

SIP-adus 2020

User Education and Training



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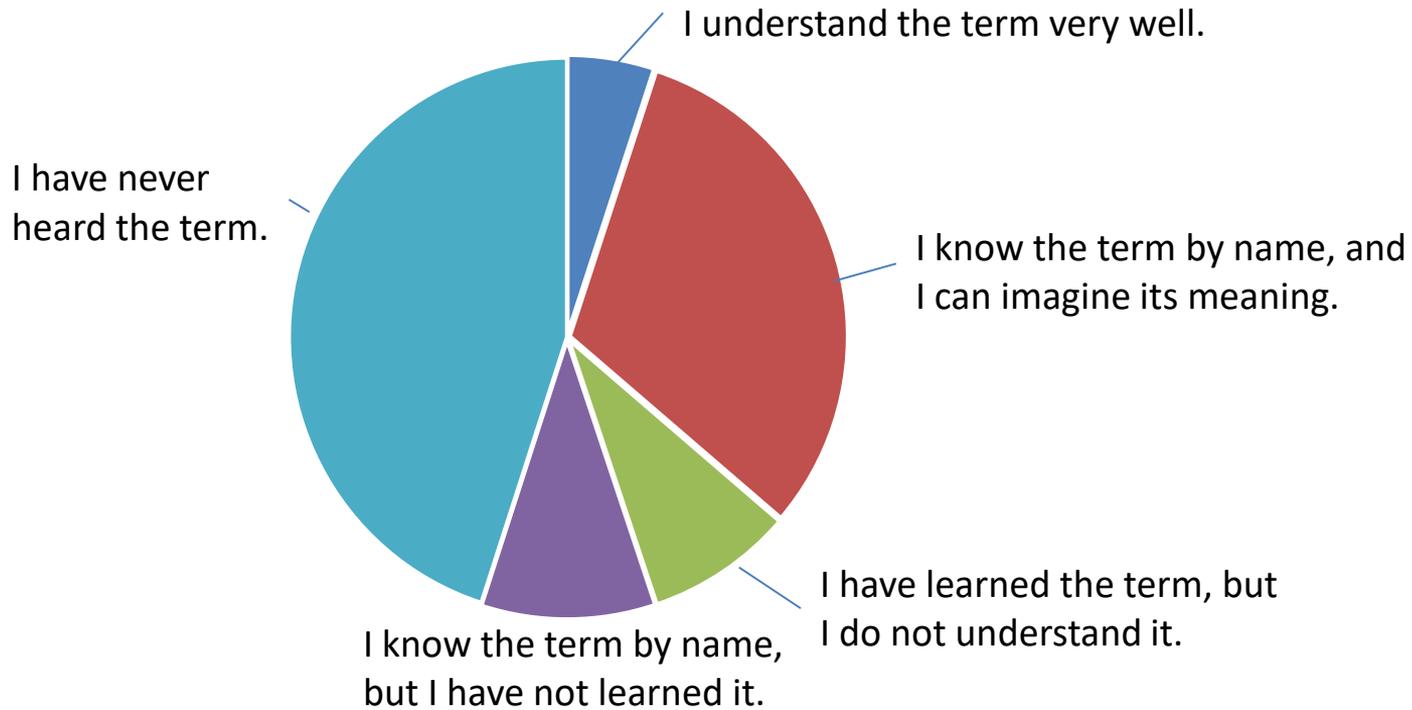
1



Motivation (From the 1st Phase)

What people know about Automated Driving?

◆ People do not know about Automated Driving at all!



Effects of knowledge on driving performance (DS experiment)

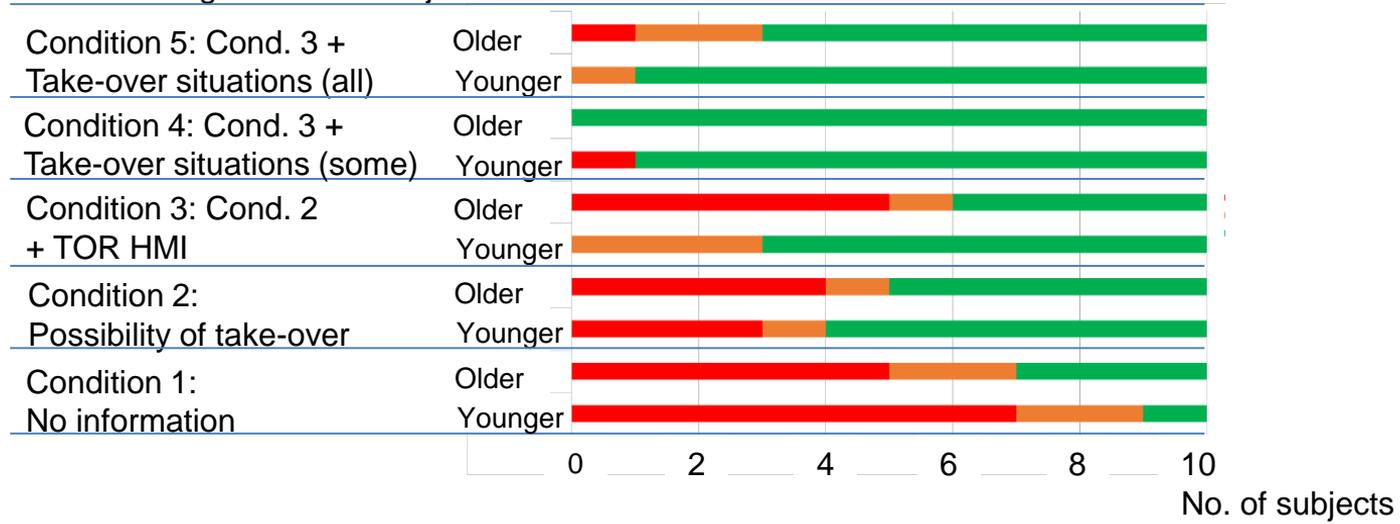
Levels of prior information on Rtl

condition	Possibility of Takeover	Rtl Message	Possible situations	Information given to drivers
1 No info	×	×	×	“The system provides automated driving in expressways”
2 Possibility of takeover	○	×	×	Condition 1 + “There are situations you need to takeover the control.”
3 Rtl HMI	○	○	×	Condition 2 + “Please takeover the control when this message appears.”
4 Takeover situations (partial)	○	○	△ (partial)	Condition 3 + “For example, you need to takeover the control when the vehicle approaches the target exit.”
5 Takeover situations (all)	○	○	○	Condition 4 + Explanation on all the takeover situations the driver may encounter. “



Main result

Information given to the subjects



■ Take-over was completed within 10 seconds.

■ Take-over was completed within 10-15 seconds.

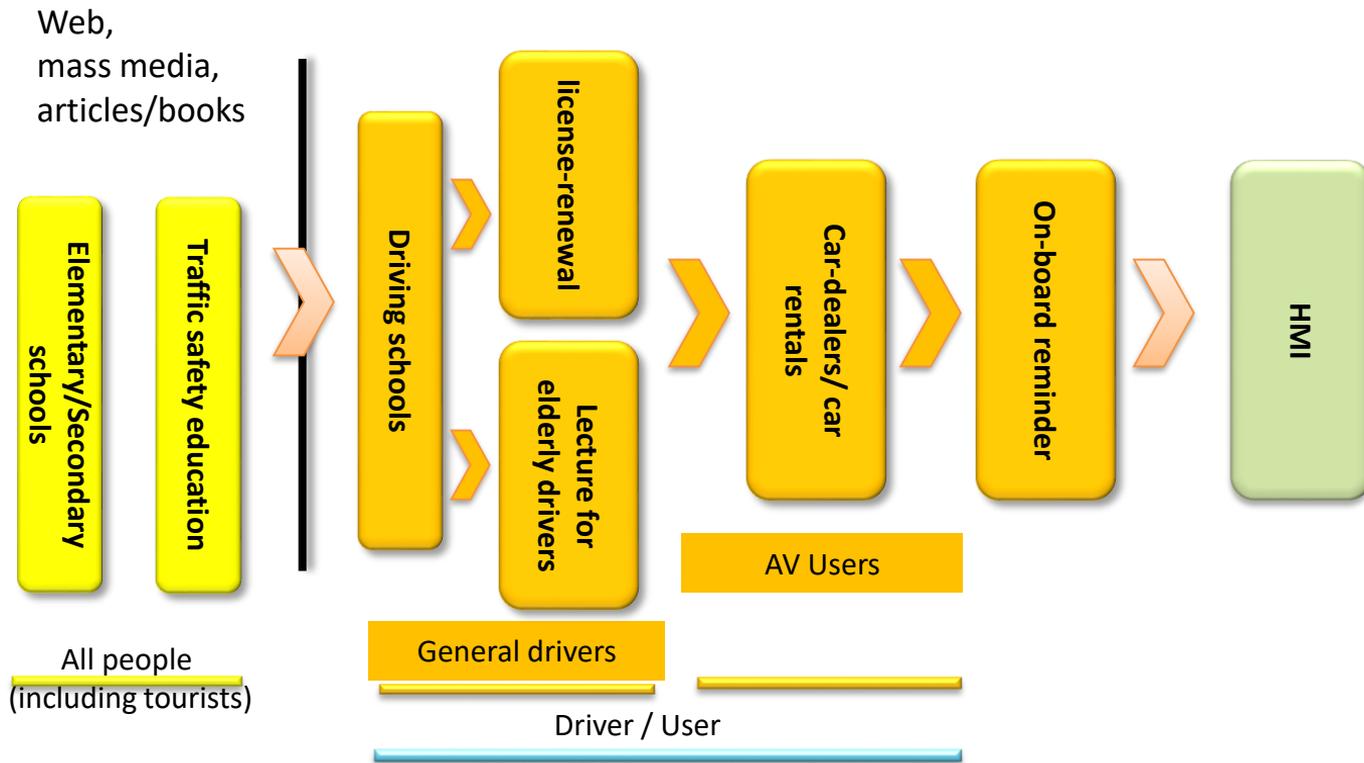
■ Take-over was not completed within 15 seconds.

2

Approach in the 2nd Phase

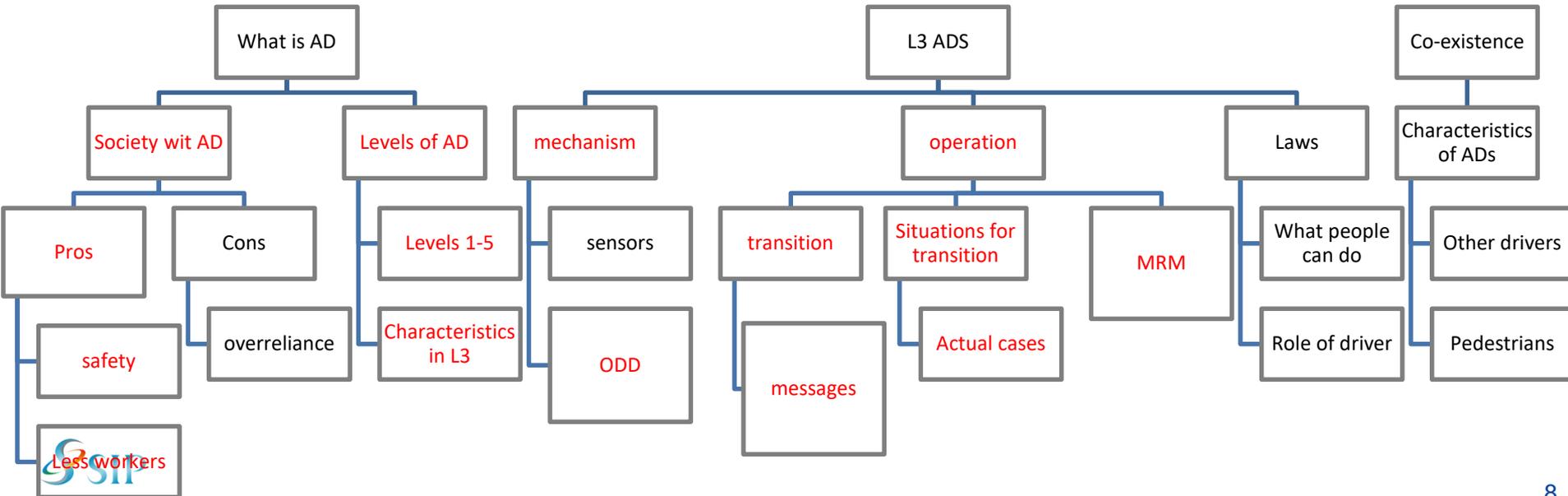


Framework of education/training for AD use in Japan



Research item in 2019

- ◆ Purpose: Is it effective to teach on general issues of automated driving?
- ◆ Method: Divide into modules, and develop contents for demo.



自動運転におけるドライバーの役割とは？

- 🔊 通常走行中, 状況によっては, 自動運転システムが動作を継続できなくなる場合があります.
- 🔊 その時は, ドライバーが自分で運転を行う(車の制御を引き継ぐ)必要があります.



ドライバーに介入要請のメッセージを提示

3



Method

Experimental method

Prior education

Experiment

With prior education

Teach general issues with the prototype

One month



Explanations about the system to be used

- ALKS
- Full speed L3

+

Trials

Without prior education

Explanations about the system to be used

- ALKS
- Full speed L3

+

Trials

4



Result

Typical result

Crash rate against an obstacle ahead (stopped vehicle)



The crash rate without prior education was greater than that with prior education. This result was irrelevant to the actual system to be used.



Education of general issues is effective.

5



Further work

◆ Toward implementation

- How can the education of general issues be done?
 - Limited available time
 - How to teach

◆ Toward variable use of the contents

- Full list of items to be taught
- Best way adapted to users learning style and available resources

Thank you

