

REESS requirements under UN ECE 1958 agreement

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headlines

- REESS is the new abbreviation for **Re**chargeable **E**nergy **S**torage **s**ystem – rationale s. Reg. 92 -.
- Risk of explosions, fires or harming by electrical shock are minimized with REESS safety requirements
- Scope is for vehicles of categories M and N with electric power train

not done

What we did **not** do

- Restrict our scope to Li-Ion batteries
- Establish requirements for chemical safety (HF)

motivation

- „HV batteries are ticking bombs“ quoting a high level Korean manager
- do not hinder the fast development in high voltage vehicles but contribute to the new technology by avoiding discredit by accident
- 2 way approach: REESS type approved as component or vehicle based
- amend an existing regulation to avoid a long administrative procedure in the European legislation (s. LED Reg.)

Amend existing regulation

The current Reg. 100 contains safety requirements for road vehicles of categories M and N with electric propulsion i.e.

Protection against

- Electrical shock
 - Direct contact
 - Indirect contact
 - Isolation resistance

integration in R 100

Come up with a new Part II with REESS requirements

5. Part I: Requirements of a vehicle with regard to its electrical safety

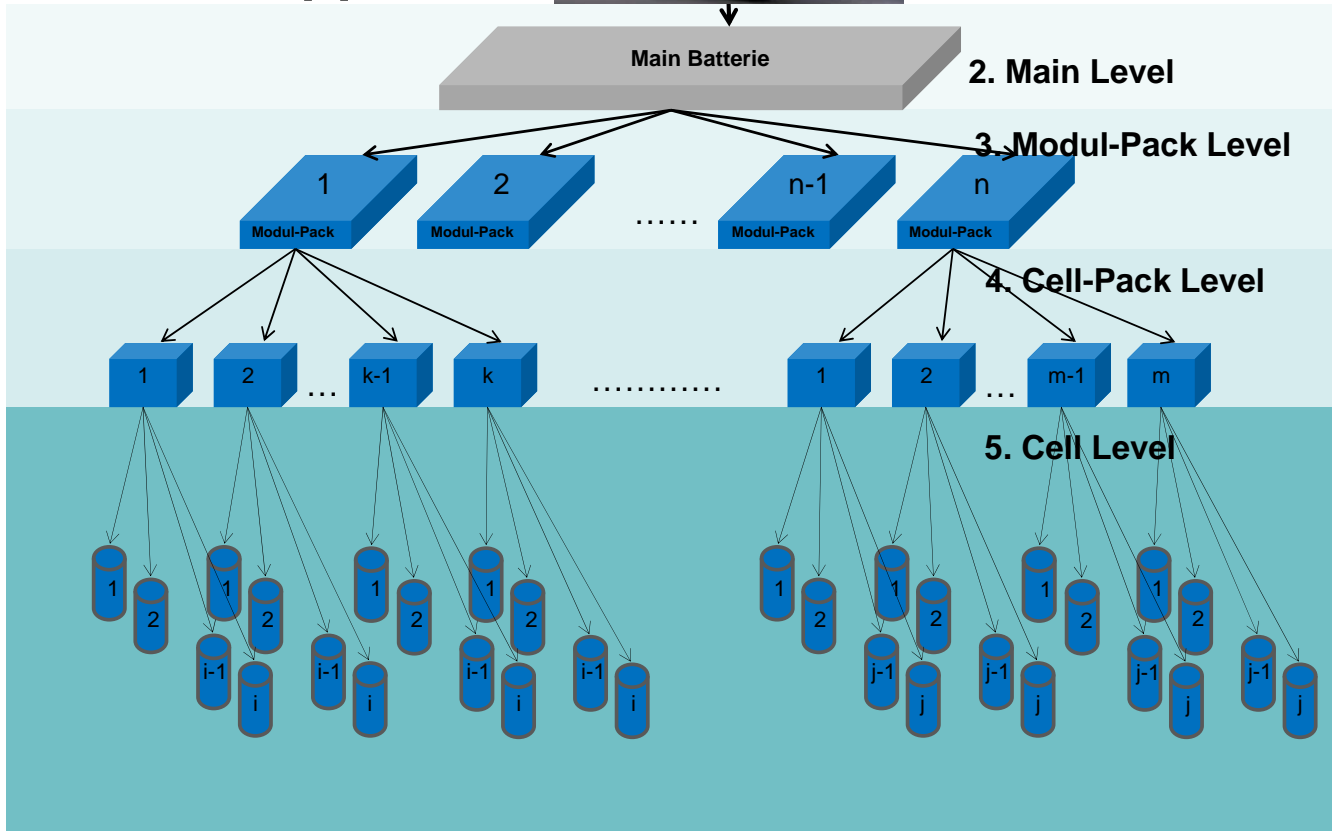
6. Part II: Requirements of a Rechargeable Energy Storage System (REESS) with regard to its safety

Amend an annex with test procedures



first approach:

1. Vehicle Level



agreed approach

No requirements on cell or cell-pack level

Be performance orientated as far as possible on batterie/modul level.

In addition

- align with UN 38.3 to reduce time and effort for testing (e.g. vibration)
- consider existing IEC and ISO standards

technical requirements

- 1 Vibration
- 2 Thermal Shock and Cycling
- 3 Mechanical impact
 - mechanical shock
 - mechanical integrity
- 4 Fire Resistance
- 5 External Short Circuit
- 6 Overcharge Protection
- 7 Over-discharge Protection
- 8 Over-temperature Protection
- 9 Emissions

technical requirements

- Acceptance criteria and test procedures are determined for each item and a rationale is given
- Differentiate between vehicle based test and REESS (component) test

open issue

- Transport of damaged batteries (WP.15)
- Instructions for rescue operation after crash (local/regional recommendations)
- Usage of EV will give more evidence and lifetime experience.
This will lead to further amendments

timeline

Jan 2012: Last meeting of RESS group
Feb 2012: Formal document to GRSP
April 2012: 1st meeting EV-SGS for the GTR
May 2012: Adoption REESS amendments by GRSP
Nov 2012: Adoption REESS amendments by WP.29
Sep 2013: research initiated by NHTSA provide
results with test procedures for Li-Ion batteries
2014 ? : draft GTR EV

1998 agreement

- The REESS safety requirements as proposed in Reg. 100 SA 02 will become part of EVS GTR compendium
- Reg. 100 SA 02 is an advanced input for the GTR

May be requirements for REESS as component are not needed (for cars: fire or mechanical impact test)

But, how to handle buses and trucks?

Thank you for your attention