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Communication between moving vehicles using a virtual assistant

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ABSTRACT

This disclosure describes virtual assistant based techniques for communication between vehicles in proximity to each other. Users register pertinent information such as license plate number, contact information, etc. at a registry. While driving, a user requests their virtual assistant to send a message to a nearby vehicle, e.g., by providing an observed license plate number or a portion thereof. With user permission, location data is accessed to identify nearby vehicles that match the user's specification. When a nearby vehicle is identified that matches the user specification, the virtual assistant checks if the user of the identified vehicle permits being contacted. If so, the virtual assistant delivers the message to the target user.

KEYWORDS

- Virtual assistant

- Vehicle identification

- Hands-free communication

- Vehicle-to-vehicle communication

- License plate

BACKGROUND

At present, it is difficult for a driver in a vehicle to communicate with another driver in a nearby vehicle. For example, consider a situation where a driver observes a truck with non-functioning brake lights. The truck has a sign with a phone number that can be contacted to provide feedback on how safely the truck is being driven. However, it is not practical for the driver to remember the phone number, call the number, and provide feedback about the non-functioning brake lights. Other examples of messages, notifications, or feedback that drivers may

want to send to each other include messages relating to driving performance, vehicle condition,

thanking someone for allowing them to pass, etc.

DESCRIPTION
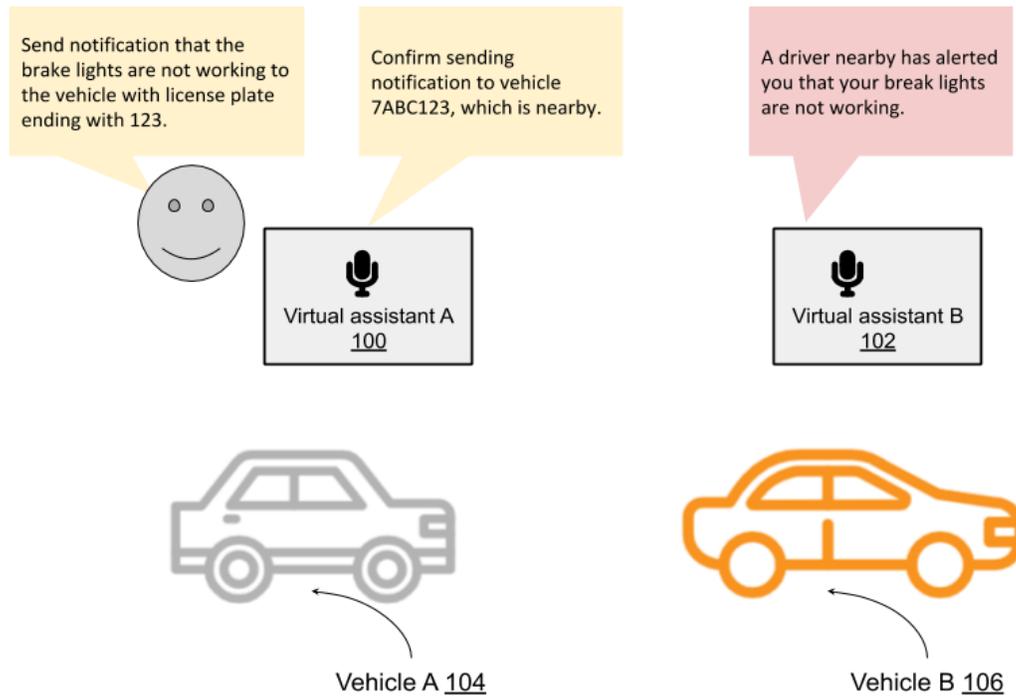
Fig. 1: Communication between moving vehicles using a virtual assistant

Fig. 1 illustrates an example in which a user driving a vehicle communicates with another

nearby vehicle with the help of a virtual assistant. Vehicle users register for vehicle-to-vehicle

communication by providing to a registry information such as license plate number, contact

information, permission to be located, permission to be contacted via vehicle-to-vehicle

communication, etc. A first user that is driving a first vehicle (104) or is a passenger in the first

vehicle attempts to communicate with a second user in a second vehicle (106) using the observed

license plate number (or part thereof) of the second vehicle.

For example, the first user can request their virtual assistant (100) to initiate

communication with a vehicle whose license plate ends in 123: "Send notification that the brake

lights are not working to vehicle with license plate ending with 123." With the first user's permission, the virtual assistant utilizes the first user's location to identify a vehicle in proximity to the first user with a license plate that matches the user's specification. The virtual assistant verifies that the identified vehicle is registered for vehicle-to-vehicle communication, and that the user of the identified vehicle permits receipt of vehicle-to-vehicle communications. The virtual assistant requests the first user to confirm that the identification is correct: "Confirm sending notification to vehicle 7ABC123, which is nearby."

After the first user's confirmation, and with the permission of the second user (of the vehicle identified as the recipient), the virtual assistant sends a notification to the second vehicle about the non-functioning brake lights. This notification is received and provided to the second user, for example, by the virtual assistant (102) of the second user: "A driver nearby has alerted you that your brake lights are not working." Based on permission settings, the sender of the message can be identified to the recipient.

If multiple nearby vehicles have similar license plates, the virtual assistant lists the available options and requests the first user to identify the correct vehicle. For example, the virtual assistant requests the first user to identify if the vehicle they intend to communicate has the license plate 7ABC123 or 8PQZ123. When the first user selects a license plate number, the virtual assistant proceeds with communicating with the selected vehicle.

In this manner, messages can be sent quickly between moving vehicles in a hands-free and efficient way with minimal distraction to the drivers.

The described techniques are implemented with user permission to access user data such as location, vehicle identifier, user contact information, etc. for the purpose of communicating with nearby vehicles. The recipient of communication can choose to accept or decline

communication. The described techniques are implemented with specific permission of both sending user and receiving user.

Further to the descriptions above, a user may be provided with controls allowing the user to make an election as to both if and when systems, programs or features described herein may enable collection of user information (e.g., information about a user's social network, social actions or activities, profession, a user's preferences, or a user's current location), and if the user is sent content or communications from a server. In addition, certain data may be treated in one or more ways before it is stored or used, so that personally identifiable information is removed. For example, a user's identity may be treated so that no personally identifiable information can be determined for the user, or a user's geographic location may be generalized where location information is obtained (such as to a city, ZIP code, or state level), so that a particular location of a user cannot be determined. Thus, the user may have control over what information is collected about the user, how that information is used, and what information is provided to the user.

CONCLUSION

This disclosure describes virtual assistant based techniques for communication between vehicles in proximity to each other. Users register pertinent information such as license plate number, contact information, etc. at a registry. While driving, a user requests their virtual assistant to send a message to a nearby vehicle, e.g., by providing an observed license plate number or a portion thereof. With user permission, location data is accessed to identify nearby vehicles that match the user's specification. When a nearby vehicle is identified that matches the user specification, the virtual assistant checks if the user of the identified vehicle permits being contacted. If so, the virtual assistant delivers the message to the target user.