Content

- Introduction
- Project workplan
- Detailed axes of development
  - Automated text placement
  - Generalization
  - Updating
- Use of LAMPS2
- Conclusion
Why such a project?

• BDCarto® database
  • Initial scale 1 : 50 000
  • Several themes: roads, hydrography....
  • 1 600 000 edges for roads
  • 2 giga bytes of data

• Future Map:
  • Final scale 1 : 100 000
  • 76 sheets (+ 76 military sheets) with overlapping
  • Topographic and Touristic Map
Problems Review

• 1st Project : 90 - 93
  - Not enough data in BDCarto®

• 2nd Project : 95 - 98
  - Too expensive : 60 000 € / sheet
  - Too Long : 18 months / sheet
    • Text placement
    • Generalization
    • Overlapping between sheets
    • Updating process
New technological environment

- **Maturity of research:**
  - Automated text placement
  - Automated generalization
  - Automated updating

- **New Platform: LAMPS2**
  - 1 DB \(\rightarrow\) No problem with Overlapping between sheets
Constraints

1) Using of pre-defined cartographic specifications
2) Updating Cost < 20 kF (3000 €)
3) First Map Achieved < 7 Months
4) LAMPS2 (Agent results) + Mercator
5) Ready to produce < End of 2001
## Schedule

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Means available

**ACTORS**
- Project team: 4
- Steering committee
- Production team
- Agent project
- LSL support

**MATERIAL**
- NT Workstations
- LAMPS2 NT licences
- Mercator NT licences
Automated Text Placement

• Context :
  - Research since 1992 at Cogit laboratory to industrialize (Ph. D. Mathieu BARRAULT)
  - Global need for all series

• Objectives : Independence from scale and GIS

• Results :
  - Horizontal text placement

• Still to come :
  - Road number and kilometer labeling
  - lines and areas features naming
Map Generalization

• Main Problems:
  - Bends Coalescence
  - Roads Proximity
  - Roads sharp intersection

• Results from research

• Objectives: as automatic as possible
Map Generalization

• New algorithms to solve coalescence:
  - Min break
  - Max break
  - Accordion
  - Schematisation
Map Generalization

- New algorithms to solve proximity:
  - Displacement (Nickerson, Snakes, ...)

- New measures to detect and characterize conflict:
  - Coalescence
  - Proximity

- New Technology
  - AGENT Project
Map Generalization

- Before
- After one click
Map Generalization

- Before
- After one click
Map Generalization

• To decided:
  - Use of Agent prototype? Performance?
  - Automatic tools / interactive tools?
  - Control tools?

• Still a lot of problems:
  - Coherence between thems (roads /administrative limits)
  - Interchanges

Depending from Agent project results...
Map Generalization
Updating

• **Context**:  
  - IGN research on  
    • Data matching  
    • Propagation between different scale databases  
  - Database updating  
    • Frequency improved  
    • Some attempts to update maps from databases  
  - "Differential delivery" coming up
Updating

• Objectives: as automatic as possible if useful

• Results:
  - Solutions compared ==> XML and evolution data
  - Data model designed
  - Data imported into LAMPS2 from XML

• In progress for roads:
  - Integration tools
  - Propagation tools

Depending from generalization...
Use of LAMPS2

• Import/Export Data
• Data structuration
• Dataset enrichment
• Symbolization
• Texts editing
• Integrating C code for Updating
• Tests of AGENT prototype
• Dedicated ergonomic environment for production
CONCLUSION

• Past 10 years: a lot of progress in research:
  - Automated text placement
  - Automated updating
  - Automated generalization

• But...Still a lot of work on generalization
Cartographic Space Odyssey

Carto2001 PROJECT

Still on its way...
...and counting on new progress
in automatic generalization!