

Nordic AI & Open Data Hackathon

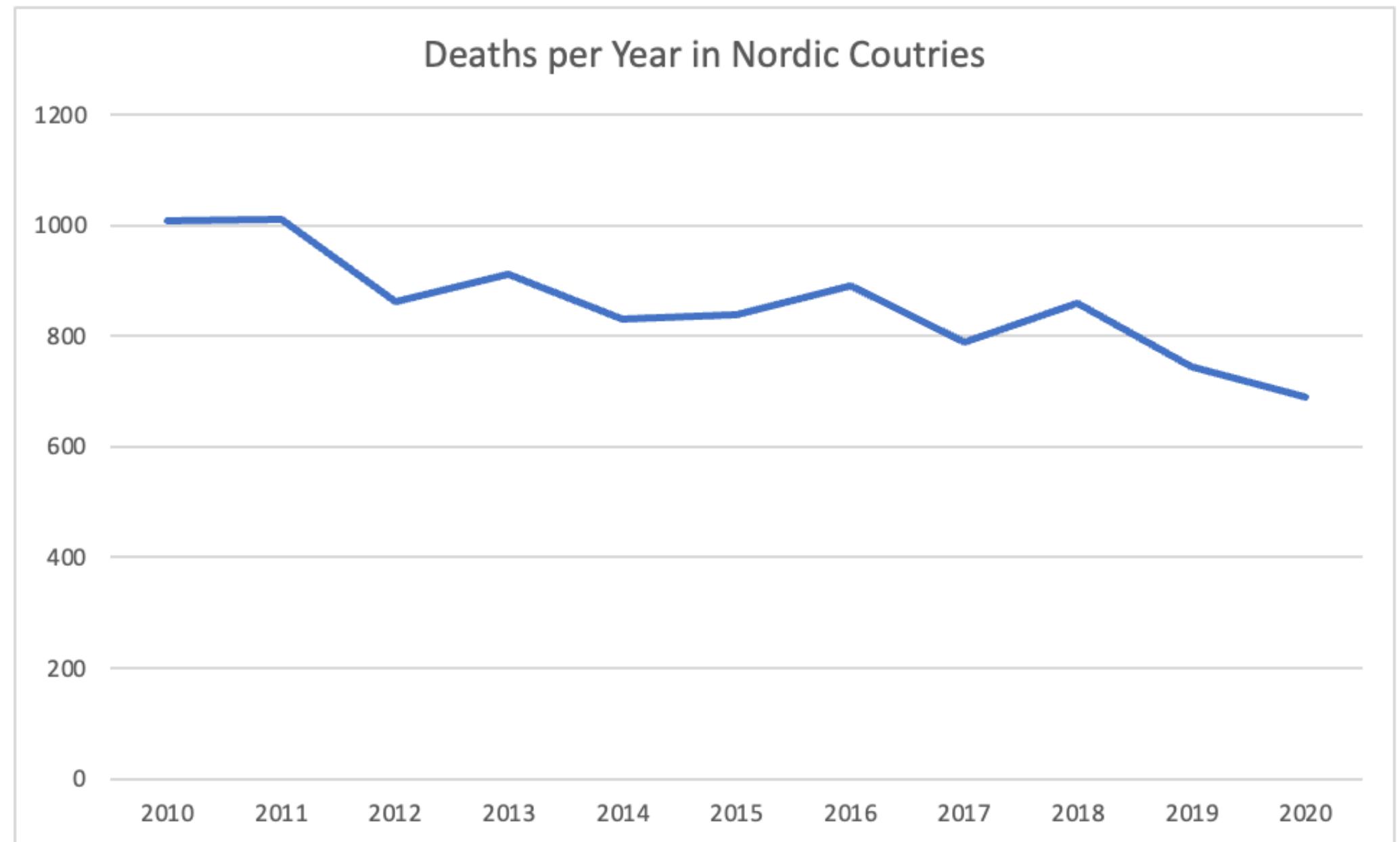
Intelligent Real-time Accident Warning System (IRAWS)

Project repo: github.com/tamagusko/nordicopendata/



691 people
died
in a car accident
in the Nordic
countries in 2020

Vision Zero still
not
reached





In the future, no one
will die in a road
accident

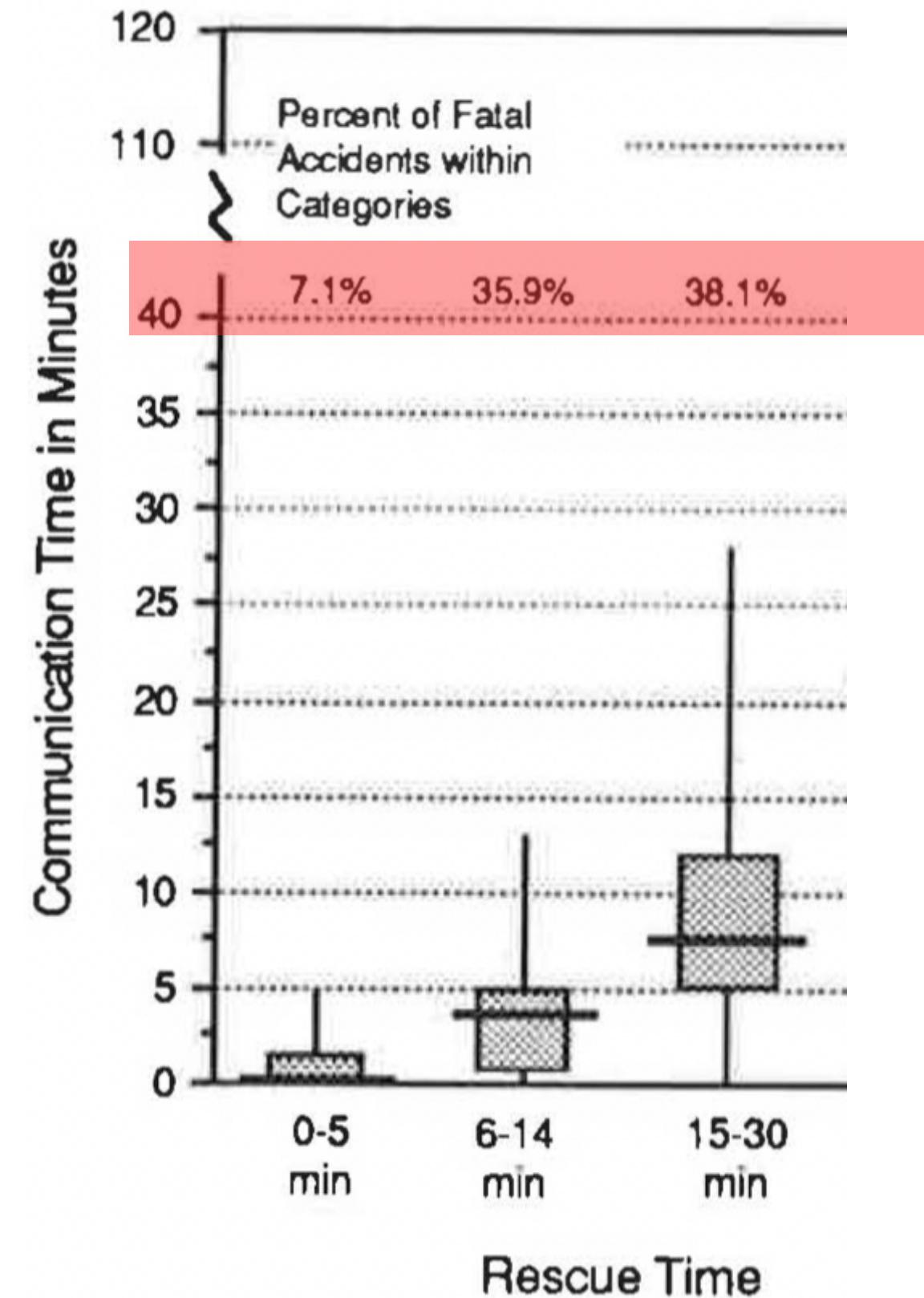
Medical staff
and police need
to be informed
as soon as possible
to get to the traffic
accident scene
in time

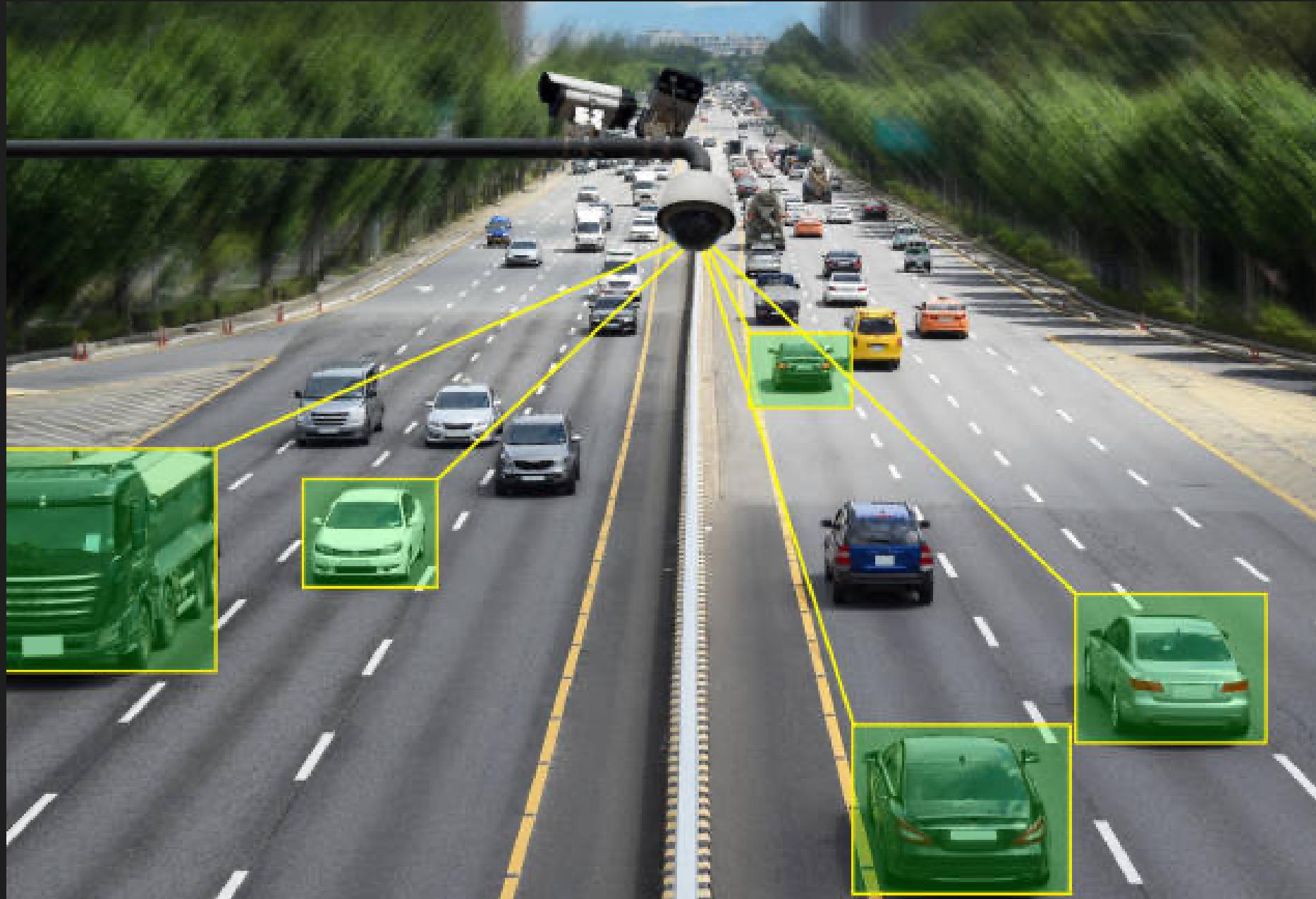




Communication time
is a major component
of rescue time, about
equal in importance
to response time.

Communication
time is
vital





What if we identify
accidents in
real time?

Demo



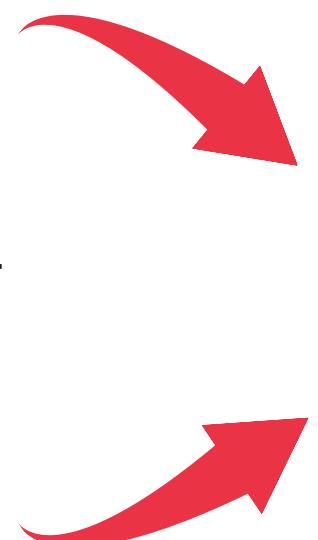
MVP: image2alarm.herokuapp.com

Overall Concept

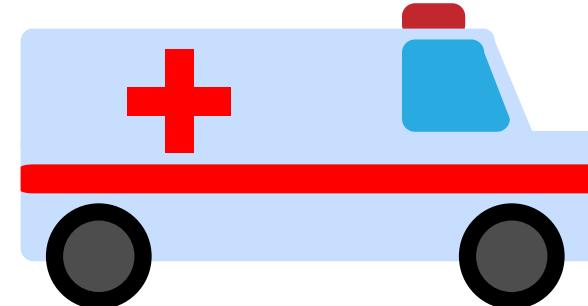
Training with real data & fake data



Analyze real-time road camera data



Deep learning
with
Transfer learning
using
EfficientNet-B1
model



Confirmation



Early
Warning



Predict

Potential
accidents

Features

1

.....
Light and effective Deep Learning Model

2

.....
Utilizes already existing infrastructure (cameras deployed on diverse roads)

3

.....
The response time only depends on the video stream refresh and image processing (only few seconds)

4

.....
Highly scalable while using Open Source tools

Overall Plan

1 Preparation (2022)

- Create a management team and project teams for each Nordic country
- Complete the entire system (algorithm, hardware, communication protocol to third parties)
- Lab-scale evaluation of entire system
- Make detailed plan
- Initial fundraising

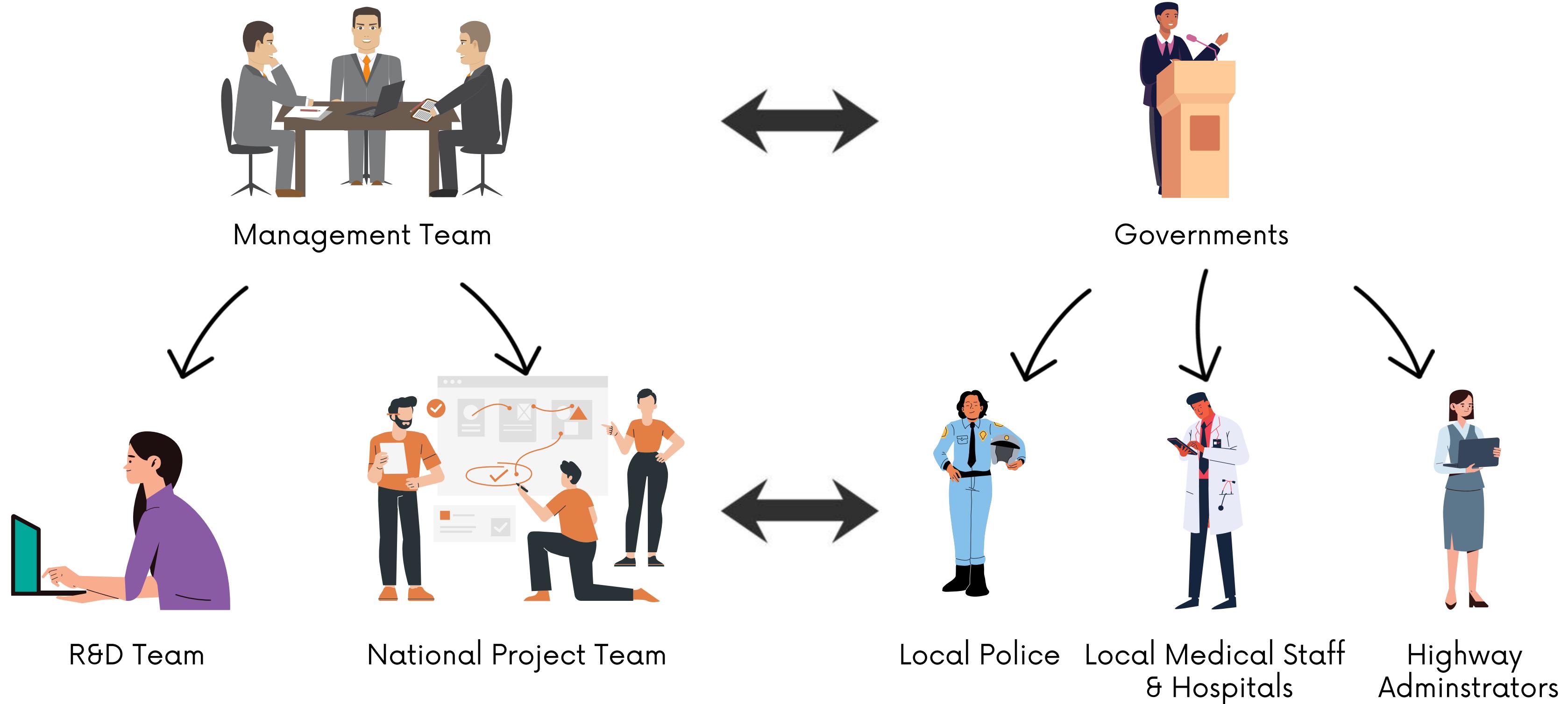
2 Trial run (2023-2024)

- Work with local governments
- Run trials on each Nordic country
- Evaluate efficiency
- Develop the entire system
- Risk assessment
- Fundraising

3 Expansion (2025-2030)

- Use current State-of-the-Art in Computer Vision
- Implement it in the entire Nordic region
- Expand to other European countries
- Continuously improve models and system
- Fundraising

Stakeholders



Conclusions

1

Lightweight model

2

Use existing infrastructure from Nordic countries

3

Easy and quick to use

4

Feasible improvements

Team Members



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Area of Study:
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Thank you!