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A Development of Power Child Lock System Using The Rear Radar Sensors.

-To Prevent The Rear Collisions When Door Openning-

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As the number of people who using motorcycles, bicycles, kickboards, etc. the number of accidents when door opening is also increasing. This is caused by the inability to see an approaching object from the rear of the vehicle when the rear passenger gets off.

Currently, there are four typical technologies to prevent collisions.

First, a passenger mirror is installed outside the rear door so that the rear passenger can directly see the rear when getting off.

Second, when an object approaches from the rear, it flashes a warning light in the door trim, using a rear radar sensor, and when a passenger gets off, it sees a warning light and knows that the object is coming.

Third, it is the Dutch reach campaign. This campaign was devised in the Netherlands in the 1960s and is a measure to prevent opening accidents. When a passenger opens the car door before getting off the vehicle, it is a way to open the door after turning around with the handle on the other hand, not the hand close to the door, to see if there is no bicycle or motorcycle approaching the side of the car from the rear.

Fourth, it is a method of using manual child records. This method prevents unintended movement of the inside handle when the child is in the rear seat. However, these functions should be set before passengers board the rear seat, and someone must open the door from outside the vehicle whenever they get off. Although it is inconvenient, accidents can be prevented when rear passengers get off.

The four methods are passive methods for preventing collision, and thus are not suitable for reducing accidents caused by rear collision. So, my company has developed the SEA (Safety Exit Asist) system to prevent rear door opening accidents. This system includes rear-side radar sensor detection and rear power child lock door latches. The operation method is that the door release is stopped when an object approaching from the rear side is detected. Through the development of such an active system, we tried to reduce accidents when getting off, which has been steadily increasing recently.

This paper aims to introduce the SEA (Safety Exit Asist) system operation logic and power child lock door latch development process and technology. The operating scenario of the sea system is as follows. (Fig.1)

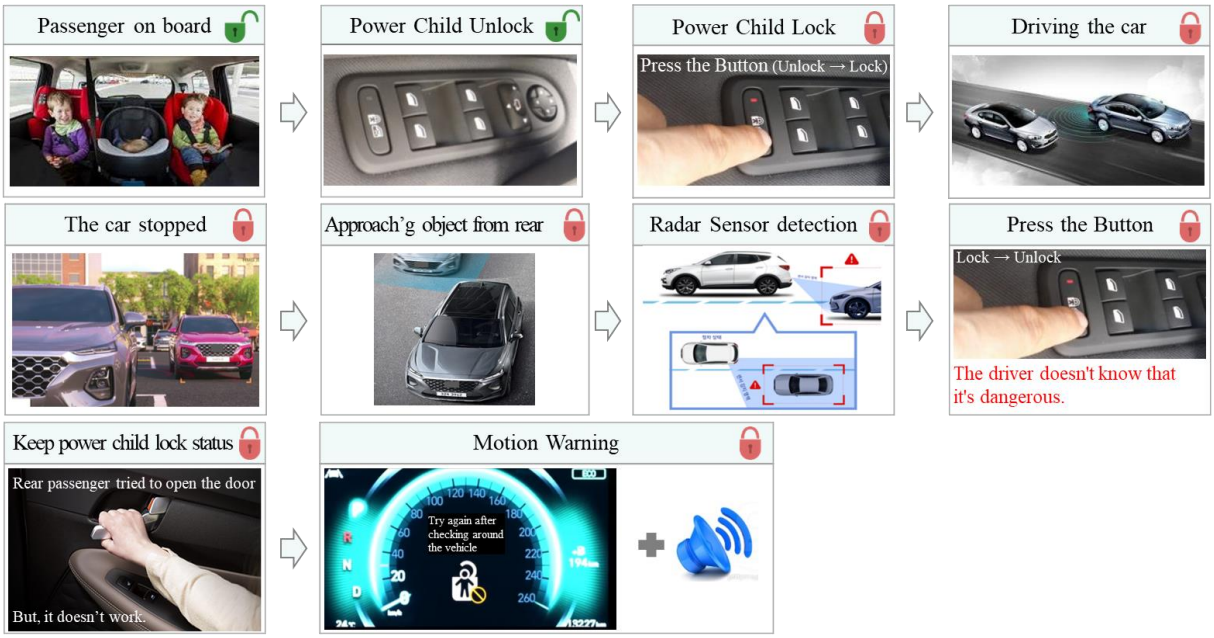

Fig.1 SEA(Safety Exit Asist) System Operation Scenario