



Long-Term User Acceptance and Trust
in Automated Vehicles:
Results of a Real-Traffic Study

L3Pilot Final Event

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Background

- User acceptance and trust are key factors for the success of automated driving on the market
- Attitudes towards automated driving can change over time
- In our study, we investigated the possible development of trust, acceptance and user behaviour over time

ADF Used in Real-Traffic Study

- Wizard of Oz: hidden second driver
- Motorway chauffeur (SAE Level 3), 130 kph
- *Including:* lane changes, traffic jams
- *Excluding:* road works, on-/off-ramps, bad visibility conditions
- Public roads, three drives of 96 km
- Participants could use non-driving related activities (NDRAs) such as smartphones, tablets, magazines etc.



Study Participants

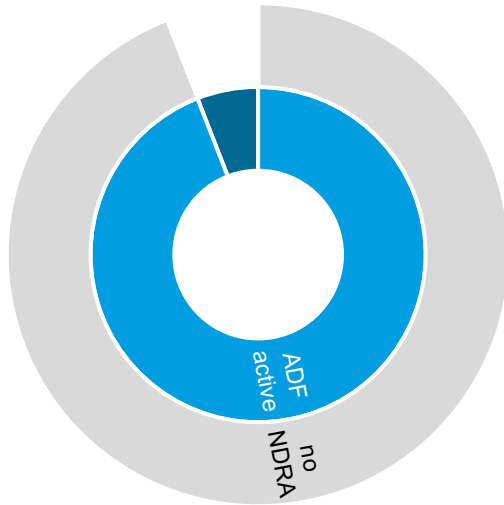
- Restrictions and finally cancellation of study due to COVID
- Participants:
 - $N = 6$
 - Non-professionals
 - All male
 - Between 52 and 65 years old

Video: Development of NDRA Engagement

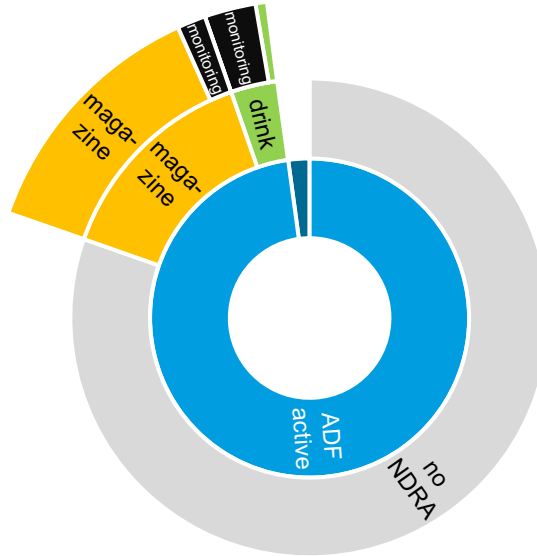


ADF Use, NDRA Engagement and Gaze Direction

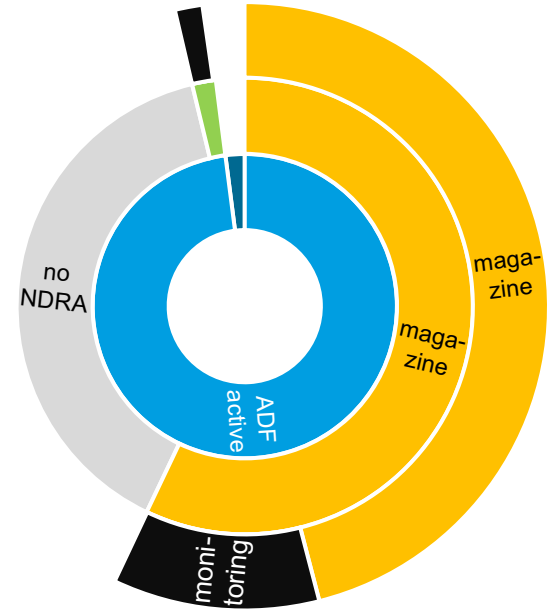
1st drive



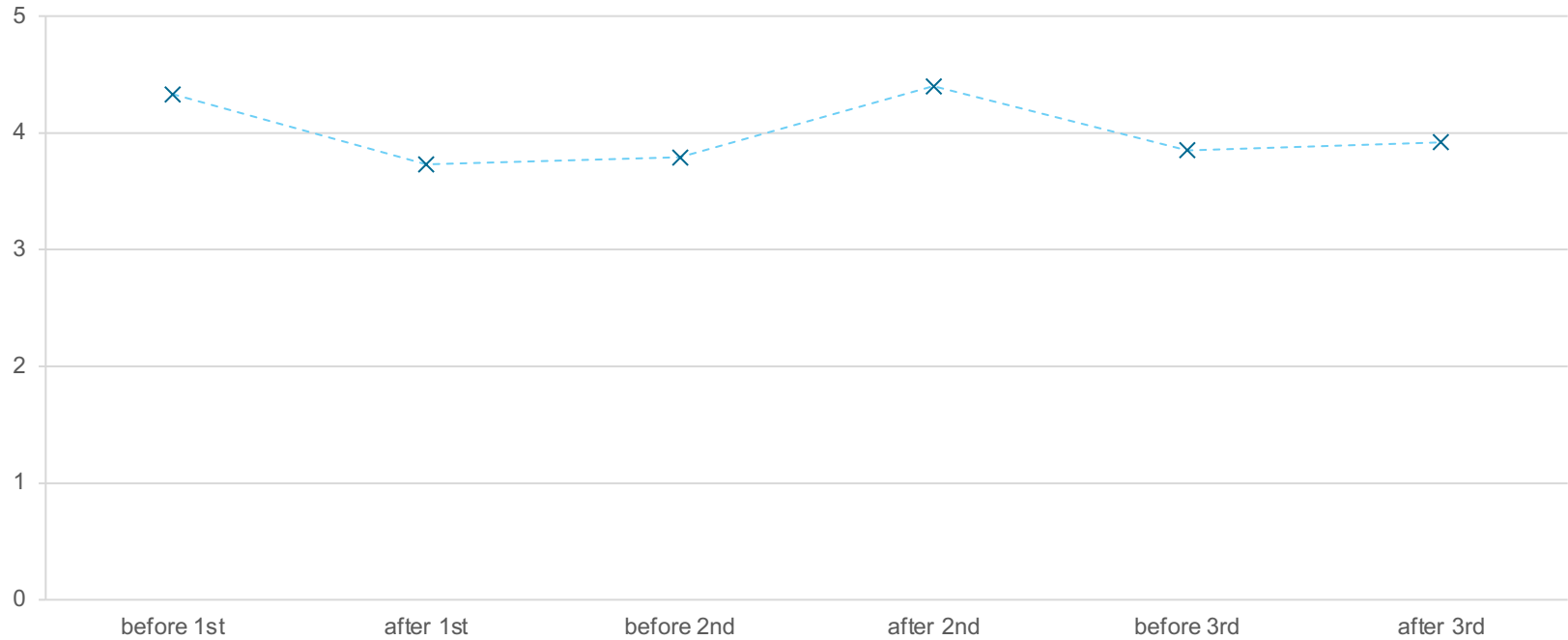
2nd drive



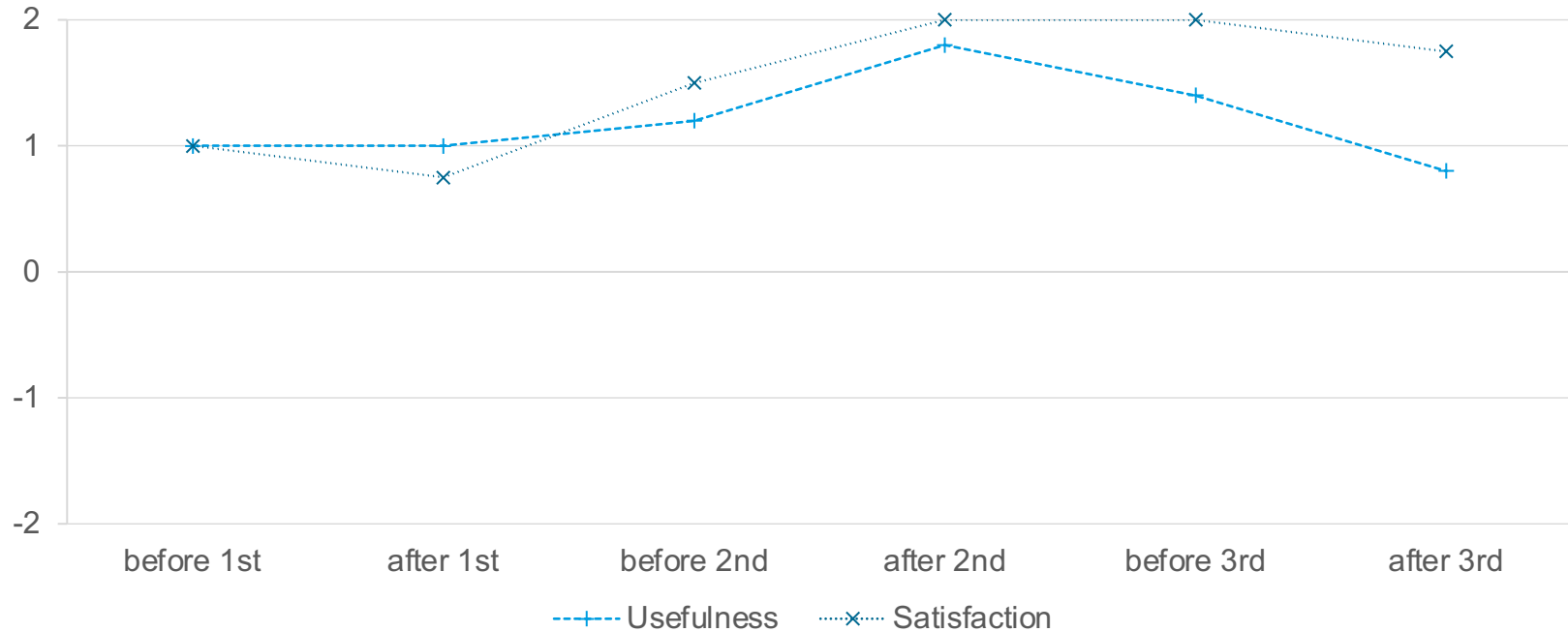
3rd drive



Trust over Time (Questionnaire: Körber et al.)



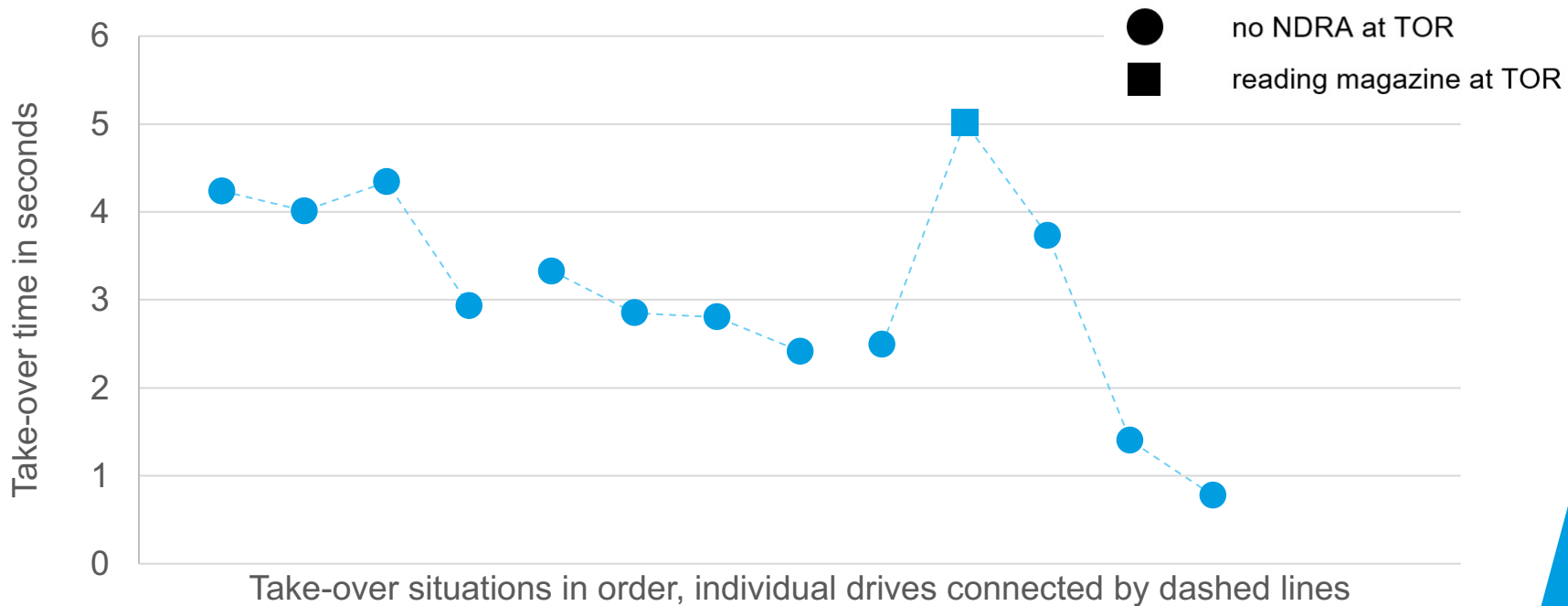
Acceptance over Time (Questionnaire: van der Laan et al.)



Video: Take-Over Situation



Take-Over Times and Respective NDRAs



Overview of Results of All Participants

- **ADF usage:** 88 – 99 % of available time
- **Trust:** fairly high or high during all drives (except one participant)
- **Acceptance:** mediocre to high during all drives
- **Popular NDRAs:** smartphone use and reading magazine



Thank you for your kind attention.

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