Specifications for the Territorial Intelligence Community Systems (TICS)

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Summary: This paper presents the progress of the drafting of specifications regarding the design of the Territorial Intelligence Community System, a concept that emerged within the caENTI coordination research activities framework from the Catalyse method.
After a presentation of the TICS global design we will present the research about specifications according to the TICS four axis:
- Integration of the data processing software
- Online editorial process from data gathering to results publishing
- Data processing protocols for statistic and spatial analysis
- Integration of actors' uses

Résumé: Cette communication présente les résultats obtenus dans l'élaboration des spécifications des Systèmes Communautaires d'Intelligence Territoriale, un concept qui s'est développé dans le cadre des activités de coordination et de recherche de la caENTI à partir de la méthode Catalyse.
Après une présentation de la conception générale des SCIT, nous présenterons l'état des recherches sur les spécifications selon les quatre axes d'intégration des SCIT :
- Intégration des logiciels de traitement des données
- Processus editorial, de la collecte des données à la publication en ligne des données
- Protocoles d'analyse des données pour l'analyse statistique et spatiale
- Intégration des usages des acteurs.

Keywords: territorial intelligence, territorial information system, partnership, sustainable development, data analysis, participation

Mots clés: intelligence territoriale, système d'information territoriale, partenariat, développement durable, analyse des données, participation

Specifications for the Territorial Intelligence Community Systems (TICS)

At the beginning of caENTI, Catalyse was the starting point of the work on TICS. We essentially take consider Catalyse as a set of tools. Consequently, caENTI aims at "integrating the present research projects on territorial intelligence tools, so as to give them a European dimension" and the main objective of the work package 6 was to "design tools for territorial actors".

From Catalyse to TICS

Harmonisation of Catalyse Tools

Catalyse essentially articulates three kinds of tools:
- The tools for diagnostic and evaluation, an individual multi-sector guide, Pragma for quantitative analysis and Anaconda for qualitative analysis (profiles of needs)
- The repertory that publishes on line the available services
- Territorial indicators mapping

We consider then two additional specifications sets:
- The Catalyse « toolkit » harmonizes and updates the tools, improves their accessibility and completes their documentation.
- The integration of the Catalyse tools within a territorial information system linking quantitative analysis, qualitative analysis and spatial analysis in order to determine and compare people's needs profiles and services profiles within a context defined by territorial indicators.

In the initial project, the specifications of such a territorial information system mostly depend on a methodological and technical logic. Statistic analysis, data analysis and spatial analysis have their own generic process.

They are integrated within an information system that also has a broader generic process, from data gathering to information publication, *via* cooperative space for analysis. These generic processes can also be defined step by step, independently from their application field and uses.

During the first period of caENTI, common specifications were drafted for information contents: guide, repertory and territorial indicators; as for the data processing tools: Pragma, Anaconda, Nuage and Sitra for mapping (see deliverables 51 to 56). The definition of harmonized information contents and tools specifications, on the basis of observatories experiences and respecting European standards, strongly mobilized actors and researchers at the European scale.
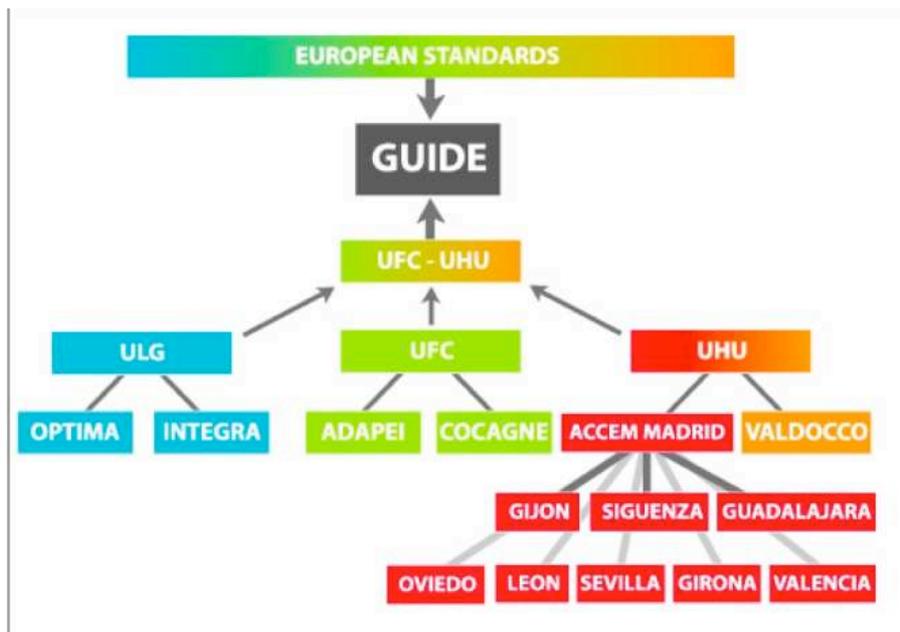

Diagram 1: Harmonisation of Catalyse tools (J-J. Girardot, ThéMA)

New experimentations quickly started with the updated contents and tools.

Transition towards TICS concept

The modelling of the Catalyse method made decisive progress:
- The information contents became at least as important as the data processing tools.
- The specifications for uses became more important than the technical guidance note.

Data analysis protocols were drafted to define the data processing and the analysis process for each question of the guide. These protocols were deduced from the generic analysis process on one hand, and from actors needs and uses on the other hand. A diagram describes the Catalyse governance integrated within territorial cooperative observation tools used by participative territorial partnerships.
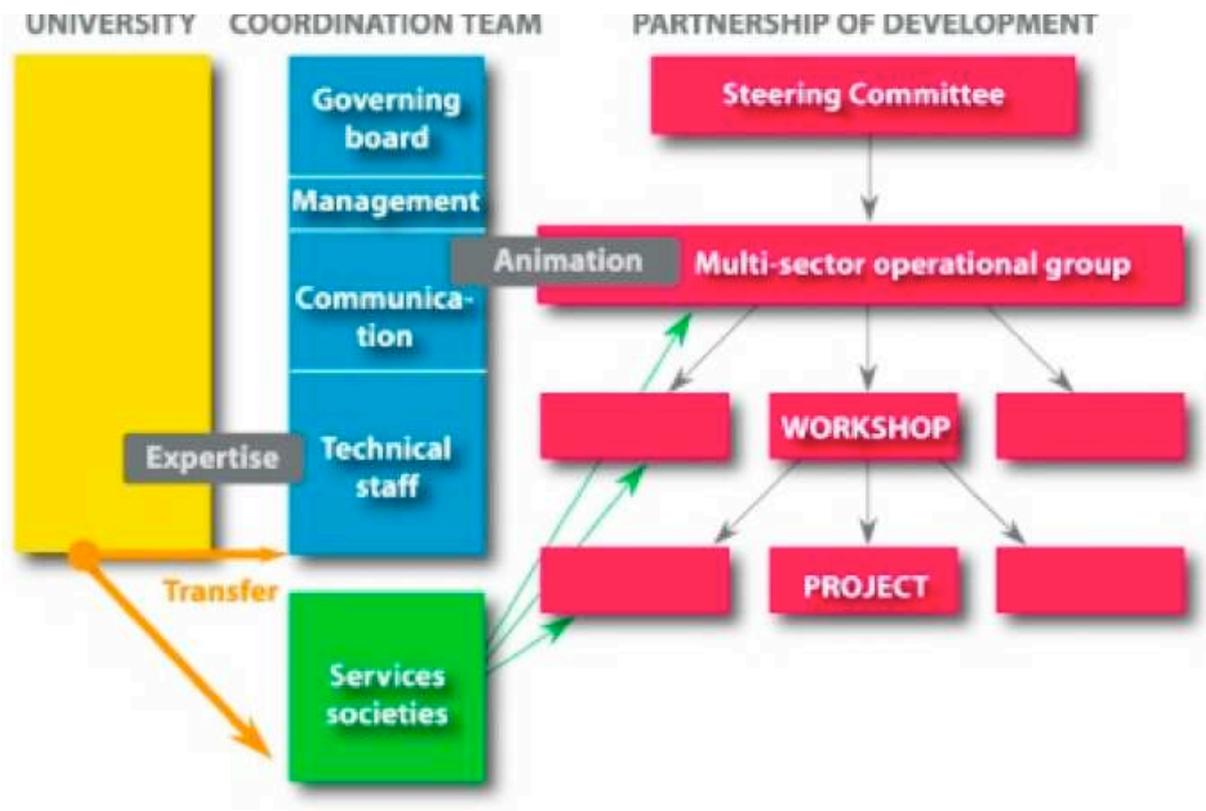

Diagram 2: Scheme of Catalyse governance (J-J. Girardot, ThéMA)

During the second period, two coordination groups drafted specifications for:
- The integration of the guide within the European online Inclusion Itinerary Accompaniment File, which computerises a traditional professional tool of the medical and social sector (see deliverable 57).
- The generic processing and editorial chain from territorial data to results publication.
An unplanned coordination group was created during Huelva conference on October 2007 in order to study the uses of associated observatories, follow the caENTI experimentations and make a repertory of territorial actors (see deliverable 58).

Definition of TICS concept

During the first two periods of caENTI, we progressively define the territorial intelligence community system (TICS) as a territorial information system (TIS) designed on the basis of actors use and specifically uses within territorial development partnerships. Its governance in the observation field was illustrated within the Catalyse method framework.

Our first objective was to integrate the fundamental analysis tools Pragma, Anaconda, Nuage and Sitra as modules of a Territorial Information system. This software only allowed beeing used on a

working station. As their main users were distant partners from different bodies and worked in network, the need to integrate this software and to make the output and input files compatible and available at distance quickly appeared.
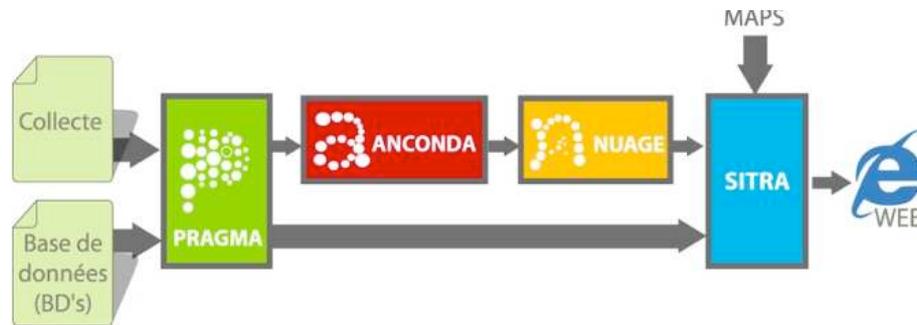

Diagram 3: Integration of basic modules (J-J. Girardot, ThéMA)

In the TIS, we designed the information concerned a territory, that is to say a geographic space and its community. They are referenced in space and time. The aim of the statistical and spatial analysis functions was to help territory actors, by producing knowledge about the territory. We considered the functions from the technical point of view of an editorial chain:
-   Gathering information
-   Analyzing them according to scientific protocols, especially in a spatial prospect
-   Interpreting these analyses results
-   Representing the information and the results
-   Drafting decision-making scenarios
-   Managing and evaluating policies, programs, devices, projects and actions that result from these decisions.

When we paid interest in uses, we referred to the following definition that focuses more on the uses than on the functions: A TICS is a TIS addressed to a territorial community, or to a partnership of territorial actors who want to develop democratic governance according to sustainable development principles.
-   It favours information sharing within a territorial development partnership;
-   It instruments the data cooperative analysis and the participative interpretation of the results;
-   It introduces citizens' participation in the decision-making process;
-   It provides to the actors useful information in order to draft projects, and then to manage and to evaluate them;
- It gives to the community all the useful information.

It exploits the potential offered by computer science for gathering information, sharing it, favouring the actors' partnership in the information cooperative analysis, and increasing citizens participation, by improving their information and their access to information. It respects the constraints that sustainable development, particularly participation and partnership, imposes to information processing and publication protocols. The next diagram shows four research axes:
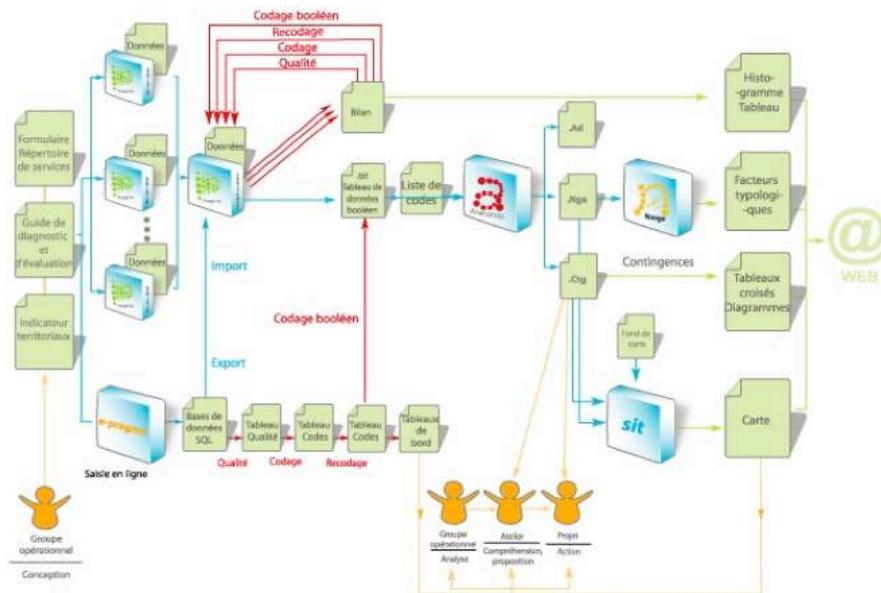
Diagram 4: Territorial Intelligence Community System (J-J. Girardot, ThéMA)

Before considering the results in each axis, we will quote the research actions on transversal specifications about the overall design of TICS initiated last year (see deliverable 57 and 58)

- Computer science specifications, coordinated with Sylvie DAMY and Bénédicte HERMANN of the "Laboratoire d'Informatique de l'Université de Franche-Comté" (LIFC)
- Energy consumption and ecological use (it is new)
- Ethics and law, mainly about the respect of private life
- Information and communication sciences coordinated by Cyril MASSELOT

TOOLS INTEGRATION

The tools integration is the starting point and the most advanced axis of the TICS. Its work was preceded by the creation of specifications regarding the software Pragma (deliverable 54), its integration with Anaconda (deliverable 55), the territorial indicators System (deliverable 56), then the analytic and editorial chain of territorial information from gathering to online publication (deliverable 58).

This part aims at showing the progress in the development of the software and in the design of their integration.

Before the CAENTI project, we began to develop new stand-alone cross platform version of software and to integrate data and spatial analysis software.

These first steps were quickly joined and enlarged with the design of the TICS during caENTI, in two directions:
- Firstly we wanted to gather the tools in a Catalyse Toolkit for personal computers.
- Then we pursued a better integration of the tools in a unique database within the TICS.
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We followed the first schema of integration of the catalyse software (diagram 3) and upgraded pragma classic, developed a version in Java jPragma and an ePragma online version and integrated Nuage in Anaconda.

During the last period of caENTI, the software and their integration made important progress with:

- The java version of Pragma, ready for a daily use. It has the same function of Pragma classic and new functionalities, as the multilingual management.
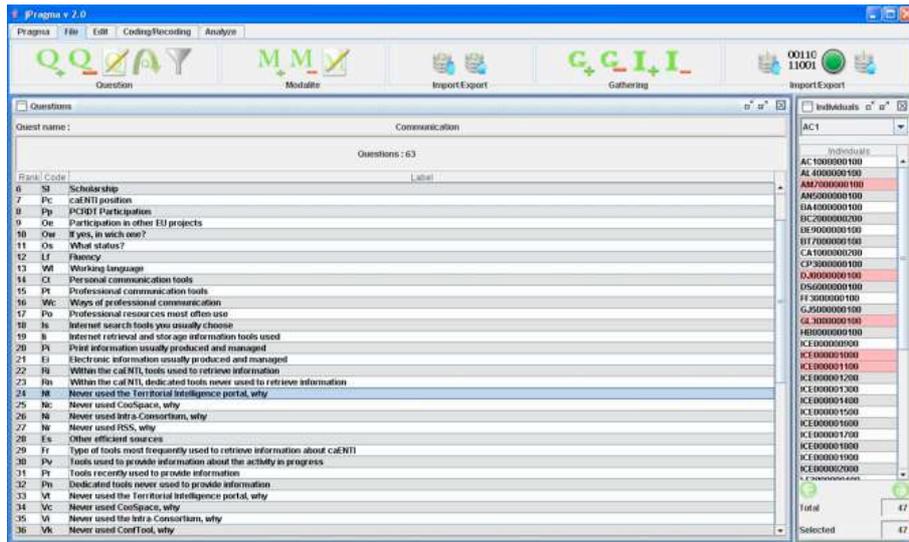
Diagram 5: Cross-platform version of Pragma (J. Bénilan, ThéMA)
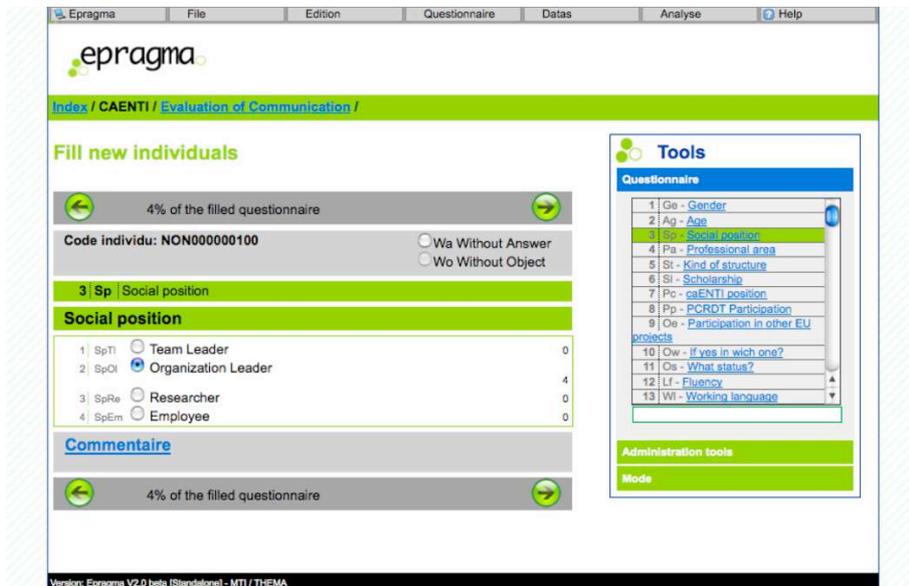
- A new version (2) of ePragma:

Diagram 6: New epragma version 2 (R. Thomas, ThéMA)

- Anaconda has been entirely rebuilt with a new graphical user interface, more ergonomic and easier to use.
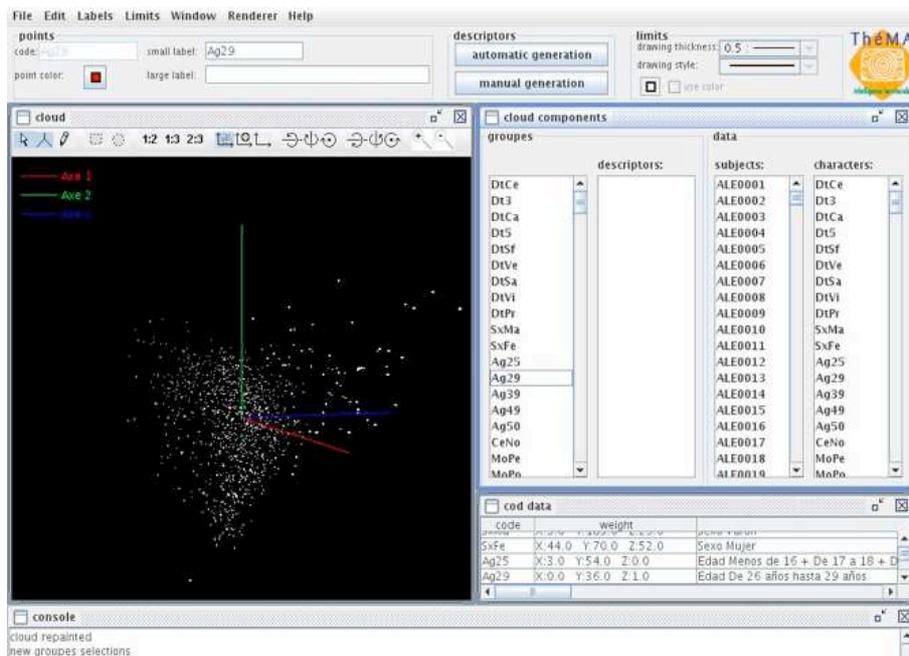
Diagram 7 : New beta version of Anaconda 3 software (croos-platform and online, M-E. Ramage, ThéMA)

- A first webmapping was done to represent data at the communal level and we initiated regional experiences at infracommunal level.
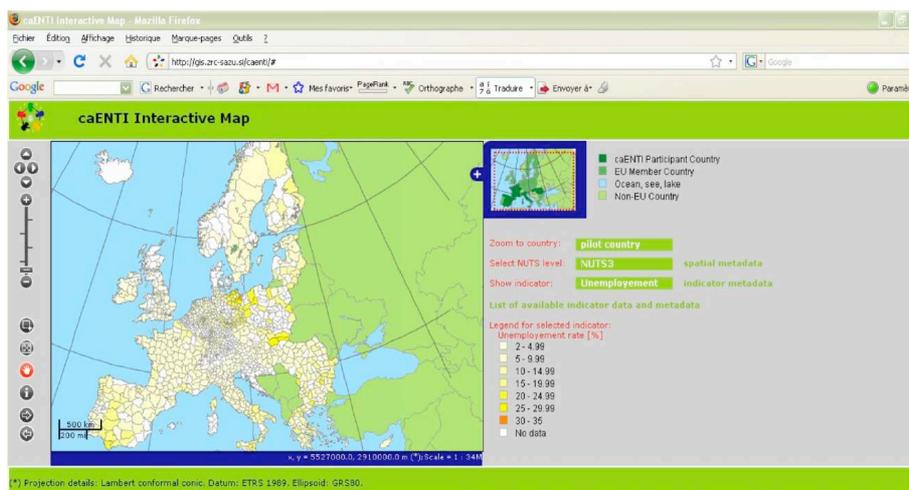
Diagram 8: European web mapping of territorial indicators (unemployment) at communal level (P. Pehani, ZRC ZAZU).

These tools will be presented in the workshop "Catalyse tools integration" and "European portal of territorial indicators". In this workshop we will debate of:

- The CATALYSE Content Management System, which prefigures a more ambitious TICS. It suggests to Catalyse old and new observatories a website « ready to go », based on the Catalyse method, multi-language, low cost, robust and reliable

- The Catalyse community, which allows downloading free updated and gives a multilingual documentation at conceptual, methodological, technical and operational levels.

Diagram 9 : Catalyse community (C. Masselot, Laseldi)

Editorial and documentary process

This research axis considers the TICS as an editorial process, from data collection to results publication.

We essentially designed the documentary process of the TICS.

Firstly, we updated specifications about the input documents: the guide for diagnosis and evaluation, the repertory of services, the territorial indicators, the file, the questionnaire as a model for the previous documents and the links between these documents
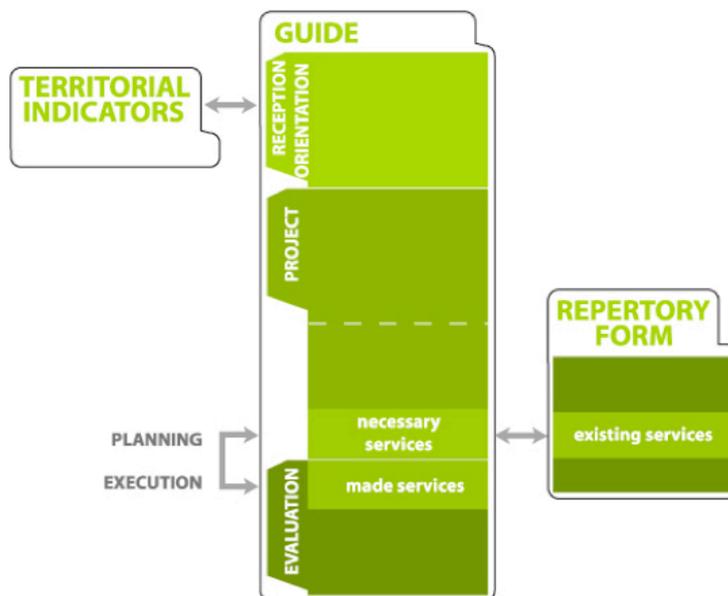

Diagram 10 : Hamonization between input documents of the TICS (J-J. Girardot, ThéMA)

Then, we completed the specification of the intermediary documents: Global qualitative balance, Cross plan, Boolean data sheet, codes list and the results file of Anaconda with a proposal for a new classes profiles file

We will debate of the data modelling and of the topic of Métadata that were both coordinated by Sylvie DAMY and Bénédicte HERMANN. The report on data modelling was published on Coospace and a paper on metadata will be presented.

Analytical protocols

By working on analytical chain, we became aware of the matter of its editorial function, directed towards online edition of data analysis results. Last year, we drafted a first scheme of the main phases and stages, according to the technical protocols of data analysis, and we initiated to define with the actors the specific protocol for each question of the guide in the framework of experimentations.

Celia SANCHEZ LOPEZ and Antonio MORENO MORENO, Universidad de Huelva, Spain will be present a paper on protocols.

Integration of uses

When we were working on data analysis protocols and the use of Catalyse tools, we decided to enlarge the topic of the collective use of Pragma to the use of territorial intelligence by a development partnership, and above all, beyond it, by a community (deliverable 56). In the context of the current evolution of Internet towards social use, we bridged Internet community and community development, as a group of people gathered by a common project. It allowed clearly introducing the uses of a community, in the design of the system, in accordance with the modelling of the Catalyse governance (deliverable 56).

In territorial intelligence and TICS, the word « community » does not refer to the biological, historical or religious dimension. It refers to a group of people united by a common project. It is also the meaning that is used in computer science to refer to a users community. This meaning covering will allow studying the conditions in which territorial community can constitute the TICS users community. We should also take into account the fact that if the information analysis can constitute a project for the TICS, it is an intermediary step at the service of an objective of sustainable development for the territorial community, or more simply for the local actors who want to plan, lead and evaluate actions of local development.

This orientation implies the categorization of the TICS users – *a priori*; experts, actors, partners and community, and the study of their uses:
- Which functions do need an expertise?
- Which functions are transferable to the users?
- According to which pedagogy and with which accompaniment?
- How to organize the sharing of territorial information, and then the cooperation at the level of their analysis and their edition?
- Which are the actors, partnership, and territorial community functions?
- How to associate the community by the means of the participative interactive systems?

This modelling implies an adaptation of data analysis steps and of the results interpretation, as well as of the editorial flow, to the communication, the animation objectives of the partnership, the participation and of governance of the territorial community.

We lead comparative analysis on the uses with the caENTI observatories and the four experimentations: Accem (Spain), Integra Plus (Belgium), Adapei (France) and Chapelle-lez_Herlaimont.

We joined the WP6 (on methodological and technical aspects) and the WP5 (on "sustainability principles") efforts. They organized together during the third period three coordination meetings in order to:

- Evaluate the Catalyse method from the point of view of the uses and of the users, with a first short evaluation form (Liege, February 2008).). Jean-Marie DELVOYE, Christiane RULOT MARÉCHAL and Guenaël DEVILLET coordinated this evaluation. They will present a paper on preconisation for Catalyse use.
- Draft a form that allows describing, then analysing, the uses of territorial intelligence tools within development partnerships in order to make territorial diagnoses, to evaluate action, to observe, to elaborate projects, etc. (Huelva, May 2008). Maria Jose ASENSIO COTE coordinated the form drafting.

- Feed the form in order to draft papers that present the uses of territorial intelligence tools according to their action objectives and their principal approach in the domain of observation, and present a first version of their paper for internal discussion (Besançon, June 2008). Celia SANCHEZ LOPEZ and Jean-Jacques GIRARDOT animated the feeding and the papers drafting.
- These papers will be presented in the two workshops on "The uses of territorial intelligence tools". Celia SANCHEZ will animate the workshops and Blanca MIEDES UGARTE will make a synthesis.

The led experimentation fed the research activities that were made. The workshop members should now identify all the meetings devoted to observation activities within the partnerships.

CONCLUSION AND PROSPECTS

The draft of specifications for the TICS is a very important work we initiated in caENTI. It needs to be completed in all axes and will not be finished with caENTI. However, we recently drafted sufficient specification to begin experimentation of TICS.

Numerous topics are linked between documents, protocols and uses. It is often difficult to progress in an axis until we end another. Documents cannot evolve before protocols are sufficiently advanced and the latter depends on use analysis.

Research and action are also closely associated in this domain. Each tool, document or protocol need to be experimented before making a new step.
We can consider the work is now well advanced and will go on.

The tools have been presented in a demonstration workshop, with the first prototype of online documentation managed by a wiki tool.

They can be downloaded on the *Catalyse community* website (http://www.territorial-intelligence.eu/catalyse/). Each version of these tools is available in a good and stable version. Meanwhile, they can be improved, and some points have to be finalized for a public use.

The *Catalyse Community* gives a first online version of the Catalyse toolkit.
The integration of the software progressed much. The website ready to use *Catalyse's Contents Management System* is a first simple TICS.

We have strongly initiated the specifications of the documentary and editorial chain with several approaches: documents, data modelling, and metadata.

Analysis of uses has mobilized all the caENTI territorial actors to elaborate a first set of recommendations on uses in the framework of participative partnership. The actors also initiated the constitution of a portal of territorial intelligence actors. They are now engaged in the specifications of the observation meetings in development partnerships.

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