



Customer acceptance and HMI development
of autonomous parking service
Jakub Sliva, Virtual conference, 16.12.2020



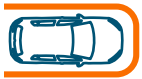
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Customer acceptance

- Autonomous parking systems in vehicles make actions independent on user
- These vehicles are extremely rare in regular traffic, most of the people have not met one
- Wider application of autonomous technology is expected = new experience for everyone (users AND bystanders)

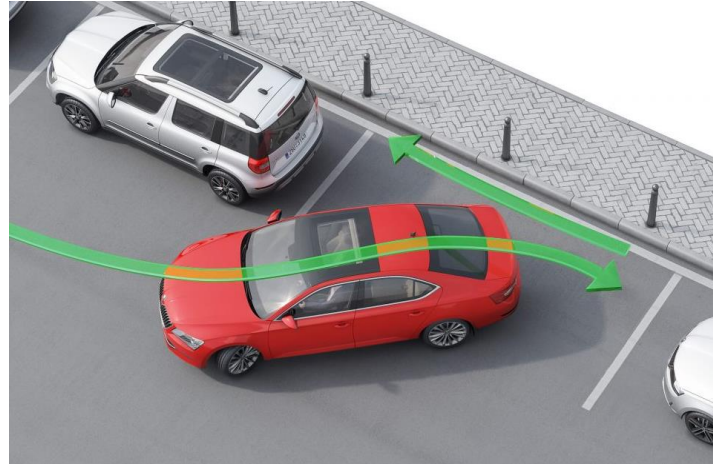


Autonomous vehicles have to be accepted by community



Customer acceptance

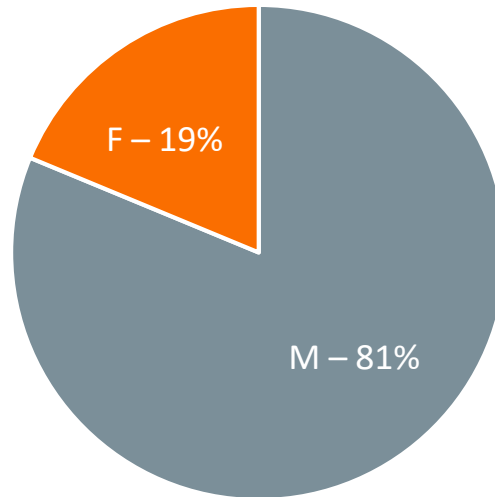
- Autonomous technologies are usually mentioned in regularly accessible media as crashes
- Most of the people are prone to have prejudice against new technologies
- Today commercial top-end assistive technology is not common in all vehicles and people mostly don't use them



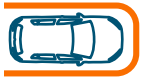
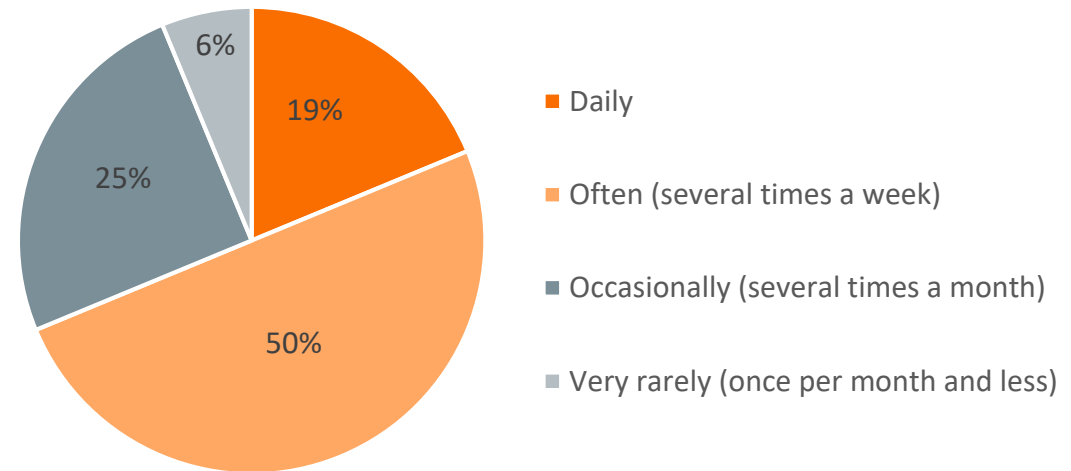
Customer acceptance

- Real environment test was conducted
- Users were introduced to vehicle with autonomous parking function and handed smartphone with control application
- Users were told to park this vehicle autonomously and retrieve it afterwards
- On the way back to the user vehicle encountered cyclist and avoided collision by braking

Gender distribution

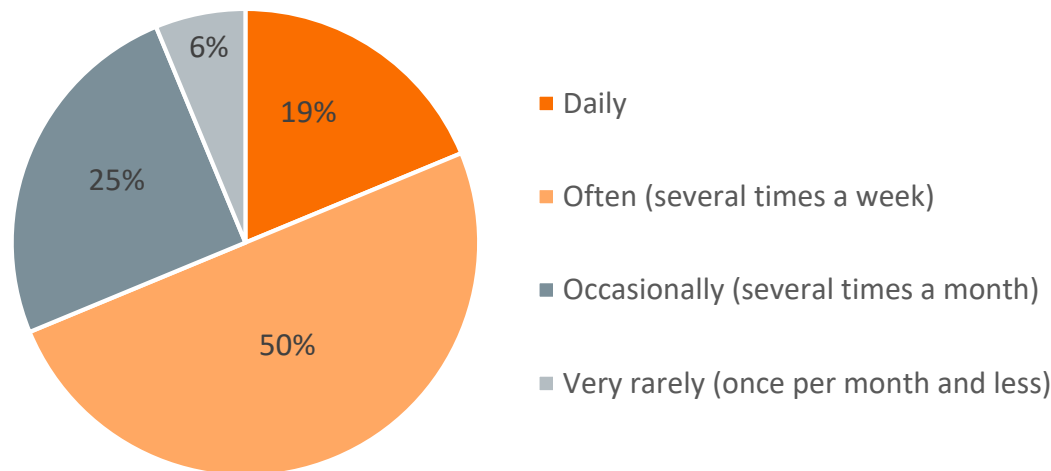


Frequency of public parking usage

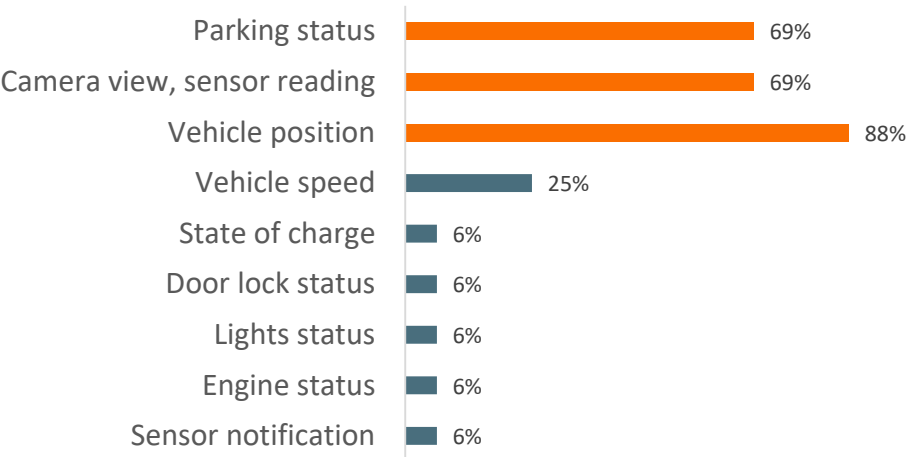


Test Template

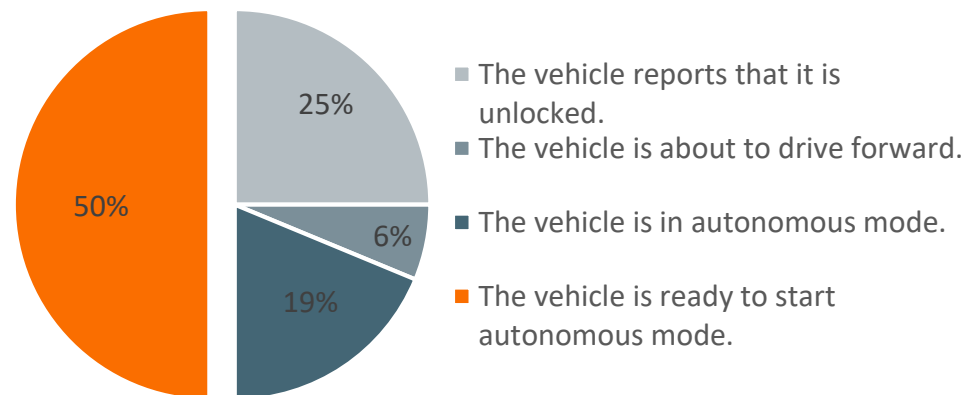
How often do you use public car parks?



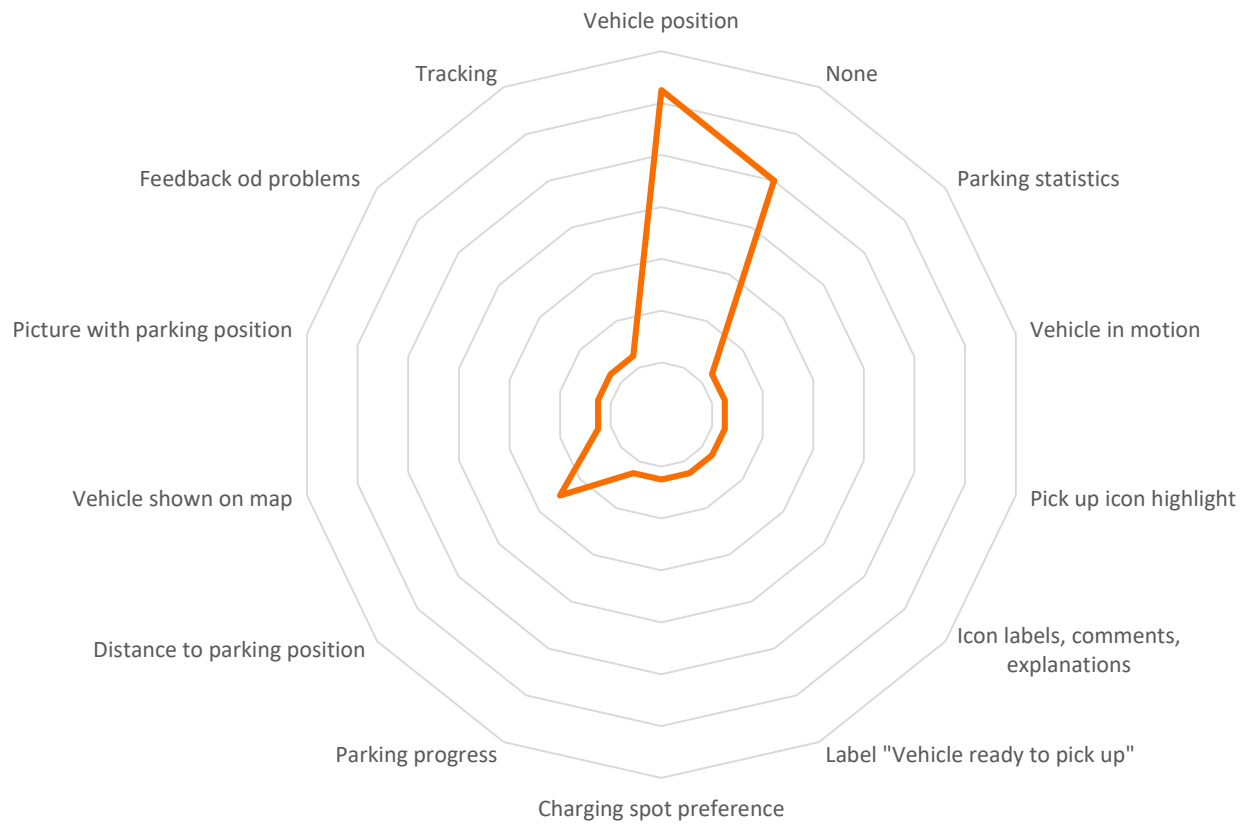
Expected informations in mobile app



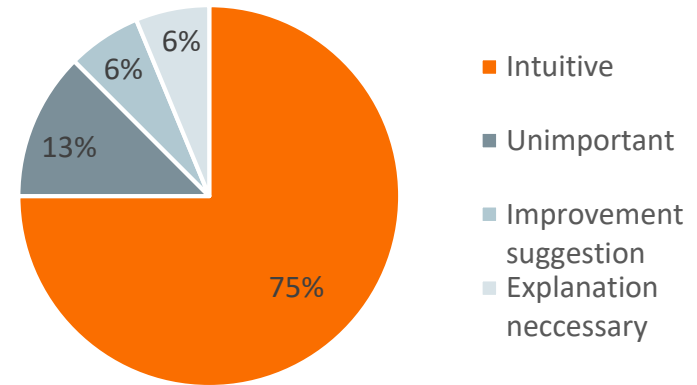
The vehicle is stationary and the beacon is green?



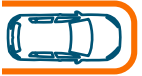
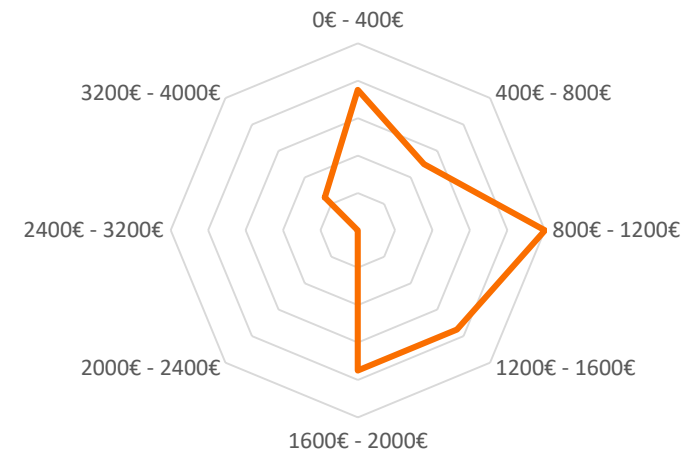
Missing information during parking



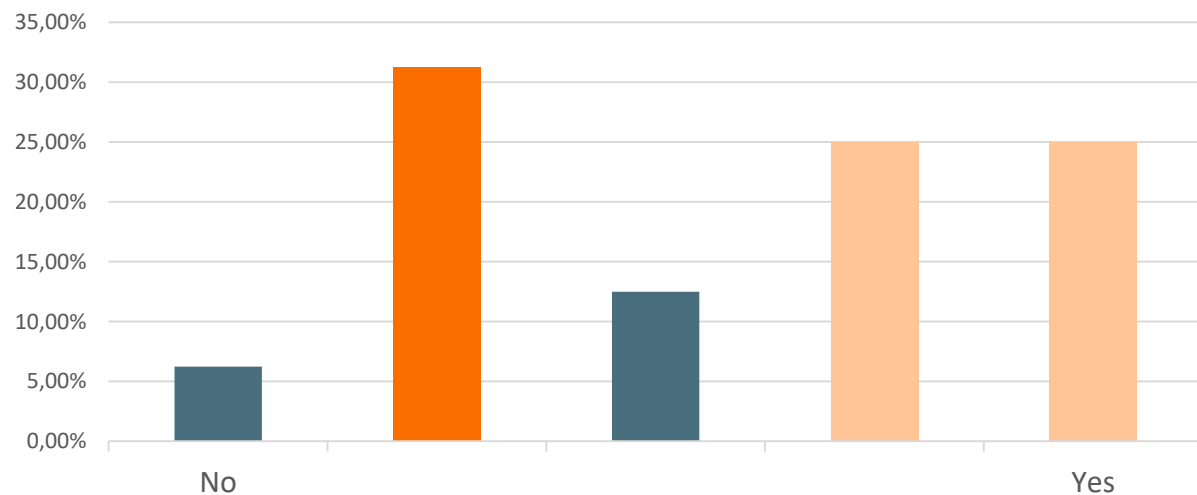
Functionality of the beacon



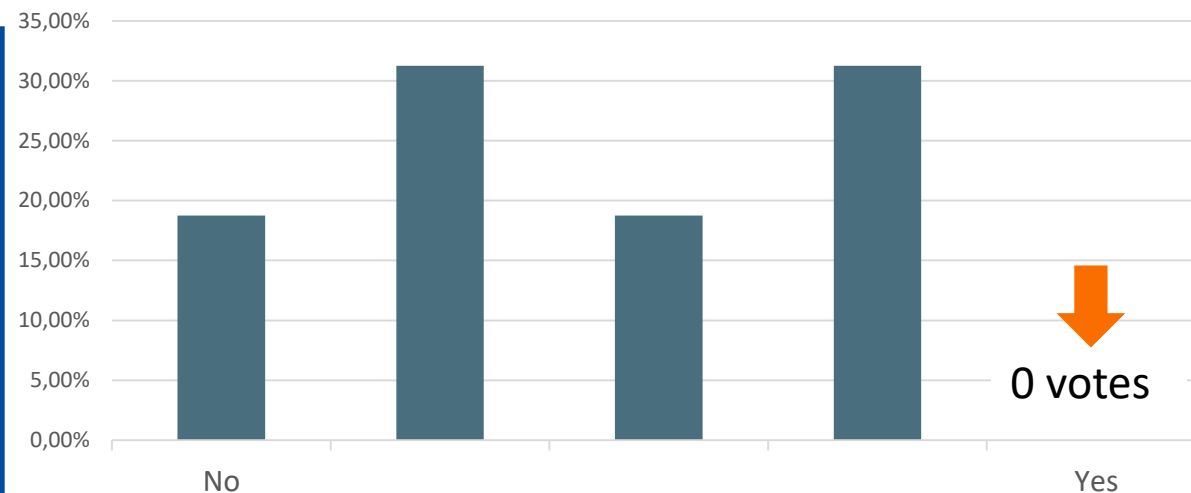
How much would you be willing to pay for this functionality?



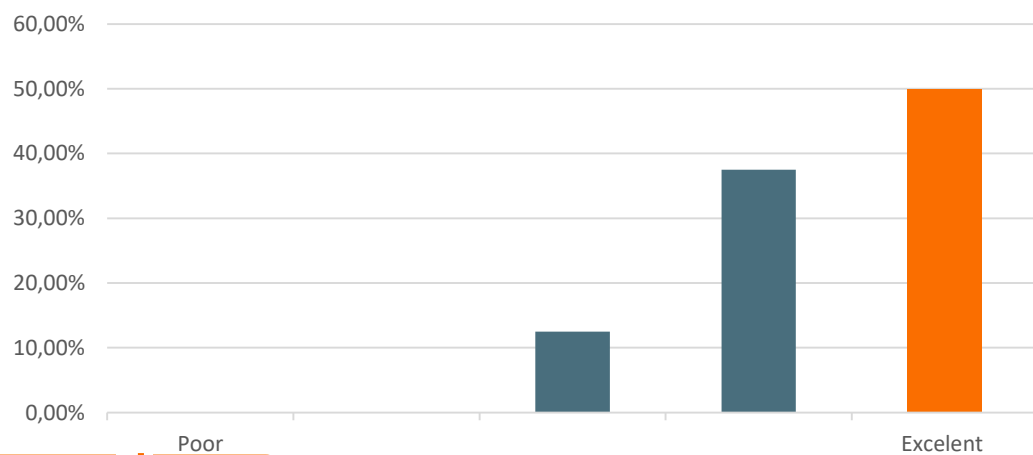
Do you trust autonomous parking in the state you just saw?



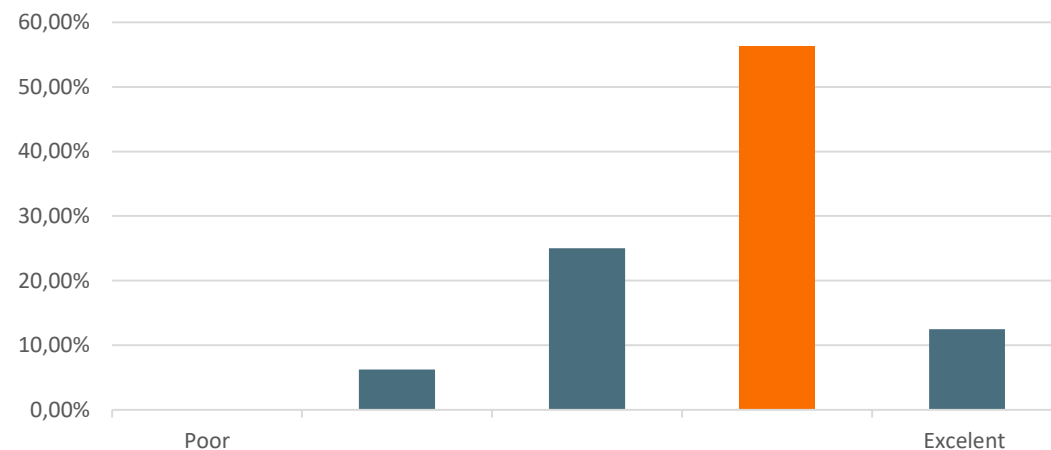
Do you believe that the vehicle will always prevent a collision?



Do you like the graphical interface of autonomous parking in the vehicle?

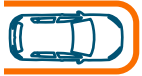
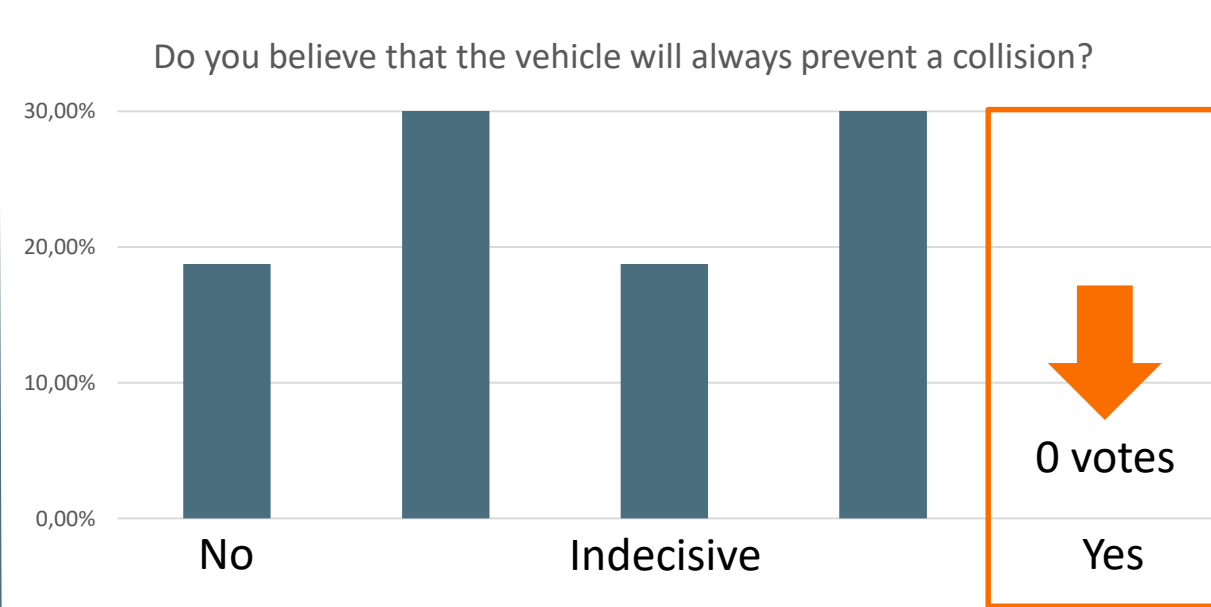
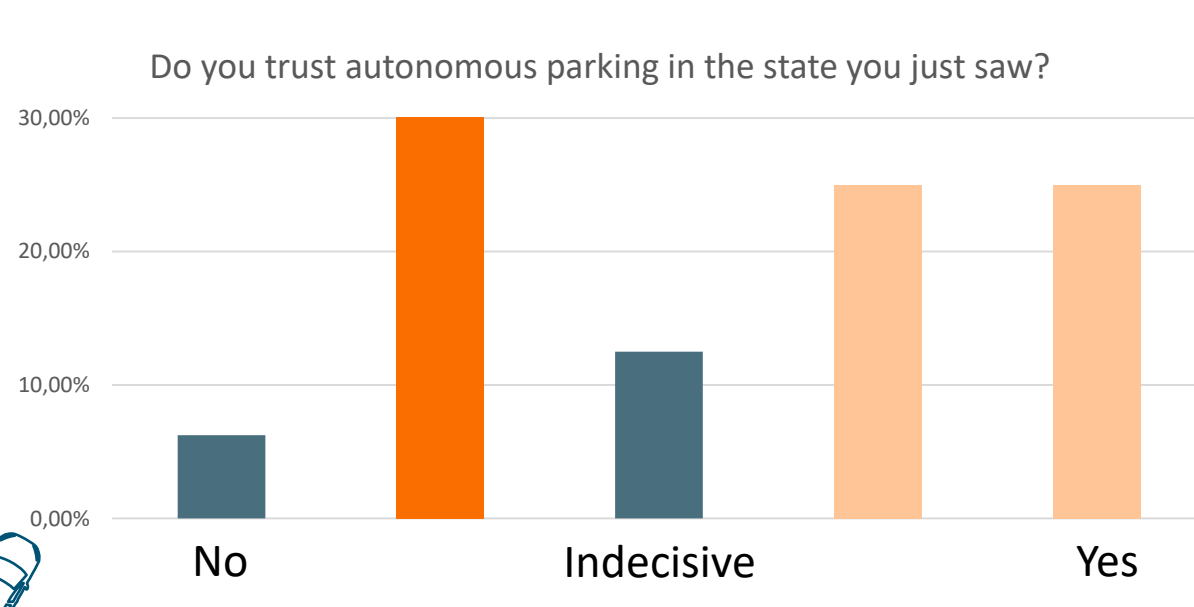


Do you like the graphical interface of autonomous parking on the phone?



Customer acceptance – test results

- Some people trusted autonomous system to find the parking place and park safely, some did not.
- **None of the people expressed full trust in system to avoid all possible obstacles**
- Signal beacon on top of the vehicle was found to be useful
- Several modifications for mobile app were suggested by users



Video



Thanks for attention



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UrbanSmartPark

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