

# REQUIREMENTS FOR AUTOMATED TRANSPORT SYSTEMS - A SYSTEM OVERARCHING APPROACH.

SUSTAINABILITY, INFRASTRUCTURE AND EUROPEAN RESEARCH



Armin Gräter, October 2021

**BMW  
GROUP**



# SUSTAINABILITY STRATEGY: BMW GROUP @ IAA MOBILITY 2021.

BMW i VISION  
CIRCULAR

IAA»  
MOBILITY  
MÜNCHEN 2021



“Less is more, “The Greenest EV” made by BMW under the principle of circular economy”



“BMW to reduce carbon emissions in car life cycle 40% by 2030”



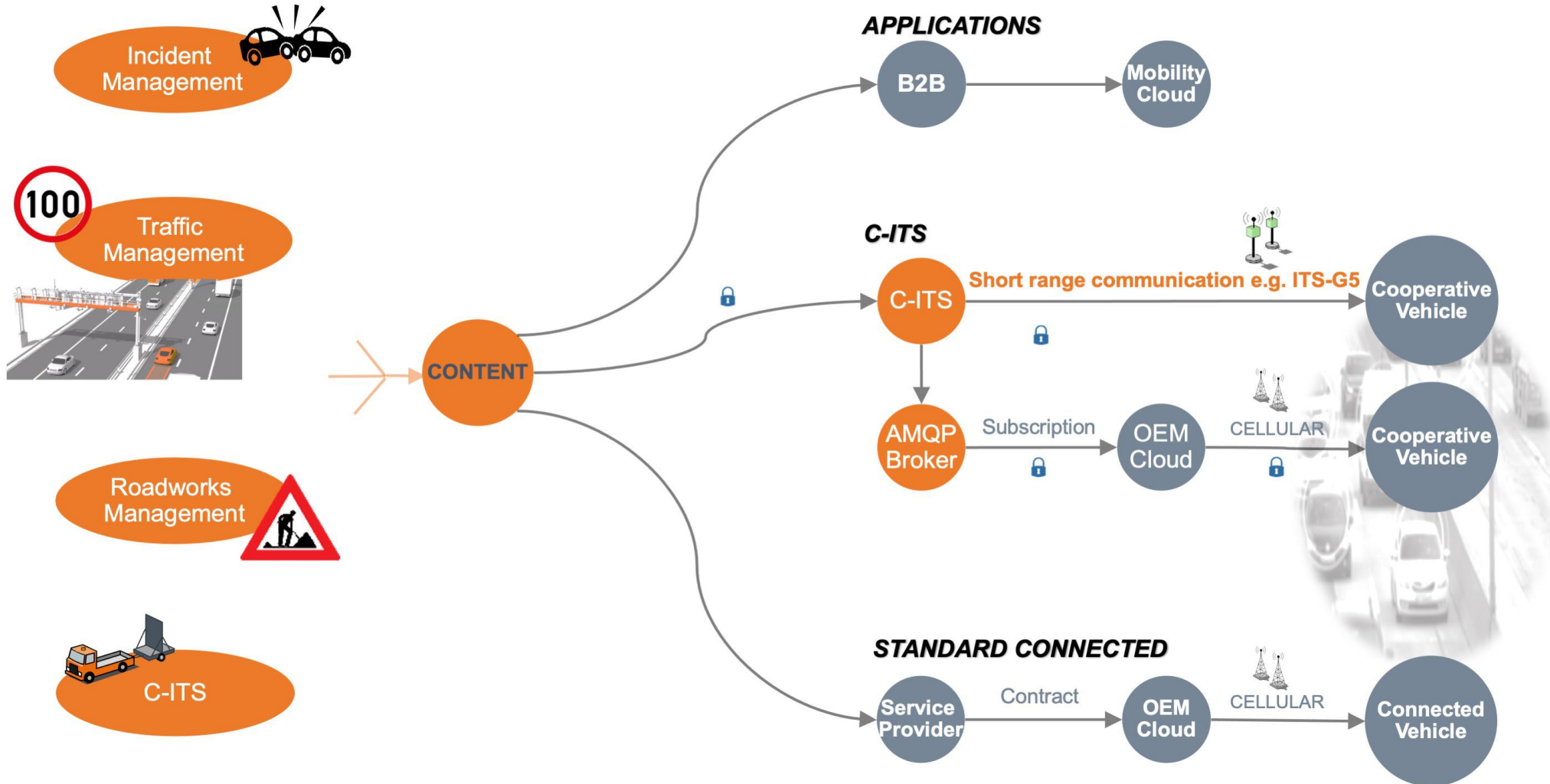
“BMW i Vision Circular concept rethinks the compact EV under a circular economy”



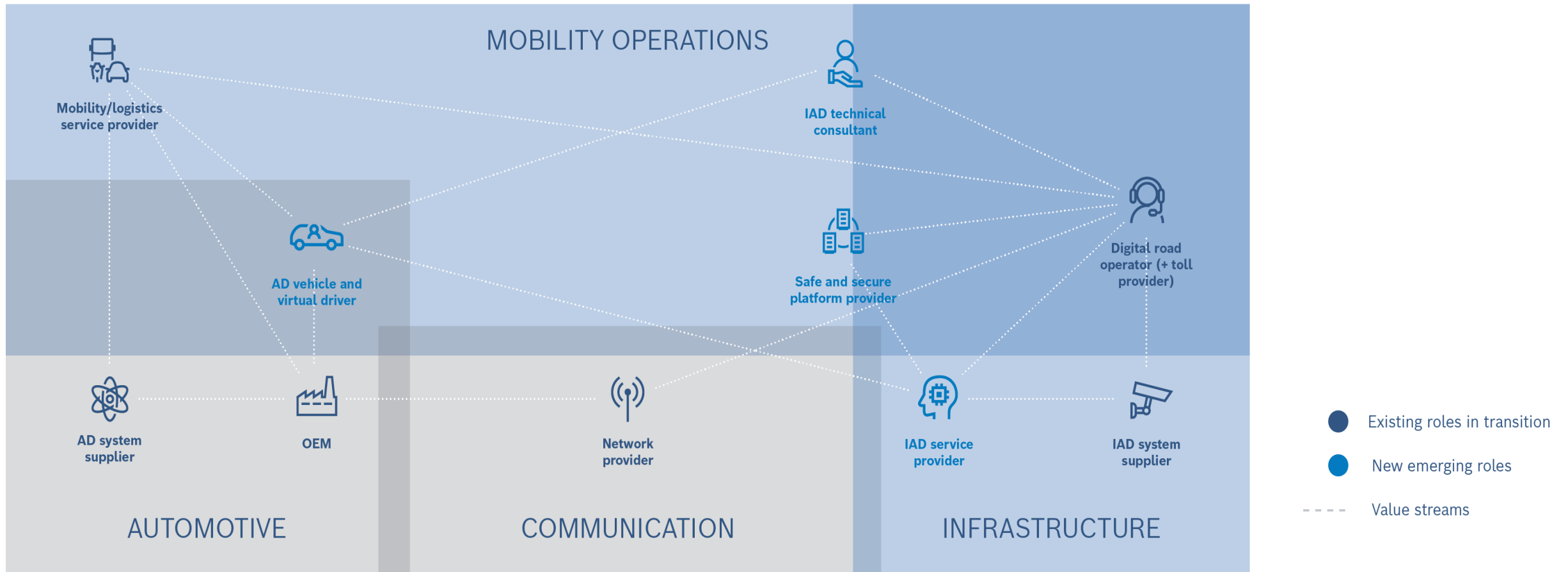
“BMW i Vision Circular concept blends luxury and sustainability”



# Data sharing patterns between infrastructure and vehicles



# CCAM ecosystem with established and potential new roles



# COOPERATIVE CONNECTED AUTOMATED MOBILITY (CCAM). PARTNERSHIP UNDER HORIZON EUROPE WILL SPEND 1 BILLION EUROS.



*European leadership in safe and sustainable road transport through automation*

The CCAM Partnership will achieve Deployment Readiness for specific Use Cases in the short-/medium-term (3-5 years) or long-term (7-10 years) by **expanding the ODD** and **demonstrating maturity**. The selection of Use Cases (and their ODDs) for demonstrations (in short, medium and long-term) are not predefined, allowing agile and open innovation processes, considering new mobility services and solutions. Less complex Use Cases as driving on highways or in confined areas as well as low speed applications in mixed traffic will be earlier ready for deployment. Driving at higher speeds in mixed city traffic and in peri-urban environment due to scaling complexity (see above) will come later. The overall goal and long-term ambition for CCAM is providing services and solutions for passengers and freight in as many application areas as possible.

# COOPERATIVE CONNECTED AUTOMATED MOBILITY (CCAM). ERTRAC ROADMAP DELIVERS A VISION OF 2050, CHALLENGES & ENABLERS.



## Connected, Cooperative and Automated Mobility Roadmap

Status: DRAFT for public consultation

Version: 9

In 2050, **vehicles** will have 100% real-time connectivity on the relevant road network and the transport management system will have the appropriate quality of service level, also for remote operation. All newly registered vehicles will have automation but in different levels:

- A vast majority of shuttles, buses and delivery vehicles in cities will operate autonomously, supported by a control center to extend the range of public transport and enabling access to previously underserved areas as well as reducing traffic volume as a whole.
- Nearly all vehicles on highways will be able to operate without immediate driver intervention and so give driving time back to the driver.
- All cars and trucks on all roads will have very sophisticated supporting systems installed, including reactions on traffic lights, roundabouts etc. and so reducing accidents to near zero as well as further reducing emissions (e.g. from tires and brakes).