Status and Feedback Request

Task Force
Separate Technical Unit (STU)
within IWG VRU-Proxi

for
Agenda item 4
130th GRSG meeting
6th to 9th October 2025

Agenda

- Request for ToR Changes – Timeline and Scope
  IWG VRU-Proxi – Related to Separate Technical Units (STU)

- Status and Feedback Request from the STU TF
  (within the IWG VRU-Proxi)
  - Context, Goals and Challenges
  - R159 Draft Approval Routes
  - Draft Structural Changes
  - Questions / Thoughts / Feedback

Timeline – Request for ToR Change

IWG VRU-Proxi – Related to Separate Technical Units (STU)

- Propose extension to October 2026 for work item Part Separate Technical Units (STU)
- Proposal considerations and justifications
  - Assessment based on current rate of progress from and R159 work and assessment for R158.
  - Assuming at least one iteration cycle, means two IWG meetings for review covering each of the 4 draft regulations.
  - Submission deadline to GRSG for informal and working documents.
  - Review demands between IWG and TF.
  - Expect efficiencies for R151 due to applying the “blueprint” from R159.
  - More traditional approach for R158 due to its content however taking in account the alternative means in the reguation.
  - Expect efficiencies for R166 due to applying the approach from R158 and its similarities.
  - Guestimate for submission of at least one draft amendment for GRSG session in April 2026.

Scope – Request for ToR Change

IWG VRU-Proxi – Related to Separate Technical Units (STU)

Proposed change of the ToR for work item Part Separate Technical Units (STU)

"…

Completing ~~draft~~ regulatory proposals for **Component and** Separate Technical Units (STU) approvals for the following regulations (if applicable):

- UN Regulation No. 151;
- UN Regulation No. 158;
- UN Regulation No. 159;
- UN Regulation No. 166.

(Note: Component and Separate Technical Units as defined in UNECE framework document "Consolidated Resolution on the Construction of Vehicles (R.E.3)", see ECE_TRANS_WP.29_78_Rev.7e)

…"

Proposal Considerations and Justifications

- The IWG colleagues involved in the definition of the TF scope around 2023 to 2024 likely had limited awareness of the latest updated framework document as stated above.
- This document defines both, Components and STU as well as Manufacturer in UNECE terms.
- Suggest to cover both in the scope to allow Component and STU approach for flexibility and economy benefits for the industry fulfilling the regulation demands, which was the original goal in the initial version of the ToR mentioning "component" at that time.

Context – Key Part from UNECE Framework R.E.3

STU TF within the IWG VRU-Proxi

Definitions

UNECE has defined Manufacturer, Component and Separate Technical Unit in the latest update of the framework document:

“Consolidated Resolution on the Construction of Vehicles (R.E.3)”

See: ECE_TRANS_WP.29_78_Rev.7e

Extract of Definitions:

“...

1.13 **“Manufacturer"** means the person or body who is **responsible to the Approval Authority** for all aspects covered by the UN Regulations requirements for approval process and for ensuring the conformity of production. It is not essential that the person or body is directly involved in all stages of the construction of the vehicle or component which is the subject of the approval process.

1.14. **"Component"** means a device intended to be part of a vehicle, which may be **approved independently of a vehicle** where relevant UN Regulation(s) provide express provisions for so doing.

1.15. **"Separate technical unit"** means a device intended to be part of a vehicle, which may be **approved separately, but only in relation to one or more specified types of vehicle** where relevant UN regulation(s) provide express provisions for so doing.

...”

Note: For “Manufacturer “ frequently the phrase of “Approval requester” is used.

Context, Goals and Challenges

STU TF within the IWG VRU-Proxi

Context

- Familiarising with various regulations containing Component or STU approach – all dealing with a specific system, having at the outset a basic specific universal structure, which is picked up in the structure of the regulation.
- STU TF is dealing with regulations which are mostly pure functional and technology independent (especially R151 and R159).
- Focus so far has been mostly on R159.
- Consultations suggested such will become a more common matter for regulations with e. g. ADAS functions or self-driving vehicles.

Goals

- All changes should not make the regulation less or more stringent however adding wider scope.
- Current scheme for full vehicle approval will be maintained and ensures possible extension of current approvals.
- Therefore, allowing to follow the process of an “Amendment as a Supplement” (and not a new series).
- A “blueprint” to be developed as recommended for general future use and reuse for R151.

Challenges

Efficiency	Avoid or limit the same testing on Component or STU level vs. integration of an approved Component or STU on vehicle level.
Dependency	Taking in account vehicle features which significantly influence the performance of a STU or Component when integrated on vehicle level.
Stringency	Ensure fulfilment for all requirement demands after the integration of an approved Component or STU on vehicle level approval.
Simplicity	Guidance for the approval requester providing the information for Component, STU or integration of an approved Component or STU on vehicle level. Ensuring the Technical Service and approval authority can fulfil their responsibilities.

R159 Draft Approval Routes – New Types

STU TF within the IWG VRU-Proxi

1) Vehicle fitted with a Moving Off Information System (not type approved as a Component or STU)
   (Note: “Full vehicle” as currently will be maintained and unchanged for such content)

2) Component

3) STU

4) Vehicle fitted with a Moving Off Information System type approved as a Component or STU

R159 Draft Approval Routes – Component

STU TF within the IWG VRU-Proxi

Component:
There are 2 starting points

Already existing full vehicle type ghi approval *

E11 159R-001234

OR

In case no existing vehicle type approval

Component type approval

→ E11 159R-007531

(Independent of vehicle type)

Already existing full vehicle type ghi approval stays as it is:
E11 159R-001234

(assumed to be very unlikely *)

Vehicle ghi with component type approval (either due to system update, special request to unify a range of vehicle types and re-approve the same vehicle type, …)
→ E11 159R-001546 with support of E11 159R-007531

Any vehicle type with component type approval
→ E11 159R-007647 / E11 159R-007654 / …
with support of E11 159R-007531

* not needed as a precondition for component type approval but possible

R159 Draft Approval Routes – STU

STU TF within the IWG VRU-Proxi

STU:

There are 2 starting points

Already existing full vehicle type ghi approval *

E11 159R-001234

OR

In case no existing vehicle type approval

STU type approval

→ E11 159R-004568

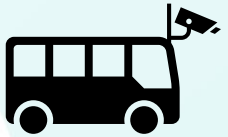
With relevant vehicle type list
abc, def, ghi

(Vehicle type definition is regulation specific)

Already existing full vehicle type ghi approval stays as it is:
E11 159R-001234

(assumed to be very unlikely *)

Vehicle ghi with STU type approval (either due to system update, special request to unify a range of vehicle types and re-approve the same vehicle type, …)
→ E11 159R-001546 with support of E11 159R-004568



Vehicle abc with STU type approval
→ E11 159R-009876 with support of E11 159R-004568

Vehicle def with STU type approval
→ E11 159R-007531 with support of E11 159R-004568

* not needed as a precondition for STU type approval but possible

Draft Structural Changes – R159 Overview

STU TF within the IWG VRU-Proxi

Current Chapters

0. Introduction
1. Scope
2. Definitions
3. Application for approval
4. Approval
5. Specifications
6. Test procedure
7. Modification of vehicle type and ...
8. Conformity of production
9. Penalties for non-conformity of production
10. Production definitively discontinued
11. Names and addresses of the Technical ...

Appendix 1

Annexes
1 Communication
2 Arrangements of approval marks
3 Test method for determining blind spot boundary

Proposed Changes for Chapters *

0. Introduction
1. Scope
2. Definitions
3. Application for approval
4. Approval
5. Part 1: Full vehicle type approval with unapproved MOIS
   - 5.1 Specifications
   - 5.2 Test procedure
6. Part 2: Vehicle fitted with already approved Component or STU
   - 6.1 Specifications (tbc.)
   - 6.2 Test procedure
7. Part 3 and 4: Component or STU
   - 7.1 Specifications
     - 7.1.1 Detection
     - 7.1.2 Control
     - 7.1.3 HMI
   - 7.2 Test procedure
8. Modification of vehicle type and ...
9. Conformity of production
10. Penalties for non-conformity of production
11. Production definitively discontinued
12. Names and addresses of the Technical ...

Appendix 1

Annexes
1 Communication
- Part 1 Vehicle fitted with a MOIS
- Part 2 Component
- Part 3 STU
- Part 4 Vehicle fitted with a MOIS type approved as a Component or STU

2 Information Document
- Part 1 Vehicle fitted with a MOIS
- Part 2 Component
- Part 3 STU
- Part 4 Vehicle fitted with a MOIS type approved as a Component or STU

3 Arrangements of approval marks
4 Test method for determining blind spot boundary

* Note: Colour scheme for highlighted text: added paragraphs / new / major updates / no or minor updates

Draft Structural Changes – Details

STU TF within the IWG VRU-Proxi

Based on R159 MOIS

- Chapters for requirements to cover the scope for the new types (currently called “5. Specification” and “6. Testing”).
- Structure for universal functional blocks approach for new types grouped into functions for Detection, Control, HMI, Vehicle Integration and Vehicle Inputs.
- For types of Component or STU systems fulfilling the minimum functions for combining Detection and Control requirements.
- HMI requirements only on vehicle level approval (no HMI only MOIS) or may be included in Component or STU approval.
- Possible allow (tbc.) testing items to be forward from Component or STU to vehicle approval level to allow some flexibility due to possible dependencies on vehicle integration and vehicle Inputs subject of a particular system or technology.
- Goal to reduce for the type “Vehicle fitted with a MOIS type approved as a Component or STU“ to a minimum set of requirements especially for testing.
- Annex 1 “Communication” document of approvals add appendixes for each type.
- New annex for “Information Document” with appendixes for each type. (Note: Currently covered under requirements in testing chapter)
- Reduce the amount of text to limit multiplying same or common text for each type.
- A range of advised administrative changes to bring text in line with latest UNECE directions for structure and content.

R158 Outlook – more traditional approach due to given system

- Introduce Component or STU approach only for “rear view camera system” (similar to R46) and for “detection systems”.

Thank You – for Supporting the STU TF

Questions / Thoughts / Feedback ?