Targeting new opportunities in multi-gas measurements

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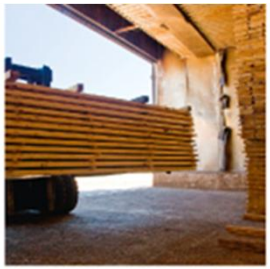
VAISALA

Observations for a better world:
Safety, Efficiency and Better Decision-Making













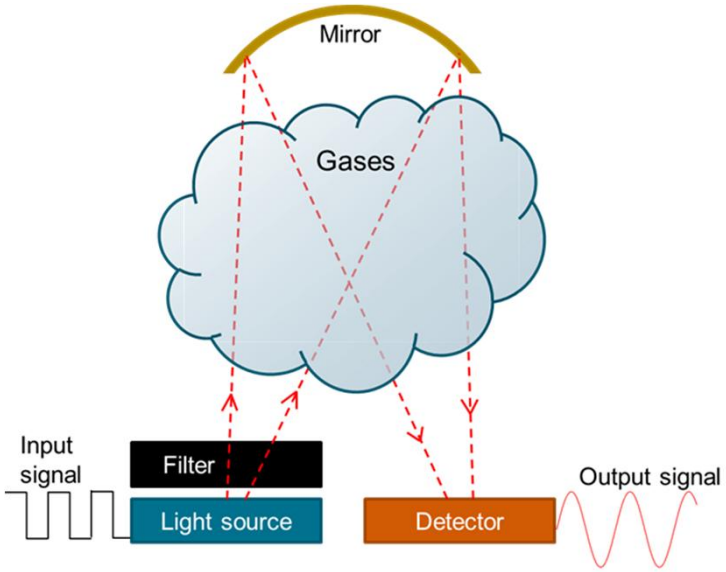


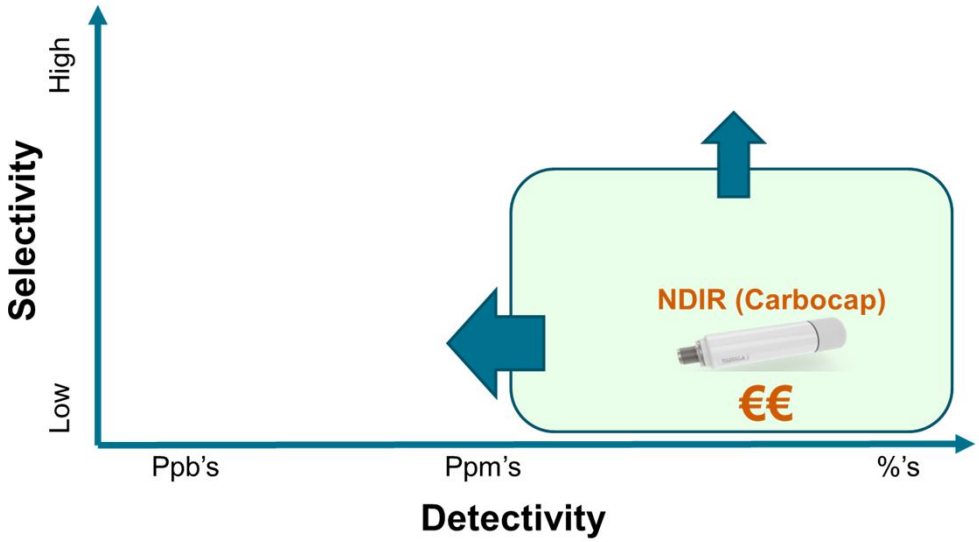


Leading Technologies

- Thin-film technologies: e.g. humidity
- Silicon micromechanics: e.g. CO_2, hydrocarbons
- also
  - Optics: e.g. visibility
  - Radio and Microwaves: Weather radar
  - Acoustics and Ultrasonics: Wind
  - Software, Modeling, AI

Optical Gas Sensors – Future Growth Potential

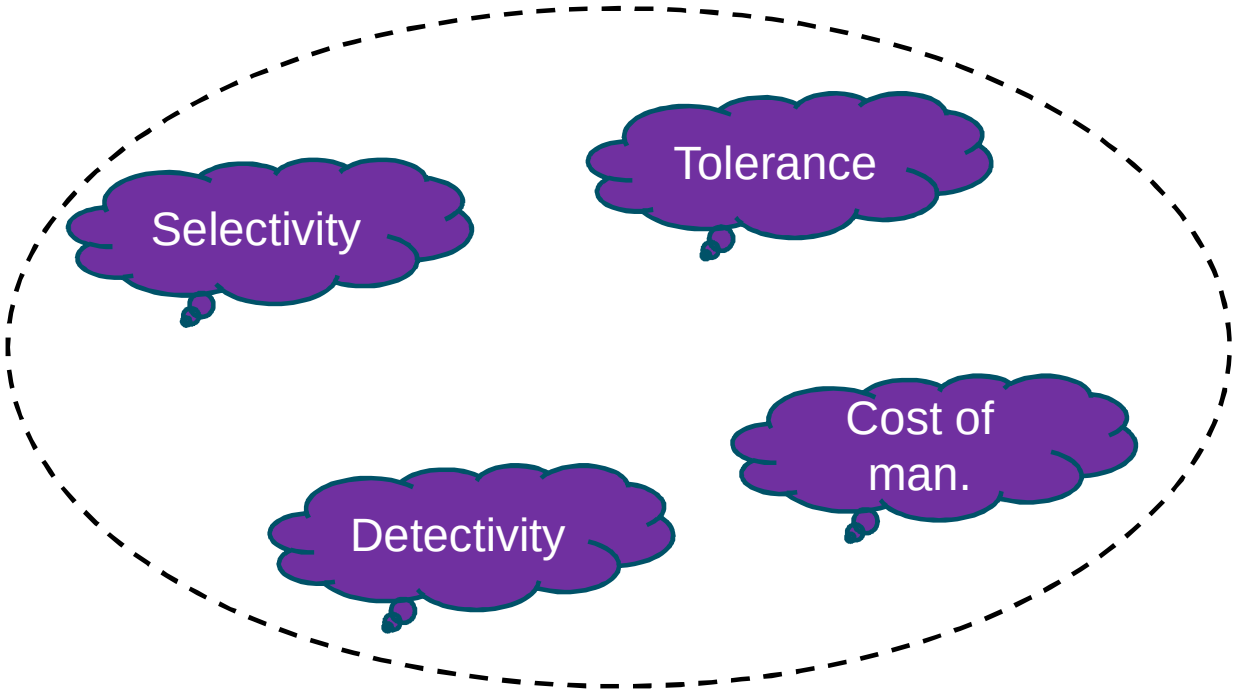




Also important:
- Environmental tolerance
- Cost of manufacturing

Consortium Projects for Optical Gas Sensing

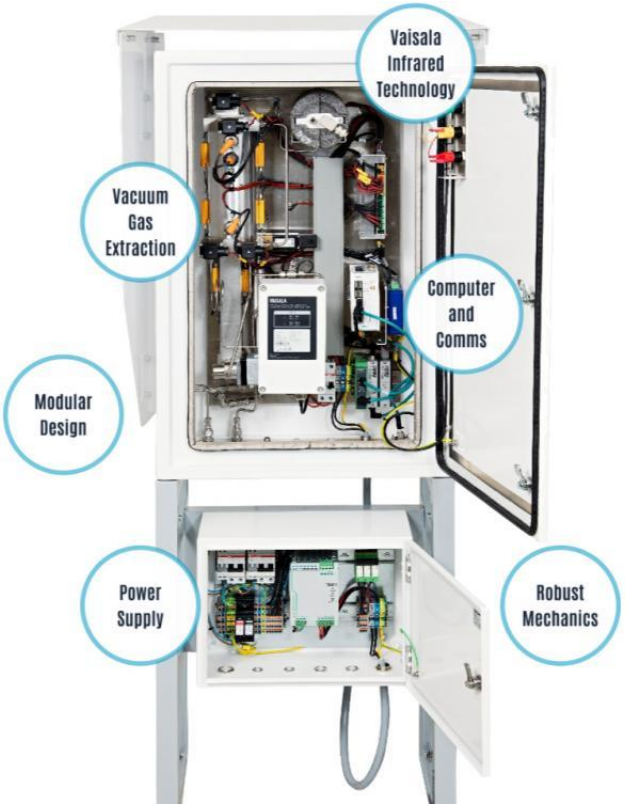
- Consortiums under various instruments
  - EU H2020
  - Business Finland
- Purpose
  - Knowledge
  - Networks and partners
  - Risk mitigation

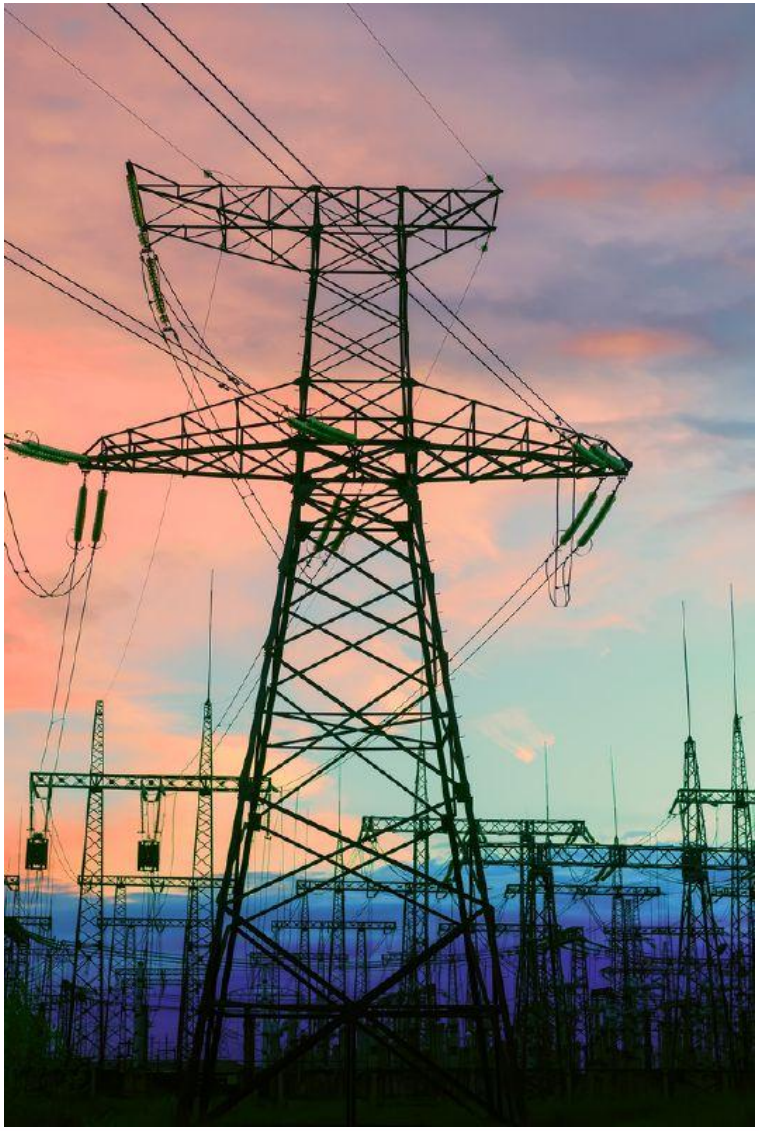


Important for Vaisala

- Adoption of new disruptive innovations for sensing
- Control of the value chain
  - The whole package from light source to detector
- Manufacturing flow fit
  - Fit to modest volumes in niche markets

Outcome





OPT100 Dissolved Gas Analyzer (2016)

- Measurement of transformer fault gases, e.g. hydrocarbons

Thank You