

A leading OEM turns to Beam Connectivity to improve connectivity performance for end users.

Industry: Automotive OEM

Date: 2024



Industry Background:

Vehicle manufacturers are increasingly turning to shared electric vehicle (EV) platforms to reduce the high R&D costs associated with developing and maintaining modern vehicle architectures. This shift has brought the User Experience to the forefront, both within the vehicle itself and in the wider digital ownership journey. With the rise of the Internet of Things, car buyers are now seeking enhanced connectivity features. However, J.D. Power's 2023 U.S. OEM ICE App Report highlights how driver-focused mobile apps often fail to meet expectations, citing issues such as poor setup and slow performance.

Our Expertise:

Drawing on our extensive experience in connected vehicle technologies and our deep insights into optimizing automotive user experiences, we have identified a reliable metric for assessing connected vehicle performance: the round-trip time for a remote unlock command sent from a mobile app to the vehicle and back.

Through detailed benchmarking of current market solutions, we have observed that response times for remote unlock commands vary significantly, ranging from as long as 33 seconds to as short as 2 seconds across different models. To provide a premium user experience, we recommend that vehicle manufacturers aim for a response time of under 2 seconds under standard cellular conditions.

The Client's Challenges:

- A connected system has many constituent parts – some within the OEM control and others a function of the cellular partner and vehicle location.
- The OEM customer had an incumbent connectivity platform delivered by a combination of traditional Tier 1, an enterprise IT vendor and a third-party mobile app team. This patchwork resulted in a remote command roundtrip performance of 6-8 seconds, which is slower than the vehicle manufacturer was targeting.
- Due to the multi-vendor approach and inflexible delivery methodology, there was little room to tune and innovate around the existing solution, to understand and reduce the round-trip time.

Our Solution:

- Beam Connectivity operate an end-to-end platform with telemetry collection from each point, providing a detailed understanding of the full chain from mobile app to cloud to vehicle and back. This gives us unique insight into every 'hop' of the journey a message makes on its way to and from the vehicle.
- Beam Connectivity worked with the OEM to deploy CVaaS by installing the Beam TCU into the vehicles and implementing the OEM specific remote commands.
- From here, Beam Connectivity rapidly developed a branded Android and iOS mobile app for use by the R&D team to experience what super-low latency connectivity feels like.

The End Result:



This **technical collaboration** between the vehicle manufacturer and Beam Connectivity allowed us to move rapidly and see **results** within weeks.



By setting up automated testing, we demonstrated an all-in average round trip time for an unlock command of **670 milliseconds**, including the actuation of the door locks via the body controller. This is a **10x improvement** on the round-trip latency for their current solution.



We look forward to **working** with the vehicle programme team to roll these improvements into their next generation **connectivity** platform.

About Us

We build best-in-class connected vehicle systems, supporting our customers to focus on and interpret the value of their vehicle data. Founded in January 2020, we are a truly multi-disciplinary team with decades of experience in user-centric design and delivery of connected consumer products. Understanding the need for an agile delivery of software-centric systems, our robust end-to-end IoT solution offers superior performance thanks to our deep understanding and drive for innovation.

To schedule in a demo, please contact:

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