Japan Presentation

EVS-GTR IWG_ September, 2017

Considerations for transposing EVS-GTR Phase 1

Specifications of two items below in EVS-GTR Phase1 are different from those in current UNR100.

1. Application/Scope
2. Marking

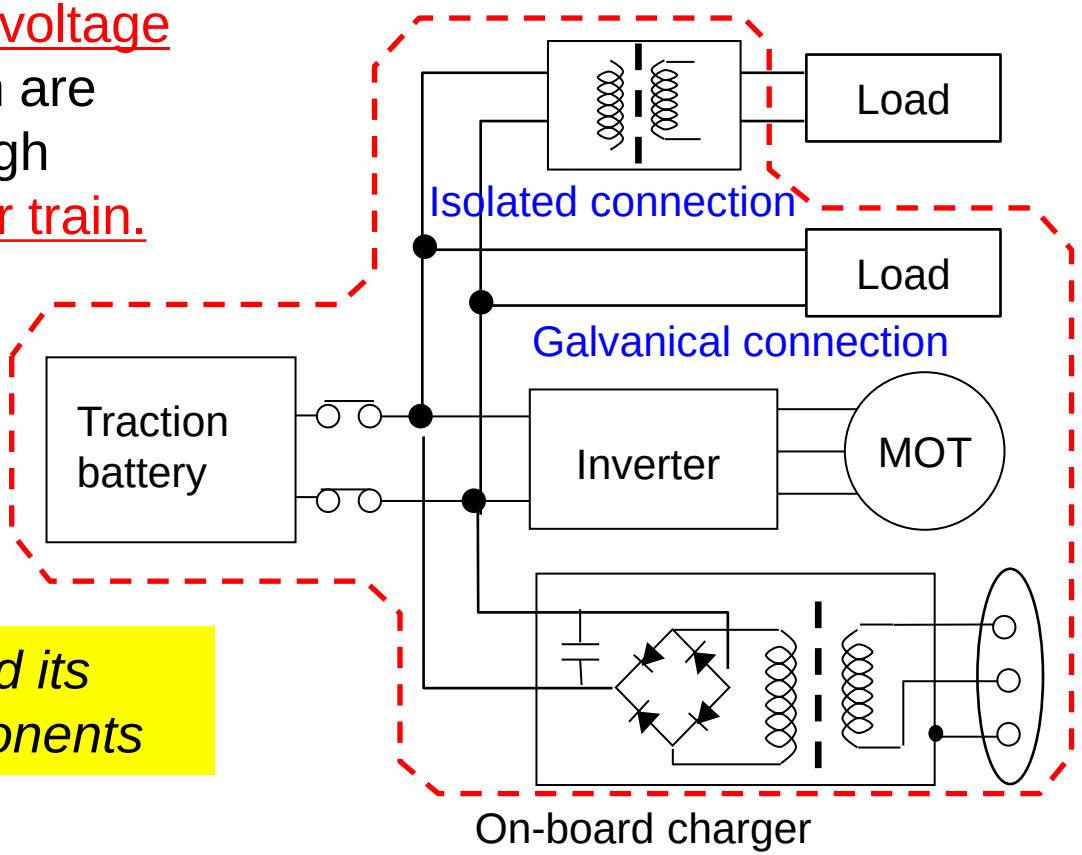
Japan's opinion

Discussions for clarification and considerations are necessary for UN-R100 revision.

Current text in UN R100

1. Scope

1.1. Part I: Safety requirements with respect to the electric power train of road vehicles of categories M and N1, with a maximum design speed exceeding 25 km/h, equipped with one or more traction motor(s) operated by electric power and not permanently connected to the grid, as well as their high voltage components and systems which are galvanically connected to the high voltage bus of the electric power train.



*Application_*

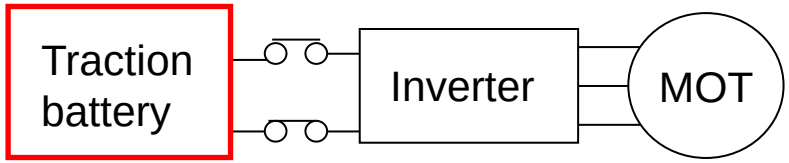
Vehicle propulsion system and its galvanically connected components

Current text in UN R100

1.2. Part II: Safety requirements with respect to the Rechargeable Energy Storage System (REESS), of road vehicles of categories M and N equipped with one or more traction motors operated by electric power and not permanently connected to the grid.
Part II of this Regulation does not apply to REESS(s) whose primary use is to supply power for starting the engine and/or lighting and/or other vehicle auxiliaries systems.

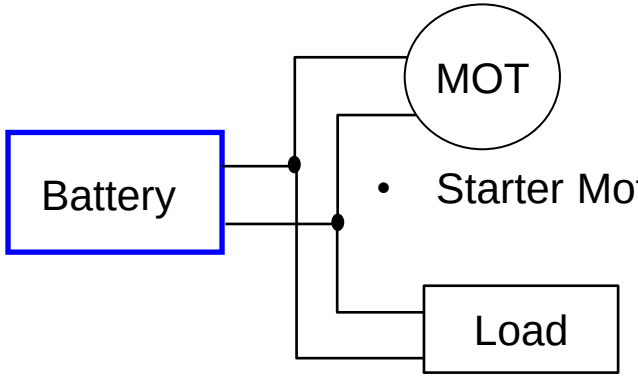
Application_ REESS for vehicle propulsion (no voltage range is specified).

REESS in the Scope



No voltage requirement

REESS out of the Scope



- Starter Motor
- Electrical Power Steering
- Lighting system

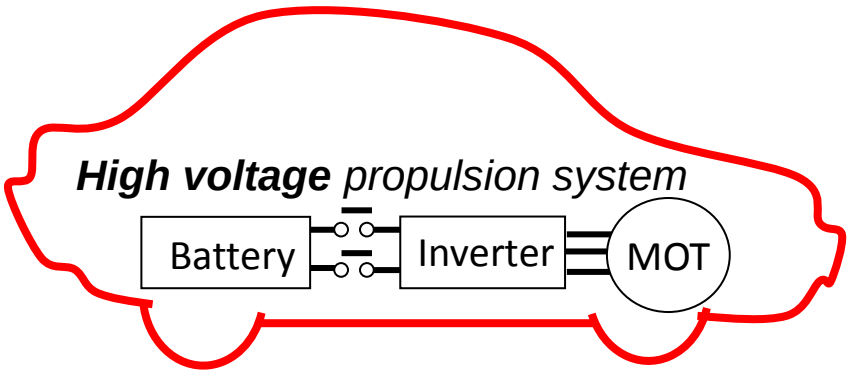
Current text in EVS-GTR

2. Application/Scope

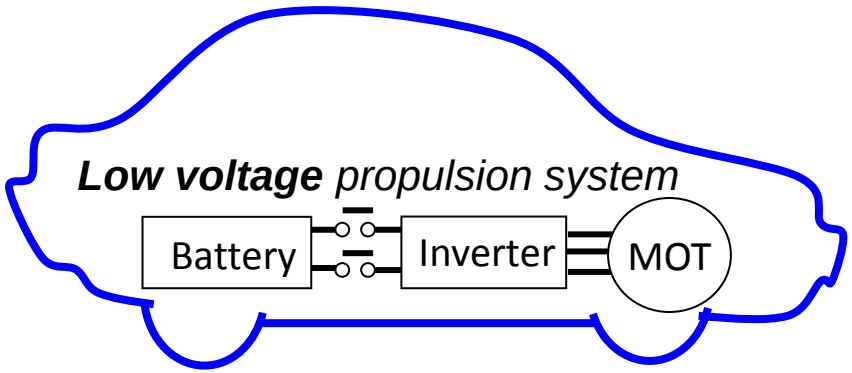
2.1 This regulation applies to vehicles of Category 1 and Category 2 with a maximum design speed exceeding 25 km/h, equipped with electric power train containing high voltage bus, excluding vehicles permanently connected to the grid.

Application_ Vehicles with high voltage propulsion system

Vehicle in the Scope



Vehicle out of the Scope



Comparison between EVS-GTR and UN R100

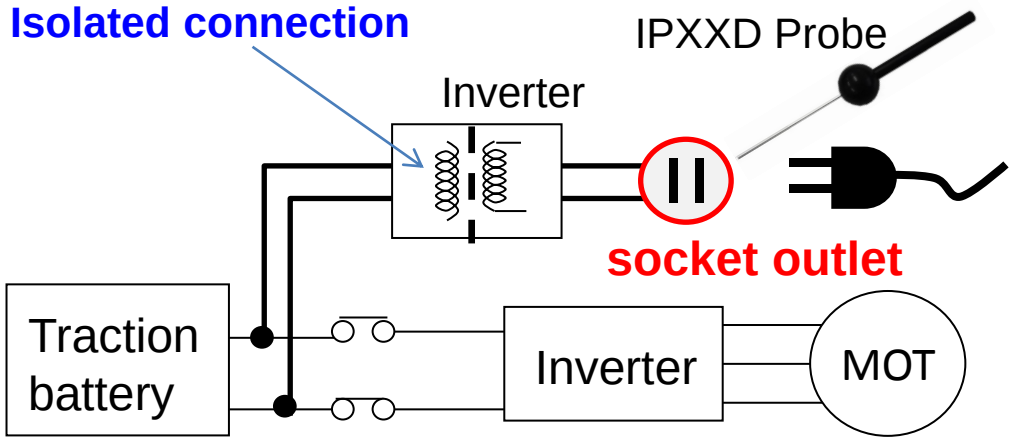
EVS-GTR	UN R100
<Scope> Vehicles with high voltage propulsion system	<Scope> Vehicle propulsion system and its gelvanically connected components
<Application for Batteries> Traction batteries in vehicles with low voltage propulsion system are not included.	<Application for Batteries> Traction batteries in low voltage propulsion system are included.

Discussion #1

Clarification of the scope of EVS-GTR Phase1 is necessary.

EVS-GTR

It is not clear whether the domestic socket outlet in passenger compartment is excluded or not.



The socket outlet cannot meet the IPXXD requirement in EVS-GTR.

If the requirements are applied to the socket outlet, the vehicle is non-compliant to EVS-GTR.

UNR100

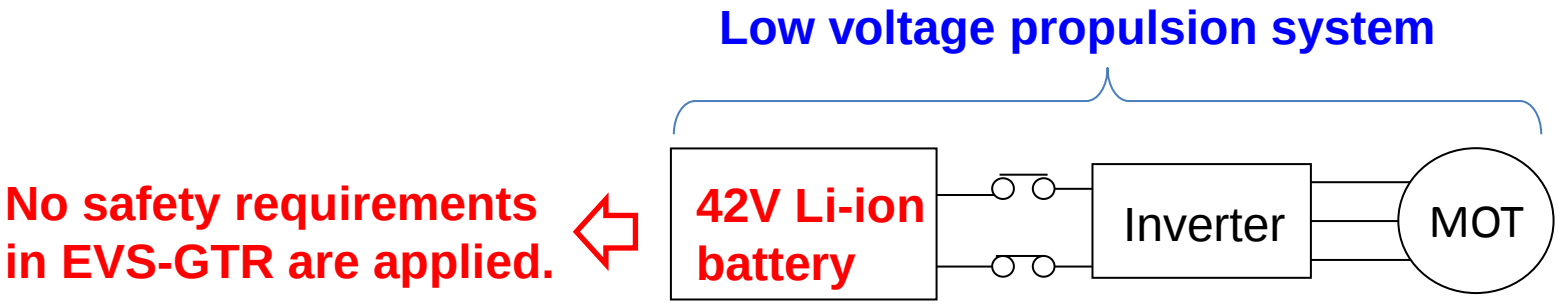
UNR100 mentions that “galvanically connected to the electric power train” and the socket outlet isolated from vehicle propulsion system is out of the scope.

Discussion #2

Scope for REESS needs to be discussed and clarified.

EVS-GTR

The batteries in the low voltage propulsion system is out of the scope of EVS-GTR Phase1.



UNR100

No voltage range of REESS is specified in the scope of UNR100.

Regardless of voltage, the batteries for vehicle propulsion have to meet the safety requirements in UNR100.

Current text in UN R100

5.1.1.5.2.

The symbol shall also be visible on enclosures and barriers, which, when removed expose live parts of high voltage circuits. This provision is optional to any connector for high voltage buses. This provision shall not apply to any of the following cases:

a. Where barriers or enclosures cannot be physically accessed, opened, or removed; unless other vehicle components are removed with the use of tools;

b. Where barriers or enclosures are located underneath the vehicle floor.

Current text in EVS-GTR

5.1.1.1.4.2.

The symbol shall be visible on enclosures and electrical protection barriers, which, when removed, expose live parts of high voltage circuits. This provision is optional to any connectors for high voltage buses. This provision shall not apply to the case where electrical protection barriers or enclosures cannot be physically accessed, opened, or removed; unless other vehicle components are removed with the use of tools.

Exemption for underneath the floor is not included in EVS-GTR Phase1.

Discussion #1

For the labels located underneath the vehicle floor, it is difficult to ensure durability over the vehicle service life.

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Practical requirements for marking need to be developed.

Related information

ISO 6469-3 DIS draft (May, 2017)

5.2.1 Marking of voltage class B electric components

The symbol W 012 in accordance with ISO 7010 shown in Figure 1 shall be visible on protective barriers and protective enclosures, which, when removed, expose hazardous live parts of voltage class B electric circuits. Accessibility and removability of protective barriers/protective enclosures should be considered when evaluating the requirement for the symbol. The symbol may be embossed or engraved in accordance with Figure 1. In this case color is not required.

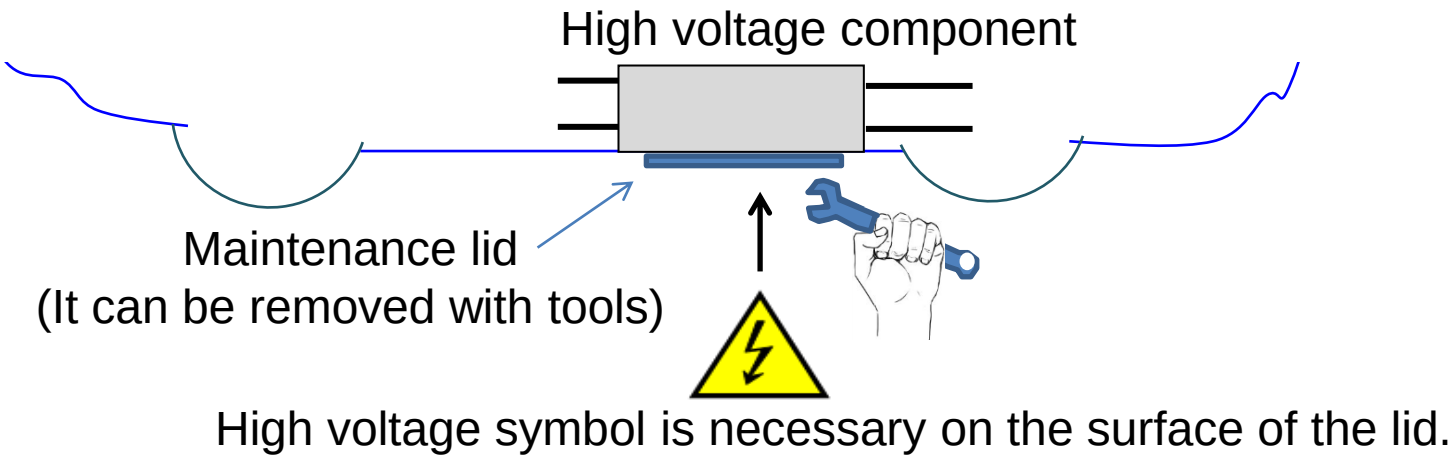
For a protective enclosure consisting of several parts, one symbol is sufficient when visibility of the symbol is given.

Purpose of Marking

To inform people that there are high voltage buses inside or the other side of barriers/enclosures with high voltage symbols.

Situation to be considered

If a maintenance lid exists underneath the vehicle floor and it can be accessed and removed with using tools, the high voltage symbol is necessary on the lid.



Issues

If a yellow color symbol is required, the symbol is printed on a label.

It is difficult to ensure durability of the label over the vehicle service life.