Autonomous Reaction to Safety-Critical Situations on Highways

The Ko-HAF project evaluated the use of a safety server to exchange up-to-date map information and information about critical situations, such as obstacles on highway lanes. BMW will demonstrate the use of Safety Server information to safely react to a critical situation in a scenario where a highway lane is blocked by a ski box.

AWARENESS OF THE STATIC ENVIRONMENT

To be able to choose an appropriate tactical option as a reaction to a critical situation, the vehicle needs to be aware of the road and lane topology around it. Knowledge about the static environment comes from map data in combination with a precise localization and from sensor data. A resulting hypothesis is generated after fusing both sources of information.

The following scenes will be displayed in BMW’s demo showcase:

1. Highway entry
   Through its awareness of the static environment, the vehicle is informed that it is on an entry lane and needs to merge onto the highway.