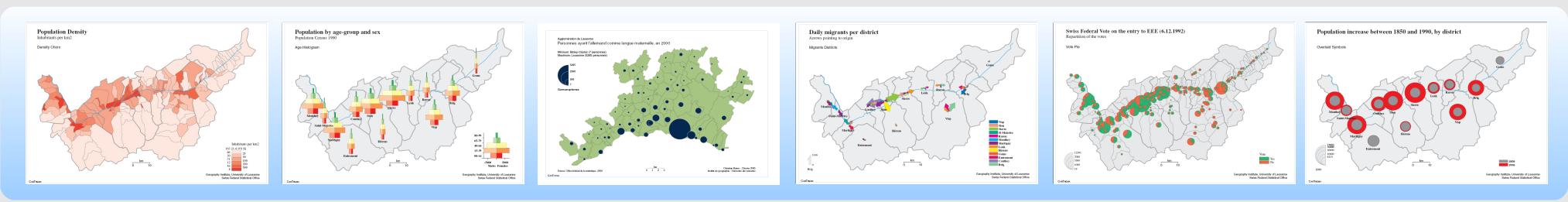


CarThema5

**gvSIG-based application
dedicated to thematic mapping**



→ Mr. ERTZ Olivier – Mr. CORPATAUX Damien

IICT / geo.sysin

Institute for Information and Communication Technologies
<http://www.iict.ch>

MicroGIS

<http://www.microgis.ch>



Swiss Federal Statistical Office

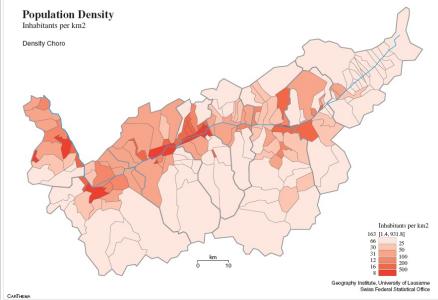
<http://www.bfs.admin.ch>



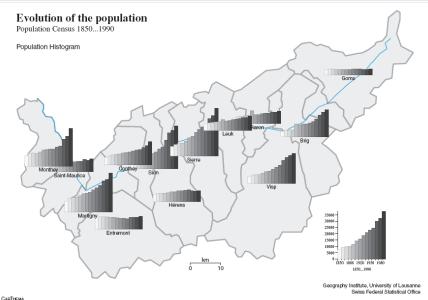
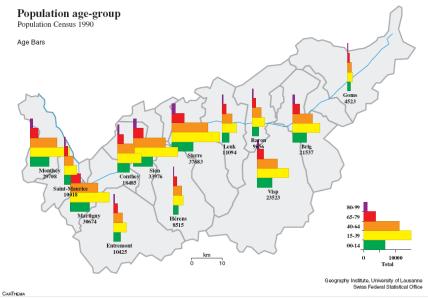
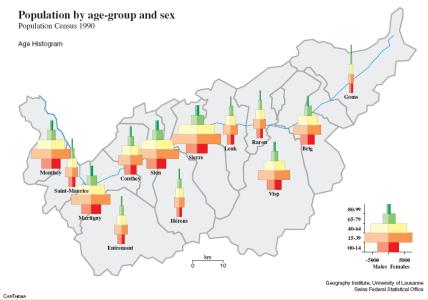
heig-vd

Show case

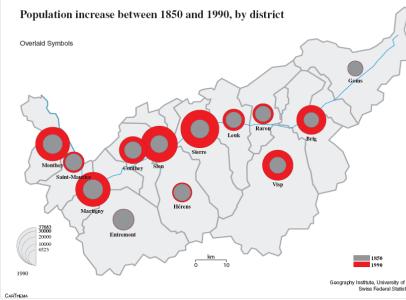
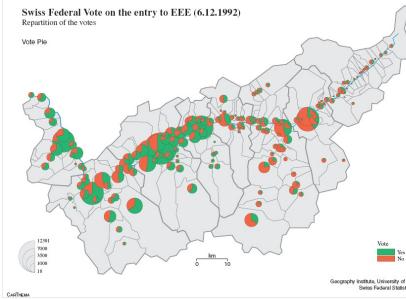
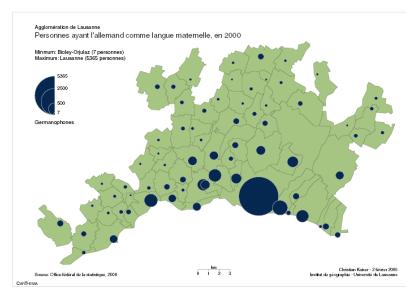
Choropleth



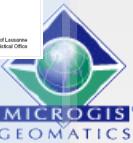
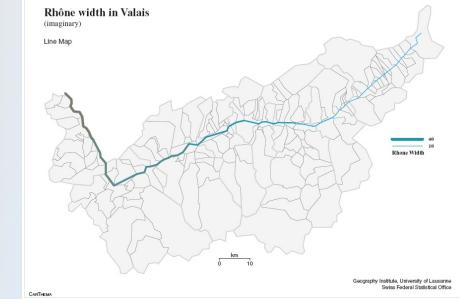
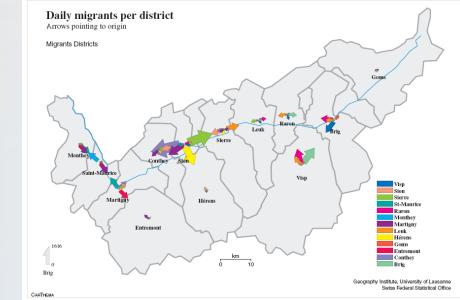
Histogram



Symbol



Flow

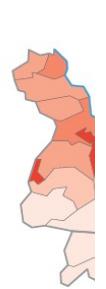


Show case (2)

Population Density

Inhabitants per km²

Density Chor



POPULATION, 1990, per district

Relative increase since 1970

Character Sy



Evolution of the population

Population Census 1850...1990

Population His

Swiss Federal Vote on the entry to EEE (6.12.1992)

Repartition of the votes

Vote Pie

Daily migrants per district

Arrows pointing to origin

Migrants Dist

Population increase between 1850 and 1990, by district

Overlaid Sym

Population by age-group and sex

Population Census 1990

Age Histogram

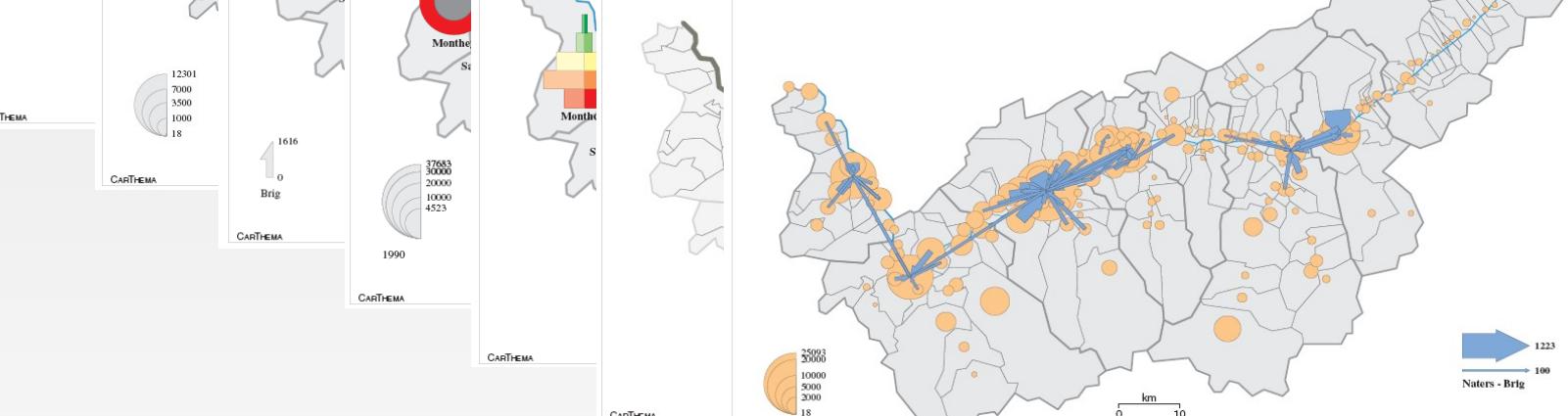
Rhône width in Valais (imaginary)

Line Map

DAILY MIGRATORY FLUXES

Communes of Valais, 1980

Flow Map



CarThema 4

- CarThema 4 has involved :
 - Cartographic Specifications:
Lausanne University Geography Institute
 - Extended Specifications:
Swiss Federal Statistical Office
 - Program design and development:
B. Gabioud
- Written all along 90s in Pascal language, not OO.
- **Now in a “prison”** - runs only on old MacOS 8.x



CarThema 4

- More or less a command-based application with hard-linked dialogs
 - Command window : input/execute a command
 - List Window : show results of a invoked command
 - Graphic window : show the map result
 - UI dialogs to ease the input of command



CarThema 4

File Edit Option Map Data Color Note Chart Draw Aide

11:22 CarThema 4.0.3

Graphic Window

Population by age-group and sex
Population Census 1990

Age Histogram

Histogram Legend...

Line Legend...

Arrow Legend...

Distance Legend...

Legend Labels...

Program CarThema 4.0.3, developed by Bernard Gobin, University of Lausanne

Thematic Cartography concept by Micheline Cosinschi, Geography Institute

This program copy is reserved for use by the Swiss Federal Office of Statistics

```
!-----  
! Age Histogram.cmd: Population by age-group and sex  
!-----  
infile = "Macintosh HD:CaTh:Distrib:Scripts:Age Histogram.cmd"  
path (A = "Macintosh HD:CaTh:Distrib:Scripts:")  
run "A:PathFiles.cmd"  
!  
! PathFiles.cmd : Define paths and files for the example scripts  
!  
Path (R = "Macintosh HD:CaTh:Distrib:")  
Path (C = "R:Data:Colors:")  
Path (G = "R:Data:Geometry:")  
Path (S = "R:Data:Statistics:")  
vsi = "Age Histogram"  
uso = "R:Output:Age Histogram.ai"  
end "A:PathFiles.cmd"  
!  
! Reading the geometric data  
!  
run "A:US-DistrictFiles.cmd"  
!  
! US-DistrictFiles.cmd : read geometric files for districts  
!  
MAP DELETE (ALL = YES)  
MAP READ "G:US-dis_Centers.pts"  
POINTS file read: VS_DIS_CENTERS.PTS  
13 units, from 2301 to 2313  
MAP READ "G:US-Districts.plg"  
SURFACES file read: VS_DISTRICTS.PLG
```

Leuk, Ron, Brig, Visp, Hérens, Siemre, Goms

km

Geography Institute, University of Lausanne
Swiss Federal Statistical Office

80-99
65-79
40-64
15-39
00-14

-5000 5000

Males Females

From CarThema 4 to CarThema 5

- CarThema 5 will be
 - dedicated to the creation of thematic maps
 - migration of functionalities from CT4
- Involves a consortium :
 - MicroGIS : project leading and specialist in thematic mapping especially for business mapping
 - IICT / geo.sysin : design and specialist in geoinformatics technologies
 - Perspectives : core OO development



heig-vd

From CarThema 4 to CarThema 5



- Multiplatform, written in Java, OO, extensible ...
- Minimize the risk of prison again
- Free Software (GPL), to ease :
 - future collaborations
 - birth of a community in thematic mapping area



heig-vd

CarThema 5

component oriented development

- Data Persistence (Driver + table join)
- Data Manipulation (field management, aggregation)
- Classification (algorithms of)
- Colour Management (create/load/save palette)
- Thematic map representations : choropleth, symbols, lines, pie charts, histograms, flow charts)
- Postscript output (with grouping and named color)
- Simple Layout (note, scale, legend, ...)
- Scripting (batch mode, saving of project)



heig-vd

CarThema5 @ FOSS4G

- Mid-September: FOSS4G2006 !
 - A key moment to introduce the project to FOSS4G communities
 - The main question was:

*"with the usual idea in mind not
reinventing the wheel,
what open source toolkit / framework
should we use ?"*



heig-vd

Available solutions

in JFOSS4G area

- JUMP/OpenJUMP
 - Community seems dispersed, hard to identify
 - Doubts about its future
- So, uDig or gvSIG
 - uDig is well thought with 10th years old and mature Geotools
 - gvSIG offers the same and even more ...
functionalities



heig-vd

Available solutions

in JFOSS4G area

- What we love in gvSIG
 - Andami extensible, configurable, automatic updates
 - Fmap useful and easy mapping model
 - GDBMS promising data manipulations
 - gvSIG attractive functionalities!
 - closeness of the community

0.8 ... 2.2 ?

Europe



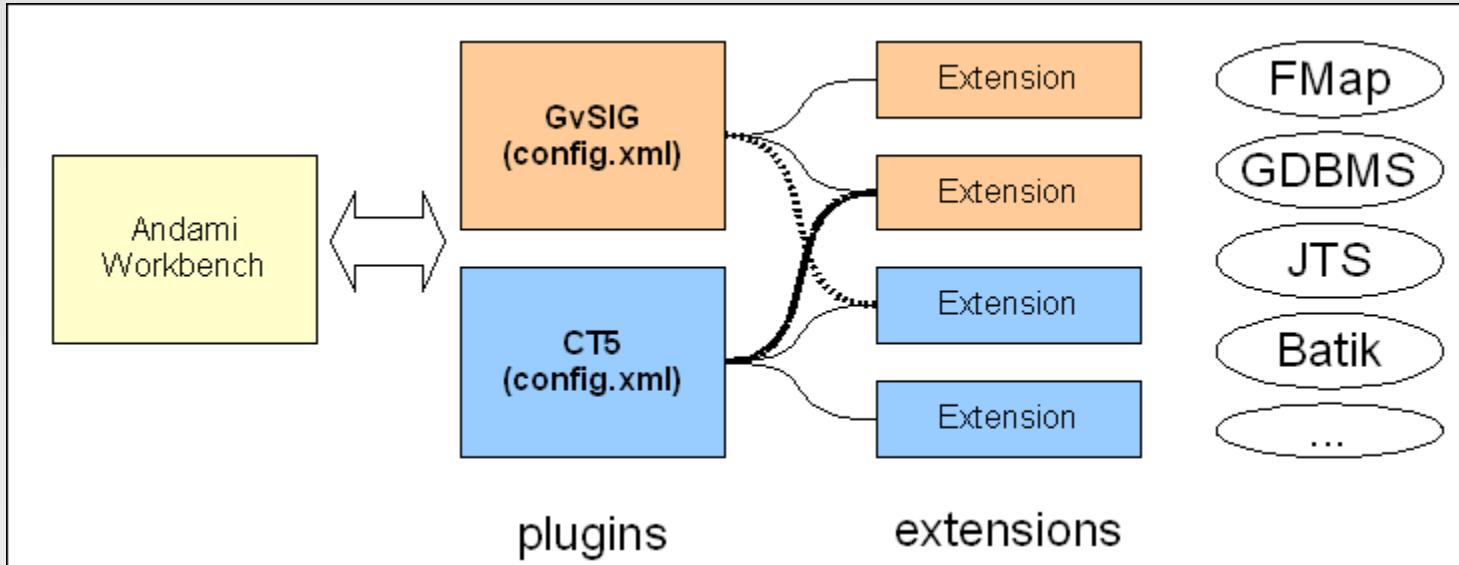
heig-vd

What has been done until now ?

- Few concrete things. First shot of a prototype :
 - Our own Driver for reading
 - BNA (spatial data)
 - TAB (alphanumeric attributes)
 - Packaged and ready to install
- Still in the design/analysis phase
- Short term milestone :
 - Create CarThema5 as a plugin for Andami



CarThema5 (CT5) plugin



- Plug extensions for each main identified component
- Reuse of gvSIG extensions as is or modified
- Creation of new extensions for CT5 but gvSIG compliant
 - ➔ Standalone CT5 (simplified gvSIG + new extensions)
 - ➔ CT5 plugin that works with gvSIG main branch

GUI concerns

- Current application: command-based with dialogs
- Step 1: stay close to CarThema 4 UI but taking benefits of a modern UI
- Step 2: build a complete new GUI which is another project



heig-vd

What we don't love in gvSIG ;-)

- Documentation : good start, but ...translation...
- Object model diagram...
- Examples...
- GDBMS...
- Projection systems...
- Organization of the workspace...



Towards a growing community

sharing knowledge

- Sharing knowledge with the gvSIG user/developer communities :
 - projet-sigle = first step
<http://www.projet-sigle.org/>
 - willing to create tutorials useful for getting started and minimize time in understanding package dependencies, use of the main classes, data persistence...
 - Trac System : transparency, wiki, milestones, tickets
- Propositions :
 - Centralized wiki, IRC channel #gvsig, CVS/SVN



heig-vd

GoWS Project

- From desktop application to web services
- Towards Web Processing Service (OGC)
- ... dedicated to thematic mapping
 - Database extraction
 - Aggregation
 - Classification
 - Rendering
- Basic idea : expose some CarThema functionalities through Web Services
- The Grail to interoperability



Thank you!

- We look forward working with gvSIG!



heig-vd

Contact information

Andreas Meissner

MicroGIS

andreas.meissner@microgis.ch

Olivier Ertz

IICT / HEIG-VD

olivier.ertz@heig-vd.ch

Damien Corpataux

IICT / HEIG-VD

damien.corpataux@heig-vd.ch



heig-vd