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EV battery OEMs manage collaboration using secure data ecosystem

Industry
Automotive
Energy
Manufacturing

Location
Worldwide

Solution
Intertrust Platform™

Introduction

Battery technology is a crucial component in the electrification of the transportation industry. As more countries adopt ambitious clean energy transportation policies, battery health and performance will play an integral role in the growth of the global electric vehicle fleet. Accordingly, many automotive industry original equipment manufacturers (OEMs) are focusing on solar and battery products, specifically around increasing capacity and decreasing cost. Projections show that by 2030, battery-powered Electric Vehicles (EVs) will have an average driving range of up to 200-250 miles on a single charge.[1] However, that comes with a set of common hurdles around the secure sharing and transparency of critical EV battery data, slowing down innovation and cooperation.

The challenge

To improve on their battery technology, extend battery performance, and address warranty-related issues, EV battery manufacturers need to be able to access and analyze critical battery performance data. With access to the right datasets, a manufacturer can analyze a battery's "state of charge," "state of health," "depth of discharge," maximum charge and discharge current levels, energy delivered since

last charge cycle, cell impedance levels, total charge and total energy delivered, total operating cycles, and number of charge cycles. Unfortunately, once a battery has been installed in an EV, the battery manufacturer faces a number of challenges in gaining full access to its data.

- Battery data resides in proprietary, guarded EV ecosystems that are closely controlled by auto OEMs.

- The data is highly sensitive, with strict rules about data access, governance, and audit requirements.

- The data is collected from multiple Battery Management Systems (BMS) and battery-pack suppliers.

- The data comes in various formats, communication protocols, encryption models, and has a wide range of accessibility and readability processes.

- It must be protected and kept immutable—in other words, the data cannot be changed or reformatted due to warranty and other considerations.

- In some cases, the data is not allowed to leave a nation's sovereign borders.

In order to overcome these challenges, battery OEMs need a robust data management solution that can offer full data interoperability and collaboration in a secure, compliant fashion.

The solution

Battery OEMs are turning to Intertrust for help in operationalizing and consolidating their various battery and data management initiatives. Intertrust enables secure and efficient data orchestration, maintains data privacy protection, and ensures complete data governance. The Intertrust Platform™ is a trusted data exchange ecosystem that acts as a secure data virtualization, data aggregation, and data collaboration layer for many different data sources and formats, regardless of location.

The Intertrust Platform provides the following functionality:

- Ingestion and storage of data from multiple sources and formats
- Protected access and unified control over a wide variety of immutable datasets

- Managed governance of complex data rights
- Management of virtualized and governed data
- Ability to collect real-time data securely, in a manner that respects the rights and regulations of all participants across the value chain
- Protected portability of data sources and analytics into governed execution environments for collaboration and sharing

By creating and sharing a joint data ecosystem around batteries, including warranty related data insights, EV battery manufacturers can easily partner with automotive OEMs and dealerships, EV automakers, and EV charging station operators. They can collaborate and share relevant data, securely, without ever having to move and potentially compromise any sensitive information.

The results

Via its agile, flexible data management solution, Intertrust Platform provides EV battery manufacturers with improved end-to-end visibility into battery data across all parts of its lifecycle. They are also able to:

- Improve data management and integration from IoT, suppliers, partners, and internal or external systems to accelerate battery performance studies
- Increase OEM value-add and prevent margin degradation
- Investigate and plan for second life applications for batteries, including stationary energy storage systems

As a result, battery OEMs can securely collaborate with their automotive OEM customers or partners and gain more actionable insights from data analytics, leading to optimized costs, operational efficiencies, and IT cost savings.

1   International Energy Agency, Global EV Outlook 2020 Entering the decade of electric drive?, p. 23

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