

# Improving the Digital Cartographic Reference Data of the Walloon Region, Belgium (PICC) : A Comprehensive Methodology for Documenting Updating and Quality Control Processes

Sophie Petit<sup>1</sup>, Benjamin Beaumont<sup>1,2</sup>, Florence Jonard<sup>2</sup>, Éric Hallot<sup>1</sup>, Jean-Claude Jasselette<sup>2</sup>

<sup>1</sup> Institut Scientifique de Service Public

<sup>2</sup> Service Public de Wallonie

Contact email: [s.petit@issep.be](mailto:s.petit@issep.be)

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# Sophie Petit



- Education
  - Master degree in Geography
  - Interdisciplinary Master in Science and Environmental Management
- Professional Experience
  - Geographic Analyst & Cartographer
  - Remote Sensing and GIS Researcher
- Projects
  - HUMSOL : Feasibility study for determining soil moisture in Walloon Region (Belgium)
  - SARSAR : Automatic redevelopment sites monitoring using SAR and OPTICAL images



# PICC: Definition



“Projet informatique de cartographie continue”

- 3D Digital Cartographic Reference for the Walloon Region (Belgium)
- Dynamic geodatabase continuously updated since 1992
- Includes all identifiable landscape elements
- Precision below 25 cm



# Objectives

- Enhance the PICC management, streamline processes, strengthen quality controls, and optimize data architecture
- Ensure the processes compliance with current standards
- Focus on 3 geodata : buildings, road axes and point addresses



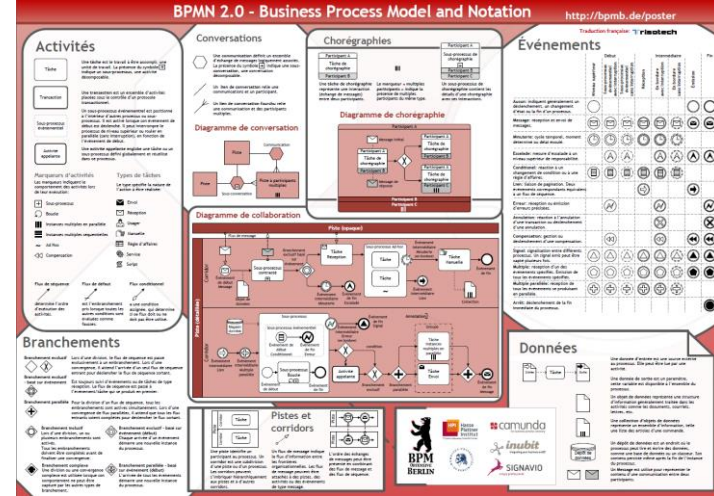
## Le processus de fabrication d'une carte

Différentes expertises et savoir-faire entrent en jeu dans la fabrication d'une carte topographique.



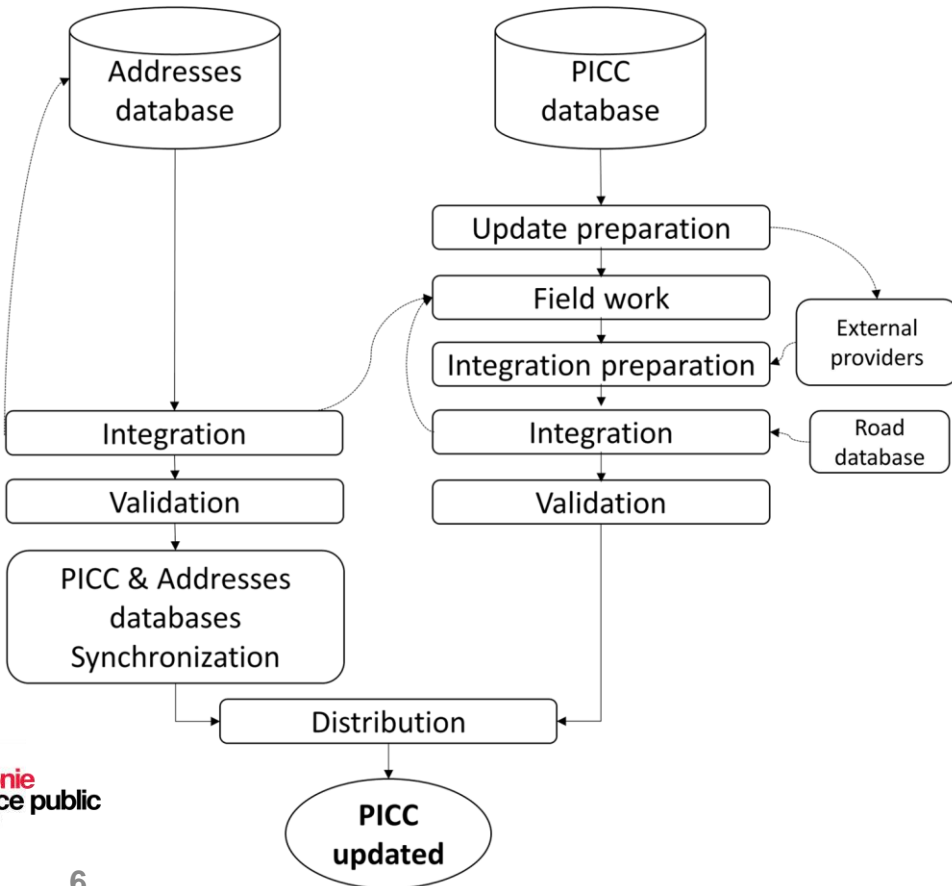
# Methodology

- Workflows modeling of the PICC update and quality control processes
- Utilizing “Business Process Model and Notation” (BPMN)
  - Standard set of diagramming conventions for describing business processes<sup>1</sup>
  - Graphical notation
- Co-constructing diagrams with experts leveraging their experience



<sup>1</sup> Object Management Group, Inc. (OMG) Business Process Model and Notation (BPMN) Version 2.0

# PICC update general workflow

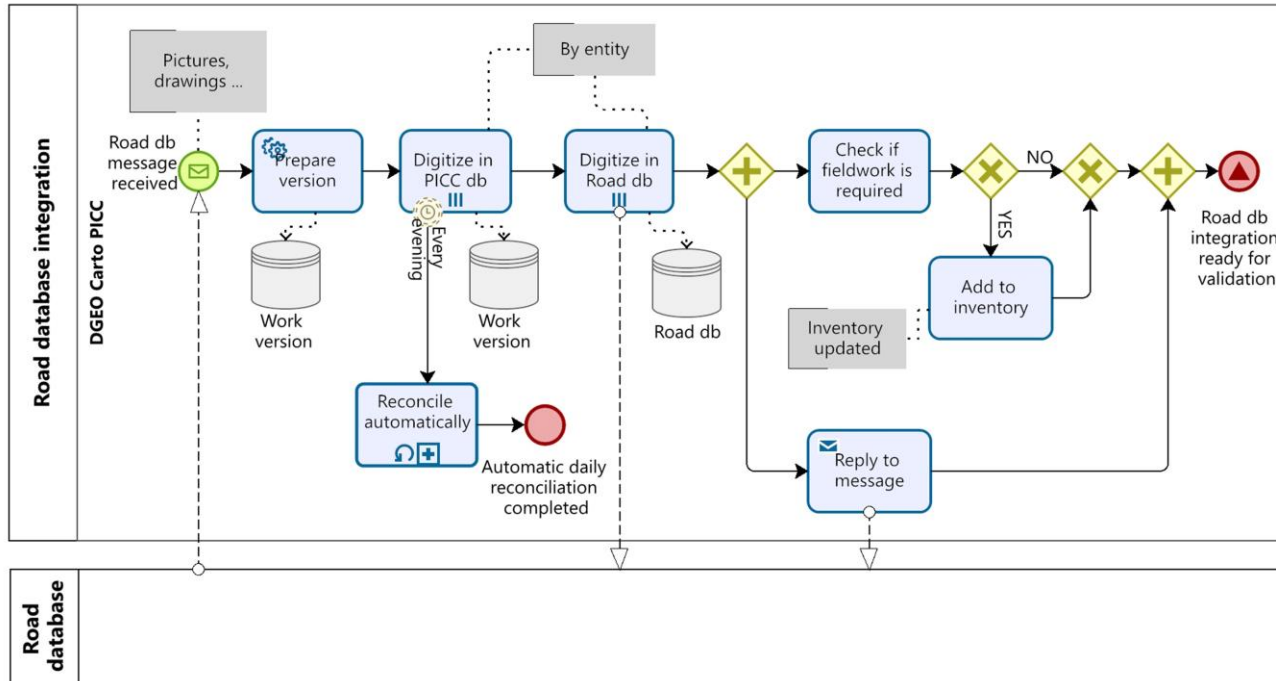
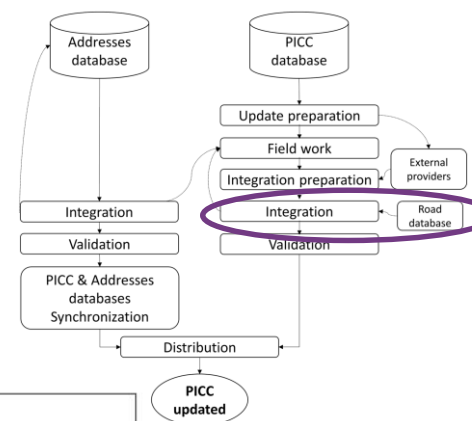


→ This workflow has been modeled in a set of 7 processes divided in 46 diagrams

→ When combined, offer a **complete and detailed vision** of the PICC update business processes and sub-processes

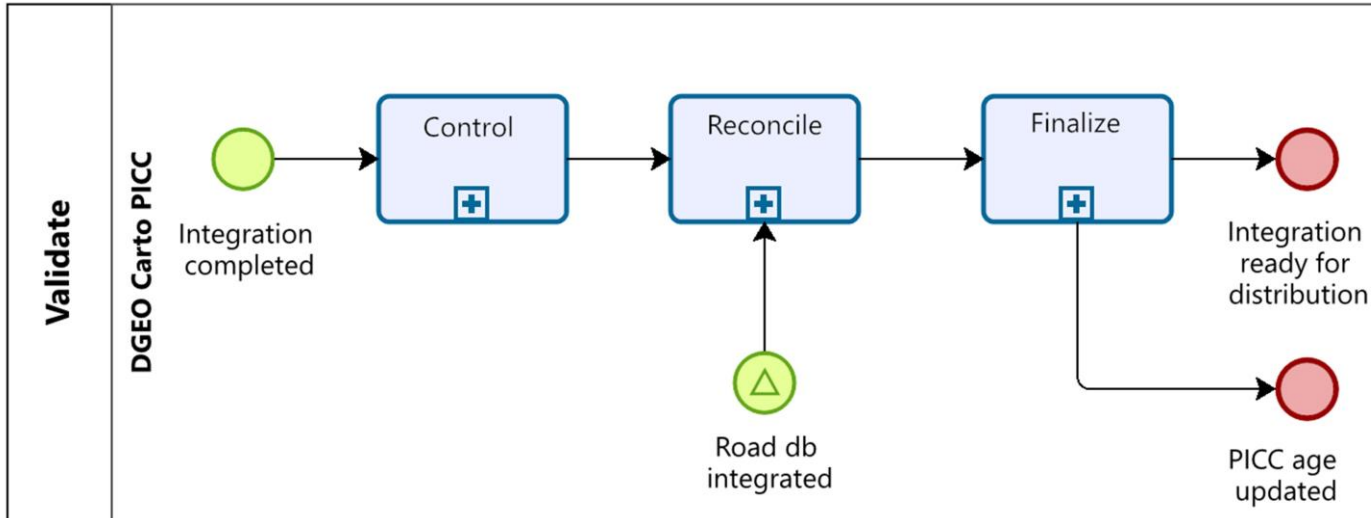
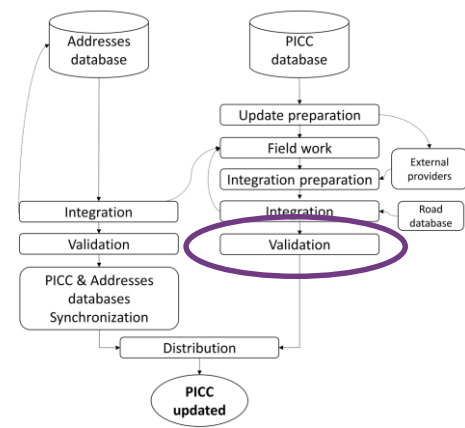
# BPMN diagrams example

- External “Road database” integration step, PICC database branch
- 1 start event
- 2 end events, one leading to the next example



# BPMN diagrams example

- Validation step, PICC database branch, general workflow
- 2 start events: 2<sup>nd</sup> being the end of the previous diagram example
- 2 end events
- Contains only sub-processes





# Optimizing PICC with BPMN methodology

The analysis of the diagrams led to more than 60 recommendations, at various processes levels, for improving the PICC management by enabling :

- Data architecture analysis
- Simplification of structures
- Process restructuring
- Reinforcement of quality control
- Improvement of PICC quality



# Conclusion

- BPMN methodology, although underused in geospatial data, offers the opportunity to improve geodata management
- Provides a comprehensive understanding of geodata update processes and quality controls
- Allows an exhaustive vision, both global and in-depth





**Thank you!**

**Sophie Petit**

**Contact: [s.petit@issep.be](mailto:s.petit@issep.be)**