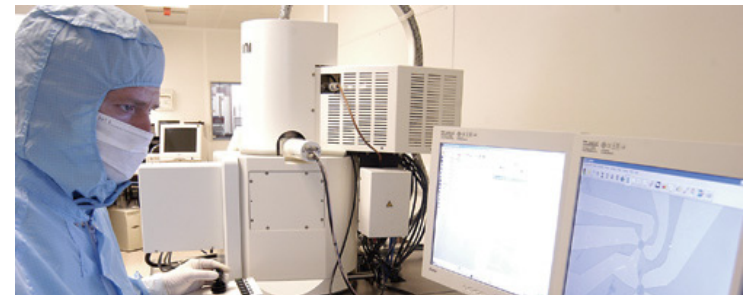


# Research Infrastructures

- Support scientists at performing their research activities
  - running experiments relying on existing research products in order to yield new research products
- ICT facilities are becoming increasingly essential to perform research activities
  - supporting modern scientific investigation: datasets, experiments, etc.
  - publishing and re-using the resulting research products



- “Publishing” is invested of a newer holistic interpretation
  - Researchers should be able to publish any form of research outcome they perceive to be important: publications, datasets, experiments, etc.
- Benefits:
  - Better interpretation of scientific results
  - More rigorous evaluation of the research outcomes
  - Omni comprehensive scientific reward practices,
  - Maximization of research reuse

# What do we mean generally by “publishing”?

## Literature communication workflows

- Publishing applies to selected research products while research activity is still ongoing, i.e. scientists decide “what” is a candidate research product and “when” to publish it
- Publishing is supported by a “research marketplace”: online services for sharing publications, i.e. deposition, quality assessment, dissemination

# Barriers to publishing non-literature products

## “Cultural barriers”

- How to publish, peer-review, cite and be guaranteed of scientific reward for non traditional scientific publications?
- Non traditional scientific publication may remain in “the researchers desk drawer” or in the ICT services of Ris
  - Fear to lose control, lack of scientific reward mechanisms, etc.

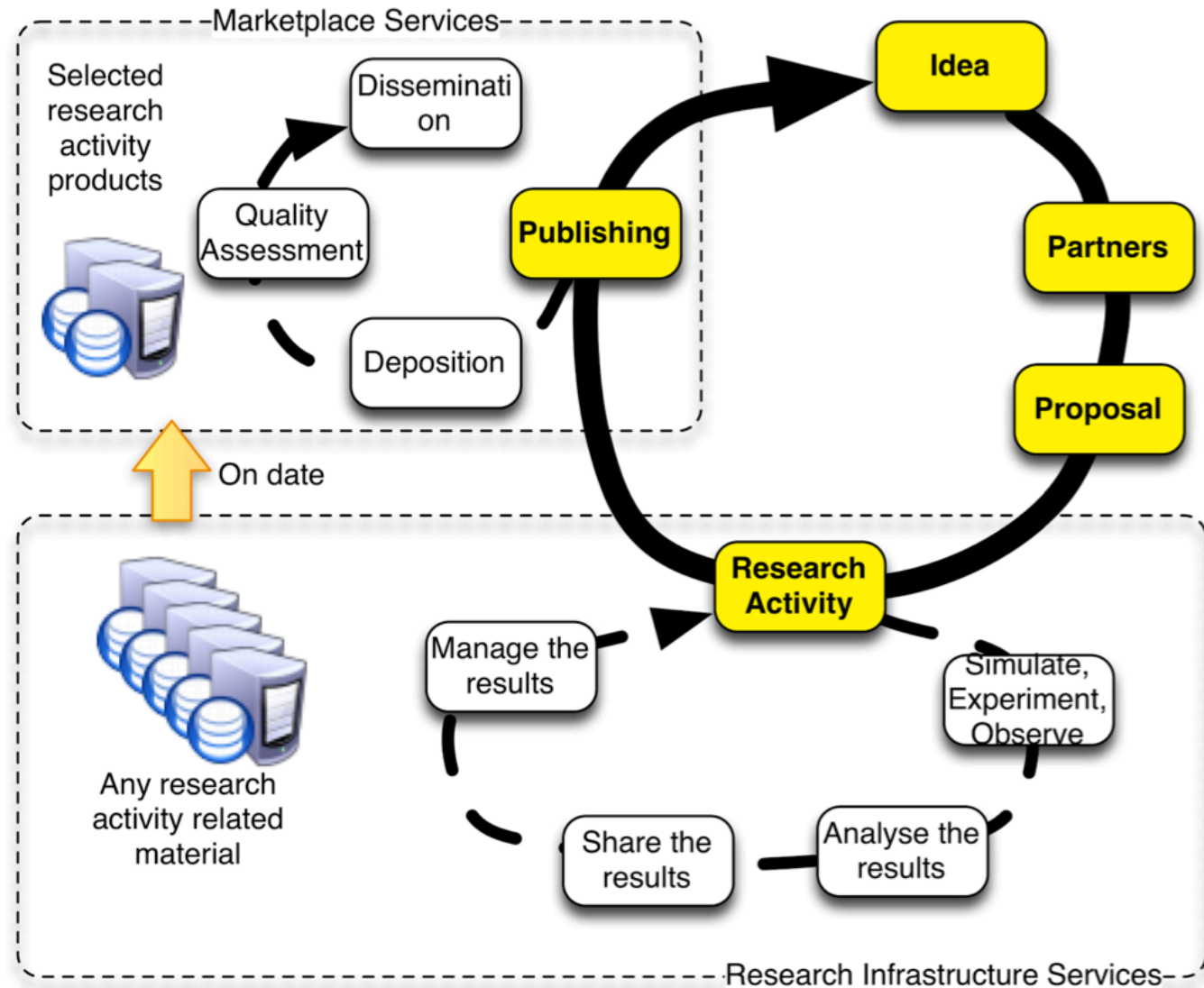
# But there are more barriers!

## Publishing takes place “elsewhere” and “on date”

- Today most practices proposed tend to renovate by reflecting literature publishing workflows
  - Research activities are conducted into the RI
  - Products leave the RI ICT services to be transferred and deposited in new kinds of sources for non-literature products
  - Products are applied literature-like deposition, assessment, and dissemination methodologies

# But there are more barriers!

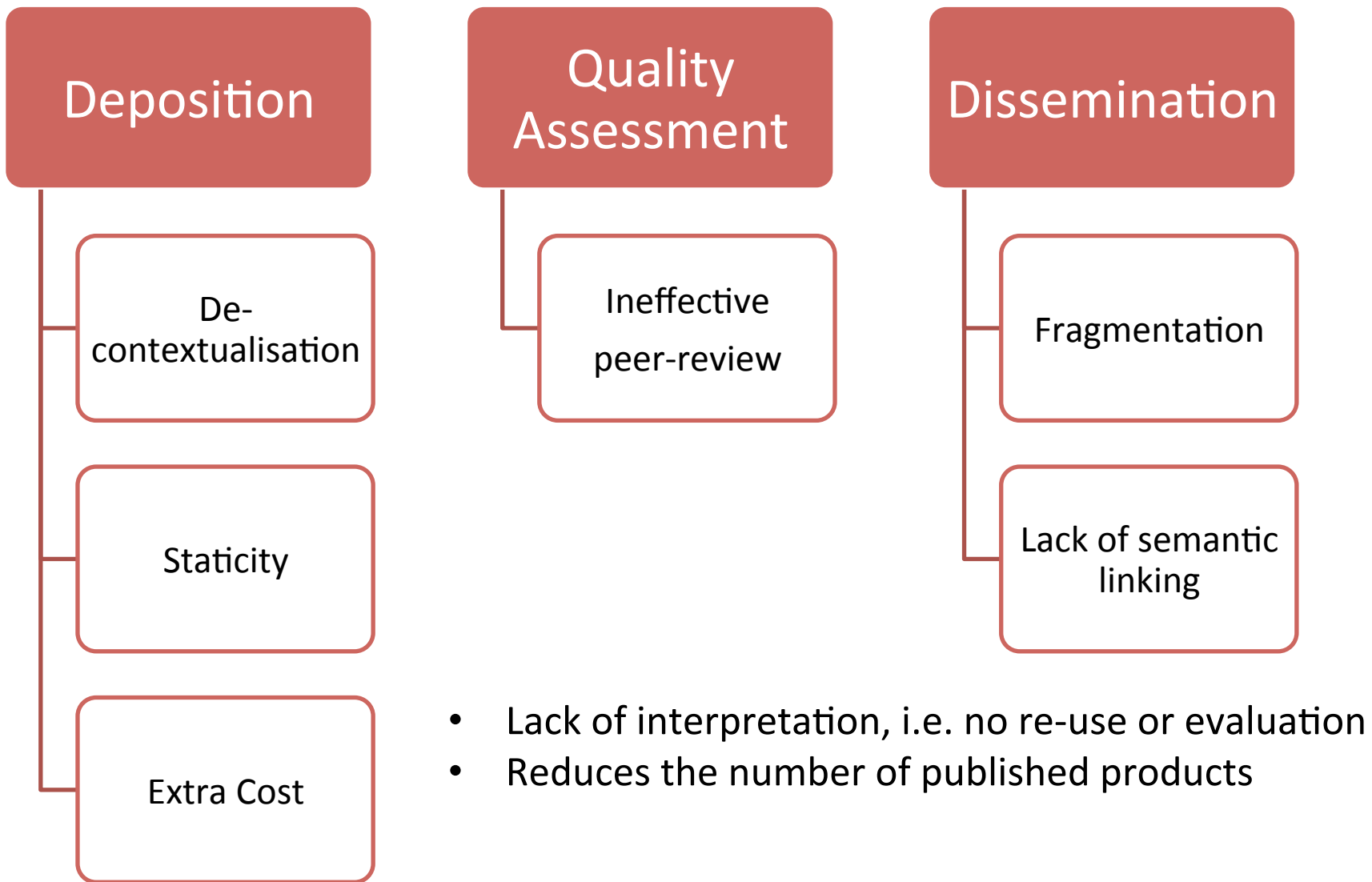
“Sectorial” and/or  
“thematic”  
sources are  
created, e.g. data  
repositories for  
biodiversity,  
experiment  
repositories,  
software  
repositories



# But there are more barriers!

- Modern research, being supported by RI-oriented ICT services is
  - Strongly contextualized
  - Intrinsically dynamic
- These requirements conflict with the “elsewhere” and “on date” philosophy of literature scientific communication workflows

# Issues of Current Publishing models





# A simple idea to change the current publishing model

Products publishing should occur “in place” the RI and “during” the research activities

- RI ICT services should provide facilities for:
  - Performing and monitoring research activities (e.g. VREs)
  - **Supporting marketplace-like activities!!**
- RIs should not rely on third-party marketplace sources to publish their products
- RIs should integrate/operate marketplace sources



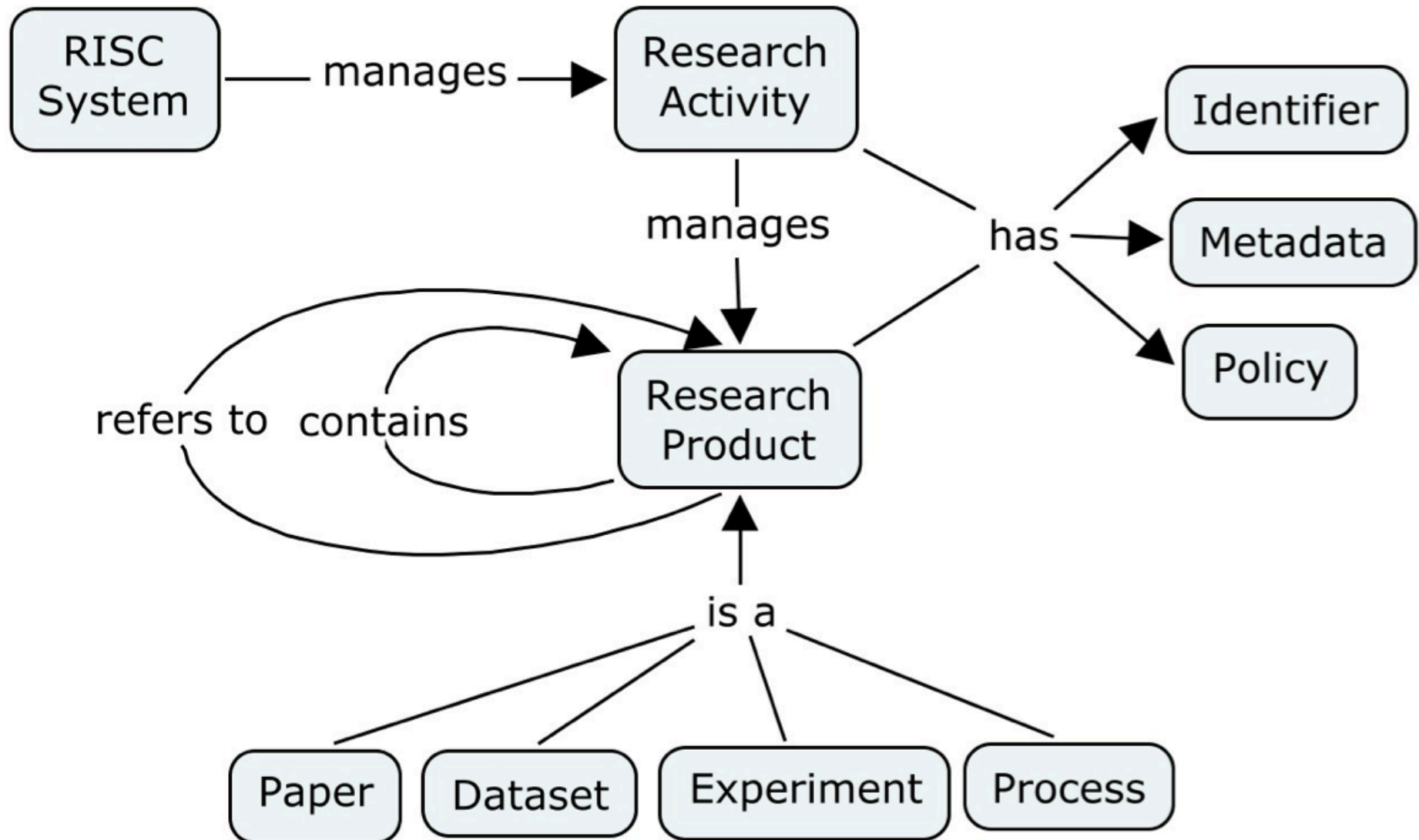
“RI-oriented repositories” in the research marketplace supporting RI scientists at sharing products created in research activities

- “Hook” with RI ICT services in order to intercept creation of new products and publish them
- Rely on social tools to unify RI research activity management and scientific research product publishing, e.g.
  - Notification posting about local product creation to interested users
  - “like” and “open discussions” for in-context quality assessment

# Publishing in RISC Systems

- “RISC Publishing” is intended as making products:
  - Online available
  - Discoverable
  - Assessable
  - Re-usable
  - Real-time accessible
  - Citable
  - In-context, i.e. interlinked with their research activity and associated products or versions

# Research Activities and Research Products in RISC Systems




# RISC System publishing model benefits



# A real-case scenario: the D4Science RISC System

- Manifests in a number of applications made available through a web browser:
  - **Home Social:** a continuously updated list of posts produced by users and applications, e.g. publishing/availability of a research product, comments on a research product
  - **Workspace:** a folder-based file system allowing for storage, discovery, and export of products
  - **Privacy:** a settings area where users can configure diverse aspects characterizing the system behavior

# Deposition and Dissemination in the D4Science RISC System



The screenshot displays the D4Science RISC System interface. At the top, there is a navigation bar with 'Home', 'Profile', and 'Join New' links. The user 'Massimiliano Assante' is logged in. The main content area is divided into three sections:

- Share updates:** A section for sharing updates or links, with a privacy level set to 'My VRZs'.
- News feed:** A section showing updates from various sources. It includes:
  - Application Feeds:** Updates from AquaMaps, Statistical Manager, and ScalableDataMining.
  - User Feeds:** Updates from Mario Rossi and Pasquale Pagano.
- My Virtual Research Environments:** A section showing various research environments like AquaMaps, BiodiversityResearchEnv, EcologicalModelling, JCRMS, IDS, and ScalableDataMining.


Handwritten annotations on the left side of the screenshot identify the 'Application Feeds' and 'User Feeds' sections.

# Contextualized Dissemination of a Species Distribution Map

AquaMaps Species View SpeciesDistribution map "Thunnus albacares" is now available

Earth Map Preview -  
/group/aquamaps/species-view?mapId=636275  
Thunnus albacares Generated Map Earth View

Reply - Favorite [go App \[AquaMaps\]](#) May 10, 7:04 PM





Search for names (ID): Type here for longer search without species names

Displaying maps for species Thunnus albacares

Advanced Search Options

Switch grid view: ☒ Images ☐ Scientific Return to Species Mode

Thunnus alba, Nototheniidae (2012 December...)

Thunnus alba, Nototheniidae (2013 April 1...)

Thunnus alba, Nototheniidae (2013 April 1...)

Thunnus alba, Nototheniidae (2012 December...)

Tuna, Nototheniidae (2013 February...)

Thunnus albacares details

Map Information

GIS Information (3 Items)

Generation Information (4 Items)

Creation Time: 2013 April 22 02:14:45 UTC+2

HAPAC ID: 405

Algorithm: Surfshifting

Data Generation Time: 2013 April 22 01:13:39 UTC+2

Generic Information (6 Items)

Title: Thunnus albacares

Author: Fabio Amabili

Map Type: SpeciesDistribution

14

Save GIS viewer



# Workspace: storage and discovery of products

Manual and  
automated storage of  
products

## Virtual workspace

- core element
- resemble classical folder based file system
- supports items ranging from binary files to information objects



# Workspace

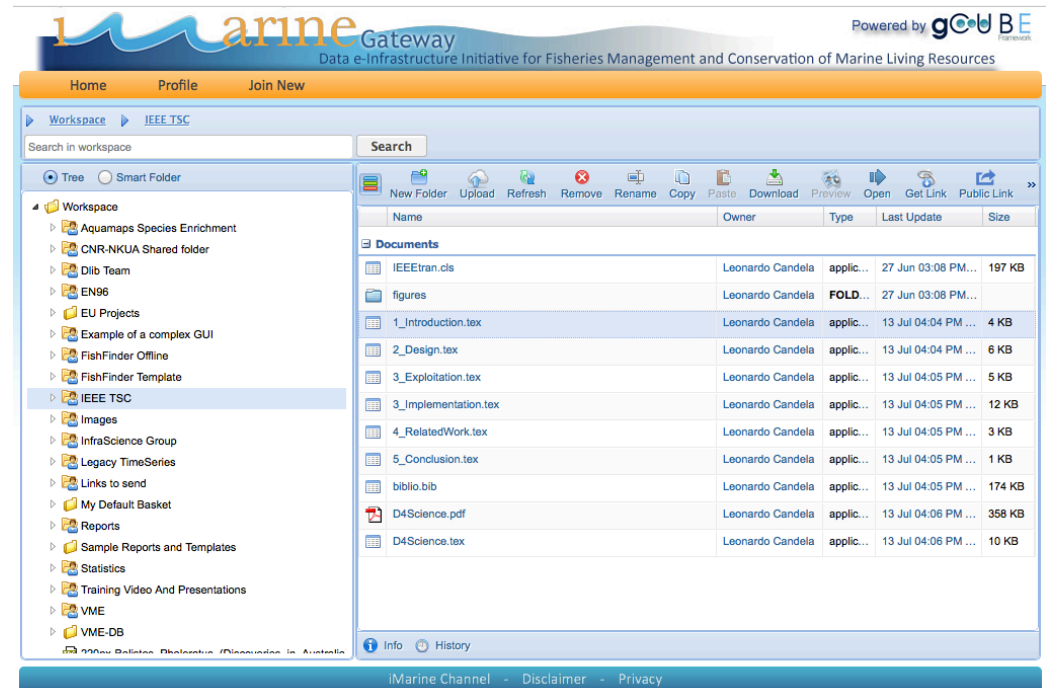
➤ Users can organise and share very different items

➤ tabular data, species distribution maps, time series

➤ Search

➤ Smart Folders

➤ Desktop Access



The screenshot shows the iMarine Gateway workspace interface. The top navigation bar includes links for Home, Profile, and Join New. The main workspace area is divided into a left sidebar for navigation and a main content area for file management.

**Left Sidebar (Tree View):**

- Workspace
  - Aquamaps Species Enrichment
  - CNR-NKUA Shared folder
  - Dib Team
  - EN96
  - EU Projects
  - Example of a complex GUI
  - FishFinder Offline
  - FishFinder Template
  - IEEE TSC
  - Images
  - InfraScience Group
  - Legacy TimeSeries
  - Links to send
  - My Default Basket
  - Reports
  - Sample Reports and Templates
  - Statistics
  - Training Video And Presentations
  - VME
  - VME-DB

**Main Content Area:**

Search in workspace:  Search

Tools: New Folder, Upload, Refresh, Remove, Rename, Copy, Paste, Download, Preview, Open, Get Link, Public Link

Name	Owner	Type	Last Update	Size
<b>Documents</b>				
IEEEtran.cls	Leonardo Candela	applic...	27 Jun 03:08 PM...	197 KB
figures	Leonardo Candela	FOLD...	27 Jun 03:08 PM...	
1_Introduction.tex	Leonardo Candela	applic...	13 Jul 04:04 PM...	4 KB
2_Design.tex	Leonardo Candela	applic...	13 Jul 04:04 PM...	6 KB
3_Exploitation.tex	Leonardo Candela	applic...	13 Jul 04:05 PM...	5 KB
3_Implementation.tex	Leonardo Candela	applic...	13 Jul 04:05 PM...	12 KB
4_RelatedWork.tex	Leonardo Candela	applic...	13 Jul 04:05 PM...	3 KB
5_Conclusion.tex	Leonardo Candela	applic...	13 Jul 04:05 PM...	1 KB
biblio.bib	Leonardo Candela	applic...	13 Jul 04:05 PM...	174 KB
D4Science.pdf	Leonardo Candela	applic...	13 Jul 04:06 PM...	358 KB
D4Science.tex	Leonardo Candela	applic...	13 Jul 04:06 PM...	10 KB

Bottom bar: iMarine Channel - Disclaimer - Privacy

# Notifications

*Notifications Page*

*alerts users on an as-it-happens basis*

[Notification Settings](#)

Few examples:

- “Alice” shared folder X with you
- Your Job has finished;
- “Bob” Commented on your post;

## Thu, 12 December

- 1:06 PM [Leonardo Candela](#) added Collaboration with C. Goble Team to your workspace shared folder /Workspace/InfraScience Group [Go to Folder](#).
- 11:14 AM [Leonardo Candela](#) updated MailingListsMembers.xlsx to your workspace shared folder /Workspace/BSCW Project Folders/iMarine [Go to Folder](#).
- 9:19 AM [Nicolas Bailly](#) also commented on Pasquale Pagano's post: Good question, but the answer is most probably no, with some marginal and localized escapes. However, education given by your parents is a strong bound, the issue being how invite the parents to educate their kids for actions with no economic incentives? Or reverse the question: maybe it is because of this economic approach that Homo sapiens took it over, probably temporarily. There is a system called UTOPIA by Thomas More, 1st Edition in 1516. I never read it, maybe there are some answers. I think someone else resumed More's efforts in the 20th century, but not sure. [See this Post](#).

## Thu, 05 December

- 10:01 AM [Pasquale Pagano](#) also commented on his post: Is there another approach to think to the future and not only to the economic interest of the present generation? [See this Post](#).
- 8:23 AM [Nicolas Bailly](#) also commented on Pasquale Pagano's post: Seems that France does not want to go that way :-( [See this Post](#).
- 8:21 AM [Nicolas Bailly](#) commented on one of your favorite posts: There is a docufiction where octopuses-like animals spread on land in the future ... But this one is false the raise of the sea level due to climate change :-). [See this Post](#).

## Wed, 04 December

- 3:56 PM [Pasquale Pagano](#) added the following event in the TCom shared calendar: 8th Tcom Time: Sun 02 February, 2014 to Thu 06 February, 2014 Category: meeting [Go to Calendar](#).
- 3:11 PM [Leonardo Candela](#) updated MailingListsMembers.xlsx to your workspace shared folder /Workspace/BSCW Project Folders/iMarine [Go to Folder](#).

## Tue, 03 December

- 6:23 PM [Francesco Mangiacrapa](#) shared the workspace folder org with you [Go to Folder](#).

## Mon, 02 December

# Privacy Settings

Notification Settings

Workspace Sharing

☐ Portal
☐ Email
OFF
☒ ON

Shared folder	<input checked="" type="checkbox"/> Portal	<input checked="" type="checkbox"/> Email	OFF	<input type="checkbox"/>	ON	Sharing of workspace folders with you
Shared item added	<input checked="" type="checkbox"/> Portal	<input type="checkbox"/> Email	OFF	<input type="checkbox"/>	ON	Someone added an item in one of your workspace shared folder
Shared item renamed			OFF	<input type="checkbox"/>	ON	Someone renamed an item in one of your workspace shared folder
Shared item updated	<input checked="" type="checkbox"/> Portal	<input type="checkbox"/> Email	OFF	<input type="checkbox"/>	ON	Someone updated an item in one of your workspace shared folder
Shared item deleted	<input checked="" type="checkbox"/> Portal	<input type="checkbox"/> Email	OFF	<input type="checkbox"/>	ON	Someone deleted an item in one of your workspace shared folder
Shared folder renamed			OFF	<input type="checkbox"/>	ON	Someone renamed one of your workspace shared folder
User added to shared folder	<input checked="" type="checkbox"/> Portal	<input type="checkbox"/> Email	OFF	<input type="checkbox"/>	ON	Someone added users one to one of your workspace shared folder
User removed from shared folder			OFF	<input type="checkbox"/>	ON	Someone removed users from one of your workspace shared folder

Social Networking

☐ Portal
☐ Email
OFF
☒ ON

Replies	<input checked="" type="checkbox"/> Portal	<input checked="" type="checkbox"/> Email	OFF	<input type="checkbox"/>	ON	Someone replied too to a post you replied
Messages	<input type="checkbox"/> Portal	<input checked="" type="checkbox"/> Email	OFF	<input type="checkbox"/>	ON	Someone sent you a message
Mentions	<input checked="" type="checkbox"/> Portal	<input checked="" type="checkbox"/> Email	OFF	<input type="checkbox"/>	ON	Someone mentioned you in a post
Favorites	<input checked="" type="checkbox"/> Portal	<input checked="" type="checkbox"/> Email	OFF	<input type="checkbox"/>	ON	Someone set favorite your post
Own replies	<input checked="" type="checkbox"/> Portal	<input checked="" type="checkbox"/> Email	OFF	<input type="checkbox"/>	ON	Someone replied to your post

Shared Calendars

☐ Portal
☐ Email
OFF
☒ ON

Cancel
Save

# Future Plans

- Definition of a RISC system formal model, i.e. reference architecture
- Design and develop a general purpose software toolkit facilitating the realization of a RISC system over any ICT-based research infrastructure environment