CulturalRoad

Cocreate, Embrace

CulturalRoad co-creates new guidelines and strategies for the effective and equitable deployment of Cooperative, Connected and Automated Mobility (CCAM) services, taking into account cultural and geographical diversity.

About CulturalRoad

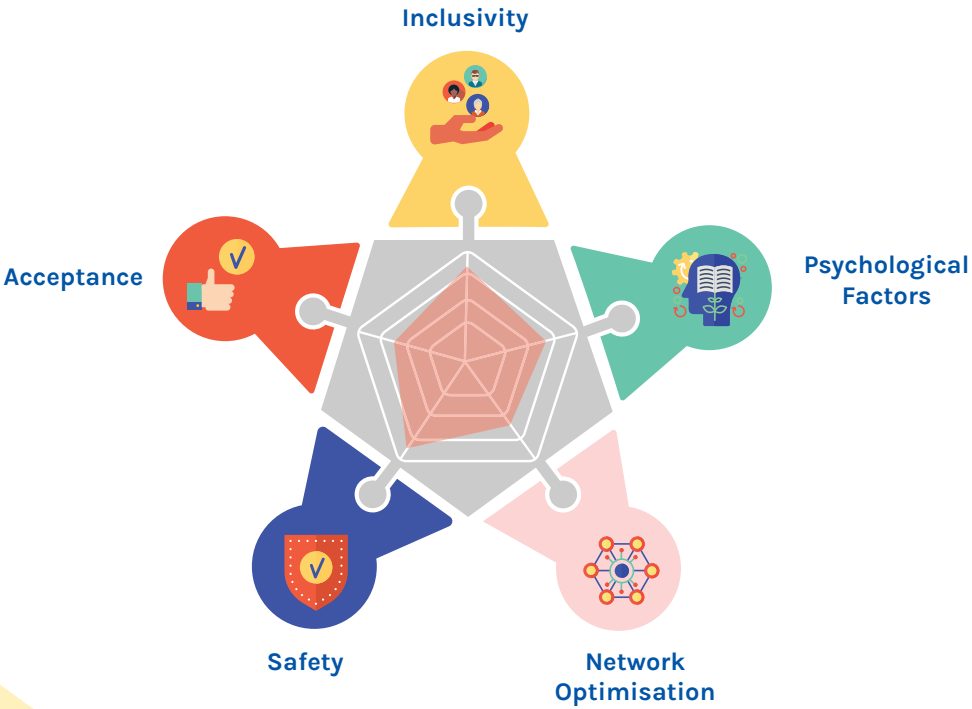
CulturalRoad addresses a key challenge: how to ensure that Cooperative, Connected and Automated Mobility (CCAM) services are deployed in a harmonised and equitable way to unlock their full potential. While CCAM can improve safety and efficiency, deployment strategies must consider cultural, geographical and social diversity to increase public acceptance and deliver real benefits.

To achieve this, CulturalRoad is developing new guidelines that integrate diversity in all its aspects and involve local communities in co-creating tailored strategies that meet their specific needs. The co-creation approach engages various stakeholders and citizens through workshops, focus groups, and interviews, with a particular focus on people with limited mobility, residents of rural and suburban areas, low-income households, and people living in larger urban areas.

The CulturalRoad concept will be validated in five demonstration sites with varied cultural and geographical contexts. This will result in planning tools and guidelines for equitable CCAM implementation, creating long-lasting results transferable to different cultural and geographical environments.

Five-Pointed Star Rating System

The CulturalRoad Five-Pointed Star Rating System provides a concise equity rating for CCAM solutions based on different aspects of equity. The system measures this by aggregating scores across five key pillars of equity: Inclusivity, Acceptance, Safety, Psychological Factors and Network Optimisation. Each pillar is measured through defined quantitative and qualitative KPIs, using existing and newly collected data.



Inclusivity

The Inclusivity pillar covers multiple dimensions, including accessibility to essential destinations and affordability, which are jointly assessed using spatial–temporal accessibility measures alongside econometric analyses that link transport costs and housing location to individuals' socioeconomic status. It also considers physical and digital accessibility to CCAM services, their security measures and their ethical standards, using advanced multicriteria analysis techniques. These insights help identify and prioritise policies for more equitable CCAM services.

Acceptance

The Acceptance pillar examines people's attitudes that impact CCAM use to maximise uptake and minimise inequalities, including social norms, attitudes towards technology, trust, control/autonomy, familiarity and experience, technology literacy, performance, and convenience. In addition, sociodemographic factors such as age, gender, education, employment, income, ethnicity, household size, and mobility experiences are also considered. A specific travel survey shared in the project's demonstration sites provides these insights.

Safety

The Safety pillar looks at both the actual and perceived safety of CCAM systems. It assesses how new mobility technologies perform in terms of crash risk, infrastructure readiness, and protection of vulnerable users, and how this differs in various environments. The pillar measures crash rates per distance travelled, injury rates, the proportion of crashes involving vulnerable users, and predictive measures such as "time-to-collision" using mainly real-world data but also simulated data.

Psychological Factors

The Psychological Factors pillar explores the cognitive, emotional, and behavioural responses that shape how people perceive and engage with emerging mobility technologies and why. The psychological drivers and barriers identified include trust in automation, affinity for technology, perceived safety and control, as well as broader attitudes and personality traits such as openness to change. A mixed-methods study examines how quantitative and qualitative data capture the relationships between these factors and CCAM adoption intentions, considering different country contexts and prior exposure to automation.

Network Optimisation

The Network Optimisation pillar assesses the impact of different implementation strategies across the project's demonstration sites. It investigates optimisation tools that allow to better manage mixed fleets composed of different vehicles (e.g. CCAM and conventional human-driven vehicles) and various operational settings (including frequency, scheduling, and on-demand) to optimise not only operational costs but also transport equity. This is achieved through the integrated optimisation of schedule-based and frequency-based public transport lines, and simulation-based optimisation for large-scale scenarios.

Demonstration sites

The CulturalRoad demonstration sites cover diverse populations, various levels of network readiness, and specific geographical characteristics. The activities in the demonstration sites validate the project's co-creation framework and the Five-Pointed Star Rating System at local, regional, and national levels.

Karlsruhe

Germany

Karlsruhe is a centre for innovation in science, technology, and sustainability, thanks to its technical university and large IT cluster. This forward-thinking hub for mobility has a well-developed transportation network and some CCAM trials already in place.

The demonstration aims to bridge the gap between technology and user needs by presenting citizens a prototype service showing next-generation CCAM applications to gather feedback and refine further applications.

Catalonia
Spain

Barcelona combines a high population density with extensive public transport and a growing demand for sustainable mobility. The city and the surrounding municipalities within the Catalonia region have been at the forefront of smart mobility initiatives and are continuously exploring ways to reduce congestion and emissions. The demonstration focuses on developing a CCAM deployment map for the region that covers both passenger and freight transport, engaging citizens in this process.

Ljubljana
Slovenia

Ljubljana is a national hub for innovation, science, and culture, with a strong commitment to reducing car dependency. Local challenges include traffic congestion and a lack of widespread public transport options. The demonstration involves citizens in co-creating equitable CCAM strategies, integrating CCAM technologies into the regional Sustainable Urban Mobility Plans (SUMP) to guide future policy development and regional mobility planning.

Oxfordshire & West Midlands
United Kingdom

The United Kingdom demonstrations take place in two regions with different mobility needs. In the West Midlands, three shuttles will be deployed to complement plans for a future fully automated and commercial service and ensure CCAM is seen as an accessible, equitable, and safe mode. In Oxfordshire, the demonstration looks at suburban and rural settings to better understand citizens' needs and how CCAM can help them switch from private car usage to other modes of transport.

Eilat
Israel

Between desert and sea, Eilat is a multicultural city at Israel's southern tip. The city faces mobility challenges due to fluctuating seasonal demand and limited connectivity with other regions. The demonstration aims to help adapt the infrastructure to better serve the population's needs. Two initiatives will support this: a marine shuttle and an autonomous vehicle connecting the airport with the city, aiming to reduce congestion and offer safe, affordable alternatives where infrastructure is limited.

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CulturalRoad project

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