

Användarupplevelse av automation i fordon

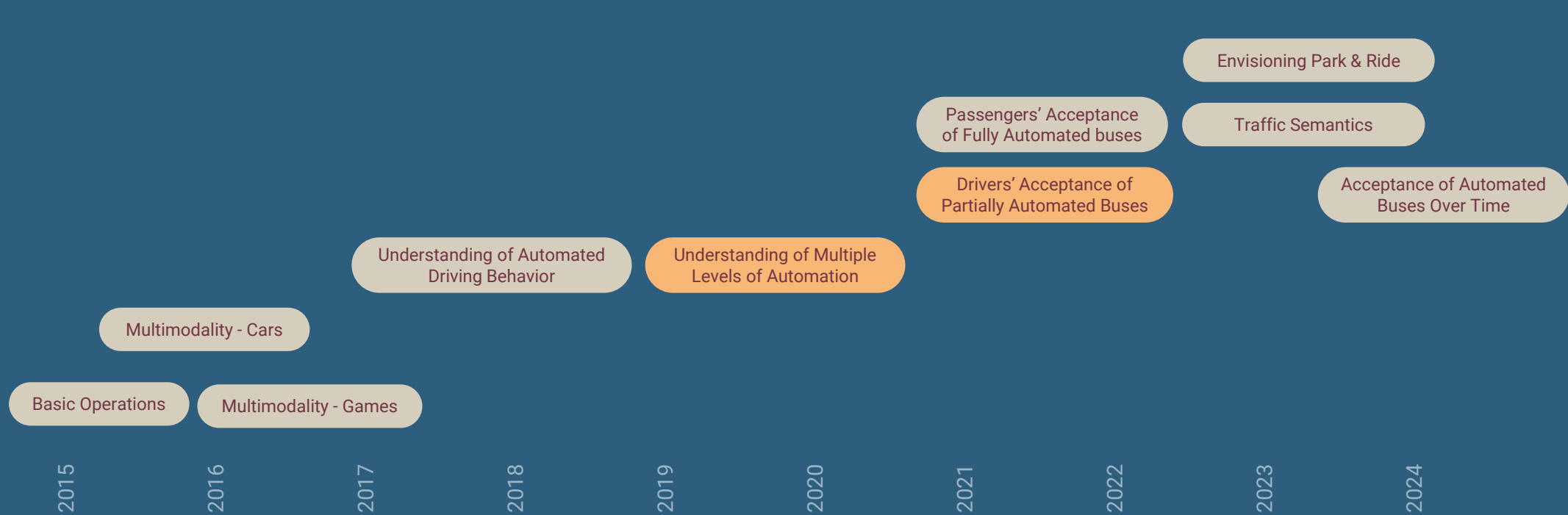
Mikael Johansson, PhD

User Researcher
Populus Perspective



TRANSPORTATION
SYSTEM

HUMAN-MACHINE
INTERACTION



Mikael Johansson, PhD

User Researcher
Populus Perspective



Fredrick Ekman
Chalmers



Helena Strömberg
Chalmers



MariAnne Karlsson
Chalmers




Joakim Jonsson
Volvo Buses



Fjolle Novakazi
Chalmers, Volvo



USE CASE 1 – Understanding & Experience of Automated cars



USE CASE 2 – Acceptance of Narrow Navigation System

20

Participants

2

Levels of
Automation

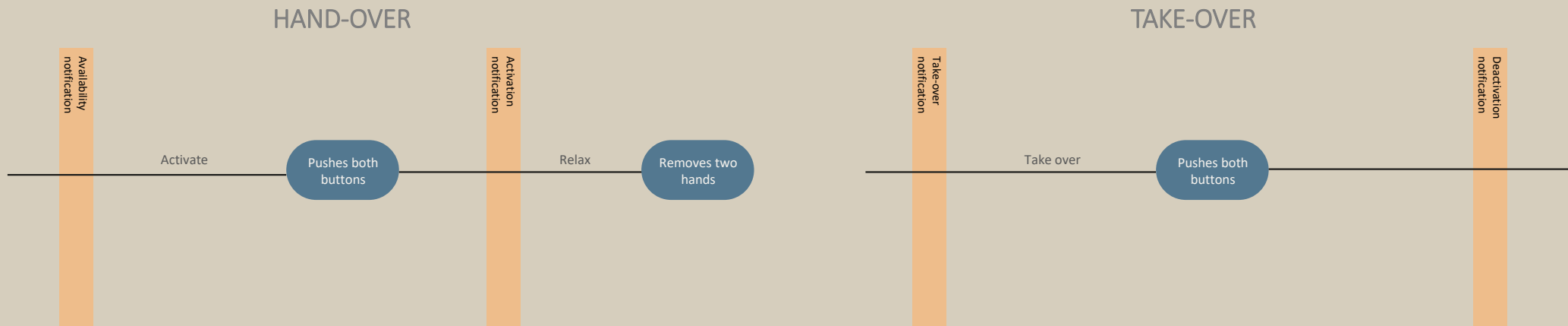
W0z

On real roads

USE CASE 1 – Understanding & Experience of Automated cars

USE CASE 2 – Acceptance of Narrow Navigation System

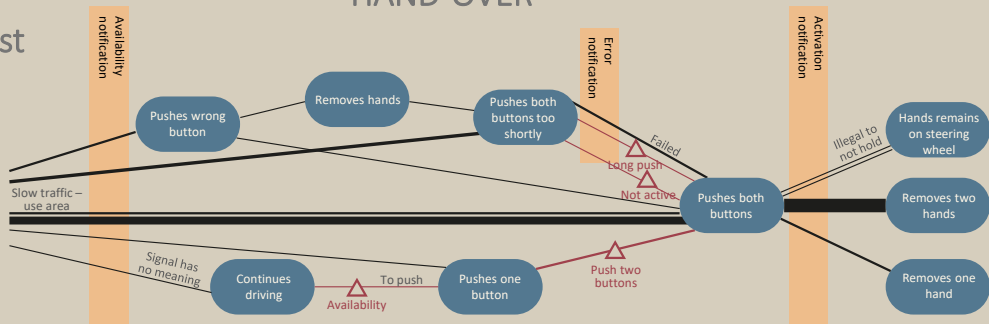




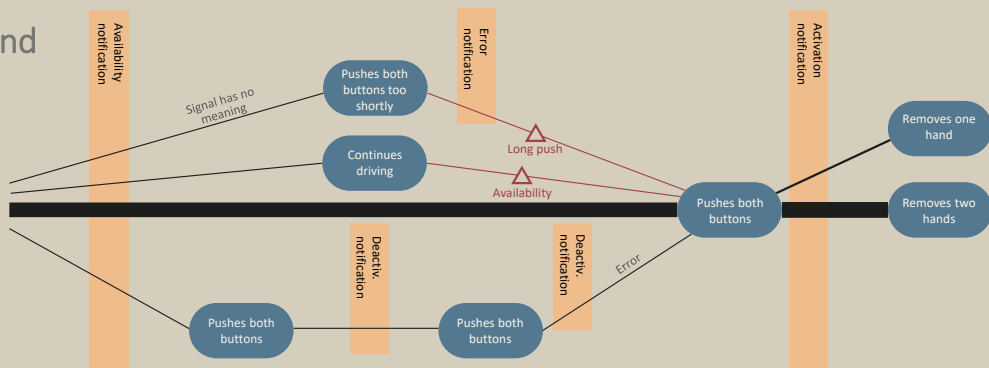
USE CASE 1 – Understanding & Experience of Automated cars

HAND-OVER

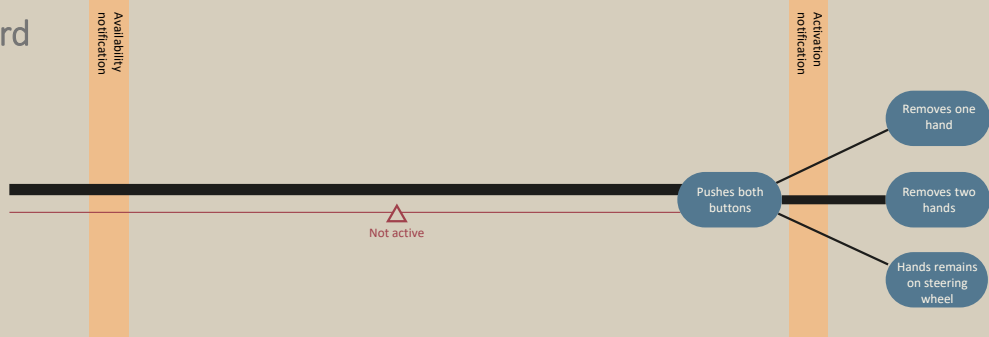
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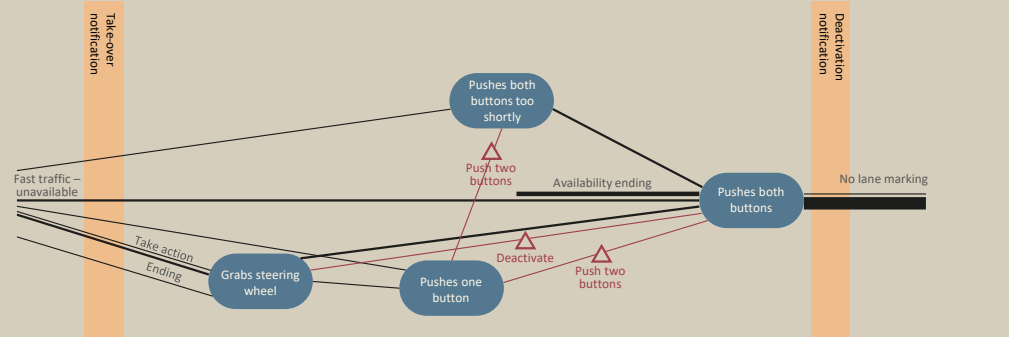
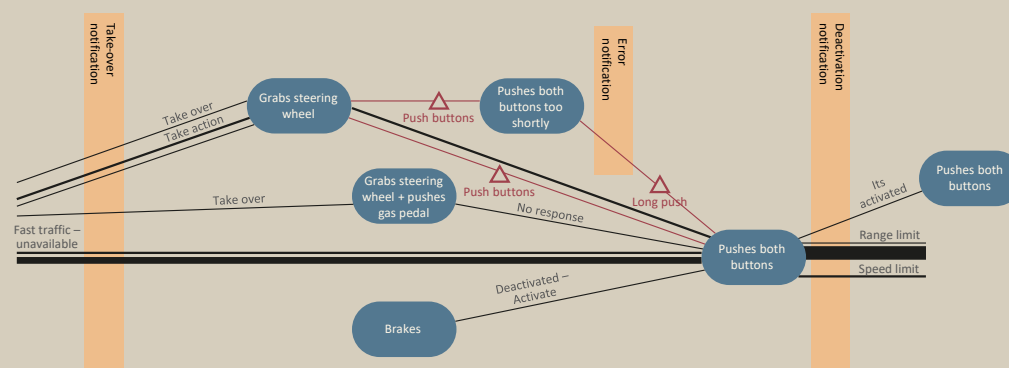
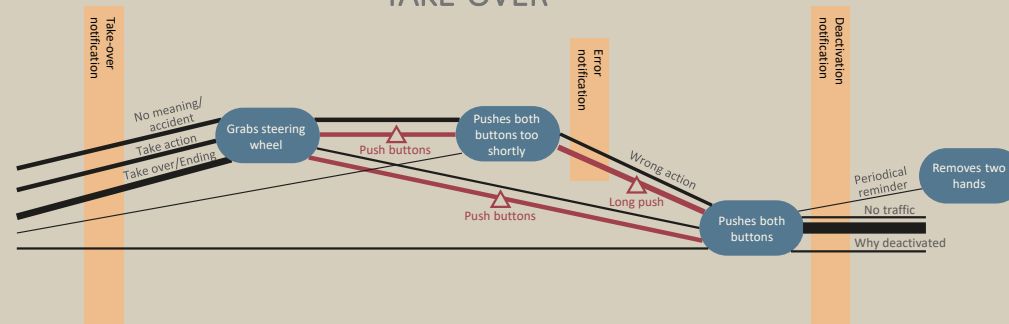
2nd



3rd

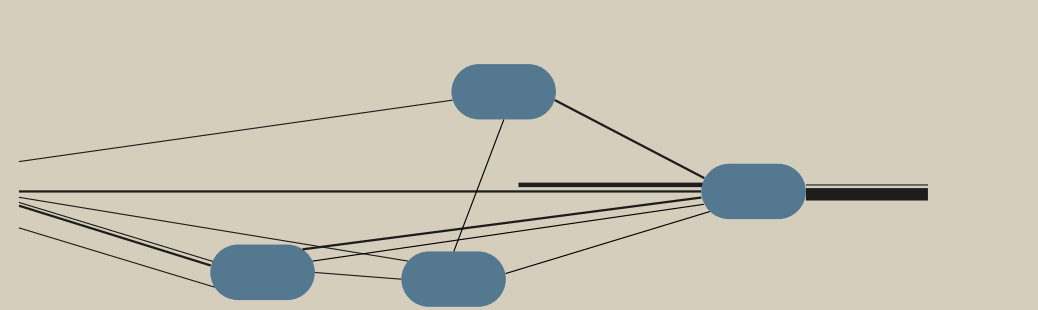
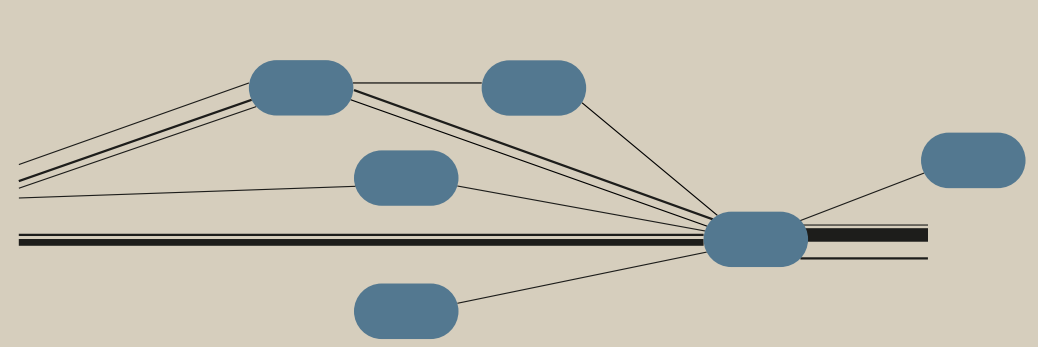
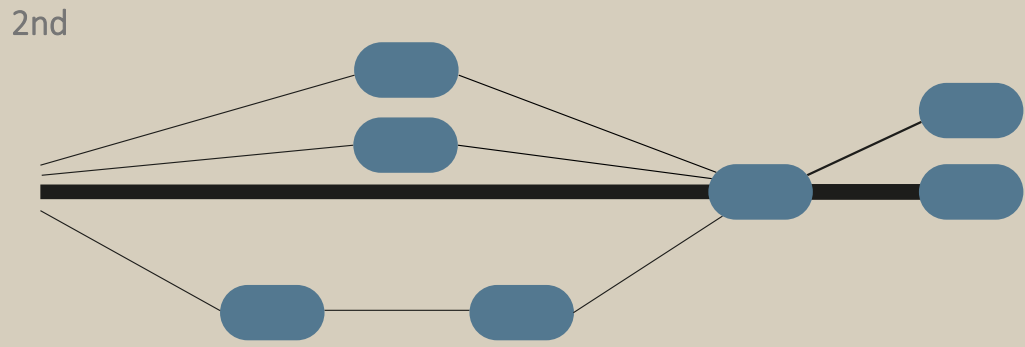
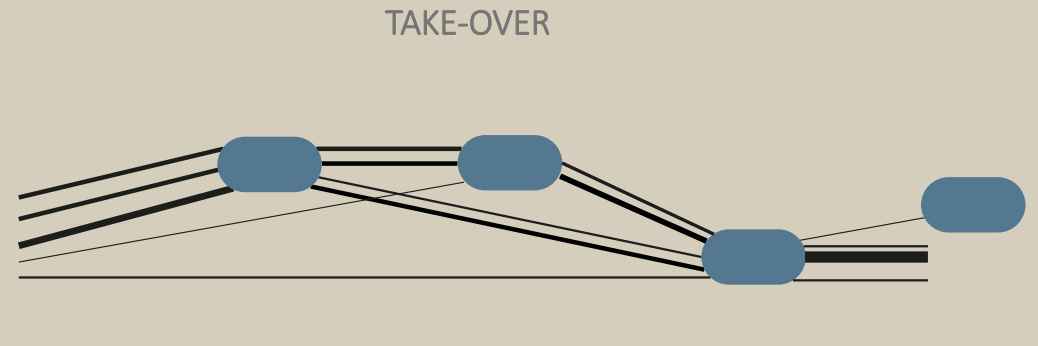
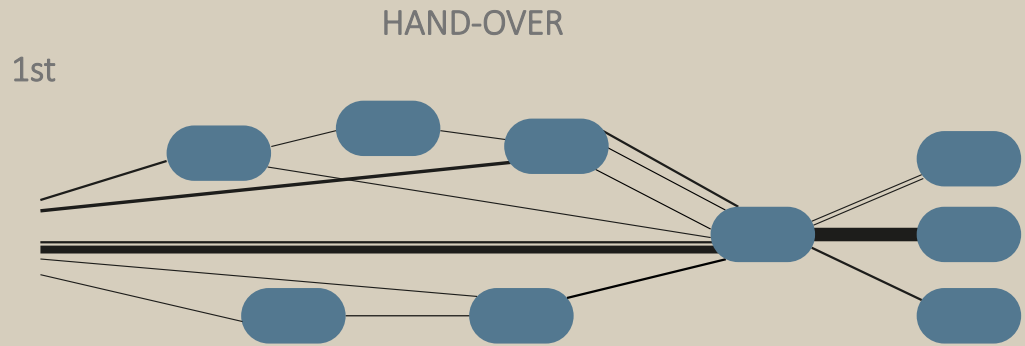


TAKE-OVER



USE CASE 1 – Understanding & Experience of Automated cars

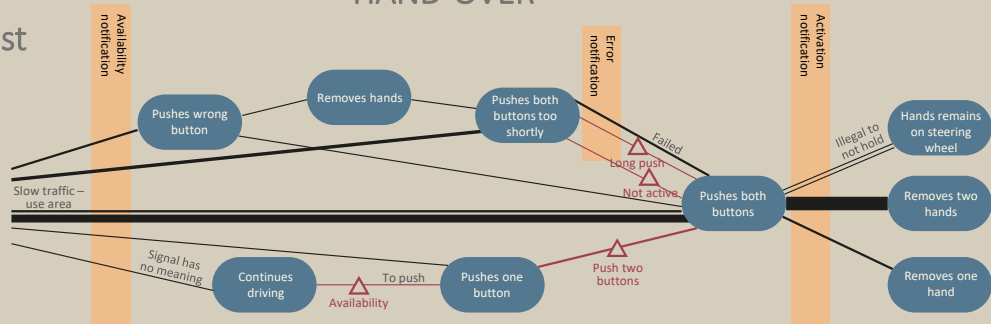
USE CASE 2 – Acceptance of Narrow Navigation System



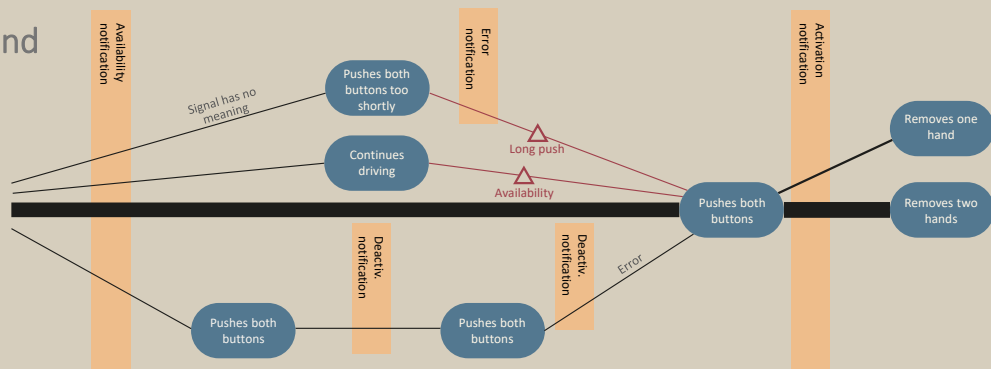
USE CASE 1 – Understanding & Experience of Automated cars

HAND-OVER

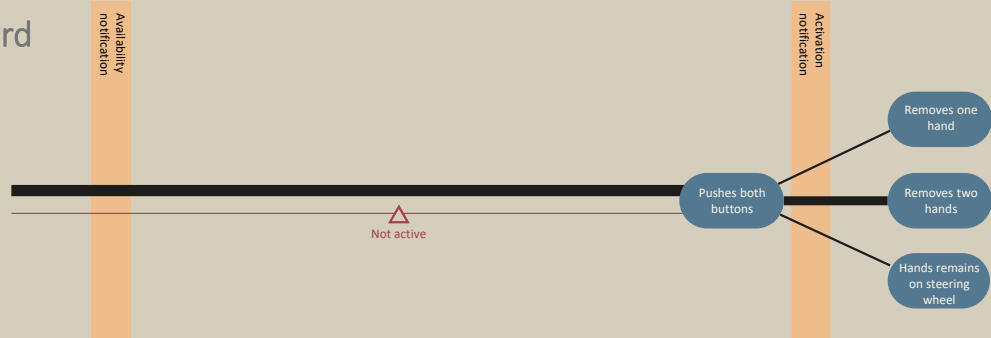
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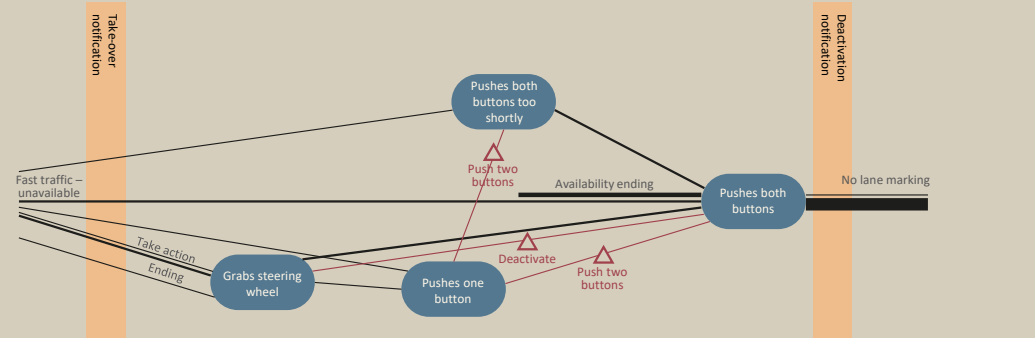
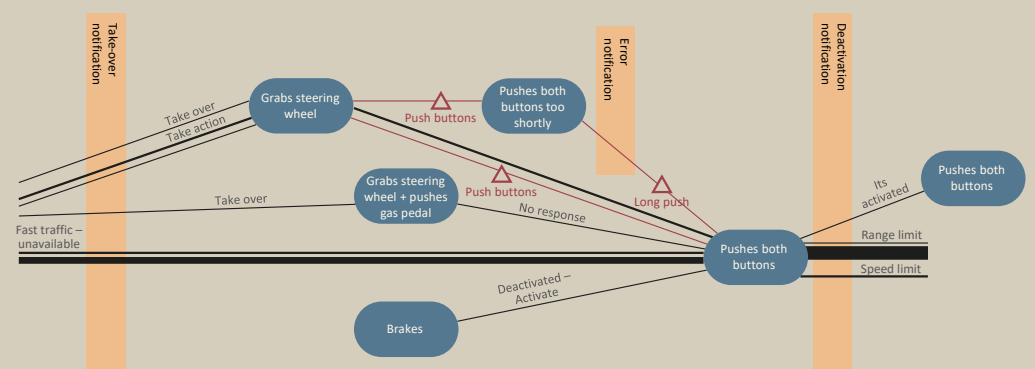
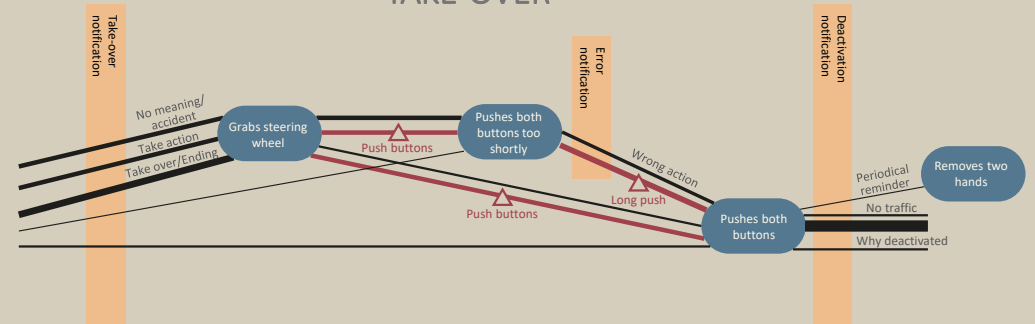
2nd



3rd

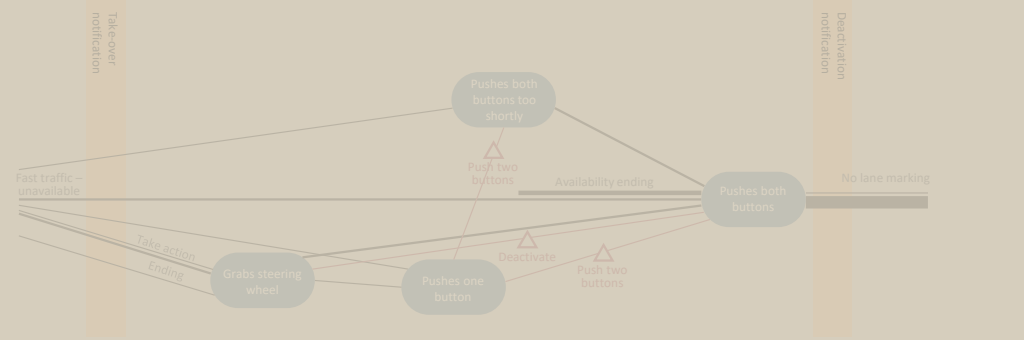
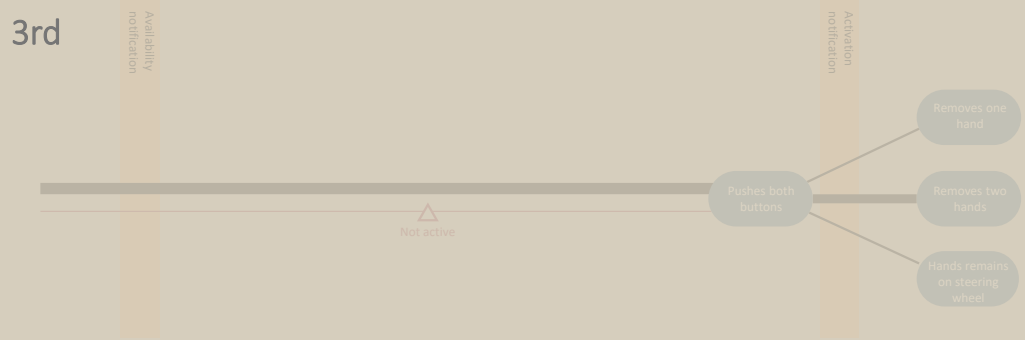
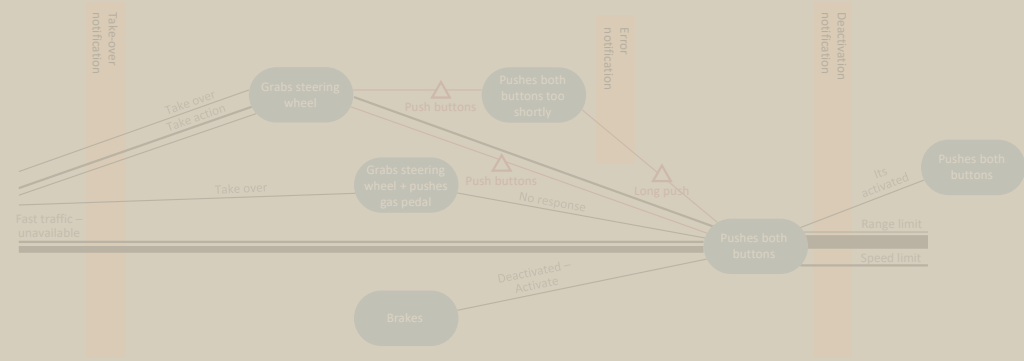
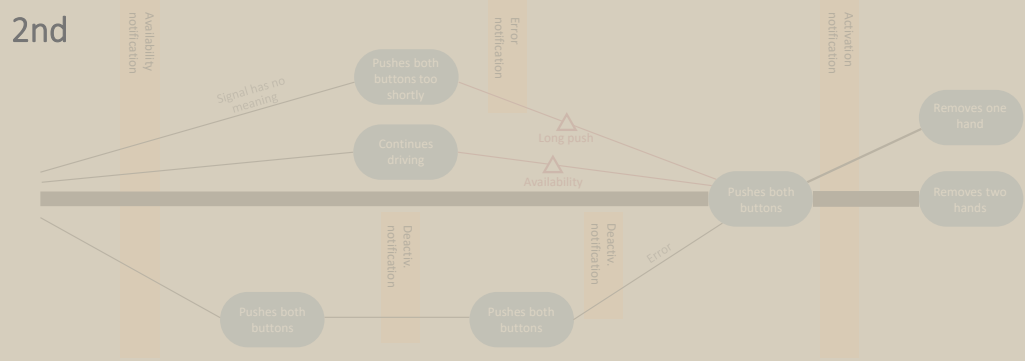
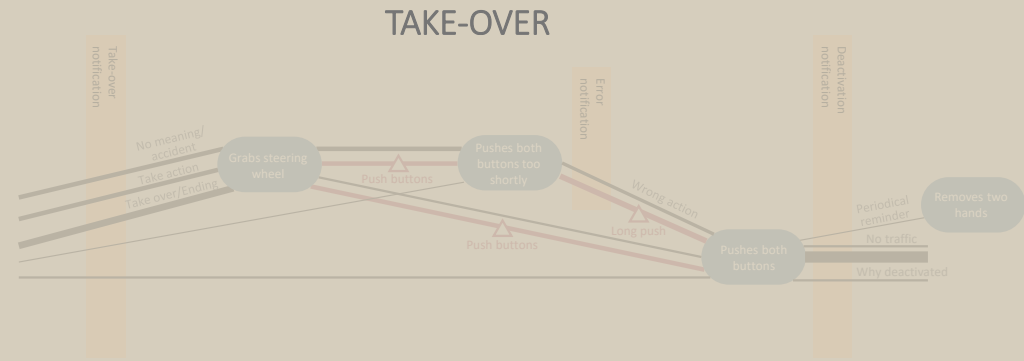
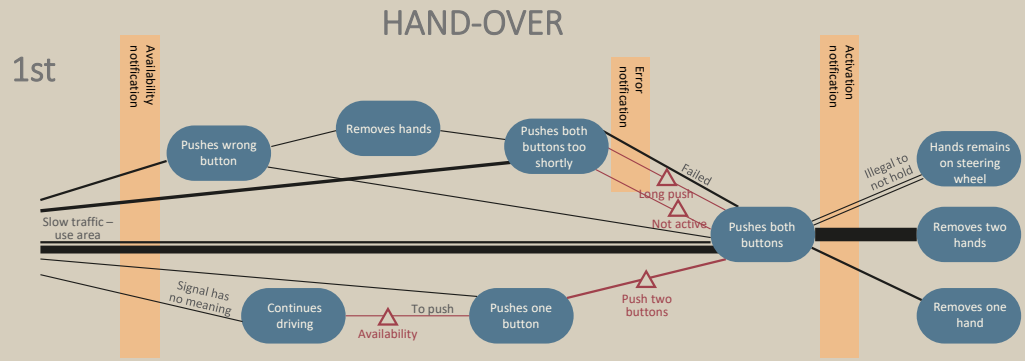


TAKE-OVER



USE CASE 1 – Understanding & Experience of Automated cars

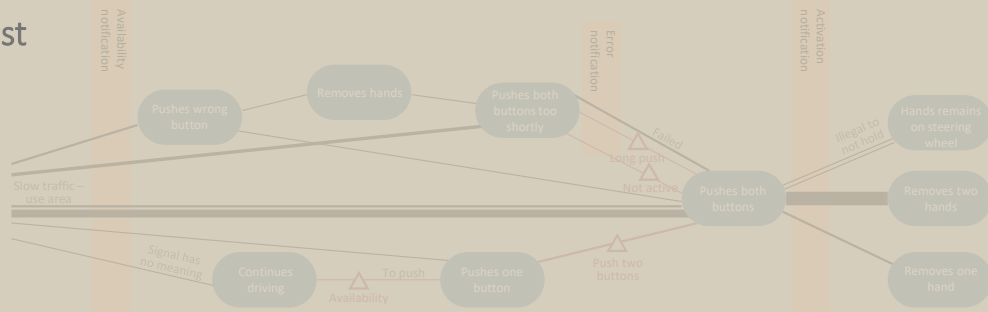
USE CASE 2 – Acceptance of Narrow Navigation System



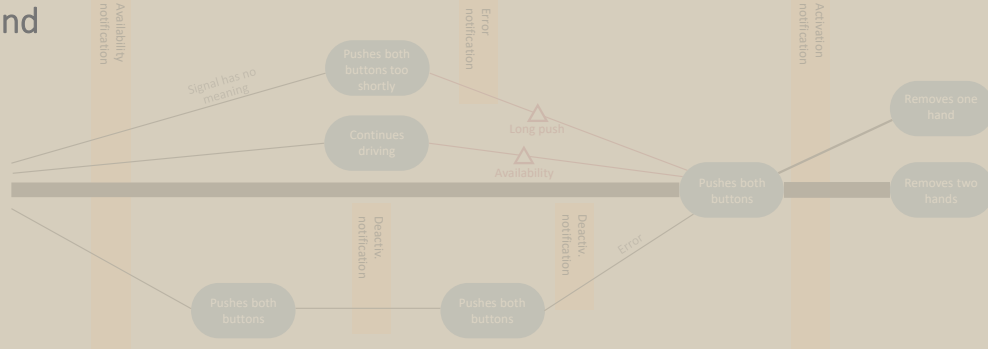
USE CASE 1 – Understanding & Experience of Automated cars

HAND-OVER

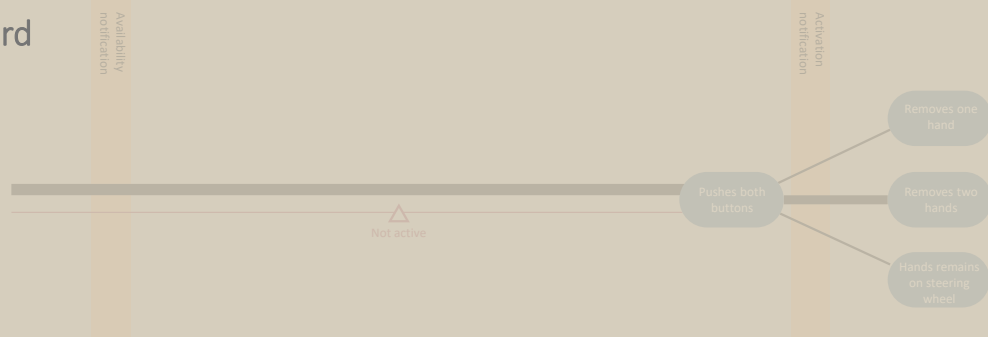
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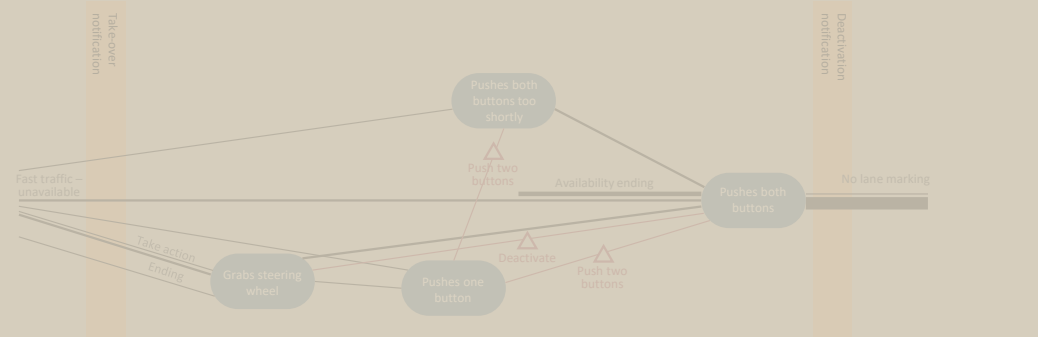
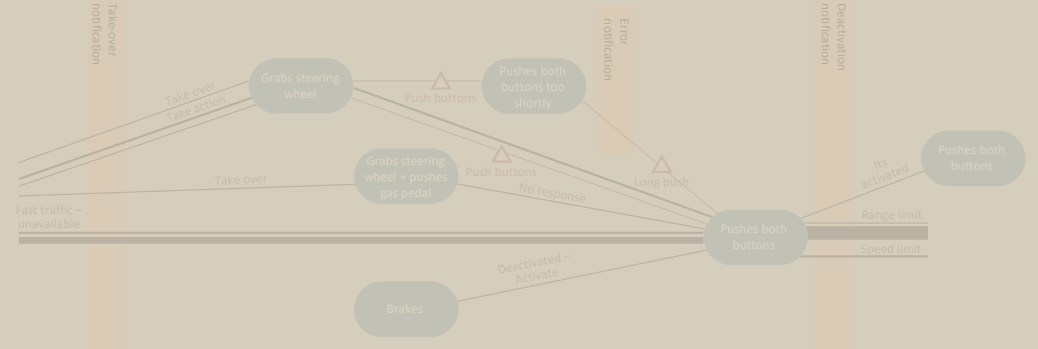
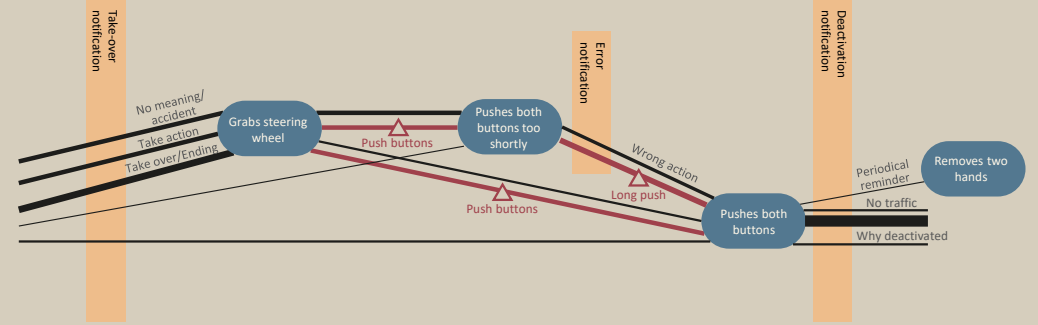
2nd



3rd



TAKE-OVER

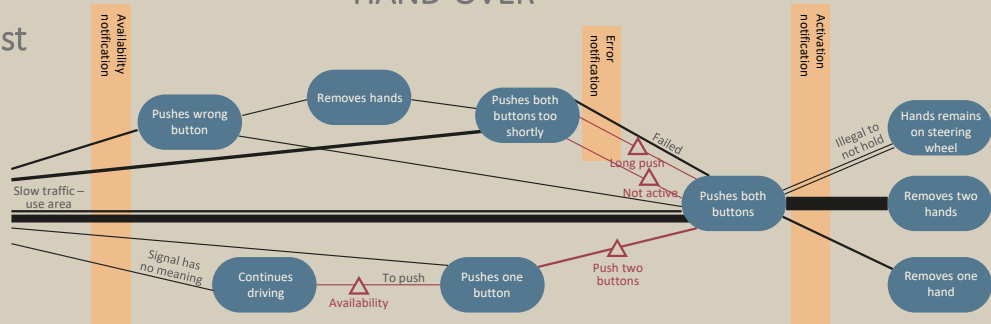


USE CASE 1 – Understanding & Experience of Automated cars

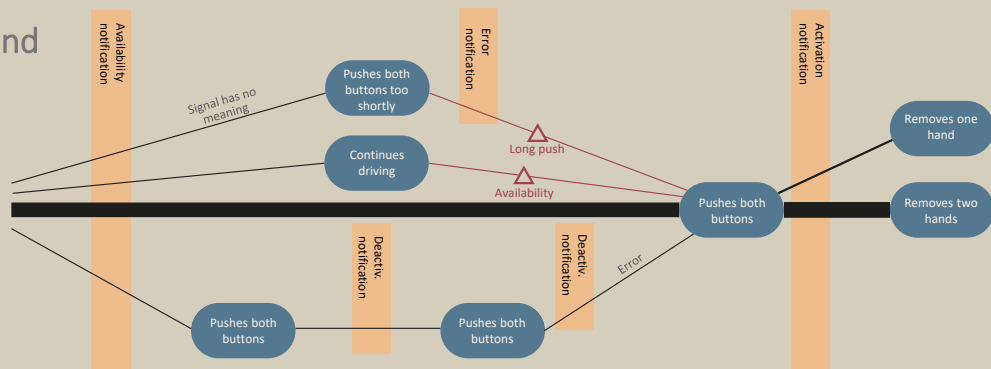
USE CASE 2 – Acceptance of Narrow Navigation System

HAND-OVER

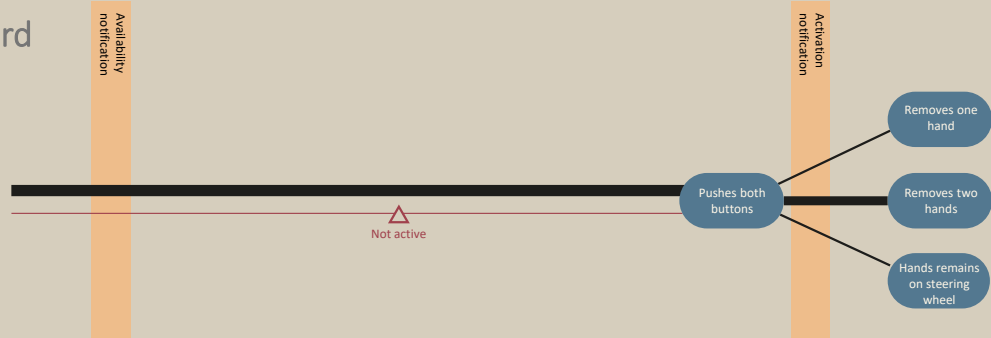
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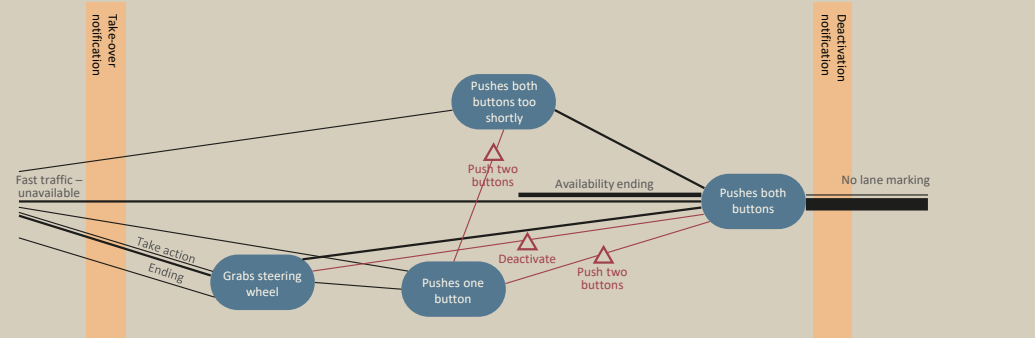
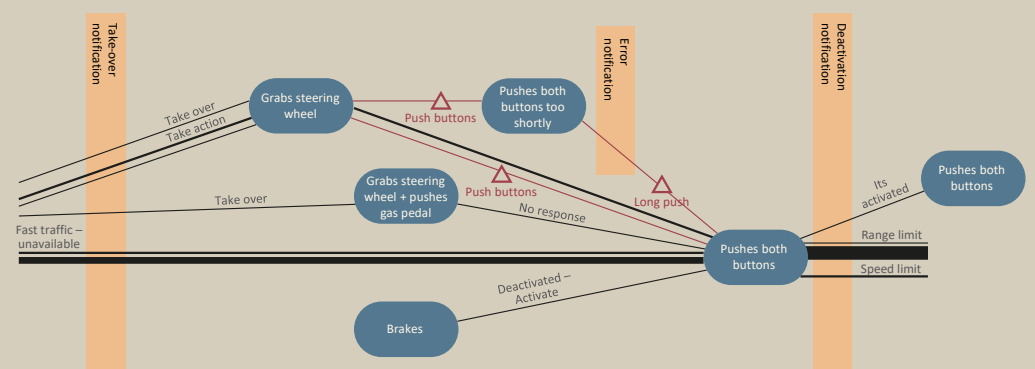
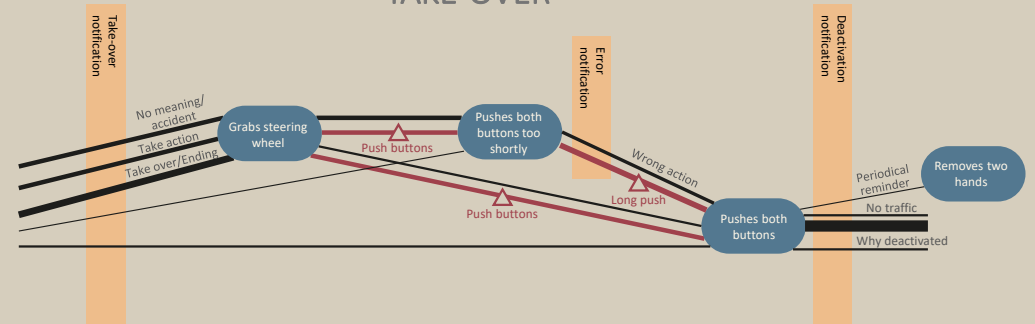
2nd



3rd



TAKE-OVER



USE CASE 1 – Understanding & Experience of Automated cars

USE CASE 2 – Acceptance of Narrow Navigation System

10

Bus drivers

5x5

Bus stops

NNS

On real roads

WORK SYSTEM

USE

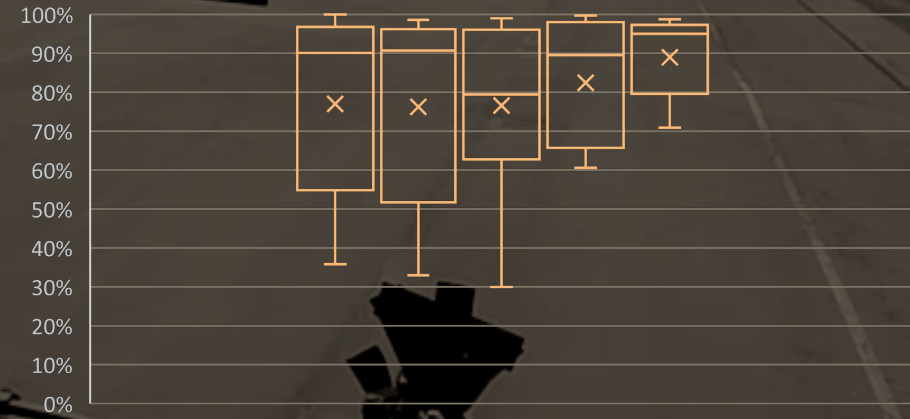
OPERATION

WORK SYSTEM

USE

OPERATION

No hands on steering wheel



“ When you activate this [NNS], and we’re not exactly correctly placed [in the lane] there was a significant jerk in the bus. ”

WORK SYSTEM

USE

OPERATION

“It makes things easier for bus drivers, much easier and simpler. Especially since the worst part is getting in and out of bus-stops.”

WORK SYSTEM

USE

OPERATION

“ It always comes back to the bus being so slow; in part, before you’ve even reached the bus-stops, when you drive into the stops and just before stopping. ”

THANK YOU FOR LISTENING



REACH OUT

More information:

- Novakazi, F., Johansson, M., Strömberg, H., & Karlsson, M. (2021). Levels of what? Investigating drivers' understanding of different levels of automation in vehicles. *Journal of Cognitive Engineering and Decision Making*, 15(2–3), 116–132. <https://doi.org/10.1177/15553434211009024>
- Johansson, M., Söderholm, M. M., Novakazi, F., & Rydström, A. (2021). The decline of user experience in transition from automated driving to manual driving. *Information*, 12(3). <https://doi.org/10.3390/info12030126>
- Johansson, M., Ekman, F., Karlsson, M., Strömberg, H., & Jonsson, J. (2022). ADAS at Work: assessing professional bus drivers' experience and acceptance of a narrow navigation system. *Cognition, Technology and Work*, 24, 625–639. <https://doi.org/10.1007/s10111-022-00704-4>
- Johansson, M., & Novakazi, F. (2023). Action-Meaning Networks - A Novel Methodology to Identify Unsafe Use of Driving Automation. *HUMANIST Conference*, 8, 28–34.