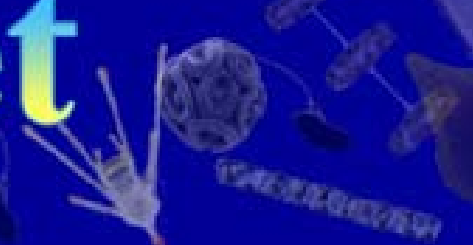


plankton net



Plankton*Net: Using Fedora to aggregate and disseminate biodiversity content

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Computer Center**



*EU-project: Plankton*Net*

Introduction to taxonomy

Existing information systems

Content model for biodiversity

Early 2004, AWI started a small project with MBL to archive images and taxonomic keys/descriptions for phytoplankton found in the North Sea ...



- > 2 year EU project acronym "Plankton-Net" with 7 partners: AWI, MBL, Roscoff, Caen, Universidade de Lisboa, IPIMAR (Lisbon), Natural History Museum
- > Original scope: to create a network of interoperable repositories on plankton taxonomy
- > Motivation: to give taxonomists support in the hard task of identifying species and to rescue historically relevant collections
- > Scope keeps growing... **information system which aggregates taxonomic content and associated images, environmental data, digitized documents, taxon descriptions, molecular data, etc**

. *EU-project: Plankton*Net*

. *Introduction to taxonomy*

. *Existing information systems*

. *Content model for biodiversity*

Information about organisms is often linked to a name. This can create problems in information retrieval...

- one taxon can have many names
- the same name can refer to many taxa



The uBio **Taxonomic Name Server** (MBL-WHOI Library, Woods Hole, USA), implemented as a web service, acts as a **name thesaurus**. Two services are offered:

NameBank is a repository of millions of recorded biological names and facts that link those names together

ClassificationBank stores multiple classifications and taxonomic concepts that are the result of expert opinions. It extends the functionality of NameBank.

Scientific names evolve over time as specimen's names are updated over the years. When dealing with vernacular (common) name, the problem is even more difficult given the fact that it may appear in several languages

Alternative names

see also

- [Anguilla anguilla](#) →
- [Anguilla anguilla](#) →
- [Muraena anguilla](#) →




Vernacular names

or common 194 name(s) [194]

-  [Aal](#) →
-  [Aal](#) →
-  [Aalpricken](#) →
-  [Ahlen](#) →
-  [Ambidda](#) →
-  [Ambidduna](#) →
- [\[gle\] An eascann](#) →
-  [Anchidda](#) →
-  [Ancidda](#) →
-  [Ancidda di sciumi](#) →
-  [Anciddi](#) →
-  [Ancinna](#) →
-  [Ancioda](#) →
-  [Angarone](#) →
-  [Anghidda](#) →
-  [Anghila](#) →

More or less specific

more specific [3]

-  [Anguilla anguilla macrocephala](#) →
-  [Anguilla anguilla ornithorhyncha](#) →
-  [Anguilla anguilla oxycephala](#) →

more general [1]

-  [Anguilla](#) →



ClassificationBank is a taxon concept server



Ancestry

Class	Mammalia Linnaeus, 1758
Order	Cetacea Brisson, 1762
Suborder	Odontoceti Flower, 1867
Family	Physeteridae Gray, 1821
Genus	Physeter Linnaeus, 1758

Synonymy

- [-] *Catodon australis*
Wall 1851, Mem. Australian Mus., 1: 1
Gray 1865, Proc. Zool. Soc. London, 1865: 439
- [+] *Catodon Colneti*
- [+] *Catodon macrocephalus*
- [+] *Catodon polycyphus*
- [+] *Catodon polyscyphus*
- [+] *Catodon svineval*
- [+] *Phiseter cylindricus*
- [+] *Phiseter mular*
- [+] *Phiseter trumpo*
- [+] *Physeter Novae Angliae*
- [+] *Physeter gibbosus*
- ...21 more

Species: *Physeter catodon* Linnaeus, 1758 : sec. **Hershkovitz. 1962**

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description of **Euglena**

Euglenid flagellate, with one or more green plastid or plastids, elongate or ovoid cells, some cylindrical, others flattened and/or corkscrewed in shape; one or no emergent flagella; swimming involves helical rotation of the cell; most species squirm but a few are almost rigid; gliding occurs in some taxa; eyespot and flagellar swelling present; canal opening subapical; about 125 species, mostly freshwater, a few marine; widely studied. The genus has recently been revised, and those changes are not yet included in this web site. Type species: *Euglena viridis* (Muller) Ehrenberg.

from Biopedia
[\[more info\]](#)



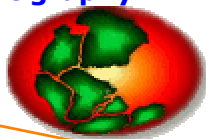
omic
g&classification

WDC/Pangaea: Water temperature and salinity, nutrients, lipid biomarkers stratigraphy

Description

Digitalization of biodiversity-related literature

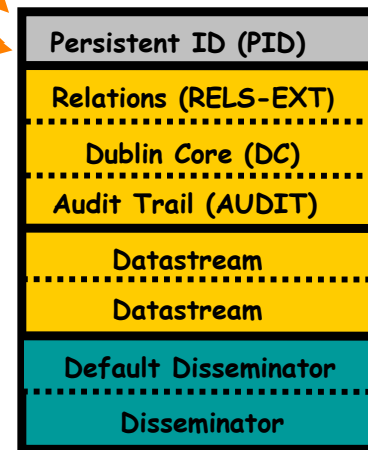
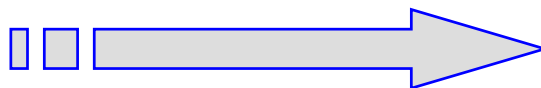
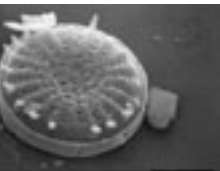
Molecular data



plankton*net@AWI



plankton*net@Roscoff



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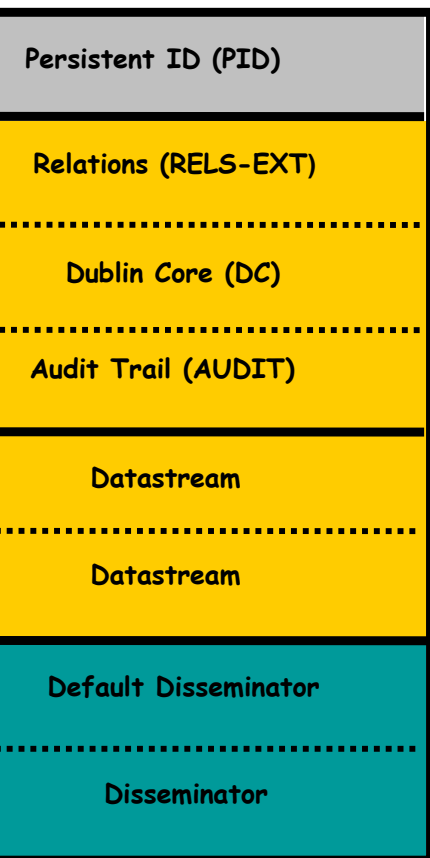
. *Existing information systems*

. *Content model for biodiversity*

Object: Taxon [metadata, resources (images, digitized documents), aggregators]

Local or surrogate content datastreams primary to the object

- taxonomics keys, synonyms and classification
- Darwin Core metadata
- Images, SEM photos, schematic drawings, etc
- Descriptions, morphometric data
- Digitized literature
- Geo-referenced environmental dataset
- Molecular data

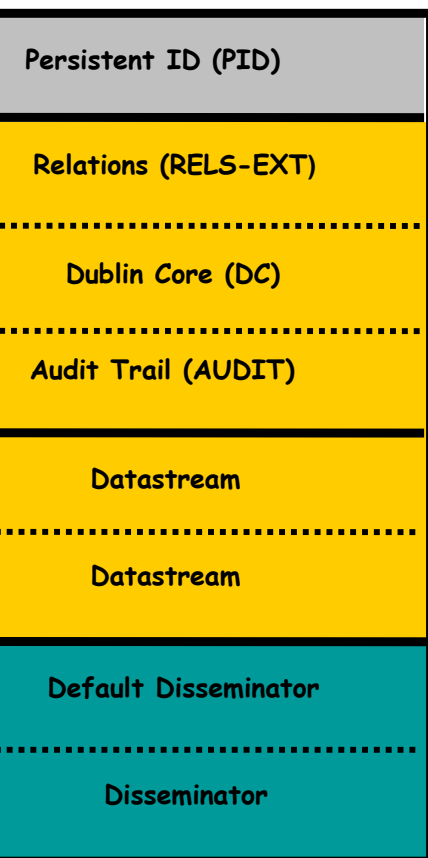


All objects are taxons for which at least 1 image (datastream) is available.

Life Science Index IDs will be used to construct PIDs:

Example:

Piper nigrum L. will be tagged as:
<info:fedora/plankton-net.org:447505>



DC (text/xml)

uBio naming and classification bank (text/xml)

Darwin Core (text/xml)

Biopedia descriptions (text/xml)

Relationships (RDF/xml)

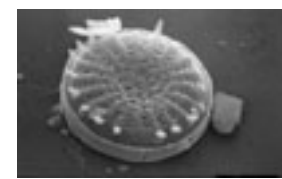
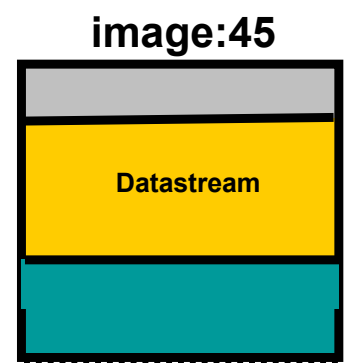
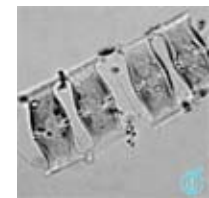
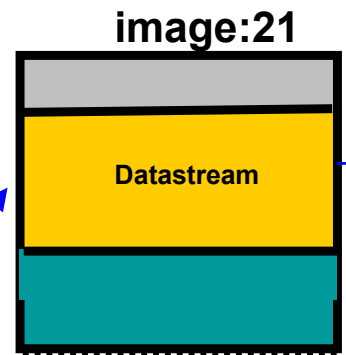
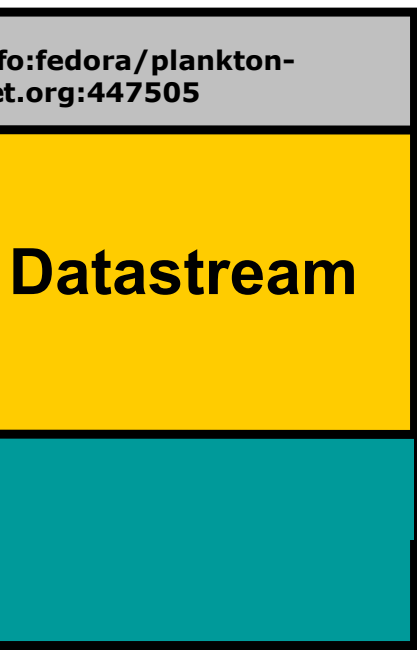
Images (image/jpeg) and respective annotations

Documents (application/pdf)

Environmental data (text/tab-separated)

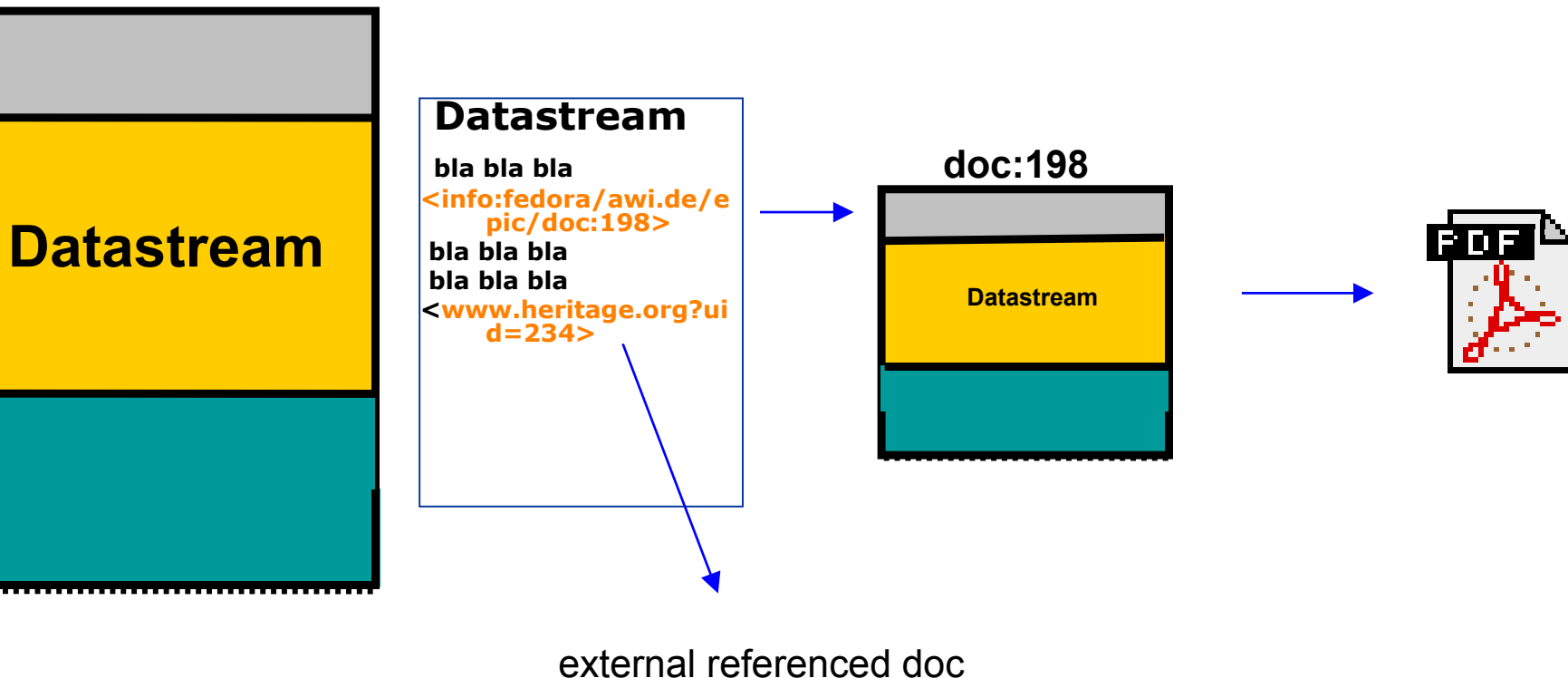
Genomics (text/xml)

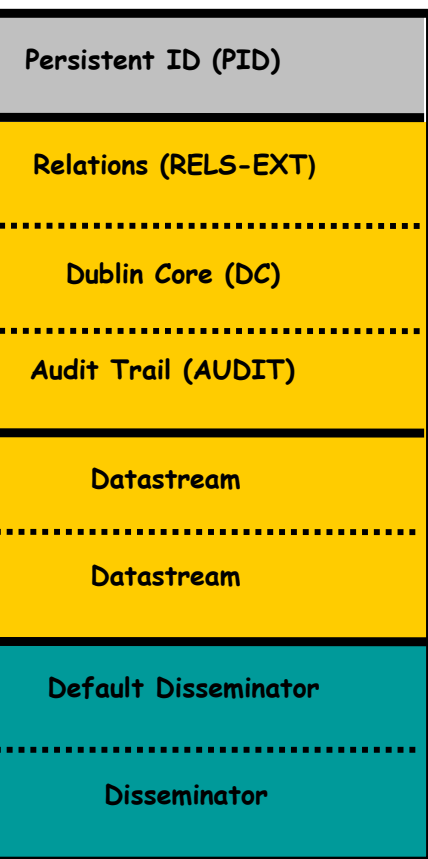
In order to assure great flexibility in the re-use of objects and discovery of content in different contexts...



external referenced image

In order to assure great flexibility in the re-use of objects and discovery of content in different contexts...



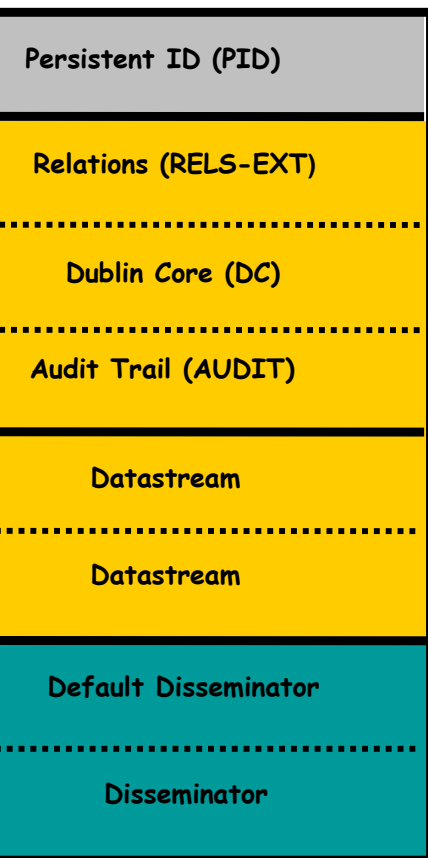


**Default (getPreview, getFullView,
getCitation, getBiopediaDescription,
getDC, getDarwinCore,
getUBioNaming, getUBioClassification)**

Image transformations

**Metadata-crosswalks (saxon XSLT engine
services)**

Mapping services



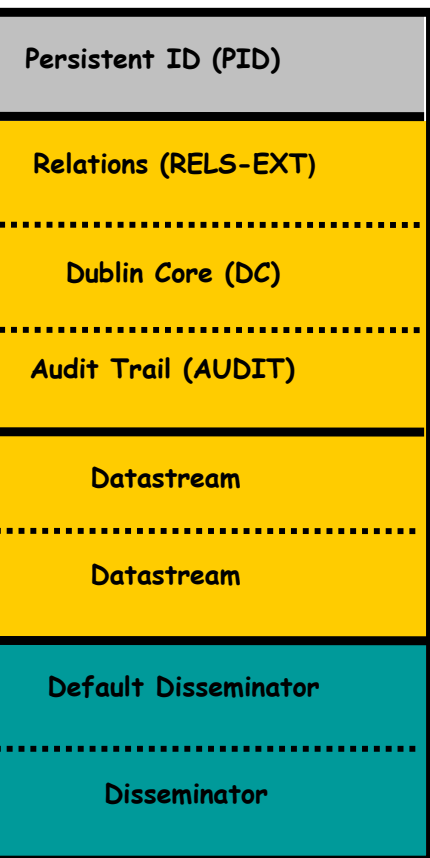
Images

getMetadata
getThumbnail, getImage
getLabel, getAnnotation

getSeeAlsos

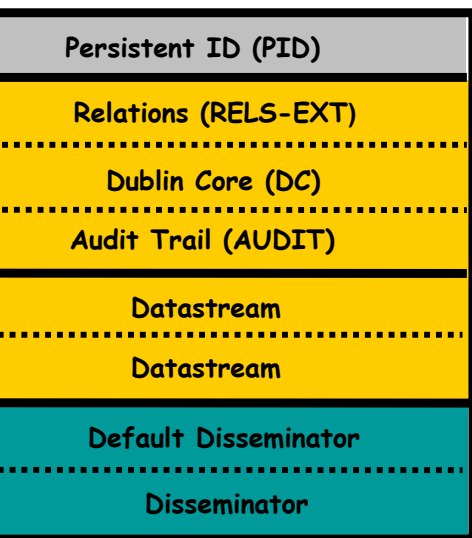
download

- > *Interoperability with other community methods in the behaviour*



Metadata-crosswalks

**getDarwinCore2,
getOBIS, getGBIF, getMARBEF, etc**



Relationship metadata

- **collection: isMemberofCollection, isMemberofAsset, isAssociatedWith**
(„SEE ALSO“)
- **branding-related: AggregatedBy, DescribedBy, CertifiedBy**

Versioning and traceability

Access control policies at collection level