BMW Forschung u. Technik GmbH.
25th Anniversary of a Think Tank.

Car2x-Communication.

BMW Group
## Car2x-Communication

### Contents

- Car2x-Projects
- Technology
- Traffic light assistant
- Intersection assistant
- Emergency vehicle warning
- Bad weather warning
- Braking manoeuvre information
- Obstacle warning
Car2x-Communication.
BMW Group is partner in a number of different projects.
Acts as a further sensor enabling applications to both increase safety and comfort.

Secure information exchange (e.g. position, velocity, ...)

Range: 200 ~ 400m
Car2x-Communication.
Traffic light assistant.
**Car2x-Communication.**
Traffic light assistant. Individual green sequence of traffic lights.

Intersection scenario with traffic light

- Vehicle would reach the intersection at red keeping the current speed.
- Driver accelerates to suggested velocity.
- Vehicle hits a green light.
Car2x-Communication.

Intersection scenario with traffic light

- Vehicle would reach the intersection at red keeping the current speed.
- Due to traffic conditions, acceleration is not possible.
- After the information, the driver brakes in time.
Car2x-Communication.
Intersection assistant.
Car2x-Communication.
Intersection assistant.

**Time horizon**

1. **approaching phase**
   - information about
     - traffic regulation
     - navigation path

2. **hazard situation**
   - potential yielding
   - disregard leads to a warning

3. **driver reaction**
   - deceleration of vehicle to stop in front of the stop line

**Car on give way (crossing) path**

**Motorcycle**:
- enhancement of conspicuity by activating indicator and horn

**Motorcycle on right of way path**
Car2x-Communication.
Hazard warnings.
Car2x-Communication.
Emergency vehicle warning.

Urban area with line-of-sight obstruction
right of way but information via car2car

emergency vehicle can pass

high building (line-of-sight obstruction)
Car2x-Communication.
Bad weather warning.

- Trip in the mountains is intended
- Driver gets the information that there is rainy weather on his route
- Driver can choose an alternative route
Car2x-Communication.
Braking manoeuvre information.

Bumber-to-bumber traffic incl. a truck (line-of-sight obstruction)

Sudden braking manoeuvre of the first vehicle in line

Truck driver can see the braking lights but conceals the braking car to the following vehicle

Via c2c communication also the following vehicle gets the information in the Head-Up Display
Car2x-Communication.
Obstacle warning.

Driving through the woods with limited view of the route

a vehicle had a breakdown in a corner
its position is sent via C2C communication.
the upcoming traffic will be informed about the potential hazard and can react accordingly in time.
Car2x-Communication.
Thank you for your attention.