



Empowering Human Connected Communities

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Empowering human connected communities (part 2)

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November 27th, 2012
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Outline #0

- What to do and why to do it?
- How to do it ?
- Ongoing projects

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Outline #3: Ongoing projects sharing the ideas

- human Discovery & Science construction
 - in science: ENCORE: chemistry -> done
 - in science: CoObs & Viewpoints: ecology
 - in science: SiFR: biomedicine
- human Learning
 - in education: Didacel KTS:
Multimedia and Digital Technologies:
Formal and Informal Learning
- human Creativity
 - in art: EMPIIU: music

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Projects are scenarios

- Classification according to a viewpoint
- A service oriented view:
 - Semantics
 - Agents
 - autonomous + communicating;
 - Human + artificial
 - Distributed , concurrent
 - Processes and data

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CoObs (Courtesy of Philippe Lemoisson, CIRAD)

Conduire le projet d'observatoire

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CoObs: (Courtesy of Philippe Lemoisson, CIRAD) the life cycle of "mass learning" for action

Fais à l'agir, comprendre et s'organiser pour agir

1. Observation: Observation et analyse des données et des connaissances existantes.

2. Comprendre: Comprendre les connaissances existantes et identifier les besoins et les opportunités.

3. Organiser: Organiser les acteurs et les ressources pour mettre en œuvre une action.

4. Agir: Mise en œuvre d'une action concrète pour atteindre les objectifs.

5. Réfléchir: Réfléchir sur l'expérience et identifier les leçons apprises.

6. Apprendre: Apprendre des leçons apprises et les intégrer dans la pratique future.

7. Conduire: Conduire le processus de manière continue et adaptive.

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Viewpoints

(Courtesy of Philippe Lemoisson, CIRAD)

- Goal: to emerge actionable knowledge from digital multimedia and multilingual content, at the scale of a community
- Concept: a computer supported open, continuously evolving knowledge space populated by high level objects: intentional agents, artificial agents, multimedia and multilingual content, multilingual processes and data
- Collective intelligence will emerge from self-organization in this complex system.
- A set of protocols will rule the knowledge space. While the artificial agents will be in charge of mining, pre-translating, summarizing the textual documents and retrieving multimedia content, the intentional agents will tag the multimedia content, and express opinion, sentiment and feedback upon retrievals.
- continuous learning, i.e. adaptability to the evolution of semantics
- self-organisation of knowledge, i.e. emergence of concepts and mainstreams
- resilience with respect to the evolution of knowledge
- scalability, i.e. full acceptance of the merging of communities
- transparency, i.e. no hidden arbitrations

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Logics on top of Viewpoints

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Goal: to compute formalized knowledge

A conversation between agents owning logical reasoning abilities

3 speech acts:

- assertives
- directives
- commisives

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Semantic indexing of biomedical resources

Courtesy of Clément Jonquet

22 sources
3.5M elements
200 terms
2.4M mappings
16.4 billion Annotations

Enabling Translational Discoveries with Integration of Biomedical Data

In Biomedicine, the wealth of publicly accessible biomedical data is beginning to enable cross-cutting integrative translational bioinformatics studies. Translational discoveries can be made by mining and crossing biomedical resources.

Biomedical researchers have turned to ontologies and terminologies to represent biomedical data (i.e., experimental data sets, diseases, experiments, conditions, clinical-trial descriptions, published papers) with common concepts for better search and retrieval. Lirame will contribute to enhance an already existing collaboration with the National Center for Biomedical Ontologies at Stanford University which maintains the BioPortal ontology repository (<http://bio2rdf.org/bioportalsrc>), a platform of ontology-based services highly used in the biomedical community.

Courtesy of Clément Jonquet

Annotation challenge

- Explosion of biomedical data: diverse, distributed, unstructured... not linked to ontologies
- Hard for biomedical researchers to find the data they need
 - Data integration problem
 - Translational discoveries are prevented
- Good examples
 - GO annotations
 - PubMed (biomedical literature) indexed with Mesh headings
- Annotate data with ontology concepts

Courtesy of Clément Jonquet



The scenario of the future: innovation and technologies

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Enhanced Music Interactive Platform for Internet User

EMIPIU IEEE1599 MUSIC BOX COMMUNITY

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Logout

GALLERY

FACEBOOK

Courtesy of Goffredo Haus and Gianna Martinengo

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Music: IEEE 1599 file structure

Courtesy of Francesco Vitale

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Ave Maria (Gounod)

Por una cabeza (Carlos Gardel)

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Obrigado Thank you Merci
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