

# UNECE approach for „filament-replacement” LED light sources in R37\*

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\*instead of LED retrofits in R128

# The approach (legal and technical equivalence)

(based on the previous discussions and guidance given in the TFSR and at GRE)

- No further work on LED “retrofits” into R128
- Open R37 to allow „filament-replacement light sources”\* in LED technology (LEDfr)
  - Use the photometric equivalence criteria from LED substitutes
  - Same cap as the filament version
  - Address open issues not fully addressed by LED substitutes (electrical, thermal)
  - Example: a PY21W of incandescent technology or a PY21W of LED technology, both approved to R37, will get the same “legal status”

\*the final terminology to be defined

# The **new** document scope

## R37

Filament light sources (traditional, incandescent technology)

Filament-replacement light sources in LED technology (LEDfr)

## R99

HID light sources

## R128

LED light sources

LED substitutes

## R.E.5 Category sheets

Filament light sources

HID light sources

LED light sources, including:

- LED substitutes
- Filament-replacement light sources in LED technology (LEDfr)

# Filament-replacement LED light sources in R37

- Photometric equivalent to incandescent counterpart
  - Using equivalence-criteria from LED substitutes, incl. 3000K limit for white signaling light sources
- Addressing electrical interface for failure detection
  - Majority of functions / cars on the road have no failure detection (DI excluded)
  - Optional „external electronics“ to support correct failure detection
- Addressing high temperature operation and PWM operation / dimming
- Additional user information and marking
- Not for use in type-approvals of devices