The interaction between aerial and ground-based traffic domains is a completely underrepresented topic in ITS development. In the Air2X project, DLR is highly focused on research activities in this sector. To identify and outline the potential difficulties of cooperative ground/air traffic, an example implementation of a particular use case is realized. The use case **Augmented Helicopter Rescue Operation with Air2X and Virtual Infrastructure** should improve a safe landing maneuver of a rescue helicopter on a highway or other dense traffic situations.

**Motivation**
- In case of an accident it is often necessary that a rescue helicopter is required
- If a landing on a traffic area is needed the traffic in this area has to be stopped
- Today, emergency personnel have to establish this blocked area manually
- This costs valuable time
- With communication between the helicopter and the ground vehicles a temporary establishment of a safe exclusive landing zone without ground support is possible

**Concept**
- The pilot defines the exact landing place due to the circumstances at the accident area
- After defining the landing place, the pilot triggers a V2X (Vehicle to everything) message and sends this message to all vehicles nearby
- A digital barrier prevents those vehicles which are capable to receive, decode and process the message from entering the desired landing site
- Thereby, they form a physical barrier for all following cars on their lane
- After the pilot confirms the successful blocking he performs a safe landing

**Demonstration**
1. The drone communicates with the CDCI over 802.11p in the MAVLink communication protocol
2. The CDCI filters all MAVLink messages, in case of a desired landing the CDCI transforms the information into a V2X message
3. A Decentralized Environmental Notification Message (DENM) is used to create the virtual barrier
4. Send DENM over ETSI ITS-G5 to all surrounding vehicles
5. Stop at the virtual barrier
6. The pilot visually checks the desired landing place
7. The drone performs a safe landing on the highway

**Further steps**
- Gather stakeholder requirements
- Identifying further possible use cases
- Discuss technical challenges:
  - Advantages and disadvantages of available communication technologies
  - Generic protocol transformation between air and ground traffic e.g. Uspace2ITS interface
  - Regulatory aspects in frequency allocation