

# Innovation procurement

– Learnings from the project Connected Road Surface Monitoring

Med stöd från

**VINNOVA**  
Sveriges innovationsmyndighet

 **Energimyndigheten**

**FORMAS** 



**Infra  
Sweden**

Sweden's development and prosperity are strongly dependent on efficient transport and presuppose a reliable, safe and sustainable transport infrastructure



# Challenges / Opportunities

## Sustainability

Climate change, electrification, circular economy

## Digitalization

Automation, AI, IoT, Big Data etc.

## Urbanization

Accessibility, mobility, travel/mobility trends

## Service-based economy

Service performance, new business models, new forms of collaboration

## Security and vulnerability

Information security, robust systems, security protection



# What we want to achieve

A sustainable transport infrastructure that supports the transition towards the 2030 Agenda and will achieve climate neutrality by 2045.

- ✓ Increased sustainability
- ✓ Competitive innovations for transport infrastructure
- ✓ Open, dynamic and attractive sector

## Focus areas



Climate-neutral and climate-resilient transport infrastructure



Connected transport infrastructure



Materials, design solutions and construction methods



Increased productivity and quality



Sustainable maintenance of transport infrastructure

# What we do

Open Calls for innovation projects

Strategic projects

Innovation competitions

Innovation coaching and competence building

Seminars, webinars & workshops

Collaboration arenas



# Agenda

- 11.30 Welcome
- 11.35 Agenda and Purpose
- 11.40 Innovation procurement – Background and learnings from the contracting authority’s perspective.  
Anders Asp, Trafikverket/ViaPM
- 12.00 Panel discussion including experiences from suppliers involved in the process
  - Fredrik Lindström, Trafikverket
  - Björn Zachrisson, NIRA
  - Adela Spulber, Mercedes-Benz
  - Jonathan Selbie, Univrse
- 12.30 General discussion
- 12.55 Upcoming events
- 13.00 Thank you!



# Innovation procurement –

Background and learnings from the  
contracting authority's perspective

Anders Asp, Trafikverket/ViaPM

**Infra  
Sweden**



**TRAFIKVERKET**

Swedish Transport Administration



# Innovation procurement – Connected Road Surface Monitoring

*Background and Learnings from the contracting authority's perspective*



**Anders Asp**  
M.Sc. Civil Engineering  
CEO and Management Consultant



## Experiences

- Project Manager Connected Road Surface Monitoring, for the Swedish Transport Administration
- Program Manager, R&D and Digitalization,
- CEO ViaPM AB
- Senior Vice President Svevia AB
- Chairman R&D-board Svevia AB

## Employers

- ViaPM AB
- Svevia AB
- Swedish Road Administration
- Chalmers University of Technology

# Strategic collaboration between the Swedish Transport Administration and InfraSweden

The Swedish Transport Administration will run development work in project form, as a strategic collaboration project between the Swedish Transport Administration and Vinnova's strategic innovation programme "InfraSweden".

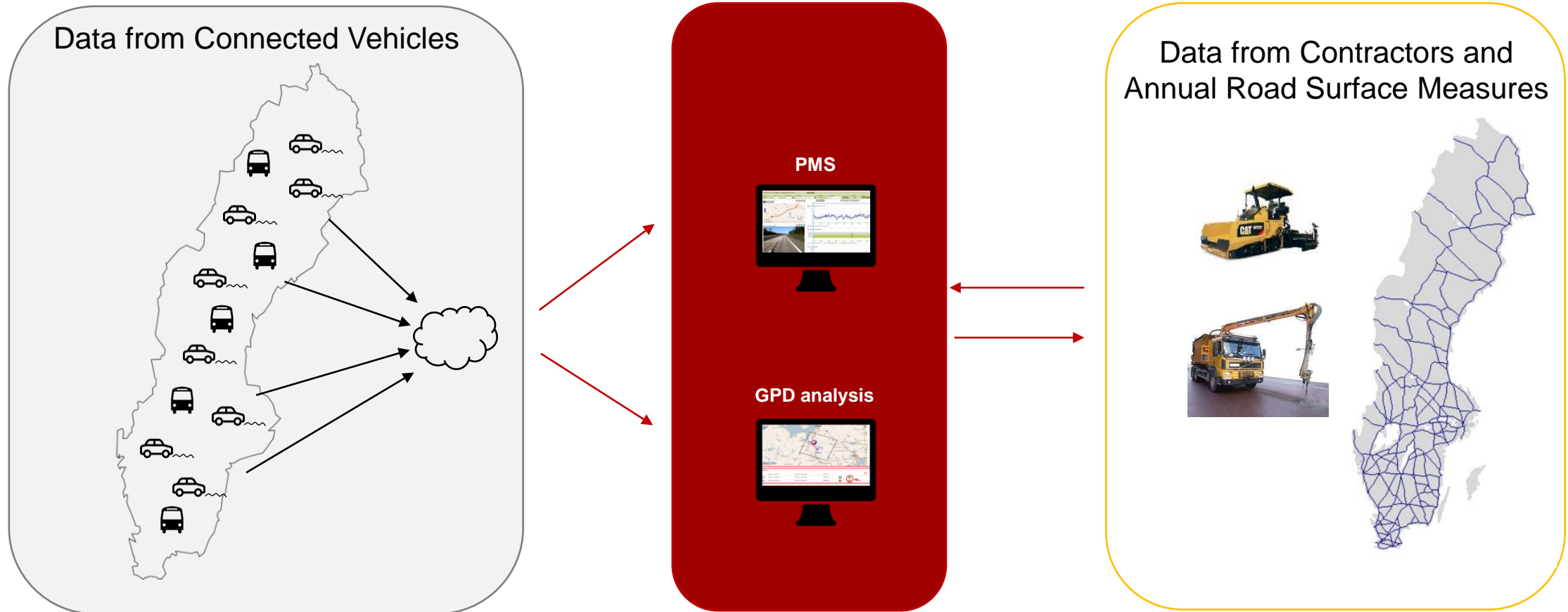
Through such collaboration, the partners will be able to leverage each other's knowledge, resources and experience in leading and driving innovation and development to achieve project goals and benefits faster.





- ✓ **Project content – information system**
- ✓ **Background and Needs**
- ✓ **Benefits, Targets and Purpose**
- ✓ **Effects of optimized and sustainable road maintenance**
- ✓ **Procurement process**
- ✓ **Requirements in the procurement**
- ✓ **Goals in the procurement**
- ✓ **Learnings**

# Connected road surface monitoring – information system



# Background

- **Annual road surface measurements** of the condition of the paved road network.
  - ✓ High-volume road network: every year
  - ✓ Other paved roads: every two years
  - ✓ Provides detailed information on the condition of the road surface and the road area.
- The Swedish Transport Administration carries out **inspections and visual inventories** of the road condition.
  - ✓ e.g. within Maintenance contracts, targeted road surface inventories.
- Systematic and comprehensive **information of changes in road condition between annual measurements is lacking.**

***We believe that data from connected vehicles can meet this need.***



## Road surface damages

**Thaw** can cause **unevenness and damage to the road** and pavement. The Swedish Transport Administration needs systematic information on **irregularities caused by frost.**



## "Winter damages"

During winter, some coatings take more damage than others. For example, through **stone chips in wheel tracks**. The Swedish Transport Administration needs information on the condition of paved roads and **surface damage that occurs during the winter season.**



## Acute damages

For example, **pot holes** or other damages that may affect accessibility and road safety.

**The Swedish Transport Administration needs systematic measurement data on acute surface damage that has an impact on road safety.**



*Connected road surface monitoring are a complement, not a substitute, to current road surface measurements*

# Benefits

- **Better basis for decision-making**
  - ✓ Added information to perform the right action in the right place, at the right time
- **Customer benefits**
  - ✓ Better basis for management and follow-up of remedial actions
- **Improved basis for road condition monitoring**
  - ✓ E.g. will we have more or less frost problems?
  - ✓ Have the measures implemented had the intended effect?





# Targets

**In close cooperation with our three suppliers:**

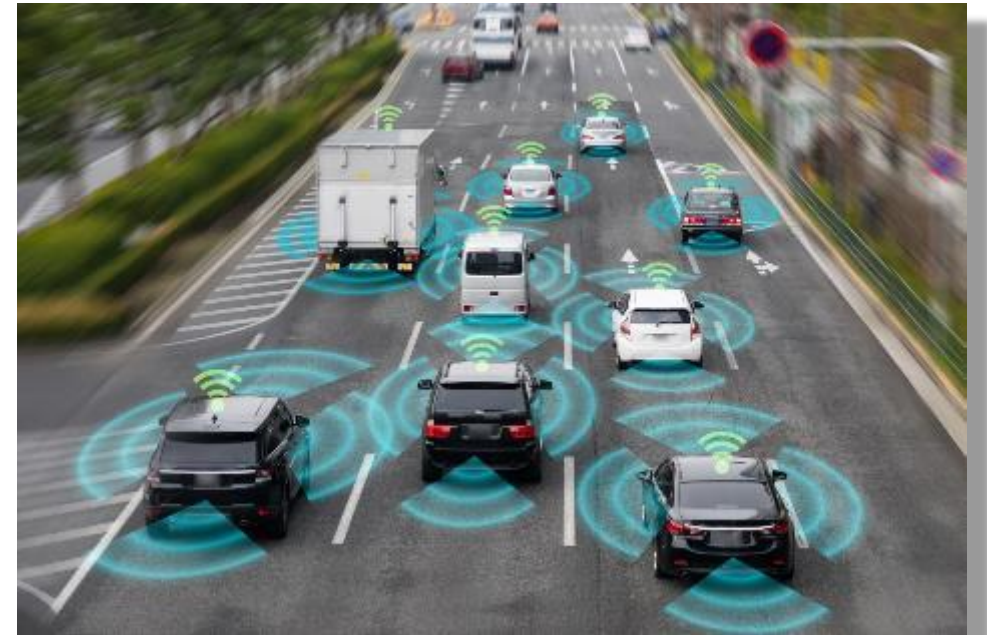
- **Develop**
- **Demonstrate**
- **Test**

**and implement new solutions for road surface monitoring using data from connected vehicles**



# Purpose

- Using **new technologies** for **monitoring conditions in the road surface to achieve efficient and sustainable road maintenance** by exploiting the opportunities offered by society's digital transformation
- Using **data from connected vehicles**, the Swedish Transport Administration will be able to **capture rapid changes in the state of the road network**
- An important **analytical basis for planning and follow-up road maintenance actions**



# Effects of optimized and sustainable road maintenance

## Increased **Economic sustainability** by:

- **Resource-efficient road maintenance** due to better information for planning, conducting and monitoring of road maintenance
- **Reduced car damage cost** caused by poor road conditions
- **Reducing accident costs** by improving road safety

## Increased **Ecological sustainability** by:

- **Reduced emissions** related to poor road maintenance
- Reduced emissions from traffic by reducing traffic disruption
- **More effective traffic management** through increased access to real-time information on current road conditions and acute damages

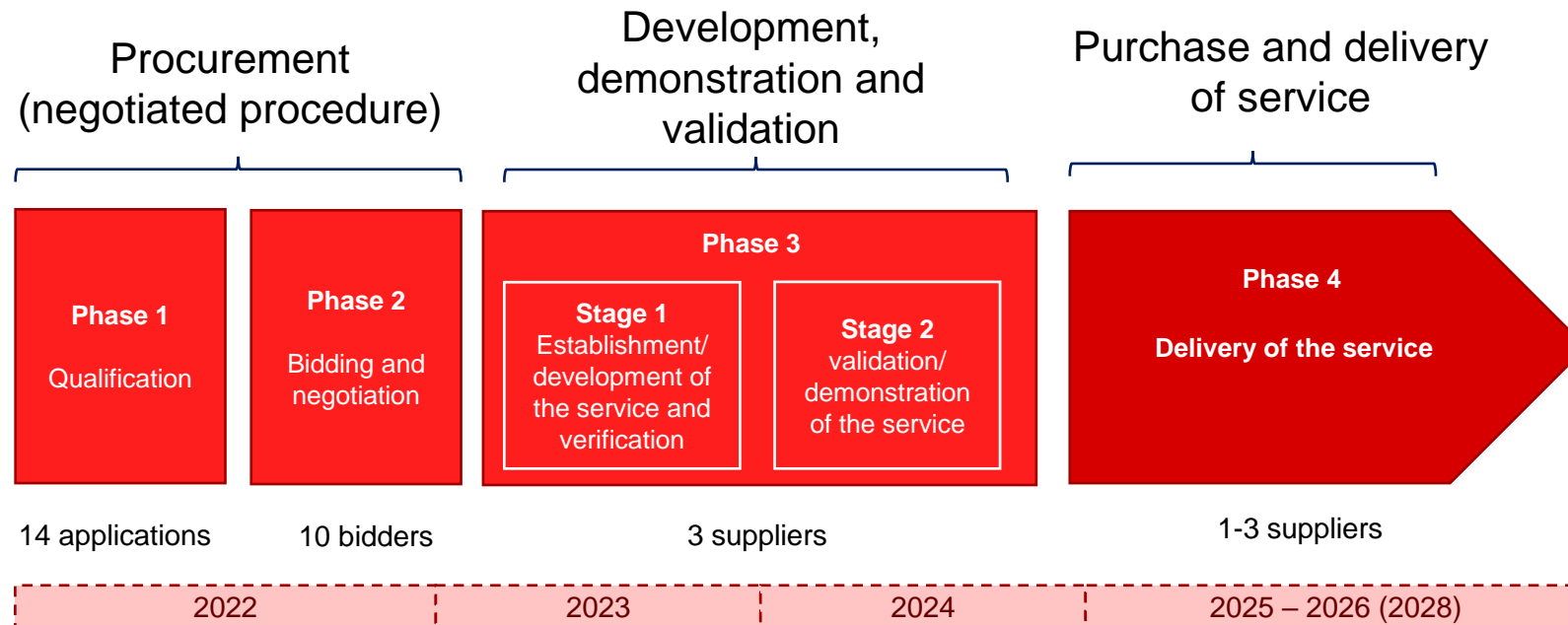
## Increased **Social sustainability** by:

- **Increased gender equality** by making the road maintenance industry more attractive due to modernized and efficient decision support tools and better working conditions

### THE GLOBAL GOALS For Sustainable Development



# Procurement process



*All 4 phases are included in the same procurement*

# Requirements in the procurement

1. Data collection
2. Data quality
3. Positioning
4. Data delivery, format etc.
5. Road coverage and measurement frequency
6. Personal data



# Goals in the procurement

1. Goals for measuring **Road surface damages**
2. Goals for measuring **Winter damages**
3. Goals for measuring **Acute damages**
4. Goals for **Road Coverage**
5. Goals for **Level of integration**
6. Goals for **Level of automation/human interactions**
7. Goals for **Measurement quality/verification** of the system solution



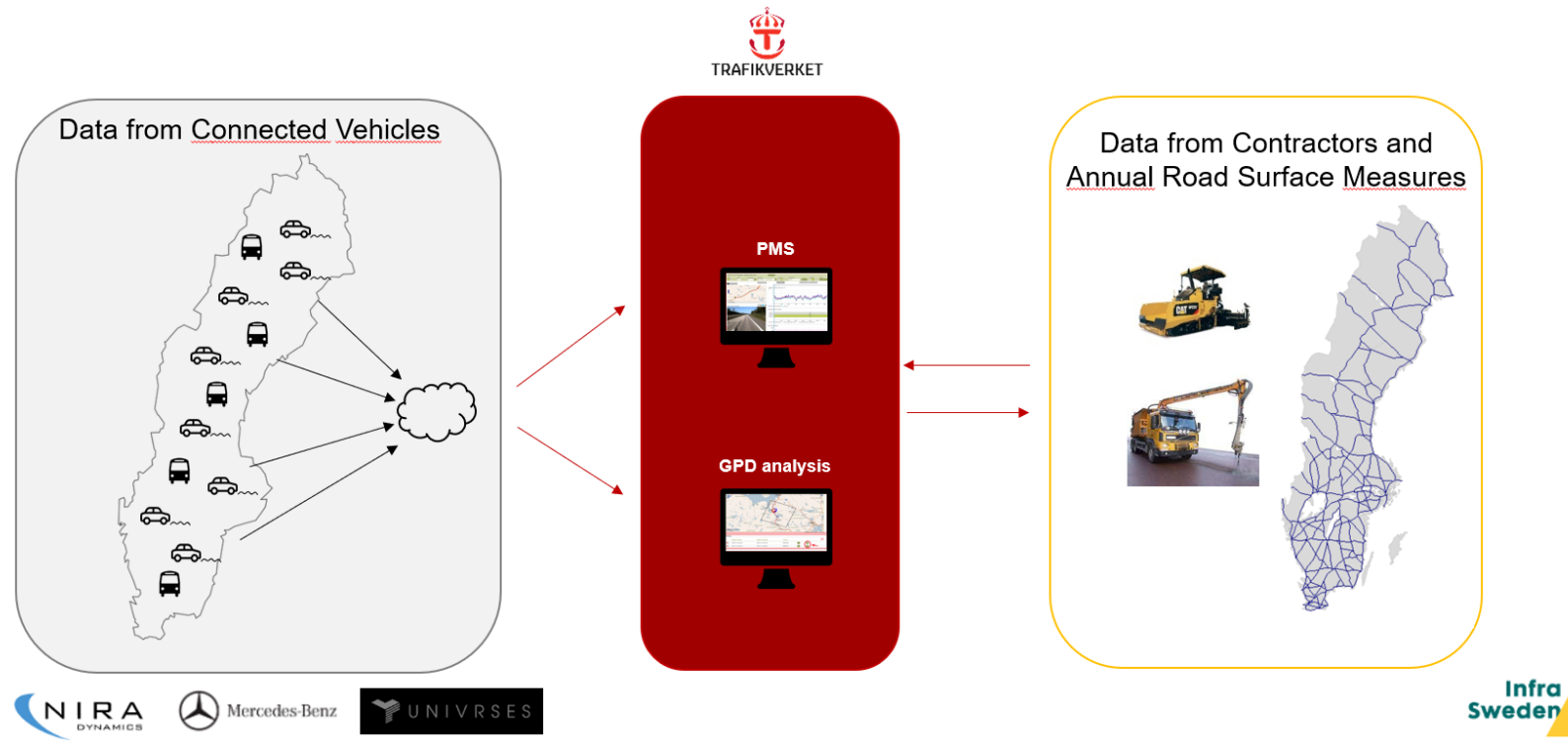
# Learnings

The process of purchasing Floating Car Data for Road Surface Monitoring for a state agency is **complex**. There are several **factors to take into consideration**:

- **Create a market of suppliers**
- **Decide the specific use**
- **Decide if you are going to share data or not**
- **GDPR**
- **Real-time data or historical data?**
- **Cover your road network**
- **Level of quality/accuracy**
- **Laws and regulations**
- **Purchase a full decision support system or only purchase data?**
- **Combine R&D and implementation in one procurement or not**

# Thank you for your attention!

## Connected road surface monitoring – information system





# Panel discussion

# Group discussions

Discuss in groups, chose a subject of your interest!

- Some suggestions:
  - Previous experiences from innovation procurements
  - How to get more innovation procurements
  - Opportunities/obstacles

15 min

Please document the essentials of your discussion in the chat after we have returned to the main session!

# Upcoming in InfraSweden

- Client's network meeting for a climate-neutral construction sector; Skellefteå, May 30-31
- Bygg kompetens (Build Competence) – Agenda 2023 – Online; May 31, 11.00 – 12.00
- Collaboration and innovation for a fossil-free transport infrastructure at the airports of the future; June 12, 13.00 – 16.00, Online
- Results Conference; October 19, 13.00 – 15.00
- InfraAwards 2023 will soon be open!: Annual innovation competition, this year about sustainable utilization of resources in Swedish transport infrastructure
- Our call concerning Internationalization: apply for resources for planning and collaboration (open now)
- Next call for Innovation Projects – focusing lifecycle aspects on transport infrastructure; information meetings are announced on our website (September – November)!
- Find more: [www.infrasweden.nu](http://www.infrasweden.nu)

# Thank you!

