

Study Committee B2

OVERHEAD LINES

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Innovative inspection techniques and digital tools for condition follow-up of overhead lines in Belgium

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EliA

Motivation

- Background of study**
 - Rapid evolution of the grid (decarbonization, integration of renewable energy, etc.)
 - Grid aging (built since 1930 and covers voltages from 36 kV to 380 kV)
 - Collecting technical information via essentially papers
 - Greater use of existing technologies (Lidar, DLR, etc.)
 - Appearance of new technologies (UAV, hyperspectral camera, etc.)
- Previous findings**
 - Attempt to standardize the statement of findings and their interpretations
 - Difficulty keeping information up to date (manual process)
 - Information not always sufficient to take decisions
 - Not the same interpretation of technical analyzes between different departments
- Aim of study**
 - Implementation of a dynamic asset management system



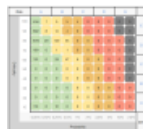
Experimental setup & test results

- Map with supports and associated risks



SAGA Tool (partnership with REE)

- Risk matrix for a region in Belgium



Discussion



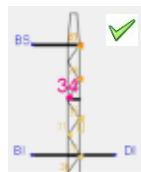
Handbook



Data is updated regularly



Localisation of damages



Better view with UAV



Same damage

UAV versus Climbing inspection

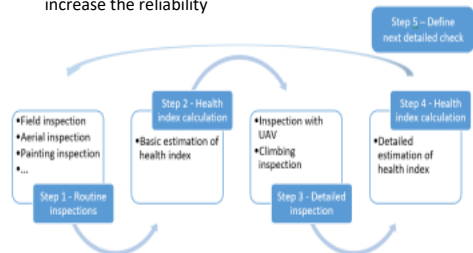


Method/Approach

- Failure Mode Effect and Criticality Analysis** on OHL components with impact on resources, risks and costs
- Reorganization of inspections** with introduction of reference handbook, existing or new technologies, etc.
- Determination and **digitization** of the needed information
- Implementation of an algorithm** to calculate the Health Index of each asset

Objects of investigation

- Implementation of the process
- Determination of limitations and needed actions to increase the reliability



Conclusion

- EliA is very satisfied with the new process
- Next step

