

DRAFT

Regulation applicable to Automated Vehicles/driverless vehicles: [] yes [] no

UN Regulation No. 13-H (Braking)

UN Group: GRVA

Potential approach for application:
~~no amendment required~~ | amendment | new Regulation

Content Summary (existing Regulation)

- No physical breakage of mechanical components (well dimensioned)
- Operating forces of service braking system, secondary braking system and parking brake system to ensure they can be handled by the driver
- Braking performance in nominal cases (Service and parking brake)
- Braking performance in failure cases (Secondary braking system)
- Warnings to be issued to warn the driver
- ABS requirements
- (ESC regulated in UN R 140)
- (BAS regulated in UN R 139, however not required for vehicles with ADS)

Summary of required changes

- Replacing the driver actuating the braking control with the braking demand generated by the ADS
- Testing section to be updated
- Warnings/failure signals to be transmitted to the ADS to ensure adequate response
- Definitions to be reviewed/added/amended e.g. for Automatically Commanded Braking
- Update of Annex 8 as appropriate
- Scope

Content relevant for FAV's / driverless vehicles

- System robustness (well dimensioned)
- Braking performance under nominal conditions
- Braking performance under failure conditions
- Braking performance in „maintenance mode“
- Warnings/failure signals to be provided to the ADS (e.g. to ensure ADS algorithm to respond adequately, to warn the operator/control tower/occupants as/if appropriate, etc.)
- Performance considering max design speed of the vehicles, that the ADS is in control of the entire driving dynamics (safety concept incl. transfer to MRC), ...

Specifics for vehicles that can be driven manually and driverless:

- Consider that the braking demand can be requested by the actuation of manual controls (driver) or by generation of the ADS
- HMI
- Warning/failure signals (system status/condition)

Content to be covered by (potential) ADS Regulation

- Generation of braking demand by the ADS
- Response to warning/failure signals
- HMI intended for communication with driver (control tower, occupants, etc.)