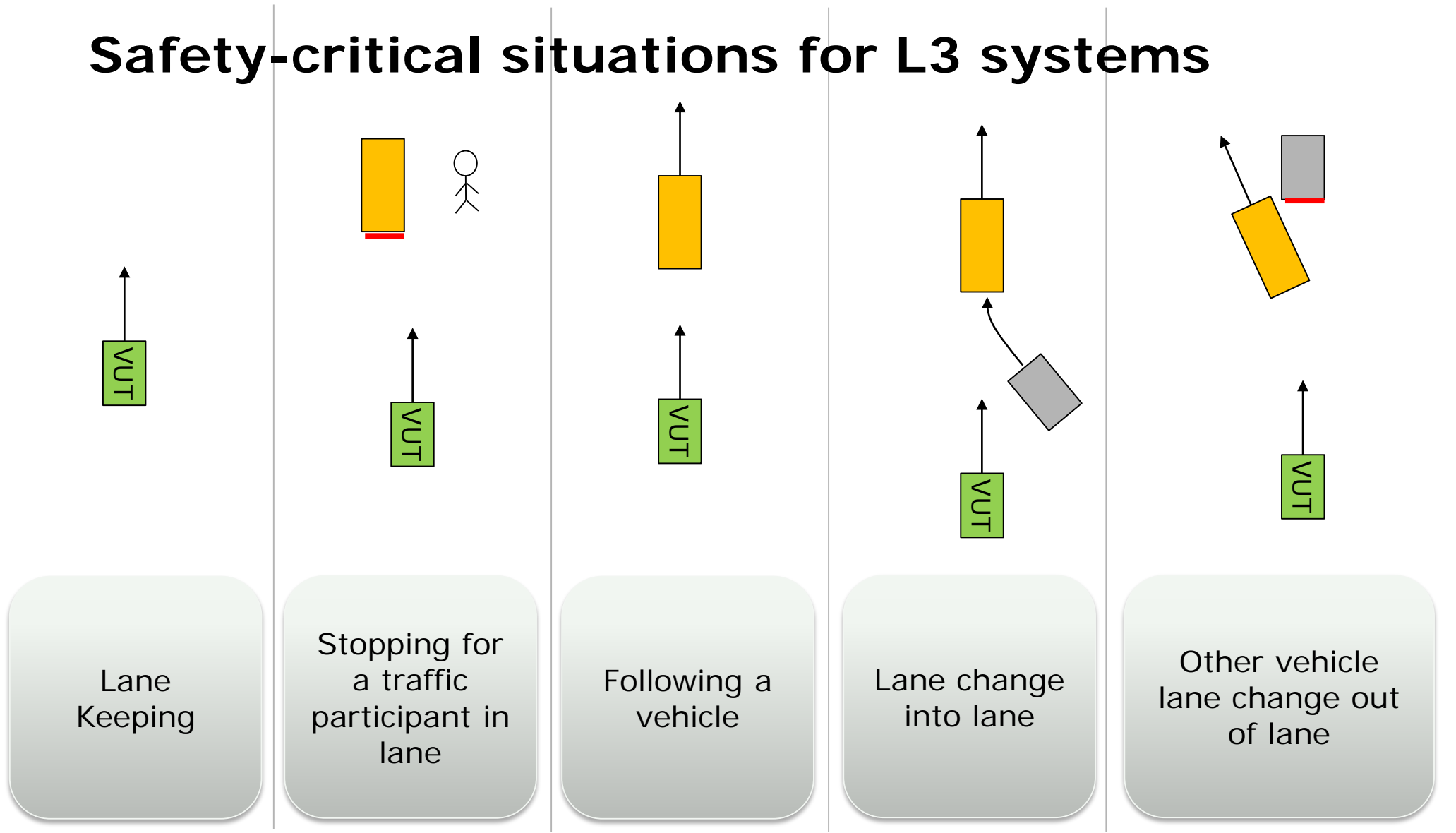


Submitted by Germany

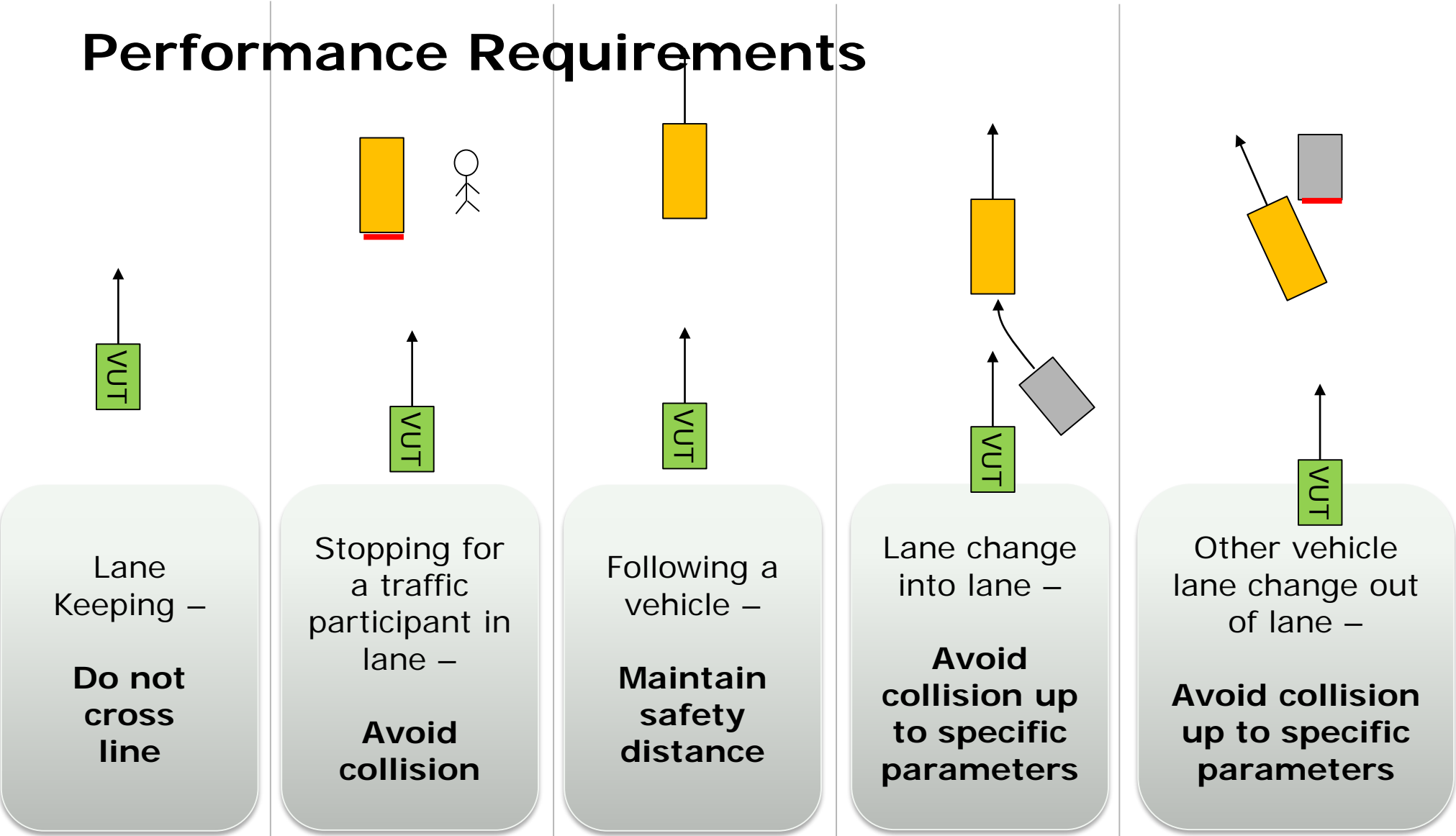
Informal document ACSF-24-13

Requirements for ALKS Low Speed

Safety-critical situations for L3 systems



Performance Requirements



Example: Performance Req's (Section 2.5)



Prevents ego-vehicle-caused accidents			
Situation	Regular maneuver [<4 m/s²]	Emergency maneuver [>4 m/s²]	>
Lane Following	Never leave lane	-	Do not change strategy (do the best avoidance not required)
Stopped traffic participant in lane (visible!)	Stop in all situations	-	
Following a lead vehicle	Maintain safety distance up to [4] m/s²	Avoid collision [4...10] m/s²	
Lane change into lane	Avoid collision vrel < [20] km/h, TTC > [2.0], vlat < [3.5] m/s	Avoid collision vrel < [20] km/h, TTC > [1.0], vlat < [3.5] m/s	
Lane change out of lane	Avoid collision vrel < [20] km/h, TTC > [2.0], vlat < [3.5] m/s	Avoid collision vrel < [20] km/h, TTC > [1.0], vlat < [3.5] m/s	

Test Concept (Annex X)



Random sequence and parameters!

1



Check of
lane
following
function

2

Rabbit



Check if VUT
stops for
stopped
vehicle

3

Rabbit



Check of
VUT
following
behavior

4

Rabbit



Check if VUT
allows cut-in
and adjusts
safety
distance

5

Rabbit



Check if VUT
adjusts safety
distance;
preparation for
phase 6

Summary - Performance and Validation Concept for ALKS

- ➔ Requirements for section 2.5 (main text for ALKS)
- ➔ Performance requirements for 6 situations
- ➔ Avoidance required
 - Parameter range for regular situations (ego $< 4 \text{ m/s}^2$)
 - Parameter range for emergency situations (ego $> 4 \text{ m/s}^2$)
- ➔ Maintain control strategy required but collisions acceptable
 - Parameters out of range
- ➔ Test concept without requirements in separate annex

Other Traffic – Test Track

