Information Seeking in a Socio-Semantic Web Application

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AGENDA

1) - « Socio-semantic Web » and the *Hypertopic* model

2) - How to help "Socio-semantic activity" within a community :

3) - Three methods, explored in real « Socio-semantic Web » applications *(2002-2007)* :

- ***1) « centralized co-building » method***
- ***2) « conflictual co-building » method***
- ***3) « hybrid co-building » method***

4) "Information Seeking" in these Socio-Semantic Web applications

« Socio-semantic Web » (2003) and the Hypertopic model (2002) are approaches mainly founded on CSCW, Knowledge Engineering, Knowledge Management and Social Sciences

« *Socio Semantic Web* [Zacklad et al., 2003]

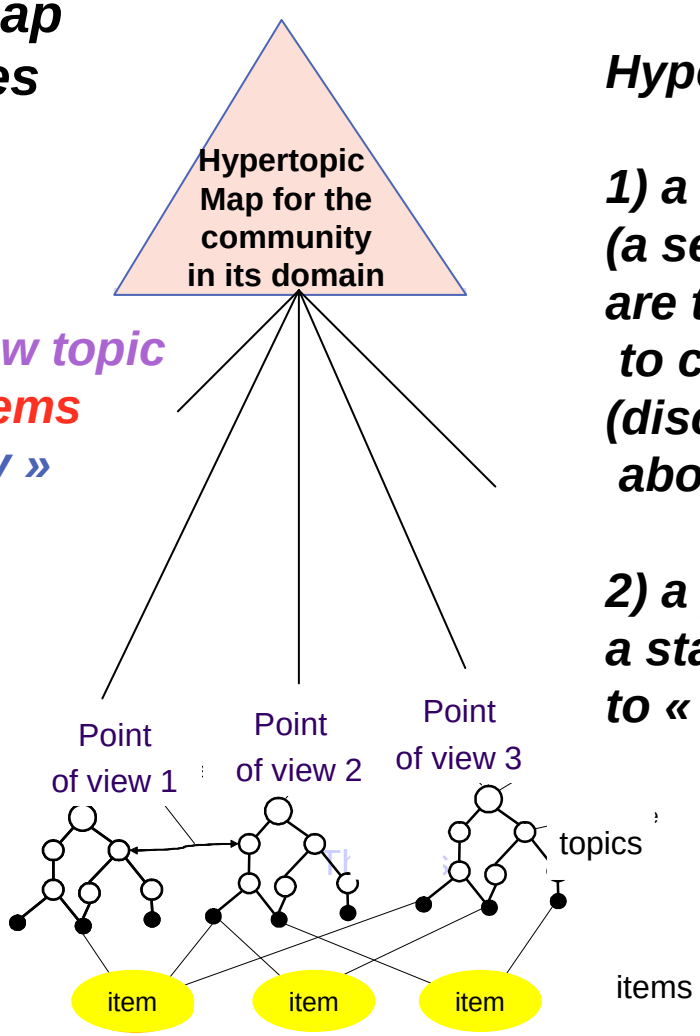
- is a social Web which participates in the building of a structured representation of both the domain and the community
  - **« Maps » , pragmatic ontologies or shared indexes make the collective knowledge and activities both more visible and more reflexive (e.g.Web2.0)**
  - **incremental structuration of cognitive and social network**
- is a Web which focuses communities
  - **users following similar goals,**
  - **but : participating to sub-groups, accepting multiples social roles, competences, opinions, conflicts → diversity of *points of view***
- is supported by a model : Hypertopic. **With Hypertopic, *points of view* are built by community members (not familiar with knowledge modelling) for embracing collections of *items* (e.g. items are *products*, *projects*, *persons, learning objects*…)**
  - → ***multiples Dimensions of Analysis (consensual plurality)***
  - → ***multiples Opinions or Points of View (conflictual plurality)***

Socio-semantic Web is a « pragmatic Web »,

oriented towards the « socio-semantic activity » of Community' members

an « Hypertopic » map includes multiples points of view :

an Hypertopic map is
= a multi-points of view topic map , to consider items
= a « semiotic ontology »



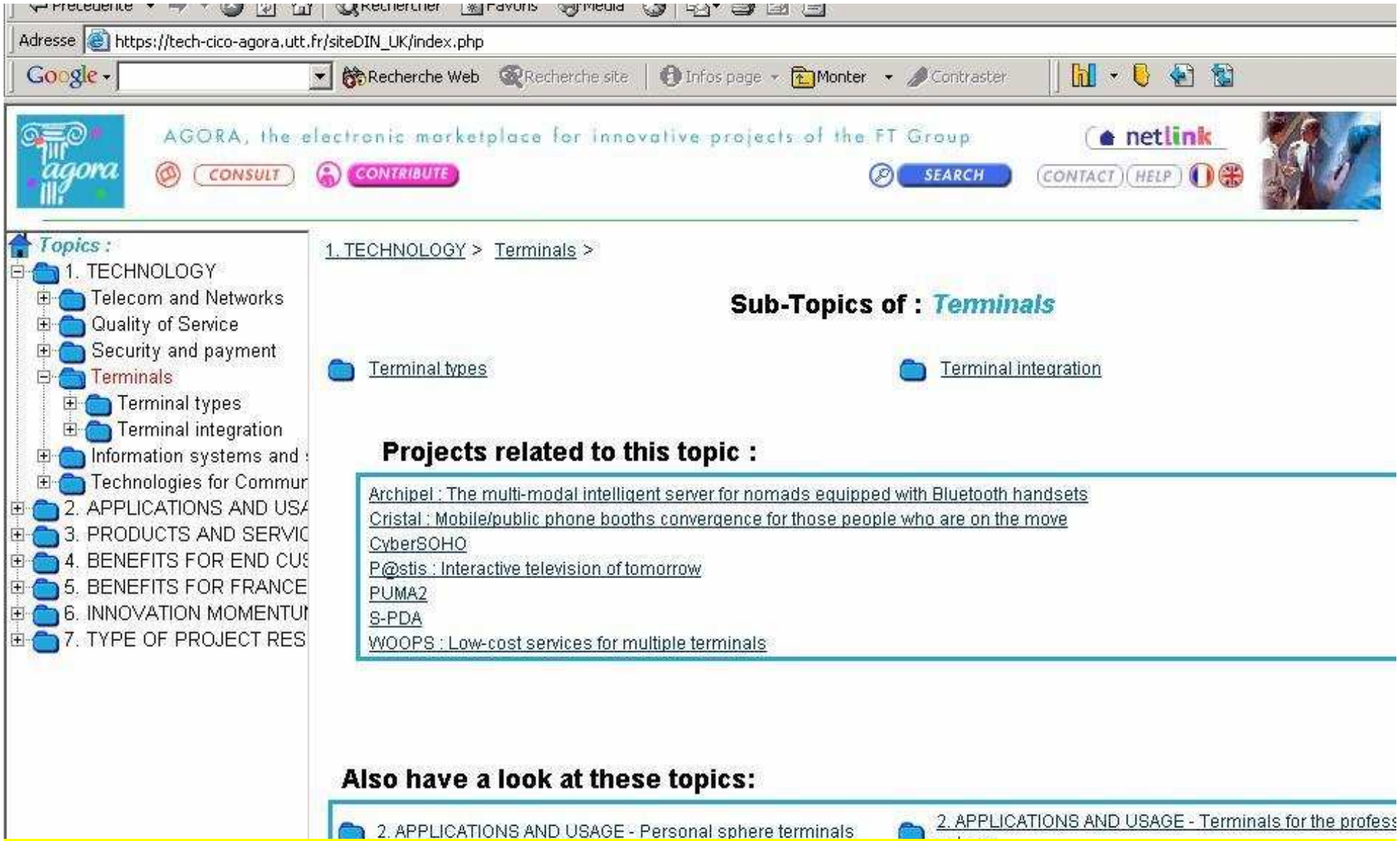
Hypertopic is

1) a knowledge representation (a set of basic constructs which are the « keys » of the map ») to co-build and communicate (discussions, design issues…) about the map

2) a protocol providing a standard access to « map services »

e.g. the « Agora/France-Telecom » application (2002) , followed Hypertopic and was built using a « knowledge-based marketplace » (KBM) cooperation model [Cahier, 2002]

- ***hundreds of items (item = a R&D project) and actors (e.g. contributors for R&D projects)***
- ***7 points of view corresponding to different business « languages » in the organisation***
- ***1500 topics after 2 months***
- ***thousands of documentary resources***



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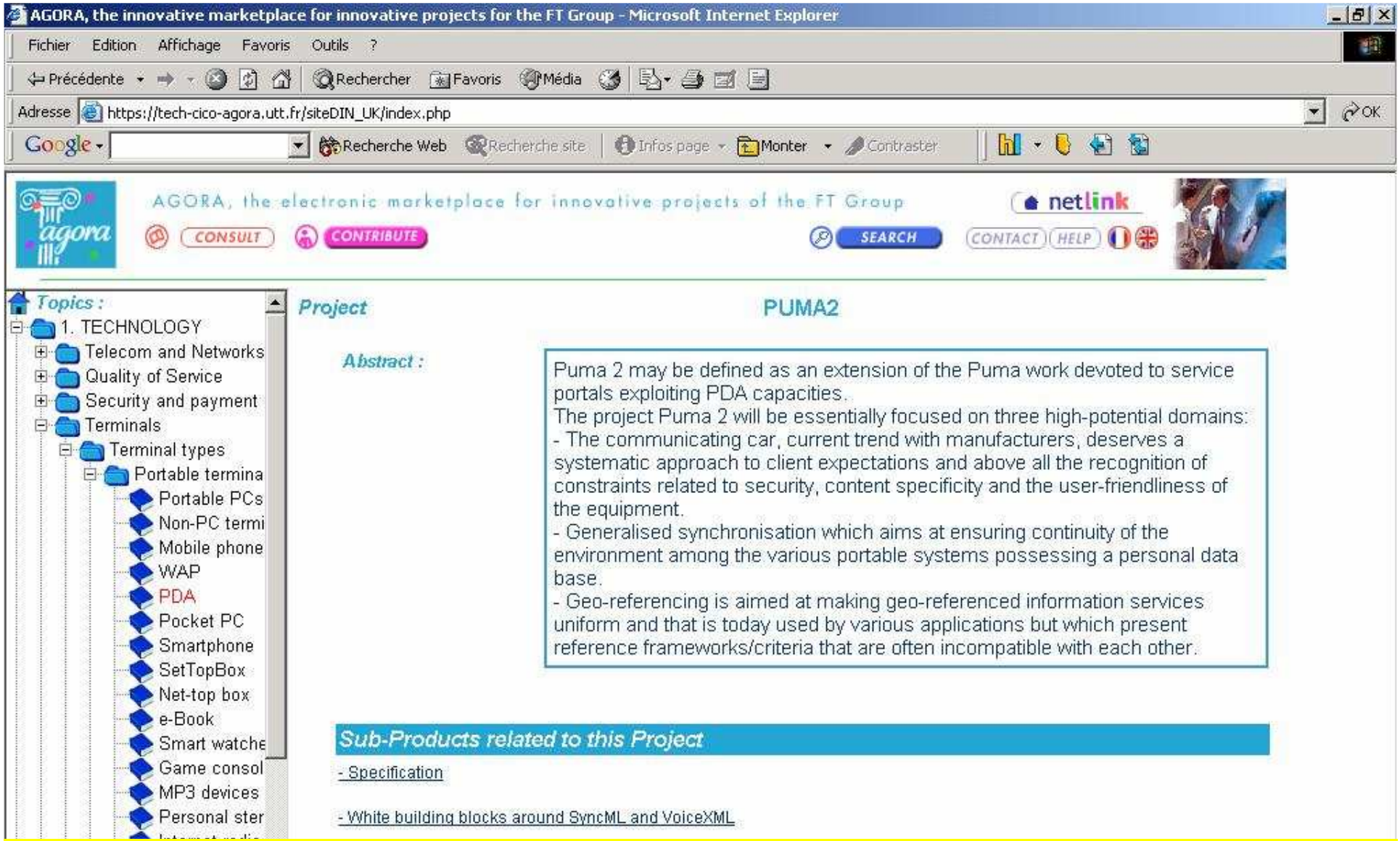

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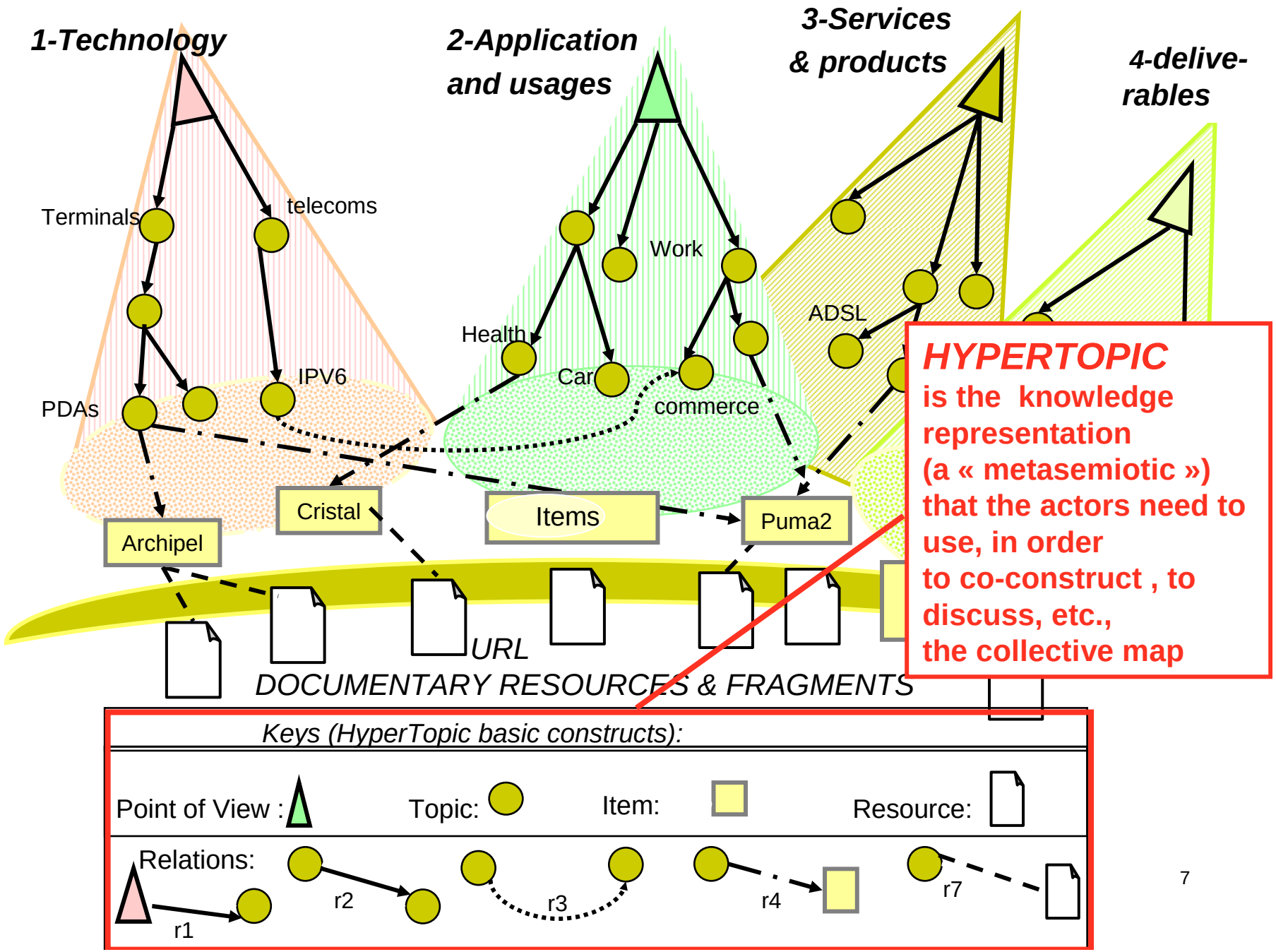
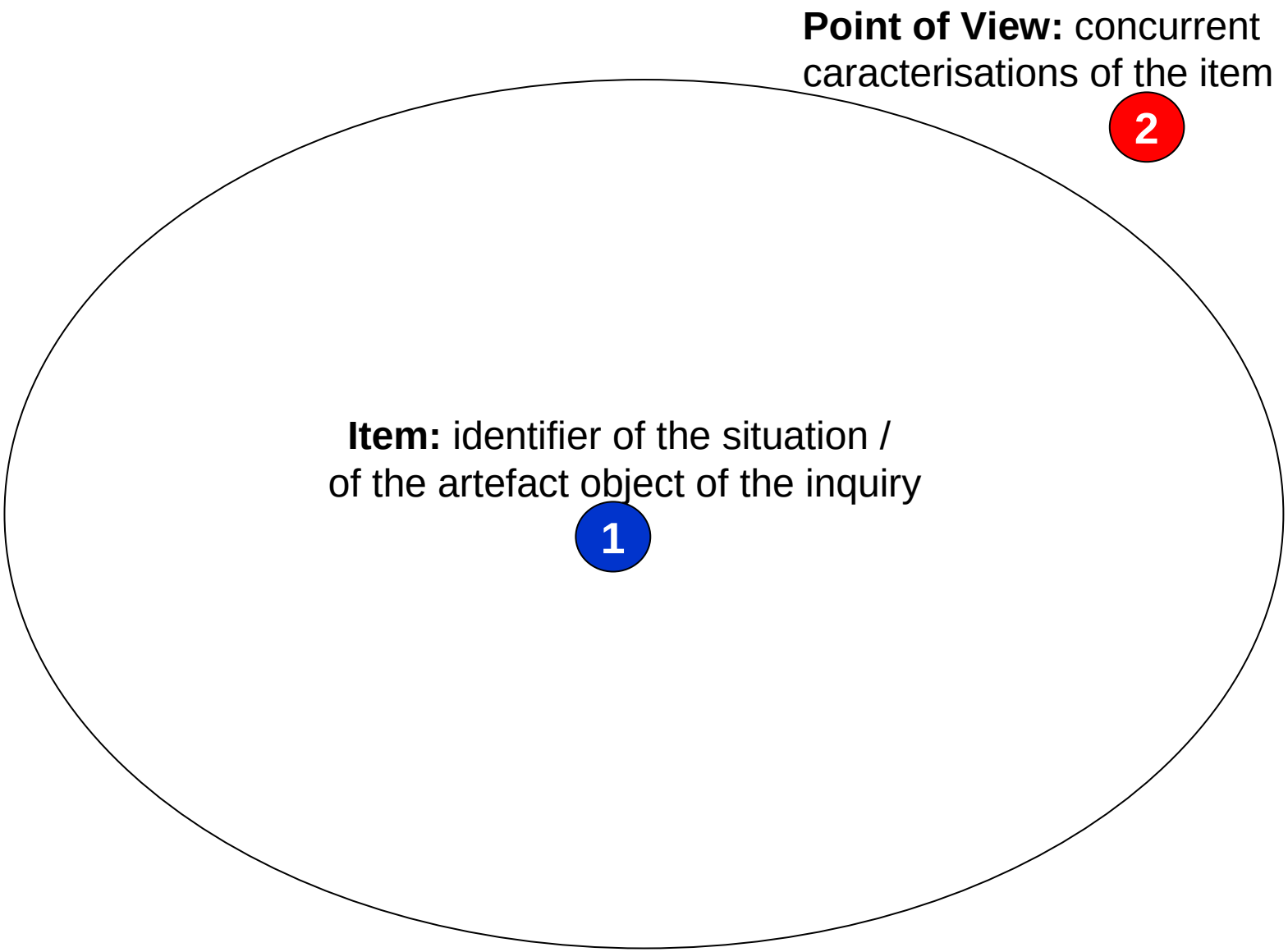
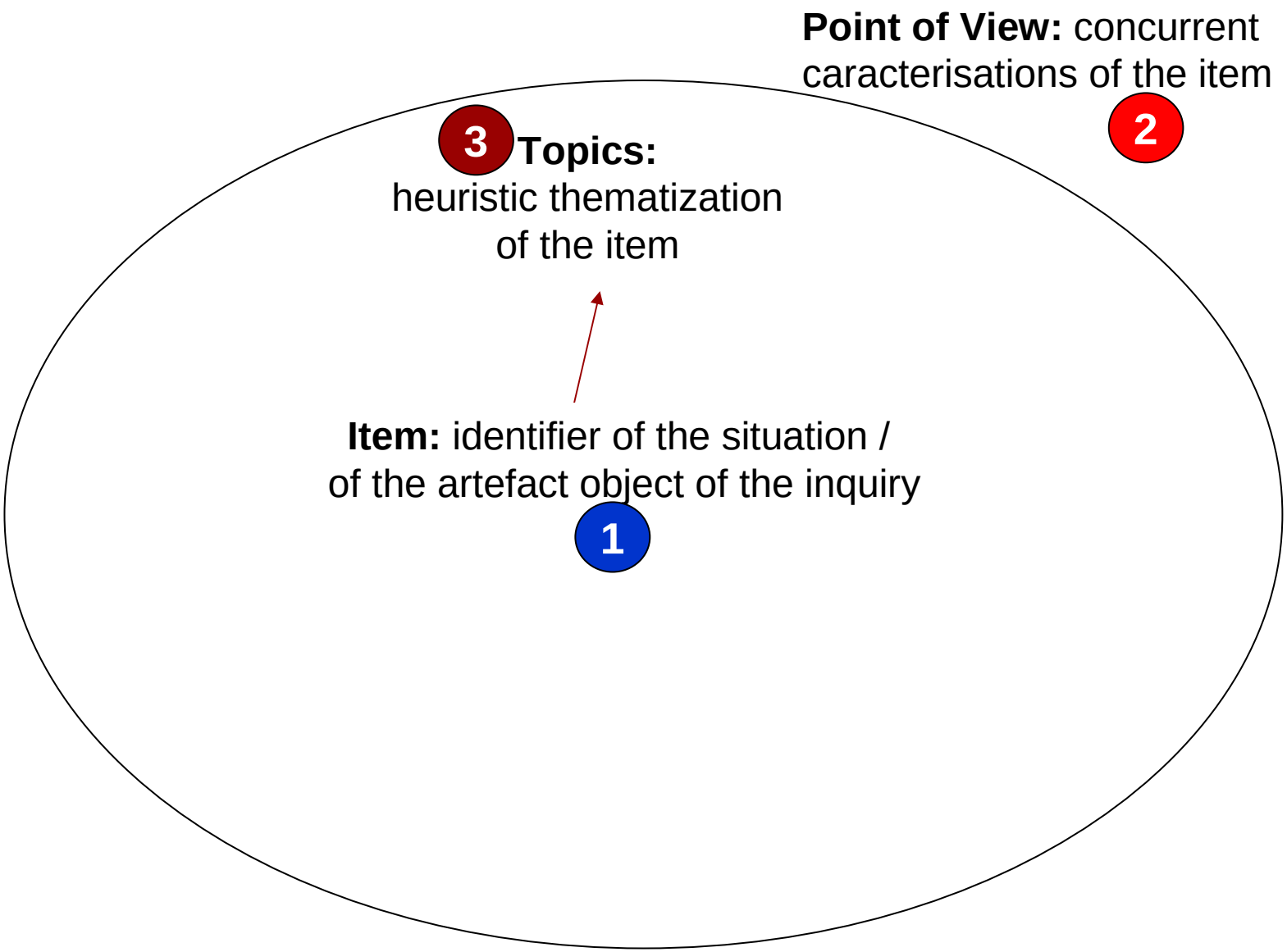
The complete Hypertopic model includes also attributes and resources



Hypertopic


Point of View: concurrent caracterisations of the item
2
Item: identifier of the situation / of the artefact object of the inquiry
1

Hypertopic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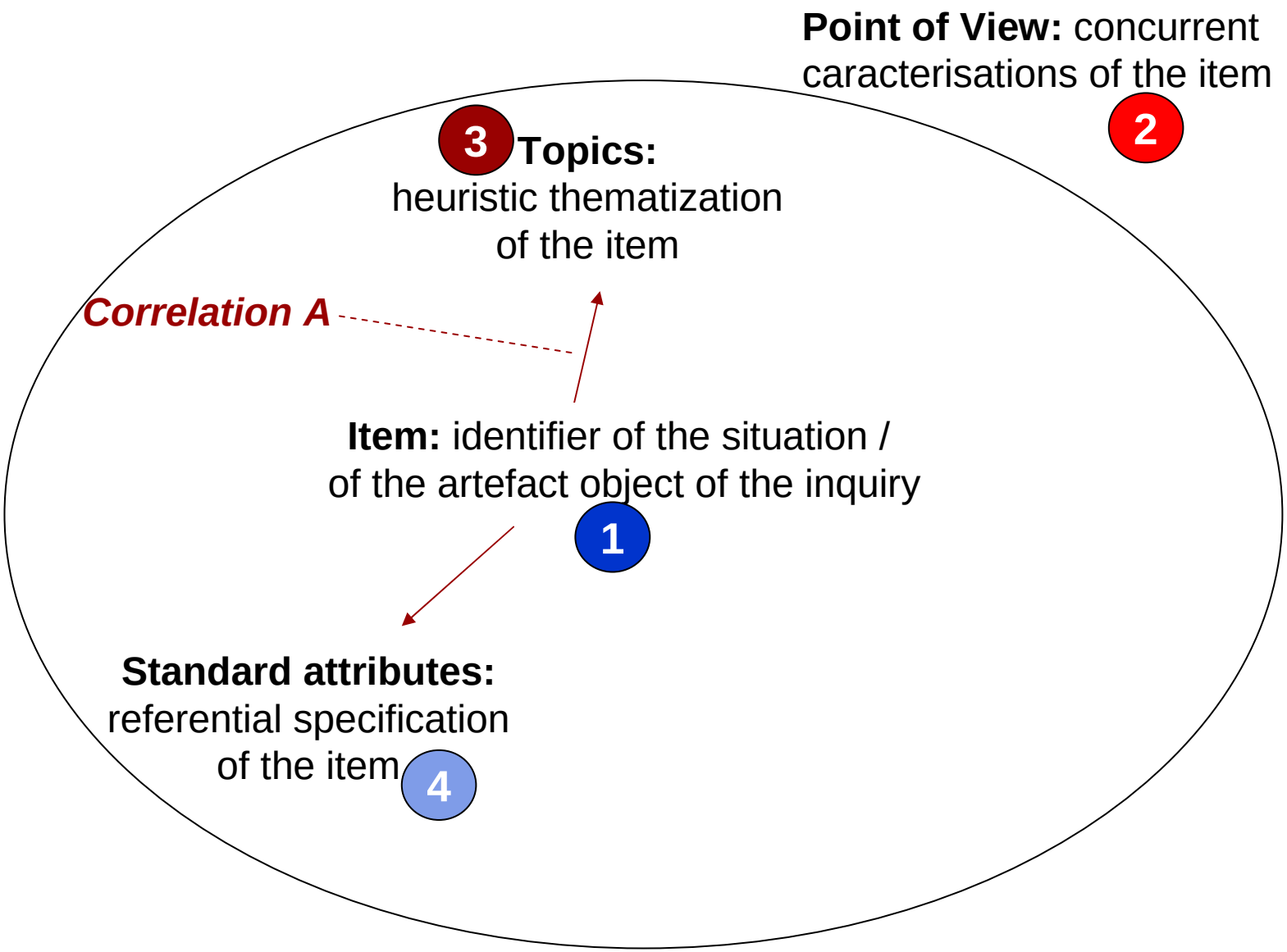
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Topics:
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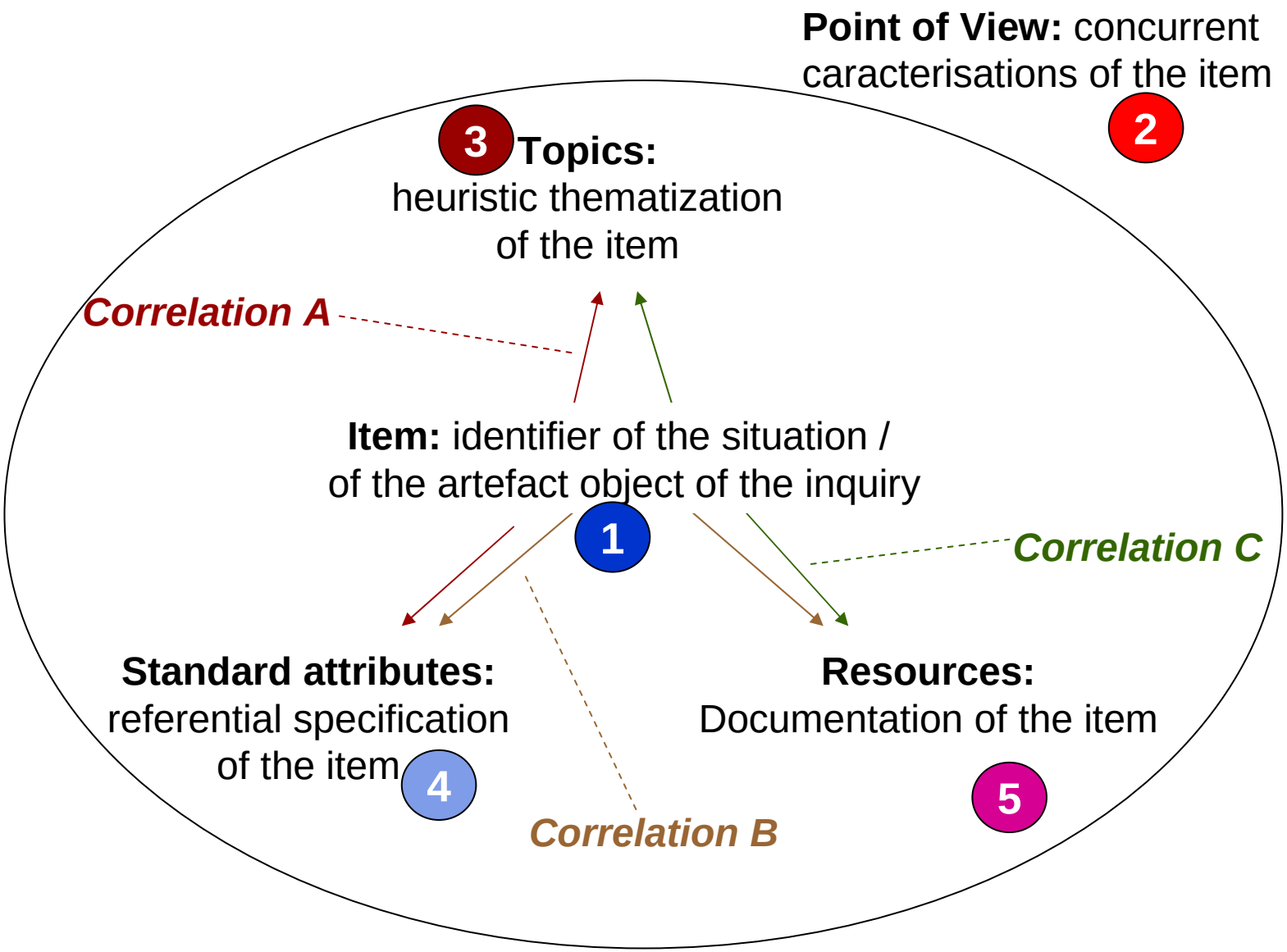
Standard attributes:
referential specification of the item
4

Hypertopic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Correlation C
Standard attributes:
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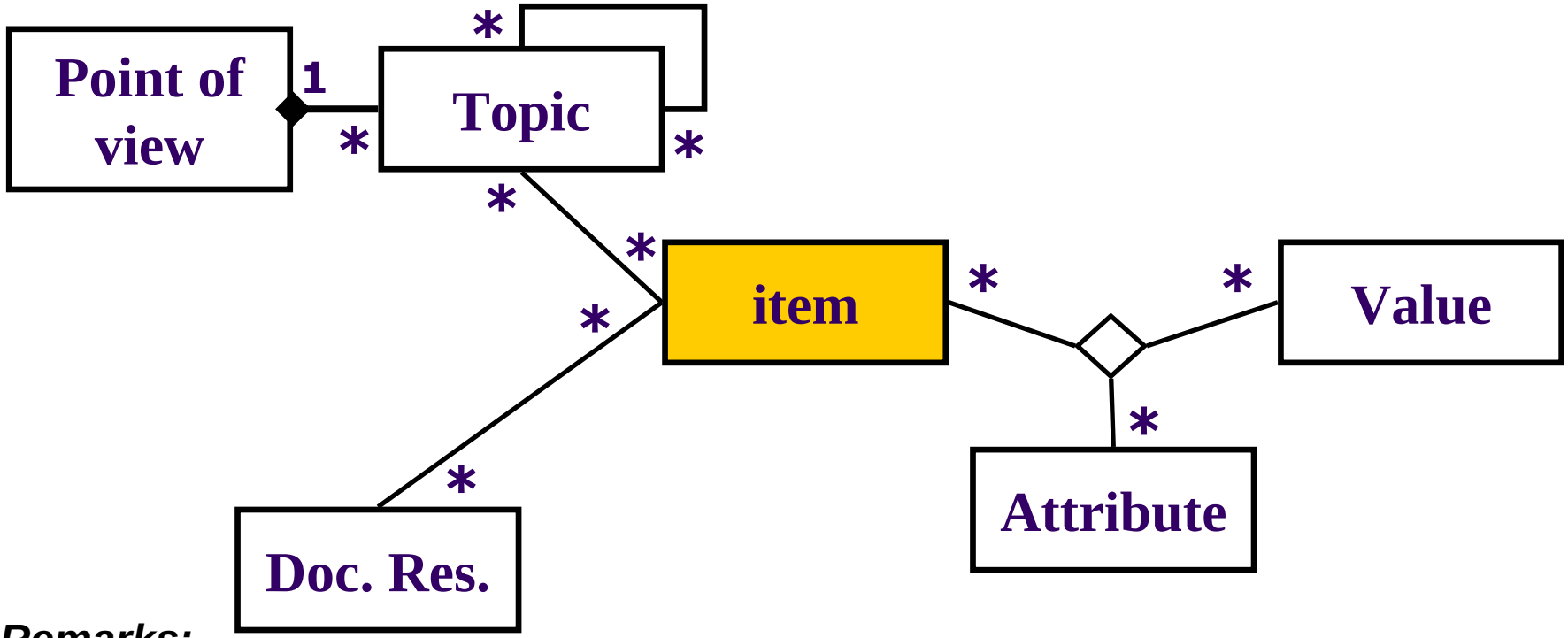
4
Resources:
Documentation of the item
5
Correlation B

Hypertopic model (UML representation)



Remarks:

-**The model is made to be understood by the community which use it to co-build the map;**

- Hypertopic is focused excusively on *a very few* basic constructs (certain are inspired by the TM), for *methodologial reasons* : to give to many end-users the ability to edit the map (items, topics) without any particular training , it is necessary to more constraint the TM language → to fix the usage makes easier to deploy the co-building within large communities

Hypertopic technical context

- Standardization

  - 2006 : XML Schema and standard protocol (cf. www.hypertopic.org)

  - bridges with Topic Map (XTM) , W3C Semantic Web standards…

- Tools

  Yet several open-source tools adress the « Socio Semantic Web » by using the Hypertopic model.

  - Argos-viewpoint server (http://sourceforge.net/projects/argos-viewpoint/) a repository for all topic maps folllowing the Hypertopic format
  - Porphyry (http://www.porphyry.org/) a « plug-in » with advanced functions
  - Cassandre, a CAGDAS (Content Analysis Software)Software tool for applications in social sciences to build, compare, and exchange qualitative analyses of textual materials (http://sourceforge.net/projects/cassandre-qda/)
  - Agoræ (http://sourceforge.net/projects/agora), a thin Hypertopic client :

    (now)
    - basic groupware functions and standard roles to edit (create, modify) an Hypertopic map by many distant users;
    - better methods, customizable procedures , roles design and roles taking to co-build the maps

    (future)
    - means to annotate nodes of the map (« post-it »-like messages), in order to facilitate discussions between users ;
    - graphical solutions helping to visualize, to trace actions and to compare maps;

  - CitizenMiles (http://www.blueinitiative.com) : attribution by community members of « Miles » (points, votes, Euros…) to items. Miles are special Hypertopic attributes allowing to evaluate or to support items (leading to use Hypertopic applications as collective decision support systems)

But how to collectively construct and maintain an Hypertopic map (= « *socio-semantic activity*”) ?

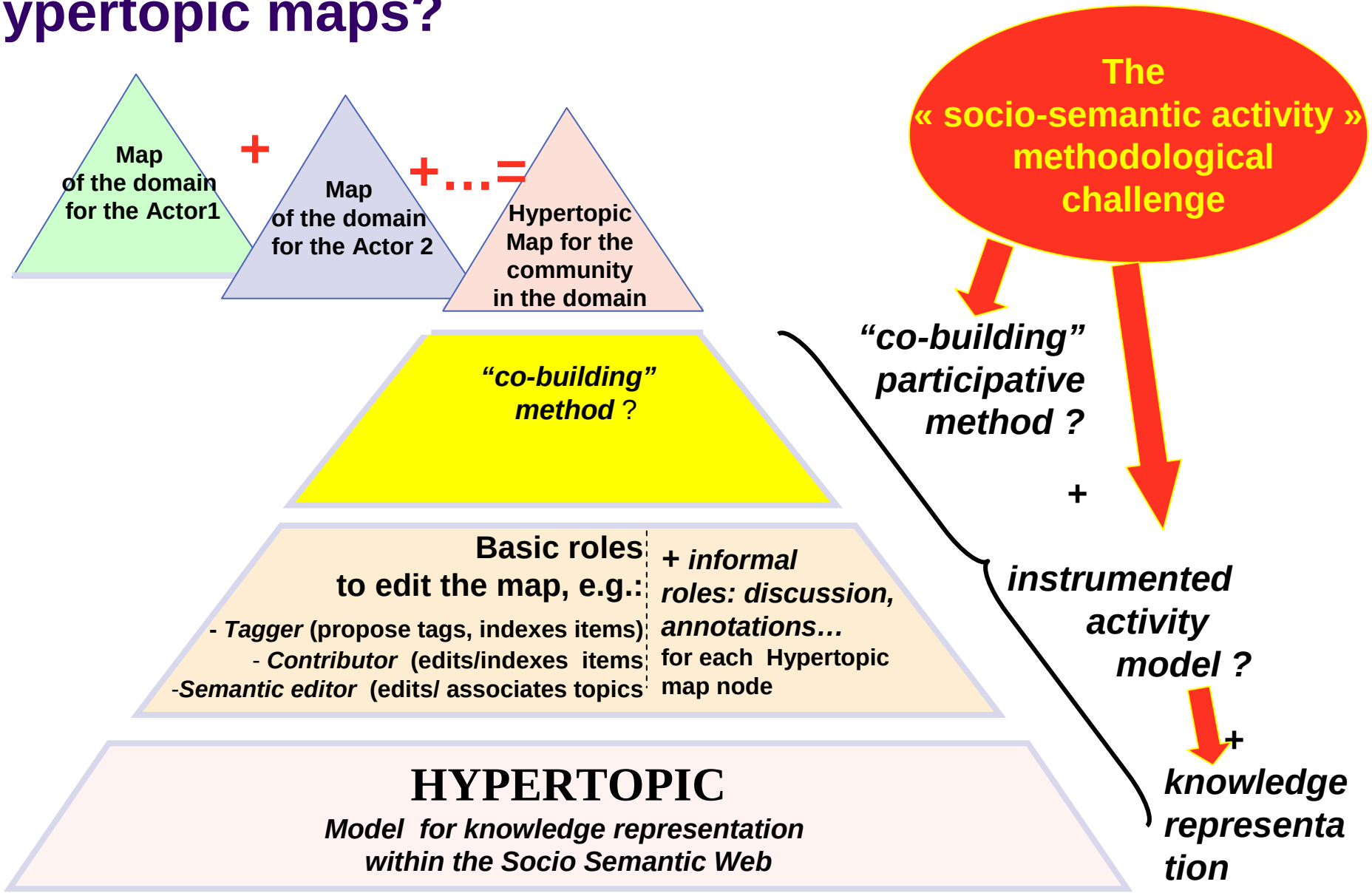
It is useful to distinguish:

- - a « bootstrapping » phase
  - to define the item, to define the first set of « points of view»
  - based (eventually) on folksonomies or on the confrontation of actors’ personal « design maps »
  - leading (eventually) to a « synthesis map » usable by the group
- - a phase of maintenance / evolution of the map

Methods explored to co-build Hypertopic maps in the two phases are many, we’ll give 3 examples

But before that : How to articulate the activity model with the knowledge representation model ?

How to articulate the models required for co-building Hypertopic maps?



The « socio-semantic activity » methodological challenge

- *To co-build maps by users themselves is a complex challenge*
- *Often it is necessary to let the community imagine its own architecture of cooperation and its socio-semantic activity (« participatory design » approach). Users need to dynamically adapt their specific social roles.*
- *Easy-to-read and flexible diagrammes for roles, activity…are needed to improve users' participation and facilitation.*
- *UML, SADT… diagrammes are too formal and « IT-specialists » oriented. They don't support vagueness / incompleteness*
- *→ Emphasis on CSCW studies, i.e. Role-Mechanisms [HERRMANN 04]: role assignement, role taking, role change, role definition, role making, Inter-role conflict, etc.*
- ***→ We choose the sociotechnical "SEEME" method** [HERRMANN 99] **to complete Hypertopic***

SeeMe diagrammes editor , Seeme tutorial :

http://web-imtm.iaw.ruhr-uni-bochum.de/iug/projekte/seeme/installer/index.html

http://web-imtm.iaw.ruhr-uni-bochum.de/iug/projekte/seeme/

Methods explored to co-build Hypertopic maps :

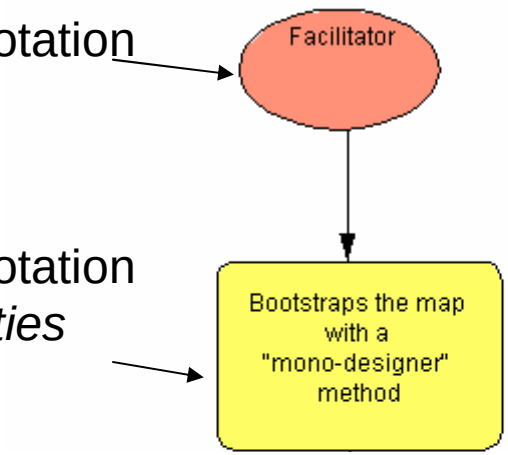
- 1)« Centralized » method (distance or presence workshops)→ with a facilitator role, who assists the emergence (and finally decides) of a consensual set of points of view
- 2)“Conflictual co-building method”, to make the conflicts more explicit
- 3)« Hybrid » method associating « top-down » « centralized » method and « bottom-up » folksonomies

1) The « centralized co-building » method

(with a facilitator -*was used in the « Agora/France-Telecom » case)*

SeeMe notation for *roles*

SeeMe notation for *activities*



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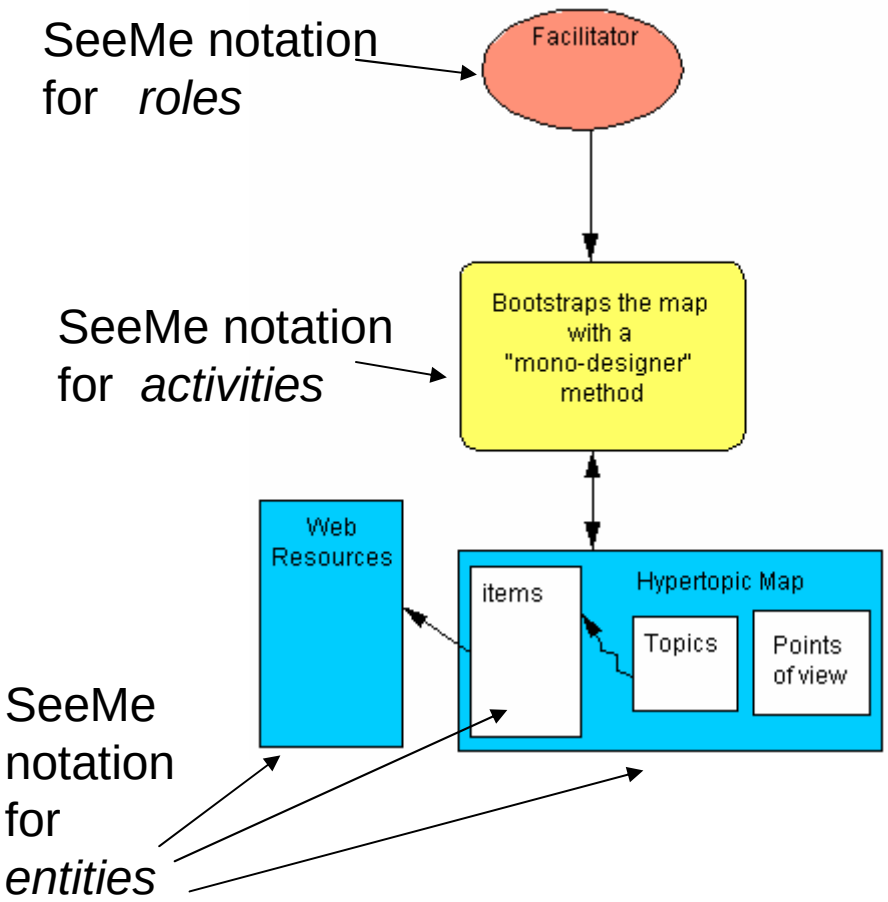

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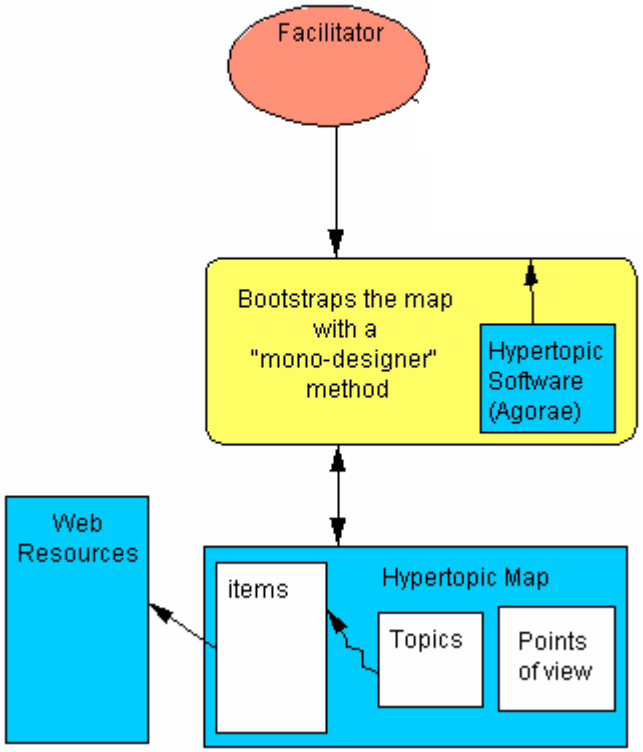

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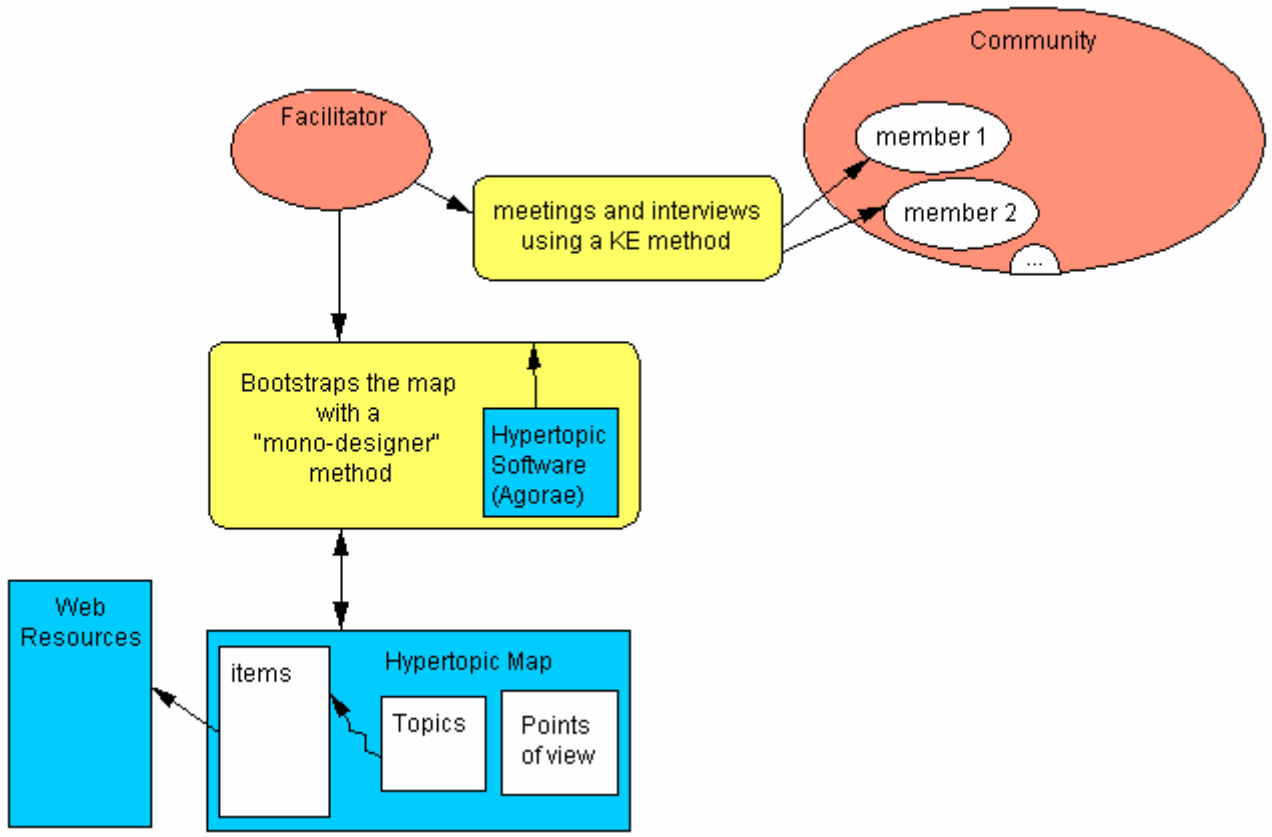

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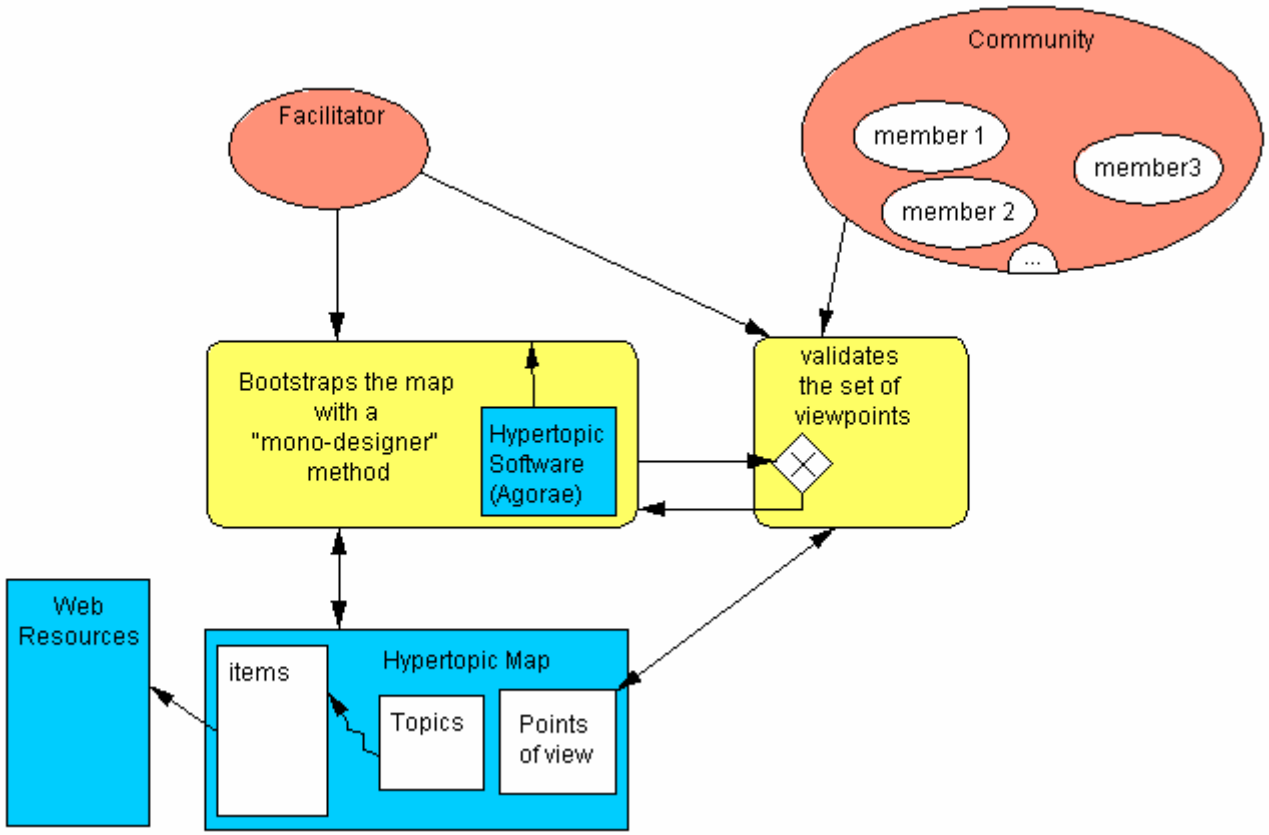

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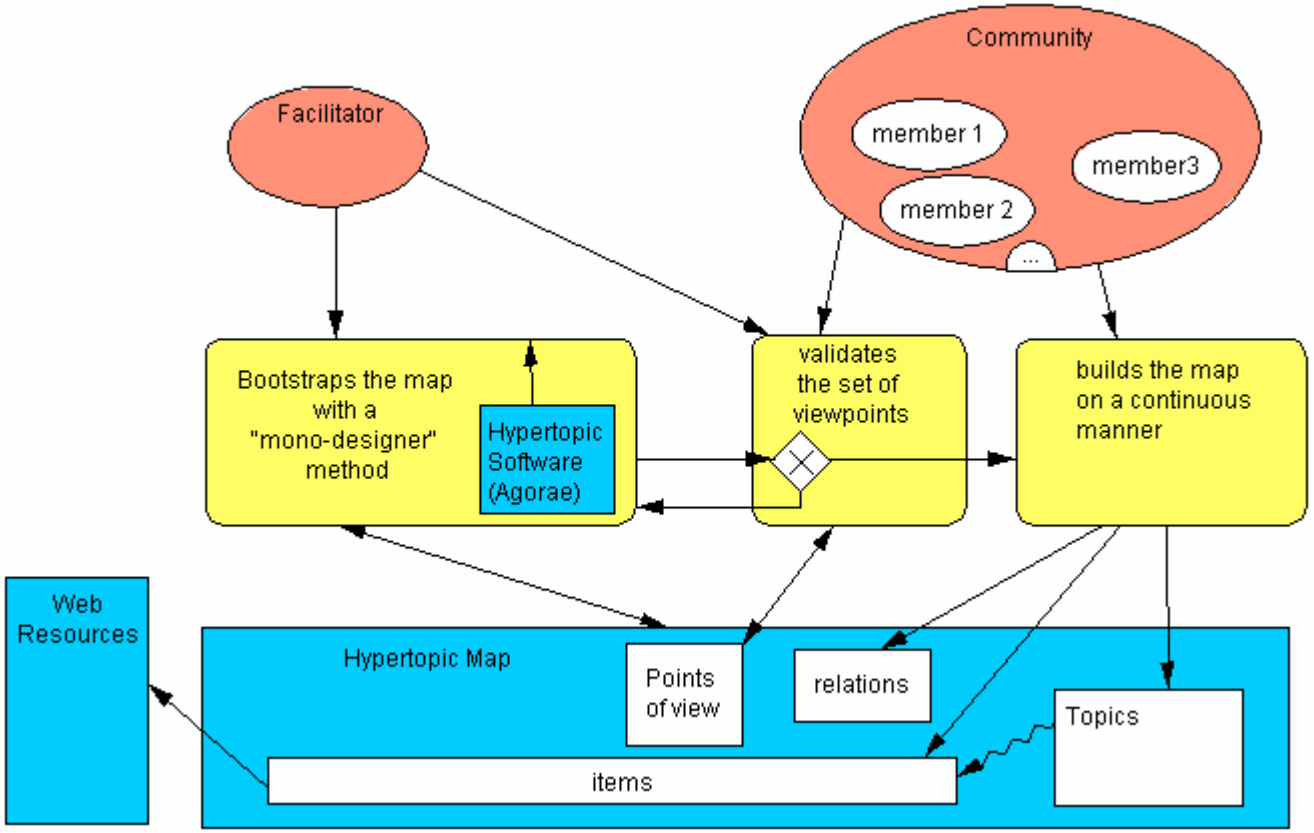
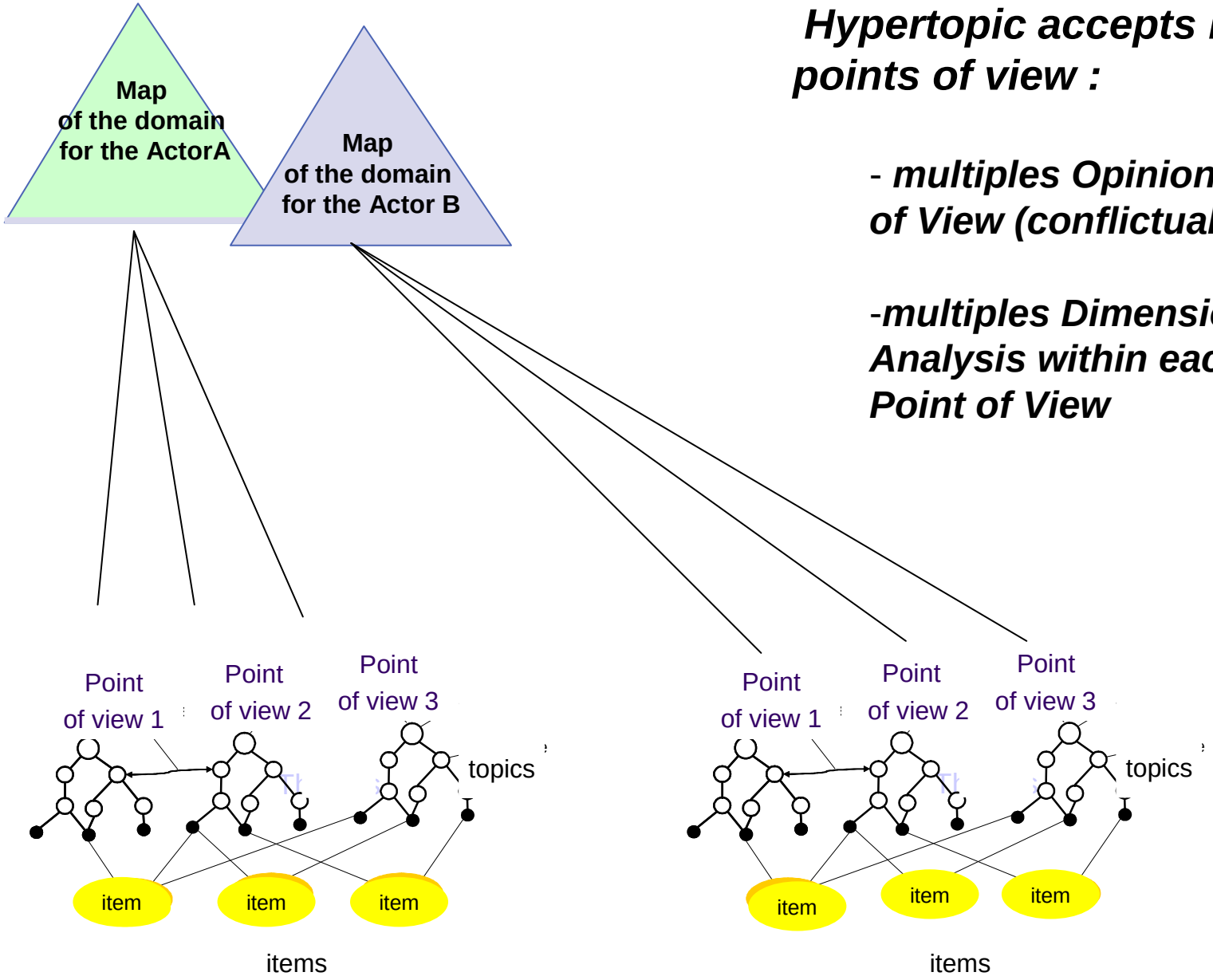


2) the “conflictual co-building” method

(without facilitator)



Hypertopic accepts multiples points of view :

- ***multiples Opinions or Points of View (conflictual plurality)***

-***multiples Dimensions of Analysis within each particular Point of View***

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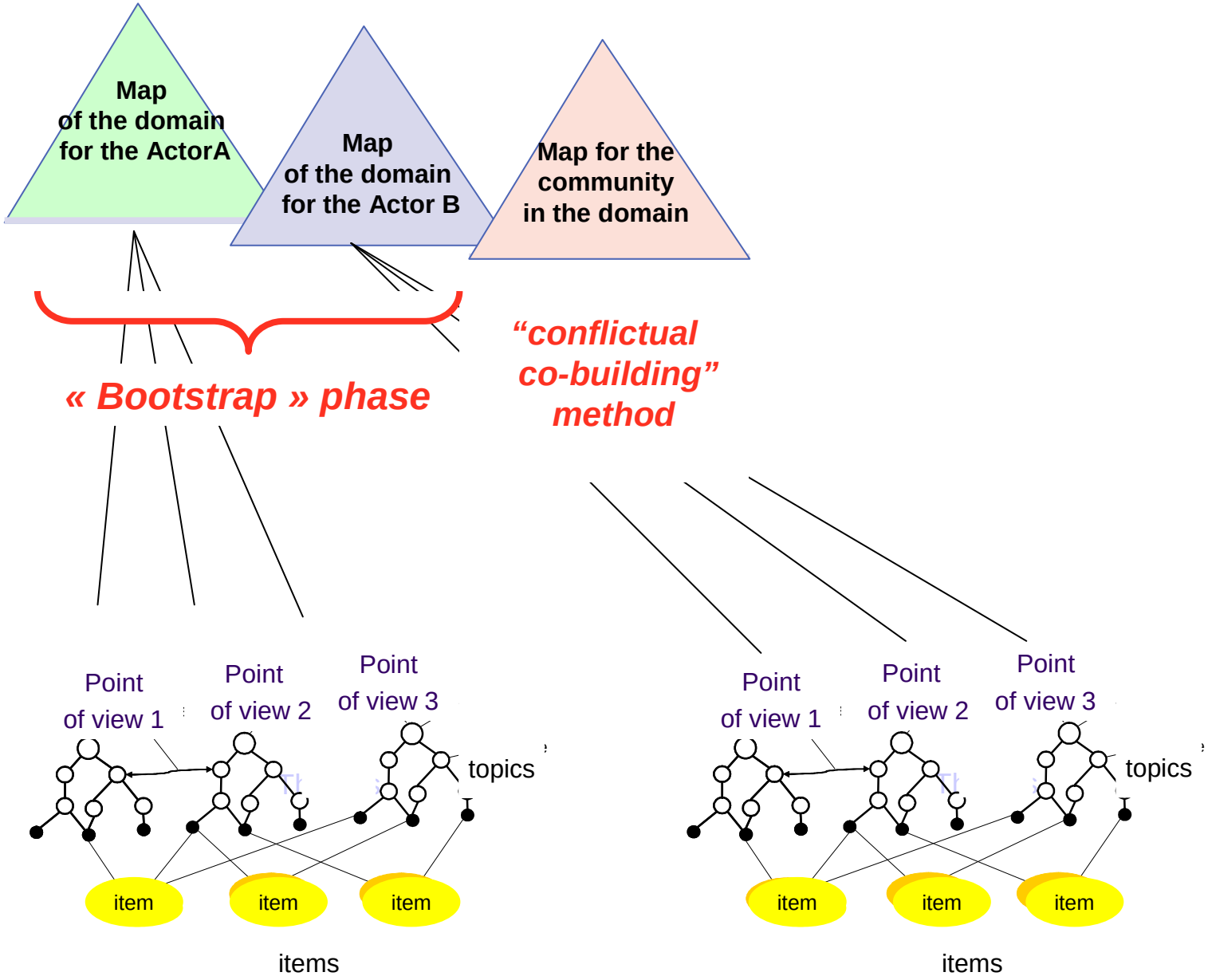

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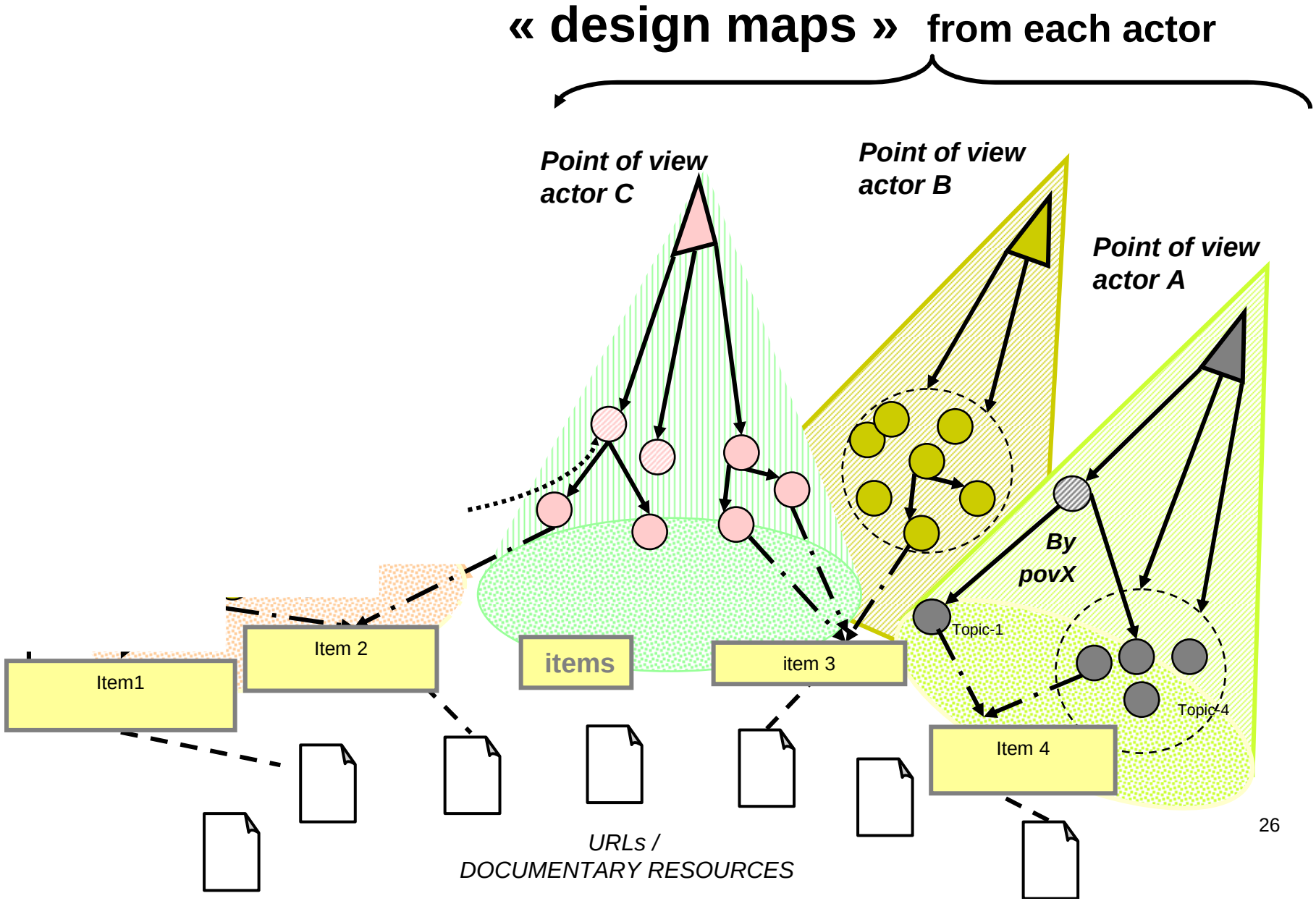
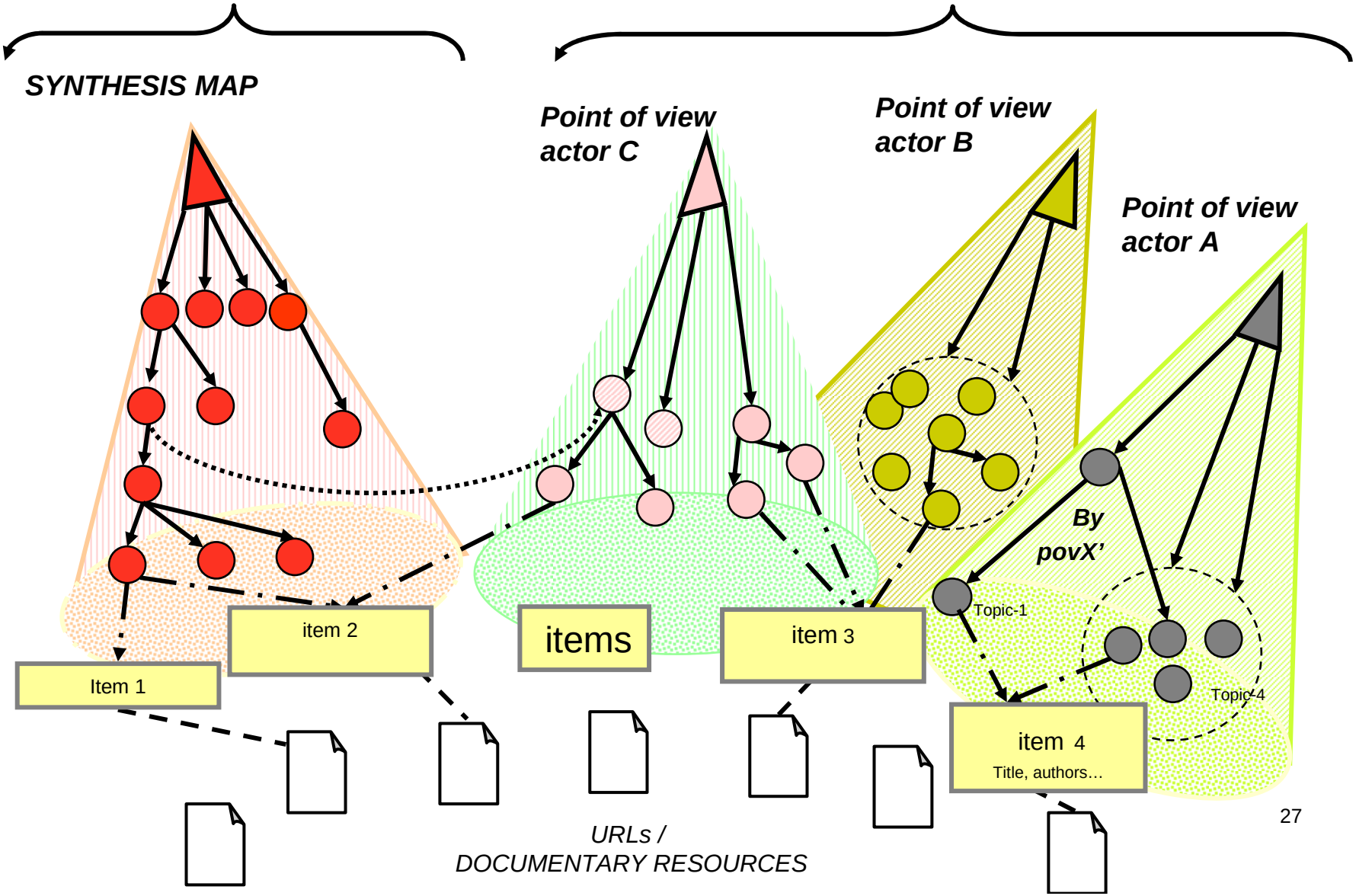
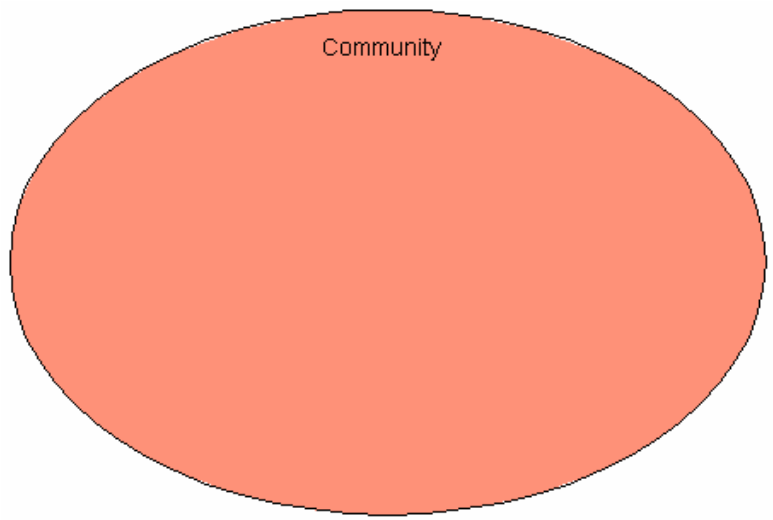


2) the “conflictual co-building” method

« synthesis map » ←→ *n* « design maps »



2) SeeMe representation of the “conflictual co-building” method



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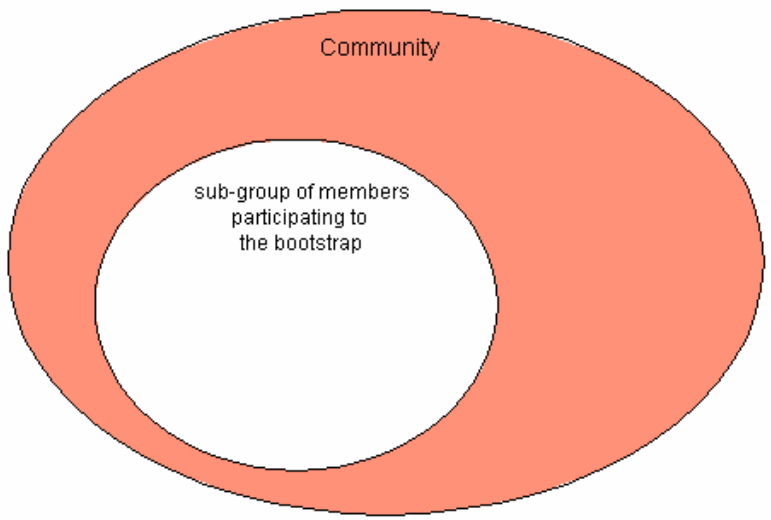

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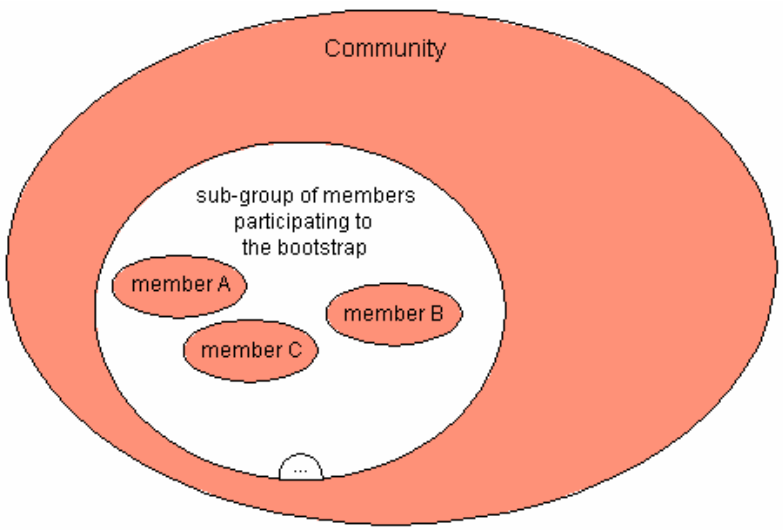

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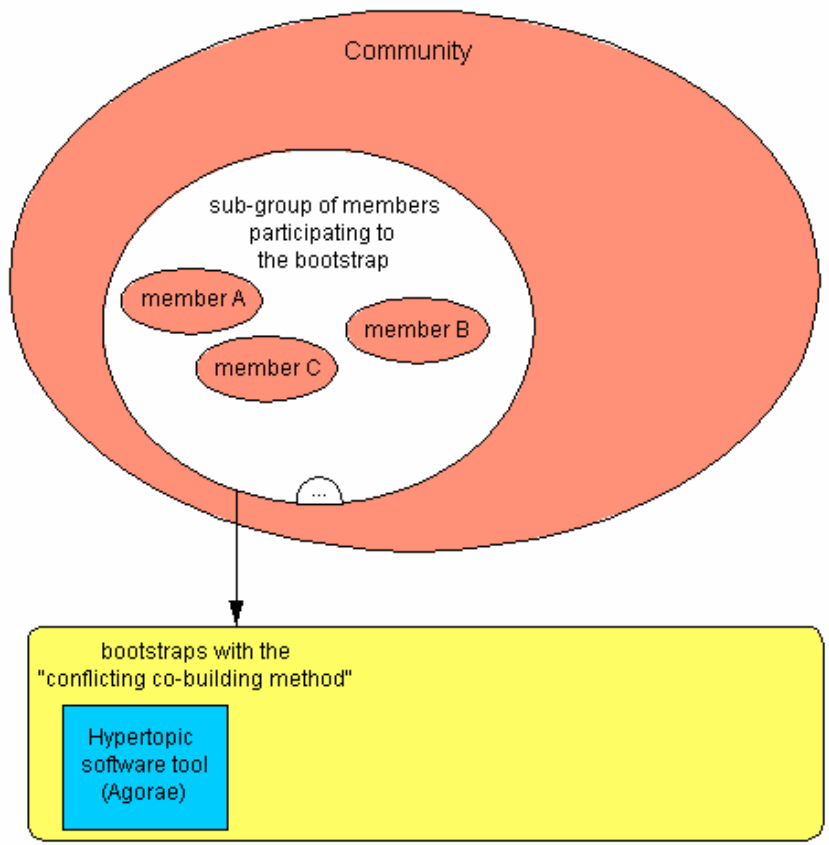

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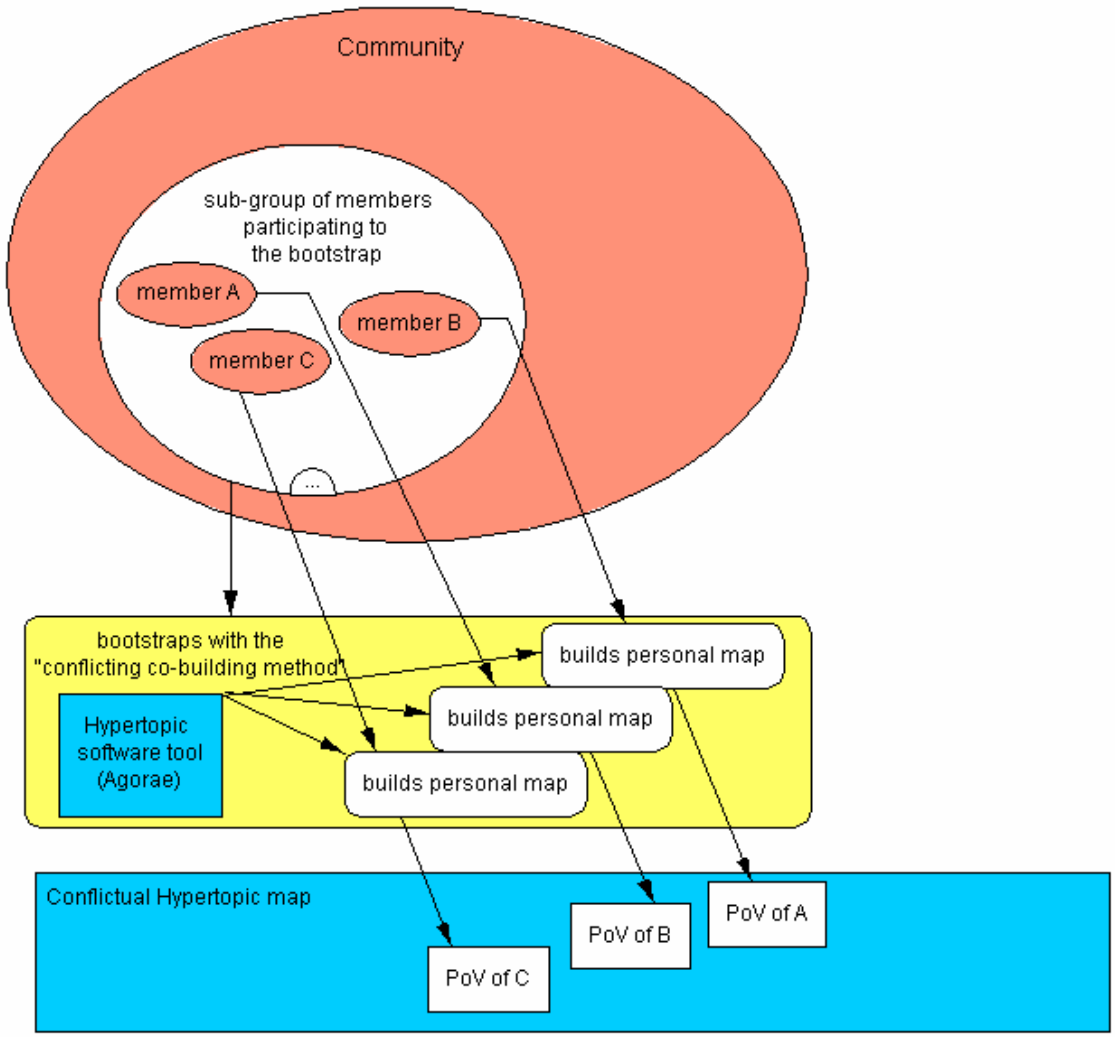

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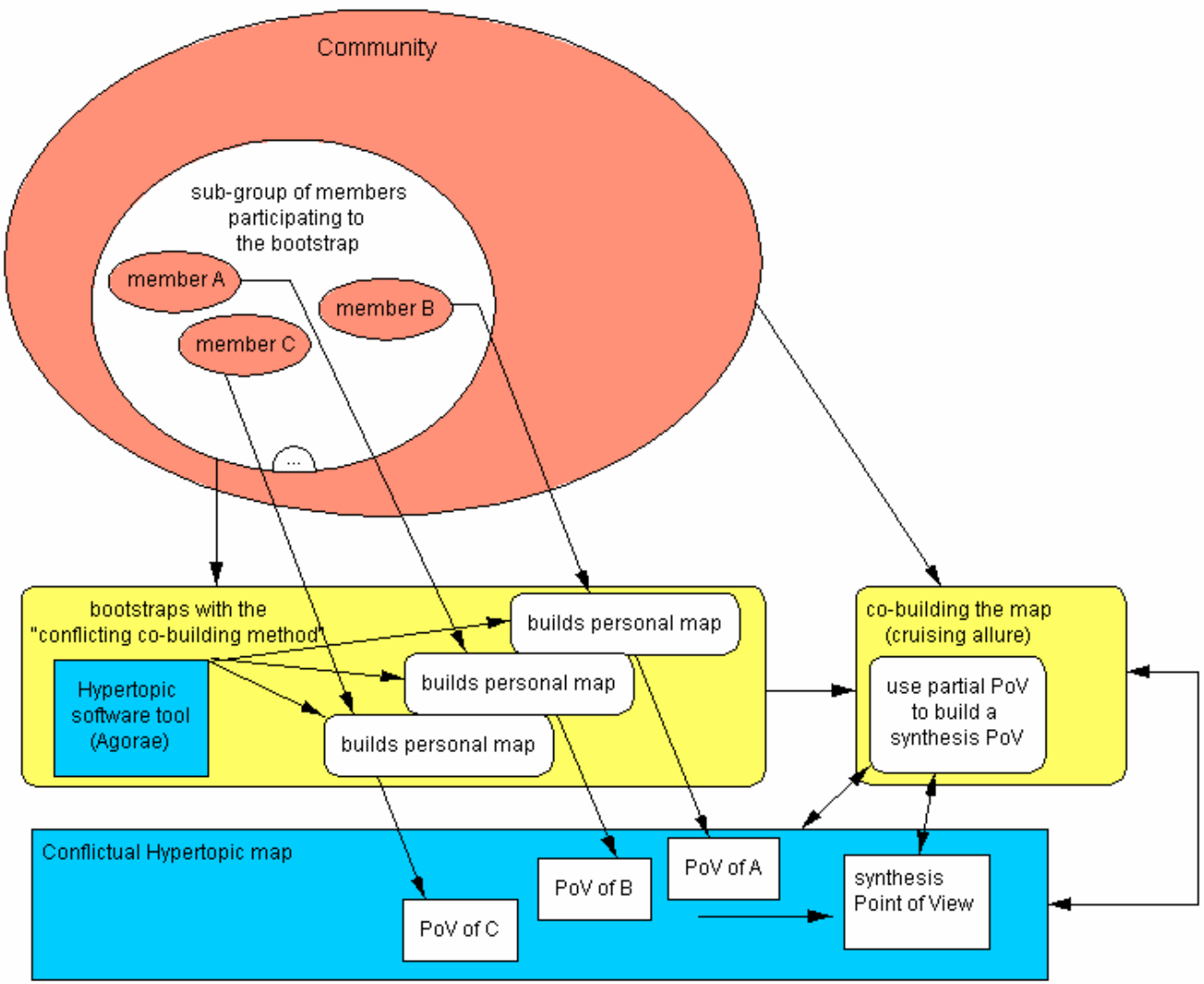
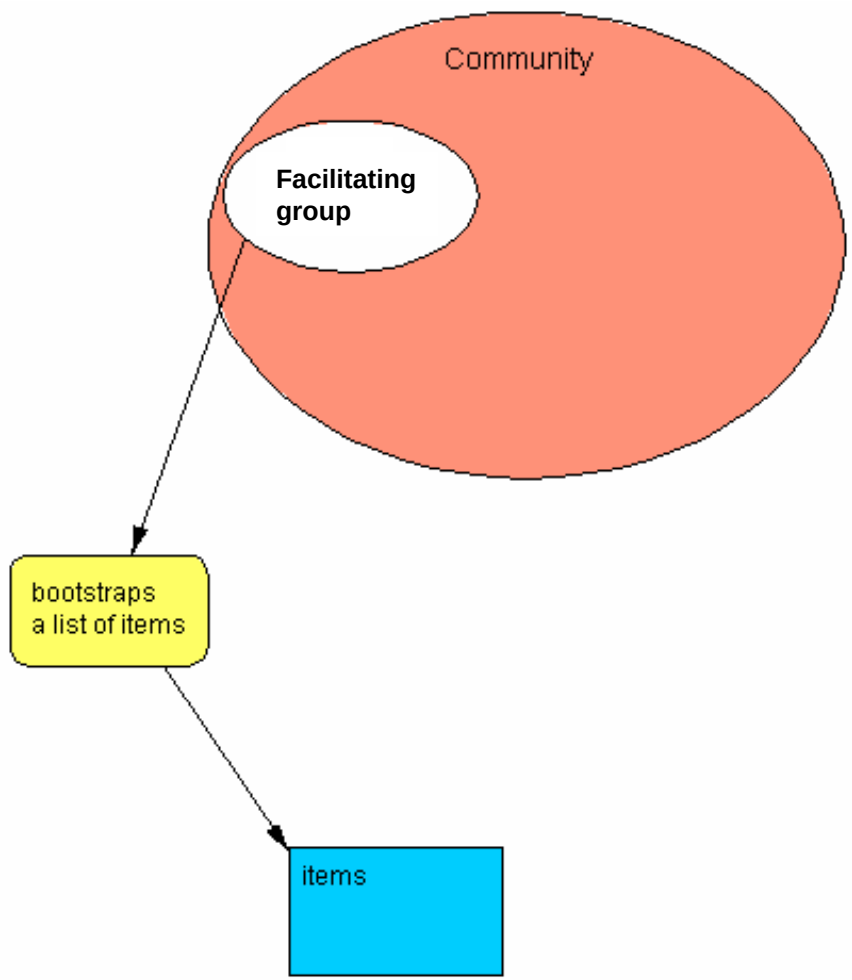
was used in the « DKN-SEQXAM » case



3) « hybrid » co-building method with Agoræ

(presently used in the « Initiatives-21 » case: a « e-catalog » of projects and initiatives in the field of sustainable developpement)



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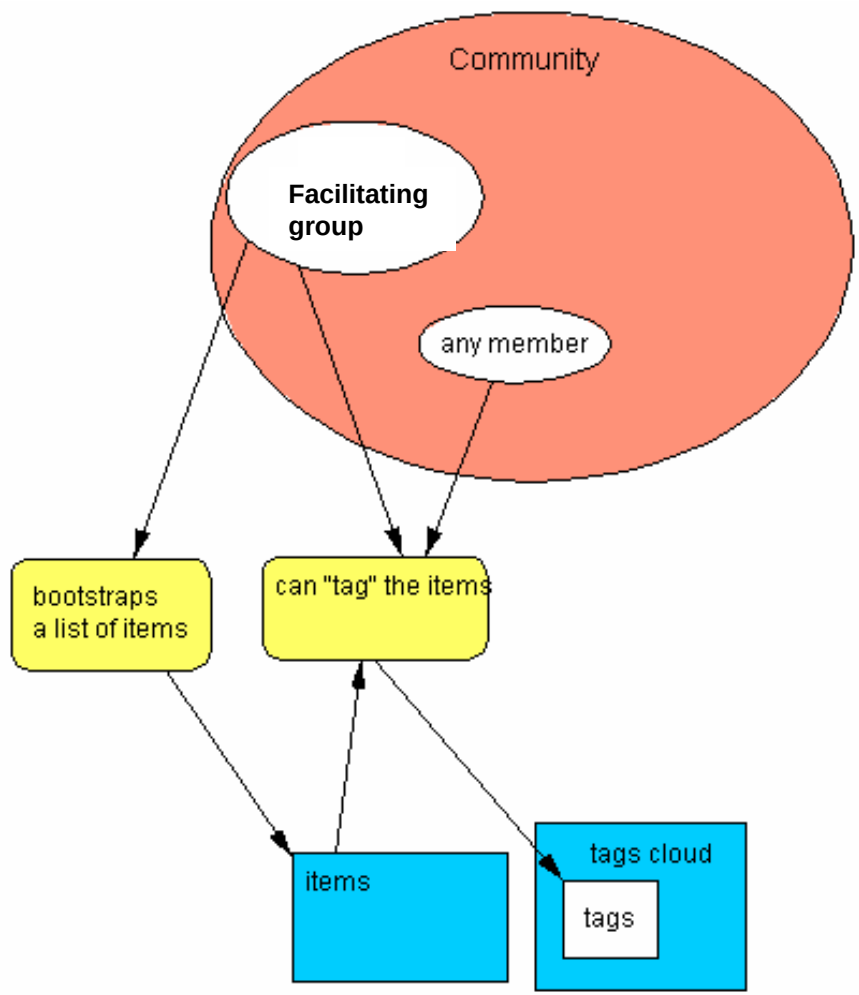

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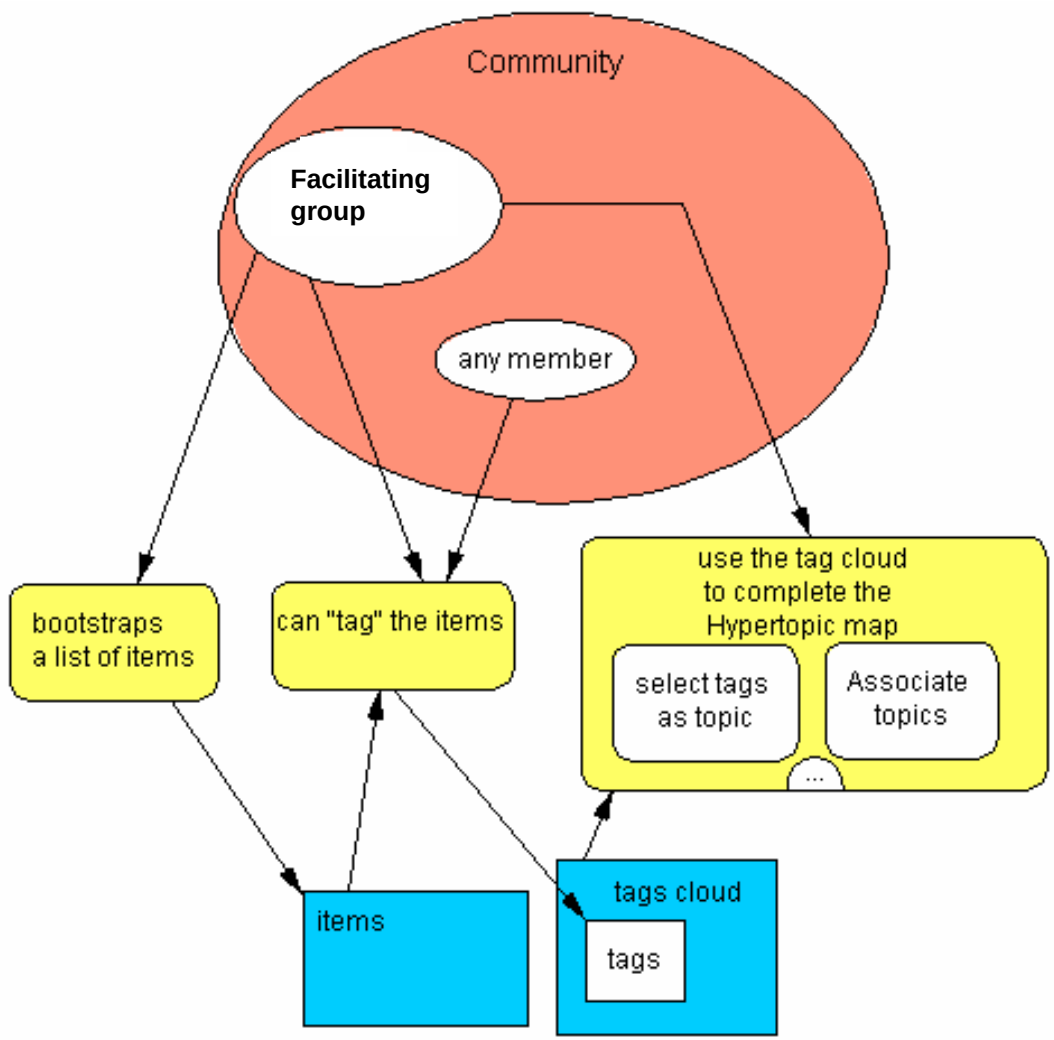

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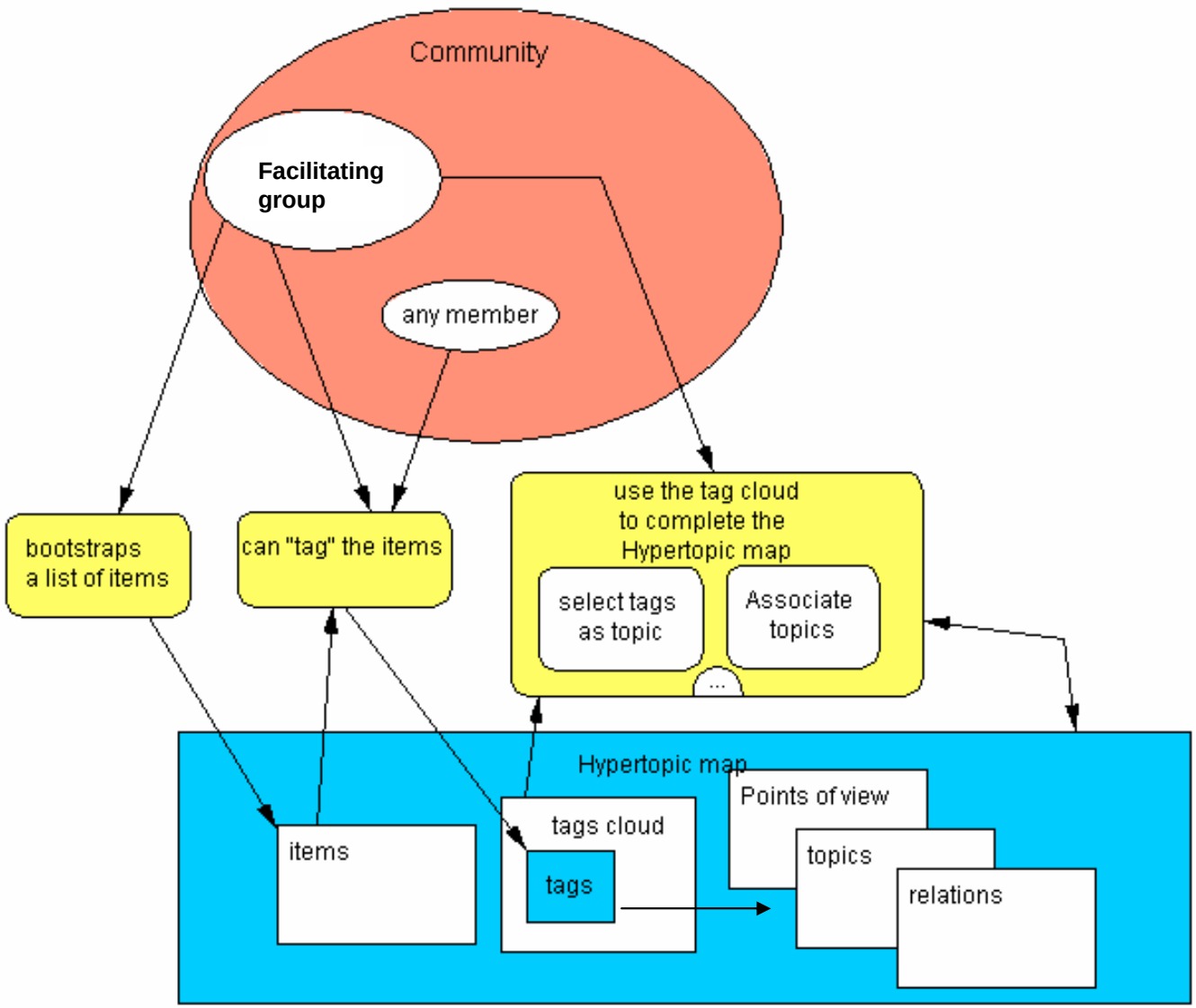

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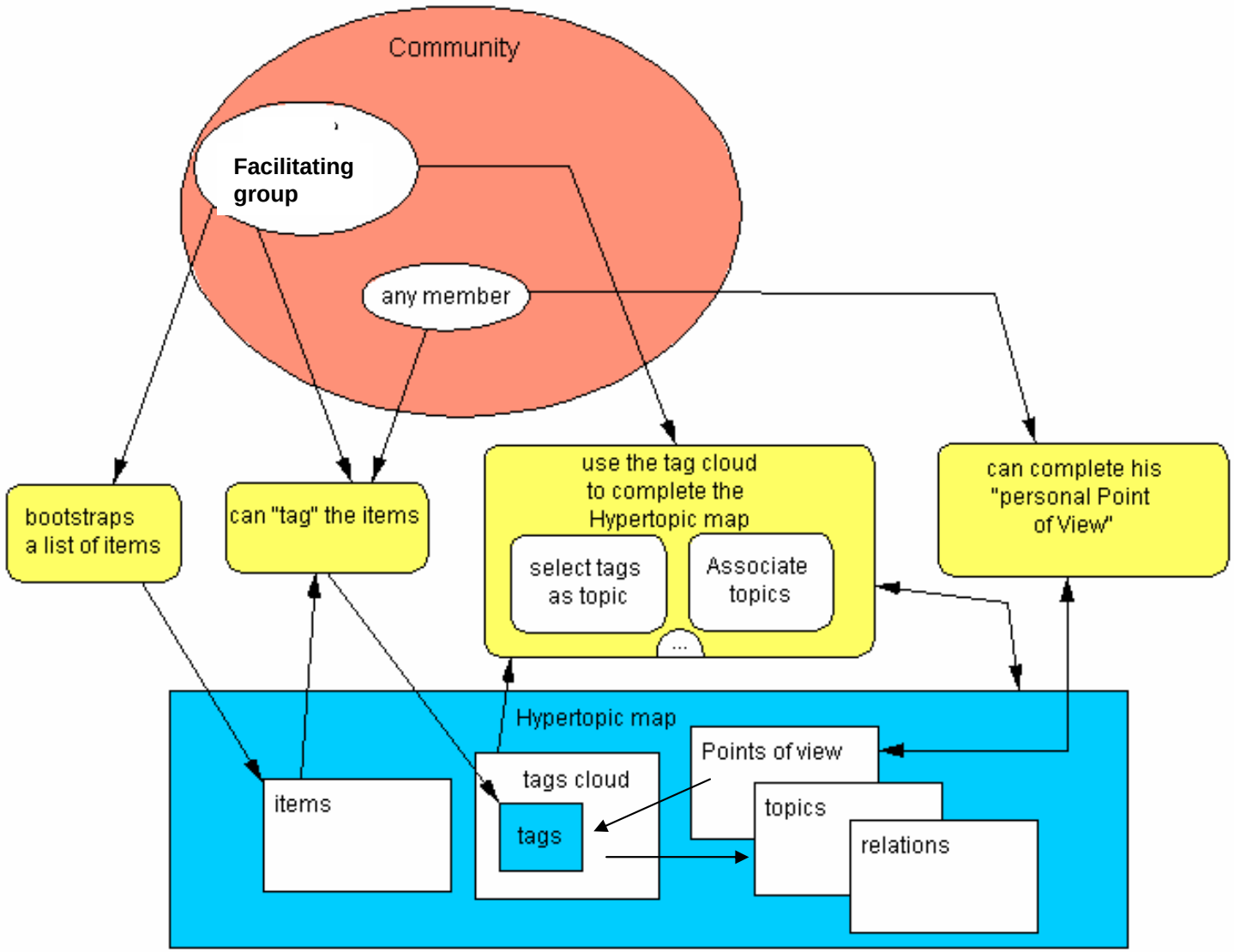

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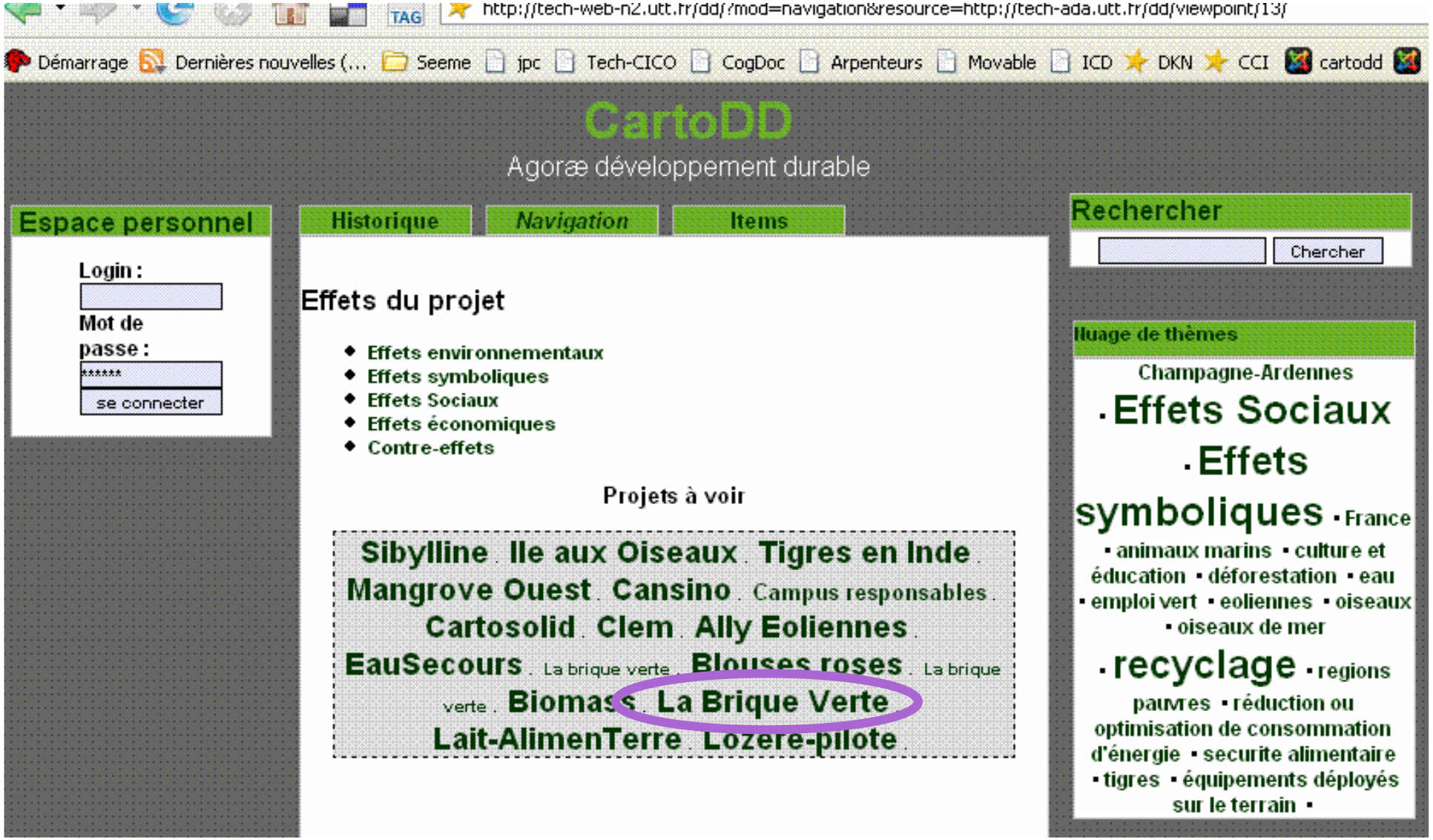

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- Effets symboliques
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- Effets économiques
- Contre-effets

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La brique verte

Effets symboliques - Effets Sociaux -

Fiche descriptive

- Description : RÃ©cupÃ©ration intelligente des jeux Lego inutilisÃ©s
- Lancement : 2007
- Localisation : Troyes

Ressource(s) documentaire(s)

- Revue de presse
- Site Web

Rechercher

Chercher

Nuage de thèmes

Effets Sociaux · Effets symboliques

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vclage · regions

es · réduction ou

ion de consommation

· securite alimentaire

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culture et éducation
déforestation
emploi vert
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oiseaux de mer
recyclage
pauvres
réduction ou optimisation de consommation d'énergie
securite alimentaire
tigres
équipements déployés sur le terrain

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Effets du projet >

Effets environnementaux

- Biodiversité
- déforestation
- réduction ou optimisation de consomm
- recyclage
- dépollution
- énergies renouvelables
- eau

Projet(s) Pertinent(s)

Cartographier

Thèmes

Ajouter un thème
Suppr. courant
Copier courant
Couper courant

Items

Ajouter un item

Projets à

Sibylline . Ile aux Oisea
Mangrove Ouest . Cansino . Campus responsables .
Cartosolid . Clem . Ally Eoliennes .
EauSecours .

Chercher

Champagne-Ardennes • France • animaux marins • déforestation • eau • éoliennes • oiseaux
oiseaux de mer
• recyclage • réduction ou optimisation de consommation d'énergie • tigres • équipements déployés sur le terrain •

http://tech-web-n2.utt.fr/dd/?mod=navigation&resource=http://tech-
Démarrage | Dernières nouvelles (... | Seeme | jpc | Tech-CICO | CogDoc | Arpenteurs | Movable
CartoDD
Agoræ développement durable
Espace personnel | Historique | Personnel | Navigation | Items
Bienvenue cahier
Ajouter utilisateur
se déconnecter

Clem

recyclage -

Fiche

- 1.code : clem
- 2.titre : Réhabilitation du porte-avion Clemenceau au profit du développement durable

Ressource(s) documentaire(s)

- resume et commentaire
- site web

Cartographier
Items
Ajouter un attribut
Ajouter une resource
Resource :
URI:
+

http://tech-web-n2.utt.fr/dd/?mod=navigation&resource=http://tech-ada.utt.fr/dd/viewpoint/13/topic/90/

Démarrage | Dernières nouvelles (... | Seeme | jpc | Tech-CICO | CogDoc | Arpenteurs | Movable | ICD | DKN | CCI | cartodd

CartoDD

Agoræ développement durable

Espace personnel

Bienvenue cahier

Ajouter utilisateur
se déconnecter

Cartographier

Thèmes

Ajouter un thème
Suppr. courant
Copier courant
Couper courant

Items

Ajouter un item

Historique | Personnel | *Navigation* | Items

Effets du projet >

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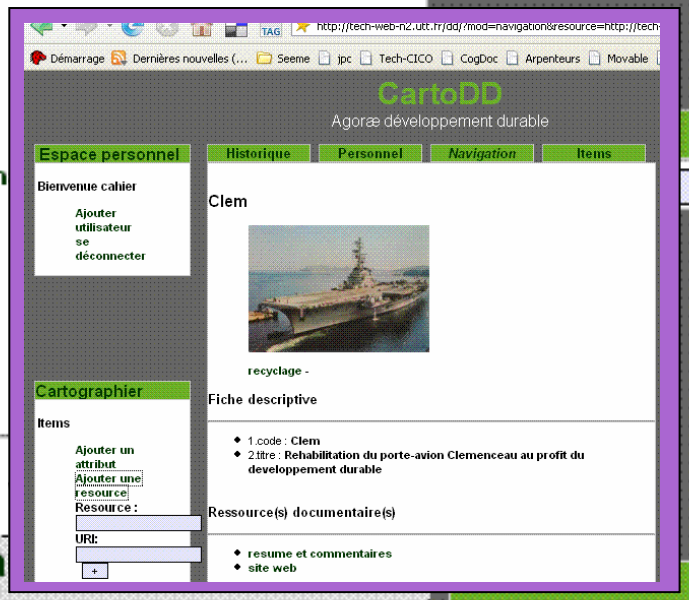
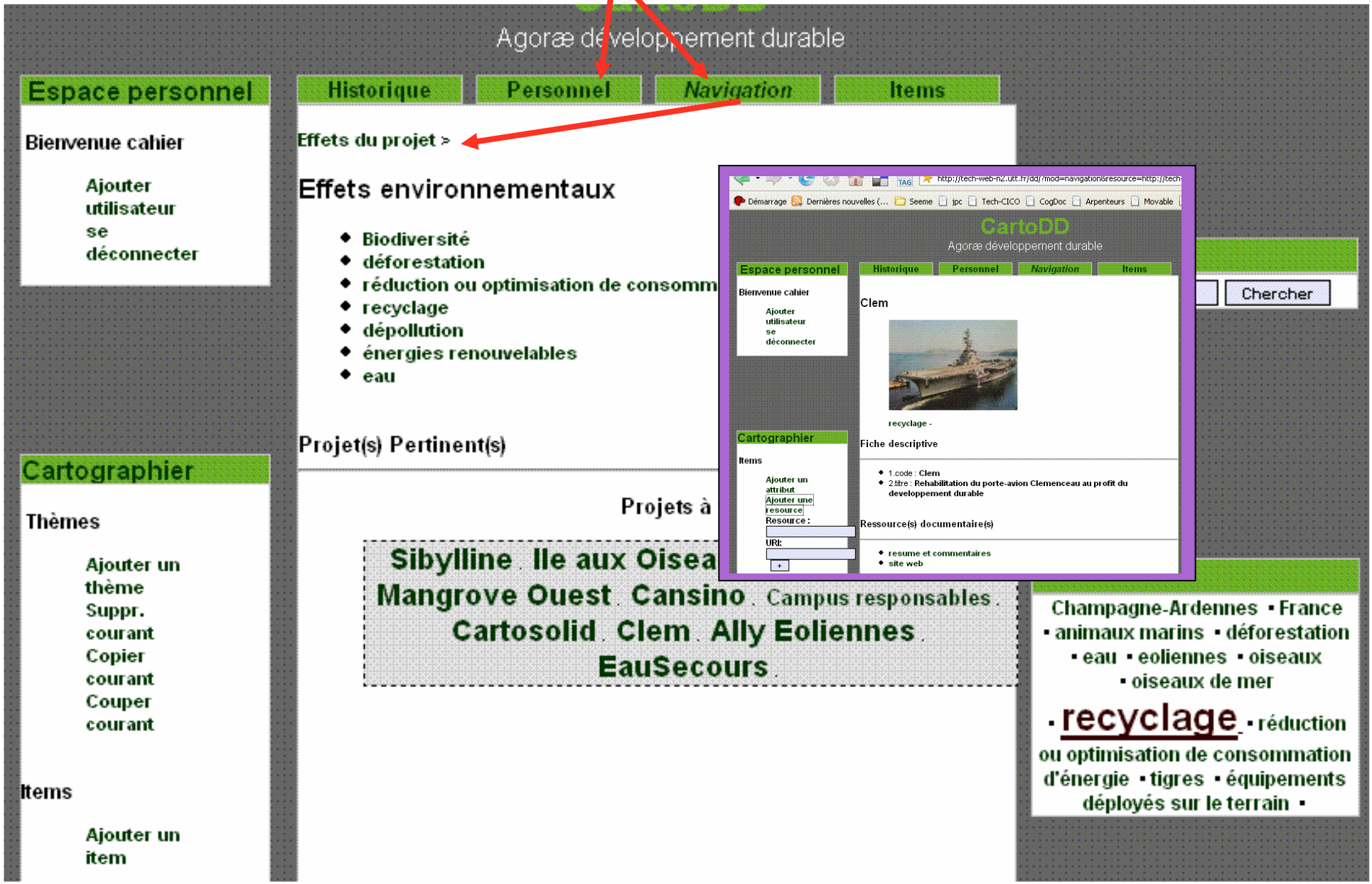
Chercher

Champagne-Ardennes ▪ France ▪ animaux marins ▪ déforestation ▪ eau ▪ eoliennes ▪ oiseaux ▪ oiseaux de mer ▪ recyclage ▪ réduction ou optimisation de consommation d'énergie ▪ tigres ▪ équipements déployés sur le terrain ▪



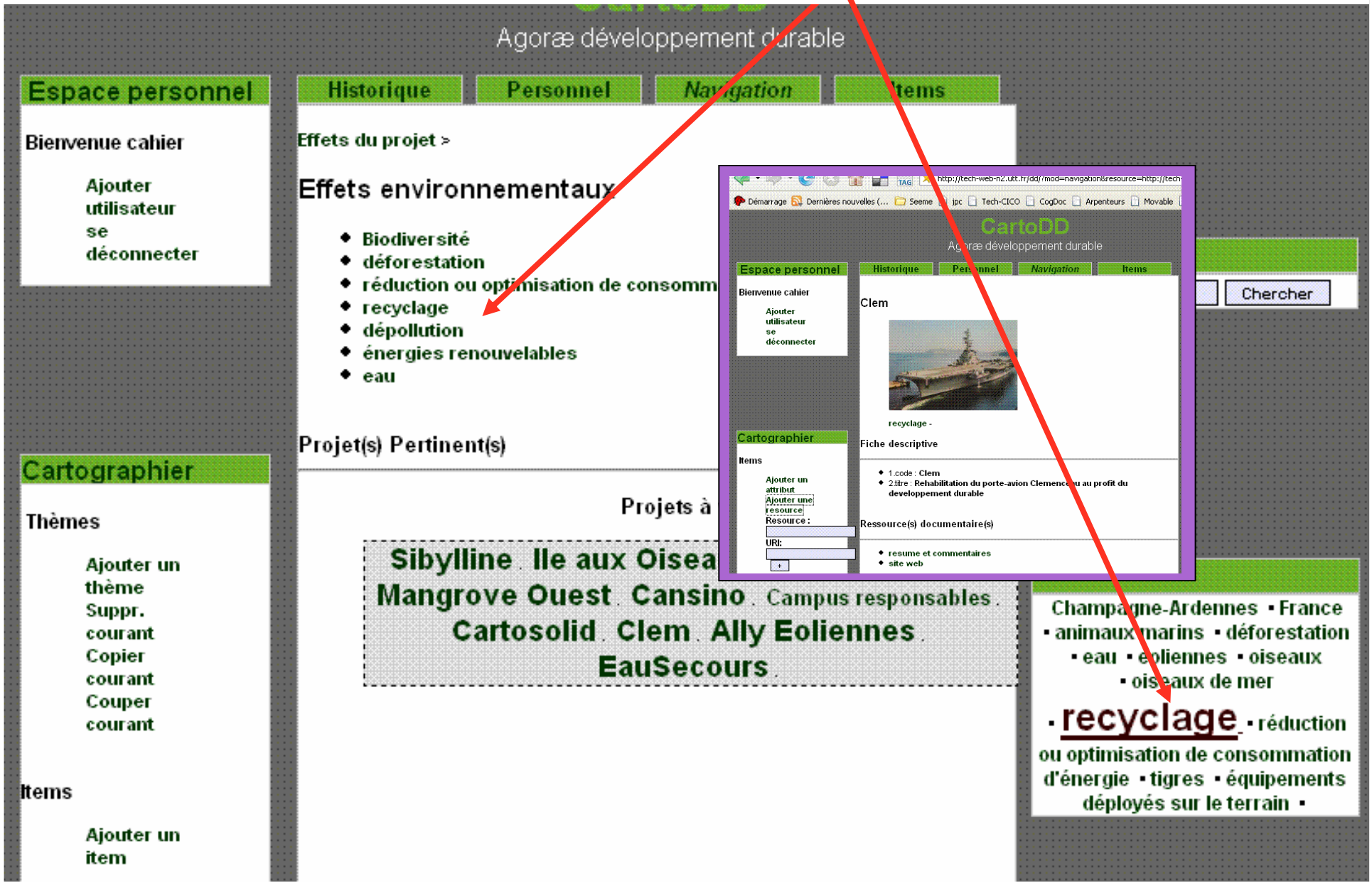
Information Seeking in a Socio-Semantic Web Application

uses all Hypertopic concepts: points of view,



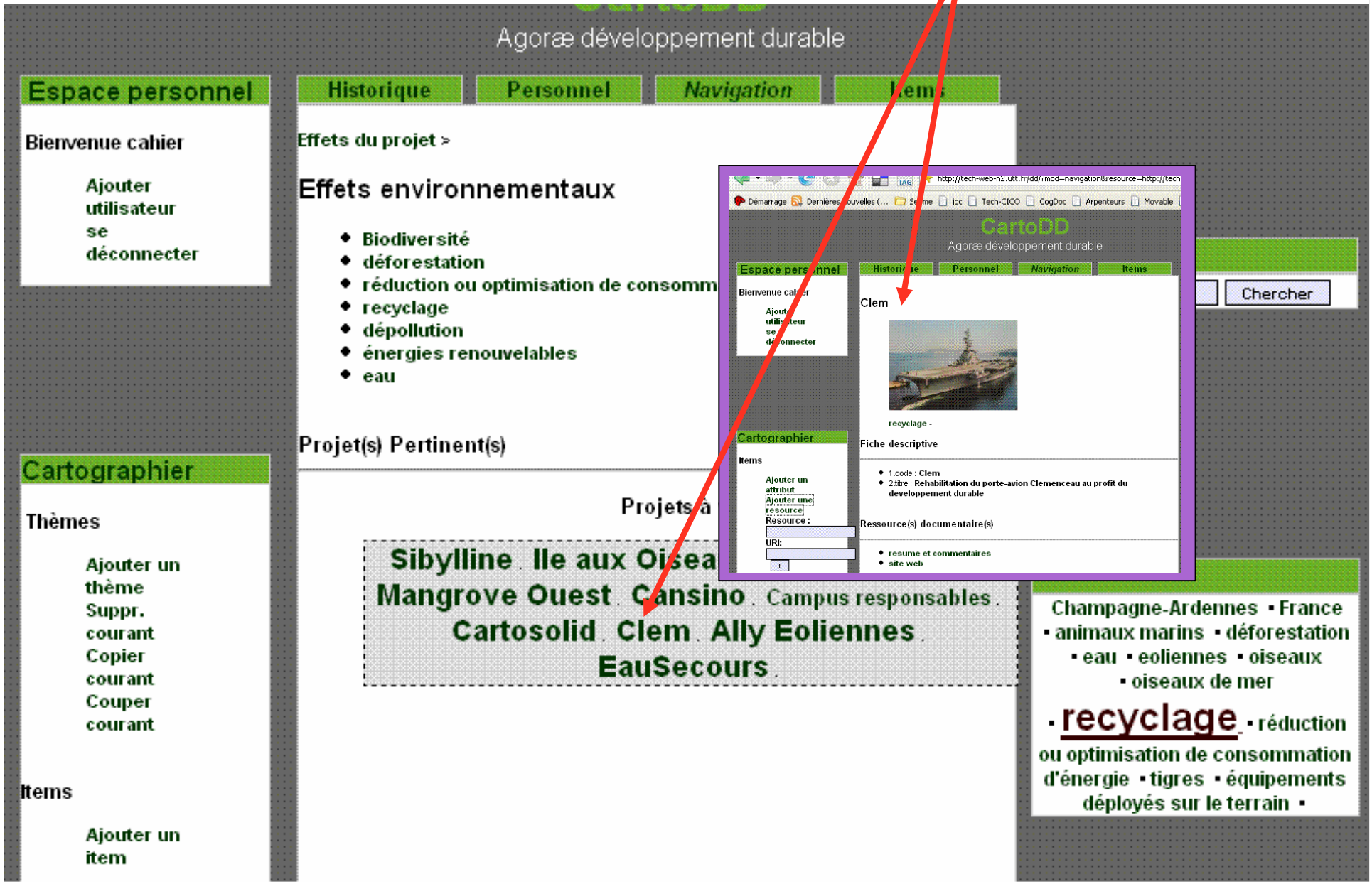
Information Seeking in a Socio-Semantic Web Application

uses all Hypertopic concepts: points of view, topics



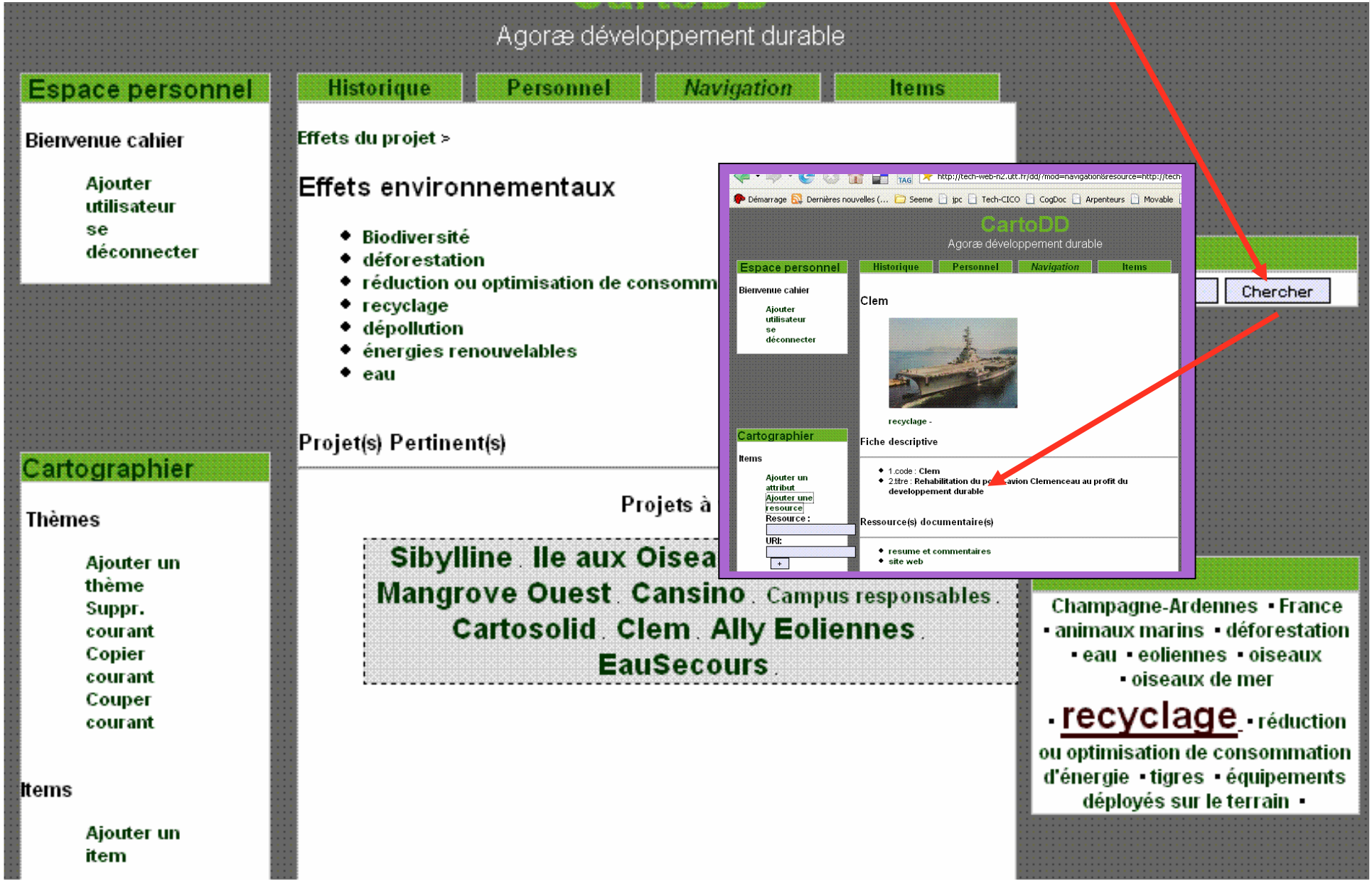
Information Seeking in a Socio-Semantic Web Application

uses all Hypertopic concepts: points of view, topics , items



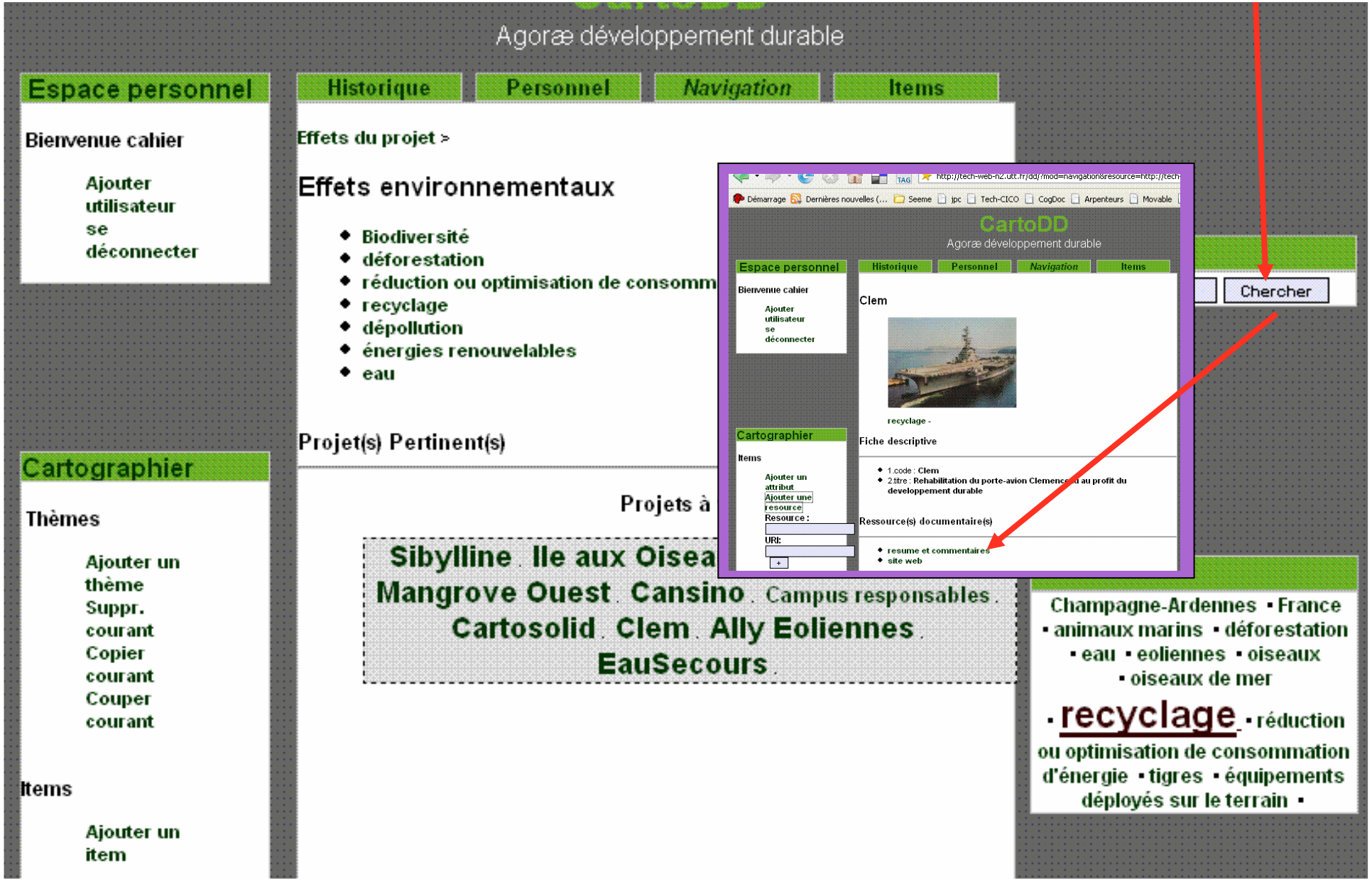
Information Seeking in a Socio-Semantic Web Application

uses all Hypertopic concepts: points of view, topics , items , attributes



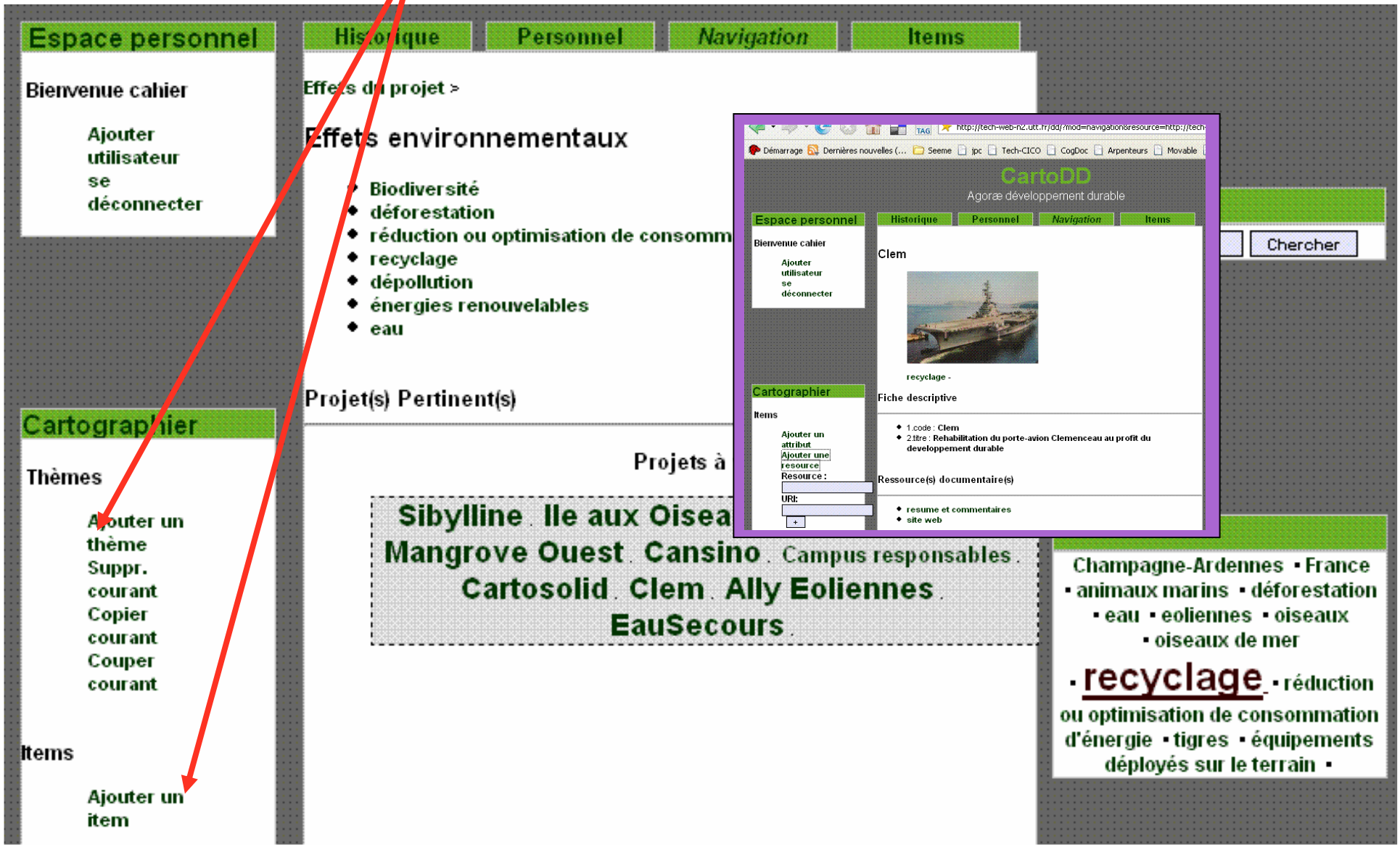
Information Seeking in a Socio-Semantic Web Application

uses all Hypertopic concepts: points of view, topics , items , attribute , resources



Information Seeking in a Socio-Semantic Web Application

uses all Hypertopic concepts: points of view, topics , items , attribute , resources , and possibility to build the map within the inquiry activity



Information Seeking in a Socio-Semantic Web Application

uses all Hypertopic concepts: points of view, topics , items , attribute , resources , and possibility to build the map within the inquiry activity

References

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Cahier J.-P., Zaher L'H., Zacklad M., « Cooperative building of multi-points of view topic maps using Hypertopic and socio-technical approaches”, 3rd International Conference on Topic Maps Research and Applications (TMRA’07 Leipzig,Germany), “Scaling Topic Maps” 11-12 oct. 2007

Questions ?

- ***Démo Agorae V1 / DKN SEQXAM : (conflictual co-building)***
  http://tech-web-n2.utt.fr/dkn

- ***Démo Agorae V2 / CartoDD-Initiatives 21 (hybrid method)***
  http://tech-web-n2.utt.fr/dd/

- ***Slides of the present presentation can be downloaded (next thursday) on :***
  http://cahier.tech-cico.fr/docs/icpw07.pdf

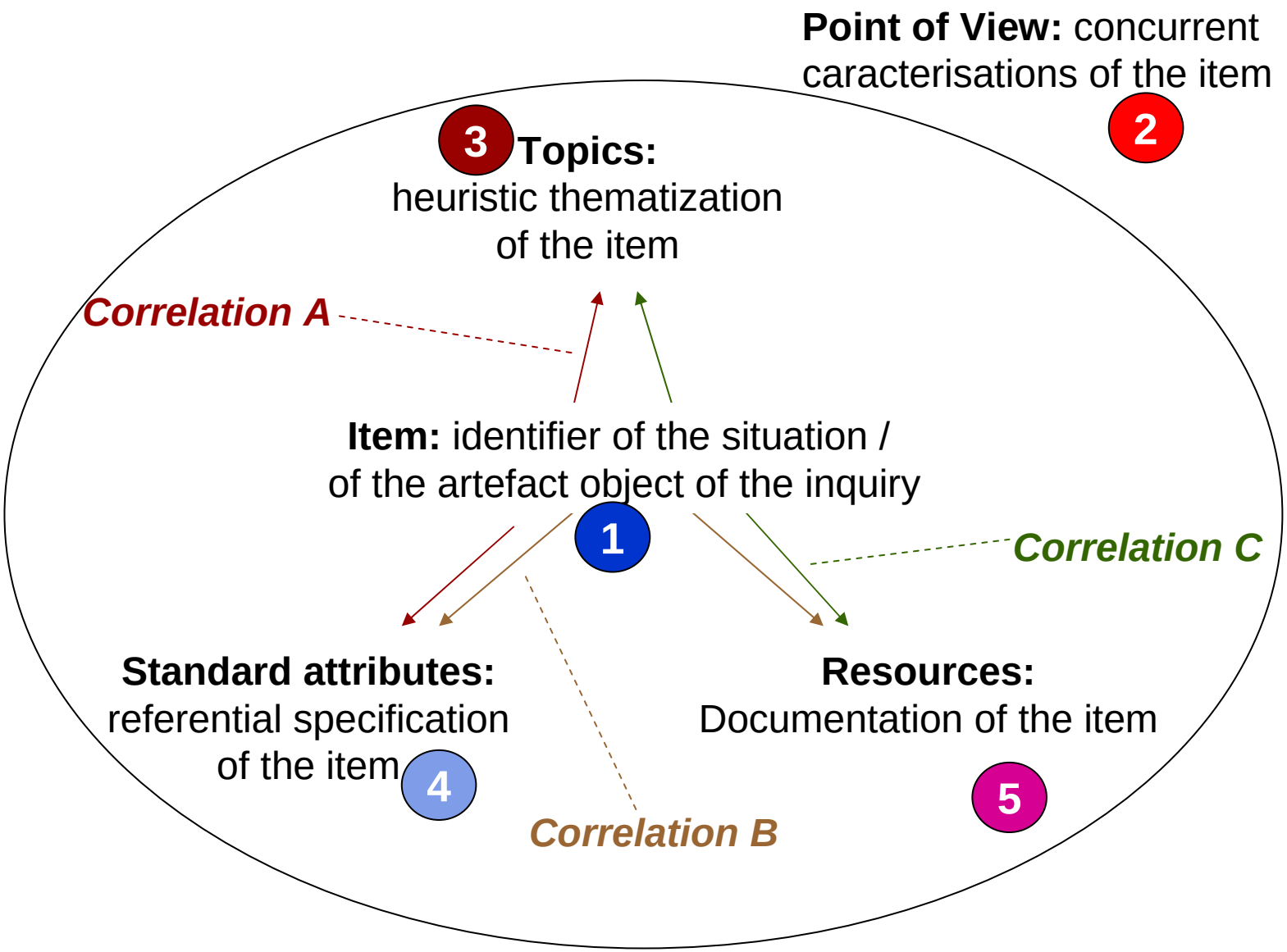
http://cahier.tech-cico.fr/

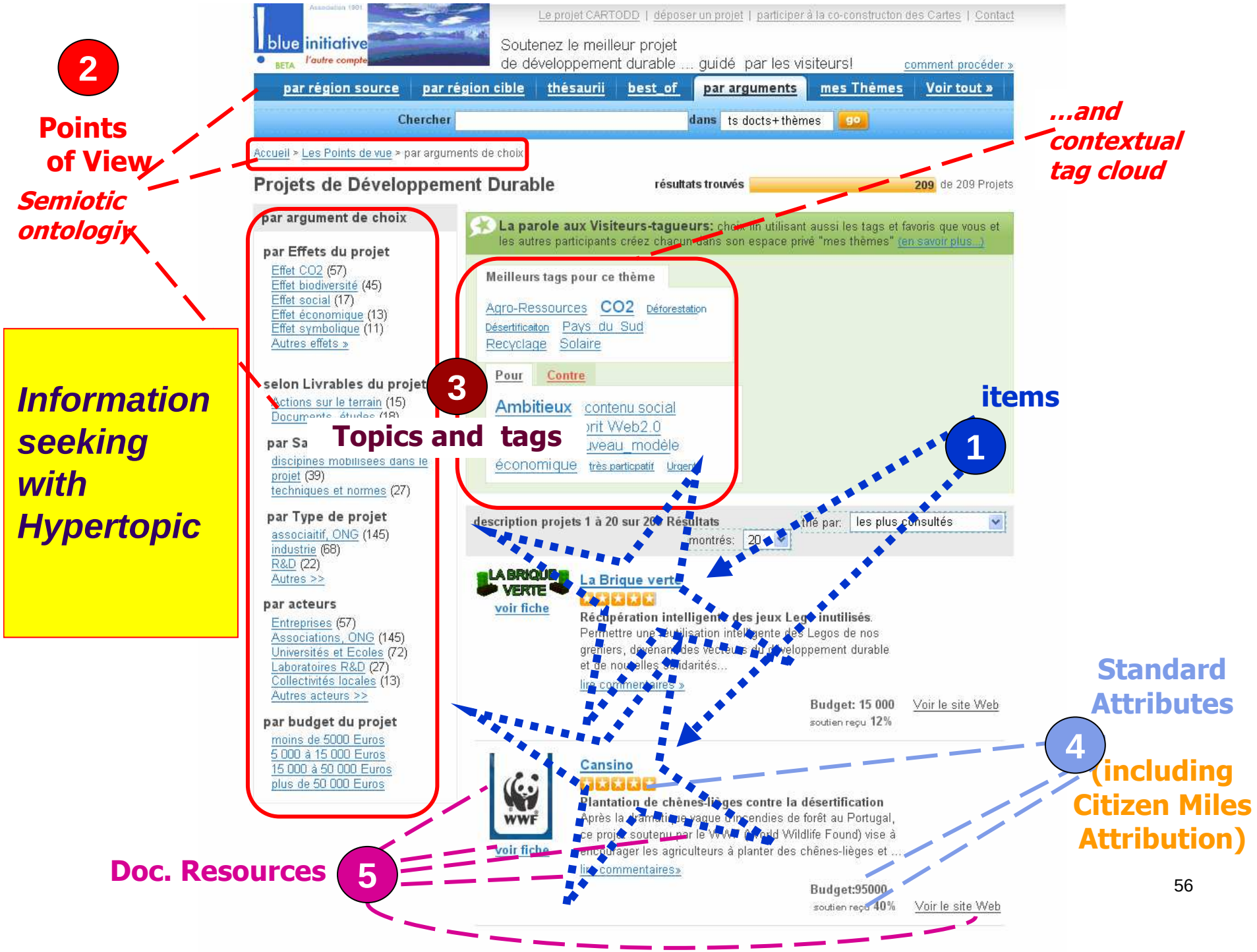
Annexes

Mock-up for CartoDD

(derived from www.buzzillions.com)

Hypertopic


Point of View: concurrent caracterisations of the item
2
3
Topics:
heuristic thematization of the item
Correlation A
Item: identifier of the situation / of the artefact object of the inquiry
1
Correlation C
Standard attributes:
referential specification of the item
4
Resources:
Documentation of the item
5
Correlation B


2
Points of View
Semiotic ontologix
Information seeking with Hypertopic
...and contextual tag cloud
Le projet CARTODD | déposer un projet | participer à la co-construction des Cartes | Contact
blue initiative
Soutenez le meilleur projet de développement durable ... guidé par les visiteurs!
comment procéder »
par région source | par région cible | thésaurii | best of | par arguments | mes Thèmes | Voir tout »
Chercher dans ts docts+thèmes go
Accueil > Les Points de vue > par arguments de choix
Projets de Développement Durable
résultats trouvés 209 de 209 Projets
par argument de choix
par Effets du projet
Effet CO2 (57)
Effet biodiversité (45)
Effet social (17)
Effet économique (13)
Effet symbolique (11)
Autres effets »
selon Livrables du projet
Actions sur le terrain (15)
3
Topics and tags
par Sa
discipines mobilisees dans le projet (39)
techniques et normes (27)
par Type de projet
associaitif, ONG (145)
industrie (68)
R&D (22)
Autres >>
par acteurs
Entreprises (57)
Associations, ONG (145)
Universités et Ecoles (72)
Laboratoires R&D (27)
Collectivités locales (13)
Autres acteurs >>
par budget du projet
moins de 5000 Euros
5 000 à 15 000 Euros
15 000 à 50 000 Euros
plus de 50 000 Euros
La parole aux Visiteurs-tagueurs: choix in utilisant aussi les tags et favoris que vous et les autres participants créez chacun dans son espace privé "mes thèmes" (en savoir plus...)
Meilleurs tags pour ce thème
Agro-Ressources CO2 Déforestation
Désertificaiton Pays du Sud
Recyclage Solaire
Pour Contre
Ambitieux contenu social
économique très particpatif
items
1
description projets 1 à 20 sur 209 Résultats
trié par: les plus consultés
montrés: 20
La Brique verte
voir fiche
Récupération intelligente des jeux Lego inutilisés.
Budget: 15 000
soutien reçu 12%
Voir le site Web
Cansino
Plantation de chênes-lièges contre la désertification
Budget:95000
soutien reçu 40%
Voir le site Web
Standard Attributes
4
(including Citizen Miles Attribution)
Doc. Resources
5