Geographical data: How can digital technologies help increase accessibility and mobility for all?

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Situation review

10/06/2021

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Situation review

- Only few initiatives
- Significant variability between systems
- Heterogeneous data

Profiles   Areas covered   Geometry   Services
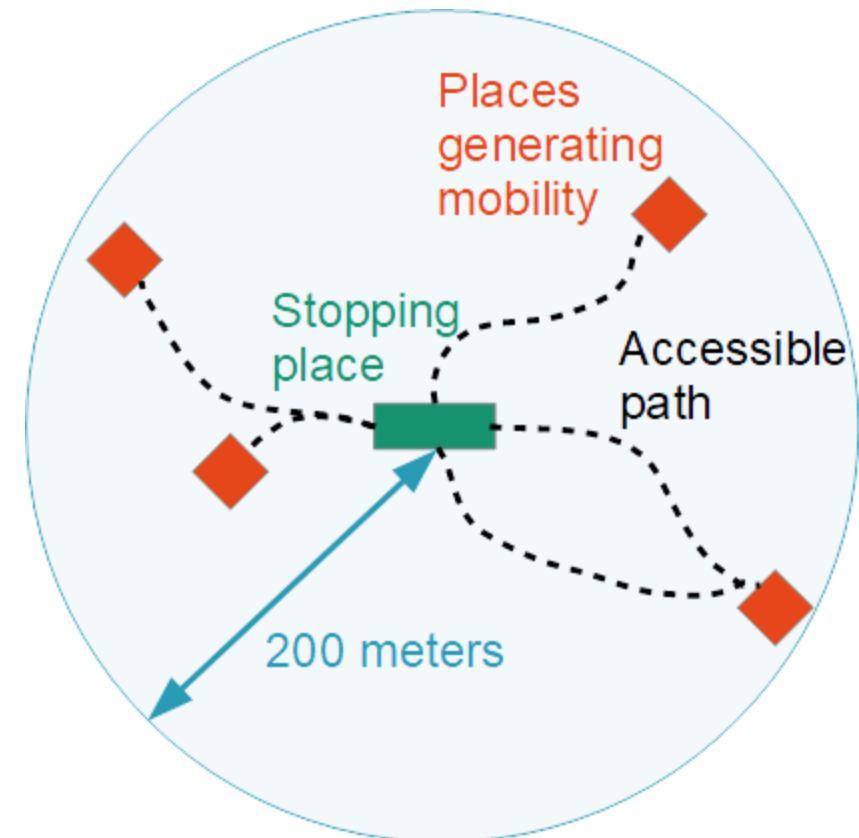
1 identical criterium: minimum width of doors: 80 cm	
4 similar criteria: (e.g."There are handrails by the toilet seat" / "folding handrails (drop & down) on both sides of the WC seat")	
4 specific criteria: e.g. "the cabin door opens outwards"	1 specific criterium: "raised WC seat: 46 cm to 48 cm"

Comparison between two existing models:
example of the description of toilets
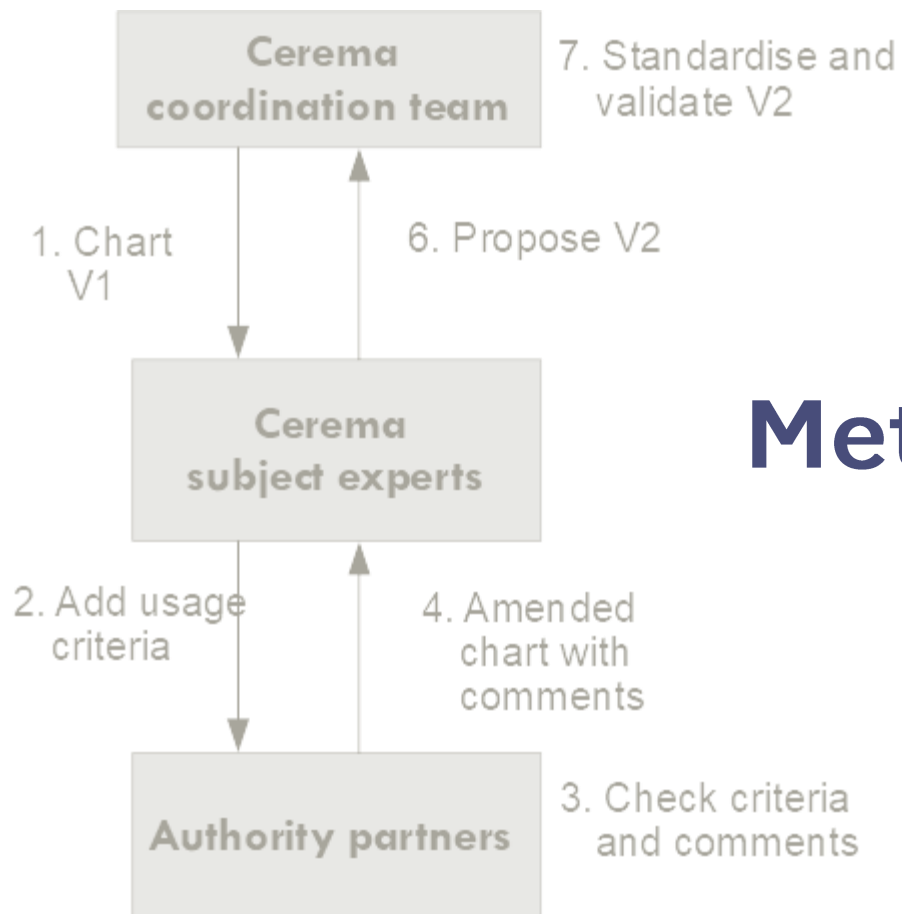in Prague & Dresden models (Toulouse, oct. 2017)

Situation review

French regulatory framework

- ## Framework Law on Mobility (LOM)
  - Open data
  - Accessibility-related data collection
  - Development of MaaS

Method

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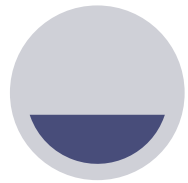
What's the need ?

- Provide a tool for cities and authorities to collect and to organize data on accessibility of the mobility chain
  - to optimise the costs of data collection and management
  - to enable the development of new services, such as pedestrian route calculations
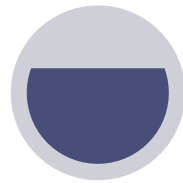 - to homogenise the information provided and its quality
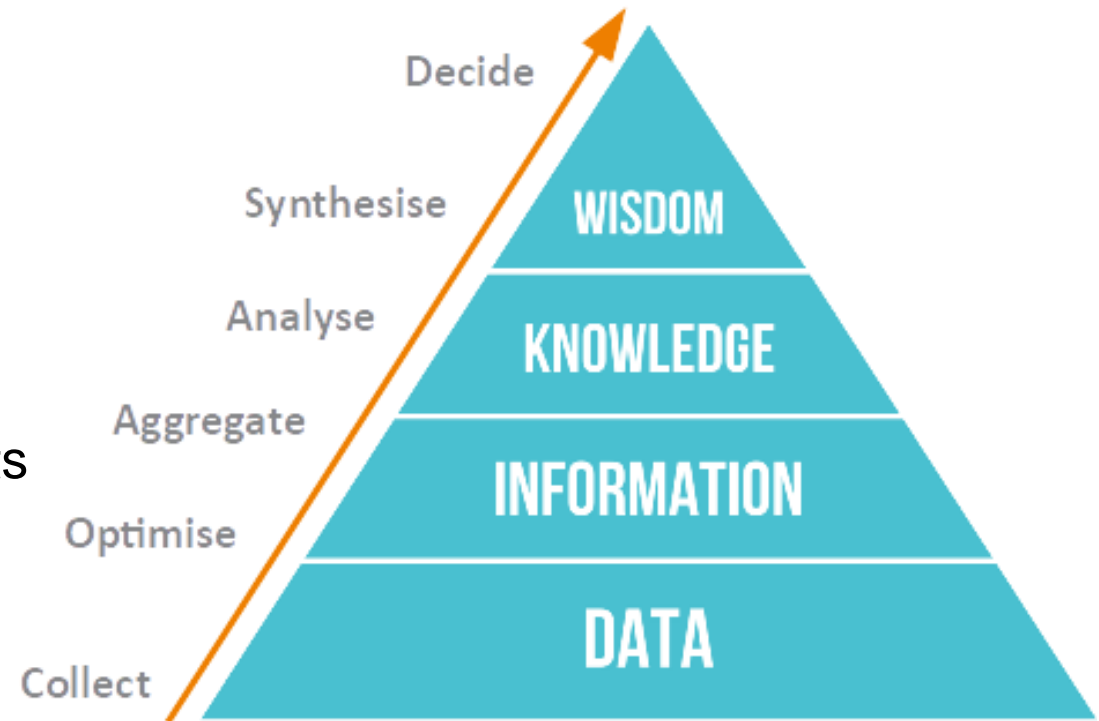
Method

Phase 1

Convergence

Analyse data and models

Focus 1: Criterion analysis

Focus 2: GIS data model analysis

Phase 2

Workshops

Proof-of-concept for the model, over 1.5 days of field tests based on discussions

Multiple stakeholders State, authorities, private entities and start-ups

Phase 3

Production

Build the model

Present it to institutional partners

Consult with local non-profit organisations, led by partner authorities

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3 principles of data convergence

1. To prioritize attributes based on the objective in figure 2;

2. To prefer objective data such as measurement over information, such as "accessible" or "not accessible", to assure adaptability of the implemented data,

3. To focus on the notion of navigation path, to assure homogeneity in the characterisation of the three links of the mobility chain.

Priority	Nature	Objective
1	Required	Ensure that the path does not cause obstruction
2	Strongly recommended	Identify a safe, autonomous path of travel
3	Optional	Provide a comfortable path of travel

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Method

Phase 1

Convergence

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Focus 1: Criterion analysis

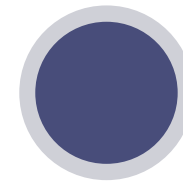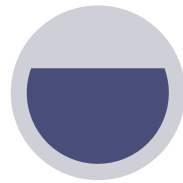**Focus 2:** GIS data model analysis

Phase 2

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Production

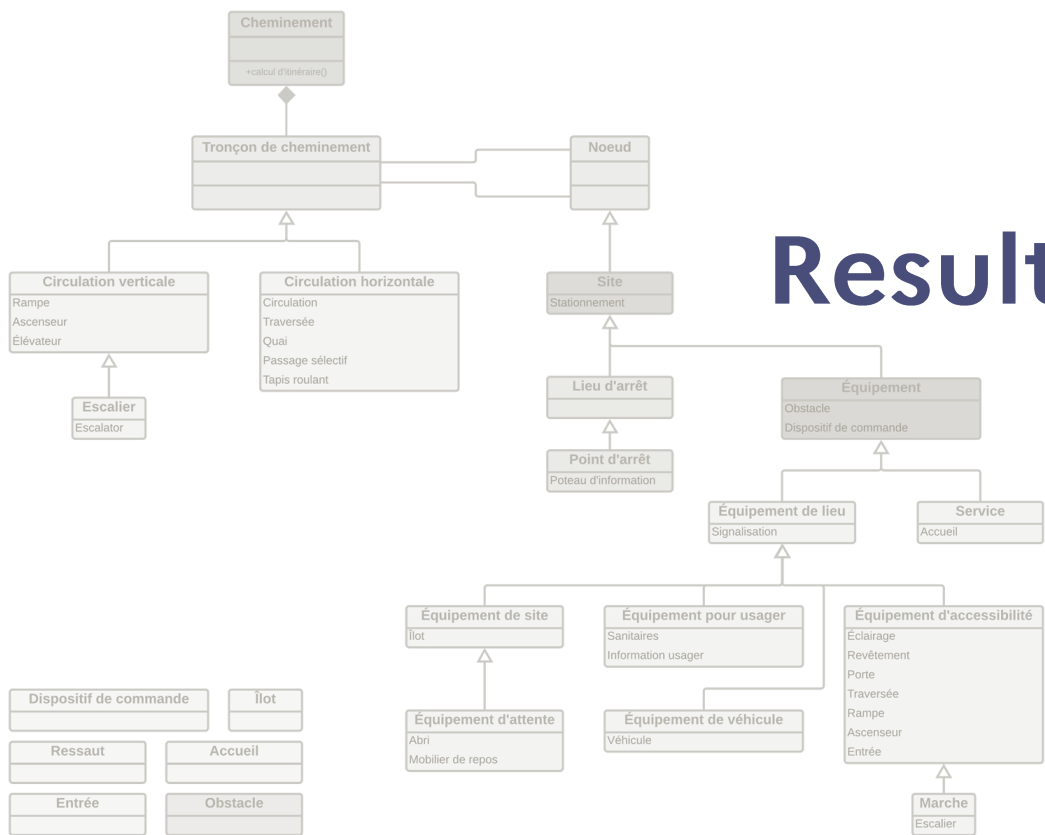**Build the model**

Present it to institutional partners

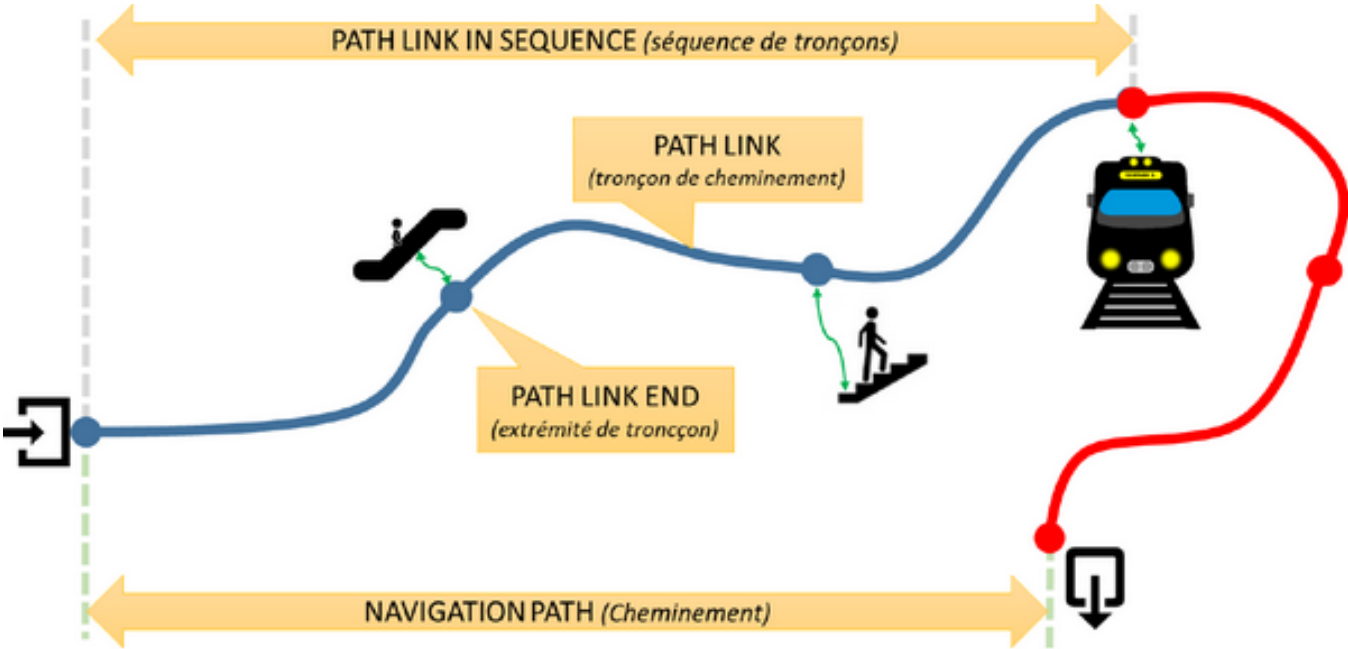**Consult** with local non-profit organisations, led by partner authorities

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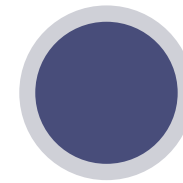
Production

Entity name	Semantic definition	Attribute name	Value types	Semantic definition	Possible values	Priority
Path of travel	Dedicated space for pedestrian movements	**Ground type**	List	Path surface	Firm / Soft in wet weather / Permanently soft	1
		Surface damage	List	Wear impairing usability of the path	VSC Accessibilité	1
		Shelter	List	Shelter type	Interior / Exterior / Sheltered / Not sheltered	1
Circulation		**Clear passage width**	Integer	Minimum actual width, clear of obstacles to a useful height of 2.20m (standard P98-350). Centimetre accuracy		1
		Road status	List	Attribute based on the roads framework plan	Conventional street / 30 kph zone / Shared space / Pedestrian area / Greenway / Other type of thoroughfare covered in the roads framework plan	1
		Path length	Integer	Calculated attribute stated in cm		1
		Cross slope	Integer	Gradient of the terrain perpendicular to the direction of pedestrian travel (standard P98-350), stated as a percentage. Accuracy: 0.1%		1
		Slope	Integer	Gradient of the terrain in the direction of pedestrian travel (standard P98-350). Calculated attribute, based on the altitude of the start and end points, stated as a percentage. Accuracy: 0.1 %		1
		Visual guidance 2, Tactile guidance 2, Glazed surfaces 2, Glazed surfaces easily detected 2, Manoeuvring area 2, Diameter of smallest manoeuvring area 2, Cycle facility 2, Number of walls (0 to 2) 2, Guard rails 2, Encroaching vegetation 2, Tactile separator 2, Pedestrian flow 2, Total pavement width 3, Number of driveways 3, Path type 3				

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Results

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Results

from NeTEx

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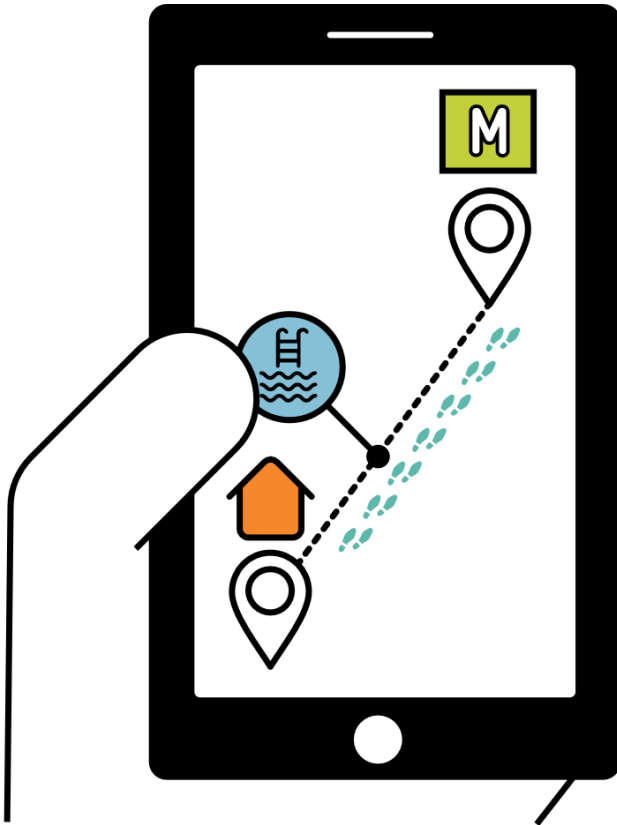
Perspectives

- Structuring of the internal GIS tool
- Organization of data collection (PAVE, LOM)
- Decision support: programming of accessibility works

- pedestrian route calculator
- adaptation of the user profile
- crowdsourcing
- real time: construction sites, obstacles...

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Thank you

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National standardization GW

Building GW

Street and public space GW

Transportation GW - BNTRA GT7

Acceslibre

- National platform to register and describe buidings accessibility

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UD 2021

Cerema
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