Item 0.4

GTB Working Group
Signal Lighting

Roadmap
(February 2011)
Market demands and trends for signal lighting

Value
- Increased Safety and Convenience
- Improved Lighting Performance
- Added Functionality
- Styling Enhancement
- Brand Differentiation

Year of Availability
- 96
- 98
- 02
- 06
- 10
- 2015+

- Cameras
- Sensors
- adaptive lighting
- added functionality, full light signaling systems

- Improved Regulations
  - DRLs mandatory

- Improved Appearance
  - apparent surface
  - Y-lamps

- Improved Performance/Safety
  - Emergency Stop Signal
  - planar light guides

- Reduced Weight
  - light guide design
  - variable intensity control

- Reduced Package
  - multi color lens
  - facet light design
  - full LED rear lighting

- Improved Styling, Performance, Functionality
  - multi color lenses
  - faceted reflectors

- Improved Appearance
  - planar light guides
  - apparent surface

- Improved Regulations
  - DRLs mandatory

- Improved Performance/Safety
  - Emergency Stop Signal
  - planar light guides

- Reduced Weight
  - light guide design
  - variable intensity control

- Reduced Package
  - multi color lens
  - faceted reflectors
Road map for signal lighting headlines

harmonized legislation

future trends

open tasks

future needs
Road map for signal lighting harmonized legislation (1)

- **harmonized legislation**
  - geometric visibility
  - uniform provisions for all signalling functions
  - reduced inboard visibility
  - Horizontal Reference Document
    - contribution of WG SL
  - retro reflective material
    - alignment of photometric values R70 and R104
Road map for signal lighting harmonized legislation (2)

- Throughout the years all regulations have been subject to amendments due to various proposals
- At one hand not all regulations have been updated simultaneously / in the same manner
- On the other hand a lot of the text inside the different regulations is manifold existent

➢ The goal is to harmonize these discrepancies either in each regulation or as a new approach in a “horizontal reference document”
Road map for signal lighting open tasks (1)

open tasks

- (n-1) rule
  - proposal for deletion in R87
  - further regulations?
  - problem about enforcement

- Y-lamps
  - provisions for R06
  - provisions for R38
  - provisions for R87

- light sources
  - replaceable vs. non-replaceable
  - standardized LED light sources
Road map for signal lighting
open tasks (2)

- In the recent past, different proposals have been submitted by WG SL on specific issues (e.g. Y-lamps)
- Some of these proposals need to be transferred to other regulations dealing with the same topic

» Accomplish the started tasks
Road map for signal lighting future trends (1)
Road map for signal lighting future trends (2)

- Today's car-architecture enables the networking of the various systems inside a car (already common practice in some applications of front lighting)
- Existing Regulation might be used in broader context for the sake of further benefit

➢ Explore new possible technology trends and their impact on automotive lighting and refine existing regulations to keep pace with technology progress
Road map for signal lighting future needs (1)

- future needs
  - electric vehicles
    - reduction of power consumption
  - reduction of weight
  - hybrid vehicles
    - reduction of fuel consumption
    - reduction of CO2
Road map for signal lighting
future needs (2)

- The global automotive world faces innovative and economic propulsion systems
- With the new generation of electric and hybrid vehicles also new challenges arise for automotive lighting

This leads to the need of appropriate legal requirements for new concepts of light-weight and low-consuming lighting and light-signalling devices
Thank you for your attention!