




## **Identify and manage your safety critical components for improving the safety in railways**

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# Problem statement

- For Many years Recurrently, stakeholders and authorities wanted lists of safety critical components. Also, after catastrophic accidents.
- But: No consensus on the meaning of 'CRITICAL' Different attempts led to lists covering ...ALL COMPONENTS of vehicle with the result of "if all is Critical, nothing is Critical" Consensus on Criticality of components linked to vehicle movement (axle, wheel,...), but substantially "obvious". No added value
- However: Everyone conscious that CRITICAL components mean strengthened rules for operation and maintenance. Criticality depends on the vehicle design and the context of operations. Example: An external door locking system may be critical in a specific design and not in another one depending on reliability, availability or maintainability and operational context.



# Definition Terminology

Agency regulation

Regulation (EU) 2016/796

Safety directive

Interoperability directive

Directive (EU) 2016/797

TSIs revision

Directive (EU) 2016/798

Commission Implementing  
Regulation (EU) 2019/776

ECM Regulation

Commission Implementing Regulation (EU)  
2019/779 of 16 May

***Safety critical components*** are ***components*** for which  
a ***single failure*** has a ***credible potential*** to lead directly  
to a ***serious accident*** resulting in stated ***consequences***











Foto 1. Aksel 3 og 4 på havareret vogn efter standsning i Ejby.



Foto 1. Det havarerede hjul fotograferet efter standsning i Nyborg d. 09-09-2023. Kilde: DSB



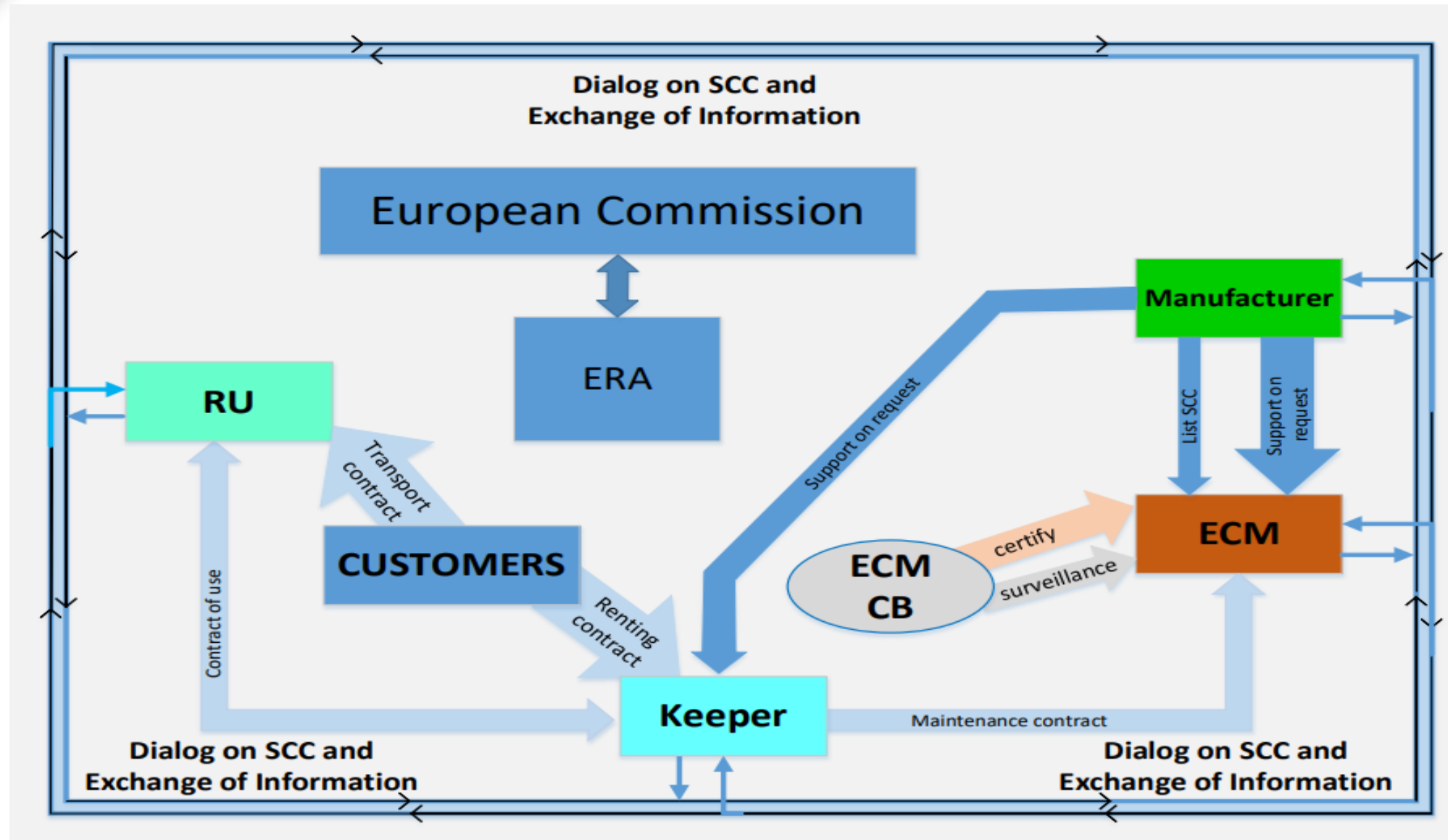




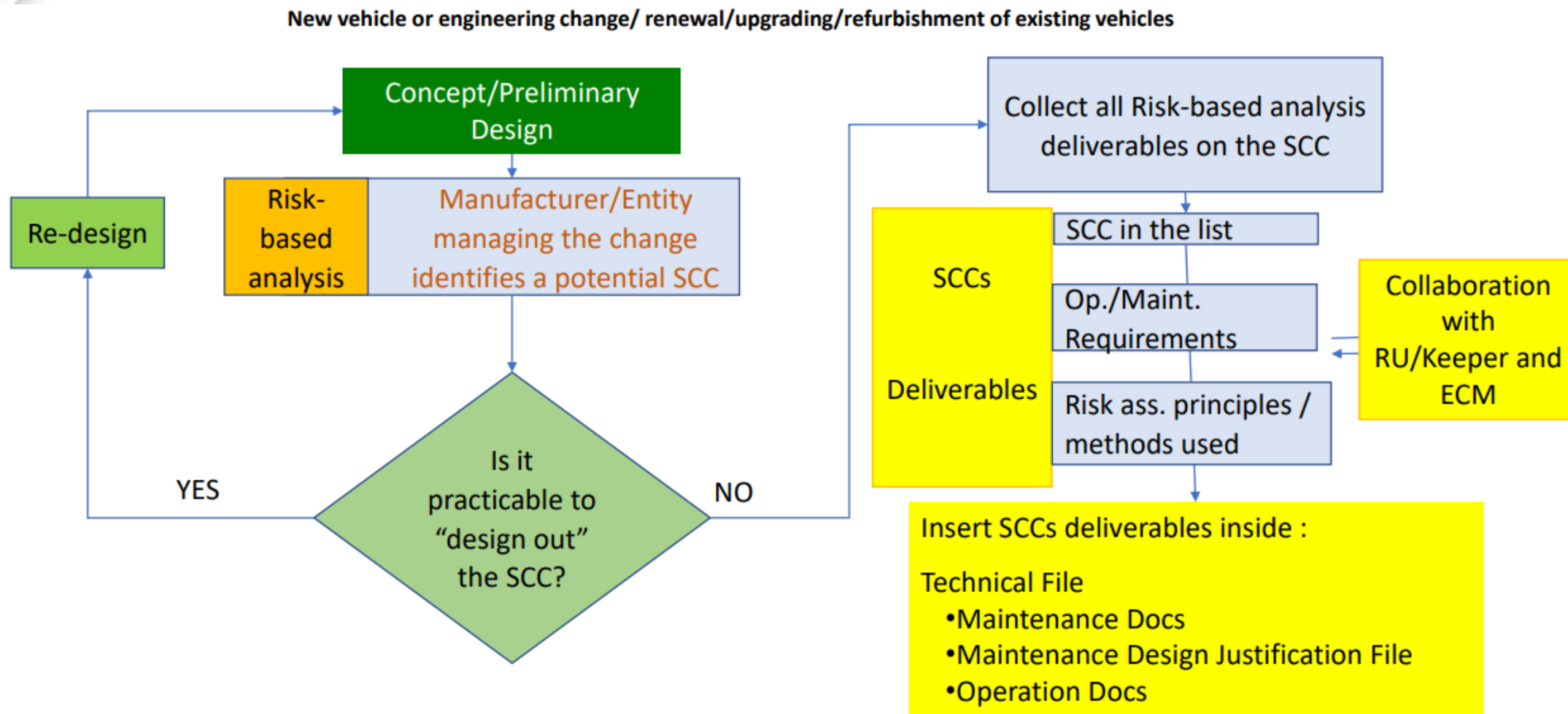








# Identification process Perspective from Manufacturer/Entity managing the change







# CONCLUSION

- Collaboration between manufacturers, ECMs and Rus
- Risk-based process for defining criticality and identifying safety critical components
- Outcomes of the process are list that must be monitored for confirmation.
- Traceability of components, maintenance records, criticality evaluation/decision based on data provided by manufacturers and RUs under the responsibility of ECMs (system of maintenance – configuration file).
- Concept of ‘design authority’ but limited to safety critical components.

# More info.....

Watch the recording of the webinar



[FY22Q4\\_Acrobat\\_DC\\_Create-Protect\\_FR \(youtube.com\)](#)



**CEN/TR 17696**  
*Vehicle Maintenance  
Guide for identification and  
management of Safety  
Critical Components for  
railway vehicles*

TECHNICAL REPORT  
RAPPORT TECHNIQUE  
TECHNISCHER BERICHT

**FINAL DRAFT**  
**FprCEN/TR 17696**

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English Version

Railway applications - Vehicle Maintenance - Guide for  
identification and management of Safety Critical  
Components for railway vehicles

Applications Ferroviaires - Maintenance des véhicules -  
Guide pour l'identification et le management des  
Composants Critiques de Sécurité pour les véhicules  
ferroviaires

Bahnwendungen - Instandhaltung von  
Eisenbahnfahrzeugen - Sicherheits-kritische Bauteile

This draft Technical Report is submitted to CEN members for Vote. It has been drawn up by the Technical Committee CEN/TC 256.



**Thank you for  
your attention!**

