Code Meets the Road: Continental White Paper Explores Key Technologies for Connected Mobility

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White paper envisions vehicles not just as a means of transport, but as a versatile platform for software solutions

- Verifiable credentials as a promising approach for more security and privacy when using mobility applications

- Nino Romano, CTO of Continental Automotive:

> With a trustworthy digital framework, our vision of future mobility concepts can become reality

Frankfurt, Germany, July 9, 2025. Continental is underlining its pioneering role in digital mobility with a white paper entitled

> Mobility applications for software-defined vehicles – an approach based on verifiable credentials.

It illustrates how, beyond merely serving as a means of transport, vehicles could in the future become versatile platforms for intelligent software solutions – including for real-time traffic management.

The focus of the publication is on so-called verifiable credentials (VCs), which are regarded as a key technology for greater security and data protection in connected mobility applications. Continental outlines a practical approach for how verifiable credentials can enable trustworthy communication between vehicles, infrastructure and digital services – a crucial step on the path to secure, software-defined mobility of the future.

Verifiable credentials are a standardized, cryptographically secure format for digitally representing information – such as details about a

vehicle or a user – enabling unique and trustworthy identification. The white paper was created as part of the publicly funded cooperation project GAIA-X 4 AGEDA, a subproject of GAIA-X 4 Future Mobility, in which Continental is taking a leading role together with well-known partners from industry and research to address the central challenges of increasing connectivity and digitalization in the automotive sector.

Verifiable credentials as a key to the safe mobility of tomorrow

Mobility applications are increasingly becoming a central component in meeting the mobility requirements of tomorrow. However, their integration in the vehicle, the necessary connection to an open ecosystem and the decentralized management of identities and data raises many questions. It is therefore necessary to create a framework that ensures both the seamless integration of new applications and compliance with strict security and data protection standards.

> Research by colleagues has shown that verifiable credentials are a promising approach for the secure use of mobility services in vehicles. They enable a high level of security and data protection when using software-defined vehicles as an execution platform for mobility services,

explains Nino Romano, Chief Technology Officer at Continental Automotive.

Based on the results of the GAIA-X 4 AGEDA project, the white paper outlines the necessary fundamentals and describes the key aspects of how the use of verifiable credentials provides an effective way to make access to vehicle data and functions secure and flexible. The white paper underscores the importance of the developed framework for the mobility of the future. It makes clear that the concepts embedded within it are central to integration into modern, software-defined vehicle architectures.

> Software-defined vehicles as part of a cloud ecosystem are the key technology for future mobility concepts," says Romano. "With a reliable and trustworthy digital framework, the vision can become reality.

The complete white paper is now available for download. - pdf (869KB)

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