Robotics and AI for Inspection and Maintenance at SINTEF

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ReR - Robotica, AI, Idrogeno e Rinnovabili.
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Technology for a better society

ONE OF EUROPE'S LARGEST INDEPENDENT RESEARCH ORGANISATIONS

367,5 million
EUR turnover

2200
employees

6400
projects

3300
customers

INTERNATIONAL
70,7 million EUR

NATIONALITIES
80

PUBLICATIONS (INCL. DISSEMINATION)
6200

CUSTOMER SATISFACTION
4,6 / 5

SINTEF provides research and innovation in a large range of application areas

Energy

Digitalisation

Health

Industry and construction

COMPETITIVENESS

Sustainability

SOCIETAL BENEFITS

Smart and secure societies

Food

Productivity

Mobility

Robotics and AI for inspection and maintenance of Energy Infrastructures

- Most of the operations are done manually today either by personnel or by remotely controlling/programming robots/drones.

- Robots/Drones are used to gather data.
  - There is a need to have verified methods for automatically analyse the data generated (e.g., to automatically find defects, etc.)
  - There is a need to connect application specific data analysis with robot/drone autonomy. In other words, the data analysis should inform or influence how the robot/drone operates on its own.

- In the future more robot/drone intervention operations are expected.

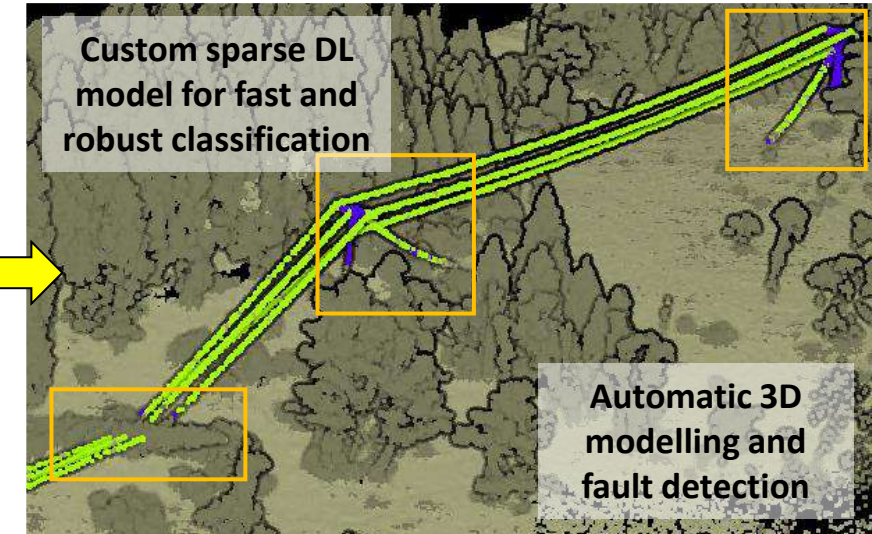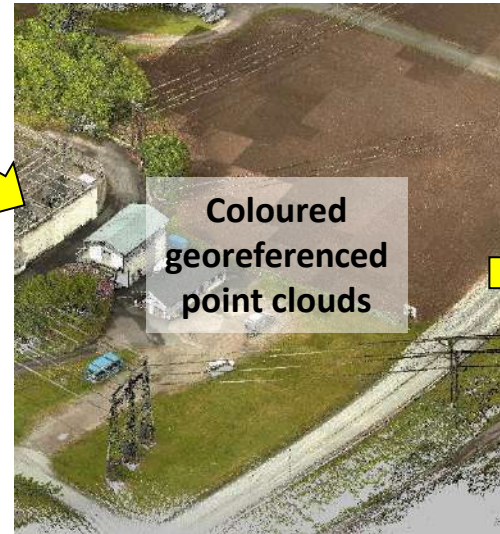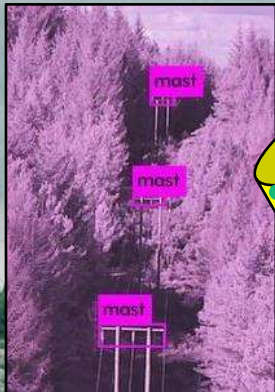# "All access" robot for inspection and maintenance

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Visual/lidar fault detection pipeline

STELLAIRE

Onboard mast detection to steer inspection payload

High-quality inspection images

Offboard DCNNs for anomaly detection

Coloured georeferenced point clouds

Custom sparse DL model for fast and robust classification

Automatic 3D modelling and fault detection

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