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Research theme title	Elucidation of accident mechanisms and safety measures using XR
	~Focusing on extreme weather events in the northern Japan region～
Background and objectives	Cross reality (XR) is a combination of virtual reality (VR), augmented reality (AR), mixed reality (MR), and simulated reality (SR).
	Alternative reality is a generic name for the technology that fuses the real society and the virtual world, and it has also been rapidly utilized in traffic research. The purpose of this study is to investigate the driver behavior that increases the risk of accidents and the mechanism that increases the risk of accidents by taking up traffic conditions that are difficult to realize with the usual methods, such as abnormal weather and night, and to link it to the recommendation of concrete countermeasures.
Expected results	By studying driver behavior during snowfall and freezing conditions, which are characteristic of northern Japan, and analyzing (including foresight and practicality) behavior during poor visibility (e.g., overlooking hazards during straight driving or occasional left and right turning behavior),
	As a countermeasure, there are some technologies such as head-up display using AR technology (AR-HUD) for overlooked hazard and guide lights for gaze guidance on the road. The effectiveness of these measures will be evaluated by visualizing them with XR technology.
	The uniqueness of this study is that by using the XR method, it is possible to reproduce the situation during extreme weather and measures that have a wide effect can be evaluated in a short period of time for different quality driver groups, such as the elderly and beginners.