

External lighting signal for autonomous vehicles

Technical status survey

Organization name	
Contacts	
Email	
Telephone no.	

This research focuses on the necessity of standardization of lighting equipment and external lighting signal for autonomous vehicles. The results will support the following requirement research work of ORU (Other Road Users) under FRAV. Experts from all units are requested to fill in the questionnaire carefully according to the actual situation and feedback the electronic version of the questionnaire to the secretariat contact before April 4th:

Jiajie Wu (wujiajie@catarc.ac.cn)

Yanhui Yu (yuanhui@catarc.ac.cn)

External lighting signal for conventional vehicle is mainly used for night condition, marking the width of the vehicle, lighting the interior carriage of the car, instrumentation and nighttime maintenance. The signal device mainly sends out the information about the running condition or state of the vehicle to the environment through the acoustic and optical signal to ensure the safety of driving.

Q1. General Consensus

Q1. 1 For autonomous vehicles, do you foresee the definition of external lighting signal differ from that of conventional vehicles? ()

A、 Yes

B、 No

If yes, how to define the new ADS external lighting signal? _____

Q1.2 Do you foresee any risks if vehicles add dedicated device for external lighting signals?

A、 Yes

B、 No

If yes, please specify why? _____

Q1.3 Do you foresee any benefits if vehicles add dedicated device for external lighting signals?

A、 Yes

B、 No

If yes, please specify why? _____

Q2. The necessity of new external lighting signal device for autonomous vehicles

Q2.1 How do you think the autonomous vehicles need external lighting signal or not ()

A、 Need

B、 Don't need

Reasons for the needed/undeeded: _____

If needed, please specify the functions of external lighting signals: _____

Q2.2 In the future, as connected technologies such as V2X V2V mature, autonomous vehicles will need dedicated lighting signals? ()

A、 Need

B、 Don't need

Reasons for the needed/undeeded: _____

Q2.3 Besides lighting and sound signals, what else method do you think is appropriate to ADS vehicles? _____

Q3. The difference between autonomous vehicles and conventional vehicles in external lighting functions and device

Q3.1 Are the requirements of illumination range for autonomous vehicles different from those for conventional vehicles? ()

A、 Yes

B、 No

If yes, please explain: _____

Q3.2 Are the requirements of number and mounting position of lighting signal of autonomous vehicles differ from those of conventional vehicles? ()

A、 Yes

B、 No

If yes, please explain: _____

Q3.3 Are the requirements of lighting brightness of autonomous vehicles different from those of conventional vehicles? ()

A、 Yes

B、 No

If yes, please explain: _____

Q3.4 Are the requirements of lighting signal for internal carriage illumination of autonomous vehicles different from those of conventional vehicles? ()

A、 Yes

B、 No

If yes, please explain: (Brightness, quantity, light color, etc.) _____

Q3.5 Are the information send out from signals of autonomous vehicles different from those of conventional vehicles? ()

A、 Yes

B、 No

If yes, please explain: _____

Q3.6 Are the requirements of voice prompt system for autonomous vehicles different from conventional vehicles? ()

A、 Yes

B、 No

If yes, please explain: (Sound intensity, frequency, whether human voice replaces the current whistle, etc) _____

Q4. State of the art

Q4.1 Is there any mature external lighting signal plan for autonomous vehicles under research/researched? ()

A、 Yes

B、 Temporarily not

Q4.2 If not, do you have any plans for external lighting signal for autonomous driving? ()

A、 Yes

B、 Temporarily not

Q4.3 If there is a plan, when do you prepare to start the related work ()

A、 In 2 years

B、 In 5 years

C、 TBD

Q5. Applicability of regulations/standards

Q5.1 (In the process of researching) Do you foresee any legal/regulation/standard barriers if raise the requirements of external lighting signals? ()

A、 If Yes, what are those barriers: _____

(Please list the standards/regulations and specific terms that the product performance does not meet) _____

B、 Temporarily not

Q5.2 Are there exist enterprise standards for external lighting signals for autonomous vehicles? ()

A、 Yes

B、 Temporarily not

Q5.3 What other issues should be considered for external lighting equipment for autonomous vehicles?

Please Specify: _____

Q5.4 What are your suggestions for this questionnaire survey?

Please Specify: _____

