IEEE DIGITAL PRIVACY MODEL: RENTAL CAR USE CASE

When a customer rents a modern connected car, the vehicle's infotainment and telematics systems gather valuable data throughout the rental period. The infotainment system enhances the user experience by offering navigation, music, and entertainment options, while the telematics unit monitors vehicle performance metrics such as speed, fuel consumption, and location. This data collection allows the rental company to manage its fleet more efficiently, ensuring vehicles remain in optimal condition by addressing maintenance needs proactively. For the renter, these systems provide a safer, more connected driving experience with real-time feedback on driving habits and vehicle health. Meanwhile, features like geofencing and remote diagnostics enable the rental company to maintain control over vehicle usage and quickly respond to any issues, creating a smoother, more reliable rental experience for both the company and the customer.



| INFORMATION REQUESTED | | | |
|--|--|--|--|
| Name, driver's license information, credit card details (for payment processing). | Location, mileage traveled, duration of rental, fuel consumption data. | General trip locations (e.g., city-level) might be inferred, but not specific destinations. | Rental agreement details, start and end locations, payment transactions, driver's license information, passport details, and personal insurance coverage. |
| Identities | Behaviors | INFERENCES | Transactions |
| Securely stored and only used for rental agreement purposes. | Not used to track habits or invade privacy unless consent is given. May be used for billing, fleet management, accident investigations, vehicle abuse, etc. | Inferences shouldn't reveal personal habits or routines. | Secure communication between car, rental company systems, and payment processors, ensuring all personal and sensitive information is protected. |

EXPECTED USE OF DATA



Customer: Expect personal data to remain private and used only for purposes directly related to the rental agreement and not shared with third parties. Also, data collected not be retained indefinitely but deleted after a reasonable period, in accordance with privacy regulations and best practices.

Rental Company: Data should be secure and accessible for legal purposes, such as liability claims or investigations, and for insurance purposes to assess damages or verify claims.



Customer: Have access to their rental agreement details and potentially anonymized trip summaries. **Rental Company**: Have access to data needed for billing, fleet management, and customer service. Restricted access for other entities (e.g., advertisers).





PRIVACY EXPECTATIONS IN THE DIGITAL WORLD



INFLUENCES ON PRIVACY: This model identifies the environmental influences for Rental Car use cases:

Technical: Secure data storage, location data anonymization techniques, and custom indicators for data use beyond core needs in tandem with mechanisms to ensure integrity, non-repudiation, and protection against false positives or fail-silent errors. Implementation of technical measures to uphold data privacy and enable efficient, reliable operations.

Regulatory: Regulations might mandate data minimization (collecting only essential data), data security standards, and user control over data access depending on the type of the Vehicle over data access depending on the type of the vehicle.

Economic: Balancing data collection benefits, such as optimizing fleet usage, resale value, and demand-based pricing, with the cost of implementing robust privacy measures.

Legislative: Laws might regulate the scope of data collection in rental agreements, ensuring transparency and limiting use to agreed

purposes, such as billing or fleet management, while addressing liability for unauthorized use or breaches. **Legal**: Legal frameworks should ensure data security and prevent unauthorized access or misuse by the rental company or third parties.

Individual: Customers should have clear and concise information about data collection practices, purposes, and opt-out options.

Societal & Cultural: Public awareness about data privacy in car rentals and the importance of informed consent.

This Rental Car Privacy model provides a use case that leverages the <u>IEEE</u> <u>Digital Privacy Model</u> to consider the dynamic aspects of digital privacy for rental car services. The model focuses on individuals and their expectations of privacy and brings together the factors that influence digital privacy in any physical or virtual environment.

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