



Towards requirements related to future CCAM services for road usage optimization

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Objectives of ESRIUM



ESRIUM is a Horizon 2020 project increasing the safety and resource efficiency of transport on European roads. Its key innovation is a digital map of road surface damage and road wear.

The digital road wear map will contain unique information for the road operators to enhance the road maintenance planning and to provide routing recommendations (in-lane and cross-lane) to automated vehicles and conventional vehicles to avoid road damages.

Through ESRIUM, transportation becomes...

- **Smarter:** Exploiting detailed driving recommendations received from the road operator in every automated and connected car.
- **Safer:** Allowing the vehicle to drive on undamaged road surface.
- **Greener:** A longer paving lifetime makes road operations greener and more resource-efficient.

Objectives of this presentation

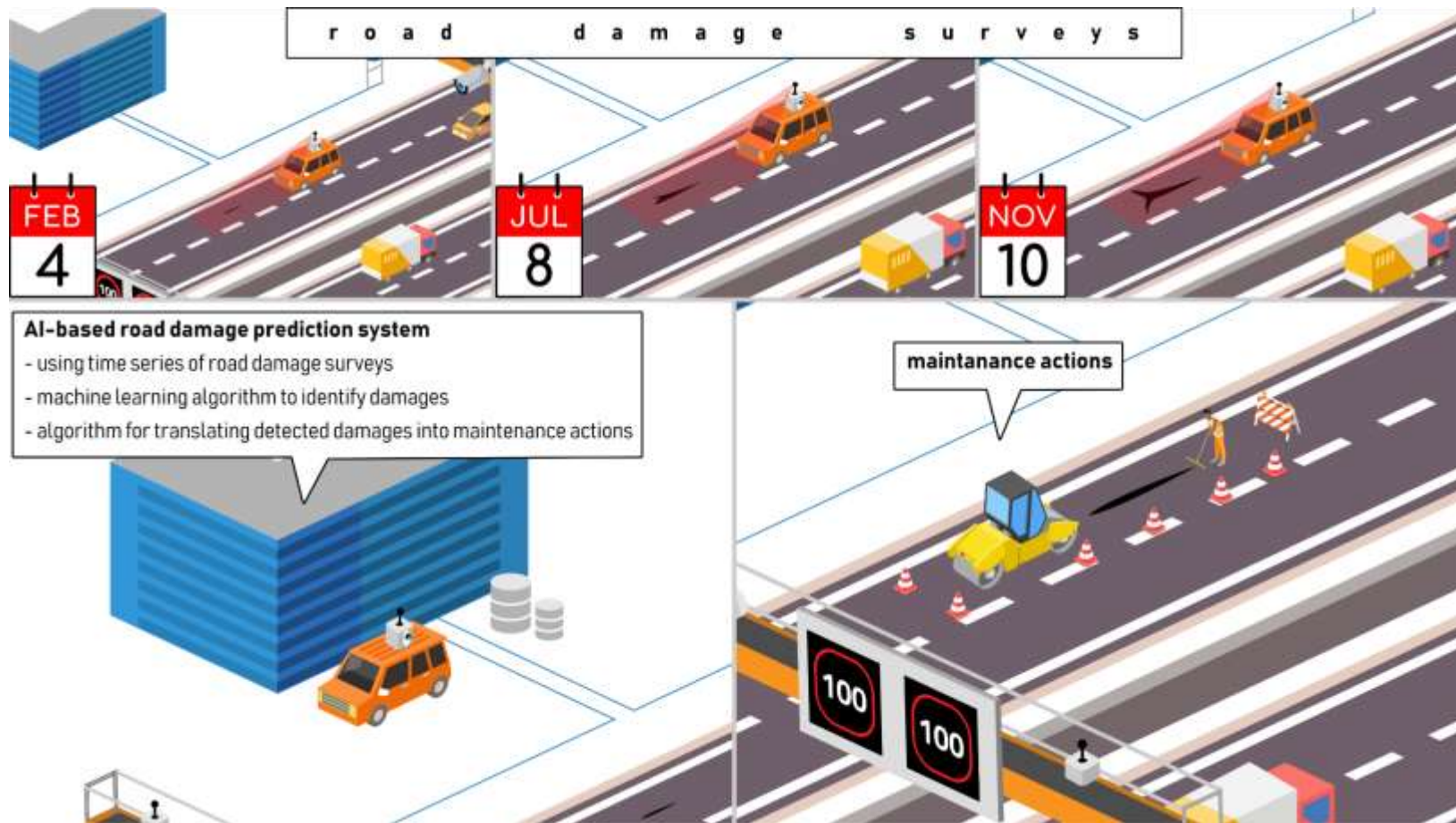


1. Presentation of four use cases
2. Elaboration of non-technological requirements of the offered digital services

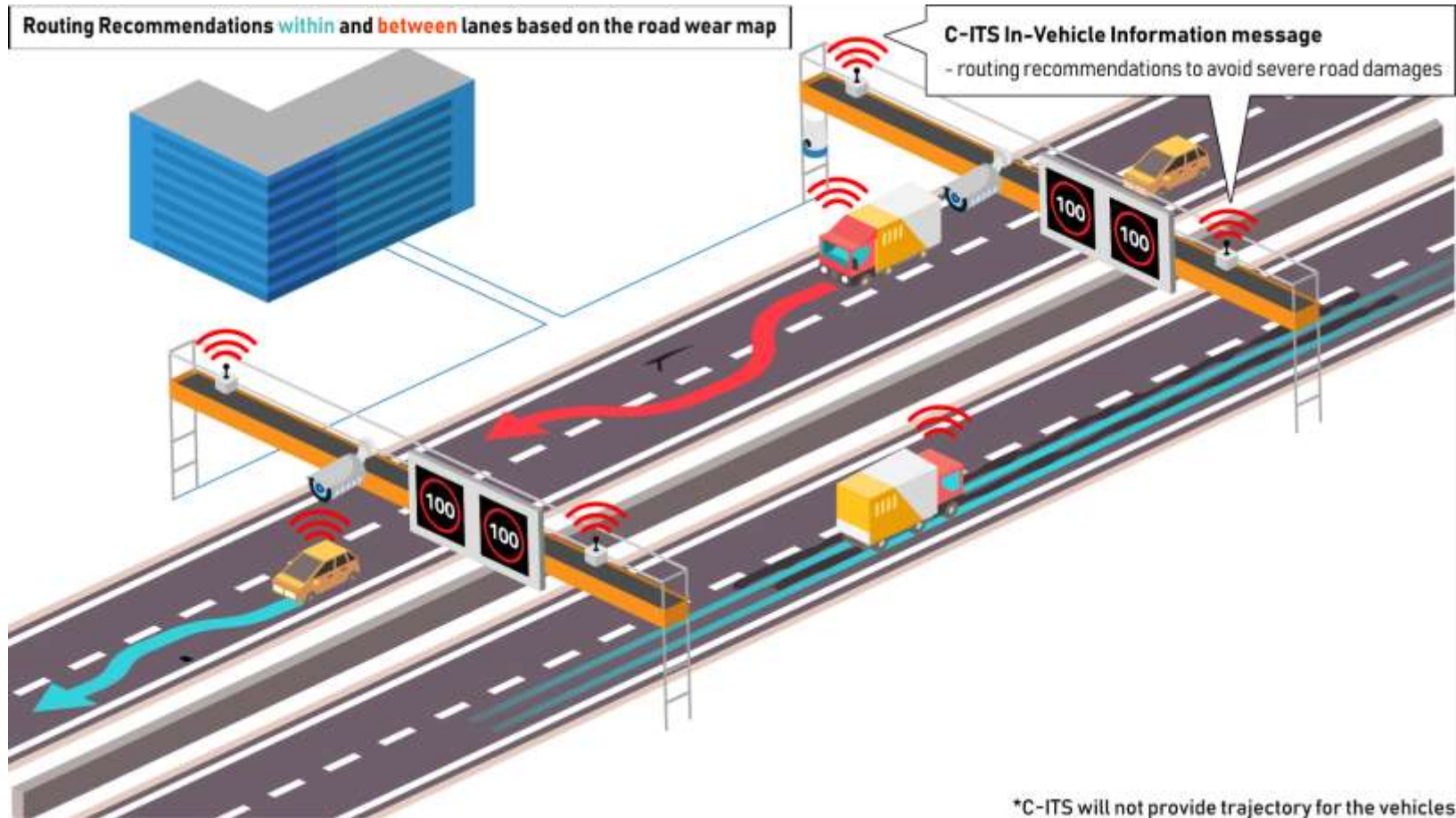
Aim of this project phase:

- Mapping of the requirements of the stakeholders
- Consideration of these requirements in the development of the ESRIUM services
- Optimizing the interaction between humans and the system and thus increase user and technology acceptance

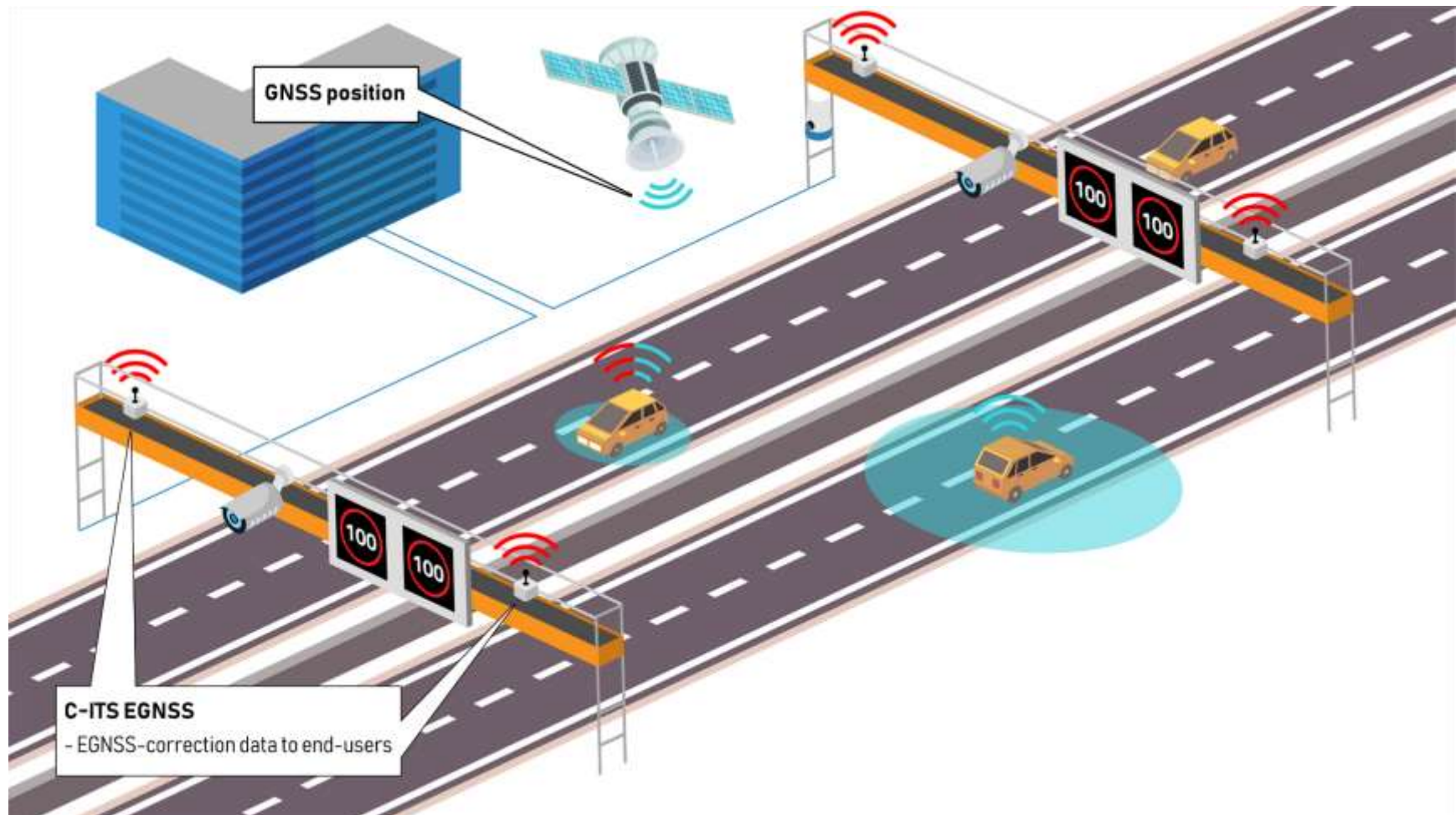
EUC-001: AI-based road damage prediction to support enhanced road maintenance planning (Figure)



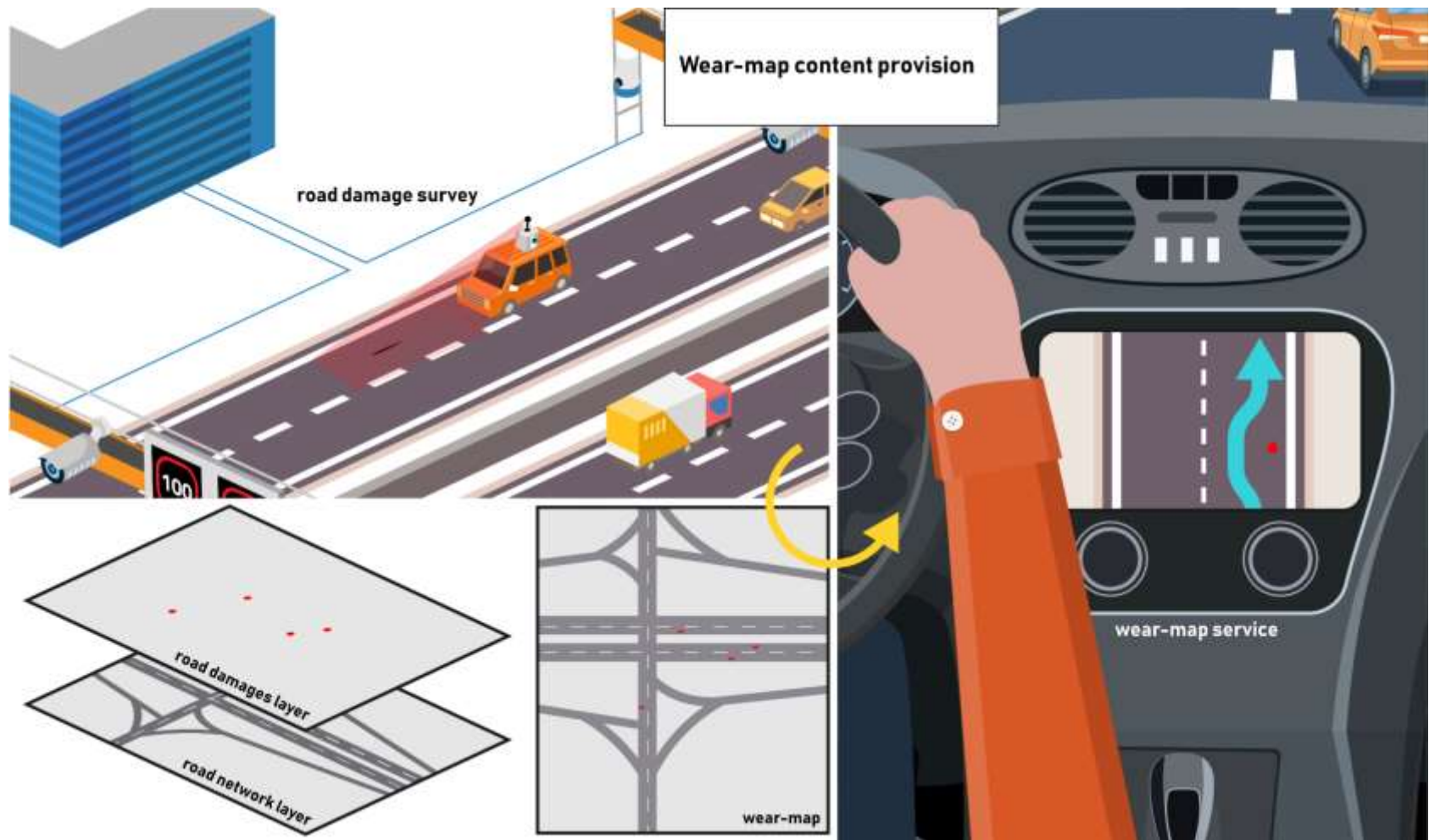
EUC-002: Routing Recommendations within and between lanes based on the road wear map, provided via C-ITS messages (Figure)



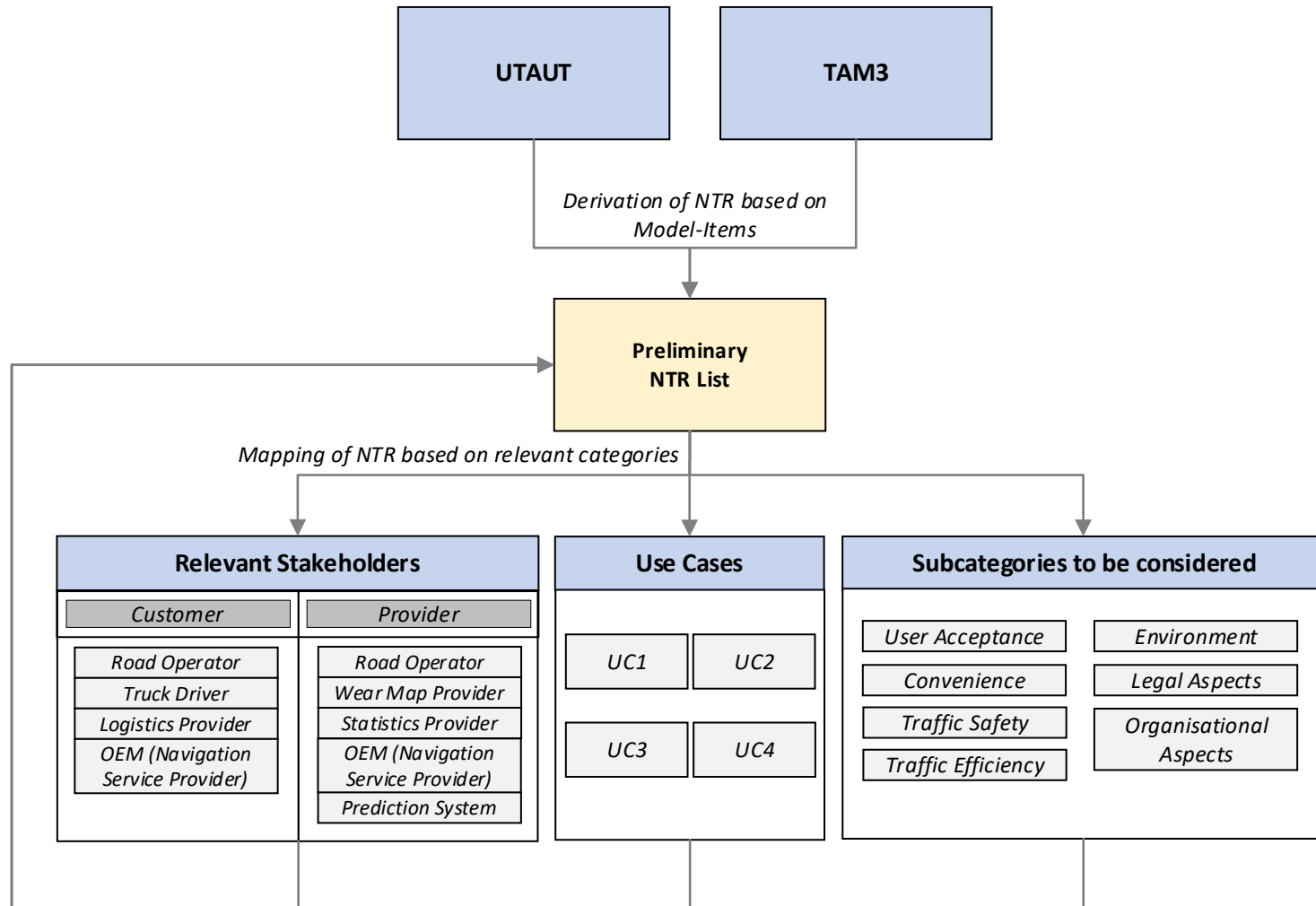
EUC-003: C-ITS Message 'GNSS-correction data' provision (Figure)



EUC-004: Wear-map content provision (Figure)



Process for the definition of non-technical requirements



Revision and inclusion of still unconsidered NTRs based on the respective categories

Conclusion

1. Existing road maintenance systems lead to numerous long-term road works and the associated high costs, congestion and CO2 emissions.
2. ESRIUM services offers AI-based road damage prediction, which allows for early diagnosis and appropriate preventive measures to avoid or significantly shorten long-term construction sites.
3. Proactive prevention of road damage by road users should contribute to a reduction or even shortening of road wear in order to reduce the number of construction sites.
4. Through this, transportation becomes smarter, safer and greener.

Next steps:

- Finalization of requirements lists
- Questionnaire for user acceptance study
- Field tests in mid 2022 (AlpLab and DigiTrans)



By completing our online questionnaire, you will play a key role in helping us to adapt ESRIUM services to the needs of our stakeholders. **Thank you very much!**



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