

UN Regulation No. 116 and innovative vehicle alarm systems / anti-theft systems

In principle, Germany supports the efforts of the automotive industry to facilitate the use of up-to-date technologies (such as near-field communication in conjunction with a smartphone) within the framework of the requirements laid down in UN Regulation No 116.

However, in our view the necessary amendment to UN Regulation No 116 is only possible if the amended provision – in terms of the achievement of all the objectives pursued by the regulation – guarantees a degree of security that is equal to or higher than provided for by the current regulation.

In Germany's view, the objectives pursued by the regulation must also be achieved when the conditions of expected use by the owners of type-approved vehicles are taken into consideration. Amendments must not allow entities not involved in the approval procedure (such as vehicle rental companies or private and commercial vehicle owners) to jeopardise the achievement of the desired objectives with their action.

Other aspects not relevant for type approval (e.g. sale of the vehicle or vehicle lifetime service) and their conformity with the approach presented should at least be addressed and discussed.

From a German perspective, the following should be noted with regard to documents GRSG/2019/07 and GRSG-117-31 as well as the aspects discussed so far:

1. UN Regulation on cyber security:

The development of a UN regulation on cyber security is still ongoing. It is only after the entry into force of such regulation that its role in demonstrating compliance with the requirements of UN Regulation No 116 can be conclusively assessed. From Germany's point of view, the GRSG should ask for an assessment of the expected significance of the upcoming cyber security regulation for the envisaged amendments to UN Regulation No 116 via the GRVA Secretary at the Task Force. The involvement of other groups is customary when they are affected by the topic, e.g. GRE in UN Regulation No. 10.

2. Involvement of other entities and removal of restrictions:

With the proposal, both for keys (in GRSG-117-31 the numbers 5.1.5., 6.1.8., 8.1.6.) and virtual keys (in GRSG-117-31 the numbers 5.1.5.1.; 6.1.8.1.; 8.1.6.1.) the previously existing connection to the locking system operated by them is removed. Today, the numbers 5.1.5, 6.1.8. and 8.1.6. of the UN Regulation define the following connection: 'Key' means any device designed and constructed to provide a method of operating a locking system which is designed and constructed to be operated only by that device.

According to the current definition, the relevant locking systems (i.e. the locking systems to prevent unauthorized use, for alarms and immobilisers, but not the locking system for access to the vehicle), in accordance with UN Regulation No 116, can only be operated using the key. The key itself is defined by the function to operate the locking system. This definition, and the fact that vehicle manufacturers provide the keys, exclude, inter alia, the option of making keys available via smartphone for car sharing purposes (cf. GRSG-107-08). Germany understands that one of the aims of the proposal is to remove this restriction by introducing a virtual key and an electronic solution.

Nevertheless, document GRSG-117-31 does not take into account the fact that keys are not only handed from vehicle manufacturers to vehicle owners. Private and commercial vehicle owners (apart from private vehicle owners this also includes vehicle rental companies and vehicle fleet owners) also have an interest in being able to dispose of the virtual key and, where appropriate, specific features of such key.

No definitions regarding this aspect are proposed. However, it is foreseeable that the aforementioned bodies, in particular, will seek to have access to keys with specific characteristics (such as limited territorial or temporal validity or usability of specific technical vehicle characteristics).

Annex 11 to document GRSG-117-31 deals with measures taken by vehicle manufacturers. From our point of view, it is necessary to discuss what additional regulations are needed for the handling of virtual keys by other bodies or whether no additional provisions are required.

3. Importance of reviews

Item 4 of Annex 11 of document GRSG-117-31 states that “deactivation of a virtual key shall not result in an unsafe condition.” The proposal defines the concept of a “boundary of functional operation”. However, there is no description of the requirements and criteria to be met and how to review them.

In accordance with the provisions of Article 1 of the 1958 Agreement, a UN Regulation must cover performance-related technical requirements as well as test methods to be used. From a German perspective, the proposal does not describe with sufficient detail the technical requirements, testing methods and aspects of the assessment by a technical service and by the type-approval authority. In particular, the new approach currently does not lay down any technical requirements in terms of the range of keys or the corresponding transmitting unit. The need for an “unlimited” range has not yet been demonstrated and could run counter to the objectives of the UN Regulation. Due to their technical implementation, key concepts so far have been limited in range.

It is proposed to discuss whether the conditions for granting approvals and their mutual recognition under these conditions are met and whether the proposed amendments to UN Regulation No 116 comply with the requirements set out in Article 1(2)(3) of the 1958 Agreement (document E/ECE/TRANS/505/Rev.3).

It reads:

“The UN Regulation shall cover the following:

- (a) Wheeled vehicles, equipment or parts concerned;
- (b) Technical requirements, which shall be performance oriented wherever appropriate and not design-restrictive, that give objective consideration to available technologies, costs and benefits as appropriate, and may include alternatives;
- (c) Test methods by which any performance requirements are to be demonstrated;
- (d) Conditions for granting type approval and their reciprocal recognition including administrative provisions, any approval markings and conditions for ensuring conformity of production;
- (e) [...].”

4. Restriction of the proposal to selected technology:

Moreover, according to the abovementioned paragraph of Article 1 of the 1958 Agreement, a UN regulation – where appropriate – is not intended to make a restriction with regard to a particular design.

However, the proposal contains a restriction in terms of design. Essentially, it refers to the use of a smartphone as carrier of the virtual key. Technical approaches already existing today, such as use of the key by additional devices communicating with the smartphone (wearables) or use of biometric data to activate the relevant locking systems according to UN Regulation No 116, are not included in the proposal.

From the German point of view, the need to take into account also other technologies should be discussed, too.