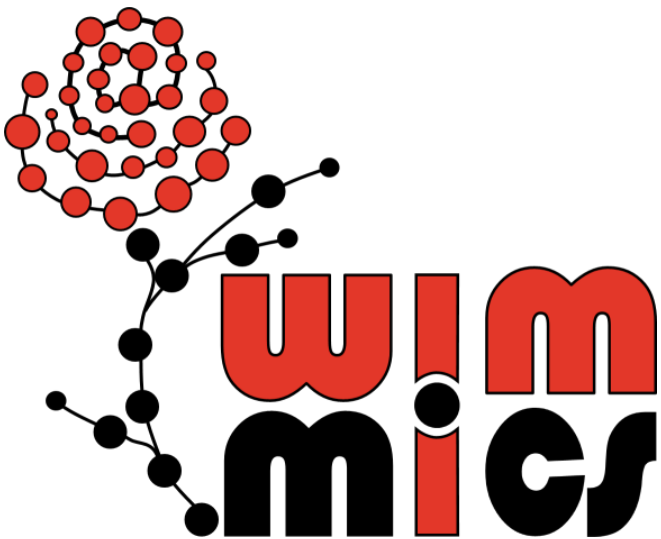


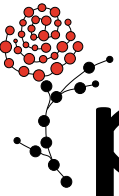


Web-Instrumented Man-Machine Interactions, Communities, and Semantics*

a proposal for a joint research team between INRIA Sophia Antipolis –
Méditerranée and I3S (CNRS and University Nice Sophia Antipolis).

(*) “wimmics” comes from “wimi”, a variety of roses.



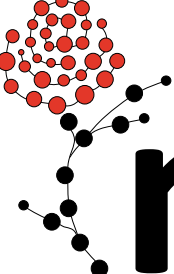


previously in Wimmics...

- First document 11 July 2010 (v01)
- First submission to BCP 22 September 2010 (v11)
- First revision with BCP 1 February 2011 (v15)
- Meeting and review with BCP 3 March 2011 (v15)
- Revision + short & long versions 12 June 2011 (v17)
- Medium presentation GLC pole 1 July 2011 (v17)
- Revision and review with BCP 6 July 2011 (v17)
- Review by I3S 8 July 2011 (v17)
- Go from Inria 19 July 2011 (v17)
- Go from I3S 5 September 2011 (v20)
- Revision + short & long versions 9 January 2012 (v21)
- Short presentation to CP 15 March 2012 (v24)
- Long presentation to CP 12 April 2012 (v24)



you are here



members

Head (and INRIA contact): Fabien Gandon

Vice Head (and I3S contact): Catherine Faron-Zucker

Researchers:

- Michel Buffa, MdC (UNS)
- Olivier Corby, CR1 (INRIA)
- Alain Giboin, CR1 (INRIA)
- Nhan Le Thanh, Pr. (UNS)
- Isabelle Mirbel, MdC, HDR (UNS)
- Peter Sander, Pr. (UNS)
- Andrea G. B. Tettamanzi, Pr. (UNS)
- Serena Villata, RP (INRIA)

Post-doc:

- Zeina Azmeh (I3S)
- Elena Cabrio (CORDIS)

Research engineers:

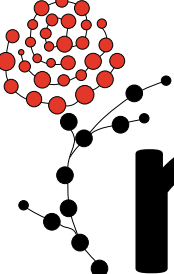
- Julien Cojan (INRIA, Ministry of Culture)
- Christophe Desclaux (Boost your code)
- Amosse Edouard (I3S)

PhD students:

1. Pavel Arapov, 1st year (EDSTIC-I3S)
2. Adrien Basse, 3rd year (UGB-INRIA)
3. Franck Berthelon, 3rd year (UNS-EDSTIC)
4. Ahlem Bouchahda, 3rd year (UNS-SupCom Tunis)
5. Khalil Riad Bouzidi, 3rd year (UNS-CSTB)
6. Luca Costabello, 2nd year (INRIA-CORDI)
7. Papa Fary Diallo, 1st year (AUF-UGB-INRIA)
8. Corentin Follenfant, 2nd year (SAP)
9. Maxime Lefrançois, 2nd year (EDSTIC-INRIA)
10. Nguyen Thi Hoa Hue, 1st year (Vietnam-CROUS)
11. Nicolas Marie, 2nd year (Bell-ALU, INRIA)
12. Rakebul Hasan, 1st year (INRIA ANR-Kolflow)
13. Oumy Seye, 2nd year, (INRIA Rose Dieng allocation)
14. Imen Tayari, 3rd year (UNS-Sfax Tunisie)

Assistants:

- Christine Foggia (INRIA)
- Sarah Choulet (I3S)



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- Nhan Le Thanh, Pr. (UNS)
- Isabelle Mirbel, MdC, HDR (UNS)
- Peter Sander, Pr. (UNS)
- Serena Villata, RP (INRIA)

social web, semantic web, tools and applications

knowledge engineering, semantic web, graph-based KR

graph-based KRR, semantic web, e-learning

semantic web, knowledge modeling, social web, w3c

psychology, ergonomics, HCI, CSCW, knowledge engineering

distributed & use-driven knowledge systems, security, mining

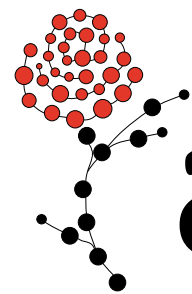
requirement & method, information systems, semantic web

affective computing, emotion detection, (serious) games

semantic web and argumentation theory, normative specification

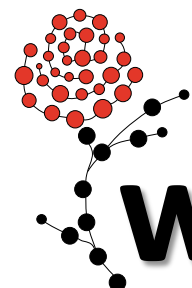
Wimmics: “we mix” Edelweiss and Kewi

- long collaboration (web, semantic web, graph-based formalisms, ontologies, etc.)
- complementarities (interaction design/ affective computing, triple-stores, rules / access control, etc.)
- several joint projects
- research and education



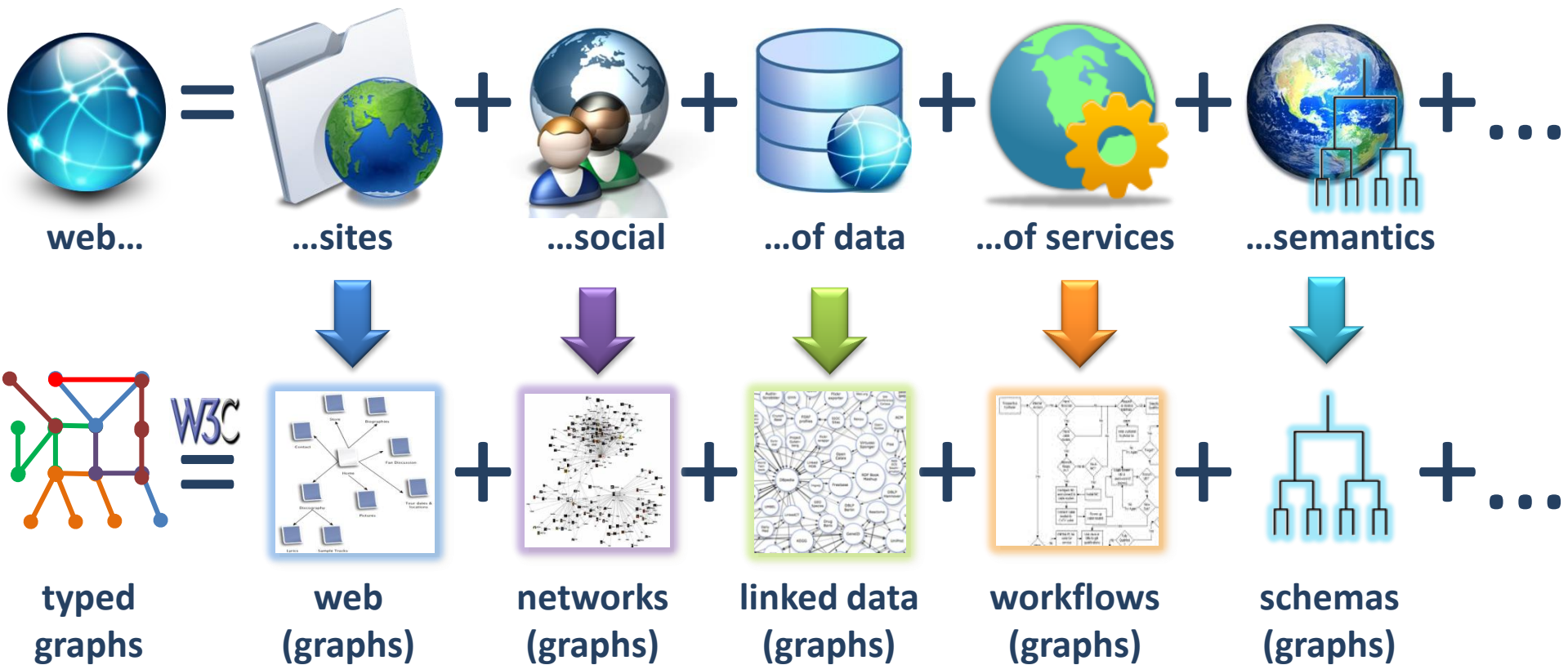
as we may *link*

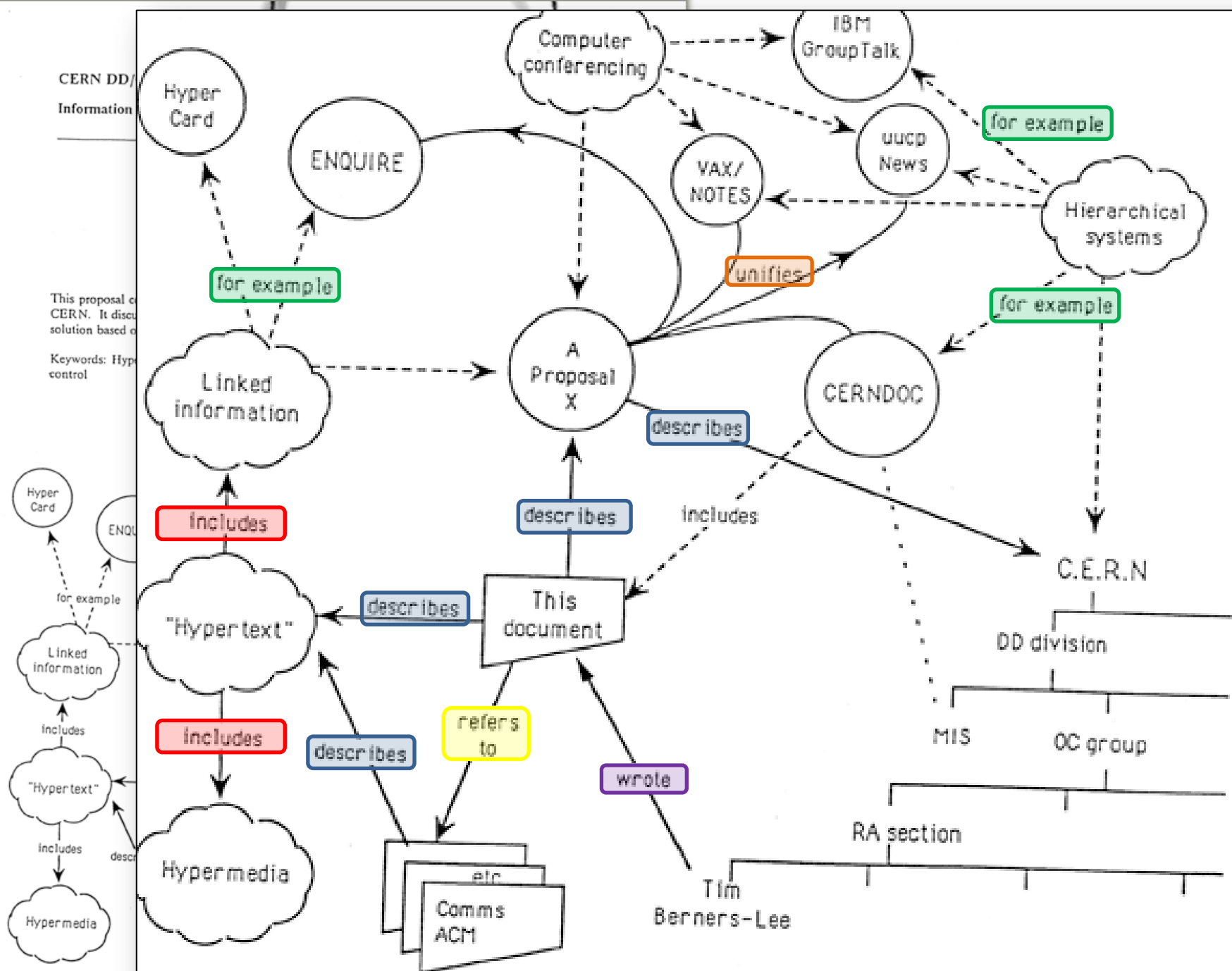
System	Author(s)	Kinds of links/graph – Linked items	Linking Goal
MEMEX	V. Bush	Association links Mesh of associative trails	Memory extension with a desk able to remember associations and organize readings.
HYPertext / HYPERMEDIA	T. Nelson	Link elements of documents	Digital structure to virtually organize tracks between fragments of multimedia resources
WORLD WIDE WEB	T. Berners-Lee	Link documents across the network.	Expand the structure over the internet to share it among many users.
Semantic Web	(several)	Link descriptions of resources and the schema of the descriptions	Making humans and software agents cooperate through the web
Web of Data	(several)	Linked open data on the web	Use the web as a giant blackboard for data exchanges and integration
Social Web / web 2.0	(several)	Link people, capture relations	Foster awareness, exchanges and interactions between users
Web of things & ubiquitous web		Link devices, places through their characteristics and services	Allow contextual interaction and web-augmented reality.



web landscape and graphs

(meta)data of the relations and the resources of the web





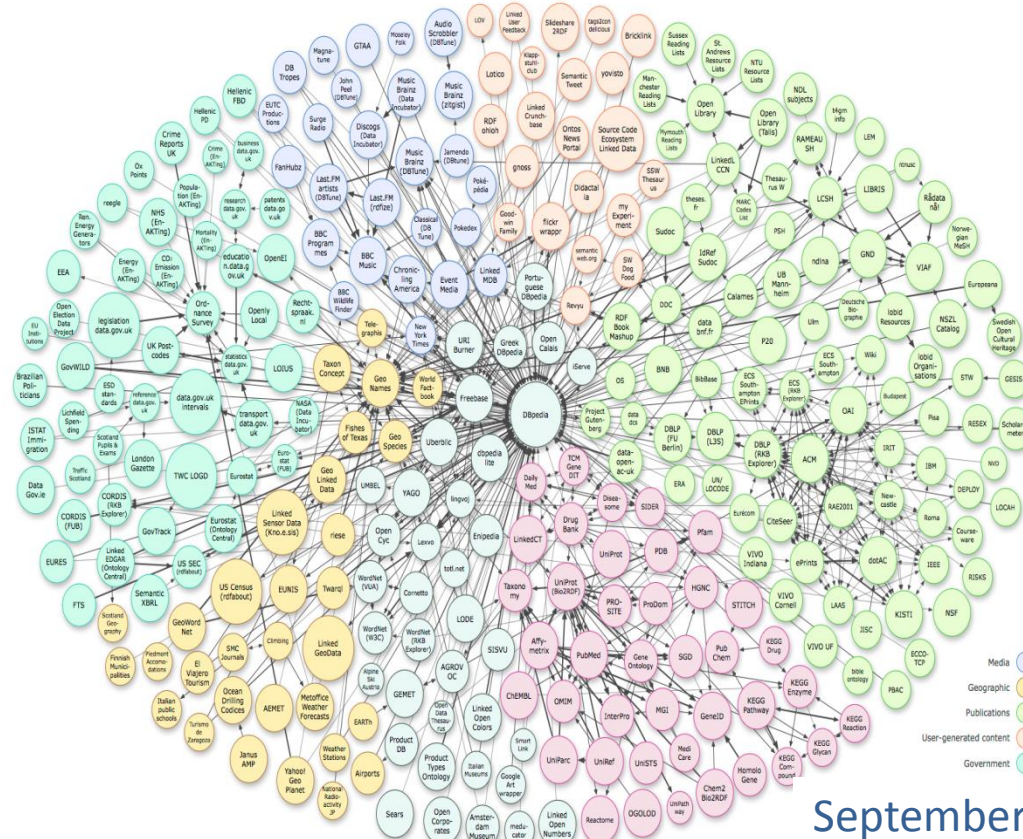
April 2008

September 2008

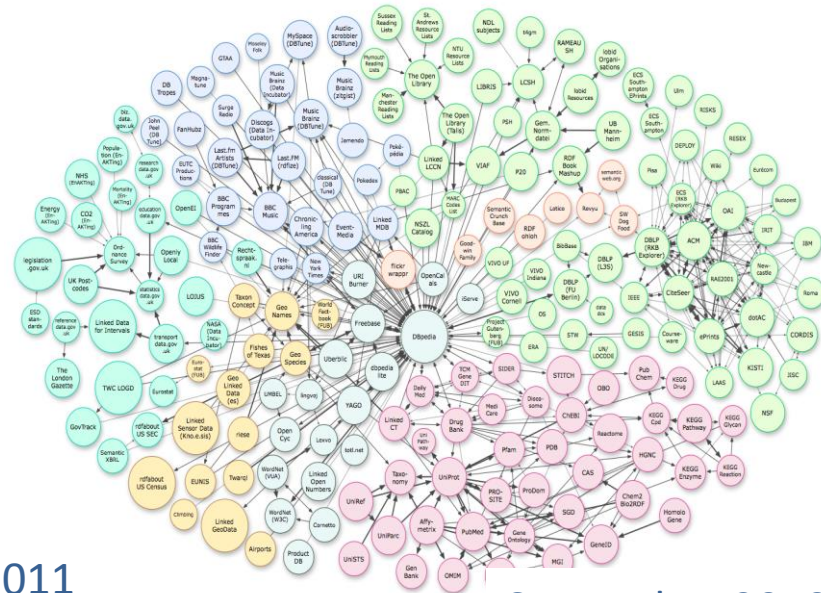
May 2007

March 2009

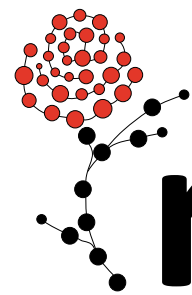
Linked Open Data



September 2011

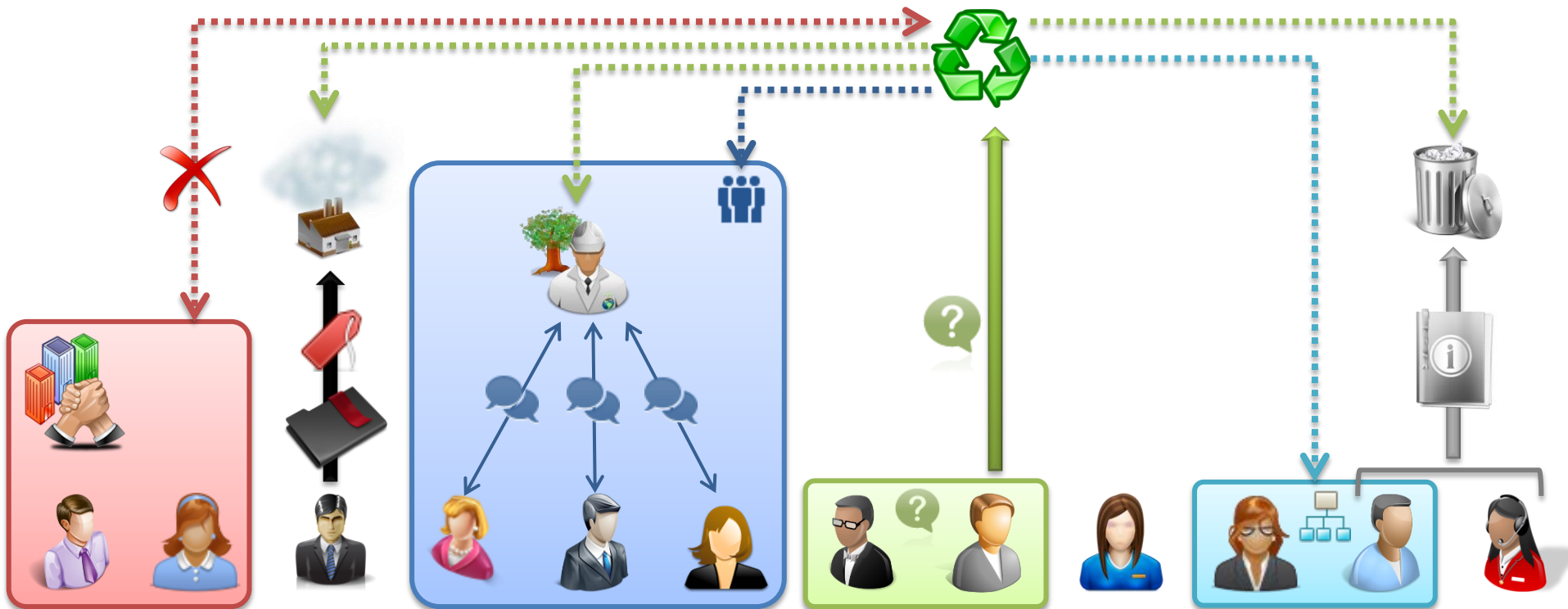


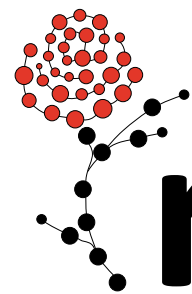
September 2010



research problem

socio-semantic networks: combining formal semantics and social semantics on the web

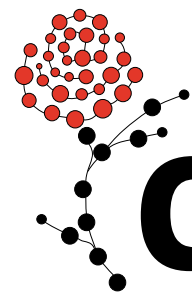




research fields

socio-semantic networks: combining formal semantics and social semantics on the web

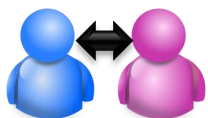
- web-supported epistemic communities
- model and support actors, actions & interactions
- graph-based representation & reasoning



challenges

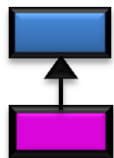
analyzing, modeling, formalizing and
implementing graph-based social semantic web
applications for communities

① multidisciplinary approach for analyzing and modeling

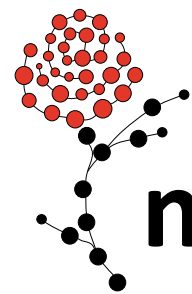


- the many aspects of intertwined information systems
- communities of users and their interactions

② formalizing and reasoning on these models



- new analysis tools and indicators
- new functionalities and better management



main research axes and questions

Interactions



Improve interactions with systems getting more and more complex?



Reconcile formal stable semantics & negotiable social semantics?



Reconcile local contexts and global world-wide virtual machine?

Typed graphs



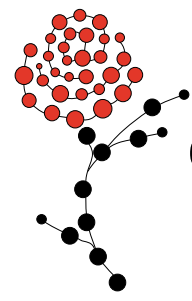
What kind of formalism is the best suited for SSW models?



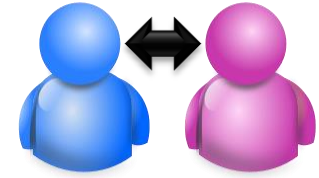
Analyze typed graph structures and their interactions?



Support different graph life-cycles, calculations & characteristics?

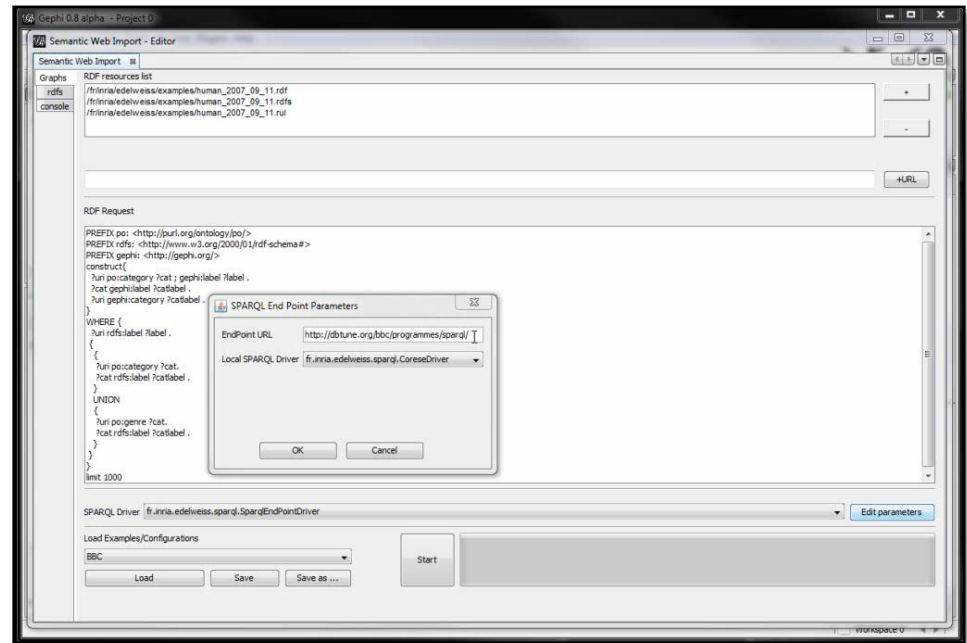
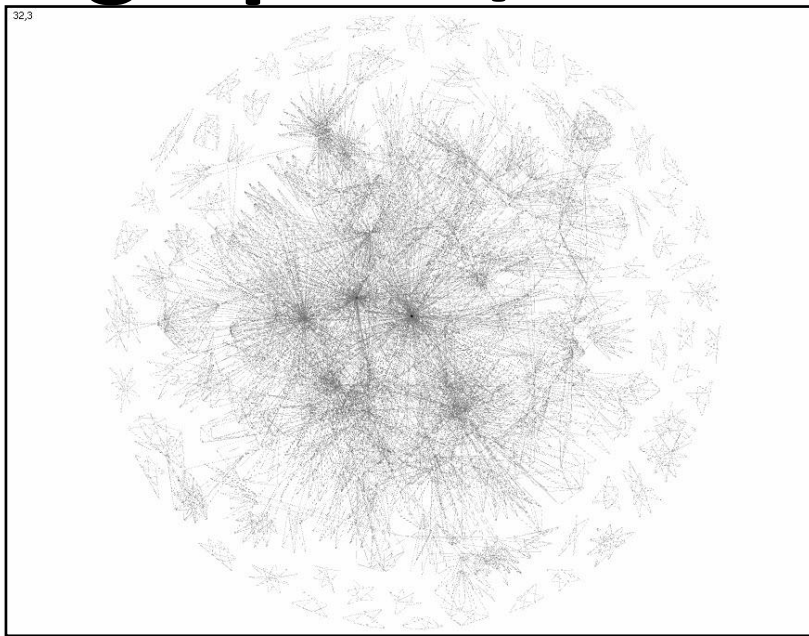


interactions



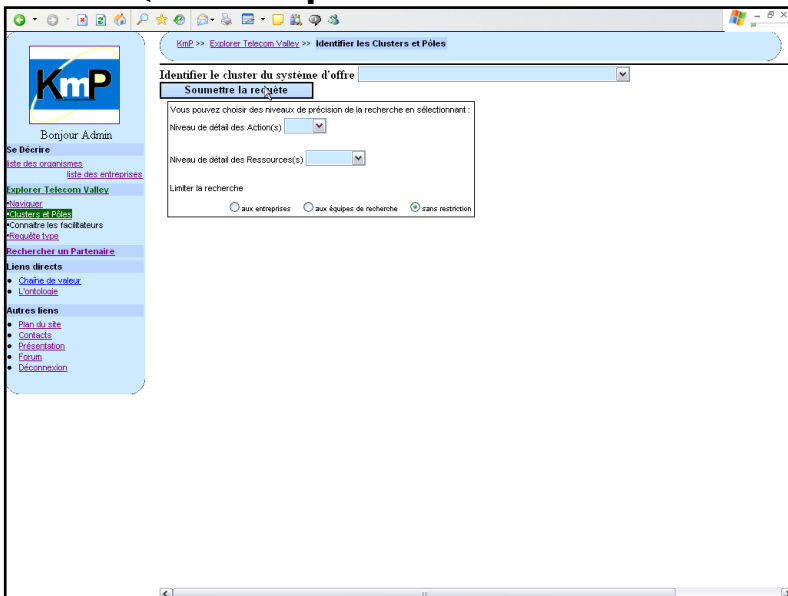
- analyzing & modeling communities and interactions through social semantic web app.
- interacting with dynamic semantic web app.

graph of/in interaction



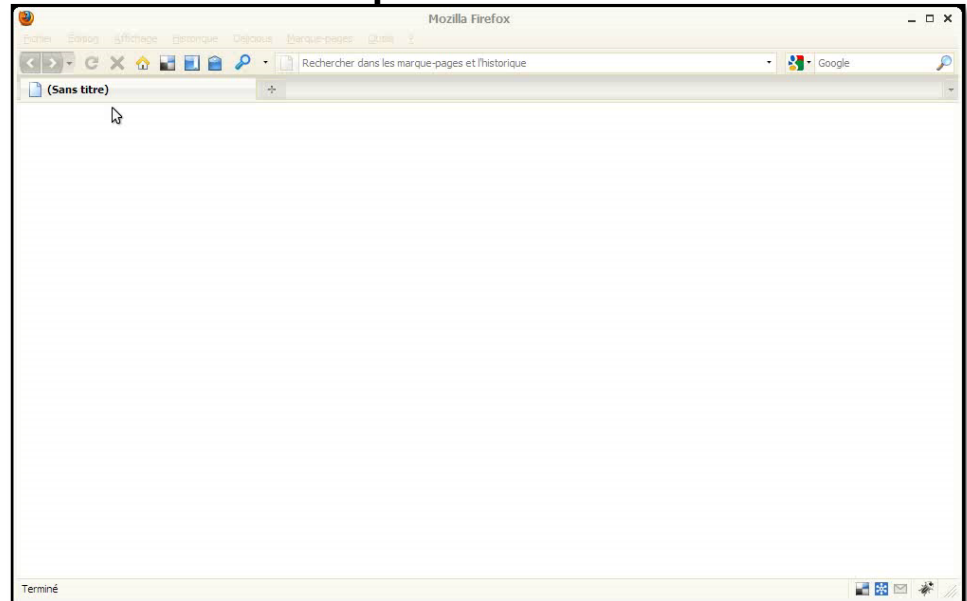
THÉMATIQUES ADEME ↑

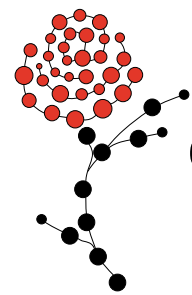
TELECOM VALLEY SOPHIA ↓



PROGRAMMES BBC ↑

RECHERCHE & CORRECTION ↓

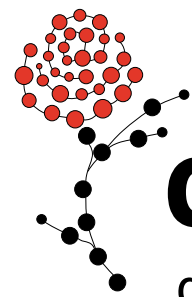




interactions

improve interactions with systems getting more and more complex?

- *requirement models in RDFS to support understanding and interoperability*
- *argumentation theory for requirement engineering to improve participant awareness and support decision-making*
- *adapt Personas to include relational and emotional aspects*
- *ontology-based modeling of users and communities*
- *incremental formalization from CSCW and HCI*

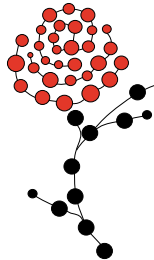


convergence matrix

detections of needs or redundancies in key scenarios

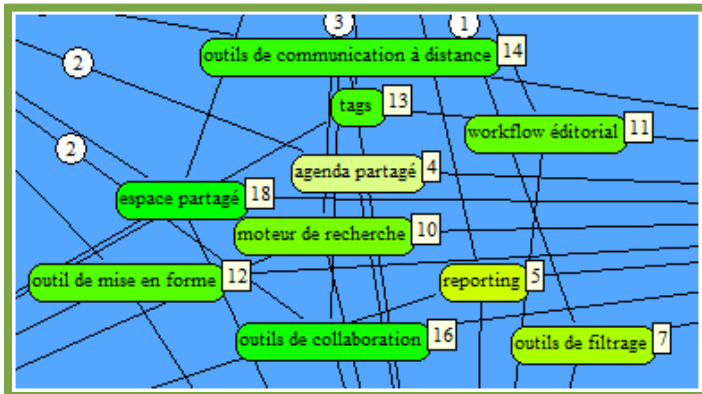
Etapes des scénarios	Fonctionnalités identifiées	Fonctions SI
Présenter problématique au SVIC	Mailing, Q&A	Envoyer
Demander ce qui est incontournable et ce que font les autres ingénieurs	Consultation d'experts	Extraire, filtrer
Prendre en compte demande	Workflow, Outils de collaboration	communiquer
Préparer requêtes	Moteur de recherche, équation de recherche	rechercher
Recueillir résultats	Abonnement, push...	Extraire, annoter
Vérifier pertinence des résultats	Analyses, outils de filtrage	filtrer
Informez l'ingénieur	Me	vide
S'approprier les résultats et les requêtes	Equ	
Devenir le destinataire des alertes	Diff	

	Fonctions SI																			
Activités/CU	Analyser	Annoter	Calculer	Classifier	Communiquer	Contacter	Coordonner	Décider	Diffuser	Echanger	Envoyer	Evaluer	Extraire	Filtrer	Gérer un projet	Intégrer des sources d'infos	Naviguer	Organiser	Partager	Publier
Demander ce qui est incontournable et ce que font les autres ingénieurs													✓	✓						
Devenir le destinataire des alertes								✓												
Informez l'ingénieur								✓	✓											
Préparer requêtes																				
Présenter problématique au SVIC																				
Prendre en compte demande																				
Recueillir résultats	✓												✓							
S'approprier les résultats et les requêtes	✓																			
Vérifier pertinence des résultats													✓	✓						



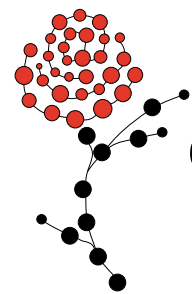
proposing functionalities & prototypes

Frequent functionalities and dependencies



Prioritization of functionalities

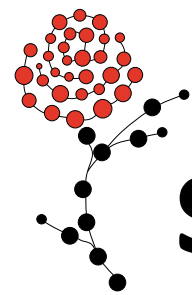
Exigences /	Sous-tâches envisagées	Fonctionnalités candidates	Fréquence
Construction collaborative de documents (Workflow rédactionnel partagé)	- Espace partagé de co-construction de documents (synthèses, rapports, feuilles de route, bulletins de veille...) - Mécanisme de valorisation / reconnaissance du travail accompli	- Espace partagé - Outils de collaboration - Workflow éditorial - Outils de mise en forme - Mesure de la confiance/notoriété (e-réputation) - Évaluation de contenu	18 16 13 12 1 1
Repérer et représenter les expertises (interne & externe car lien avec les industriels fort!)	- Profil qui fait quoi auto-taggué - Stockage et qualification des contacts - Suivre l'évolution dans le temps des expertises - Se représenter le réseau d'experts/de contacts (proximité thématique) - Métriques sur la capacité à partager/créer du lien social (personnes frontières)	- Mise en forme : visualisations avancées, graphiques et cartographie - Localisation de personnes / d'experts - Filtrage - Gestion profils utilisateurs - Questions/réponses	12 8 7 4 2
Créer ses propres services et indicateurs (pour le « métier d'ingénieur de services »)	- Créer ses propres services - Créer ses propres indicateurs (traçage et suivi des infos & des événements) - Relier les documents à leurs auteurs - Alertes sur les activités des autres - Optimiser la transversalité (liens tout azimut)	- Création de tableaux de bord - Web services / Mashups - Tags/bookmarks - Alertes - Abonnements/RSS - Analyse et visualisation des réseaux sociaux	3 1 13 2 2 2



interactions

reconcile formal stable semantics & negotiable social semantics?

- *develop “collective personas” and compare to “collaboration personas”*
- *participatory sketching and prototyping to design interfaces for visualizing and manipulating representations of collectives*
- *mixed representations containing social semantic representations (e.g. folksonomies) and formal semantic representations (e.g. ontologies)*
- *study the operations that allow us to couple and exchange knowledge between mixed representations*
- *consider compatible linguistic approaches to interact with a knowledge base using different languages or jargons*



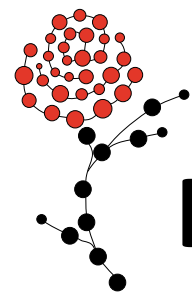
social interaction design

- reconciling semantic Web and social Web approaches in Web-oriented design

	Semantic Web	Social Web
<i>User participation</i>	Low	High
<i>Formality</i>	High	Low
<i>Inferential capabilities</i>	High	Low

- articulating developers' and users' representations and operating modes making them interoperable

	Developers	Users
<i>Representations</i>	Formal	Informal
<i>Operating modes</i>	Logics of functioning	Logics of use



mockup design in context

development of collaborative and participatory design methods, articulating scenarios, storyboards and mockups of user interfaces (ongoing)

Scenario

Storyboard

Mock-up

Scénario « Constitution d'un réseau d'experts »	
Sous-scénario 1 « Description du concept – contexte thématique et des acteurs »	
Acteur central	Ingénieur correspondant (ADEME) [INDIVIDU : IA1]
Autres acteurs	- Documentaliste (ADEME) [INDIVIDU : D1] - Personnes en interne (à l'ADEME) [INDIVIDU] - Partenaires extérieurs [INDIVIDU] - Partenaires institutionnels de l'ADEME [COLLECTIF] - Réseaux formels ou informels [COLLECTIF]
Objectif de l'acteur central	Objectif général (concerne l'ensemble du scénario) - Identifier les experts nationaux et des ingénieurs ADEME concernés par un sujet qui demande une veille et une expertise collective Objectif du sous-scénario - Comprendre le paradigme, élaborer un modèle conceptuel, identifier les travaux clés et fondateurs sur le sujet. Identifier les acteurs de la recherche au niveau de la programmation et de la mise en œuvre de la recherche. (Ceci peut se faire en interne ou être sous-traité à travers la commande d'une étude.)
Tâches/Actions	Recherche documentaire - L'ingénieur correspondant recherche des informations sur le Web via des moteurs de recherche classiques, en utilisant des mots-clés. - Les sources d'information qu'elle consulte sont par exemple : - OMS, EPA, OCDE, Ministères français et étrangers en charges de l'environnement et de la recherche, autres organismes de recherche nationaux et européens. - Sites dédiés aux programmes de recherche, GIS, GDRI, pôle de compétitivité...

STORYBOARD DU SCENARIO « CONSTITUTION D'UN GROUPE D'EXPERTS »¹

Présentation

Ce *storyboard* a été élaboré à partir de la vidéo de démonstration ISICIL intitulée « Constitution d'un groupe d'experts ». Il doit être considéré comme un manuel d'utilisation d'ISICIL dirigé par le scénario « Constitution d'un groupe d'experts » ou « Recherche d'experts ». Autrement dit, l'utilisateur peut utiliser ISICIL en rejouant exactement le scénario dans un premier temps et, dans un deuxième temps, en jouant un scénario similaire (en choisissant d'autres données par exemple).

Ce *storyboard* peut être considéré également comme une illustration, sur un cas concret, des IHM utilisées dans ISICIL.

N.-B. : Le découpage du *storyboard* suit fidèlement le découpage de la vidéo. Il sera nécessaire de revoir ce découpage pour être au plus prêt de la tâche réelle d'un veilleur.

Sommaire

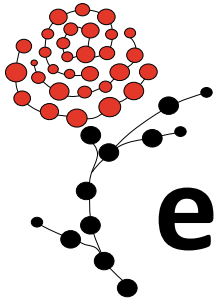
Présentation.....	1
Tâche générale : Constitution d'un groupe d'experts (Recherche d'experts).....	3
Sous-tâche 1 : Edition de la terminologie de groupe.....	4
Objectif : Recenser les mots-clés (thématiques) des experts devant constituer le groupe.....	4
1.1. Parcourir le document « AP : Bruit et nuisances sonores » pour identifier les termes pouvant caractériser l'expertise recherchée.....	5
Sous-tâche 2 : Recherche de profils.....	54
Sous-tâche 3 : Export des experts sélectionnés (constitution d'un tableau représentant le groupe d'experts).....	92

¹ Version du 11.01.2012. Auteur : Alain G. (INRIA)

IHM Scénario « Recherche d'experts »

Page 1





e.g. structuring folksonomy

web 2.0

flat folksonomies

thesaurus

Fabien Gandon's Bookmarks
Bookmarks | Network | Tags | Subscriptions | Inbox
Site: <http://www-sop.inria.fr/acacia/personnel/Fabien.Gandon/>
See more bookmarks in Popular, Recent, or look up a URL.

gandon Type a tag Bookmarks 276 Display options 2

Semweb Pro : le web sémantique français se cherche encore des entreprises utilisatrices::Gestion des données::LeMagIT

A l'occasion de la conférence Semweb Pro qui s'est déroulée les 17 et 18 janvier, la communauté du web sémantique français a fortement insisté sur les usages, histoire de rappeler aux utilisateurs que le concept du web sémantique est bel et bien sorti des labos.

EDIT | SHARE | DELETE semweb semwebpro semanticweb semantic_web presse media

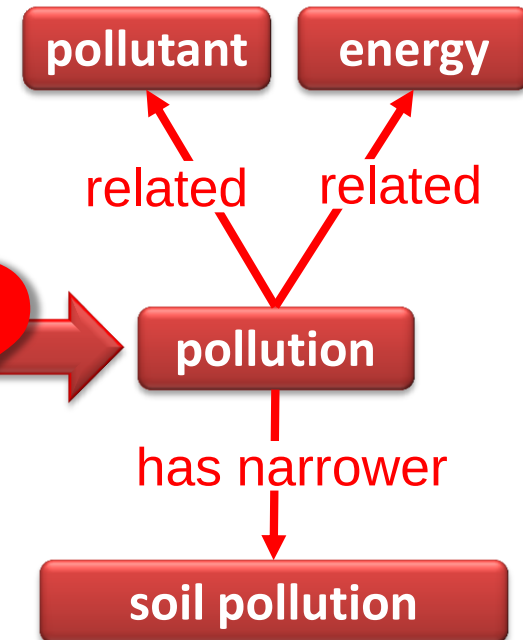
Semweb.pro : la France bien positionnée sur le web sémantique 5

Pour cette première édition, la conférence française a réuni la communauté et présenté des cas d'utilisation concrets.

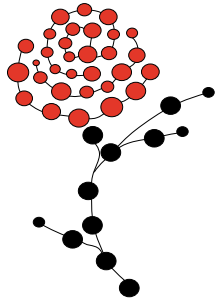
EDIT | SHARE | DELETE semantic_web semanticweb semweb France conference semwebpro media presse



communciation communication compareteur
compensation comportement condition
conference confiance consommation
contact convention cosmetique coton
covoiturage creation critique CSS cuisine
dechet dell demarche developpement document
donnee durable dynamique eau ecoconception
ecolife ecologie ecommerce economie
elavage emballage emission empreinte enq
encyclopedie energie enquete
entreprise environnement eolien
ericsson espee ethique etiquette etude
europe evaluation evolution extensif faune
federation fertilisation filiere film finance flore
fondation forum france fruit GES
goodguide grandedistribution graphique green
greenpeace greenwashing grenelle guide
habitat hitech HQE HTML hybride impact
import imprimante inde indice industrie



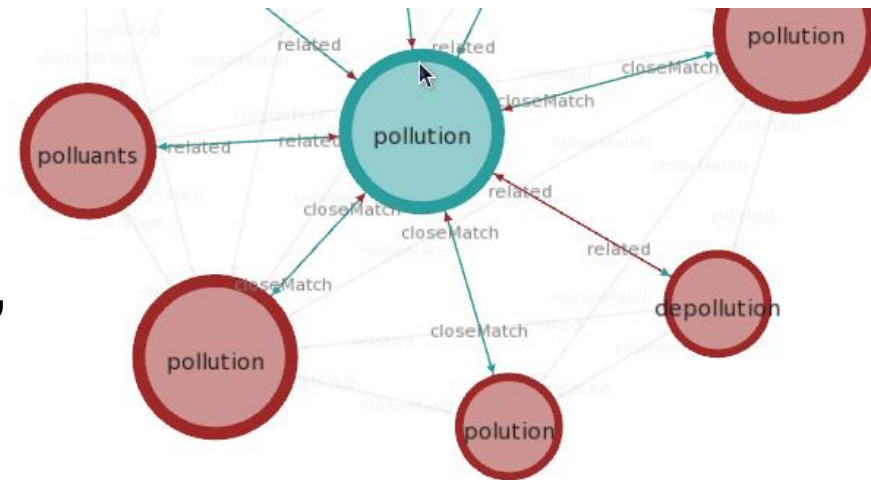
SKOS



e.g. combining metric spaces

edition distances

Monge-Elkan Soundex, JaroWinkler, asymmetry Monge-Elkan Qgram



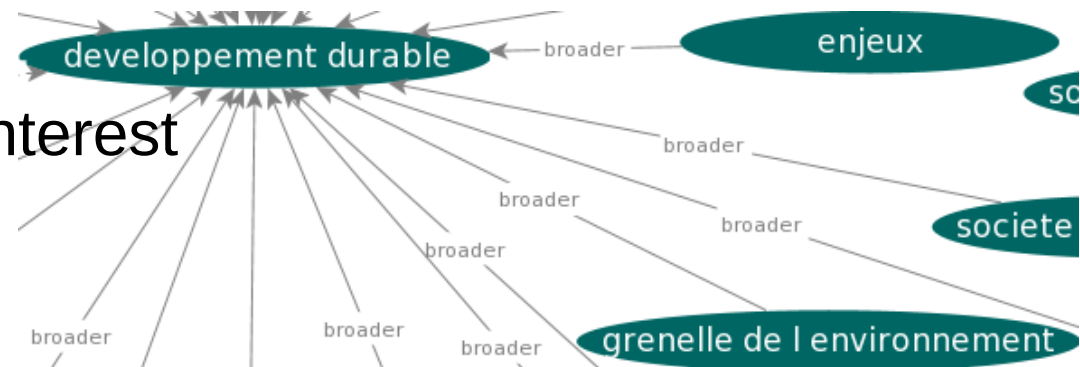
contextual metric

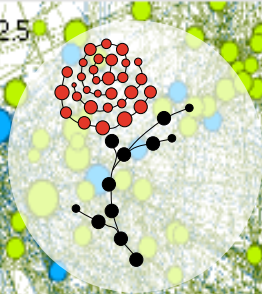
cosinus vector of co-occurring tags



social metrics

inclusion of communities of interest

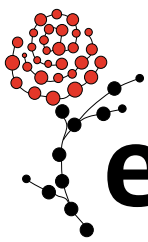




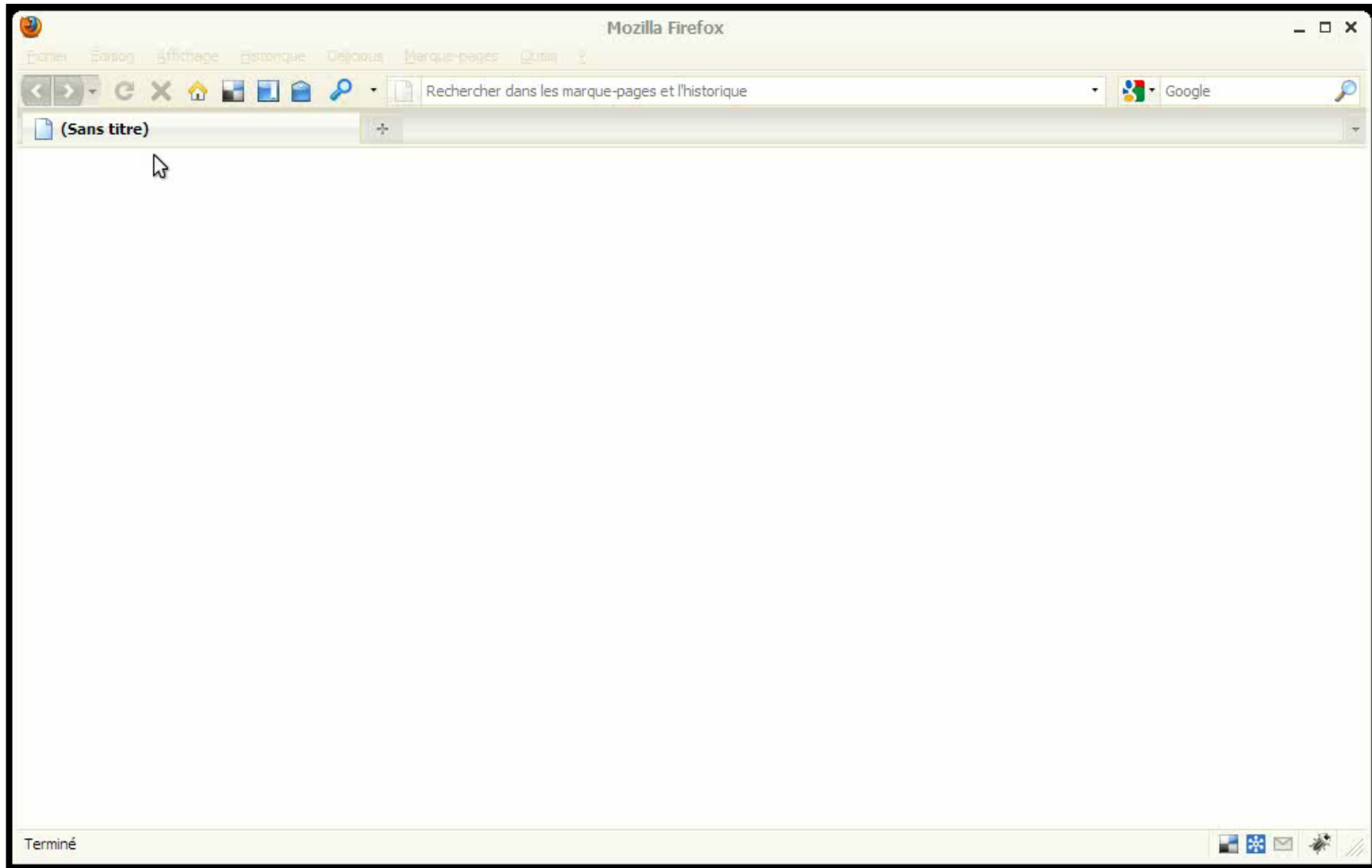
e.g. ademe TheseNet

83 027 relations / 9 037 tags

- 68 633 related
- 11 254 hyponyms
- 3 193 spelling variants



e.g. search & feedback



[Edit this page](#)Logged as Jeremy - [Disconnect](#)Semantic **WEb** Enabled
Technology **Wiki****WorkSpace**

- ◆ Courses
- ◆ Main
- ◆ Users
- ◆ All users
- ◆ Sand Box
- ◆ Search

Create Page

Name

Web

Java Courses**Basic courses**Classes and inheritance : [ClassesAndInheritance](#)[JavaSerialization](#)**Advanced**Gui : [JavaGui](#)Collection : [JavaCollection](#)working with beans : [JavaBeans](#)sounds : [JavaSounds](#)RMI : [JavaRmi](#)**Keywords**

- ◆ [JavaCourses](#)(1)

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- ◆ Web : Courses
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search & navigation in info. networks

The image displays two screenshots of the ISIOL software interface, illustrating search and navigation in information networks.

Top Screenshot: Assistant pour la création de groupe

This window is titled "Assistant pour la création de groupe" and "Editeur pour la composition de groupes d'experts". It features a search interface with the following components:

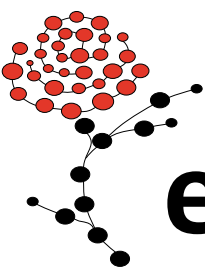
- Descripteurs:** A list of energy-related terms on the left, including "Energie", "Energie Cités", "Energie habitat", "Energies marines", "énergie hydroélectrique", "énergie nucléaire", "énergie solaire", and "énergie solaire concentrée".
- Recherche par mot-clé:** A search bar with the text "crise energie".
- Chercher dans les sources:** Checkboxes for "CADIC", "Thésenet", and "Qui Fait Quoi".
- Liste réponse:** A list of people who have used the tags, including "Christel THURET", "Cédric SOUS", "François SAVOIE", "Christine SAAS", "Gaëlle RICORDEL", "Samuel PUYGRENIER", and "Sabine POUDROUX".
- Diagram:** A central diagram showing relationships between terms. "crise" is linked to "énergie" (BROADER), "énergie" (NARROWER), and "crise" (CLOSE MATCH). "énergie" is linked to "source énergie" (RELATED).

Bottom Screenshot: ISIOL - Explorateur de groupe

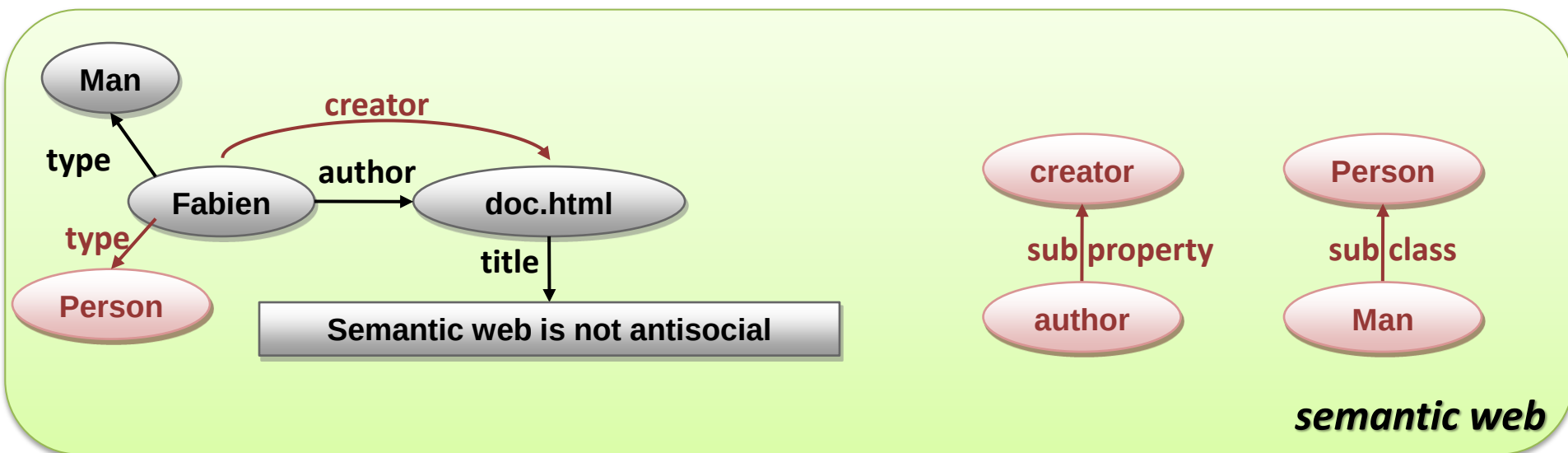
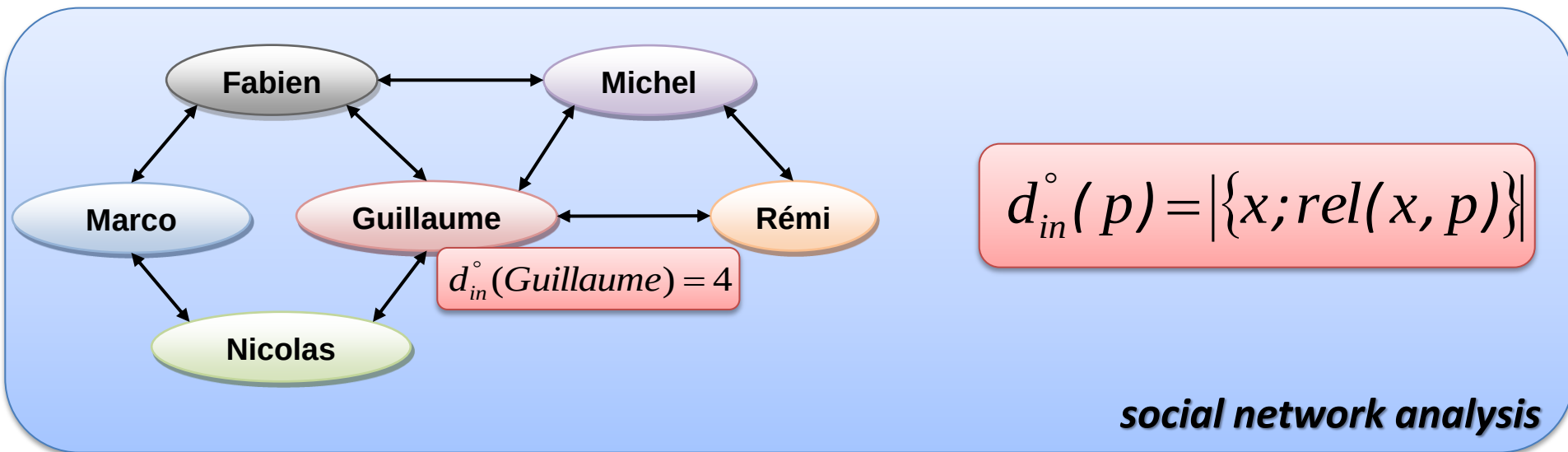
This window is titled "ISIOL - Explorateur de groupe" and "Explorateur de groupe". It displays a complex network diagram with nodes representing people and concepts, connected by lines. Key nodes include:

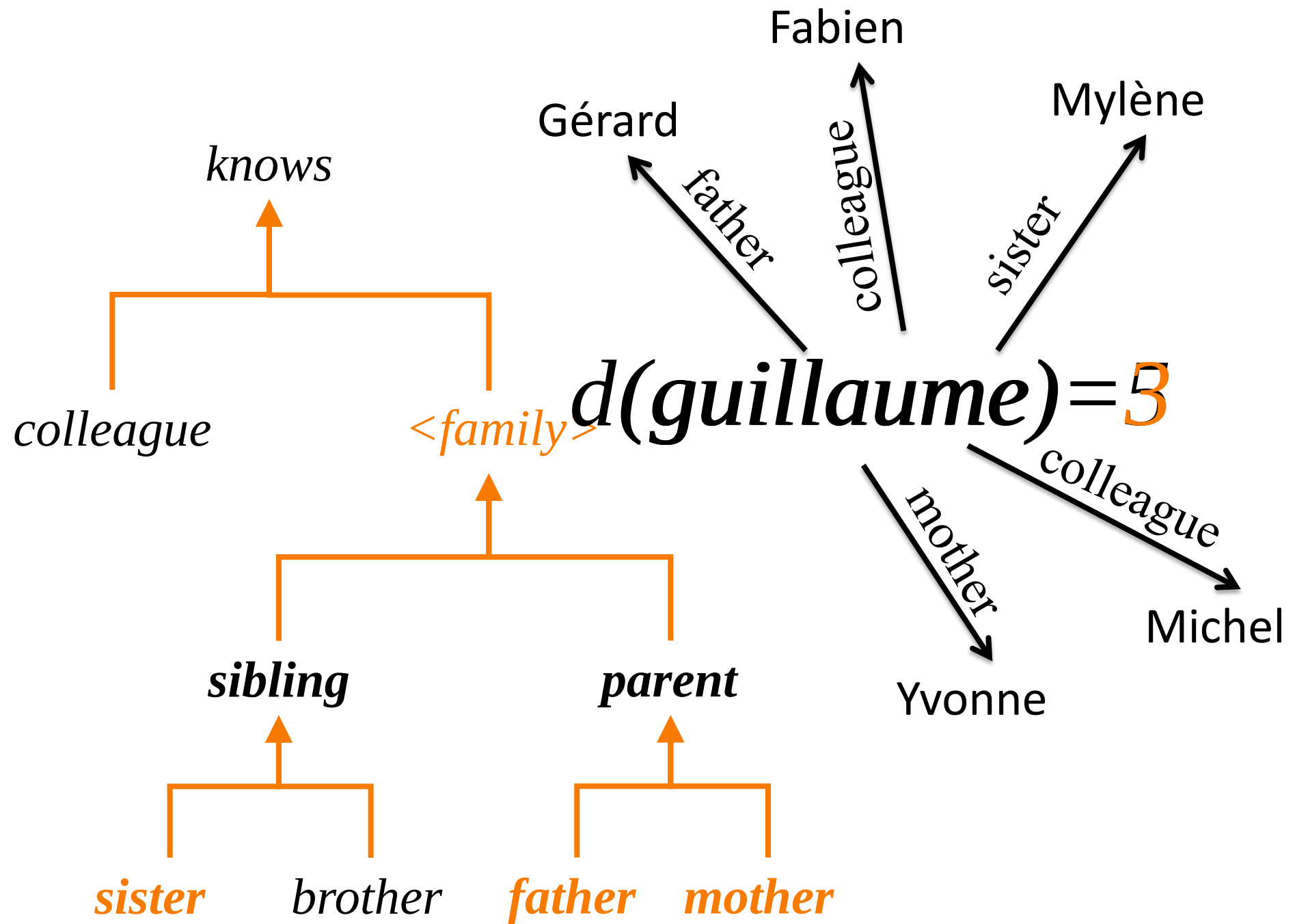
- People:** Dominique CAMPANA, Fabien POMMIER, Yann CARBAIN, Cédric ALVERA, Pierre CLEMENT, Philippe BOEGLIN, Jacques PASSAVY, and others.
- Concepts:** Agriculture, Déchets, Education à l'environnement, Transports collectifs, Espace Info Energie, Plan climat, Urbanisme, EIE (Espace Info Energie), EIE, CNA (Secrétariat de la Commission Nationale des Aides), FEDER (Fonds Européen de Développement Régional), Air sources fixes, Plan Bois-énergie, Relations Presse, and others.

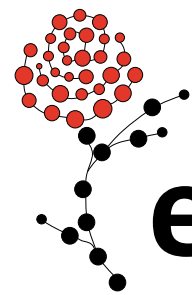
A large black arrow points from the top screenshot to the bottom screenshot, indicating a transition or flow from the search phase to the exploration phase.



e.g. typing sociograms







e.g. parameterized analysis

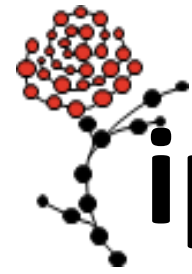
SNA indices	SPARQL formal definition
$nb_{<type>}^{actor}(G)$	<pre>select merge count(?x) as ?nbactor from <G> where{ ?x rdf:type param[type] }</pre>
$nb_{<rel>}^{actor}(G)$	<pre>select merge count(?x) as ?nbactors from <G> where{ {?x param[rel] ?y} UNION{?y param[rel] ?x} }</pre>
$nb_{<rel>}^{subject}(G)$	<pre>select merge count(?x) as ?nbsubj from <G> where{ ?x param[rel] ?y }</pre>
$nb_{<rel>}^{object}(G)$	<pre>select merge count(?y) as ?nbobj from <G> where{ ?x param[rel] ?y }</pre>
$nb_{<rel>}^{relation}(G)$	<pre>select cardinality(?p) as ?card from <G> where { { ?p rdf:type rdf:Property filter(?p ^ param[rel]) } UNION { ?p rdfs:subPropertyOf ?parent filter(?parent ^ param[rel]) } }</pre>
$Comp_{<rel>}(G)$	<pre>select ?x ?y from <G> where { ?x param[rel] ?y }group by any</pre>
$D_{<rel,dis>}(y)$	<pre>select ?y count(?x) as ?degree where { {?x (param[rel])*::\$path ?y filter(pathLength(\$path) <= param[dist])} UNION {?y param[rel]::\$path ?x filter(pathLength(\$path) <= param[dist])} }group by ?y</pre>
$D_{<rel,dis>}^{in}(y)$	<pre>select ?y count(?x) as ?indegree where{ ?x (param[rel])*::\$path ?y filter(pathLength(\$path) <= param[dist]) }group by ?y</pre>
$D_{<rel,dis>}^{out}(y)$	<pre>select ?x count(?y) as ?outdegree where { ?x (param[rel])*::\$path ?y filter(pathLength(\$path) <= param[dist]) }group by ?x</pre>
$g_{<rel>}(from,to)$	<pre>select ?from ?to \$path pathLength(\$path) as ?length where{ ?from sa (param[rel])*::\$path ?to }group by ?from ?to</pre>
$Diam_{rel}(G)$	<pre>select pathLength(\$path) as ?length from <G> where { ?y s (param[rel])*::\$path ?to }order by desc(?length) limit 1</pre>
$nb_{<rel>}^g(from,to)$	<pre>select ?from ?to count(\$path) as ?count where{ ?from sa (param[rel])*::\$path ?to }group by ?from ?to</pre>

$nb_{<rel>}^g(b, from, to)$	<pre>select ?from ?to ?b count(\$path) as ?count where{ ?from sa (param[rel])*::\$path ?to graph \$path{?b param[rel] ?j} filter(?from != ?b) optional (?from param[rel]::\$sp ?to) filter(!bound(\$p)) }group by ?from ?to ?b</pre>
$C_{<rel>}^c(y)$	<pre>select distinct ?y ?to pathLength(\$path) as ?length (1/sum(?length)) as ?centrality where{ ?y s (param[rel])*::\$path ?to }group by ?y</pre>
$B_{<rel>}(b, from, to)$	<pre>select ?from ?to ?b (count(\$path)/count(\$path2)) as ?betweenness where{ ?from sa (param[rel])*::\$path ?to graph \$path{?b param[rel] ?j} filter(?from != ?b) optional (?from param[rel]::\$sp ?to) filter(!bound(\$p)) ?from sa (param[rel])*::\$path2 ?to }group by ?from ?to ?b</pre>



$$B_{<rel>}(b, x, y) = \frac{nb_{<rel>}^g(b, x, y)}{nb_{<rel>}^g(x, y)}$$

:= select ?from ?to ?b
 (count(\$path)/count(\$path2)) as
 ?betweenness **where**{
 ?from sa (param[rel])*::\$path ?to
 graph \$path{?b param[rel] ?j}
 filter(?from != ?b)
 optional { ?from param[rel]::\$sp ?to}
 filter(!bound(\$p))
 ?from sa (param[rel])*::\$path2 ?to
 }group by ?from ?to ?b



ipernity.com dataset in RDF

61 937 actors & 494 510 relationships



–18 771 family links between 8 047 actors

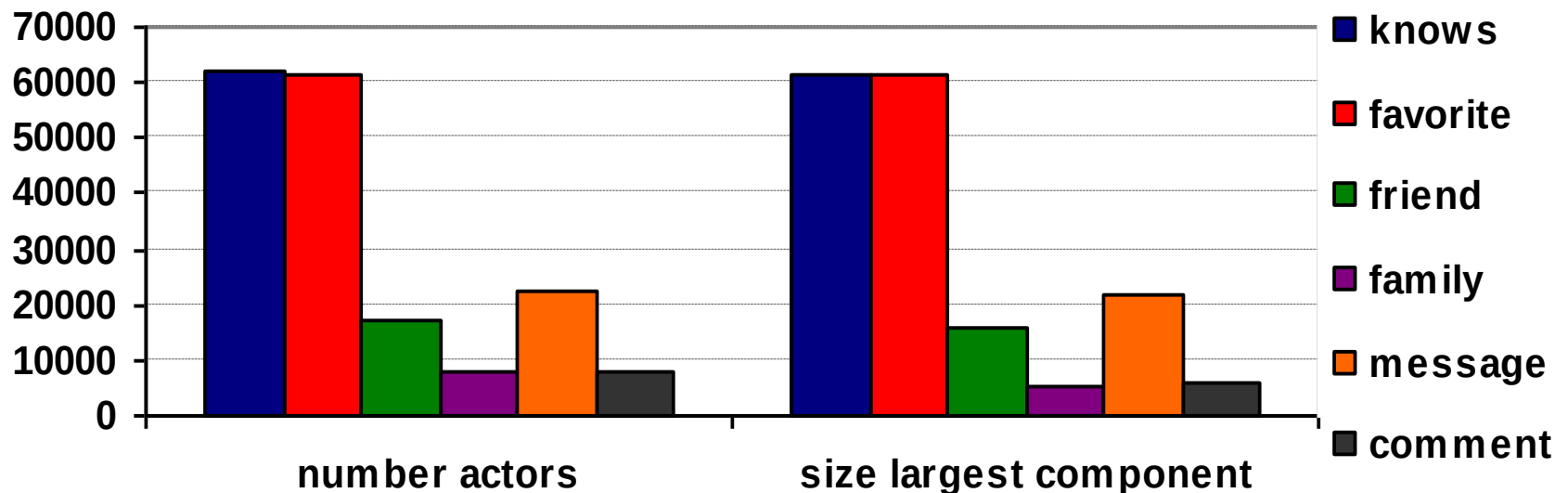
–136 311 friend links implicating 17 441 actors

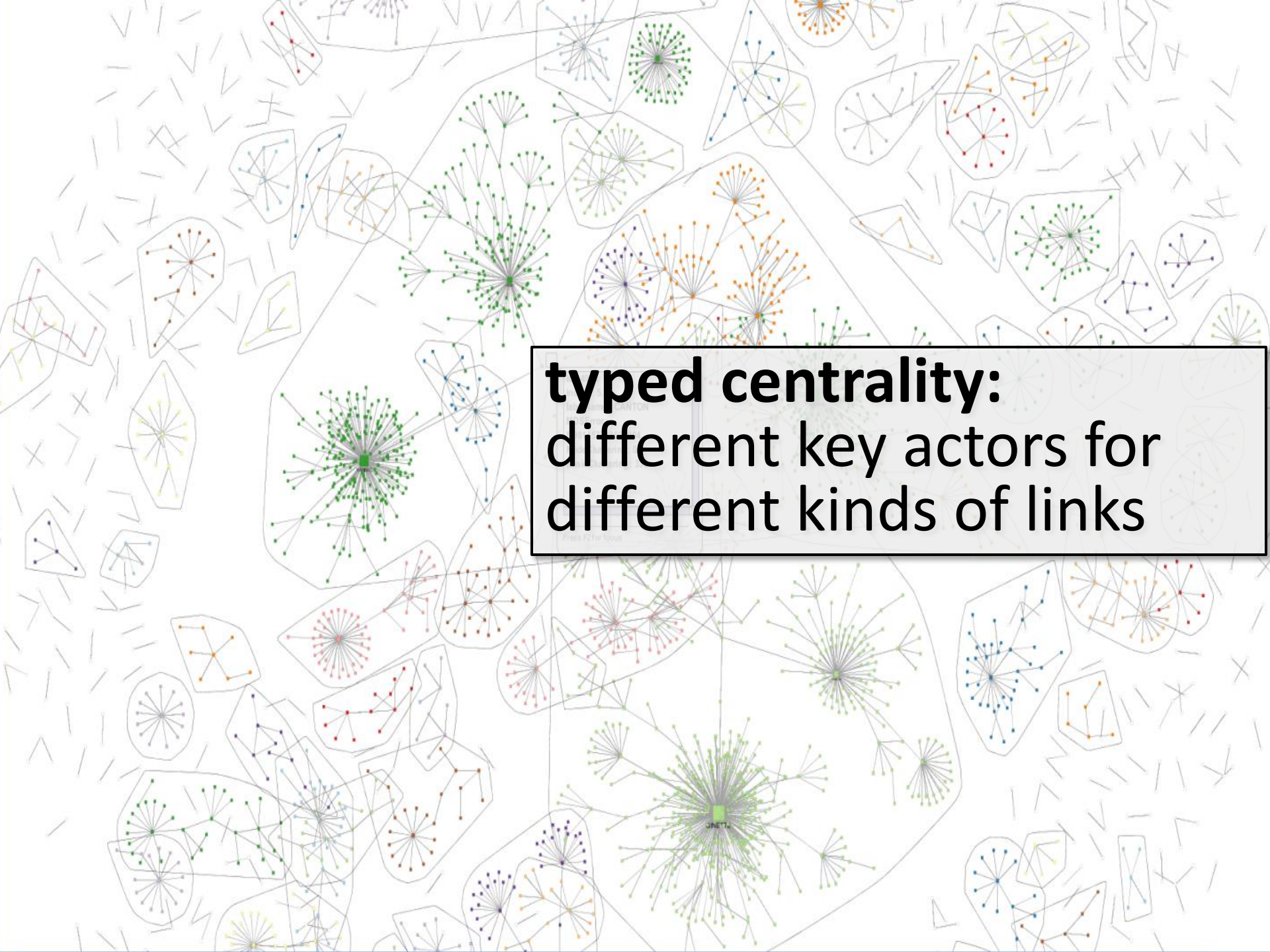
–339 428 favorite links for 61 425 actors, etc.

existence of a largest *component* in all sub networks

"the effectiveness of the social network at doing its job"

[Newman 2003]

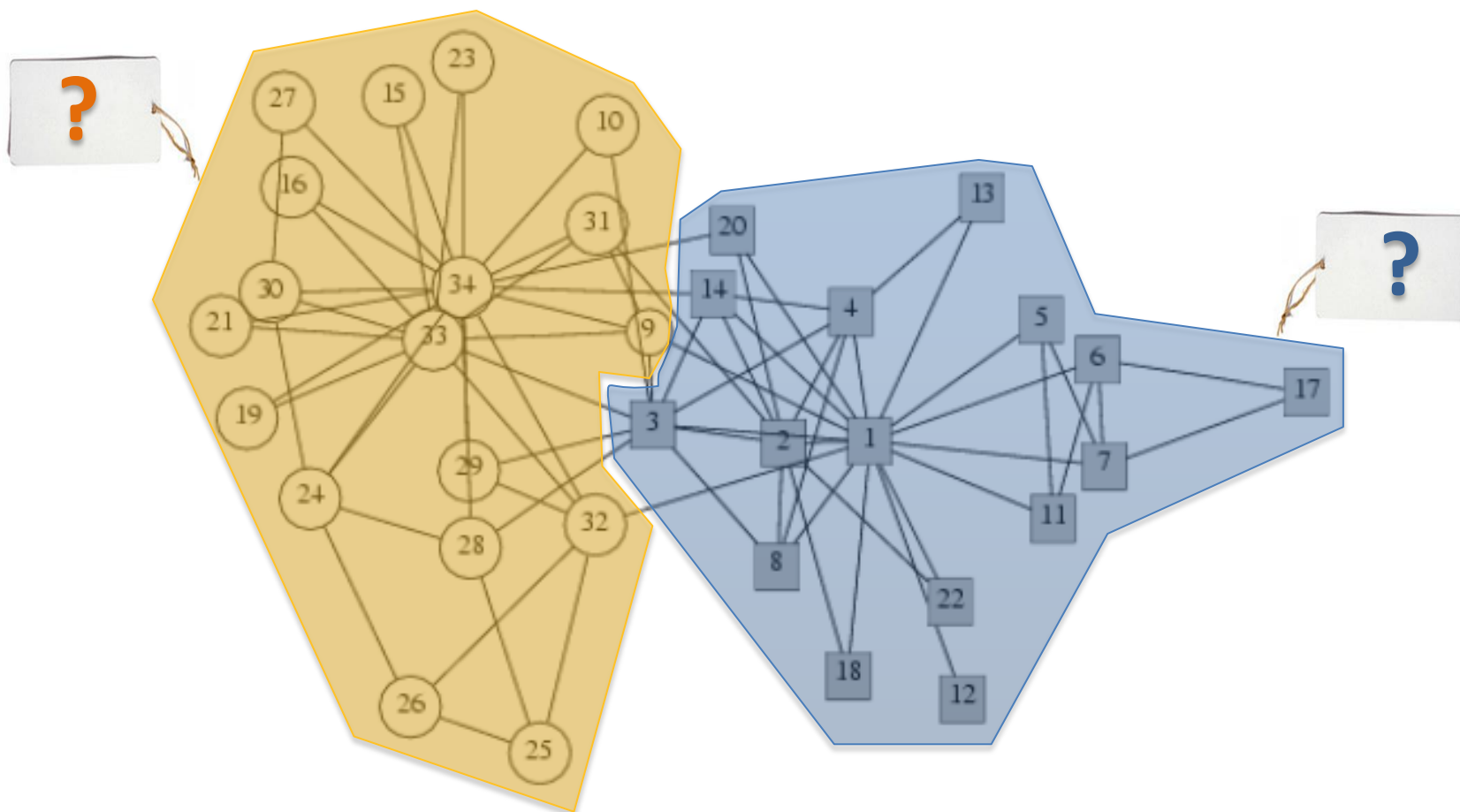


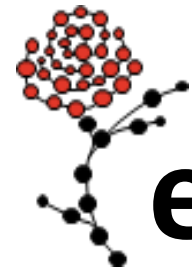


typed centrality:
different key actors for
different kinds of links

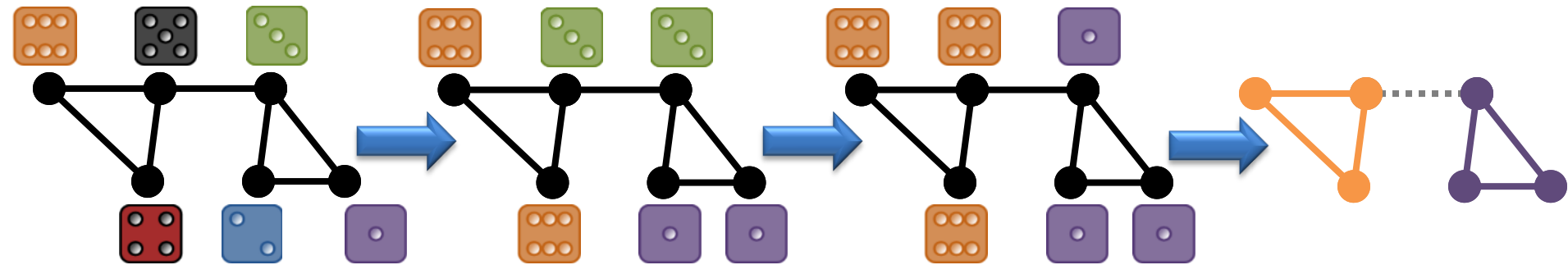


detecting AND labeling communities

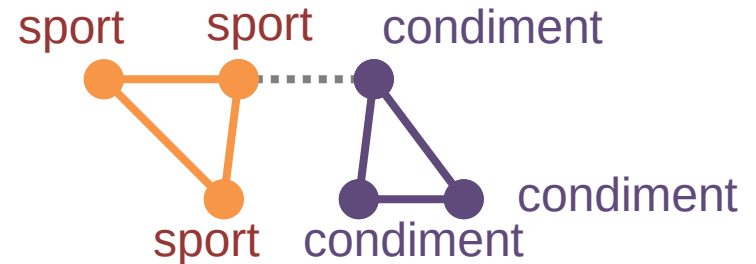
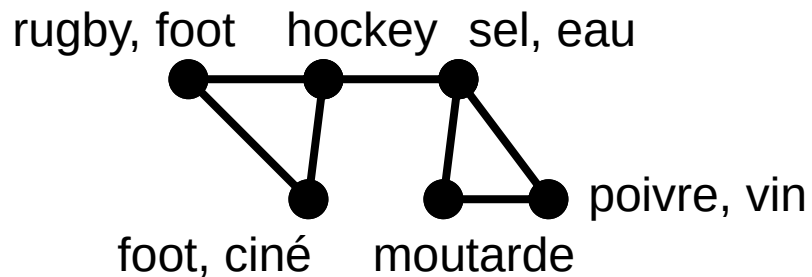




e.g. semantic propagation



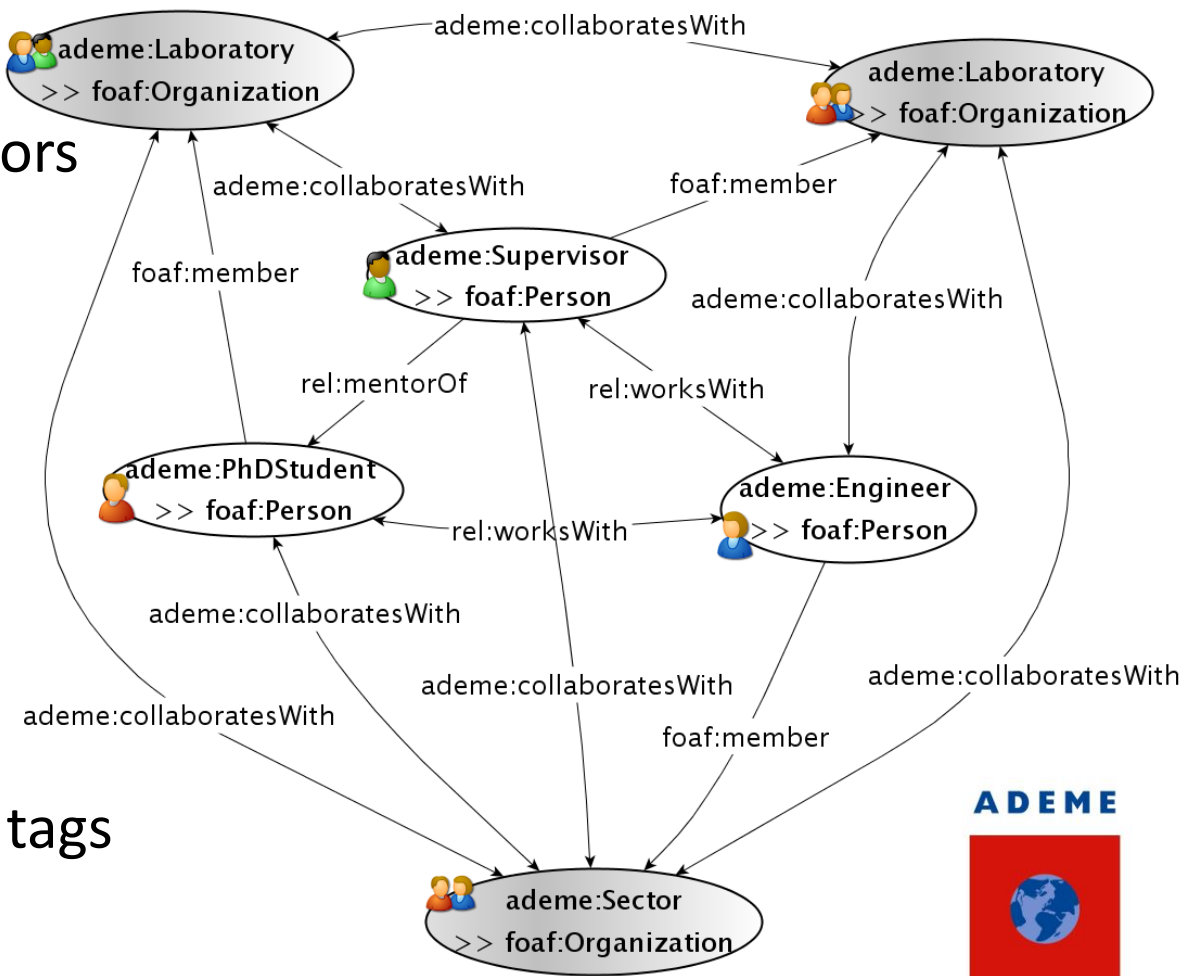
from RAK/LP to SemTagP



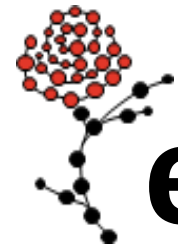


applied to Ademe Ph.D. network

- **1 853 agents**
1 597 academic supervisors
256 ADEME engineers.
- **13 982 relationships**
10 246 rel:worksWith
3 736 rel:colleagueOf
- **6 583 tags**
- **3 570 skos:narrower**
relations between 2 785 tags

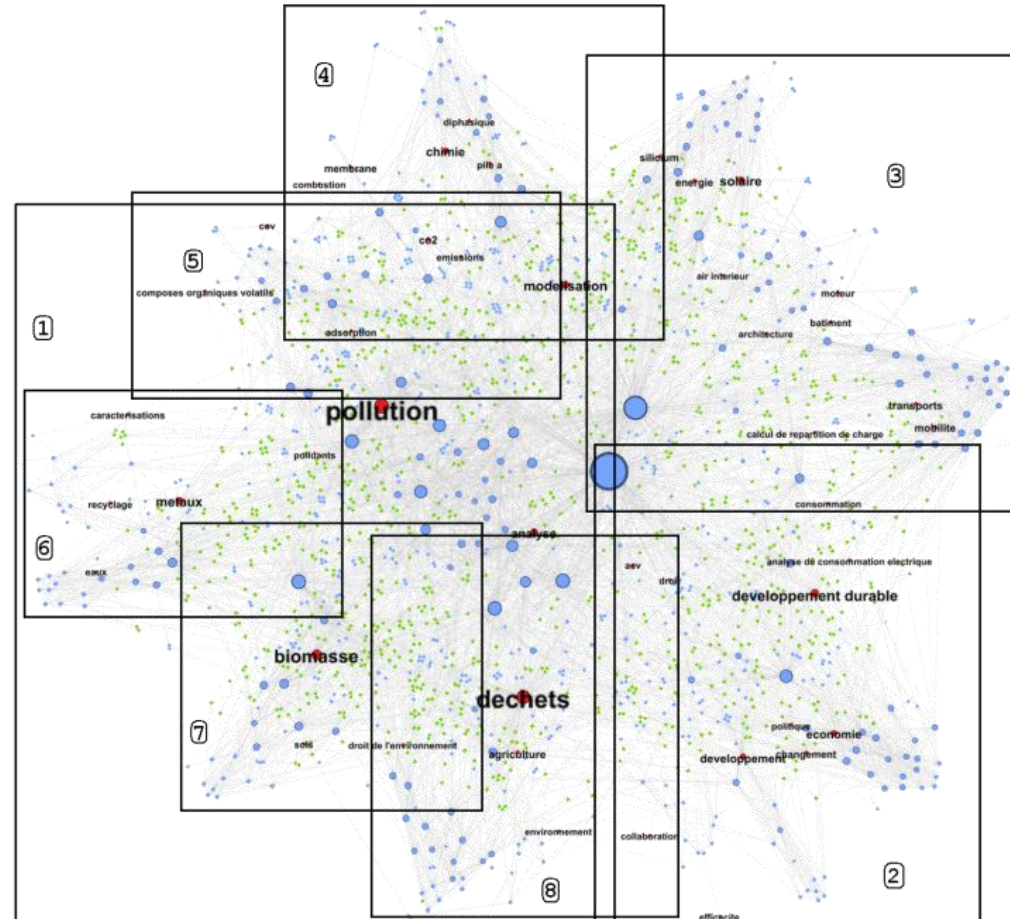
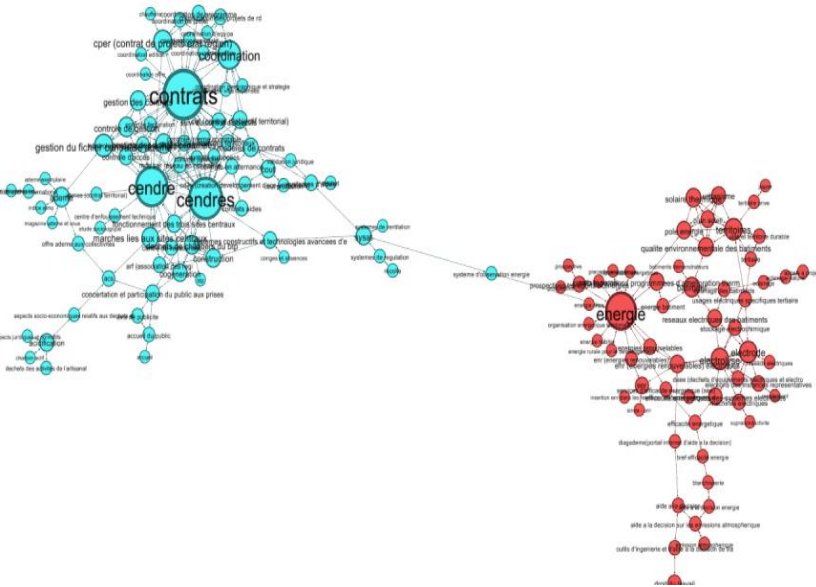


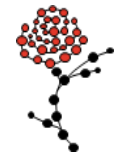
Agence de l'Environnement
et de la Maîtrise de l'Energie



ex. Ademe

- 1 pollution ; 2 développement durable ;
3 énergie ; 4 chimie ; 5 pollution de l'air ;
6 métaux ; 7 biomasse ; 8 déchets.





Plugin Gephi

Semantic Web Import - Éditeur

Semantic Web Import x

Graphs

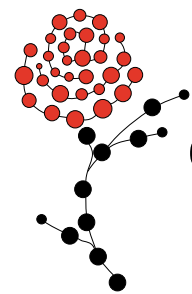
rdfs

console

RDF resources list

RDF Request

```
prefix gephi: <http://gephi.org/>
CONSTRUCT{
  ?film gephi:label ?title .
  ?film gephi:category "film" .
  ?director gephi:category "director" .
  ?actor gephi:category "actor" .
  ?film <http://dbpedia.org/ontology/director> ?director .
  ?film <http://dbpedia.org/ontology/starring> ?actor
} WHERE {
  ?film rdfs:label ?title .
  ?film <http://dbpedia.org/ontology/director> ?director .
  ?film <http://dbpedia.org/ontology/starring> ?actor
  FILTER(lang(?title)="en")
} LIMIT 10000
```

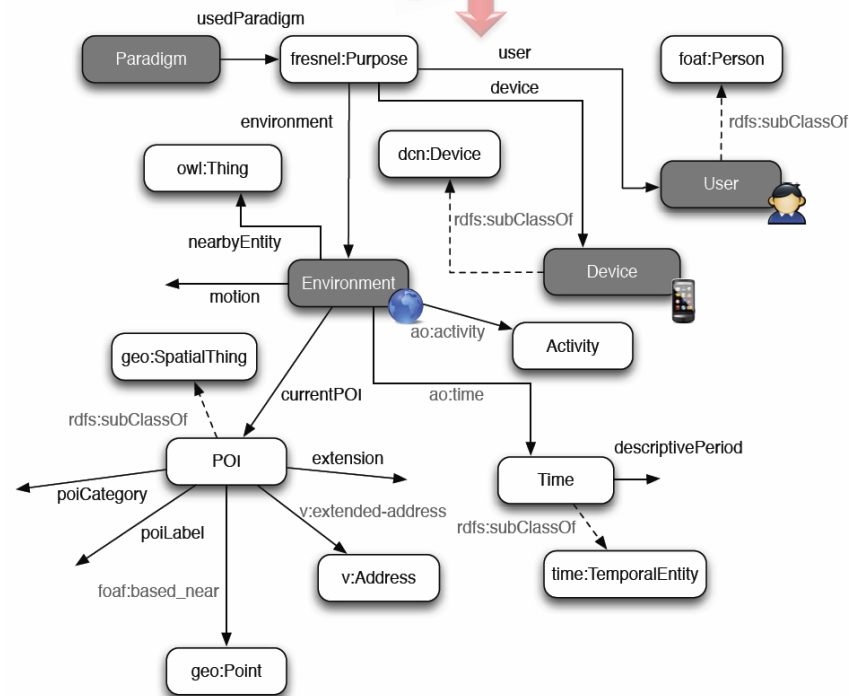
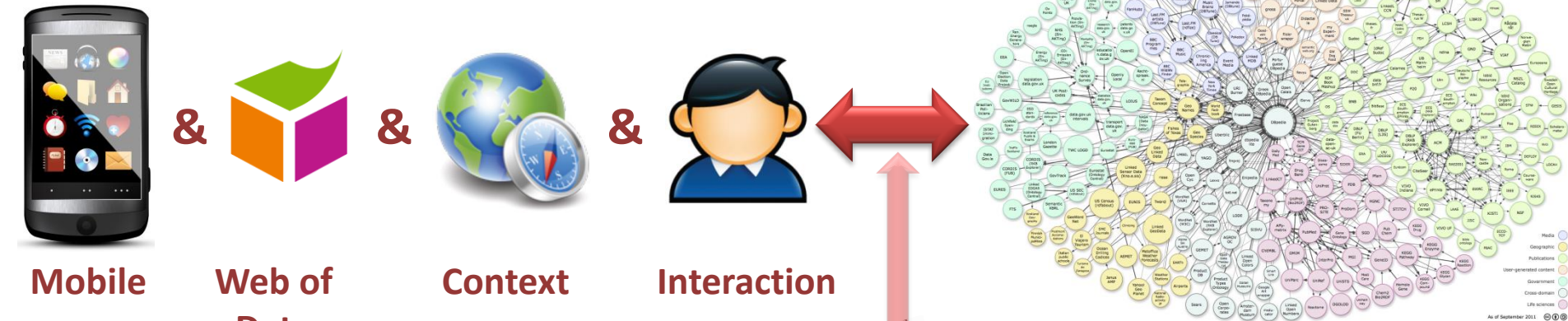


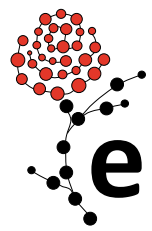
interactions

reconcile local contexts and global world-wide virtual machine?

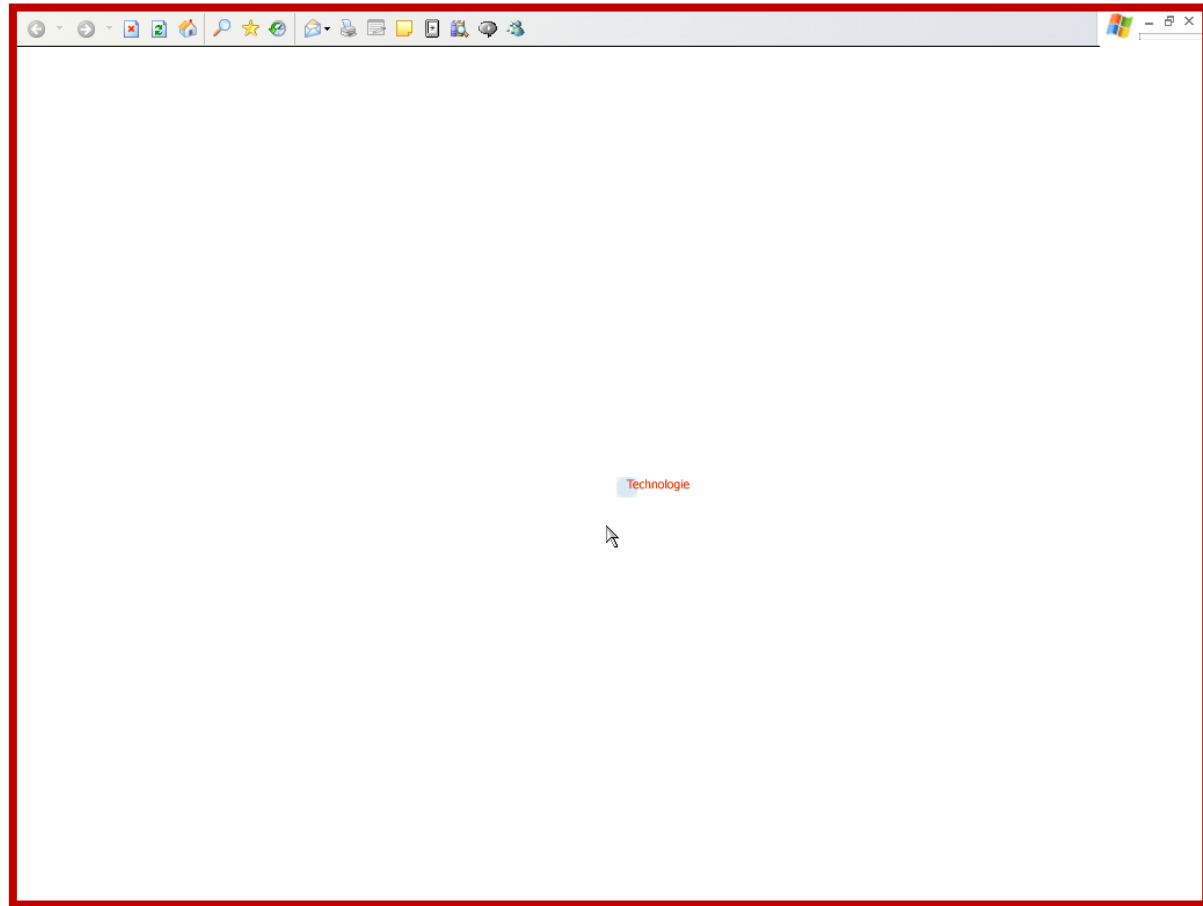
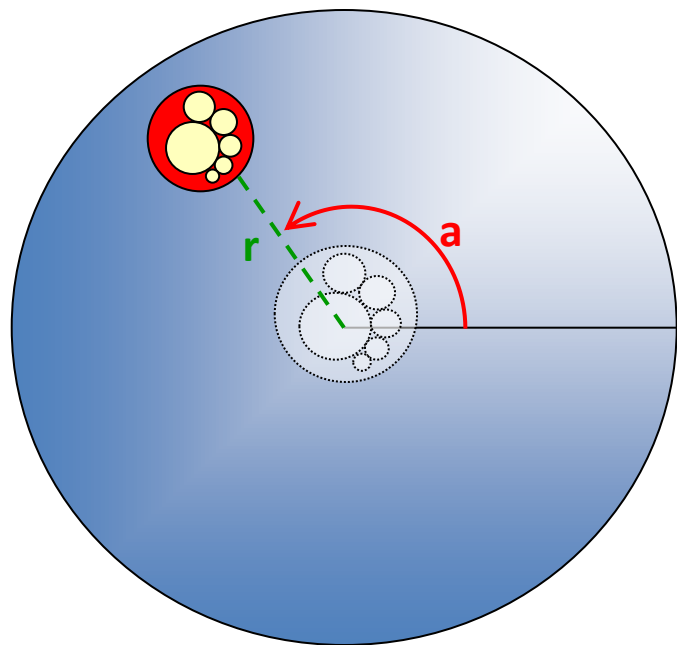
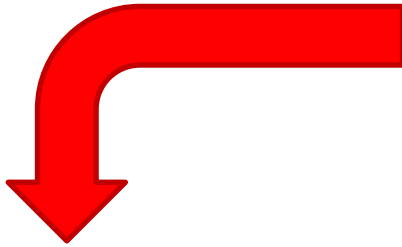
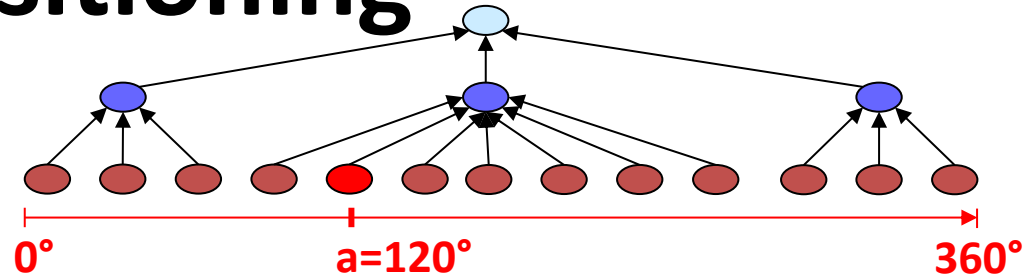
- *to develop ontology based and rule based models merged with RDF representations of context*
- *to adapt operations on social semantic web applications, to extend them by taking into account the context and other parameters*
- *modularity through named graphs, graph annotation and SPARQL extensions to take context into account when managing accesses*
- *to empirically study interaction with joint use of techniques for analyzing human behaviors and techniques for analyzing machine operations*

mobile access to web of data





e.g. semantic positioning





Bonjour Admin

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[liste des entreprises](#)

Explorer Telecom Valley

• [Naviguer](#)

• [Clusters et Pôles](#)

• [Connaitre les facilitateurs](#)

• [Requête type](#)

Rechercher un Partenaire

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- [L'ontologie](#)

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[KMP](#) >> [Explorer Telecom Valley](#) >> **Identifier les Clusters et Pôles**

Identifier le cluster du système d'offre

Soumettre la requête

Vous pouvez choisir des niveaux de précision de la recherche en sélectionnant :

Niveau de détail des Action(s)

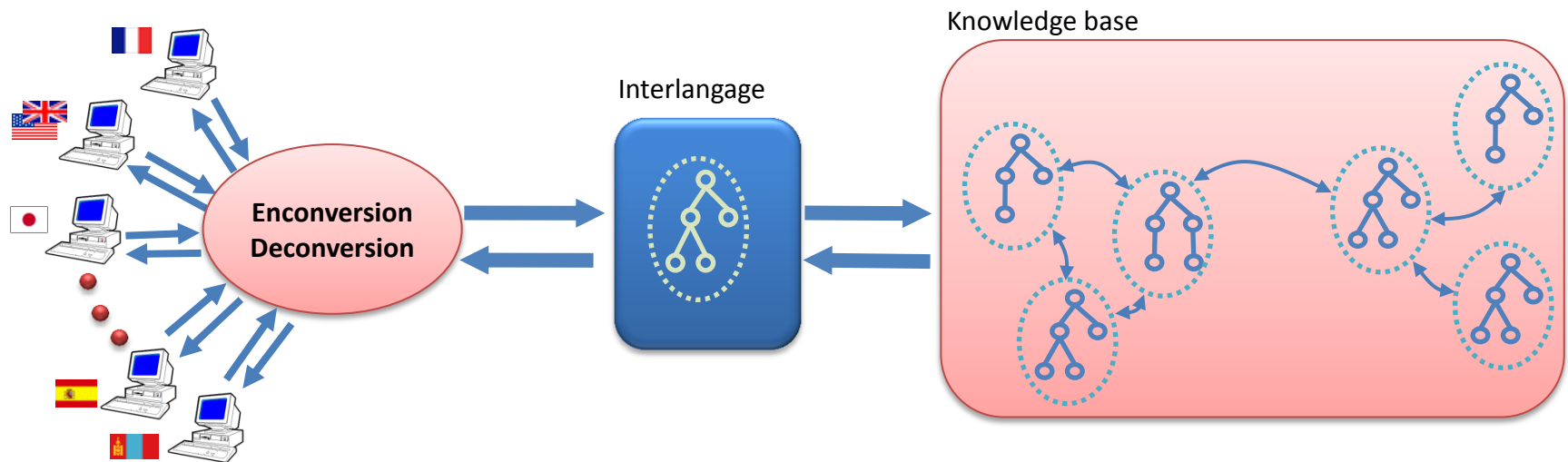
Niveau de détail des Ressources(s)

Limiter la recherche

☐ aux entreprises ☐ aux équipes de recherche ☒ sans restriction

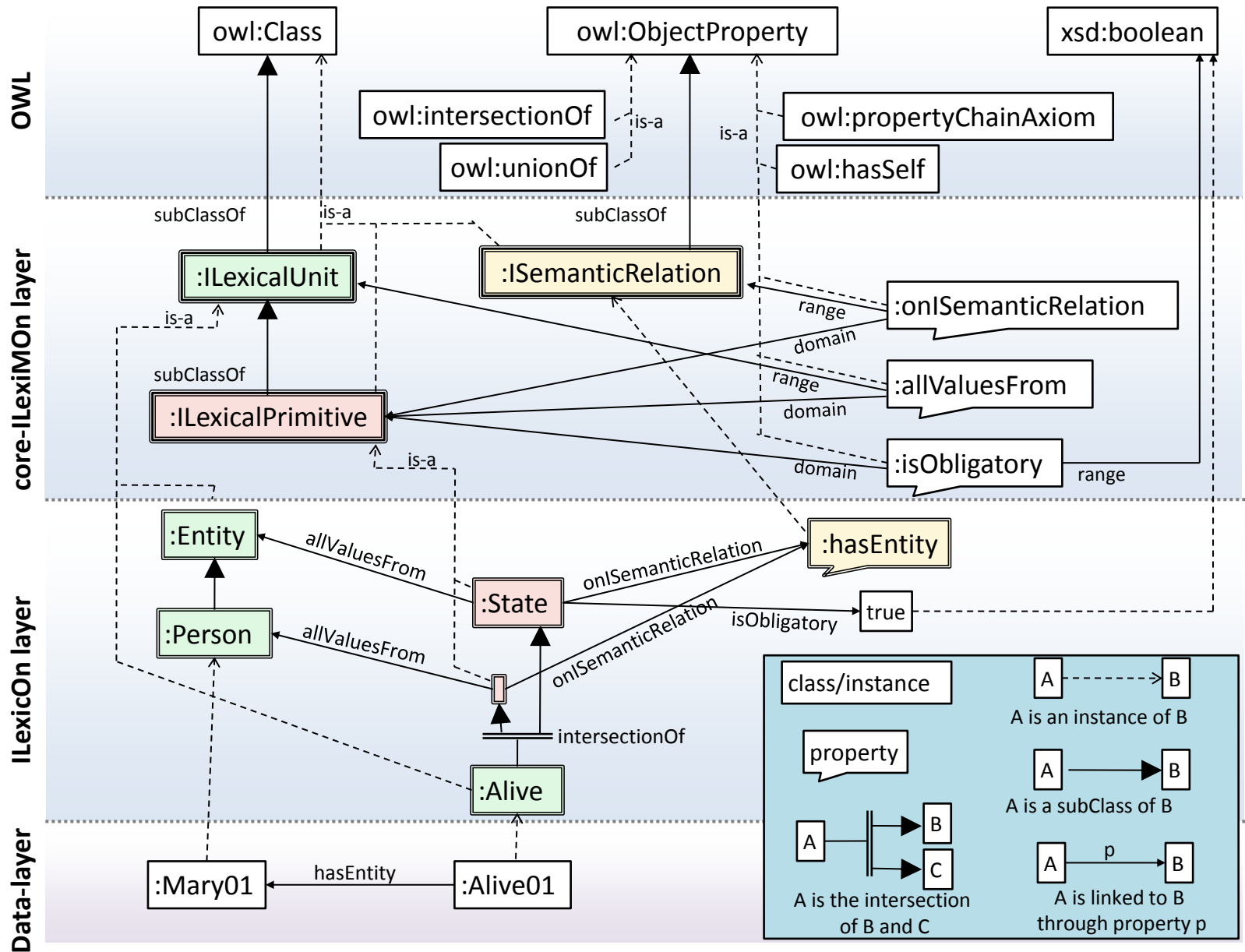
collaborative and multilingual access to the web of data

- metalingual content & semantic web (thesaurus, schemas, triple store)
- natural interaction for annotation, query & edition
- $WS \oplus CWL/UNL$

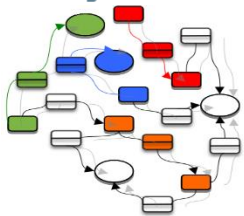




linking linguistic and semantic models



« MARY IS ALIVE »



Relational Patterns extraction

Pattern repository



owner(Thing, Thing)

[R:Person] purchased the [D:Thing]
[D:Thing] owner [R:Thing]
[D:Thing] was bought by [R:Thing]

starring(Work, Person)

[D:Work], played by [R:Person]
[D:Work] stars [R:Person]
[D:Work] film stars [R:Person]

QALD-2 Open Challenge:

	total	answered	right	partially right	precision	recall	f-measure
Groovy Answering	100	74	44	17	0.79	0.8	0.79
SemSeK	100	80	32	7	0.44	0.48	0.46
Alexandria	100	25	5	10	0.43	0.46	0.45
MHE	100	97	30	12	0.36	0.4	0.38
QAKis	100	35	11	4	0.39	0.37	0.38



Who is starring in Batman Begins?

EAT and NE recognition:
Stanford NER+ DBpedia

Query pattern

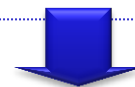
[Person] is starring in [Movie]?



ENTAILMENT ENGINE/
SIMILARITY ALGORITHM

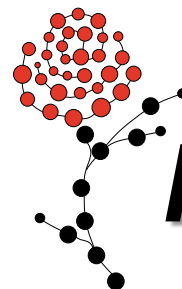


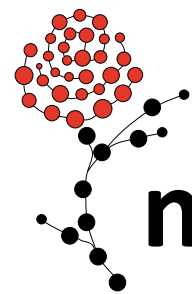
```
select * where {
  dbpr:Batman_Begins dbp:starring ?v .
  OPTIONAL {?v rdfs:label ?l
    filter(lang(?l)="en")} }
```



Christian Bale, Michael Caine, ...

question
answering
over
linked
data





main research axes and questions

Interactions



Improve interactions with systems getting more and more complex?



Reconcile formal stable semantics & negotiable social semantics?



Reconcile local contexts and global world-wide virtual machine?

Typed graphs



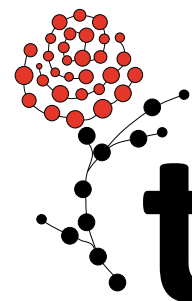
What kind of formalism is the best suited for SSW models?



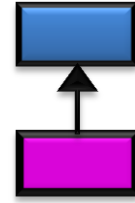
Analyze typed graph structures and their interactions?



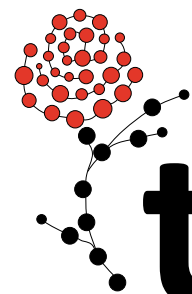
Support different graph life-cycles, calculations & characteristics?



typed graphs



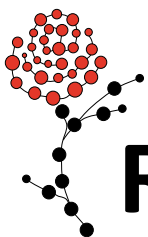
- formalizing models and implementing social semantic web applications
- calculating on heterogeneous typed graphs of the web



typed graphs

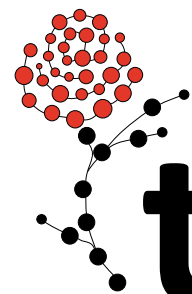
what kind of formalism is the best suited for such models?

- to specify formalisms and systematically evaluate their implementation in real applications
- abstraction of knowledge representation models following conceptual graphs and semantic networks approaches
- dissociate semantics from languages and parameterize operators



RIF-SPARQL: a RIF dialect using SPARQL

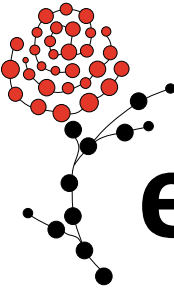
RIF-BLD	SPARQL
<code>P(n1 -> v1, ..., nn -> vn))</code>	<pre>[a rif:NamedArgs ; rif:name P ; rif:arity n ; rif:n1 v1 ; ... rif:nn vn]</pre>
<code>P(t1, ... tn)</code>	<pre>[a rif:Positional ; rif:name P ; rif:arity n ; rif:arg1 t1 ; ... rif:argn tn]</pre>
<code>l1 = l2</code>	<code>Filter(l1= l2)</code>
<code>?x1 = ?x2</code>	<code>Filter(?x1 = ?x2)</code>
<code>?x = 1</code>	<code>Filter(?x = 1)</code>
<code>l= External(P(t1 ... tn))</code>	<code>Filter(l = τ(External(P(t1 ... tn))))</code>
<code>?x= External(P(t1... tn))</code>	<code>Filter(?x = τ(External(P(t1 ... tn))))</code>



typed graphs

analyze typed graph structures and their interactions?

- to extend abstract graph model to cover as many features as possible of SPARQL 1.1 and RIF
- to specify new operators in terms of graph manipulations in an abstract graph machine.
- to extend the graph operators of our abstract model to integrate approximation, clustering and analysis operations
- to adapt structural metrics of social analysis to take into account the types in the graphs
- to study spreading algorithms and extend them to work on typed graphs in particular to propose type-based propagation functions



e.g. typed proximity centrality

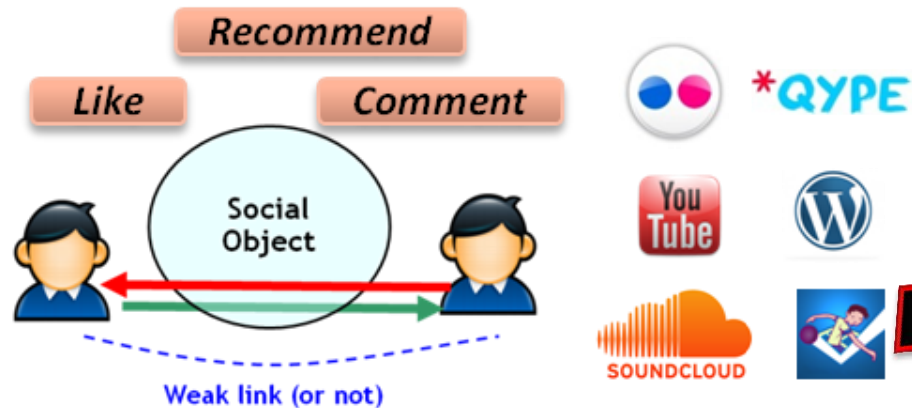
$$C_{\langle \text{knows}^* / \text{worksWith} \rangle}^c(k) = \left[\sum_{x \in E_G} \text{length}(g_{\langle \text{knows}^* / \text{worksWith} \rangle}(k, x)) \right]^{-1}$$



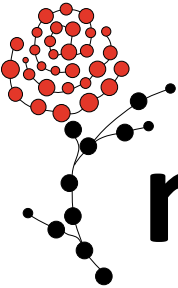
```
select distinct ?y ?to (pathLength($path) as ?length)
                        ((1/sum(?length)) as ?centrality)
where{ ?y s (foaf:knows*/rel:worksWith):: $path ?to
}group by ?y
```

contextual notification

propagation of interests for suggestion



$$a(i, n + 1, t) = \frac{w_s * s(i, n + 1, t) + \sum_{j, e_{ij}} [w_p(l(e_{ij}), t) * a(j, n, t)]}{w_s + \sum_{j, e_{ij}} w_p(e_{ij})}$$

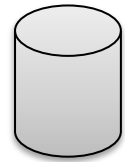


matchmaking by abduction

discover and qualify the best possible match for a demand

Terminological Axioms (TBox $\mathcal{T}$).

- Concept Inclusion Axiom ($C \sqsubseteq D$), ex. $\text{Hotel} \sqsubseteq \text{Accommodation}$
- Concept Equivalence Axiom ($C \equiv D$), ex.
 $\text{Hotel5Stars} \equiv \text{Accommodation} \sqcap \exists \text{isClassified.5Stars}$



Assertions (ABox $\mathcal{A}$) .

- Concept Assertions ($a : C$), ex. $\text{Negresco} : \text{Hotel5Stars}$
- Role Assertions ($\langle a, b \rangle : R$), ex. $\langle \text{Negresco}, 5Stars \rangle : \text{isClassified}$

Role box $\mathcal{R}$.

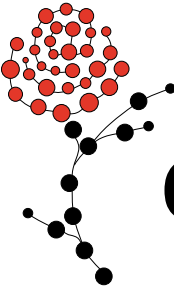
- Role Inclusion Axiom ($R \sqsubseteq S$), ex. $\text{isClassified5Stars} \sqsubseteq \text{isClassified}$
- Role Transitivity, ex $\text{Transitive}(\text{isComposedOf})$.

Abduction.

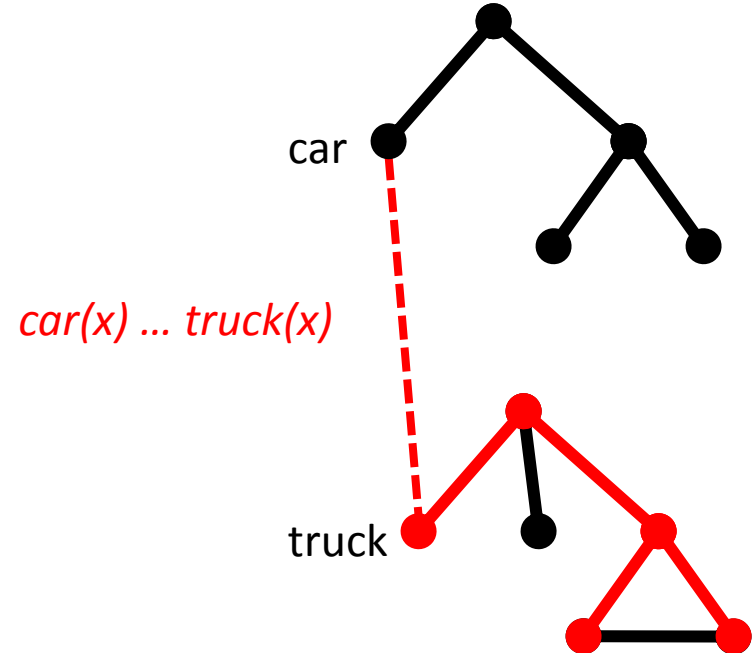
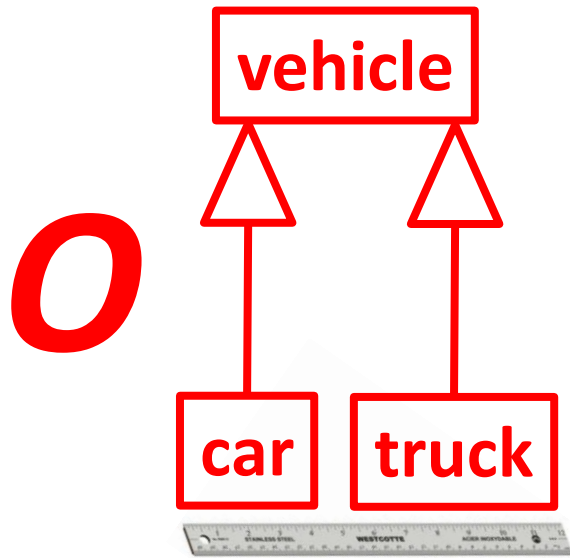
*All **Hotels** are **Accommodations***
Ex: Negresco is an **Accommodation**

*Then, Negresco is a **Hotel** (!)*





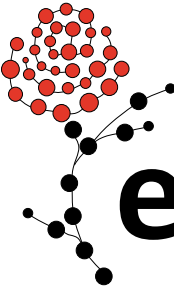
e.g. controlled approximation



$$t_1(x) \Rightarrow t_2(x) \rightarrow d(t_1, t_2) < \text{threshold}$$

$$\forall (t_1, t_2) \in H_c^2 \text{ let } \text{dist}(t_1, t_2) = \min_{\{t \geq t_1, t \geq t_2\}} (l_{H_c}(t_1, t) + l_{H_c}(t_2, t))$$

$$\forall (t_1, t_2) \in H_c^2; t_1 \leq t_2 \text{ let } l_{H_c}(t_1, t_2) = \sum_{\{t \in \langle t_1, t_2 \rangle, t \neq t_1\}} \left[\frac{1}{2^{\text{depth}(t)}} \right]$$



e.g. approximated search



Bonjour Admin

Se Décrire

[liste des organismes](#)

[liste des entreprises](#)

[Explorer Telecom Valley](#)

[Rechercher un Partenaire](#)

Liens directs

- [Chaîne de valeur](#)
- [L'ontologie](#)

Autres liens

- [Plan du site](#)
- [Contacts](#)
- [Présentation](#)
- [Forum](#)
- [Déconnexion](#)

KmP >> Scénarios 2 et 3: Rechercher un partenaire

Entreprise [Philips Semiconductors](#)

Distance sémantique  [d=42]

- [Concevoir , Design de test , 3G](#)

Entreprise [Philips Semiconductors](#)

Distance sémantique  [d=42]

- [Concevoir , Design de test , 2G](#)

Entreprise [Philips Semiconductors](#)

Distance sémantique  [d=42]

- [Concevoir , Design de test , Bluetooth](#)

Entreprise [Philips Semiconductors](#)

Distance sémantique  [d=47]

- [Concevoir , Design de circuits intégrés](#)

Equipe [Antennes actives intégrées et micro](#)

Distance sémantique  [d=50]

- [Concevoir , Composants et systèmes](#)

Equipe [Nouvelles antennes pour télécom](#)

Distance sémantique  [d=50]

- [Concevoir , Antenne miniature , Env](#)

Results of search for teams/skills

Results summary

- Number of teams: 2 (total with approx. = 3)
- Number of skills: 5 (+5 approx.)

Request summary

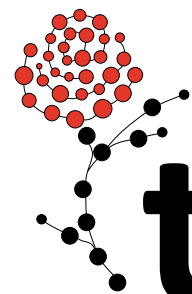
I'm looking for teams that have skill(s) characterized by Design.

Team	Action	Deliverable	Environment	Resources
MST Baseband Development	Design	Component Design	3G Handset	Digital Des Eng
Nexperia Mobile Multimedia	Design	System Design	CellularTerminals [Mobile multimedia]	Digital Des Eng
Nexperia Mobile Multimedia	Design	component Architecture	CellularTerminals [Mobile multimedia]	Computing Architecture
Nexperia Mobile Multimedia	Design	Component Design	CellularTerminals [Mobile multimedia]	Digital Des Eng
Nexperia Mobile Multimedia	Design	Deliverables	CellularTerminals [Mobile multimedia]	SW eng
MST Baseband Development	Design	component Architecture	3G Handset	Computing Architecture[Baseband architecture]
Nexperia Mobile Multimedia	Introduce	Deliverable	CellularTerminals [Mobile multimedia]	Computing Architecture
MST Baseband Development	Develop	Algorithm [HW boards/platforms]	CellularTerminals	SW eng[HW/Board eng]

Skills of the team:

- Design component Architecture CellularTerminals [Mobile multimedia] (3)
- Design System Design CellularTerminals [Mobile Multimedia] (2)
- Design Component Design CellularTerminals [Mobile multimedia] (2)
- Design Software CellularTerminals [Mobile multimedia] (2)
- Introduce Deliverable CellularTerminals [Mobile multimedia] (2)

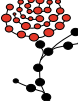
[Modify search criterions](#) [New search](#)



typed graphs

support different graph life-cycles, calculations & characteristics?

- declarative representation of workflows of operations in RDF
- to combine with standards like SPARQL 1.1 to support heterogeneous operations on possibly heterogeneous and distributed data
- to study the handling of graphs with different semantics relying on an abstract graph model & an abstract graph virtual machine
- to support temporal reasoning to identify trends, mine temporal propagation, track behavioral patterns
- to port and extend previous work on automated explanation in expert systems to explain results and failures



CORESE/ KGRAM

Corese/KGRAM GUI - v2.4.2.6 - 2010-11-11

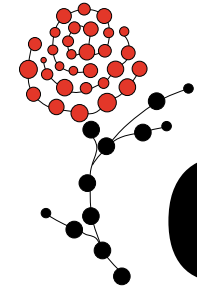
File Edit Engine Debug ?

System +

Loaded files: Debug Reload

Logs:

```
reset...  
RDFS/Rules : 0.00 s  
Load Triples : 488  
Load Relations : 423  
Load Concepts : 135  
  
done.
```

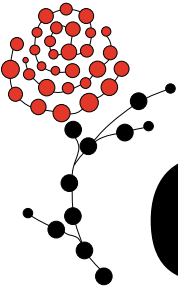


corese/kg

- Semantic Web Factory: RDF/S, SPARQL 1.1 Query & Update, Inference Rules
- Open Source CeCILL-C
- Knowledge Graph Abstract Machine with 3 Proxies (Producer, Matcher, Evaluator)



3 ANR, 2 RNRT, 1 region project, 4 european project,
4 industry grants, 10 academic grants,
>30 applications, 23 PhD, 9 edu. Institutions, etc.



e.g. extensions

- XML and XPath sources

```
select * where {  
  ?x c:authorOf ?doc  
  filter( xpath(?doc, "/book[title='1Q84']") )  
}
```

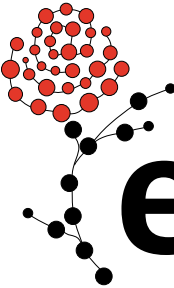
- path variables and length

```
select ?x ?y (min (pathLength($path)) as ?min)  
where { ?x foaf:knows+::$path ?y } group by ?x ?y
```

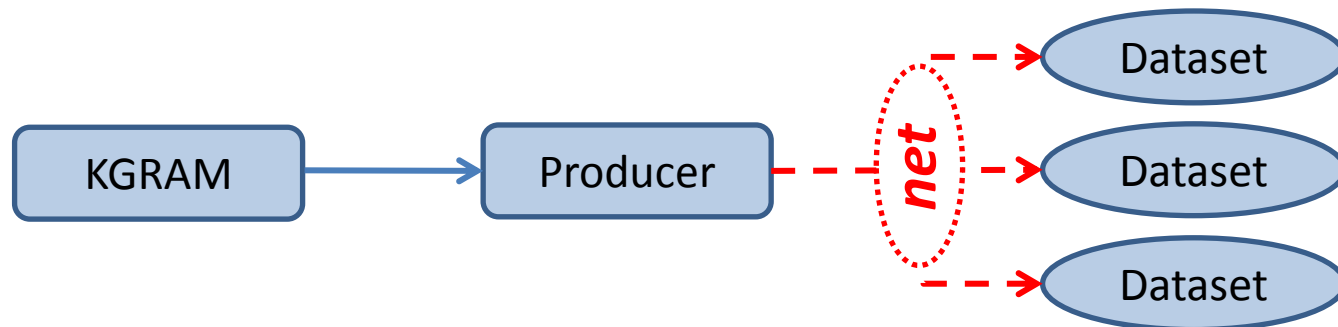
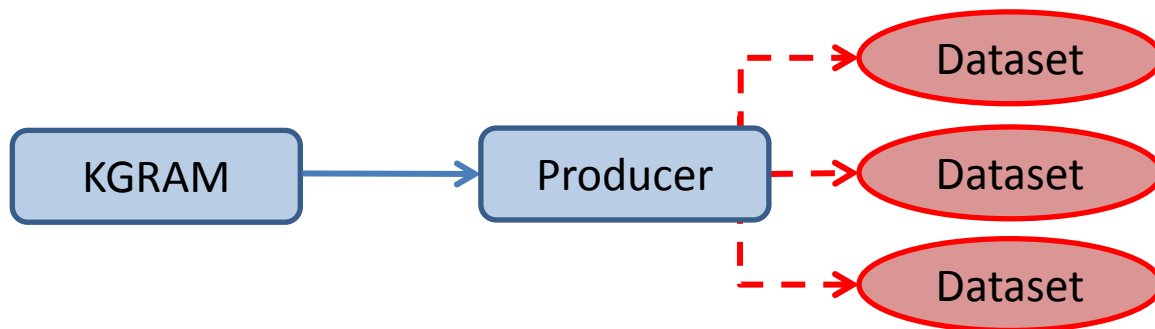
- approximate search

```
select more * (kg:similarity() as ?sim) where {  
  ?x rdf:type c:Engineer ; c:authorOf ?doc .  
  ?doc rdf:type c:TechReport ; c:topic c:Java }
```

c:Tutorial



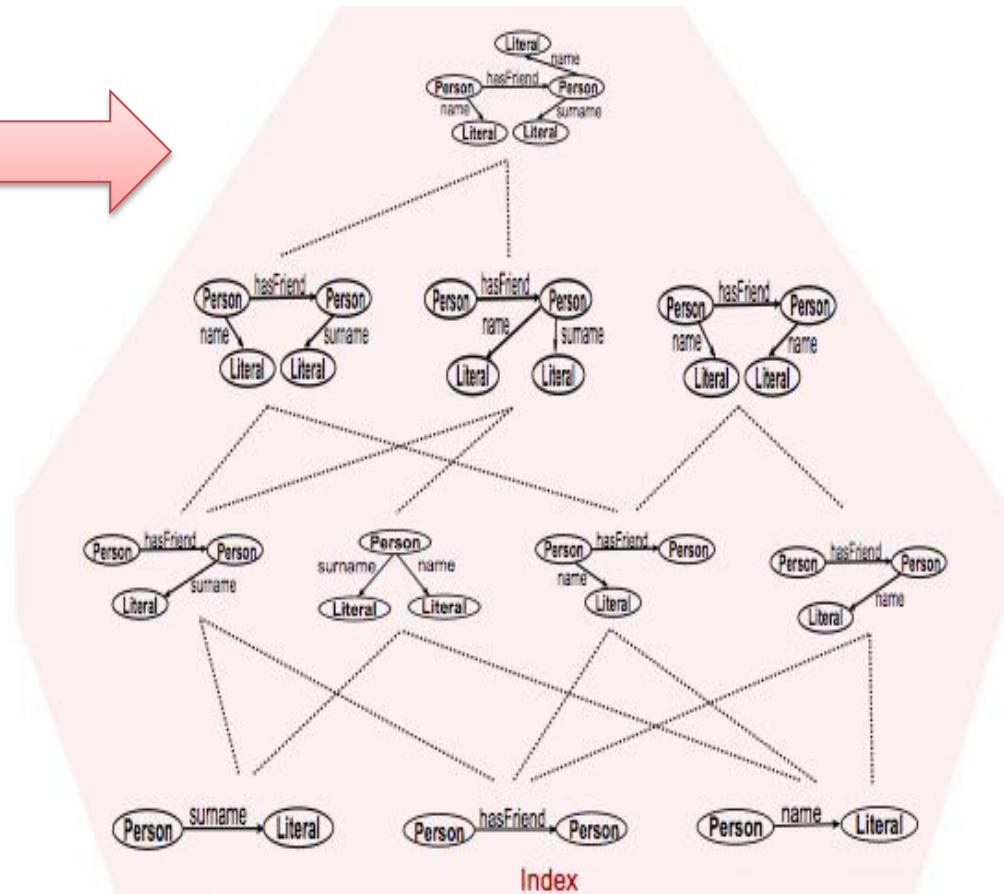
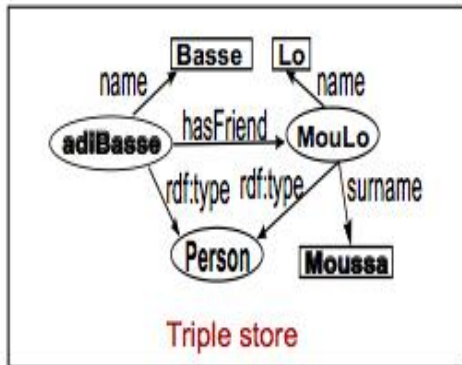
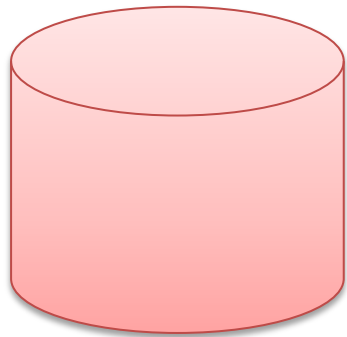
e.g. evolutions

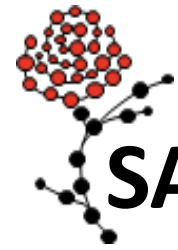




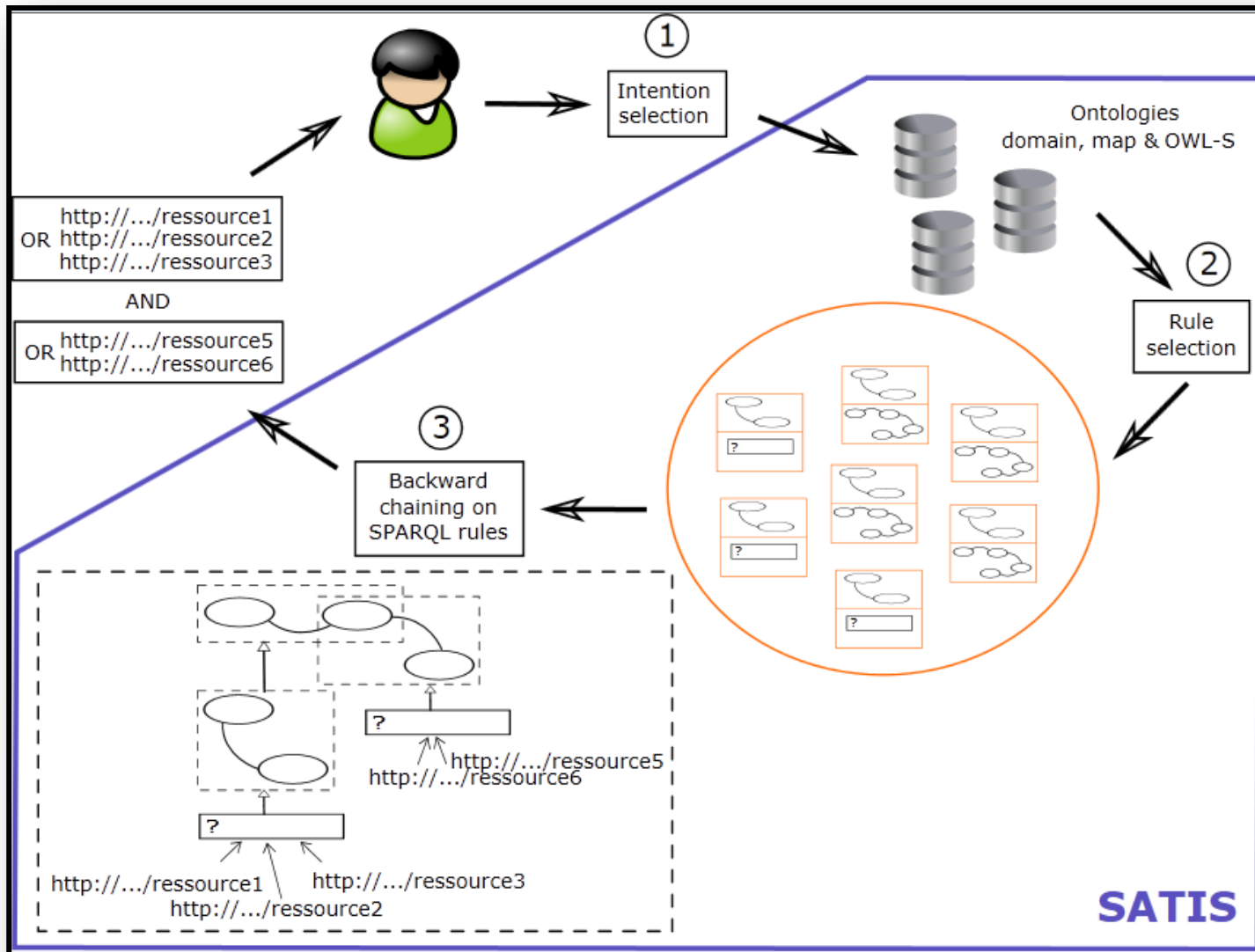
inductive index creation for a triple store

- characterize distributed RDF sources
- incremental index generation and maintenance



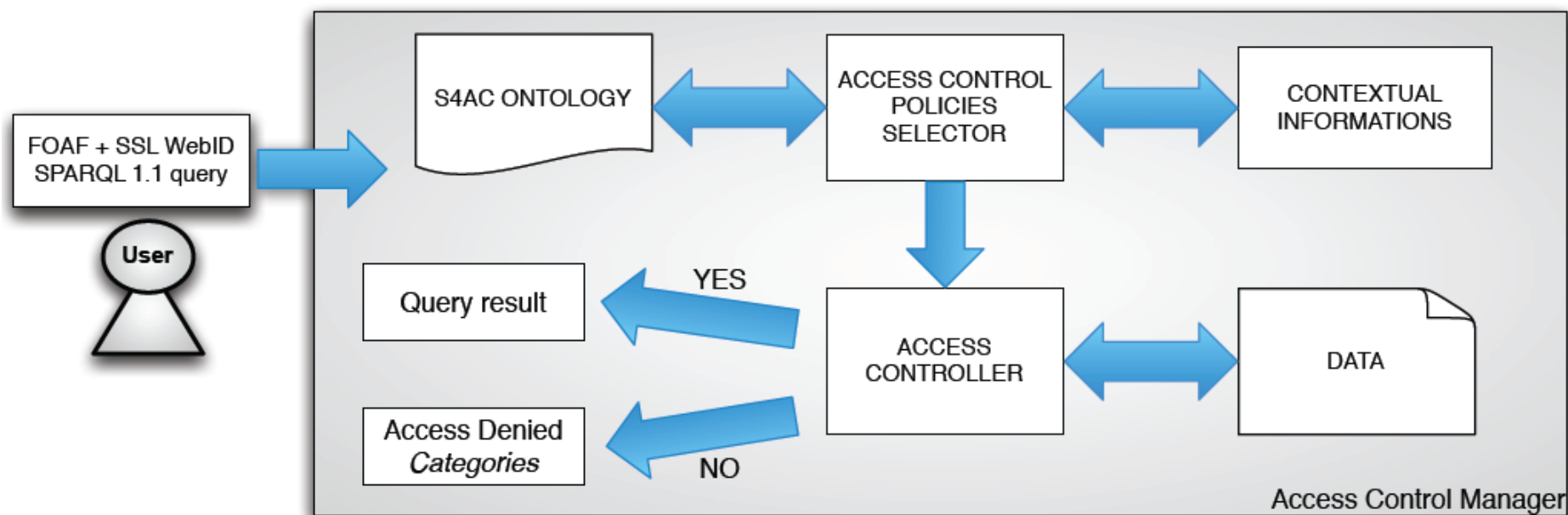


SATIS: from end-user's requirements to web services retrieval

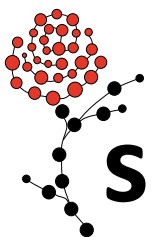




Access Control Model and Licences for Linked Data



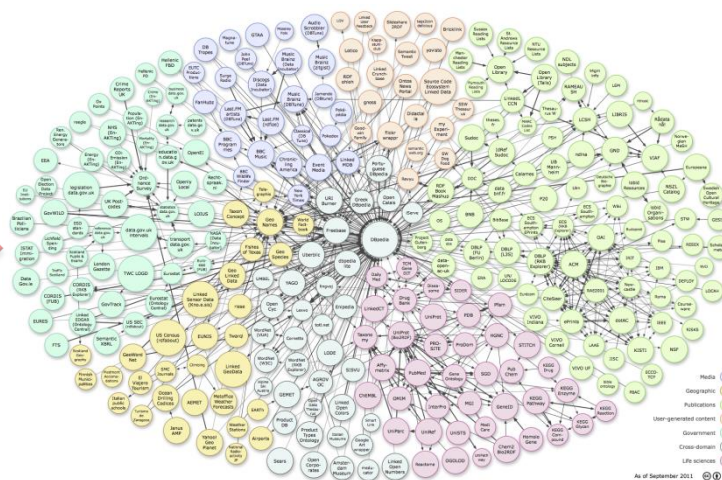
```
ASK { ?resource dct:creator
      ?provider .
      ?provider rel:memberOf ?g .
      ?user rel:memberOf ?g }
```



socio-semantic access control



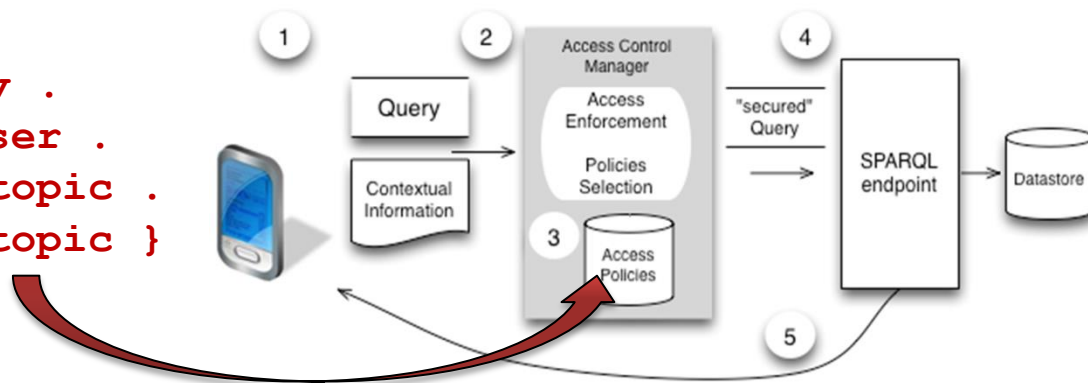
User

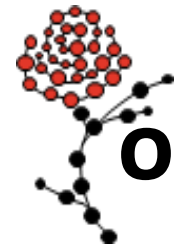


As of September 2011

e.g. only my colleagues
working on the same subject

```
ASK{ ?res dct:creator ?prov .  
      ?prov rel:hasColleague ?user .  
      ?prov foaf:interestedBy ?topic .  
      ?user foaf:interestedBy ?topic }
```

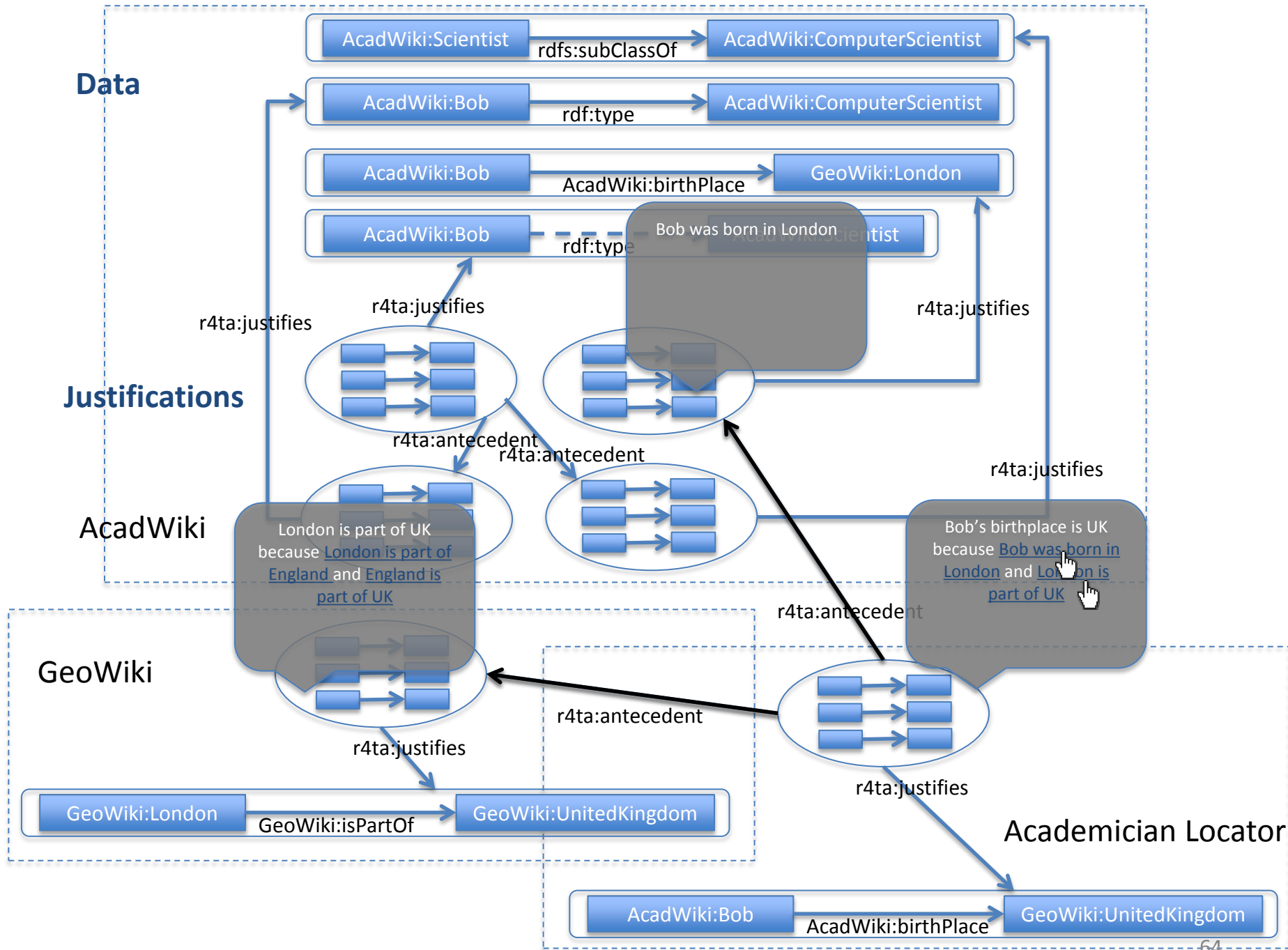


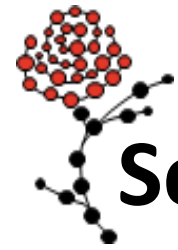


opening query-solving mechanisms

- explain results & failures & performances
- Justification: metadata about conclusion
- Ratio4TA: a vocabulary to represent justifications
- Linked justifications using the LOD principles

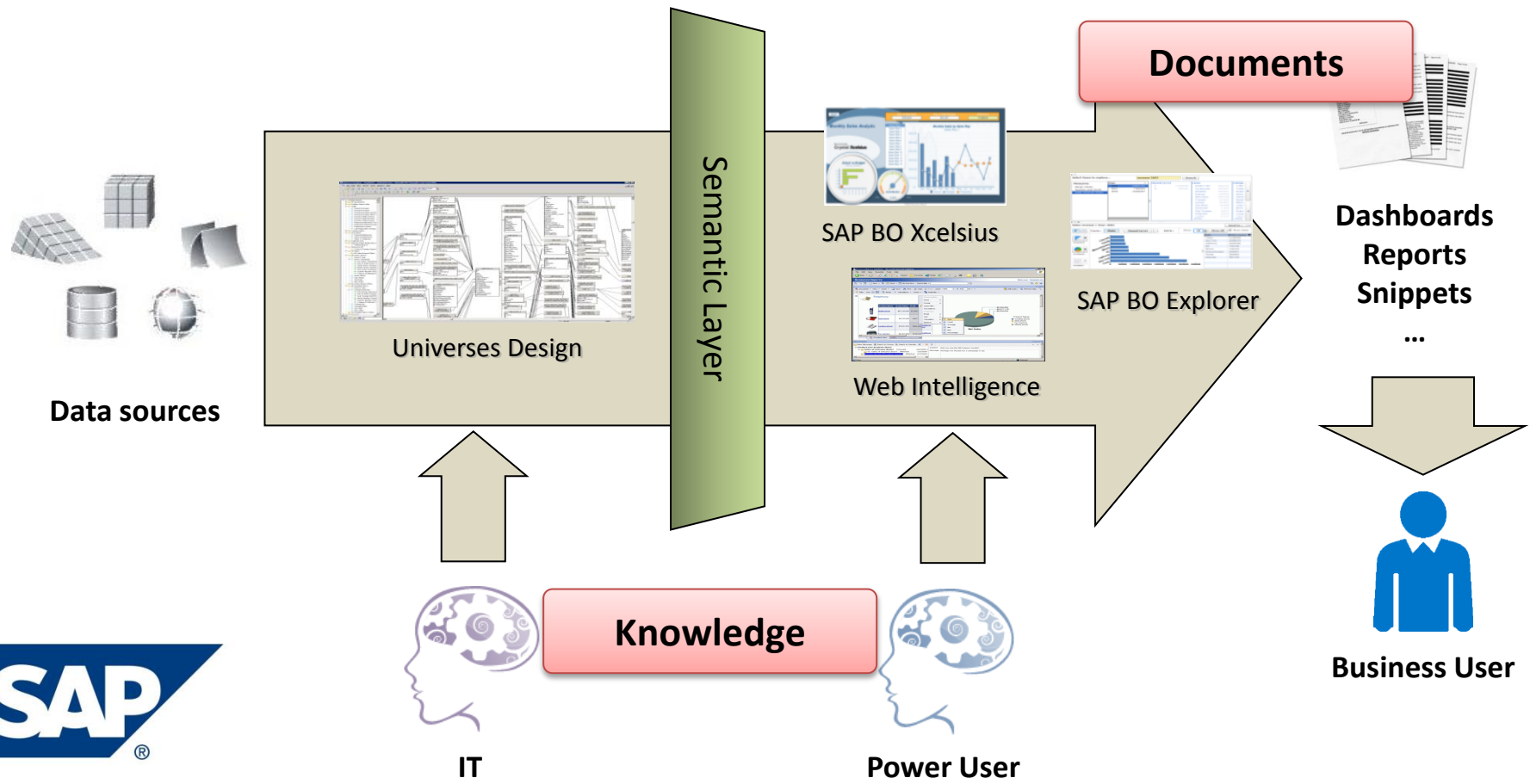


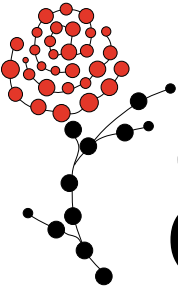




Semantic Web & *Business Intelligence*

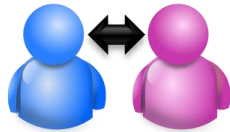
- reintegrate reports and traces of BI in the workflows
- RDF models and extraction from reports
- representation and querying for new reports





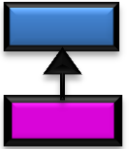
approach

modeling actors, actions and interactions

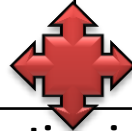


- Design methodologies
- User-centric design and interaction
- Model collective structures and relations
- Human-web and human-web-human interactions

graph-based knowledge representation, reasoning and operationalization

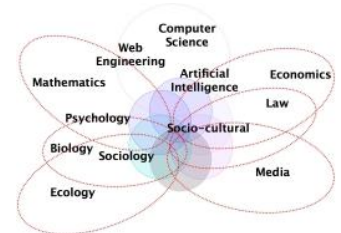


- Representing knowledge with graph formalisms
- Querying and reasoning with graph operators
- Composing and integrating sources and operators
- Context-based representation and reasoning



synergies and research intersection in web sciences

- Cooperative Web-based Information Systems
- Representing users and interactions with graphs
- Heterogeneous shared web graphs
- Notification, monitoring, watch and surveillance on dynamic networks
- Interacting with the inner machinery



Deployment environment: web applications, web standards, web science.

Application scenarios: assisting online epistemic communities in one ubiquitous web.



- 

mes préférences
déconnexion
patrick.alfano

Changements récents
Flux RSS
Plan du site
Pages populaires
Reports

Solar panels

ADEME activity on solar panels

Chart showing the use of one or many tags during the last ten weeks
Source: Spreen server

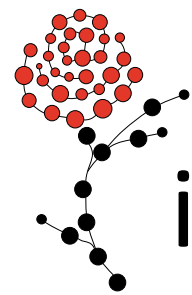
Taggings (occurrences)

Week	tag: photovoltaïque	tag: solaire+photovoltaïque
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	1	0

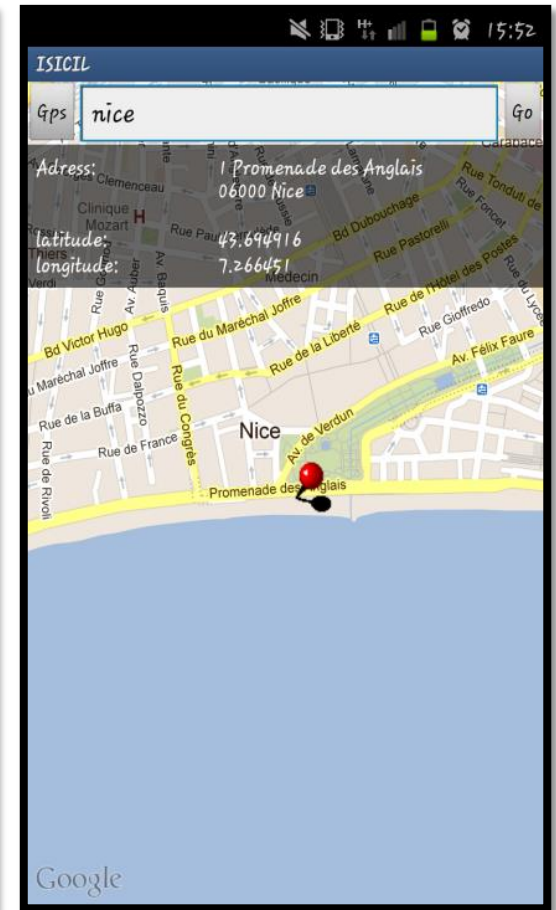
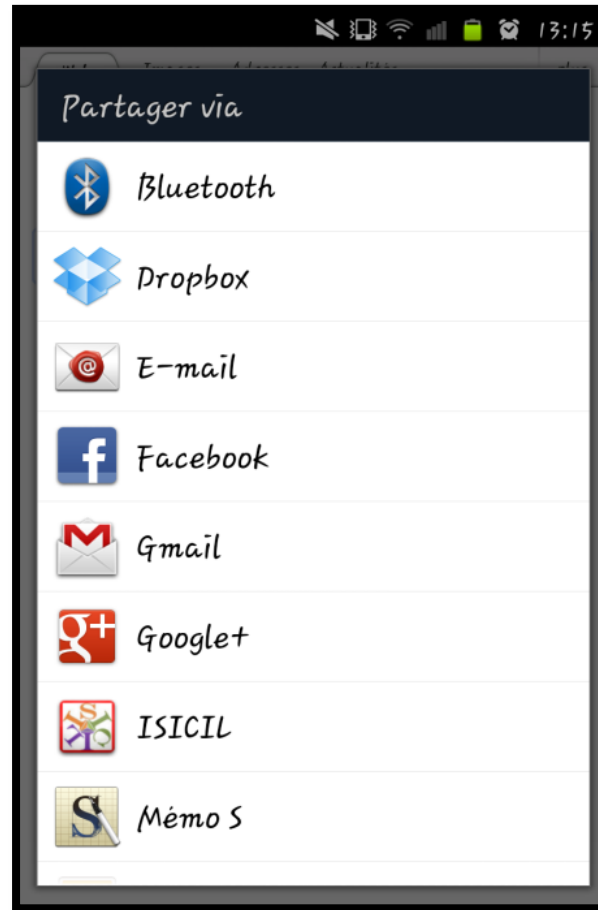
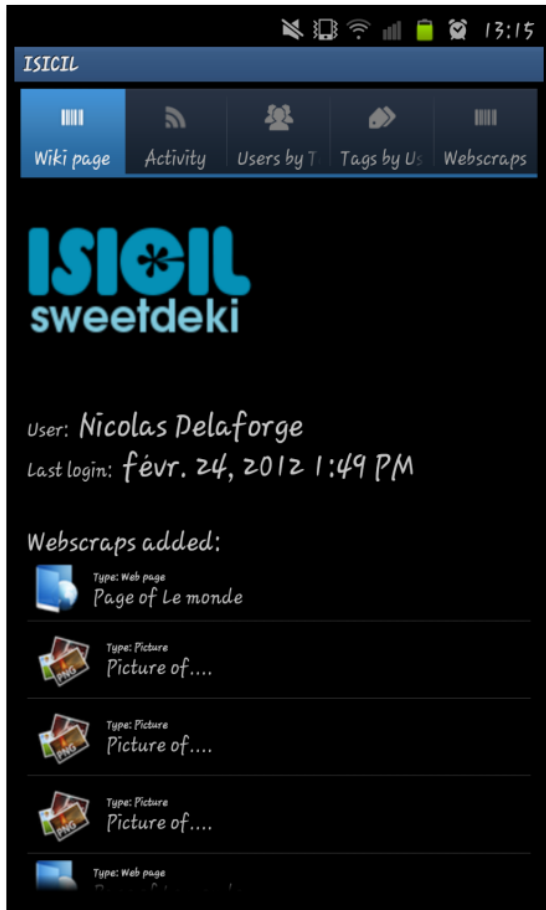
- tag: photovoltaïque
- tag: solaire+photovoltaïque

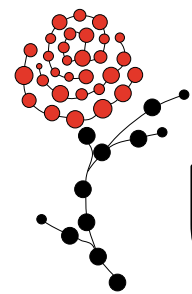
Main pages ▾

Home
Suivi d'activités d'u...
Solar panels



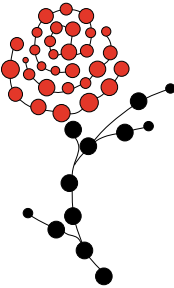
integrating with new web platforms





undergoing PhD

1. Pavel Arapov: Semantic application wikis, UNS
2. Adrien Basse: Graph Index for distributed queries, Univ. Gaston Berger, Senegal
3. Franck Berthelon: Detecting emotional states in Serious Games, UNS
4. Ahlem Bouchahda: A semantic approach to secure data base accesses, with SupCom Tunis
5. Khalil Riad Bouzidi: Management of technical and regulatory knowledge, with CSTB
6. Luca Costabello: Mobile access to the Web of Data, INRIA
7. Corentin Follenfant: Semantic Web and Business Intelligence, with SAP
8. Rakebul Hasan : explaining distributed query on the semantic web (ANR-Kolflow)
9. Maxime Lefrançois: Collaborative Management of Interlingual Knowledge, UNS
10. Nicolas Marie: context/interest querying for the web of data, Alcatel-Lucent Bell Labs
11. Thi Hoa Hue Nguyen : Schema checking and orchestration of SPARQL queries, Vietnam-CROUS
12. Oumy Seye: Rules for the Web of Data, Lirima, Univ. Gaston Berger, Senegal
13. Imen Tayari : Representing, annotating and detecting emotions in multimodal signals , with Sfax Tunisie

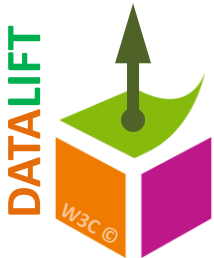


projects



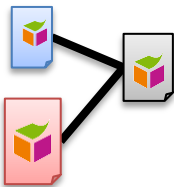
isicil.inria.fr (ANR)

- enterprise social networking
- business intelligence, watching, monitoring
- communities of interest, of practice, of experts



datalift.org (ANR)

- from raw public data to interlinked data and schemas
- a platform and documentation to assist the process
- validation on real datasets



kolflow.univ-nantes.fr (ANR)

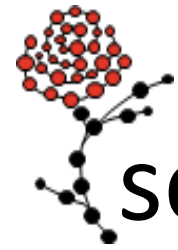
- reduce the overhead of communities building knowledge
- federated semantic: distributed blackboard for man-machine coop.



dbpedia.fr (Ministry of Culture)

- extract and publish data and facts from French version of wikipedia

● ● ● Labex UCN@SOPHIA

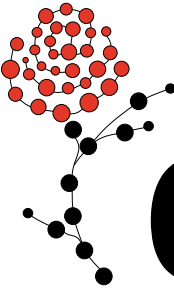


semanticpedia.org

French-speaking DBpedia



- Extract data from French speaking wikipedia
 - Reliable extraction and SPARQL end-point
 - Augment extraction and mappings
 - Monitor quantity and quality
 - Extend to other sources e.g. Wiktionary
- Results (February, Alpha testing)
 - 125 588 538 extracted triples in RDF
 - 2 400 queries on average per day

The logo for 'diffusion' features a stylized molecular structure on the left, composed of red spheres connected by black lines, with a black line extending from the bottom. To the right of this graphic is the word 'diffusion' in a large, bold, black sans-serif font.

diffusion



Master IFI: from KIS to Web

- gradual changes to the courses
- then replace the master by a new one

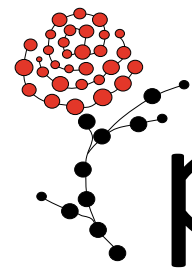


Standardization participation

- Working groups: RDF 1.1, SPARQL 1.1
- INRIA Advisory Committee Representative



Open-source and CeCILL-C free software



positioning

- **graph-based approaches**

LIRMM (GraphIK), LINA (COD), IRIT (IC³), Laval (LIC)

abstract model and operators, virtual machine, social

- **other formalisms**

Exmo, Orpailleur, Leo, Karlsruhe, Vrije, Politecnica Madrid,
Musen Lab, Manchester, DERI, STI2, Trento, KMT Salzburg,
KMI, ICS-Forth,

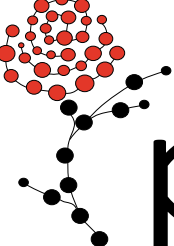
graphs, social, interaction

- **data and knowledge based systems**

- **interaction design and knowledge systems**

- **social network analysis**

- **semantic requirement engineering**



partnerships

- UTT (Tech-CICO), Troyes
 - Ministry of Culture
 - Alcatel-Lucent Bell Labs
 - SAP
 - GDF/Suez
 - Ipernity
 - Orange
 - Philips Semiconductors
 - IFP, BRGM and EADS
 - Semantic Systems (Spain), LivingSolids (Germany), Estanda (Spain) and ItalDesign (Italy)
- ETC.**

INRIA & Sorbonne

PHILOWEB

Web and Philosophy scientific events



© 2011 Atelier PW-IC : "Philosophie (du Web) et Ingénierie (des connaissances)" (IC 2012) PhiloWeb 2010

Séminaire Philosophie du Web Videos Contact



Autres ressources

- PhiloWeb (Dailymotion)
- PhiloWeb (Slideshare)
- PhiloWeb (Twitter)

Discussion list

- Philosophy and Web

Friends

- Harry Halpin
- Yuk Hui's "The Digital Milieu"

Dailymotion Vidéos Parcourir Concours Forums

recherche

PHILOWEB

 **Alexandre Monnin**

résumé vidéos playlists contacts commentaires forum

Options de liste

Exporter ▼

Mode lecture continue on | off



Web et Philosophie : pourquoi ?
Par PhiloWeb



Document numérique, mémoire, support
Par PhiloWeb



Artisanat numérique, ingénierie, philosophie
Par PhiloWeb



Lyon, world web capital from 16th to 20th April 2012

Join us



Autour de la conférence WWW2012 qui se tiendra à Lyon du 16 au 20 avril 2012, et en partenariat avec le W3C, l'Iri organise plusieurs événements et séminaire consacrés à la [philosophie du web](#).

Keynote presentation de Bernard Stiegler le 20 avril

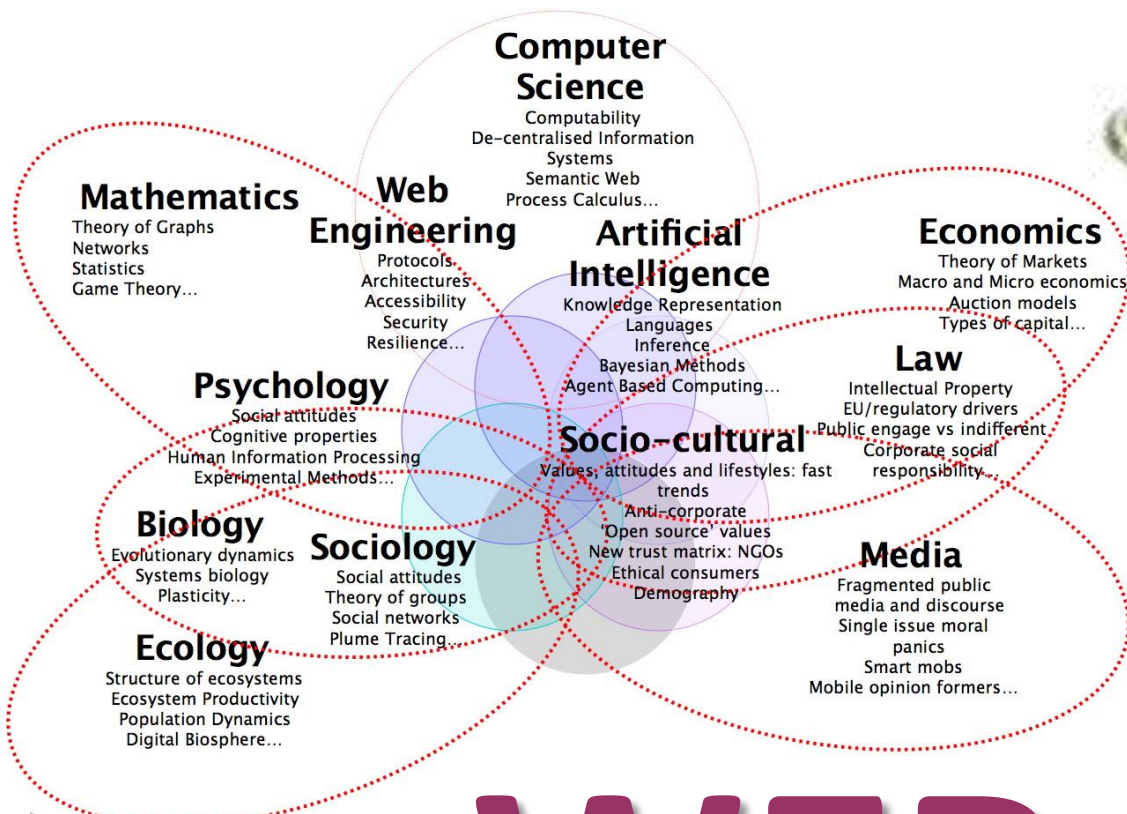
Bernard Stiegler interviendra le vendredi 20 avril en tant que *keynote speaker*, à l'instar de Neelie Kroes, Tim Berners-Lee ou encore Christopher Welter qui complète ce [panel](#).

Atelier « PhiloWeb 2012. Web and Philosophy: Why and What for? », le 17 avril

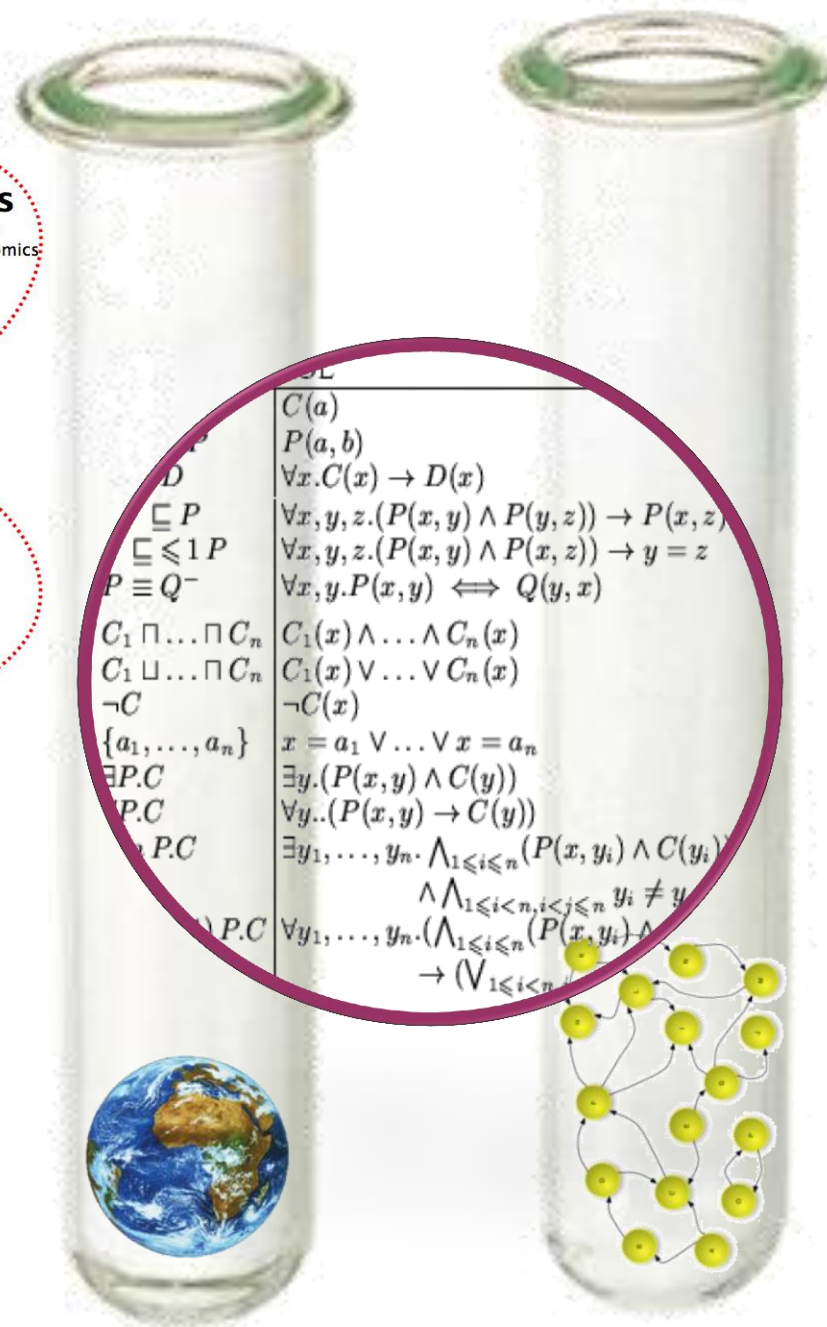
Alexandre Monnin (IRI, Paris 1, INRIA, CNAM) et Harry Halpin (IRI) organisent avec Leslie Carr (Webscience Trust) un atelier en ouverture de cette même conférence, le 17 avril.

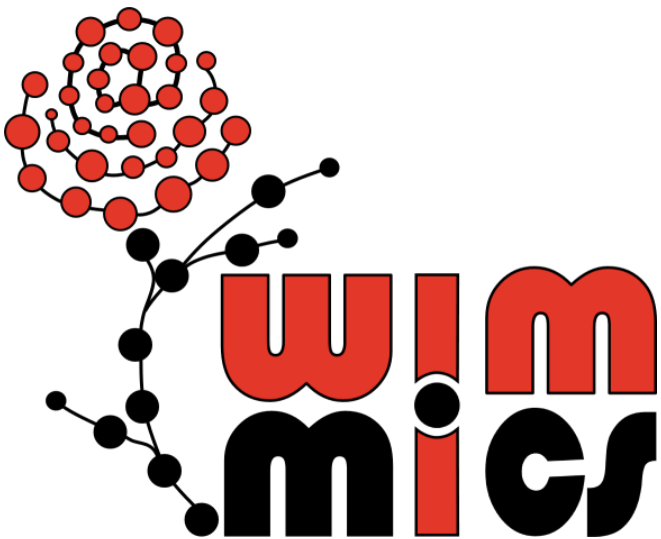
Il s'agira de la troisième conférence du cycle PhiloWeb, entamé par Alexandre Monnin en [octobre 2010](#) à la Sorbonne, à l'époque dans le cadre d'un partenariat entre Paris 1 et l'INRIA, effort déjà soutenu par le W3C (de même que l'année suivante, à [Thessalonique](#)).

Aujourd'hui, PhiloWeb 2012 prend place au sein de la plus importante conférence consacrée au Web, soutenu par le [W3C](#), l'IRI, l'[IACAP](#) et [ONRG](#).



WEB science





Web-Instrumented Man-Machine Interactions, Communities, and Semantics*

a proposal for a joint research team between INRIA Sophia Antipolis –
Méditerranée and I3S (CNRS and University Nice Sophia Antipolis).

(*) “wimmics” comes from “wimi”, a variety of roses.

