



**CELTIC-NEXT**



## **5G Enabled Road Safety Services**

**5G Momentumin  
5G kestävän kehityksen tukena -verkostoitumistilaisus  
4.2.2020**

**SITOWISE**

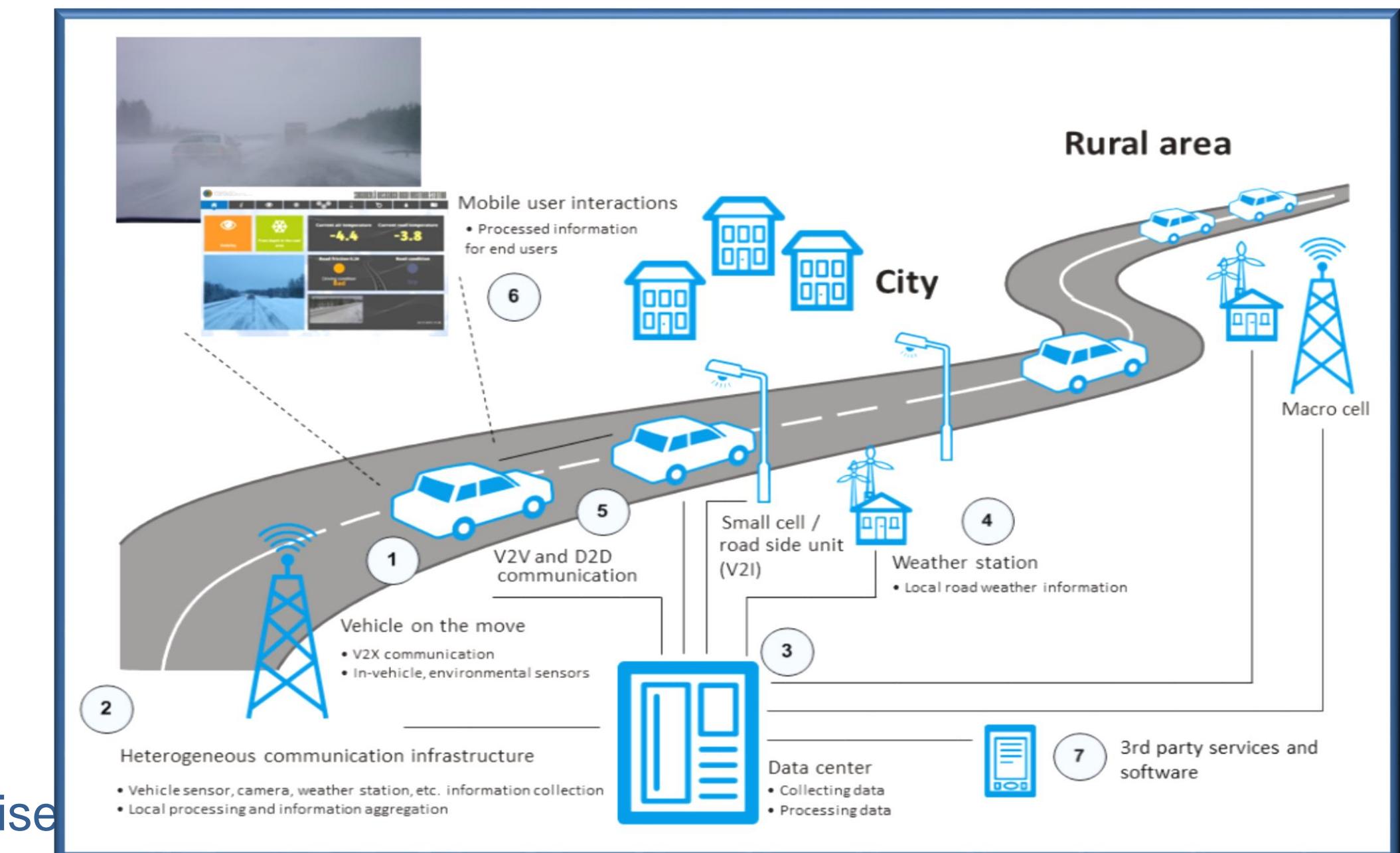
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# „Teaser“

- 5G-SAFE-Plus supports wide-scale implementation of advanced road weather & road maintenance services with 5G networking capabilities and service enablers.
- 5G-SAFE-Plus will produce innovations on 5G-based vehicular connectivity, distributed data processing, and novel road weather & safety services that benefit connected and automated vehicles, road operators and 3<sup>rd</sup> party organizations.
- Industrial & academic collaboration in identifying novel road safety use cases and services enabled by 5G.
- 36 months, autumn 2018 call.



5G-SAFE Plus, Pekka Eloranta, Sitowise Oy, pekka.eloranta@sitowise.com



# Partners

- Partners from Finland, Sweden, Romania
- Interest from UK, Canada, Portugal, Germany, Turkey and Israel
- Finnish Partners
  - ✓ Sitowise
  - ✓ VTT
  - ✓ FMI
  - ✓ Infotripla
  - ✓ Unikie
  - ✓ Teconer
  - ✓ Destia
  - ✓ Vaisala



# 5G-SAFE-PLUS Ecosystem



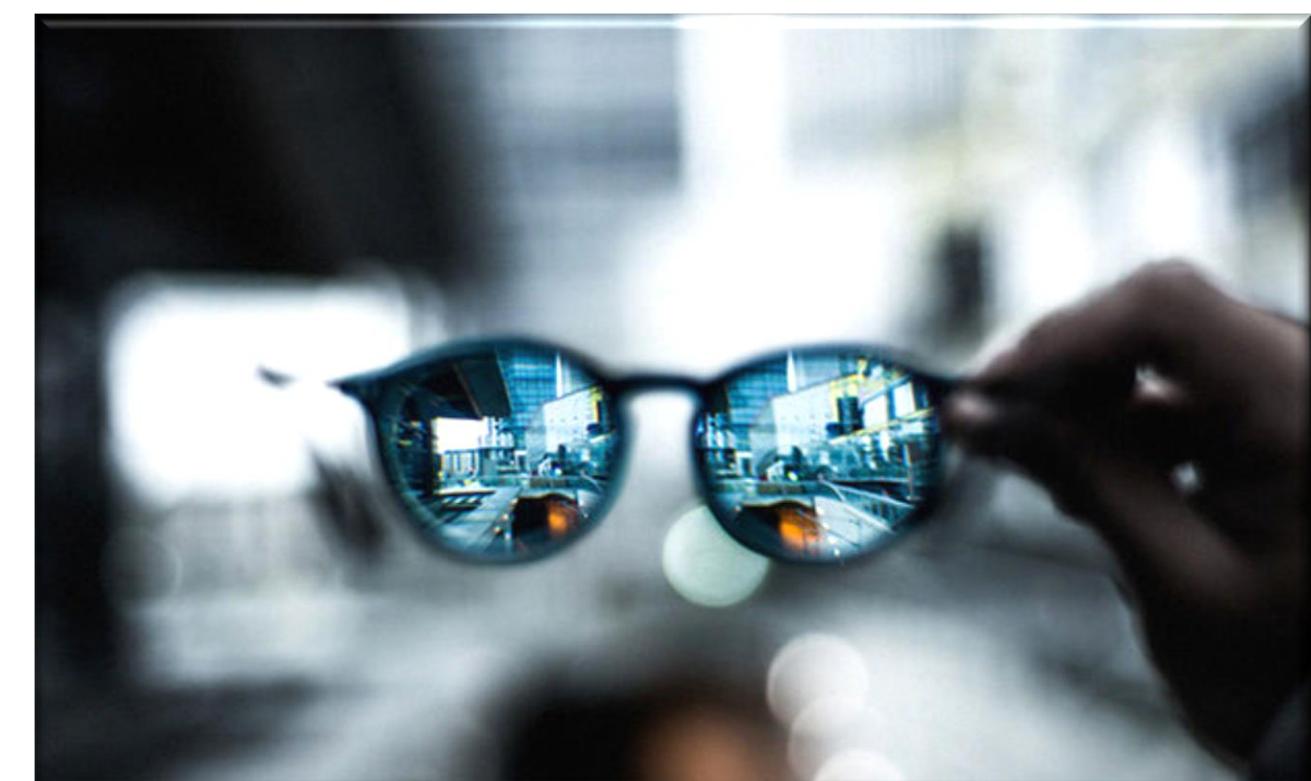
- 5G-SAFE-Plus business ecosystem includes the potential beneficiaries and end users, but also the technical enablers of the overall solution in the participating countries working together.
- Network technologies and devices include the communication media and solutions, vital for the reliable and timely service and data delivery in the vehicular domain.
- Weather & safety messaging represent novel applications to improve road safety & efficiency for road users.
- Data management for vehicles, fleets, and logistics cover data collection and fusion from different sources and usage for logistics enhancement or autonomous vehicle control.
- Road maintenance represents yet another end user perspective and fleet generating sensor data.



# 5G-SAFE-PLUS Big Issues



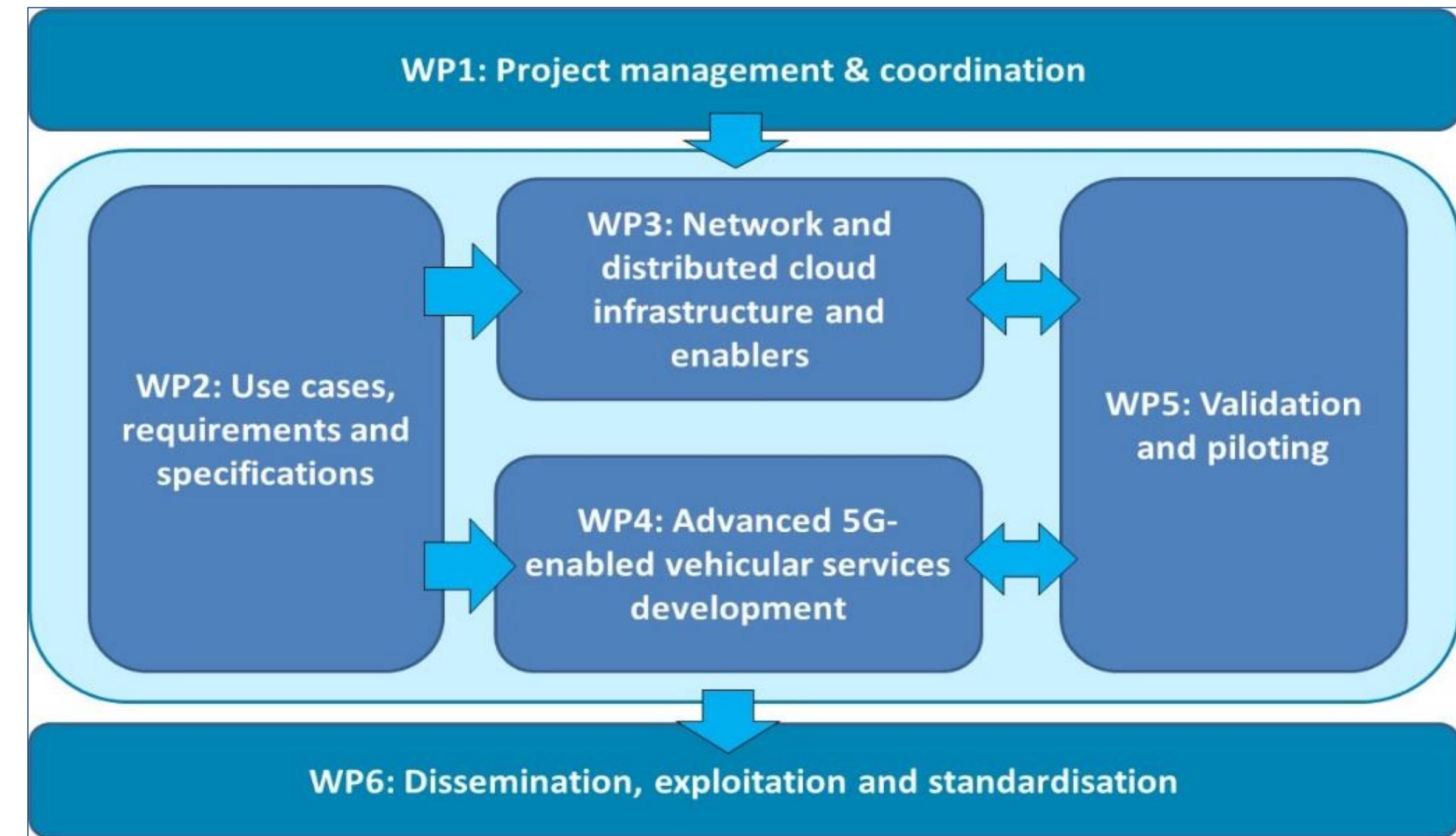
- 5G-SAFE-Plus aims to prevent traffic accidents and avoid casualties with time-critical road safety services to vehicles such as accurate weather, hazard and road condition information.
- Vehicle data allows services benefitting meteorological forecasts & optimizing road maintenance.
- Services may also be used by automated vehicles in challenging weather & road conditions.
- To ensure smooth transition to 5G and maximize reliability, hybrid network environments, including, 3G, 4G, 5G, ITS-G5 and, if possible, also satellite communication, will be used so that the service provision can be guaranteed continuously.
- For supporting real-time requirements and ensuring scalability, the solution includes means for local processing (e.g. fog/edge) and information aggregation.
- Information security plays a key role as well and will be considered by design in the overall solution, to be validated in pilot constructions in real environments.



# 5G-SAFE-PLUS WP's



Next Generation Telecommunications



# Use Cases

- 5G-SAFE-Plus will have 4 5G-related Use Cases and the initial ones are:
  - ✓ Use case 1: Weather, road safety and maintenance services. Novel road weather, safety and road maintenance services enabled by 5G. The services are relying highly on data (incl. video) collected from vehicles (e.g. crowd-sourcing) and roadside sensors as well as to the intelligent real-time processing of the collected data (e.g. AI).
  - ✓ Use case 2: Hybrid connectivity for extended service coverage and reliability in remote or rural locations. The usage of more than one network technology (e.g. 5G, ITS-G5, 5G/satcom integration) for extending the coverage area and improving the reliability of the services developed in UC1 and UC3. Adaptation of the services and data transmission to the network capabilities.
  - ✓ Use case 3: Ultra-low delay services for autonomous driving focusing on usage of road safety information. Services requiring especially very low latencies (5G: 1 ms) in ensuring the safety of automated vehicles.
  - ✓ Use Case 4: Services for the safety of vulnerable road users. The aim is to identify pedestrians, who are at risk of accidents, and to send dangerous status notification to the relevant pedestrians and vehicles.
- These Use Cases need to be discussed and agreed upon so that they are in line with each country's/site's needs and objectives.
- All Use Cases will “respect” the 5G-SAFE-PLUS overall objectives, especially the utili



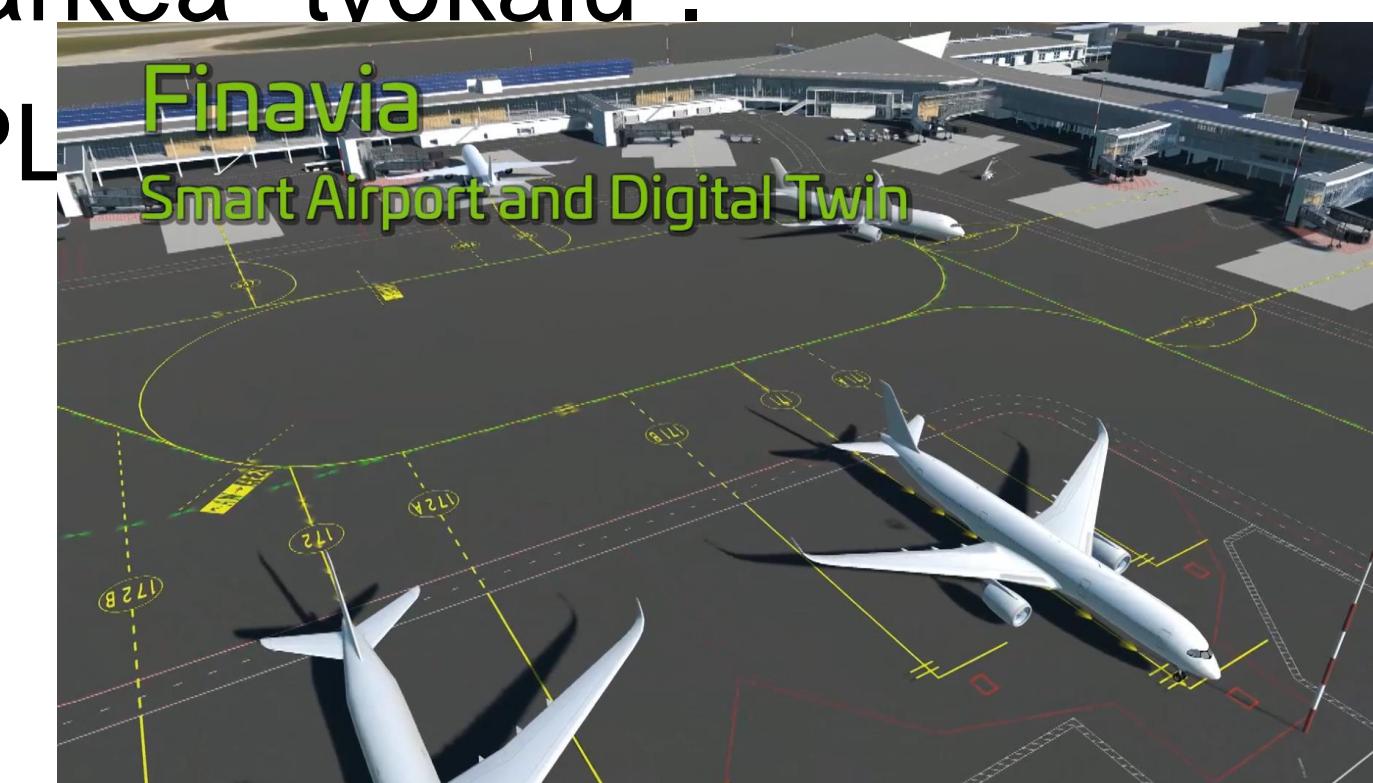
# Sitowisen rooli

- Sitowise toimii 5G-SAFE-PLUS –hankkeen kansainvälisenä koordinaattorina.
- Lisäksi Sitowise osallistuu myös aktiivisesti hankkeen tekniseen työhön kaikissa työpaketeissa.
- Sitowisen tavoitteena on yhdistää reaalialkaista dataa 5G-SAFE-PLUS -testeistä ja piloteista ja käyttää sitä yhdessä olemassa olevan paikkatiedon kanssa tuottamaan korkeatasoista ja tarkkaa informaatiota loppukäyttäjille.
- Sitowise yhdistelee ja vertailee kerättyä tietoa ja edelleen jalostaa sitä.
- Sitowise visualisoi ja analysoi yhdistettyä dataa ja luo reaalialkaista 3D-tilannekuvaan mm. digikaksosissa.
- 5G-SAFE-PLUS on linjassa Sitowisen:n digi-strategian ja konsernivälistysyhtymän tiloihin kanssa.



# Sitowisen tavoitteet

- Sitowisen aluetta hankkeessa ovat liikennetiedon keruu, jalostus, analysointi ja hyödyntäminen sekä tulos-ten käyttö myös liikenteen palveluissa, paikkatietojärjestelmissä, visualisoinnissa, digikaksosissa, jne.
- Näiden kokonaisvaltainen kehittäminen on Suomessa lähdössä liikkeelle, mutta niissä ollaan yleisesti varsinkin integroitimiessä vielä alkuvaiheessa.
- Sitowise on tämän alan merkittävä tekijä ja haluaa vahvistaa asemiaan Suomessa sekä pyrkiä kansainvälisille markkinoille (alkaen Pohjoismaista ja siirtyen kohti muuta Eurooppaa).
- Sitowisen paikkatieto-, mallinnus- ja digiosaaminen on huipputasoa niin kotimaassa kuin kansainvälisesti ja osaamisen sekä siihen nojautuvien ratkaisujen tuominen markkinoille on tärkeä strateginen tavoite.
- Tavoitteen saavuttamisessa 5G-SAFE-PLUS on erittäin tärkeä "tvökalu".
- Sitowise pyrkii laajentamaan ja syventämään 5G-SAFE-PLU



# Thank you...



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