

# Analysis of Accidents Involving Vehicles with Automatic Emergency Call System (D-Call Net) and Further Utilization

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**KEY WORDS:** Safety, Automatic crash notification, Doctor helicopter/Doctor car, First aid [C1]

The number of fatalities in 2025 was 2,547, raising concerns that the number of traffic fatalities have remained flat in recent years. Many people are still the victims of traffic accidents, there is a need for further safety measures. One such measure is the use of the ‘D-Call Net’ automatic emergency call system, which automatically sends emergency calls from vehicles involved in accidents.

The ‘D-Call Net’ automatic emergency call system detects the impact of a traffic accident requiring urgent response, automatically reports accident information from the vehicle to an emergency call center, establishes a call with the center, and rapidly provides the fire-fighting communication command room and the base hospital with information such as the vehicle’s location, vehicle data, and probability of fatality and serious injury, enabling the rapid dispatch of helicopter emergency medical services (HEMS) and doctor-staffed ground ambulances. The probability of fatality and serious injury is calculated using an injury-estimation algorithm based on information for approximately 2.8 million domestic accident cases maintained by ITARDA. According to field tests conducted in 2011, the time required for a physician to begin treatment was shortened by 17 minutes compared with normal operations.

The proportion of vehicles compatible with D-Call Net (standard, compact, and light passenger vehicles) is increasing year by year which involved in traffic accidents. Although vehicles compatible with D-Call Net accounted for only 0.4% of all passenger vehicle accidents in 2018, their proportion increased to 4.4% in 2021 and 13.8% in 2024 as the number of compatible vehicles increased.

The current activation requirement for vehicles compatible with D-Call Net are accidents in which the vehicle experiences an impact above a certain threshold, such as when airbags deploy. The coverage is limited to accidents that occur while riding in a passenger vehicle, and only the occupants of that vehicle are covered. In 2024, single-vehicle accidents and vehicle-to-vehicle accidents comprise approximately 60%. Conversely, accidents involving pedestrians, bicycles and motorcycles account for approximately 40%, expanding applicability to these currently non-covered areas is desirable.

Figure 1 shows trends in the proportions of vehicles compatible with D-Call Net by vehicle class for 2018, 2021, and 2024. As adoption expanded to other vehicle classes over the years, the proportions of accidents involving not only large vehicles but also medium, compact, and light passenger vehicles increased year by year. However, the proportion of light passenger vehicles remains low, making further expansion in applicability is desirable.

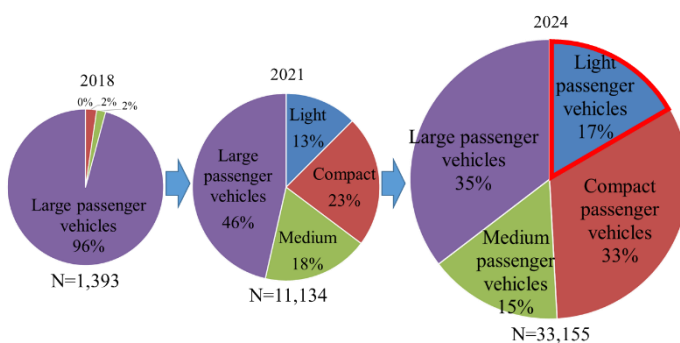


Fig.1 Trends in proportions of vehicles compatible with D-Call Net by vehicle class (Totals for primary and secondary parties)

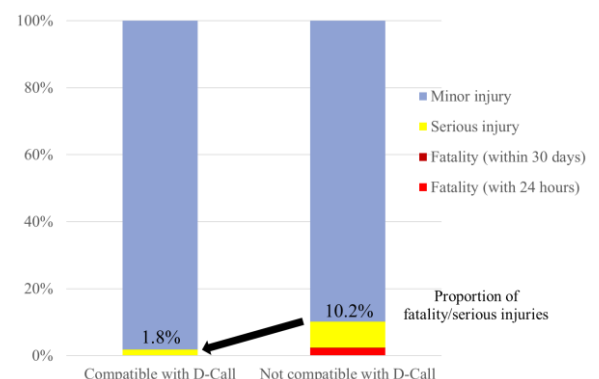


Fig.2 Composition ratios of fatality, serious, and minor injuries (2024, Totals for primary and secondary parties)

Figure 2 shows comparing the injury severity of occupants in vehicles compatible D-Call Net and those not compatible. This data shows that proportions of fatality and serious injuries are lower for vehicles compatible with D-Call Net. However, because vehicles compatible with D-Call Net experience fewer accidents than those not compatible, it is essential to continue monitoring changes in proportions of injury severity as compatible vehicles increase in number. Successful cases of D-Call Net utilization were also confirmed in accident case studies conducted by ITARDA.

The introduction of D-Call Net is expected to contribute to reducing the damage caused by traffic accidents, so further dissemination and improvement are important.