

Connectivity Insights API

China Unicom supports cloud-based automated driving

Case study for the automotive sector using the CAMARA-standardised Connectivity Insights API – [View API Descriptions](#)

Business Problem

As they have limited onboard computing power, vehicles need high-quality connectivity to drive themselves safely and accurately. In particular, autonomous driving functions require high-bandwidth and ultra-low latency connectivity, as well as robust network reliability, even as they travel between base stations at high speeds.

Impact

In tests, the solution delivered end-to-end latency below 100 ms for critical functions, with network handover reliability exceeding 99.9%. By supporting proactive traffic and network monitoring, the solution reduced accident risks by 20-30% in simulated urban environments, while real-time data sharing with traffic management systems promises to improve road utilisation and reduce congestion.

Technical Solution

China Unicom's Cloud-Based Intelligent Driving solution employs the CAMARA-based Connectivity Insights API to check the status of the mobile network on the route a vehicle plans to take. The API can check whether a driving application's network requirements can be met for a given user session. The solution also uses the Location Verification API to ensure the vehicle remains within a designated area with high quality network coverage.

Value

For automakers, the solution enables a faster and more cost-effective deployment of advanced features, such as automated obstacle detection, as the assurance of high-quality connectivity means the vehicle doesn't need expensive high-power chips and reduces maintenance expenses. China Unicom is projecting a user base of more than one million vehicles with 10+ million monthly API calls.

"By combining cloud computing, Open Gateway APIs, and a safety-first architecture, this solution addresses the hardware and connectivity bottlenecks in autonomous driving, enabling scalable, cost-effective L3 (Level 3) plus mobility while fostering a collaborative ecosystem among automakers, telecom operators and tech providers."

China Unicom

