



## Development race of “Autonomous Car” is accelerating (Japan)

Autonomous driving technology equipped “Autonomous Car” was already launched and is gaining popularity. Until recently, human being (driver) was in charge of operating “Autonomous Car”, however, an “Autonomous Car” advanced to replace human being as primary driver was launched on 11<sup>th</sup> July 2017. For this car, control of steering wheel and speed are automated under certain conditions. Competition of developing fully autonomous car is expected to further accelerate going forward.

### Point 1

#### Level 2 “Autonomous Car” is becoming popular

##### Human being is still an operator in charge

- Society of Automotive Engineers classifies level of “Autonomous Car” from 0 to 5. Human being remains as an operator in charge from level 0 to 2. There is a big gap between level 2 and 3 as car will become an operator in charge from level 3.
- Popular automatic brake in Japan is classified as level 1. Mass produced cars with autonomous driving technology which controls steering wheel and speed (classified as level 2) were launched in 2016 and are gaining popularity. For both level 1 and 2, human being remains as an operator in charge as driver is prohibited to keep his hands off the steering wheel.

### Point 2

#### Car which can be classified as level 3 was introduced

##### Automated under certain conditions

- Audi, a German auto maker, introduced the world first model classified as level 3 (automated driving under certain conditions), an advanced driving support system, on 11<sup>th</sup> July 2017.
- For level 3, car will control basic motion such as driving forward, turning around and stop under certain conditions (speed limit) of the car. However, human being still needs to take over control of operating car if the car so requires. In addition, preparation of legal framework is necessary to spread level 3 “Autonomous Car” globally, as Germany is the only country which permits level 3 legally.

### Future Outlook

#### Despite some issues to remain, development of “Autonomous Car” will move forward

- In order to spread “Autonomous Car” of level 3 up to 5, we need to overcome issues such as reduction of cost for automation in addition to preparation of legal framework. Meanwhile, “Autonomous Car” might possibly be an epoch-making industrial event which will change human life significantly through i) significant decrease in traffic accident, ii) providing means of transportation for elderly and iii) effective usage of travel time.
- Auto makers are aiming at developing and launching level 4 “Autonomous Car” which least requires human support by around year 2021. Development race of “Autonomous Car” seems to accelerate through industry wide participation such as car makers, semiconductor and electronics parts manufacturers, as its market size is expected to be huge.



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