VISUALIZATION OF QUALITY CONTROL RESULTS USING DASHBOARDS

21/11/2025

NGI
Nationaal
Geografisch
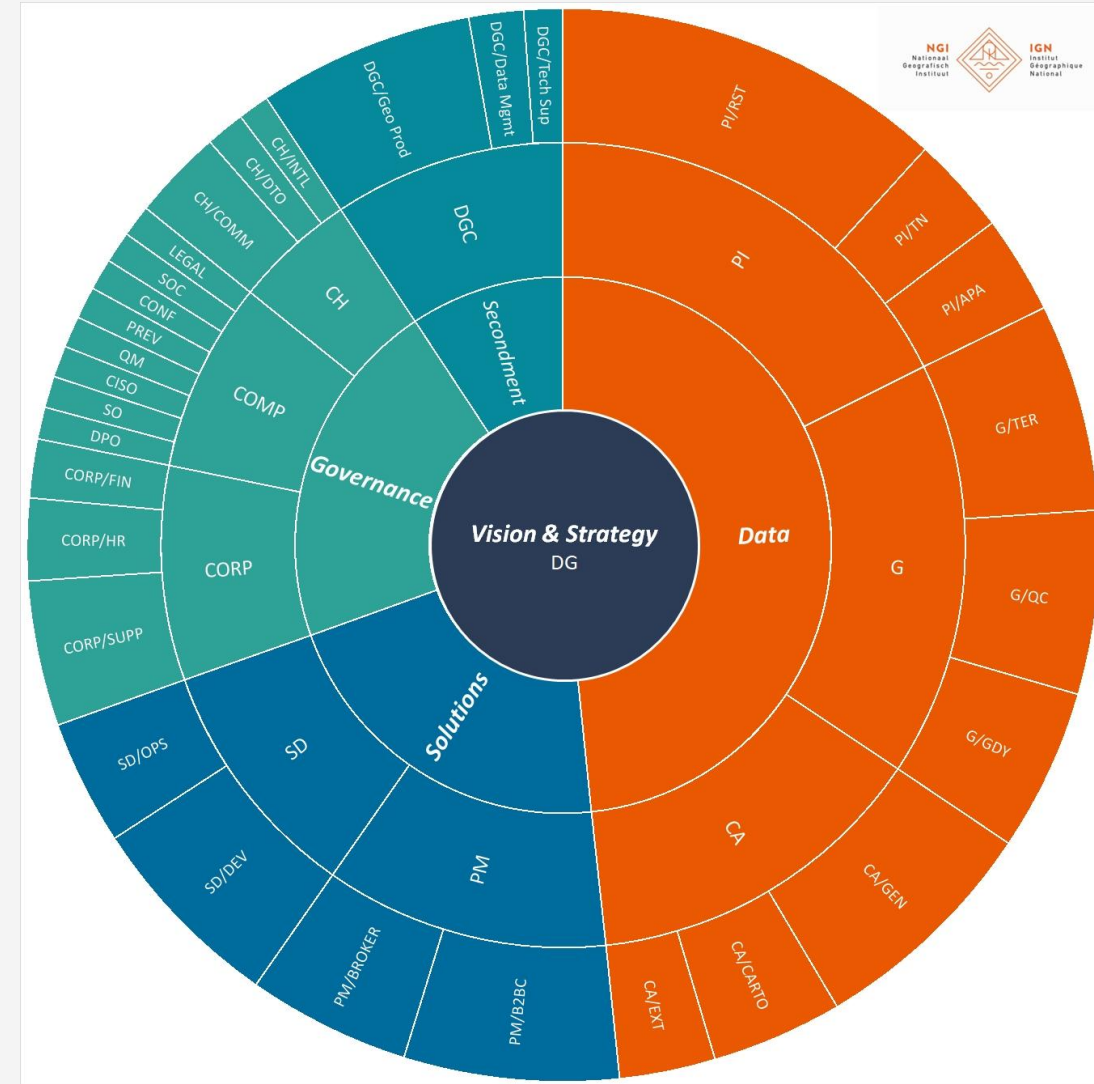Instituut

IGN
Institut
Géographique
National

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NGI Belgium

Legal mandate of NGI Belgium:
- Installation and maintenance of geodetic network and precision leveling network
- Keeping topographic map up to date
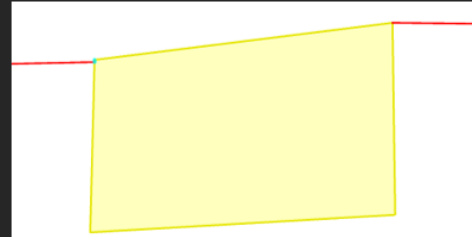- to undertake works, studies and experiments that are of general interest within its field of activities

QC team activities

- Quality control team has two kinds of checks:
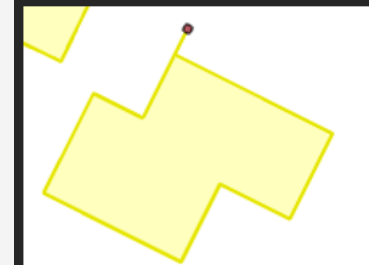 - Automated checks for validation of geometry, topology, domains

CO_Building :

- 3 x **consecutive vertices < 0.15 m** :
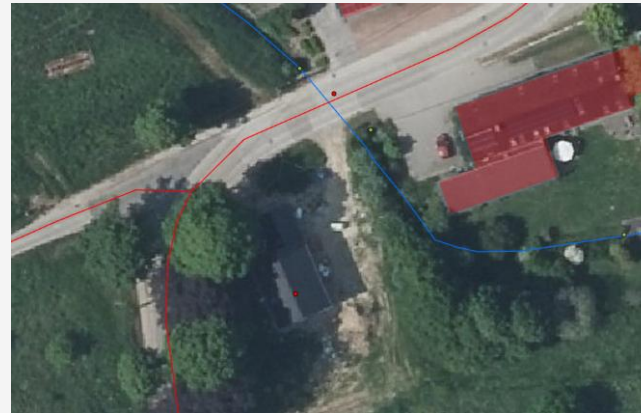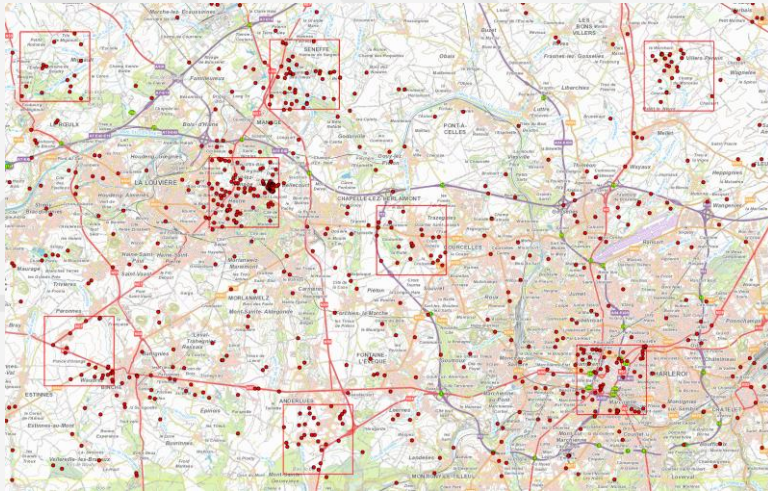
651080 – 625869

1 x **spike < 1°** :

655412 - 636762

QC team activities

- Quality control team has two kinds of checks:

  - Visual checks for validation of completeness, positional accuracy and thematic accuracy: Use of test objects and test zones

133	Point	RO_RoadSegment	Commission	Geen weg meer	<Null>
134	Point	RO_RoadSegment	Attributes	Breedte 4m	<Null>
135	Point	RO_RoadSegment	Classification	Aardeweg	<Null>
136	Point	RO_RoadSegment	Positional Accuracy	10-25m: rondpunt geworden	<Null>
137	Point	RO_RoadSegment	Commission	Restricted < 50m	<Null>
138	Point	RO_RoadSegment	Attributes	Breedte 4m	<Null>
139	Point	RO_RoadSegment	Attributes	Breedte	<Null>
140	Point	RO_RoadSegment	Attributes	Breedte	<Null>
141	Point	RO_RoadSegment	Attributes	Breedte	<Null>
142	Point	RO_RoadSegment	Classification	Aardeweg	<Null>
143	Point	RO_RoadSegment	Attributes	Breedte	<Null>
144	Point	RO_RoadSegment	Positional Accuracy	Laten aansluiten op weg ten zuiden	<Null>
145	Point	RO_RoadSegment	Positional Accuracy	Situatie veranderd	<Null>
146	Point	RO_RoadSegment	Attributes	Roadwithseparatedcarriageways = false	<Null>
147	Point	RO_RoadSegment	Positional Accuracy	<Null>	<Null>
148	Point	RO_RoadSegment	Attributes	Breedte	<Null>

QC team activities

- Reporting of quality control results before 2025

Introduction

Why a dashboard?

- Clear representation of quality
- Monitor quality
- Decisions on production
- Motivation

Advantages Power BI:

- User friendly visualizations
- Dynamic graphs/tables
- Supports many data types

Objectives

- Overview of error percentage:
  - By map sheet 50k
  - By feature class
  - By error type (omission, commission, positional accuracy xy/z, attributes, classification)

- Helps identifying problems with our data
  - → Correct use of resources

How?

- Excel table gets updated when concluding the test of a map sheet:
  - Fact table containing error percentages
  - Dimension tables who can be used for 'slicing' and 'grouping':
    - Map sheet 50k
    - Error type
    - Feature class
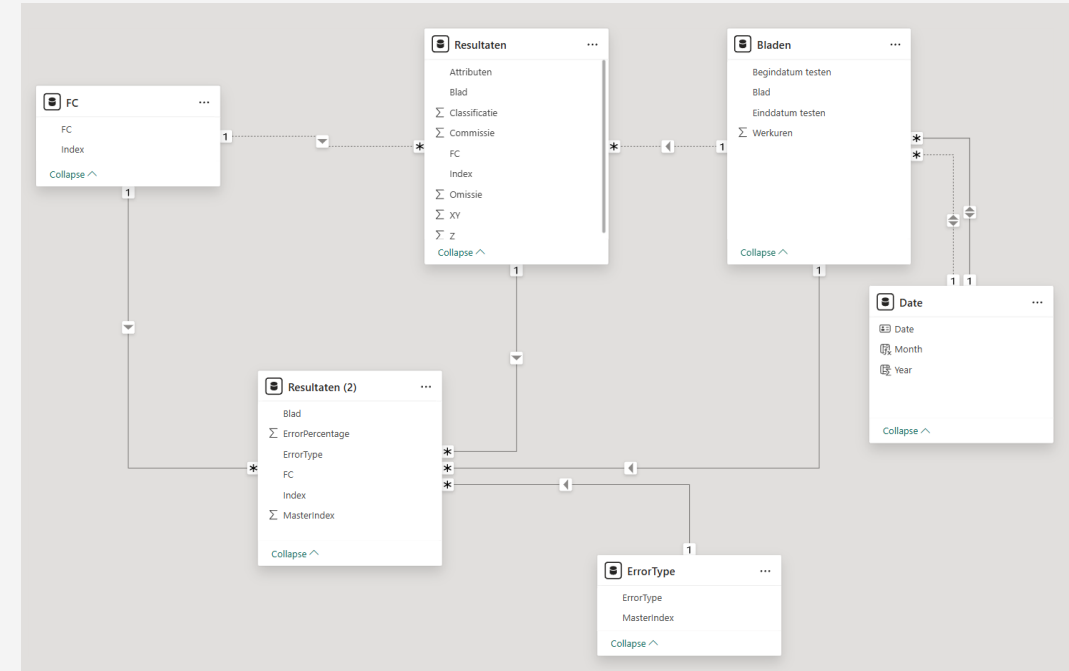
Example
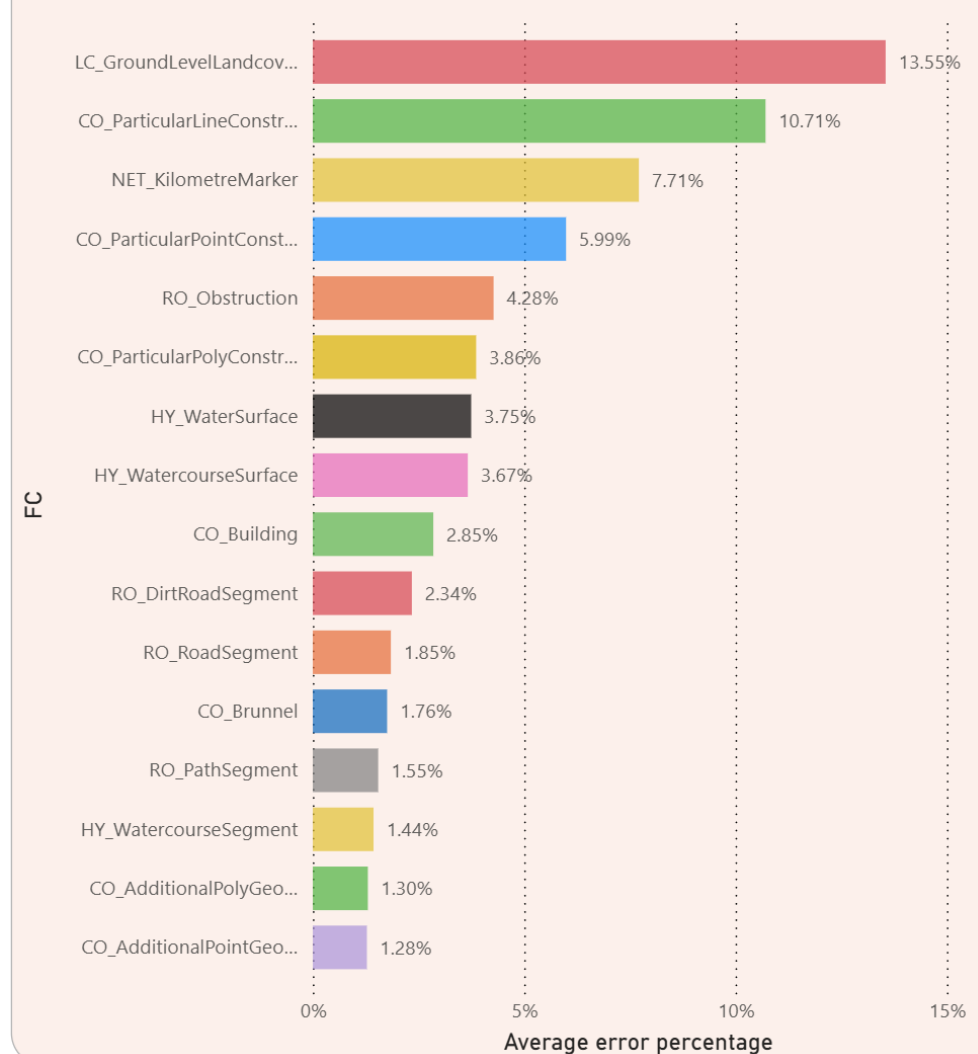
Geometric requirements

Objectives:
- Overview of problems in regard to the geometric requirements
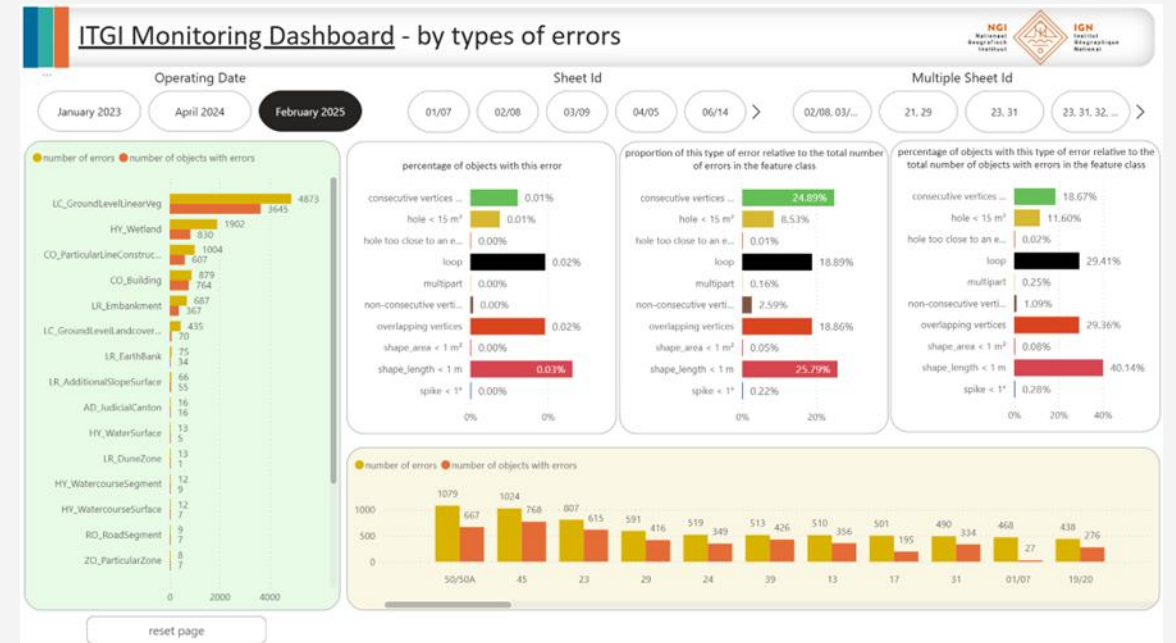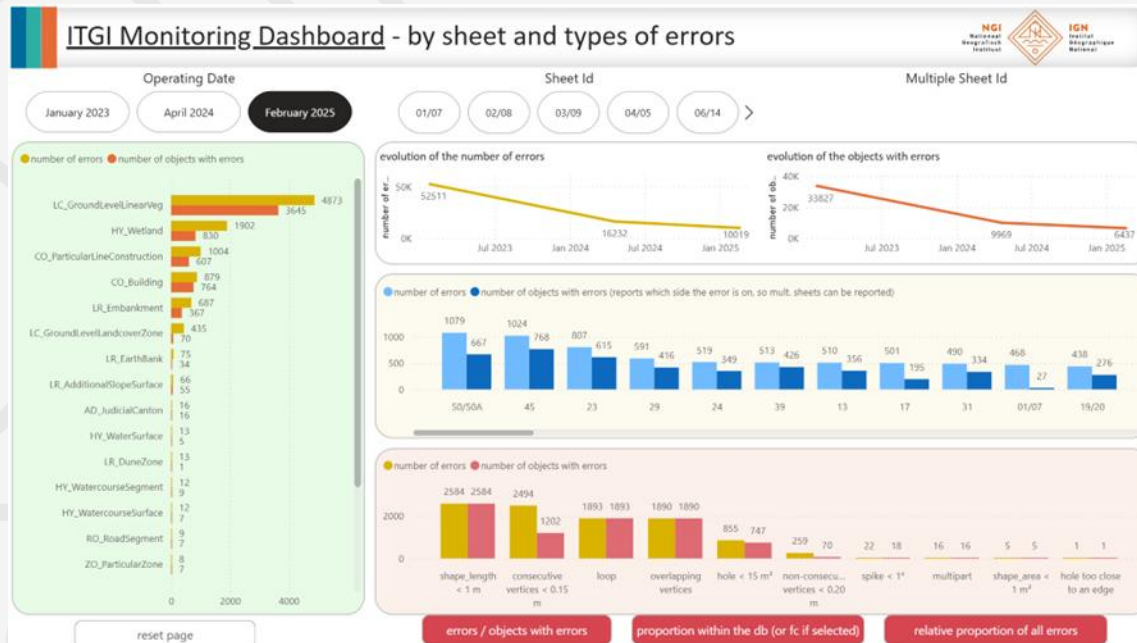- Can be done on all data of Belgium at once
- Monitoring the evolution

How:
- Error detection: FME scripts
- Transcribed to Excel file

Frequency: 3-4 times per year

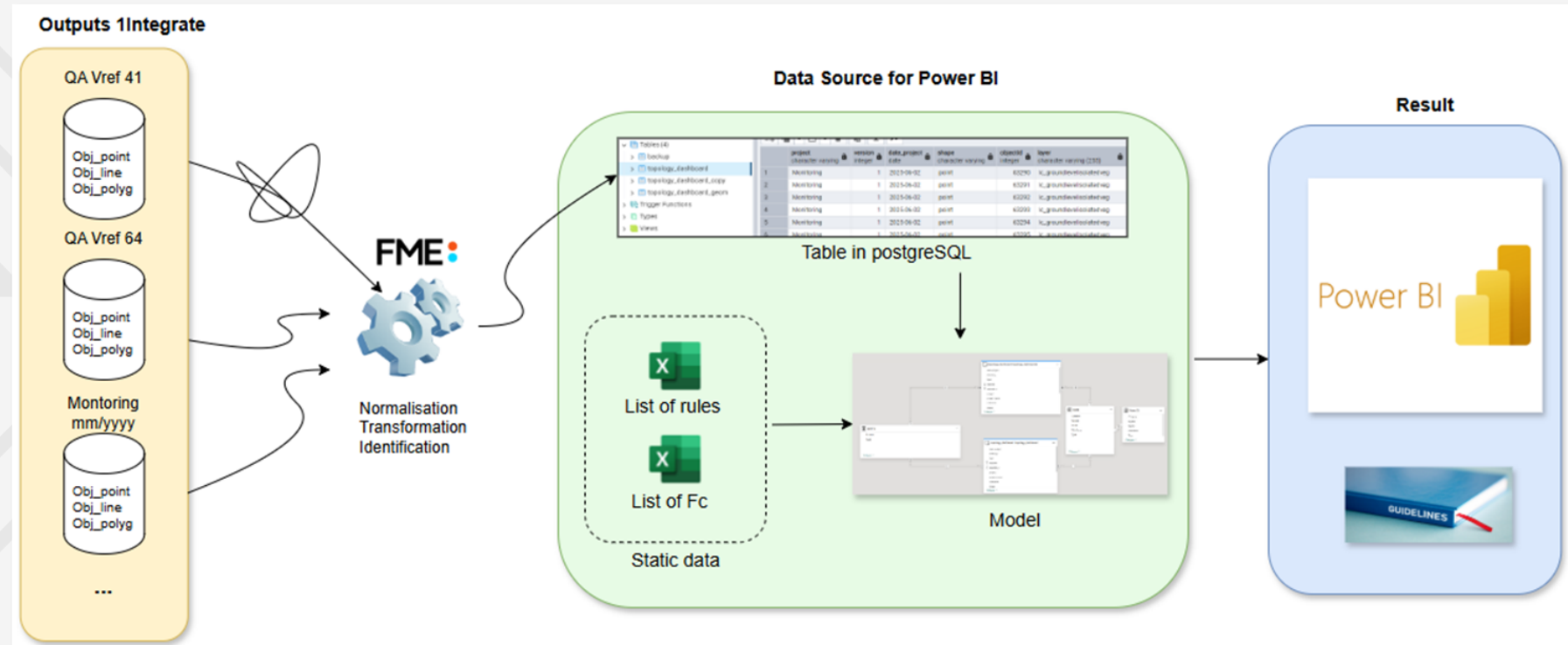# Example

Topology

Objectives:
- Overview of problems in regard to the topological relationships
- Monitoring the evolution
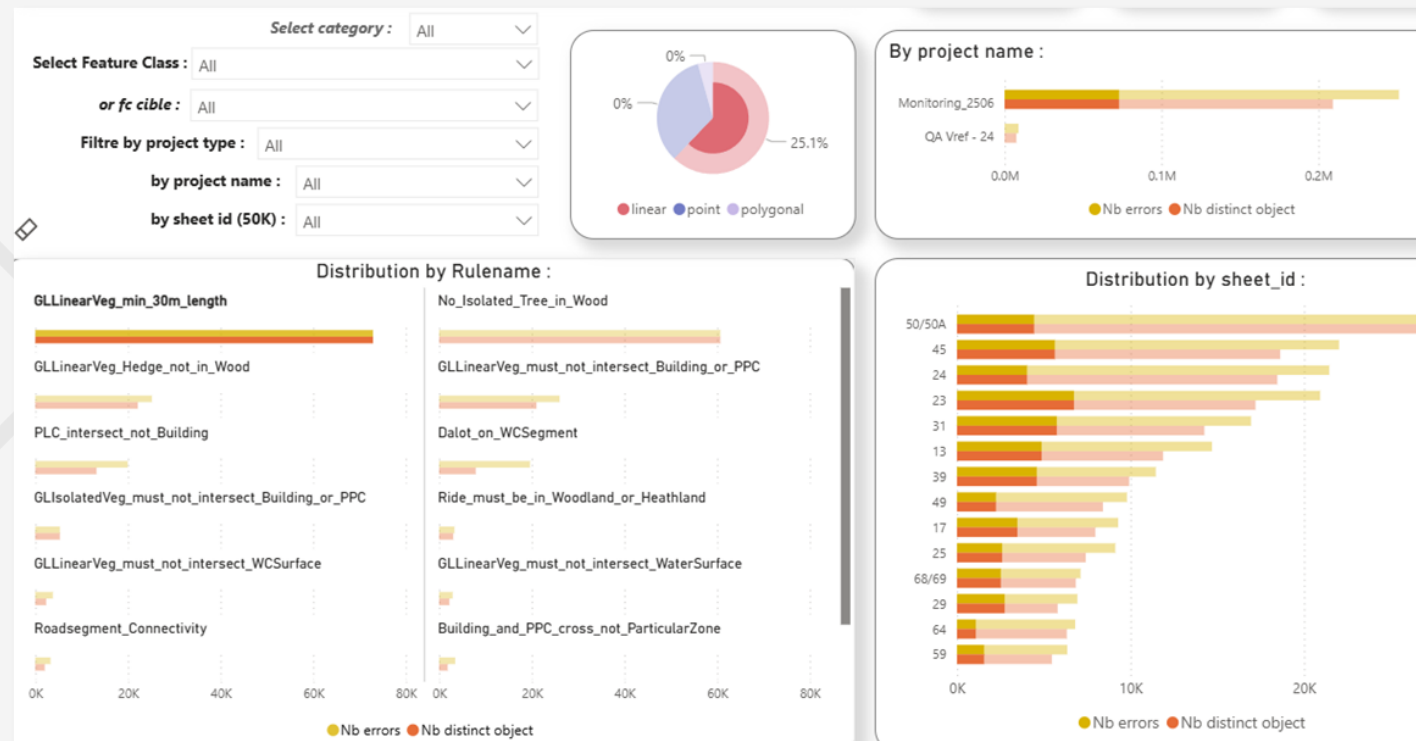- Aid in decision making

How:
- Error detection: 1Integrate
- Transcribed to PostgreSQL

For the moment, only per map sheet (and not on whole of Belgium)

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Topology

Example

Dashboard
Demo

Conclusion

- Dashboard = useful for visualizing quality control results
- Dynamic graphs make it easy to change what you want to analyse
- Can aid in decision making
- But:
  - Graphs need to be interpreted!
  - Sudden changes in numbers can be due to changes in procedures (in production or quality team)!

Thanks for your attention!