Cooperative building of "multi-points of view topic maps" using Hypertopic and socio-technical approaches

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"Scaling Topic Maps" ,3rd International Conference on Topic Maps Research and Applications (TMRA'07 Leipzig,Germany), 11-12 oct. 2007

Cooperative building of “multi-points of view topic maps” using Hypertopic and socio-technical approaches

AGENDA

1) **- « Socio-semantic Web » and the *Hypertopic* model *[Zacklad et al., 2003]* are approaches mainly founded on :**

- CSCW (Computer Supported Cooperative Work),
- Knowledge Engineering, Knowledge Management
- Social Sciences (psychology, sociology, linguistics)

2) **- Tech-CICO Lab develops generic tools and methods helping “Socio-semantic activity” within a community :**

→ co-building of « multi-points of view topic maps » is a methodological challenge

→ for example, we chose (2005) the sociotechnical method “SeeMe” (Univ. Bochum [Herrmann, 1999]) to complete Hypertopic

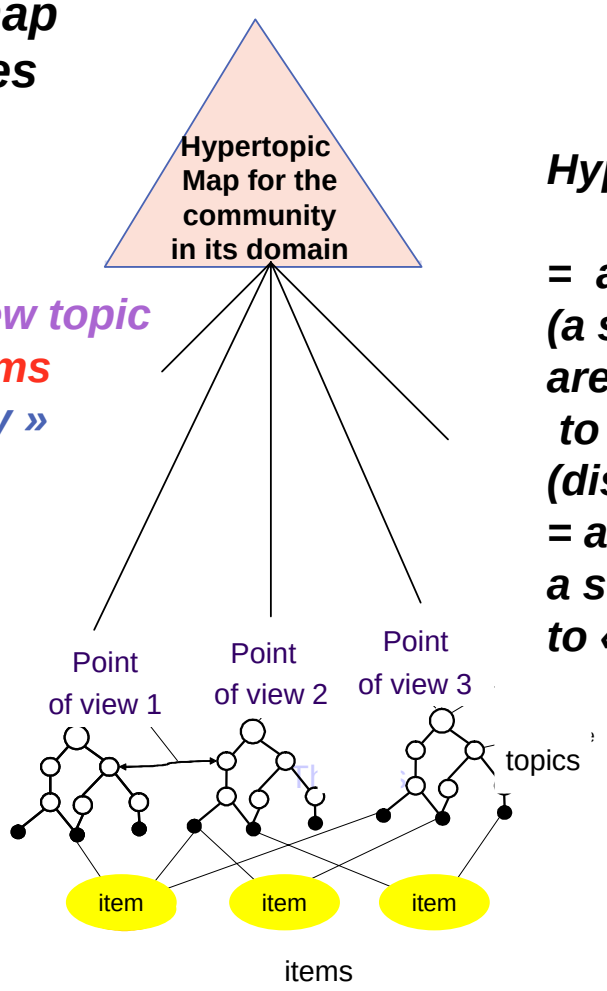
3) **- Three methods of distant co-building in communities were explored and applied in a dozen of « Socio-semantic Web » applications *(2002-2007)* :**

- « centralized co-building » method
- « conflictual co-building » methods
- « hybrid co-building » method

« Socio Semantic Web »

- is a social Web which participates in the building of a structured representation of both the domain and the community
  - **"maps" 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 → 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)***

an « Hypertopic » map includes multiples points of view :



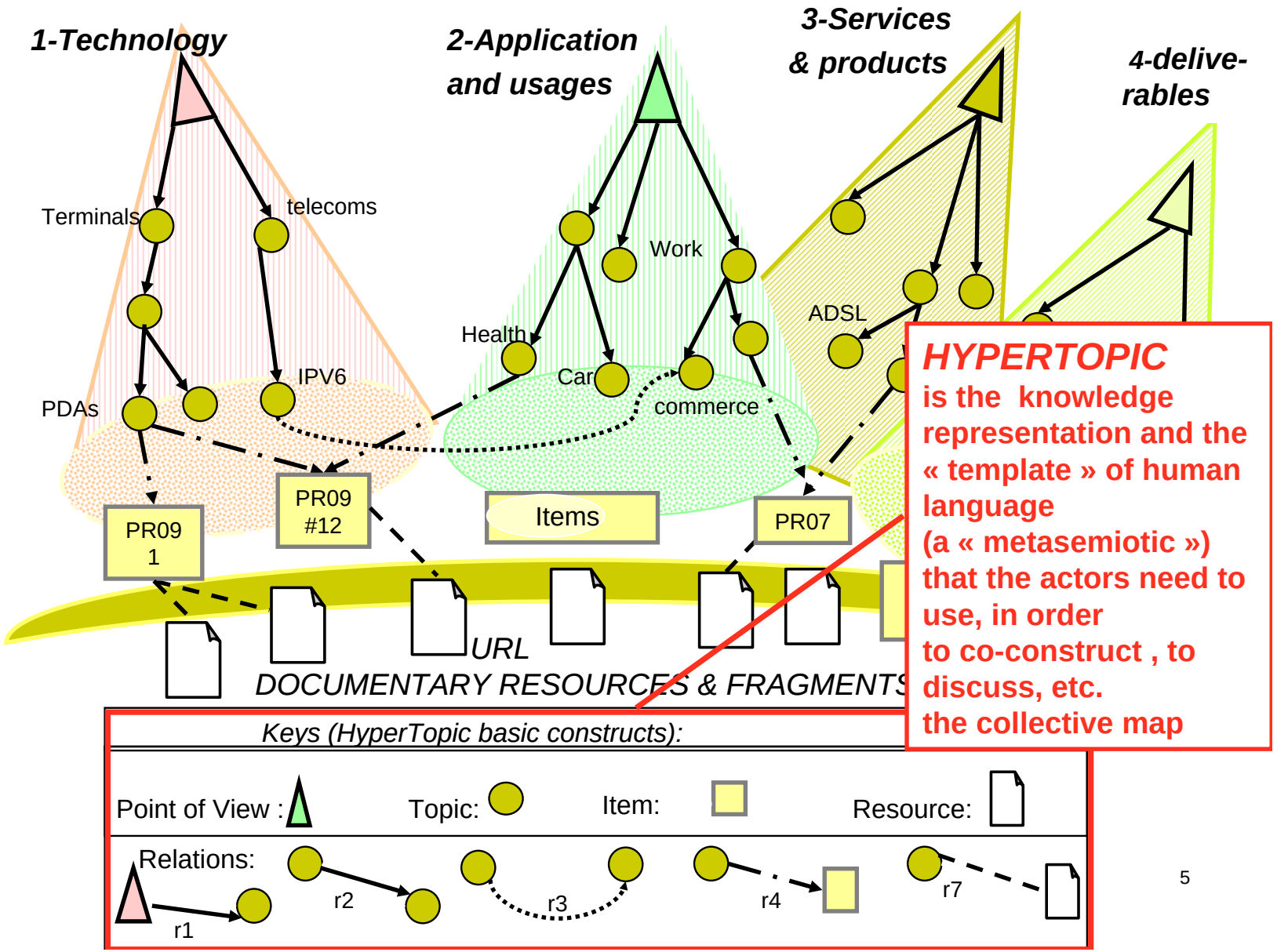
an Hypertopic map is
= a multi-points of view topic map to consider items
= a « semiotic ontology »

Hypertopic is

= a knowledge representation (a set of basic constructs which are the « keys » of the map ») to co-build and communicate (discuss…) about the map
= a protocol providing a standard access to « map services »

e.g. application « Agora/France-Telecom » (2002) , following a « knowledge-marketplace » model
- 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

Schematic example extracted from an Hypertopic Map



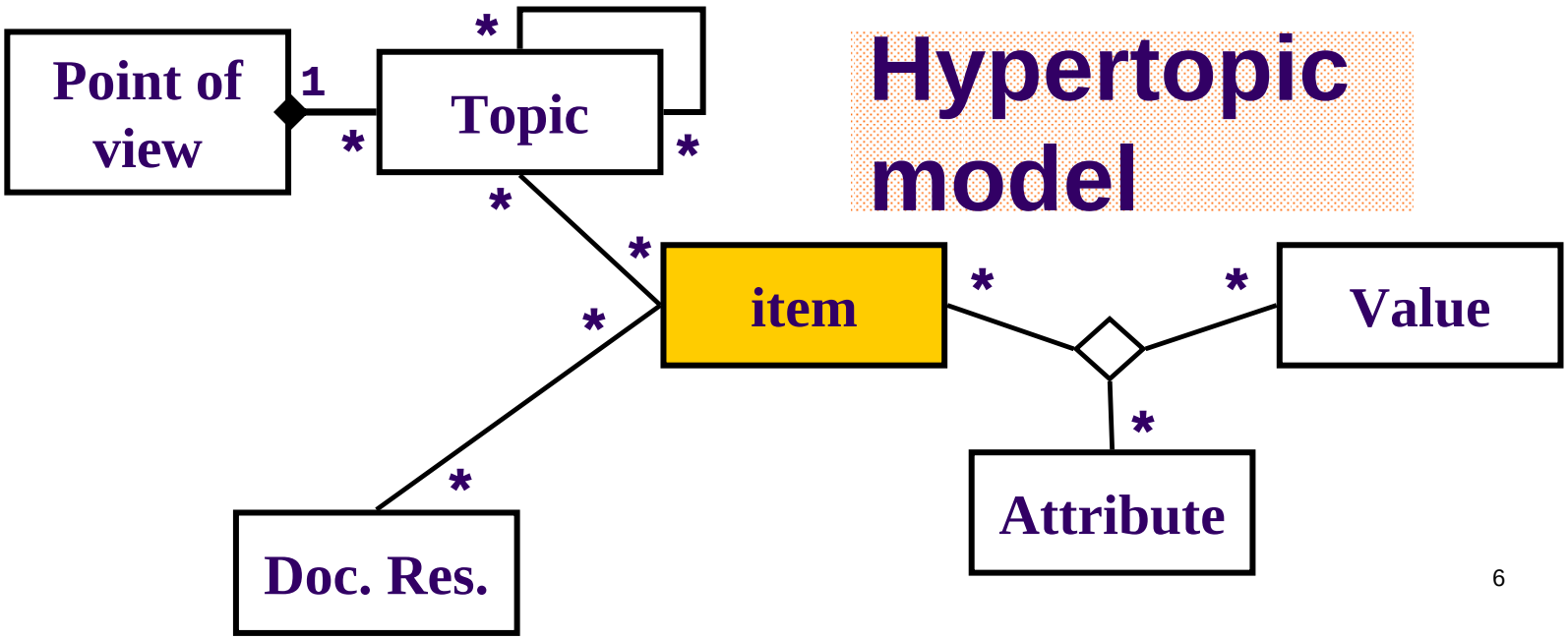
Remarks:

-Hypertopic model could be considered as a particular « template » of TMs, Following the TM methodology, it would be a generic « ontology » re-usable to model every particular Socio-Semantic Web application;

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

- 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 , the problem is not to use all the freedhoms of the TM, but to reduce them (adding constraints)

→ to fix the usage makes easier to deploy the co-building within large communities



technical context

- **Standardization**

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

Zhou, Ch., Lejeune, Ch., Bénel, A.: Towards a standard protocol for community-driven organizations of knowledge. In Proc of the 13th ISPE International Conference on Concurrent Engineering (ISPE CE'06), IOS Press, 2006, pp 338–349.

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

technical context

- Standardization

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

- future: 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/agorae), a thin client based on Argos :

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;

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

We need to distinguish:

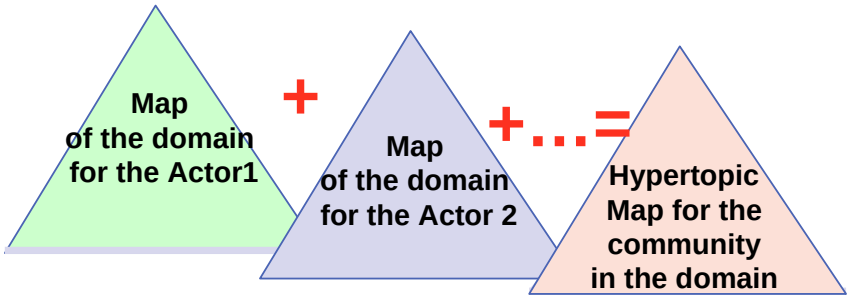
- - a « bootstrapping » phase
  - to define the item, to define the first set of « points of view»
  - based (eventually) on folksonomies or on the confrontation of actors’ personal « design maps »
  - leading (eventually) to a « synthesis map » usable by the group
- - a phase of maintenance / evolution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

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

- « 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
- “Conflictual” co-building method, to make the conflicts more explicit
- « Hybrid » method associating « top-down » « centralized » method and « bottom-up » folksonomies

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

"co-building" method ?

Basic roles to edit the map, e.g.:

- ***Tagger*** **(propose tags, indexes items)**
- ***Contributor*** **(edits/indexes items**
- ***Semantic editor*** **(edits/ associates topics**

+ informal roles: discussion, annotations… **for each Hypertopic map node**

HYPERTOPIC

Model for knowledge representation within the Socio Semantic Web

"co-building" participative method ?

+

instrumented activity model ?

+

knowledge representation

The « socio-semantic activity » methodological challenge

- *To co-build maps by users themselves is a complex challenge for these users.*
- *We focus the cases where only Community members have domain skills to build the map. 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***

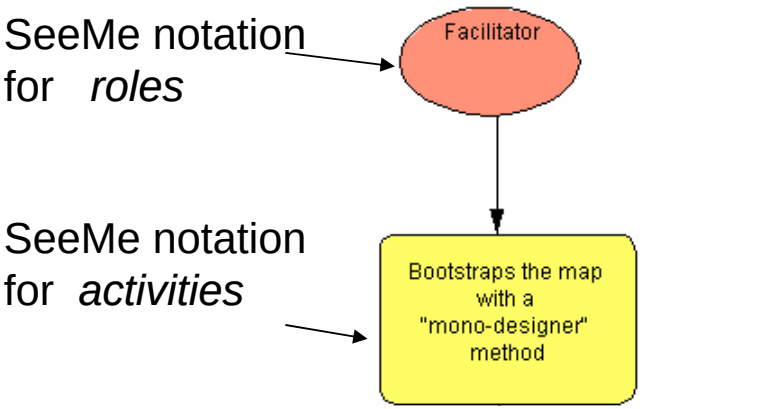
To download the SeeMe diagrammes editor and the Seeme tutorial

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/

The « centralized co-building » method

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



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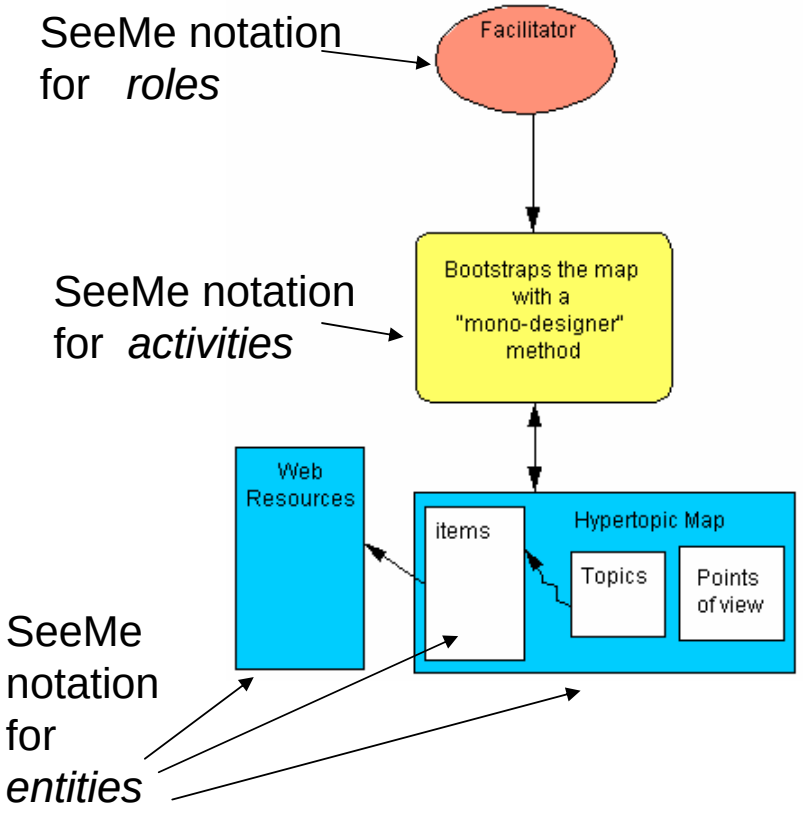

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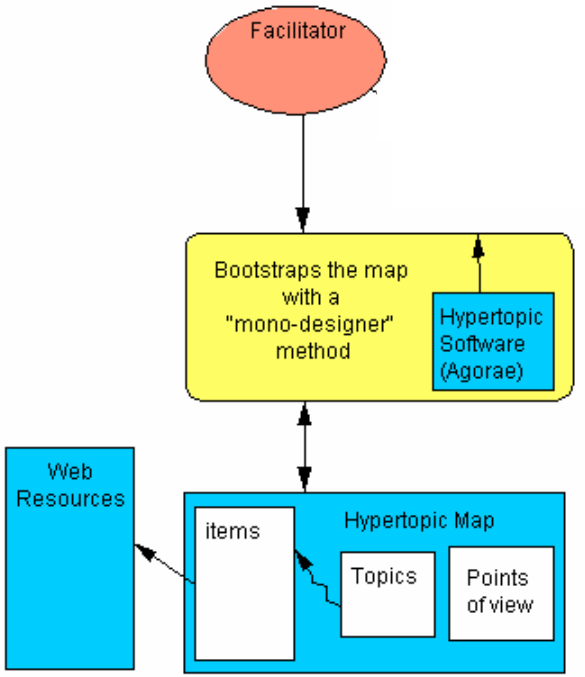

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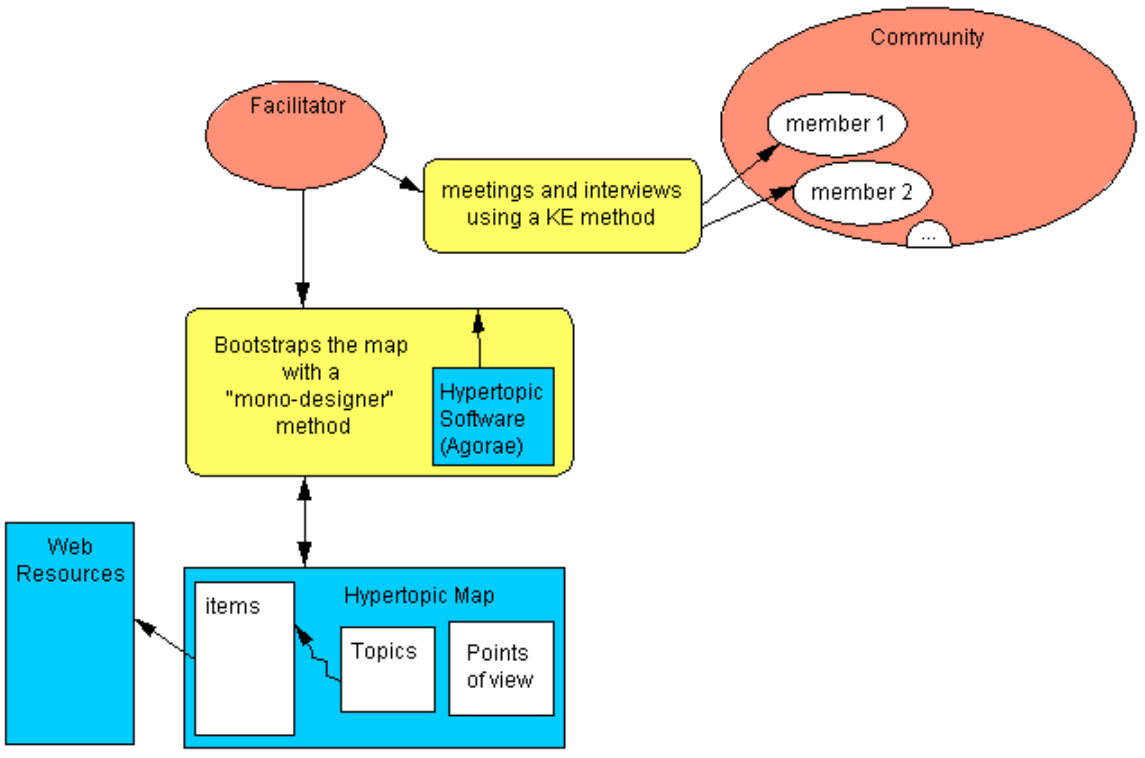

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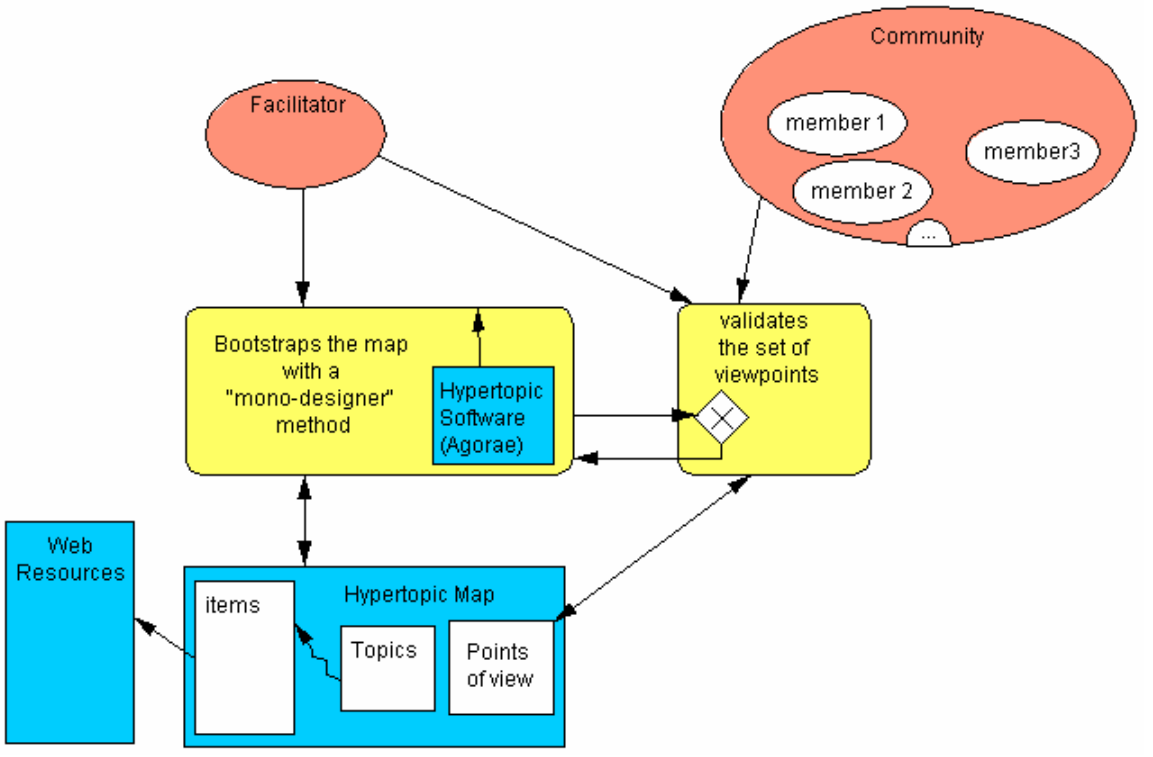

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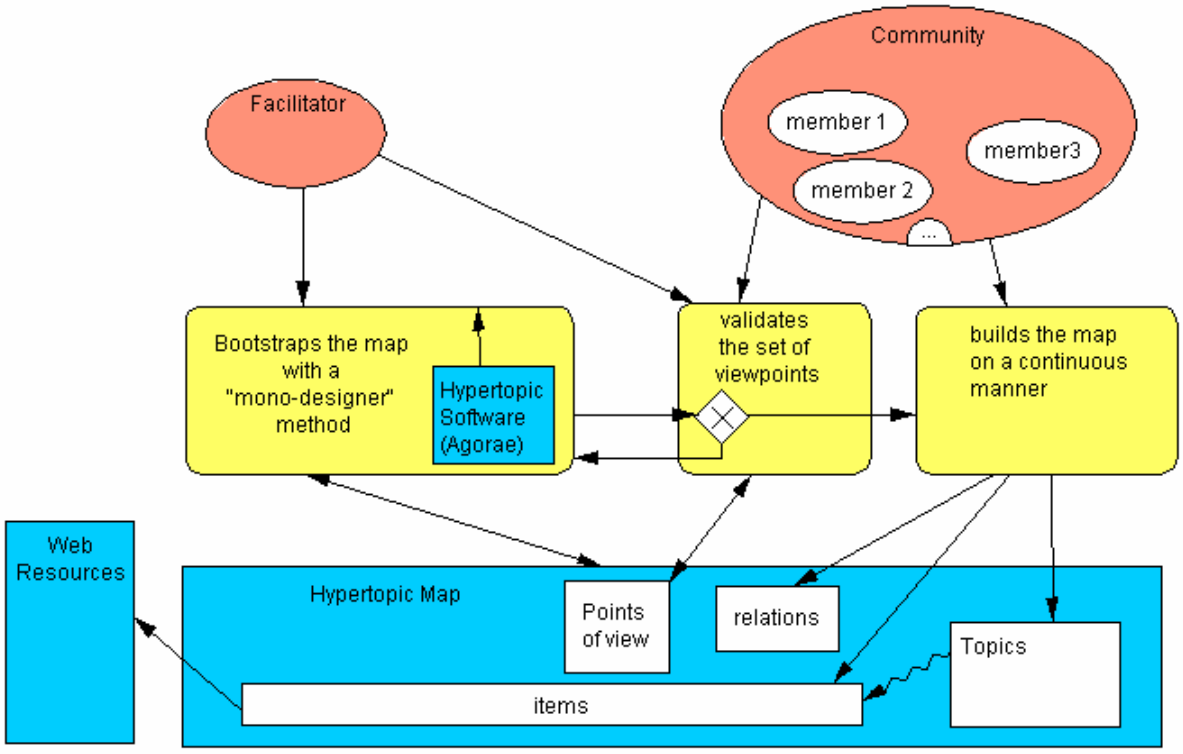
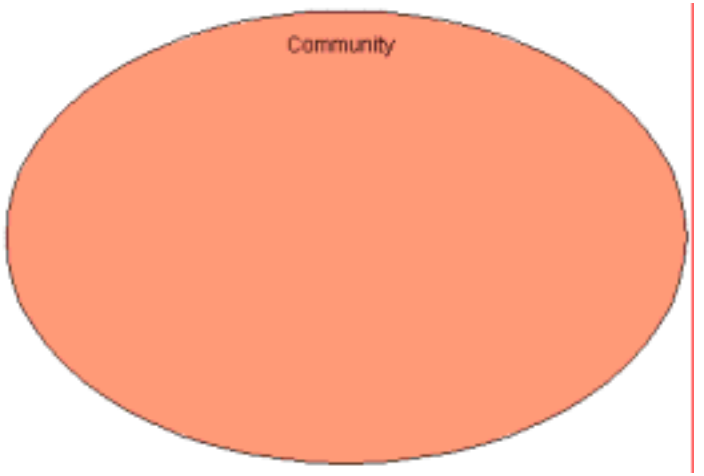


The “conflictual co-building” method (without facilitator)

(*was used in the « DKN-SEQXAM » case)*



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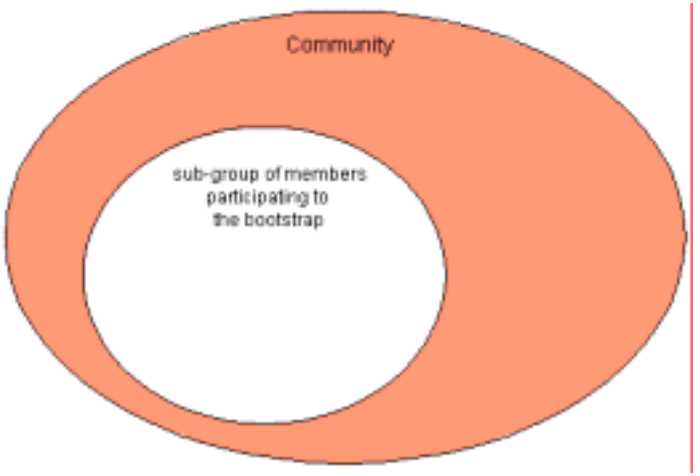

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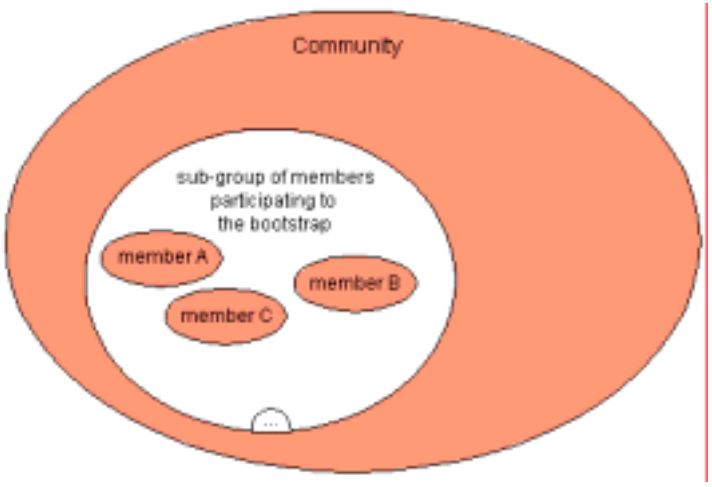

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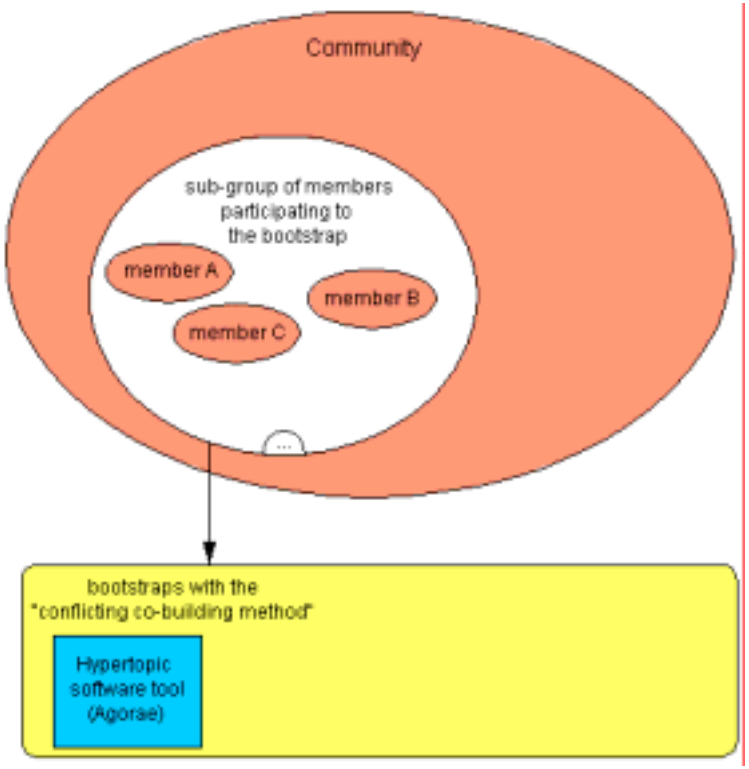

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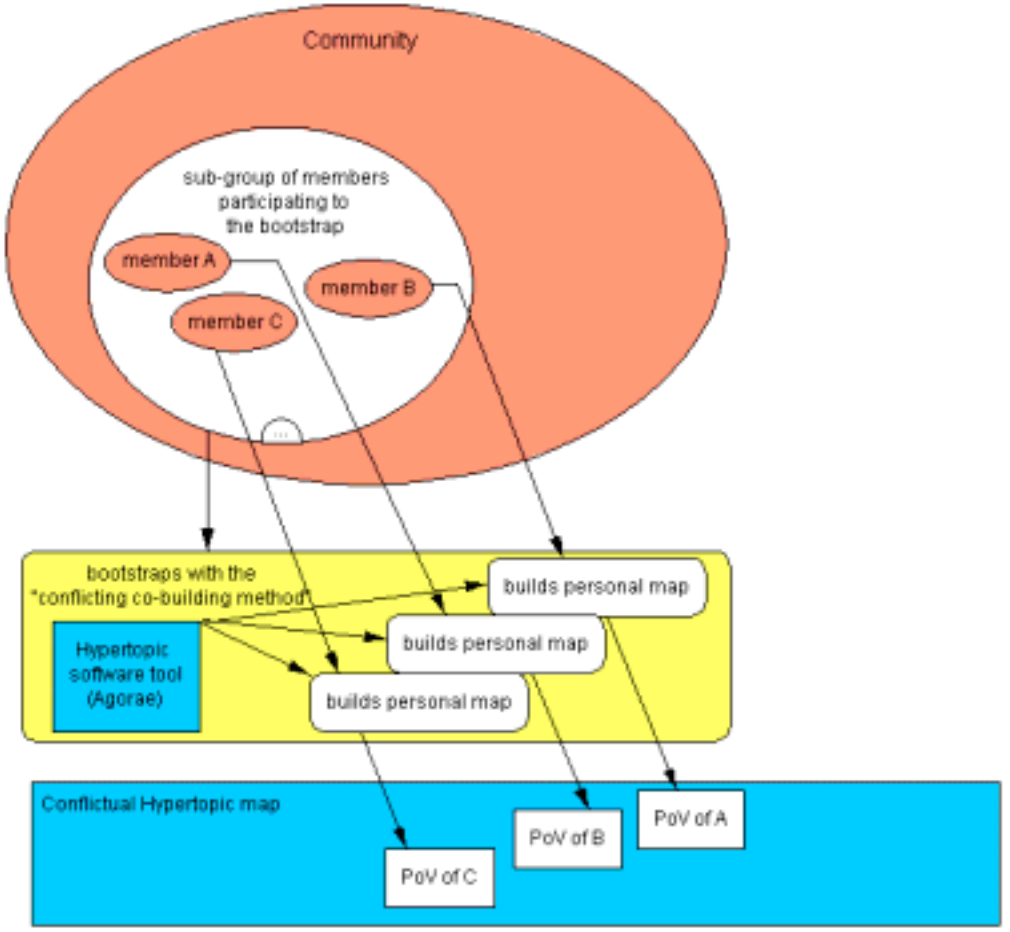

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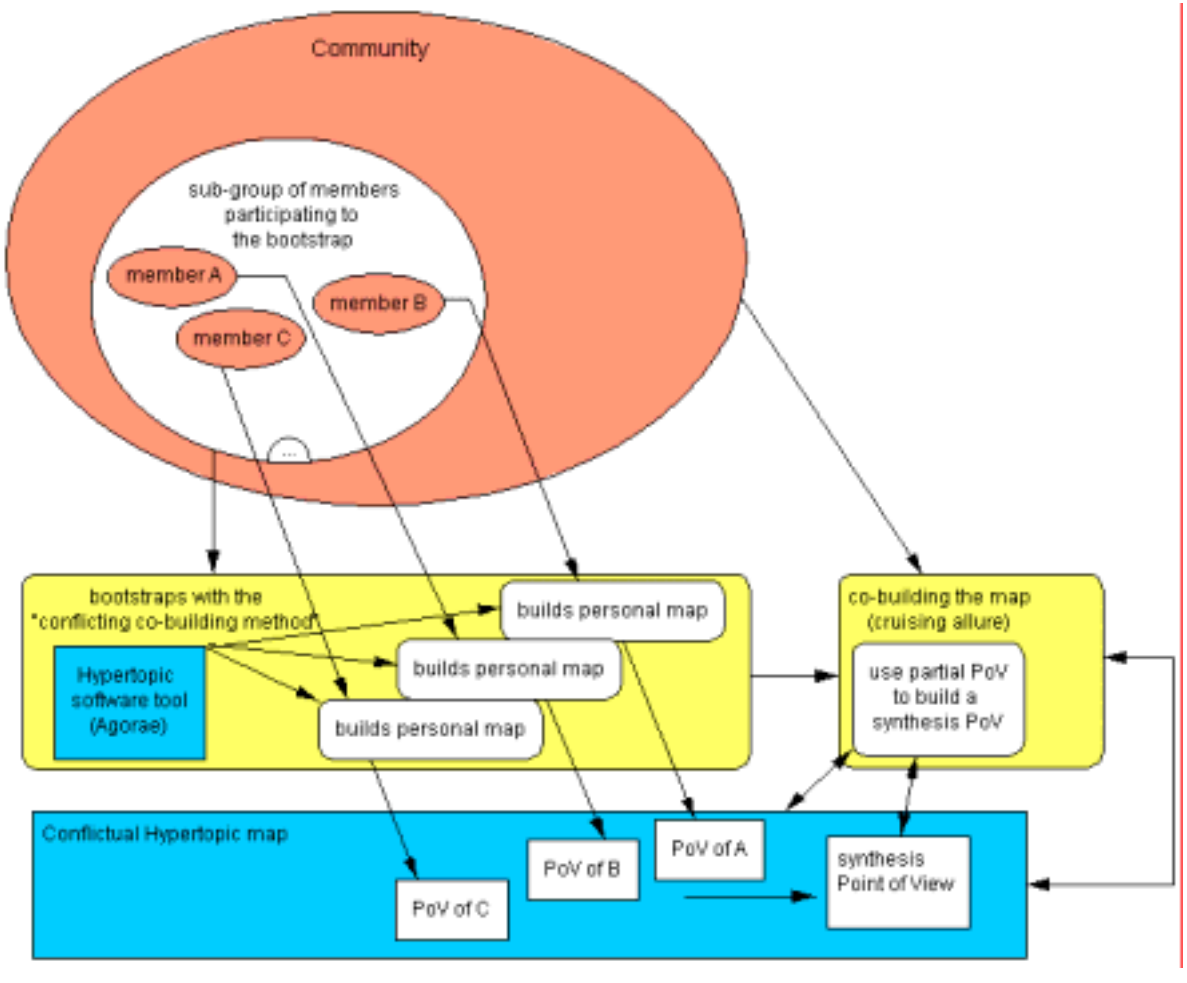

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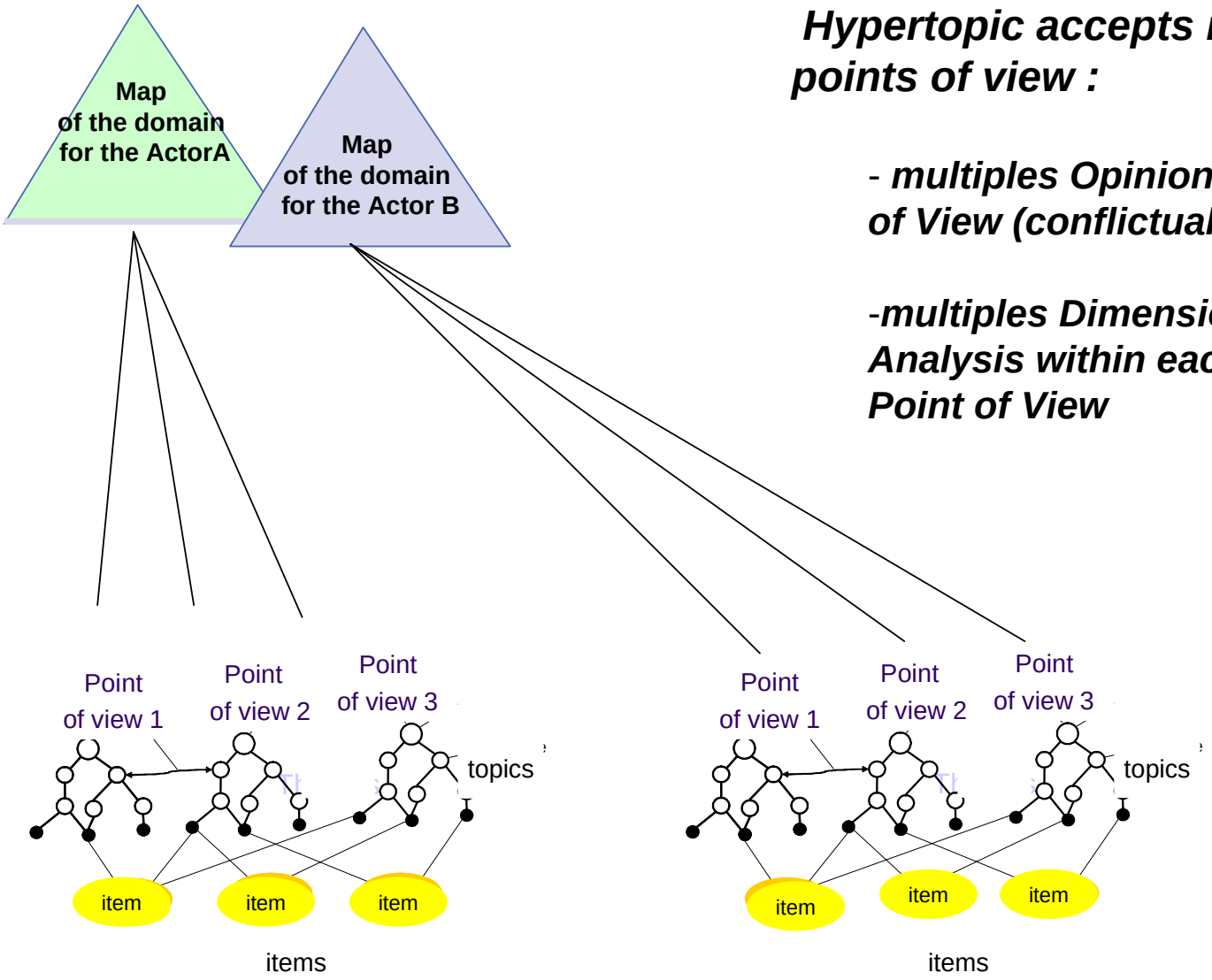
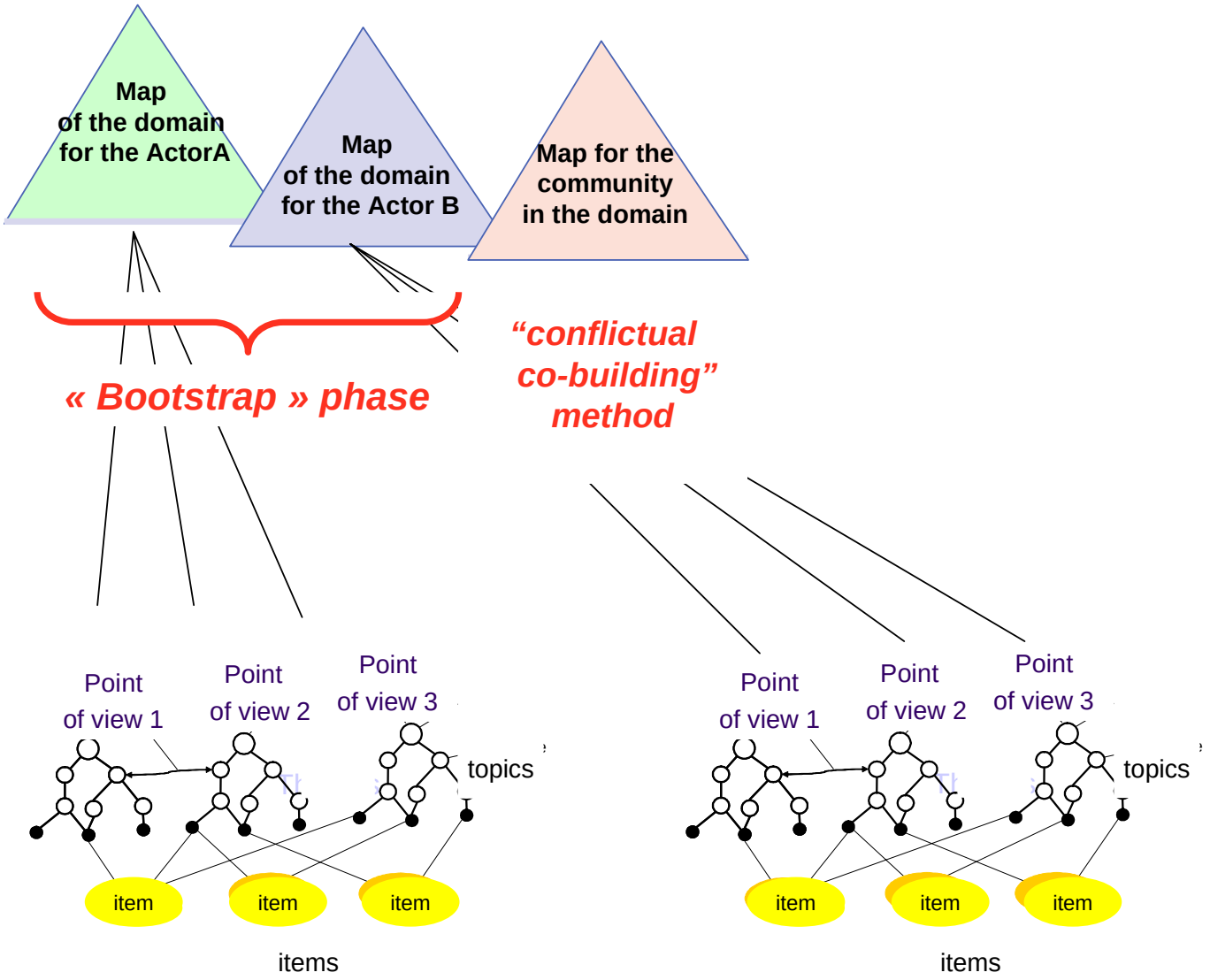


Hypertopic accepts multiples points of view :

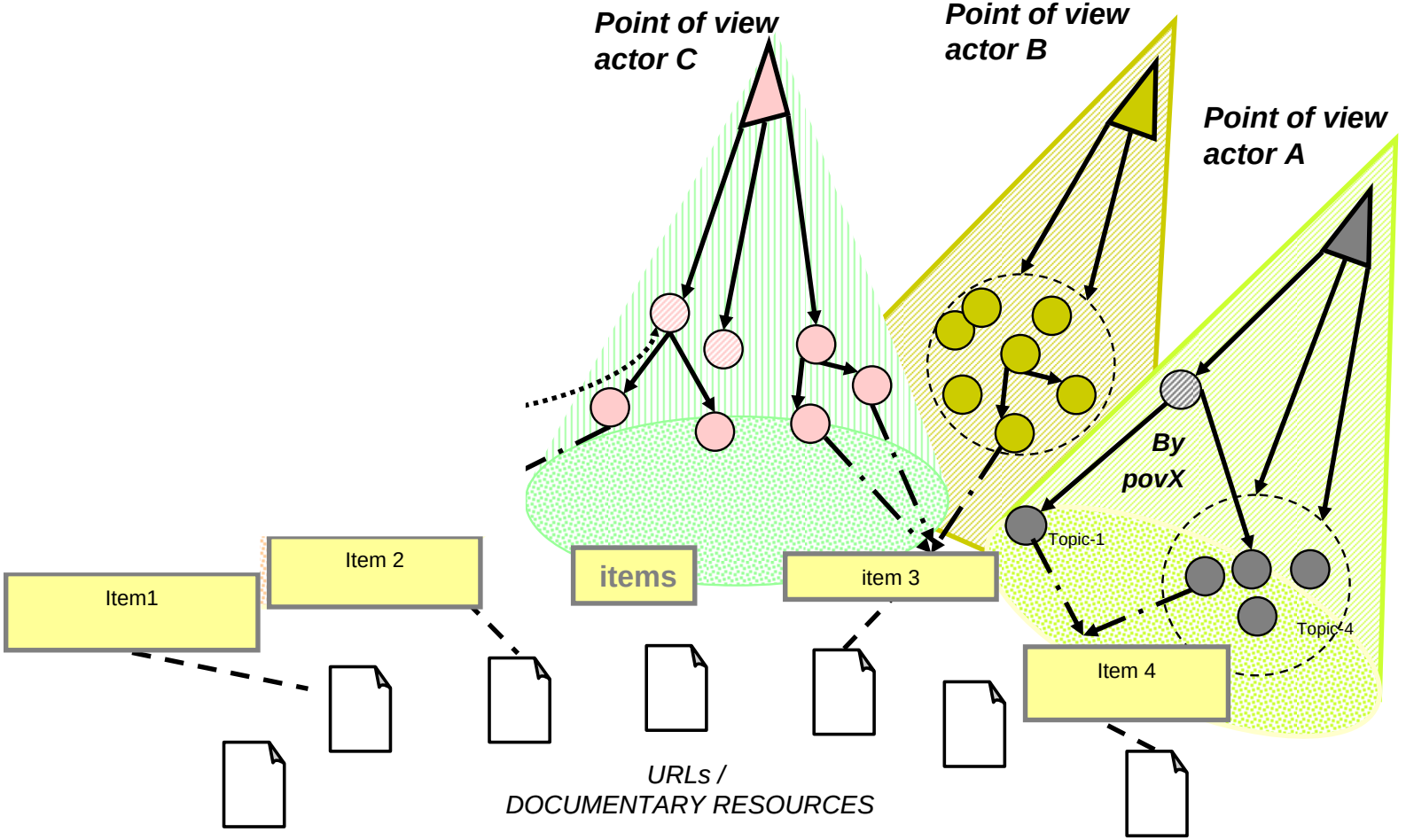
- ***multiples Opinions or Points of View (conflictual plurality)***

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

the “conflictual co-building” method

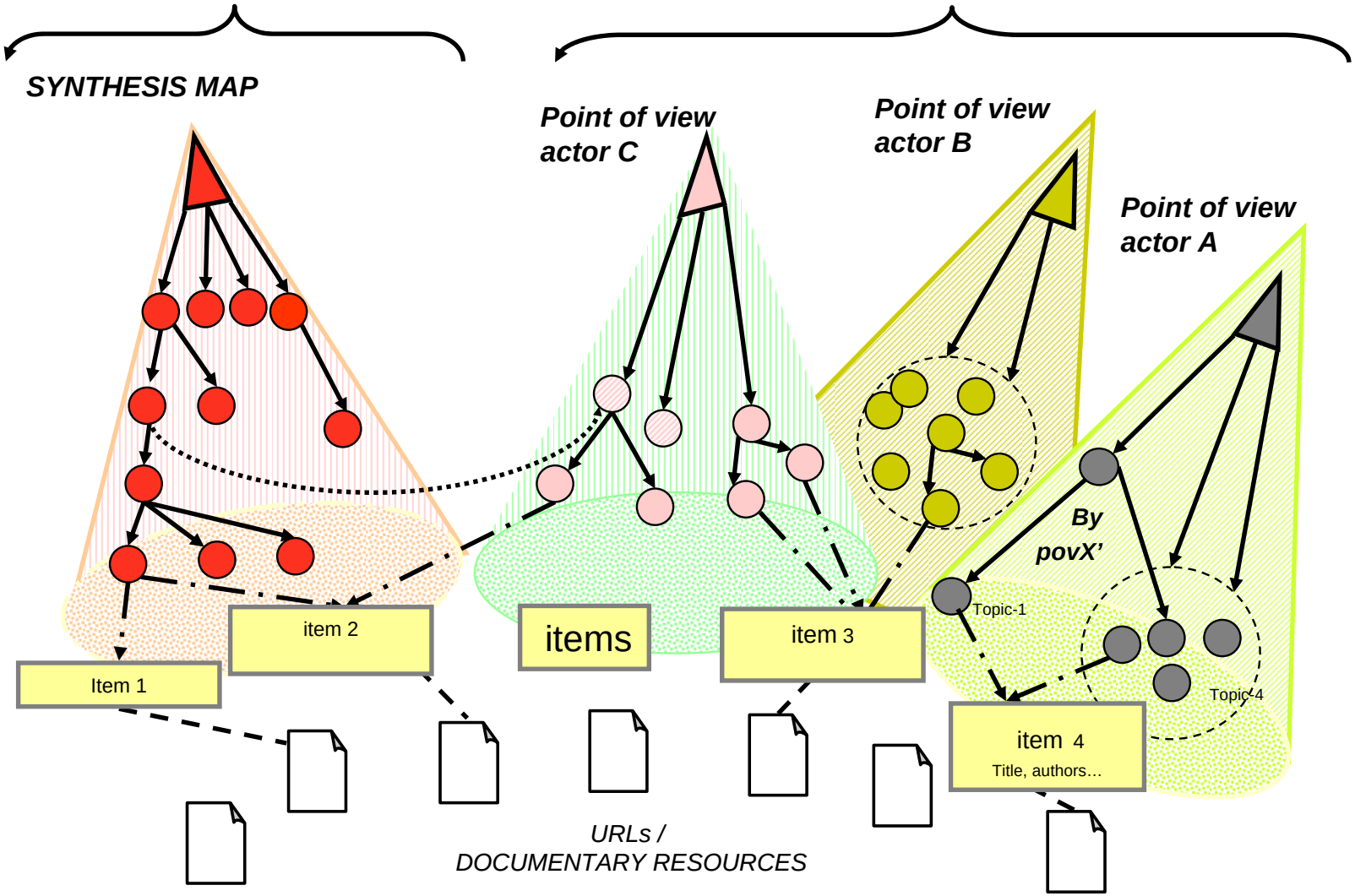


1) « design maps » from each actor



the “conflictual co-building” method

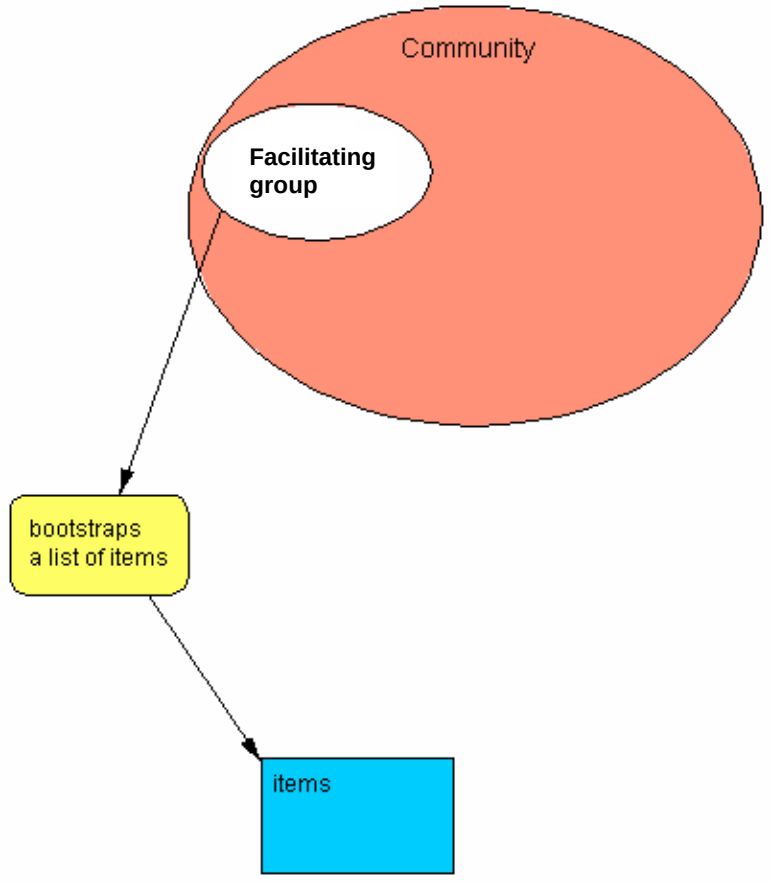
2) « synthesis map » ←→ *n* « design maps »



the "conflictual co-building" method

« 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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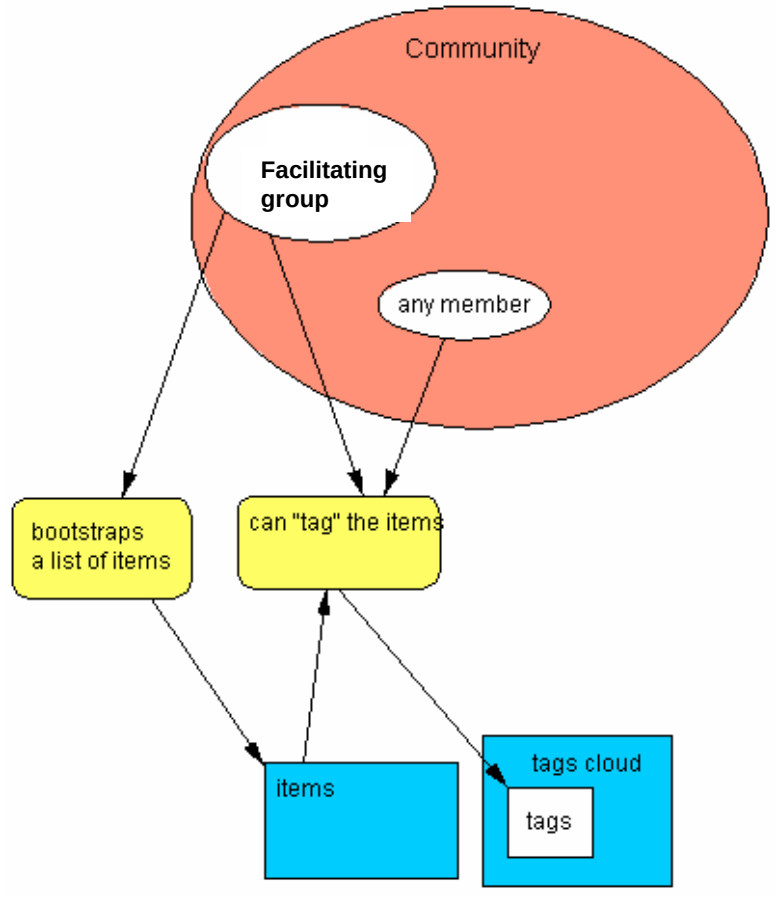

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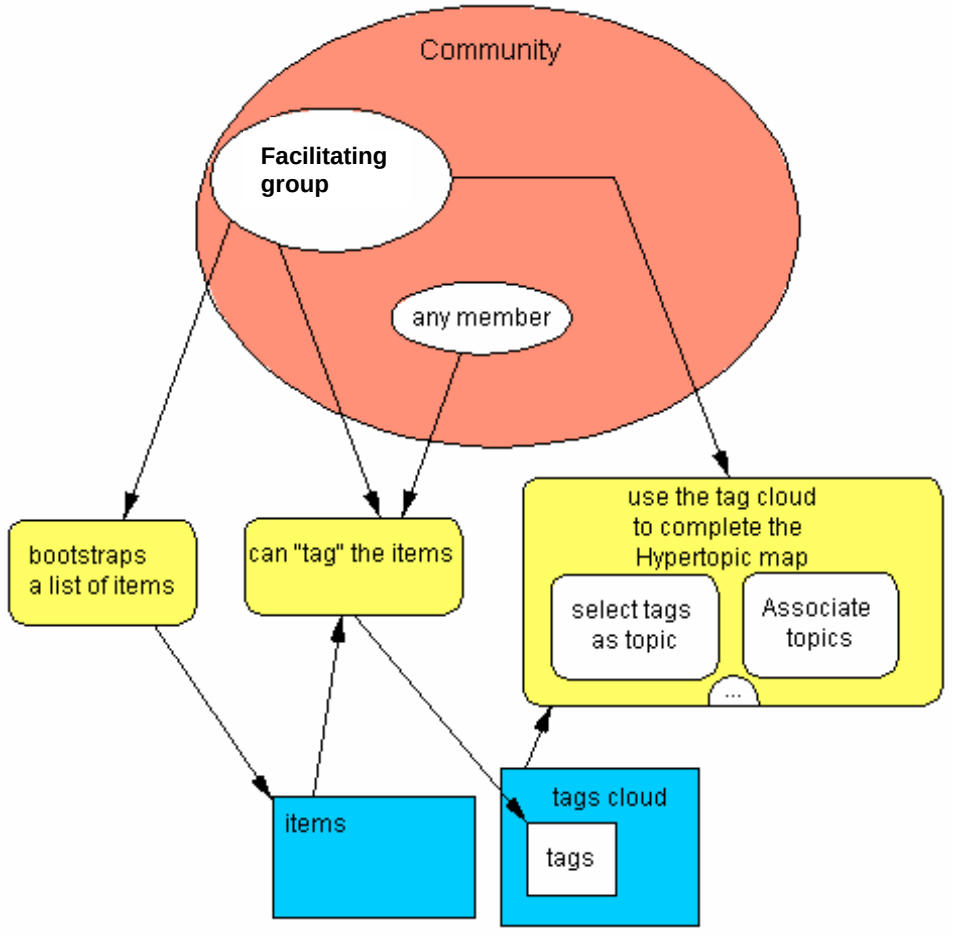

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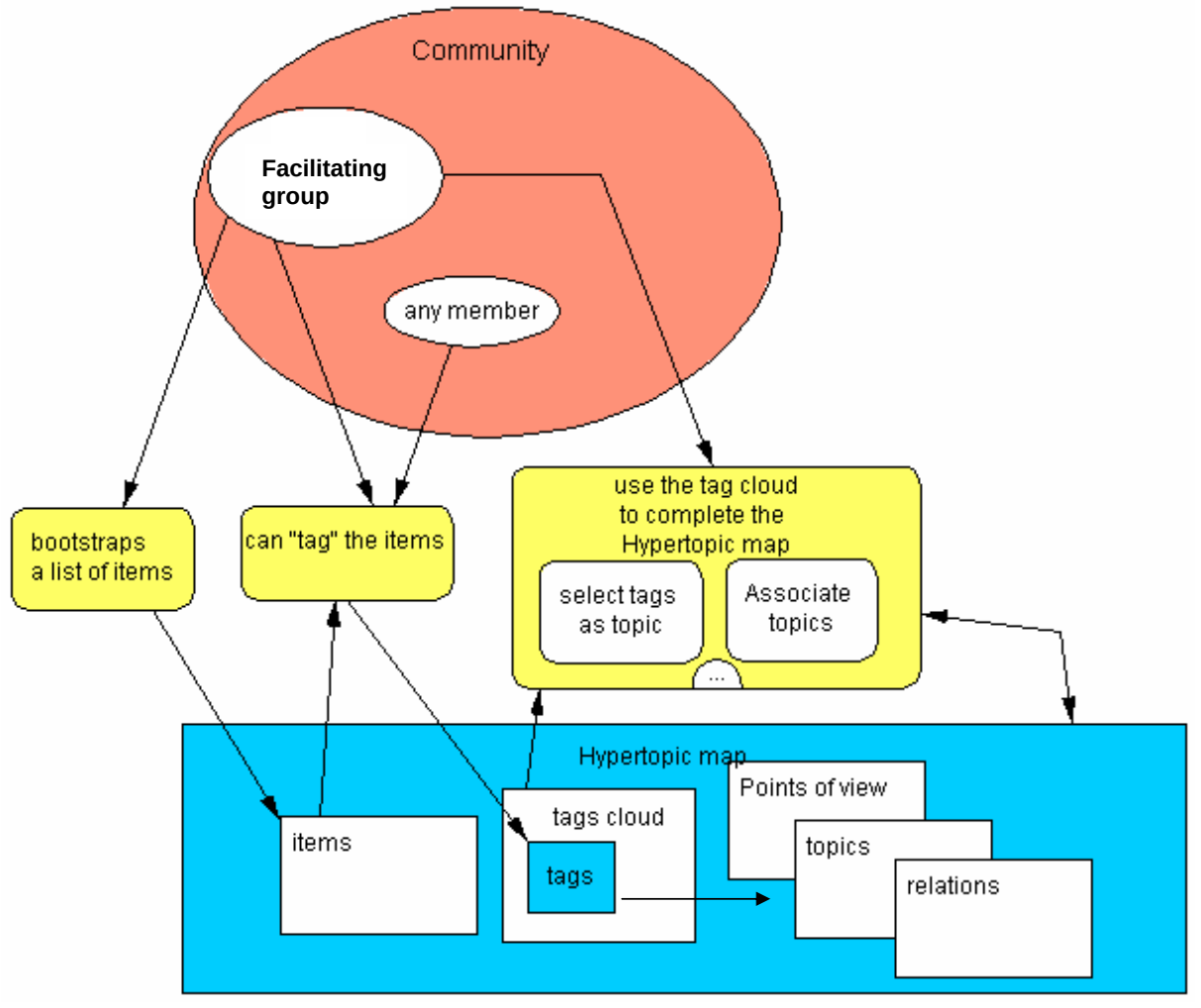

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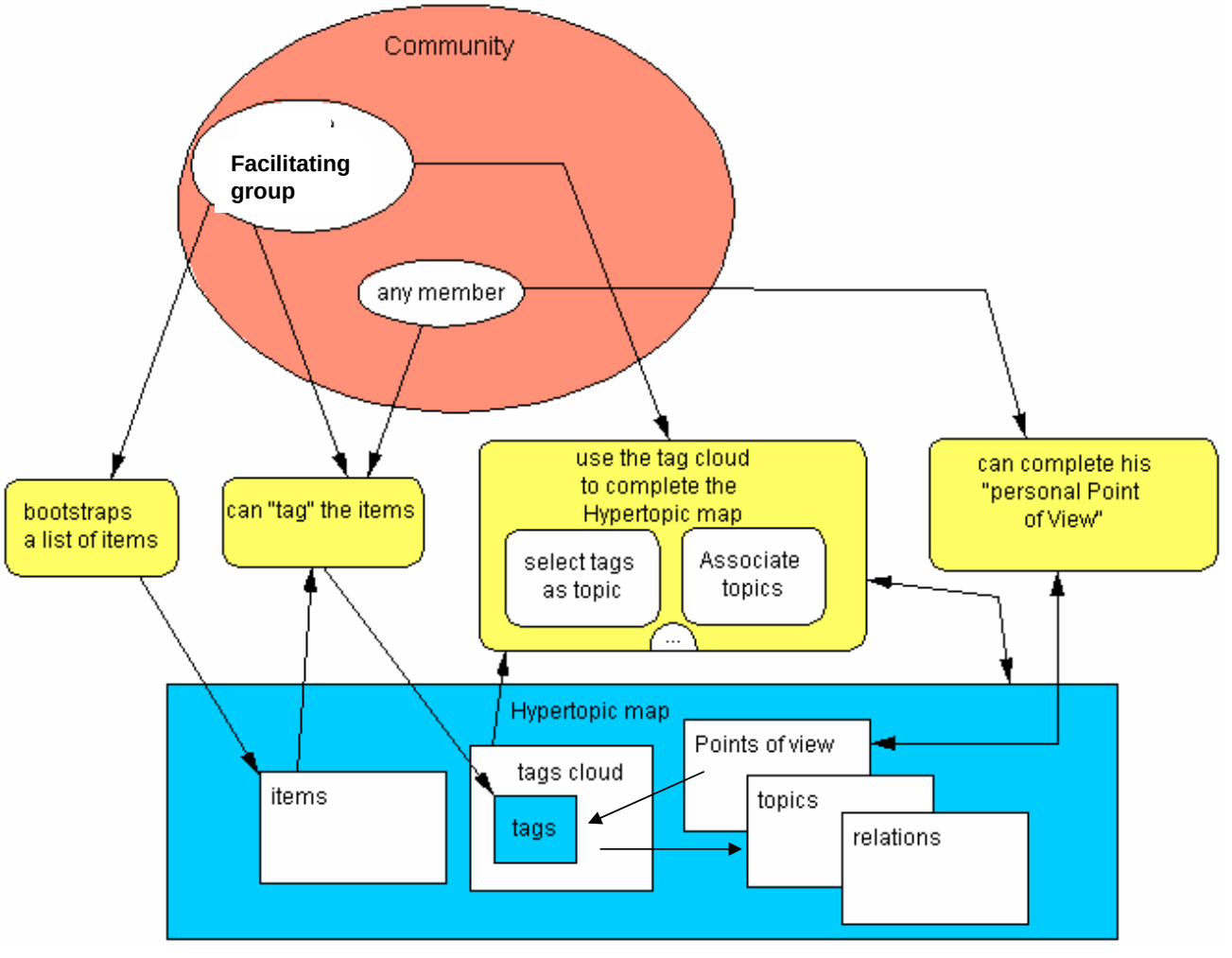

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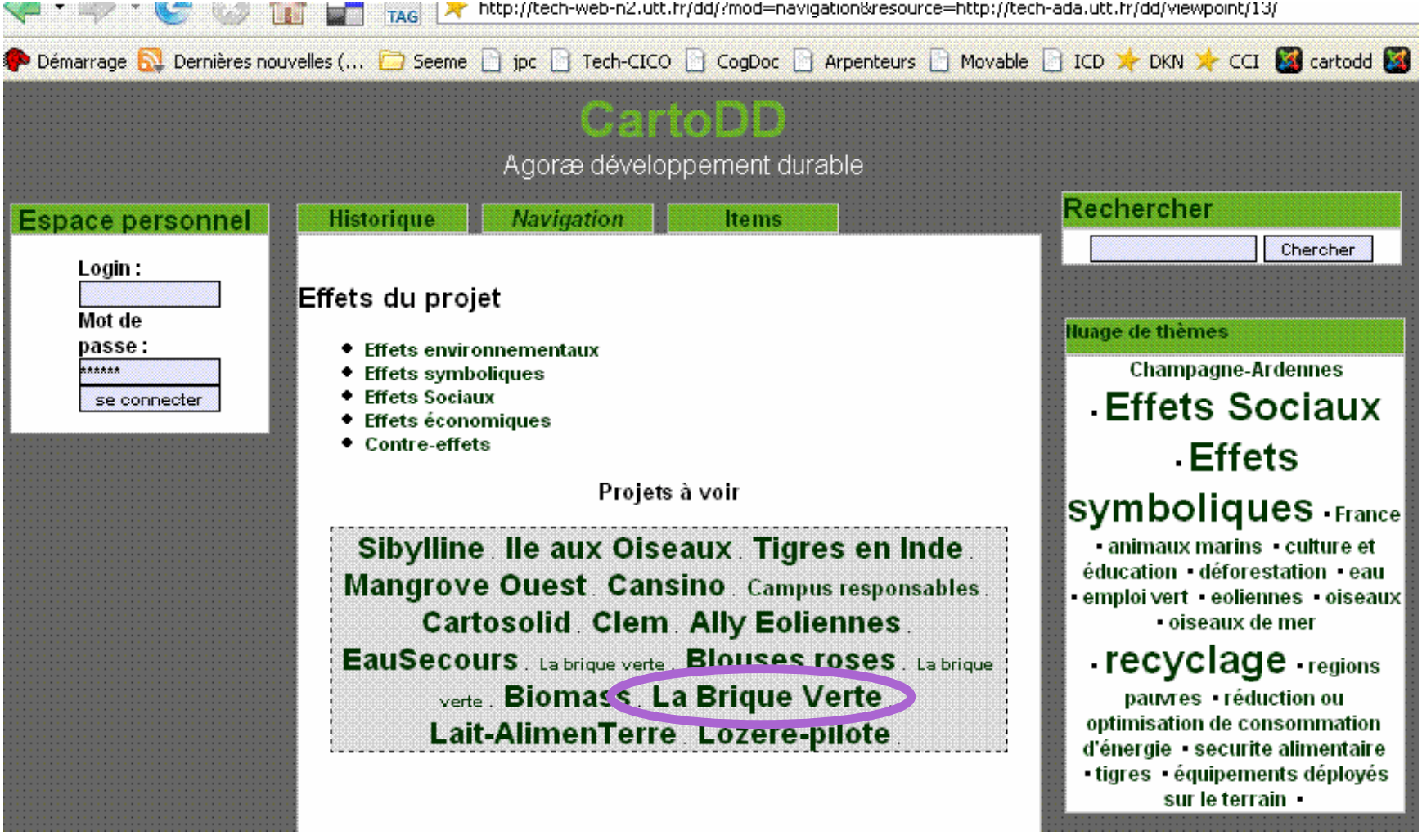


CartoDD
Agorae développement durable
Espace personnel
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Historique
Navigation
Items
Effets du projet
Effets environnementaux
Effets symboliques
Effets Sociaux
Effets économiques
Contre-effets
Projets à voir
Sibylline . Ile aux Oiseaux . Tigres en Inde .
Mangrove Ouest . Cansino . Campus responsables .
Cartosolid . Clem . Ally Eoliennes .
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Chercher
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
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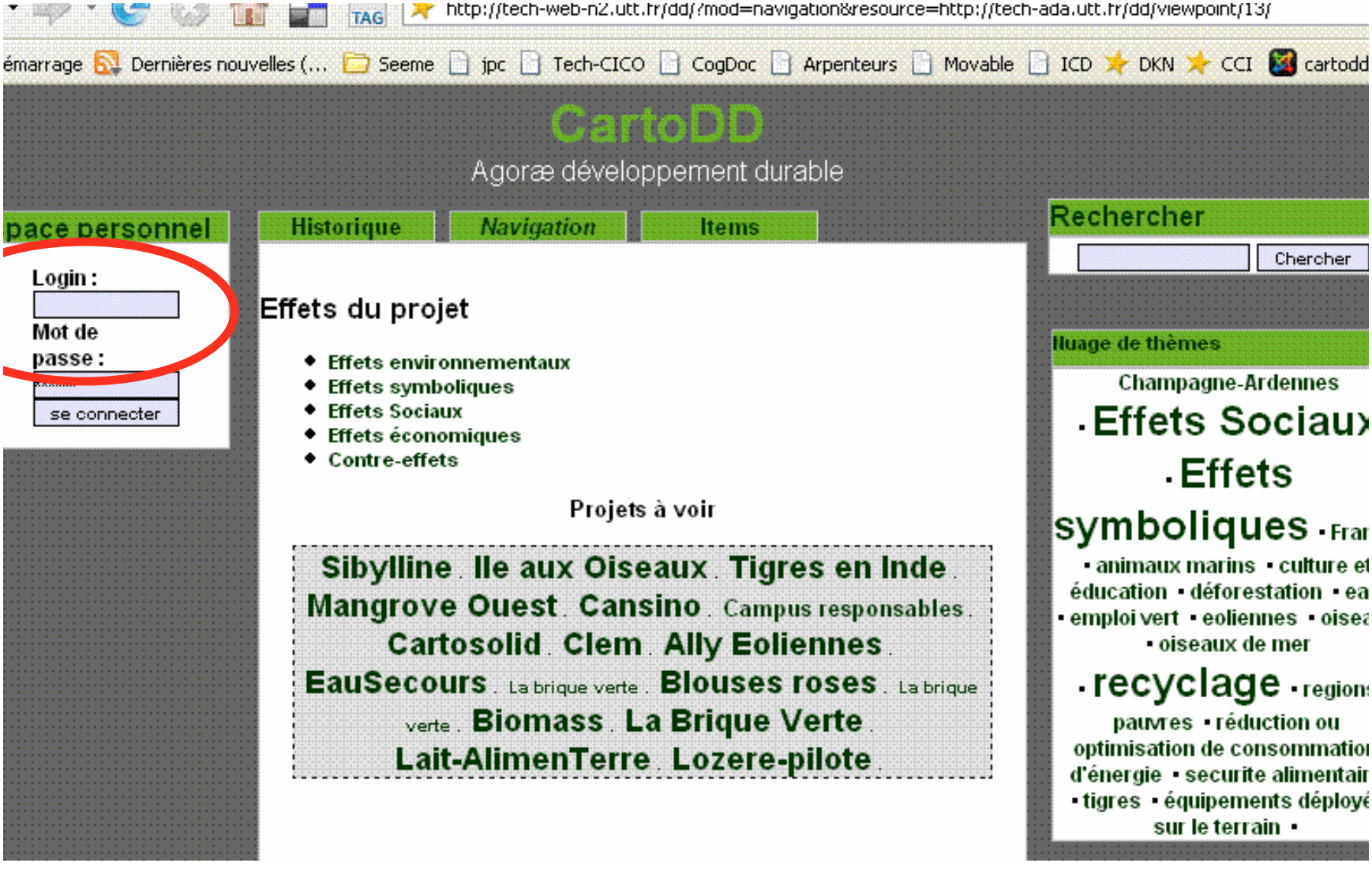
équipements déployés
ur le terrain •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Sibylline . Ile aux Oiseaux . Tigres en Inde . Mangrove Ouest . Cansino . Campus responsables . Cartosolid . Clem . Ally Eoliennes . EauSecours . La brique verte . Blouses roses . La brique verte . Biomass . La Brique Verte . Lait-AlimenTerre . Lozere-pilote .
Nuage de thèmes
Champagne-Ardennes
Effets Sociaux
Effets symboliques
animaux marins
culture et éducation
déforestation
emploi vert
eoliennes
oiseaux de mer
recyclage
régions pauvres
réduction ou optimisation de consommation d'énergie
securite alimentaire
tigres
équipements déployés sur le terrain

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

Agora développement durable

Espace personnel

Bienvenue cahier

Ajouter utilisateur
se déconnecter

Historique | Personnel | Navigation | Items

Effets du projet >

Effets environnementaux

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

Projet(s) Pertinent(s)

Projets à

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

Chercher

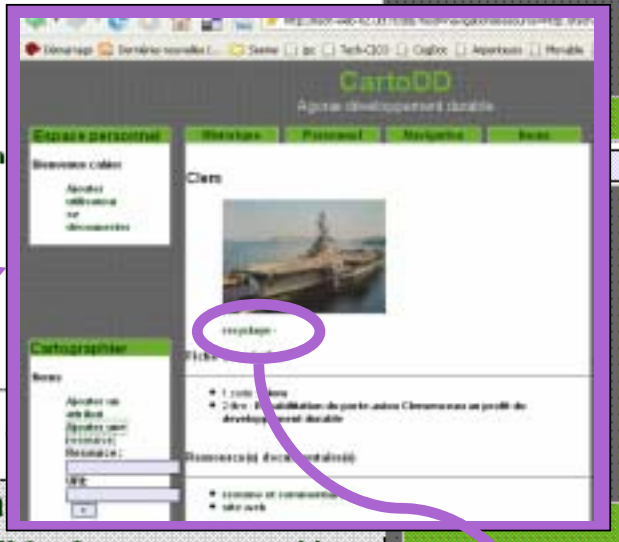
Cartographier

Thèmes

Ajouter un thème
Suppr. courant
Copier courant
Couper courant

Items

Ajouter un item



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

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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 week) on :***
  http://cahier.tech-cico.fr/docs/tmra07.pdf

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