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NATURAL HMI FOR EFFICIENT DRIVING THROUGH PLANTS IN THE CAR

Verena Schwaiger

Bertrandt Ingenieurbüro GmbH

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NATURAL HMI FOR EFFICIENT DRIVING THROUGH PLANTS IN THE CAR

Technical task:

Efficient driving style is supported by different manufacturers via different display concepts. For example, there are driving recommendations such as "foot off the gas" to let situations roll out before stopping. Other visual display options include virtual trees that change the number of leaves depending on the driver's driving style.

Initial situation:

The displays and support systems do not show the direct influence of efficient driving on environmental protection and sustainability. The "gamified" concepts lose their appeal after a short time and are therefore no longer useful to support a sustainable driving style.

Solution:

Plant containers for real plants are installed in the vehicle. The automated supply of water and nutrients is controlled by an algorithm. The algorithm interprets the driver's driving style. If the driver drives efficiently (e.g. low acceleration/deceleration), the water and nutrient supply for the plants is optimized. If the driver does not drive efficiently and sustainably, the nutrient supply is reduced.

In the best case, plants in the vehicle are used that are sensitive to the optimized water and nutrient supply, so that the effects of the driving style on the health of the plants are visually visible directly to the driver.

- The algorithm knows the driving style that is most environmentally friendly and sustainable. The driving style (e.g. driving dynamics) is evaluated.
- The algorithm knows the optimal nutrient and water supply for the plants in the vehicle (based on the variety of plant and the current condition).
- The driving style is converted into a nutrient and water quantity using the algorithm.
- The optimized nutrient quantity is then delivered to the plants via an automated irrigation and supply system.
- The algorithm can differentiate whether the (non-)efficient driving style is caused by the driver or by external circumstances. If, for example, the driver comes into Stop & Go traffic due to a traffic jam, he should not be penalised for inefficient driving. However, if the driver accelerates strongly on the open road, the water supply to the plants should be influenced.
- Outside of driving, the plants are additionally supplied with water - i.e. if the vehicle has not been used for a longer period of time, the watering is automated. The plants are also protected from sun and heat when sensitive.
- In addition, the driver receives a support system, which supports him in plant protection by means of displays and active controls (e.g. active accelerator pedal) in "Eco mode".
- The support system also contains summaries of driving passages so that the driver can see after the trip in which driving situations he has efficiently driven and in which optimisation potential exists.

In an extension of the invention, the irrigation algorithm can be applied to plants outside the vehicle. For example, a plant in the driver's home could be linked to the efficient driving style.

Advantages

Drivers experience the direct effects of their driving style on the environment at the "living" object.