorkflow** (Public, Free Access)
- VesselActivitiesAnalyzer** (Public, Free Access)
- iSearch** (Public, Free Access)

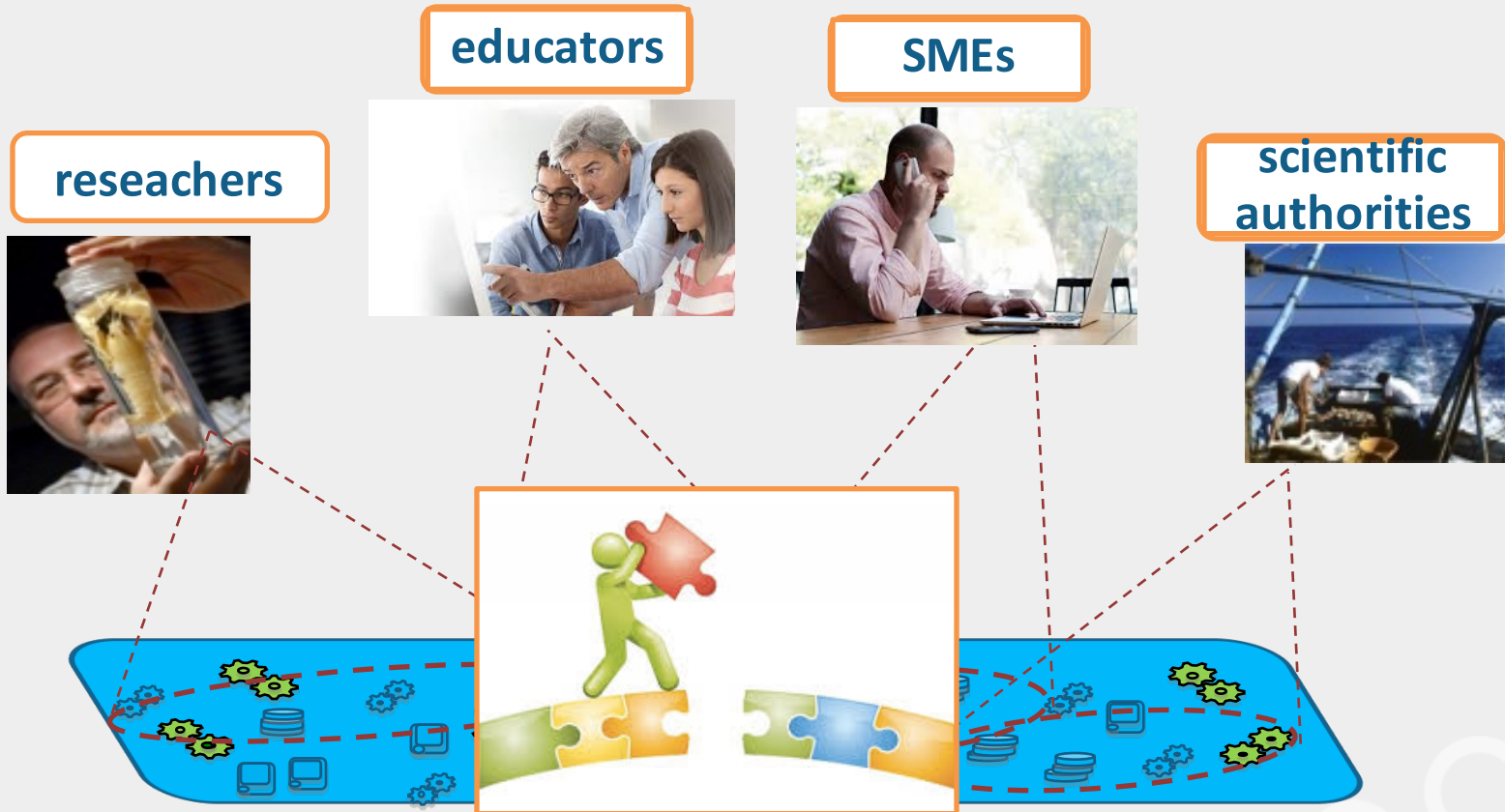
Marine Website | Contact Us | Terms of Use | Privacy

This project has received funding from the European Union's Seventh Programme for research, technological development and demonstration under grant agreement No 238444



Building **R**esearch environments fostering
Innovation, **D**ecision making, **G**overnance and
Education
for Blue growth

Target stakeholders



Expected impact



Six interrelated detailed objectives

Blue Assessment

Supporting the collaborative production of scientific knowledge required for **assessing the status of fish stocks** and **producing a global record of stocks and fisheries**

Blue Economy

Supporting the production of scientific knowledge for **analysing socio-economic performance in aquaculture**

Blue Environment

Supporting the production of scientific knowledge **for fisheries & habitat degradation monitoring**

Blue Skill

Boosting education and knowl. bridging between research & innovation in the area of protection and mgmt of marine resources

Blue Commons

Developing and deploying **service and resource commons** across VREs to facilitate the exploitation of existing infrastructure resources

Blue Uptake

Ensuring uptake of the BlueBRIDGE tools and services, with specific focus on SMEs, other scientific domains & policy making contexts

Specific Areas

Blue Assessment

- **Stock Assessment VRE**
- **Global record of Stocks and Fisheries VRE**

Blue Economy

- **Performance evaluation, benchmarking and decision making in aquaculture VRE**
- **Strategic Investment analysis and Scient. Planning/Alerting VRE**

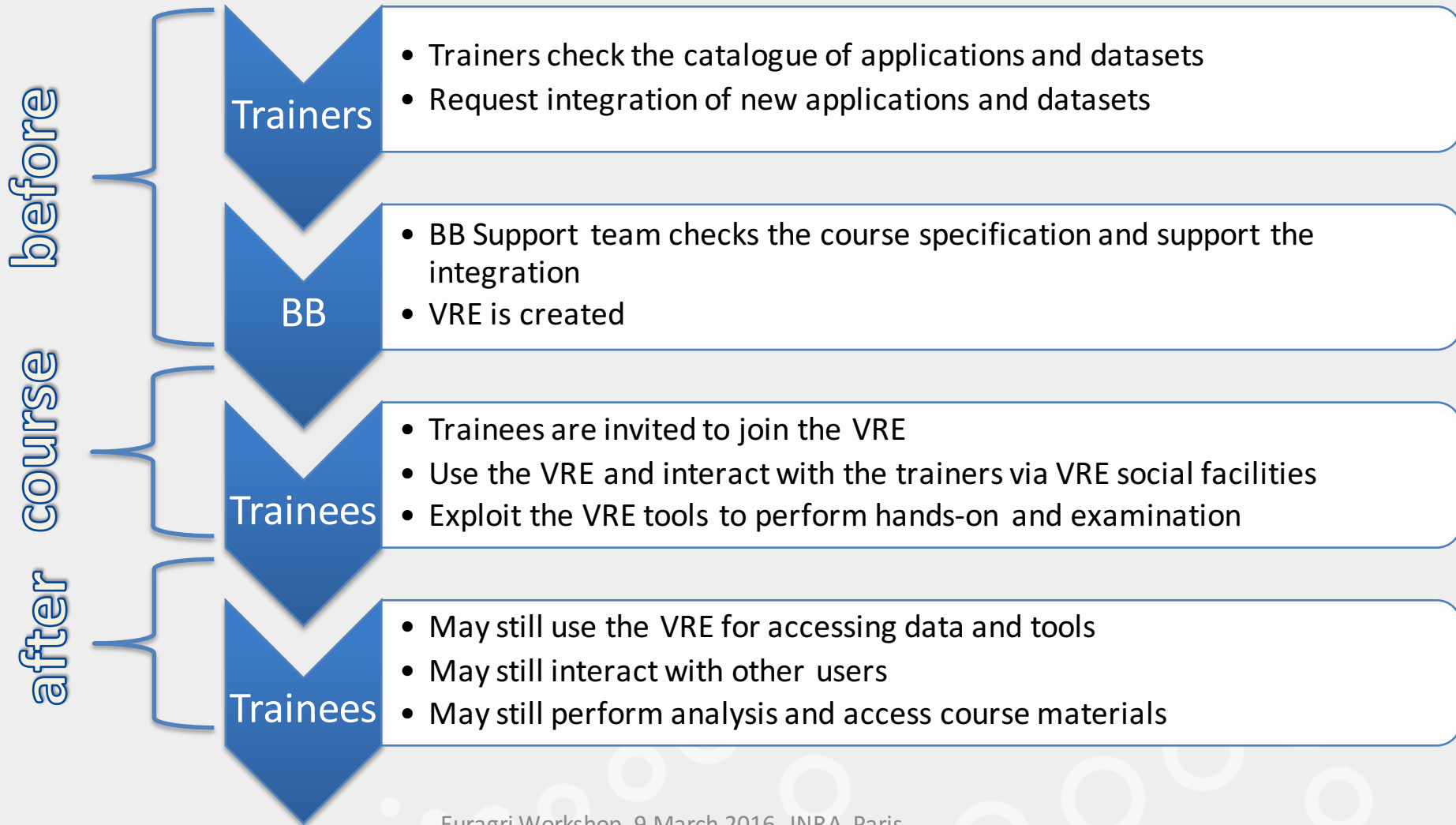
Blue Environment

- **Aquaculture Atlas Generation VRE**
- **Protected Area Impact Maps VRE**

Blue Skill

- **ICES Knowledge Bridging**
- **IRD Knowledge Bridging**
- **Knowledge Bridging Programmes**

Supported Training Workflow



Final Remarks

- The marine and agriculture sectors have many similar needs in term of data management services
- By construction D4Science/iMarine have been built for being able to easy accomodates other needs (e.g. framework, standard protocols, integration of external algorithms, VREs)
- Open to investigate collaborations and synergies



www.i-marine.eu

www.bluebridge-vres.eu

<https://www.gcube-system.org/>

www.d4science.org