Towards a better adoption of ISO/TC 211 standards: Courses on international standards in geomatics

Dr. Thierry Badard

Centre for Research in Geomatics (CRG)

University Laval, Québec, Canada

Thierry.Badard@scg.ulaval.ca

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Content of the presentation.

- Context and purposes of the course program
- Partners and members of the project
- Structure, organisation and planning of courses
- Other related initiatives and impacts of the project

Context of project.

- Canada is well involved in the definition and implementation of standards (ISO/TC 211 or OGC)
- Different organisations in Canada have understood that using standards for a better interoperability in their business activities and processes is important !
- But, standards are sometimes difficult to implement for people not familiar with them.
- Need for vulgarisation but a lack of available courses on standards in geomatics.
- Different governmental organisations want their employees to be teach on standards in geomatics

  => Idea of a common project which shares resources !

Purposes of the course program.

- This course program aims at introducing and providing a better understanding on recent international standards in the Geomatics/Geographic Information field.

- This course program focuses on the two principal sets of international standards in the field:

  - the ISO 19100 series (ISO/TC 211)

  - and the Open Geospatial Consortium (OGC) specifications.

- The courses address all different aspects of geomatics, from data acquisition to the distribution of geospatial information on the Internet or not.

Partners of the project.

This course program is developed by:

- Natural Resources Canada
- University Laval

with the contribution of:

- Defence Research and Development Centre-Valcartier,
- GEOIDE Network,
- Fisheries and Oceans Canada,
- Centre de Développement de la Géomatique.

Teachers.

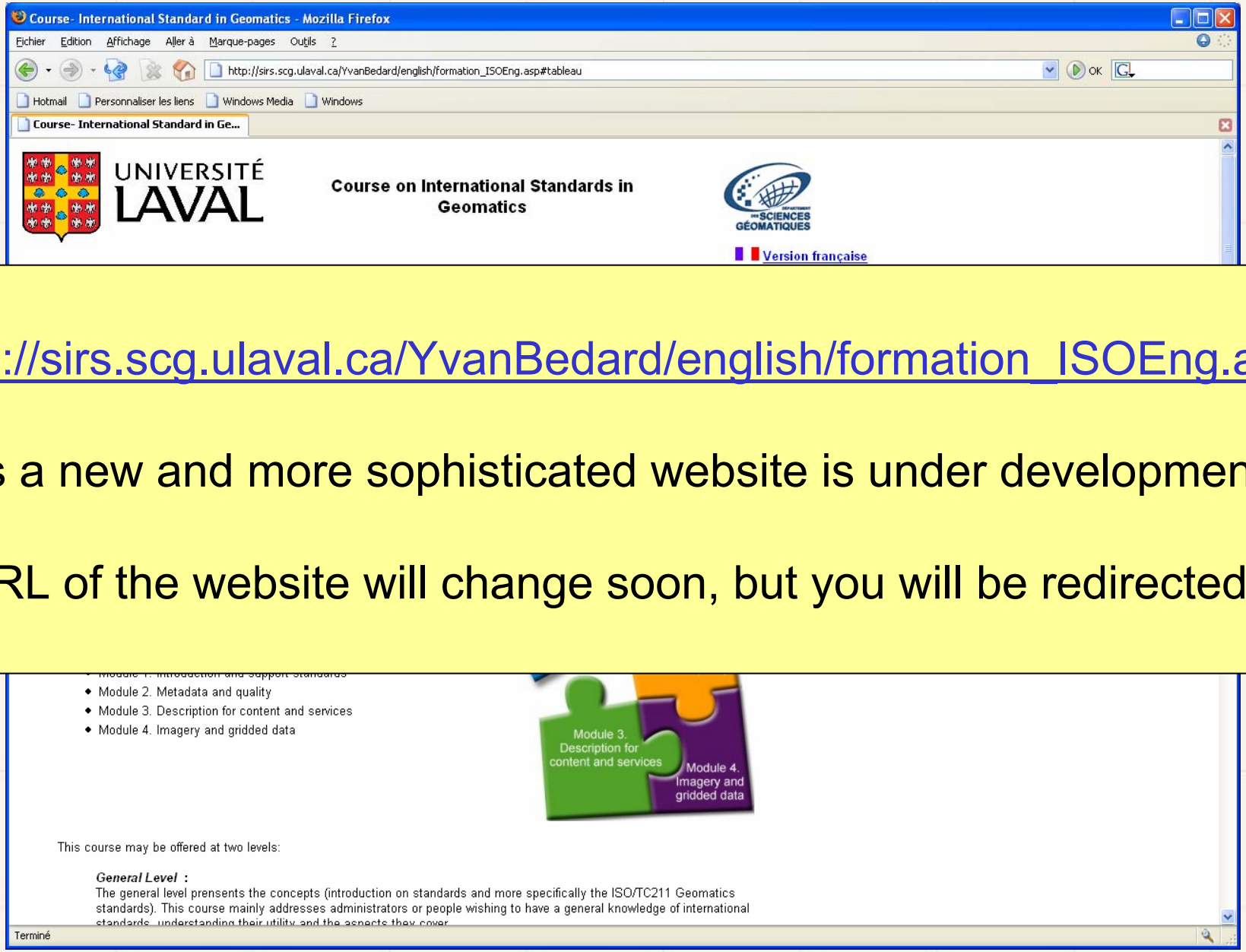
- **Thierry Badard, Ph.D**
  Person in charge of this course program
  Centre for Research in Geomatics
  University Laval

- **Sylvie Daniel, Ph.D.**
  Centre for Research in Geomatics
  University Laval

- **Frédéric Hubert, Ph.D.**
  Centre for Research in Geomatics
  University Laval

- **Rodolphe Devillers, Ph.D.**
  Department of geography
  Memorial University of Newfoundland

Website of the course program.



http://sirs.scg.ulaval.ca/YvanBedard/english/formation_ISOEng.asp

As a new and more sophisticated website is under development,

URL of the website will change soon, but you will be redirected !

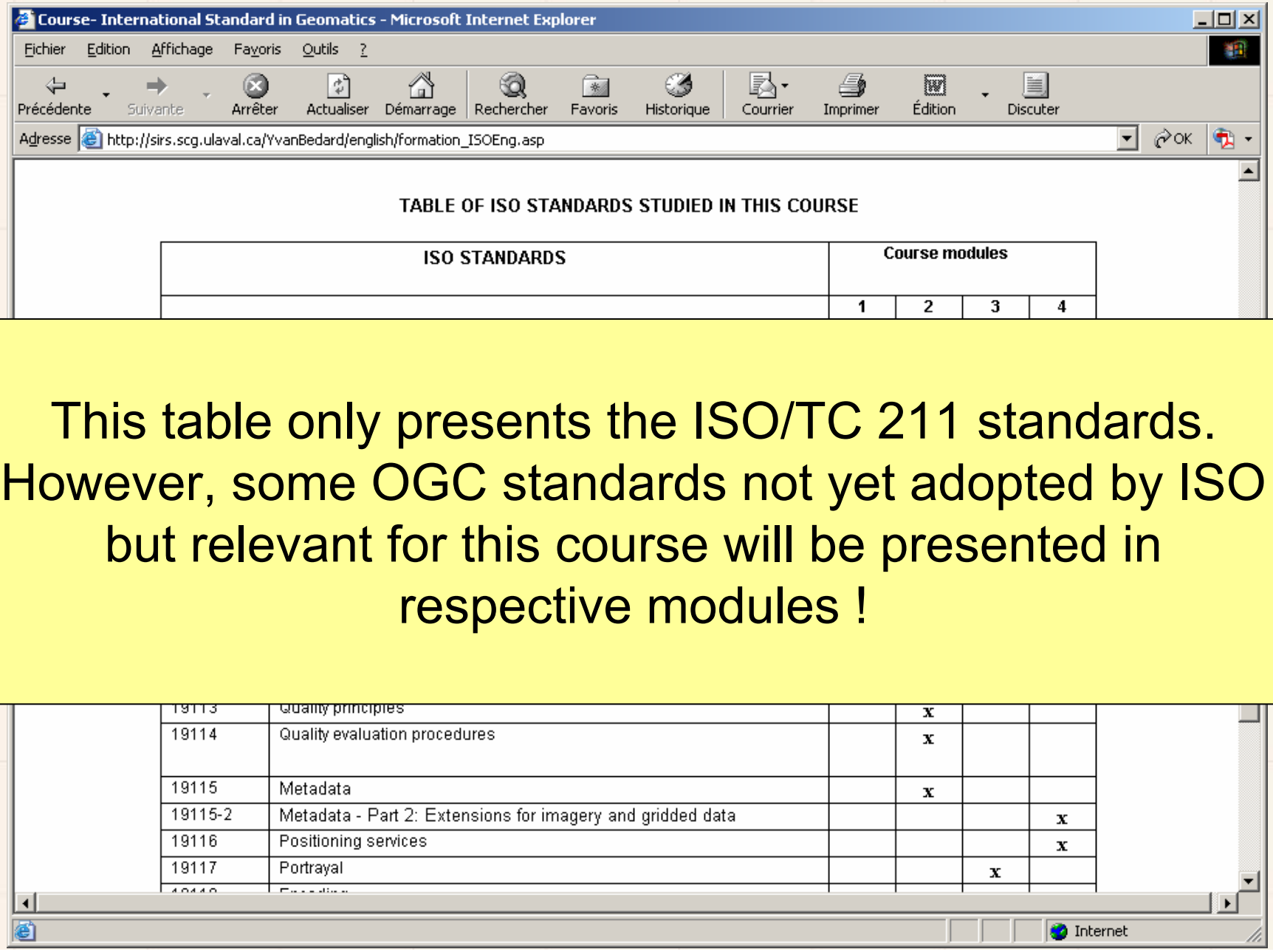
General organisation of the program (1/4).

The studied standards are divided into 4 thematic modules that are addressed by 3 training courses (the first 2 modules are presented together in the first course):

- Module 1. Introduction and support standards
- Module 2. Metadata and quality
- Module 3. Description for content and services
- Module 4. Imagery and gridded data

However, **a specialized course can be offered on a subset of these standards !**

General organisation of the program (2/4).



This table only presents the ISO/TC 211 standards. However, some OGC standards not yet adopted by ISO but relevant for this course will be presented in respective modules !

General organisation of the program (3/4).

At present, this course is offered at two levels (but it could be from one level to the other, or at an intermediate level):

- **General level**:

  - The general level presents the concepts (introduction on standards and more specifically the ISO/TC211 Geomatics standards).

  - This course mainly addresses administrators or people wishing to have a general knowledge of international standards, understanding their utility and the aspects they cover.

General organisation of the program (4/4).

- **Advanced level**:
  - The advanced level includes the notions presented in the general level but goes further in the technical aspects in order to have a better understanding of the standards and to be able to implement them.
  - The advanced level addresses people having a minimal technical knowledge in geomatics and that would eventually have to implement the standards in their organization.

Some general knowledge issues, prior to the comprehension of standards (e.g. UML), are examined in order to provide students with a sufficient background, allowing them to pursue their study of standards beyond the course !

Objectives of the general level course.

At the end of this course, the students:

- Will be more aware of the importance of the standards in the field of geomatics,
- Will understand the general structure of the ISO/TC 211 and OGC standards as well as their (inter) relationships,
- Will understand the role and the underlying general concepts of each of the ISO/TC 211 and OGC standards.

Objectives of the advanced level course.

At the end of this course, the students:

- Will be more aware of the importance of the standards in the field of geomatics,
- Will understand the general structure of the ISO/TC 211 and OGC standards as well as their (inter) relationships,
- Will understand the role and the underlying general concepts of each of the ISO/TC 211 and OGC standards,
- Will understand advanced notions related to each standard,
- Will be able to investigate the standards on his own and extract knowledge towards specific projects.

Calendar and special events (1/2).

Modules 1 and 2 have been offered during spring 2005 to:

- Natural Resources Canada (Centre d'information topographique- Sherbrooke)
- Centre de développement de la géomatique (CDG) : Hydro-Québec, MRNQ, Transport Québec, Institut de Statistiques du Québec, DMR, CGI, Seaquest)
- National Defense and Centre de Recherche de la Défense-Valcartier
- GEOIDE Network
- Fisheries and Oceans Canada
- University Laval (and partners of the Industrial Chair in Geospatial Databases for Decisional Support)

Calendar and special events (2/2).

- Module 3 will be offered to partners between December 2005 and February 2006.
- Module 4, between September 2006 and December 2006.
- In addition, the project and Jean Brodeur (Thanks Jean !) has organised the “ISO/TC 211 Tutorial - Introduction to standards in geomatics”, in conjunction with the ISO/TC 211 21st Plenary and associated meetings on September 12, 2005 in Montreal.
- This tutorial is a success (17 participants world wide) !
- Numerous requests for the organisation of this tutorial in Europe have been performed !
- Why not another tutorial during the next edition of the ICA Internat. Cartographic Conference or ISPRS assembly ?

Program modularity.

- As you can see, everything is modular and can be adapted in order to provide courses that fulfill the requirements of a specific organisation.
- Other course sessions will be offered soon, so come back on the website.
- But if your are interested in special course sessions or, events, please contact Dr. Thierry Badard:

Thierry.Badard@scg.ulaval.ca

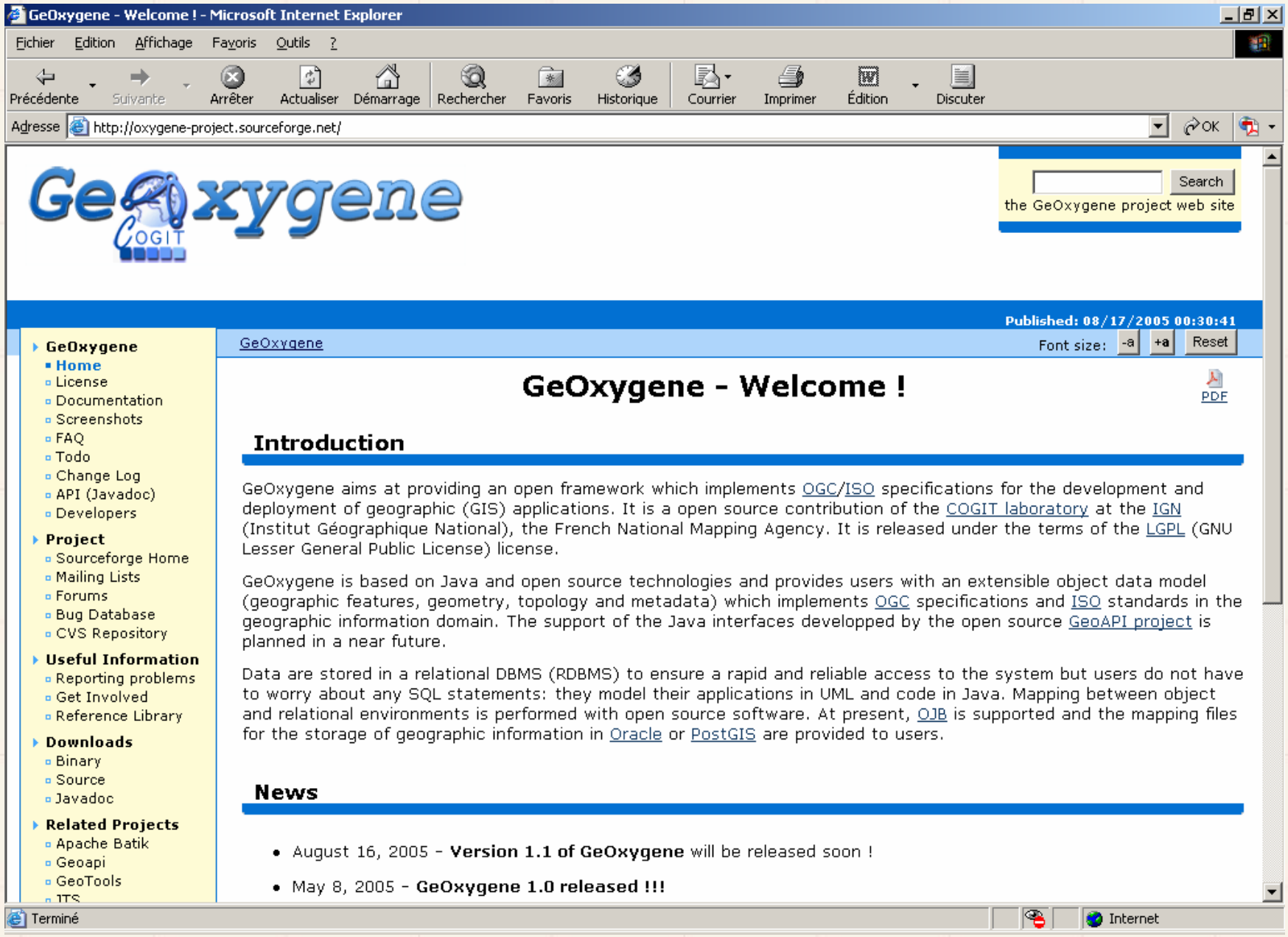
Impacts: Teaching standards at University.

- Materials produced in the project are used at University in order to introduce standards in geomatics and teach their importance in different courses at all levels (Short term programs, Bachelor, M.Sc., Ph.D., …)

  - Methods for the design of geospatial databases
  - Design of GIS applications
  - Diffusion of geospatial information over Internet
  - etc.

- Different software are used to illustrate the importance of standards in the geographic information domain
- Especially, use of open source software which implements (are often based on) geospatial standards
- As an example, the GeOxygene project !

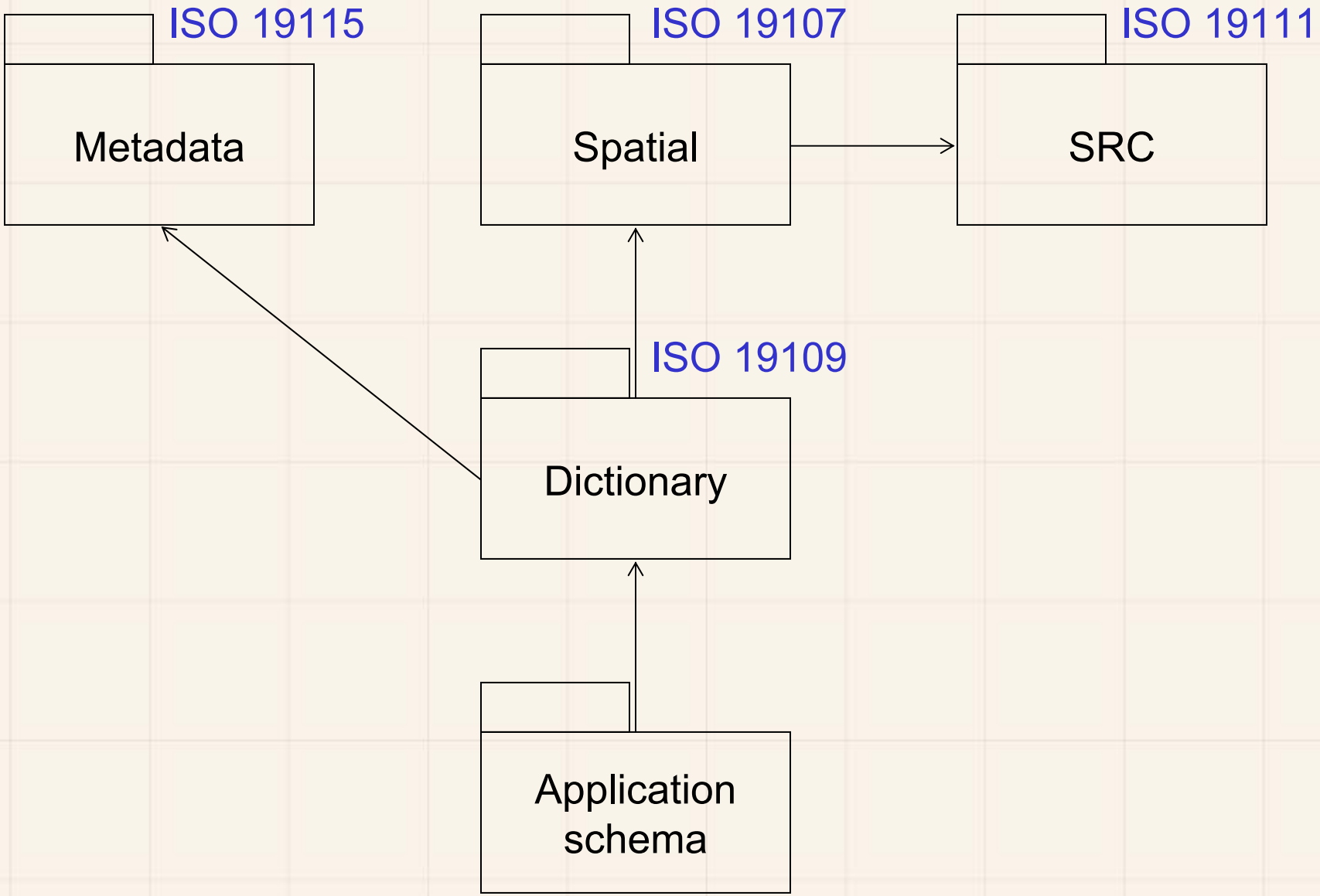
http://oxygene-project.sourceforge.net.



About GeOxygene …

- Open source project stemming from researches undergone at the COGIT laboratory of the Institut Géographique National (IGN), the French NMA.
- Project leader and developer at the IGN from September 2001 to 2004
- Open source release on May 2005 !
- GeOxygene administrators: Thierry Badard and Arnaud Braun
- Provide an open framework for the development of interoperable applications based on geographic databases and their deployment over the Internet (Web Services).
- Based on Java™ technology and different other open source components, it implements numerous standards of ISO/TC 211 and OGC (and W3C and OMG).

General organisation of the model.



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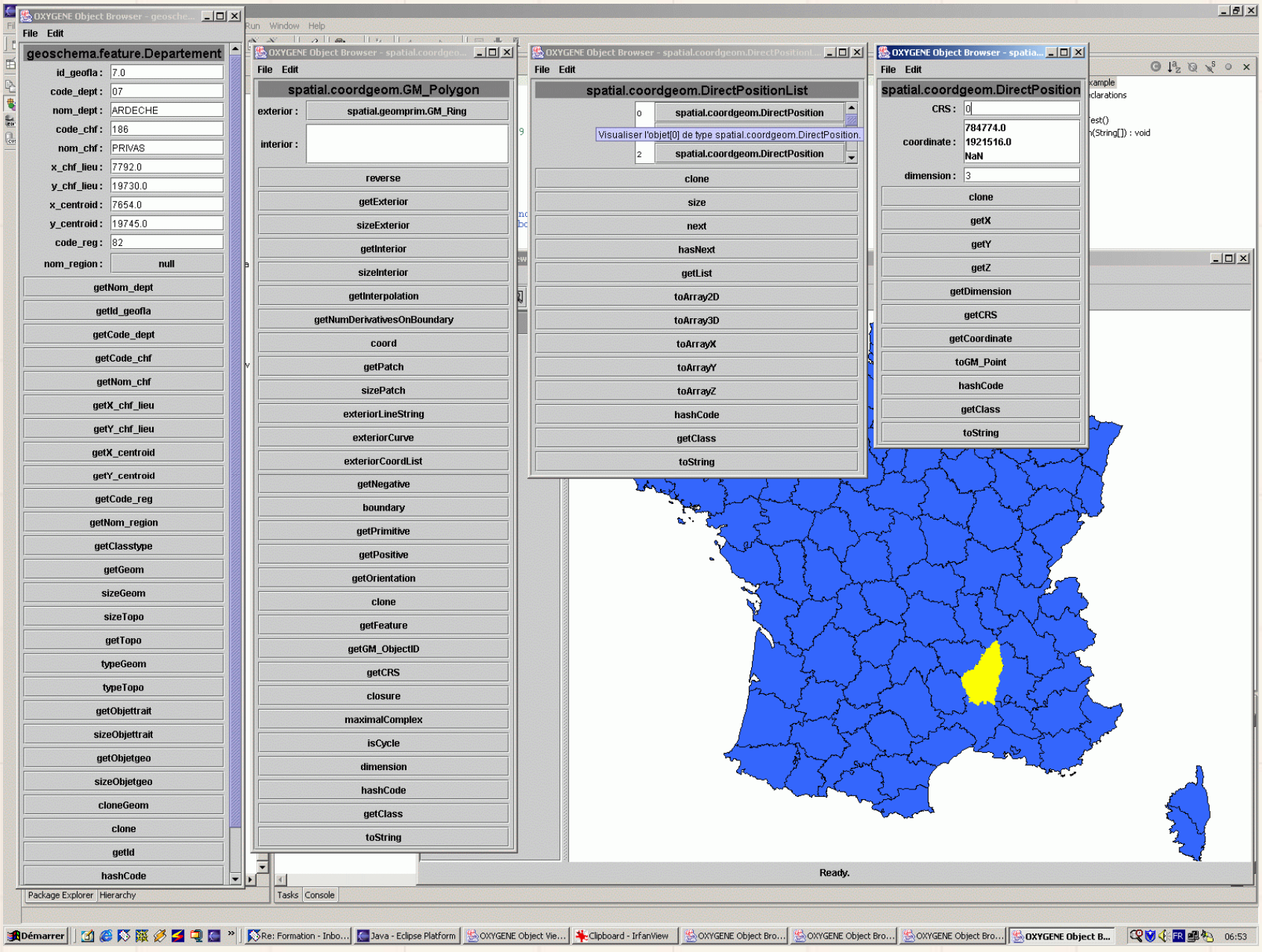

Questions.

Thanking you for your attention !