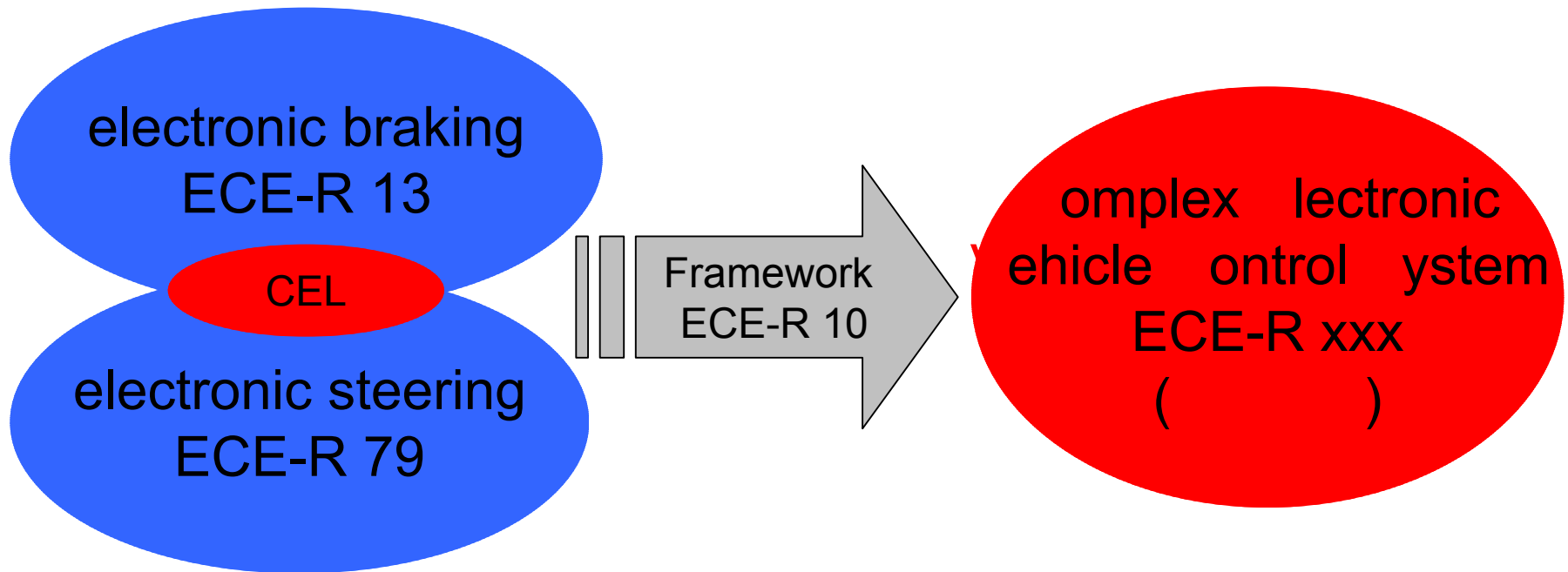


generic approach



generic approach

single vehicle systems

ECE-R 13
incl. CECS annex

ECE-R 79
incl. CECS annex

...
incl. CECS annex

complex vehicle systems

ECE-R xxx
CEVCS


Existing type approval

- network of electronic controlled:
 - steering systems
 - propulsion systems
 - brake systems
 - anti-theft systems
 - restraint systems

intention

- Increasing rate of CEVCS influencing vehicle's control

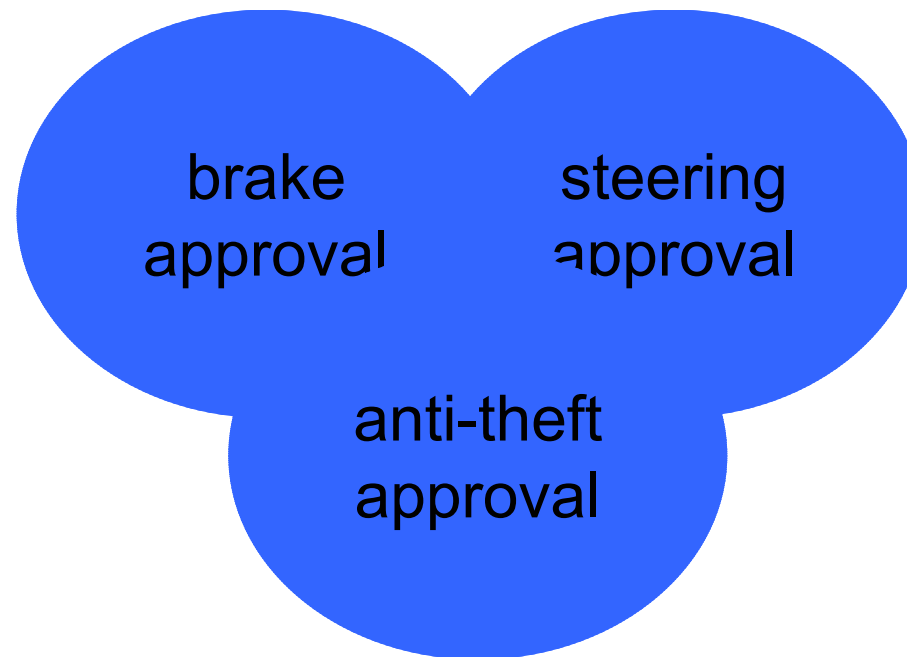
- autonomous cruise control
- autonomous park assistance
- lane keeping assistance
- enhanced stability control
- active pre-crash system
- ...



Systems not covered by type approval

⇒ suitable type approval ?

engineering process



- ⇒ mutual influence of physical data, priorities, status info
- ⇒ failure mode analysis of the entire system

existing type approval process

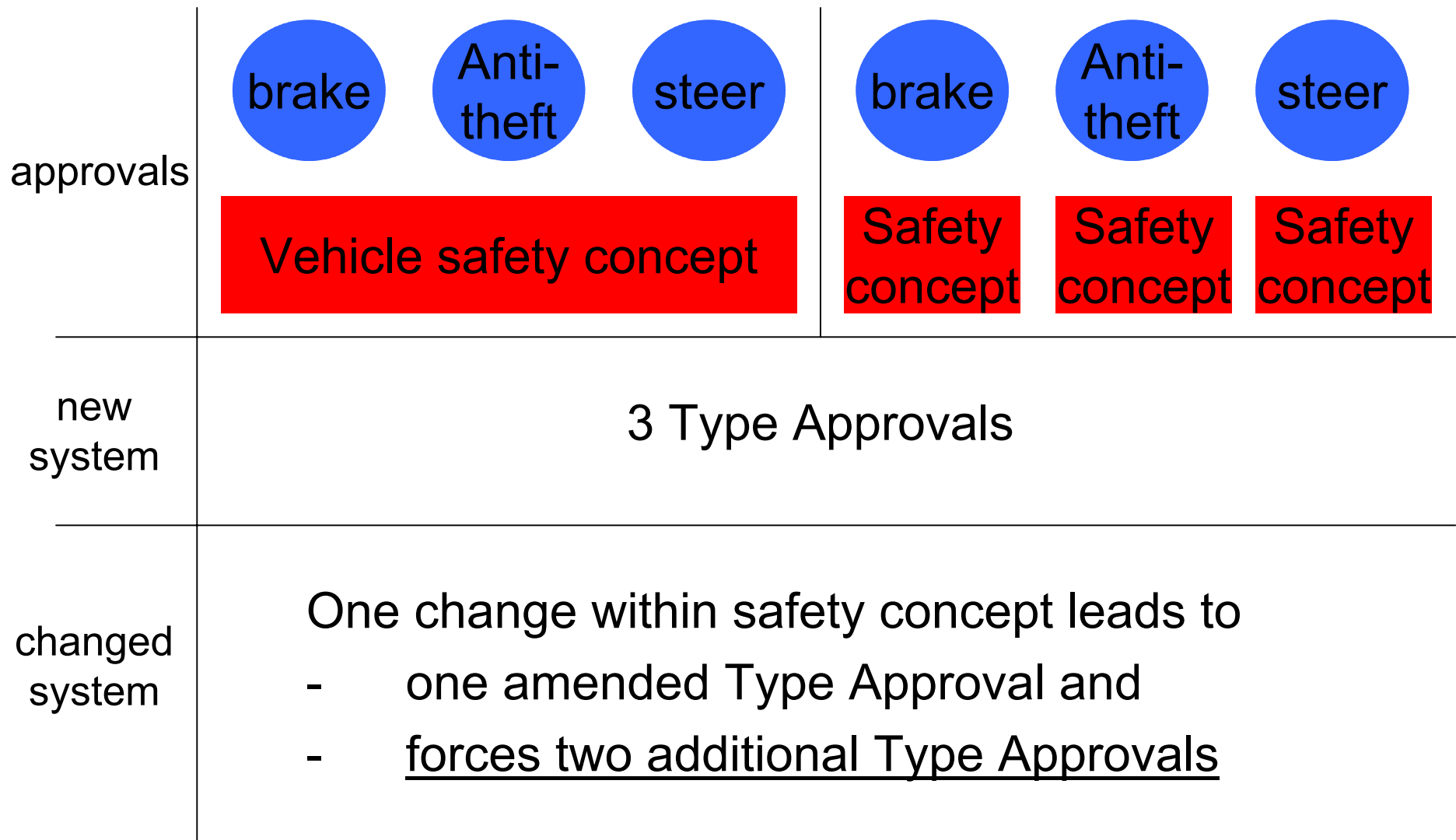
brake
approval

anti-theft
approval

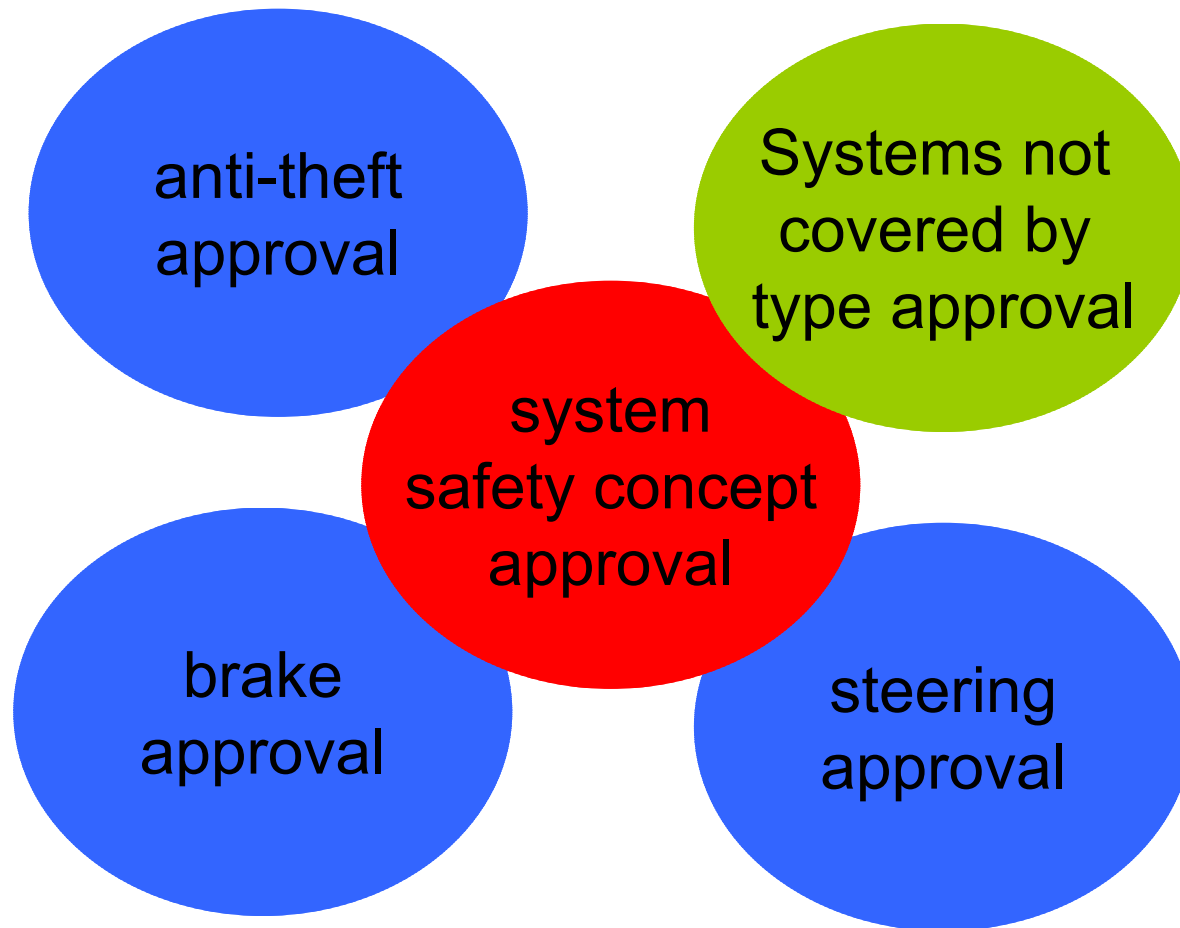
steering
approval

safety concept for vehicle control system

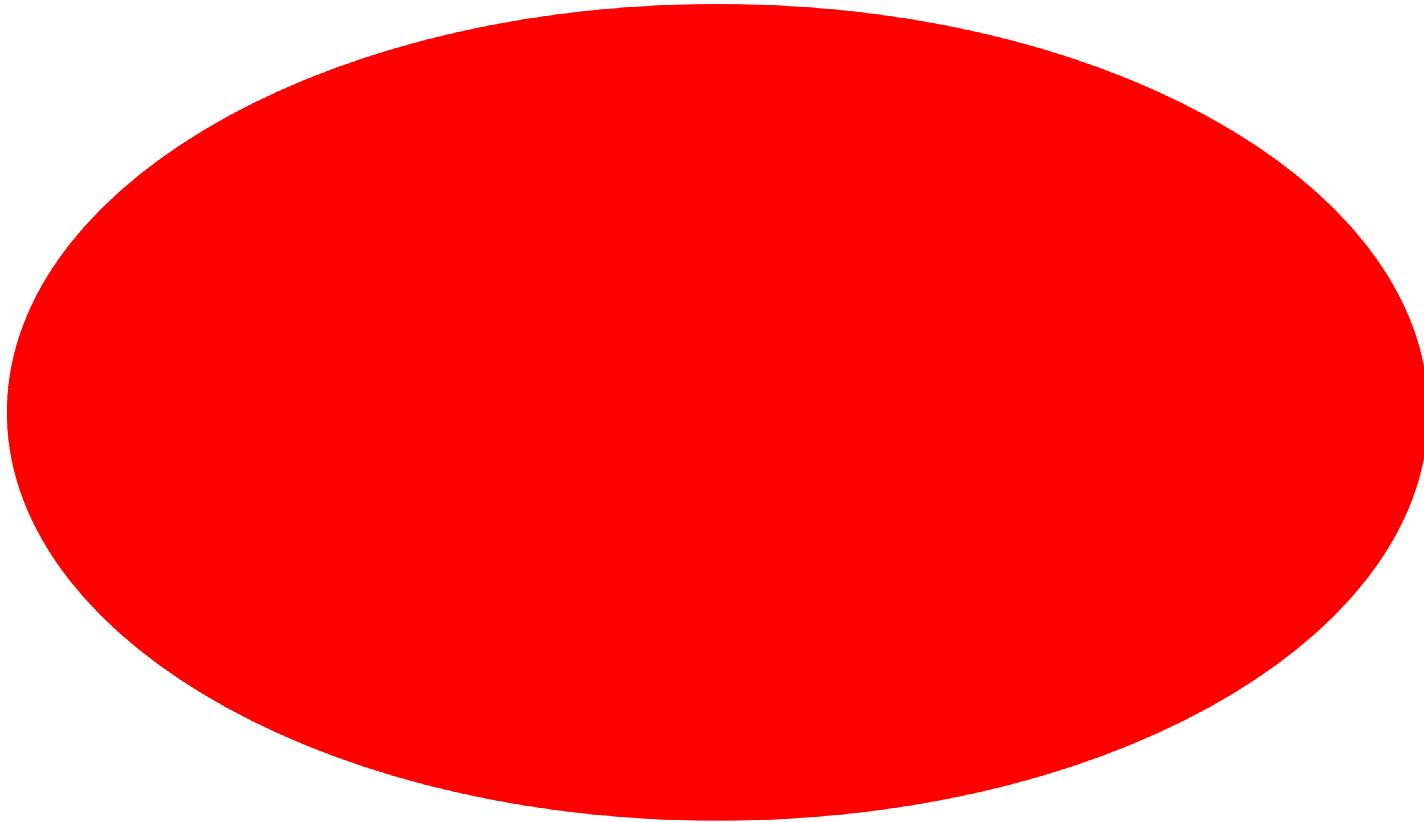
existing type approval process



ECE-R xxx CEVCS



ECE-R xxx CEVCS



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ECE-R xxx CEVCS

- this approach
 - assesses the vehicle safety system for CEVCS
 - avoids multiple assessments
 - keeps CEL annexes (ECE-R 13, 13H, 79, ...) to reduce type approval efforts for single systems
 - is based on voluntary usage
 - addresses system related approval (different vehicles, models or manufacturers)