Road Vehicles' Life-Cycle

Mapping of Relevant Standards and Regulations for Automotive Cybersecurity

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Automotive Industry
Big Picture

Digital

Connected

Autonomous

⇨ **Security by Design & Privacy by Default**

Global Automotive Standards and Regulations
Requirements to Address Cybersecurity

UN / WP.29 – World Forum for Harmonization of Vehicle Regulations
- Draft Proposal to introduce a Regulation on Cyber Security and Software Updates

ISO Standardization on Cybersecurity
- ISO/SAE 21434 Road vehicles – Cybersecurity Engineering
- ISO 24089 Software Updates Engineering

National Discussions
- (D) VDA QMC
- (UK) BSI PAS 1885:2018
- …

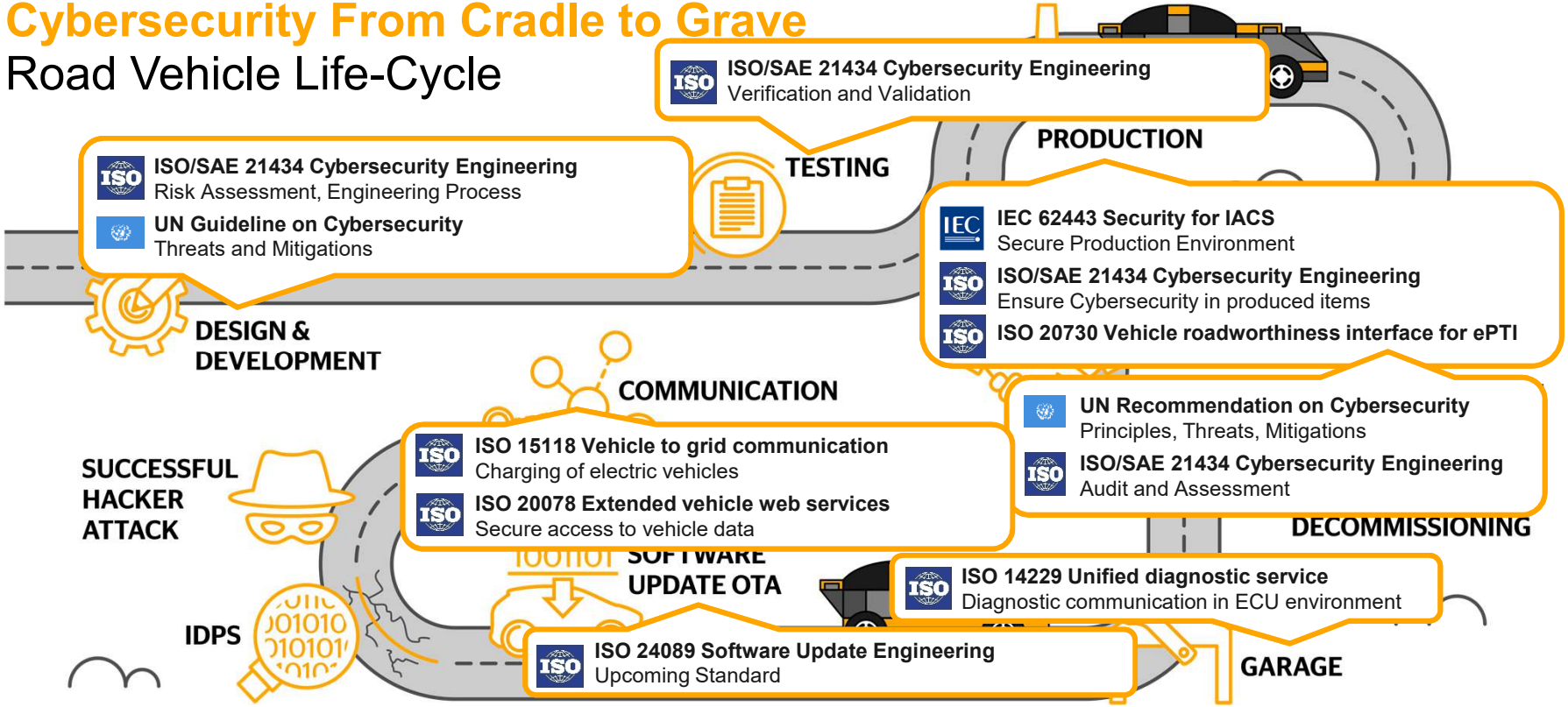
European Union
- Cybersecurity Act
- General Data Protection Regulation (EU) 2016/679
- NIST Directive
- C-ITS Delegated Act

China
- Cybersecurity Law
- Draft Encryption Law
- SAC/TC 114/SC 34/WG Cyber

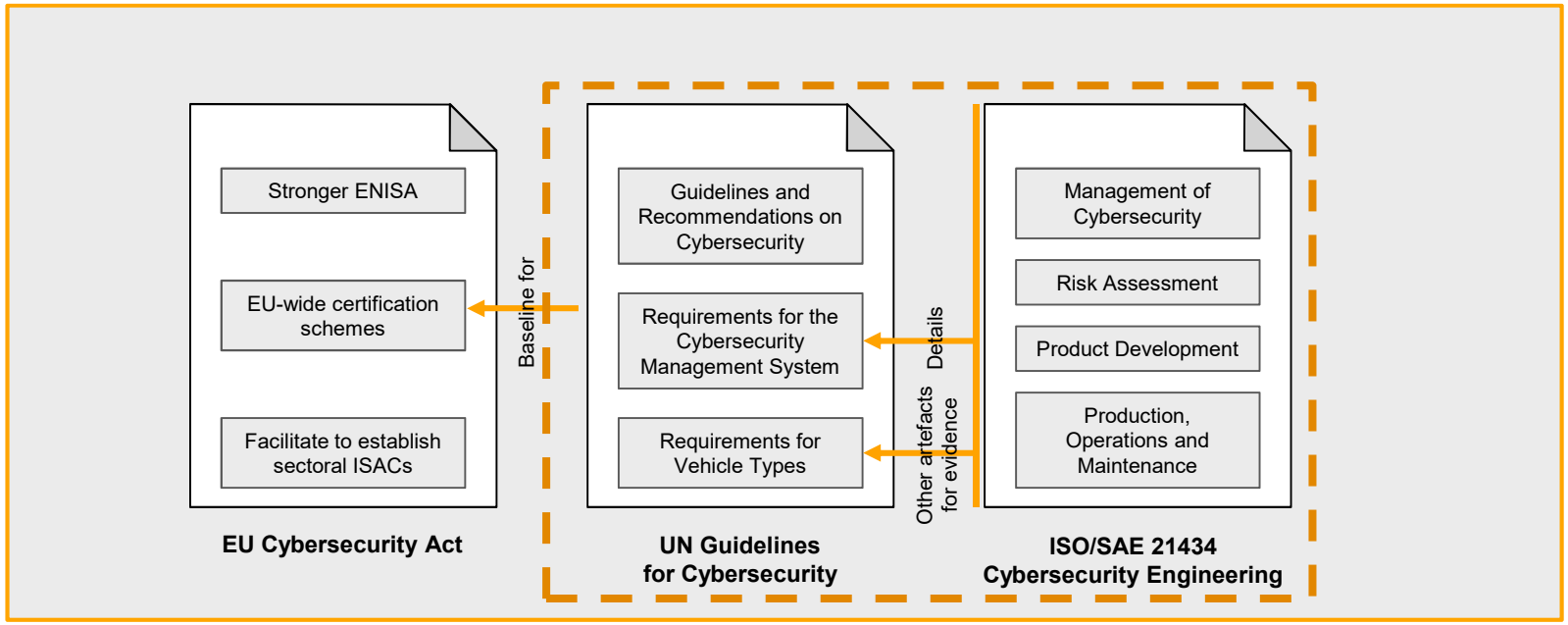
Regulation American Market
- NHTSA Cybersecurity Guidelines
- Draft SELF DRIVE Act
- Draft AV START Act

Cybersecurity From Cradle to Grave

Road Vehicle Life-Cycle

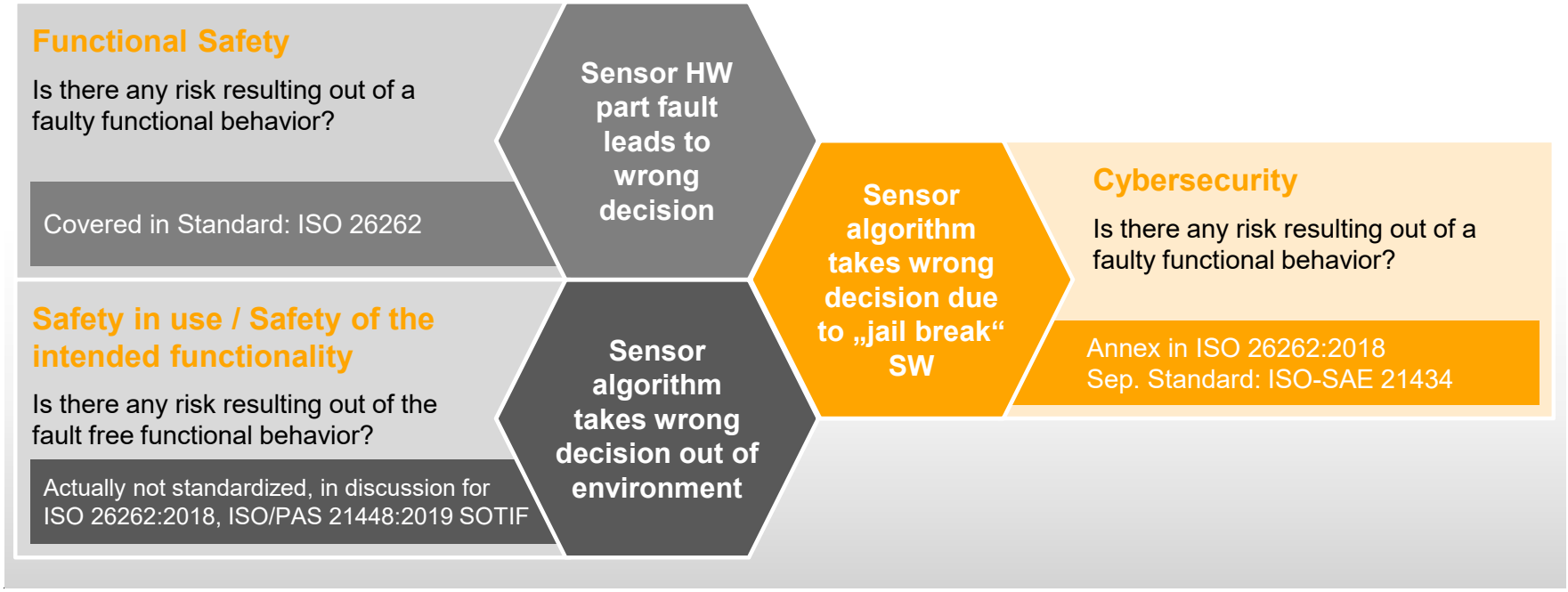


Cybersecurity in Automotive
Relation of Current Activities



ISO/SAE 21434 Road vehicles – Cybersecurity Engineering

Engineering Standards in the Automotive E/E Environment



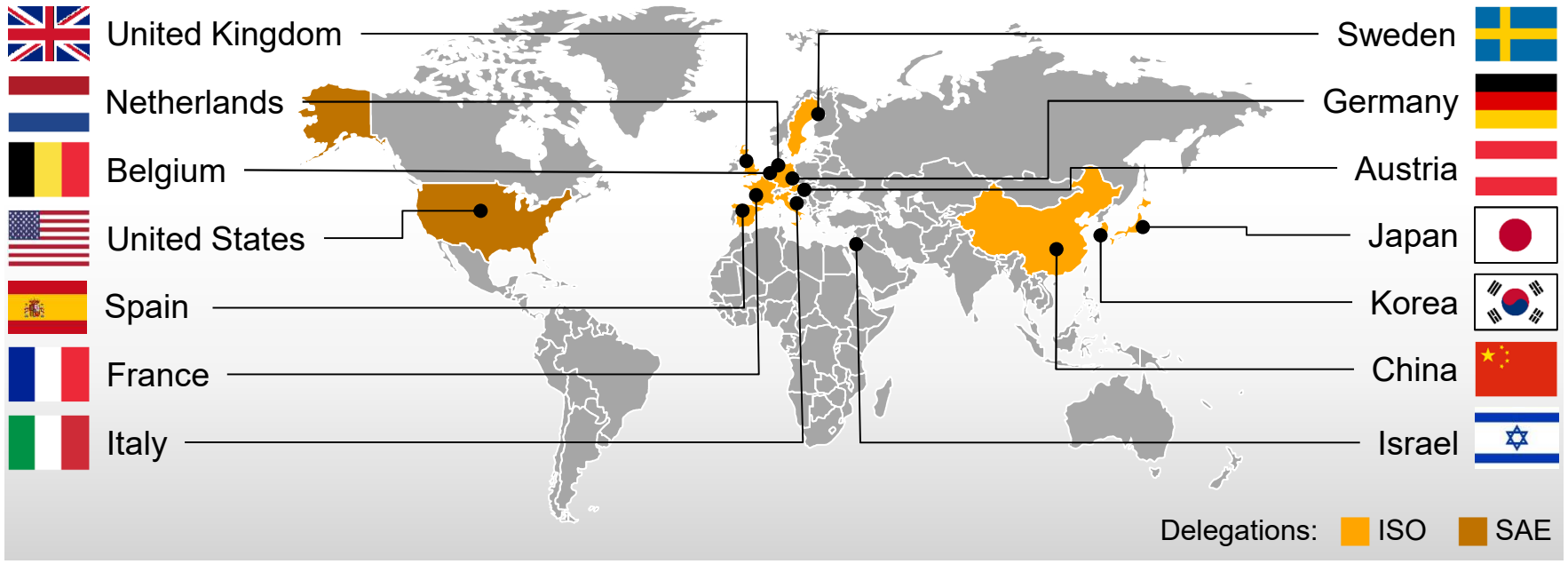
ISO/SAE 21434 Road vehicles – Cybersecurity Engineering
Goals of the Standardization Project

The future standard shall…

1. Give uniform definition of notions relevant to automotive security
2. Specify minimum requirements on security engineering process and activities and define – wherever possible – criteria for assessment
3. Describe the state of the art of security engineering in automotive E/E development
4. Enable better solutions due to harmonized value-chain
5. Facilitate bi-directional communication along the supply-chain

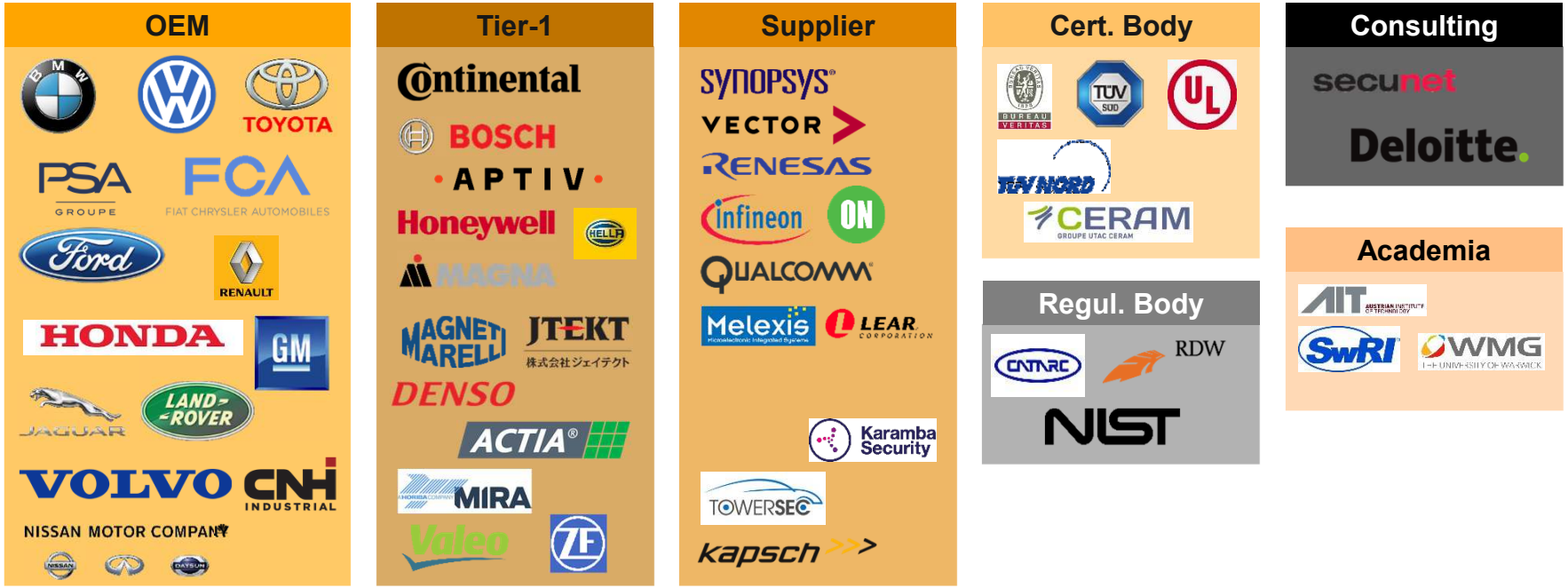
ISO/SAE 21434 Road vehicles – Cybersecurity Engineering

National Delegations



ISO/SAE 21434 Road vehicles – Cybersecurity Engineering

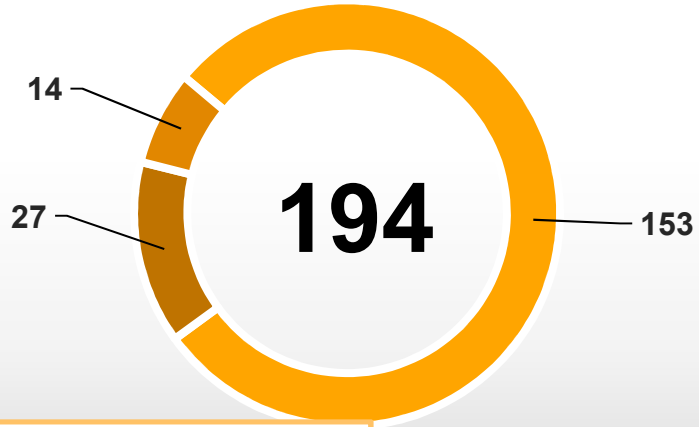
Involved Organizations

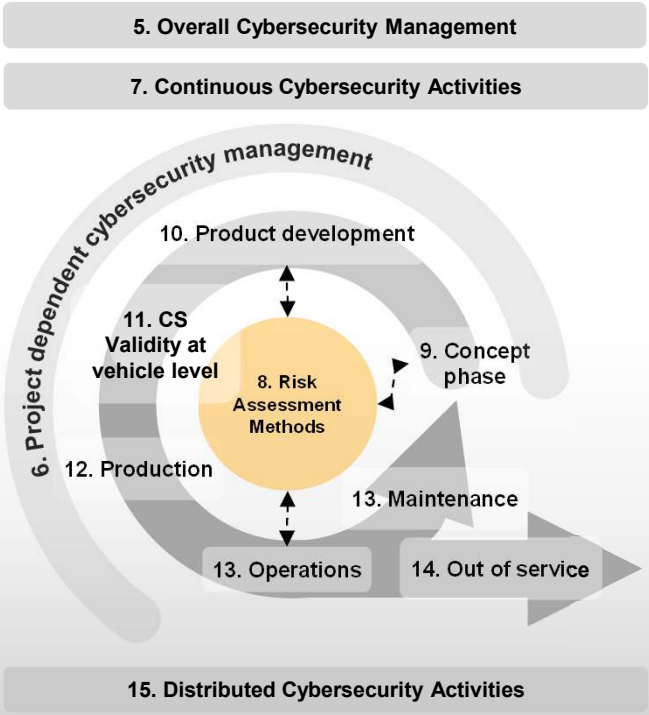


ISO/SAE 21434 Road vehicles – Cybersecurity Engineering

Outlook to the Content

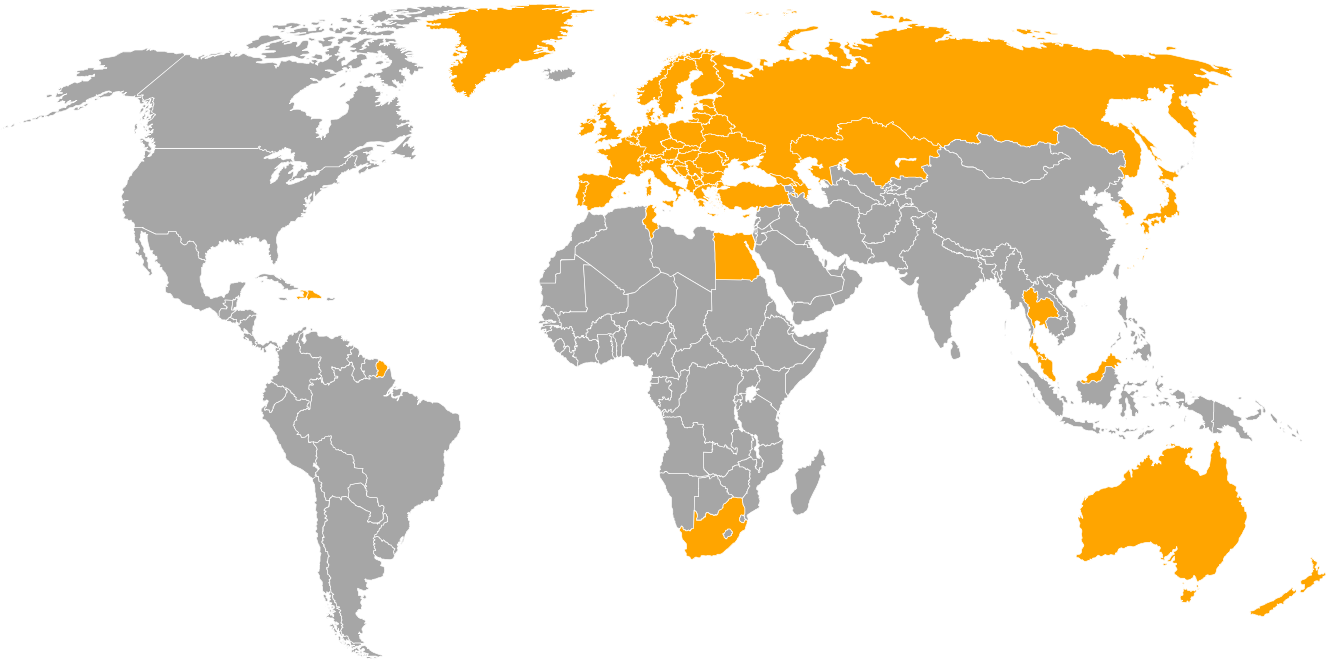
Clause Types





World Forum for Harmonization of Vehicle Regulations

UNECE WP.29 | 1958 Agreement Contracting Parties



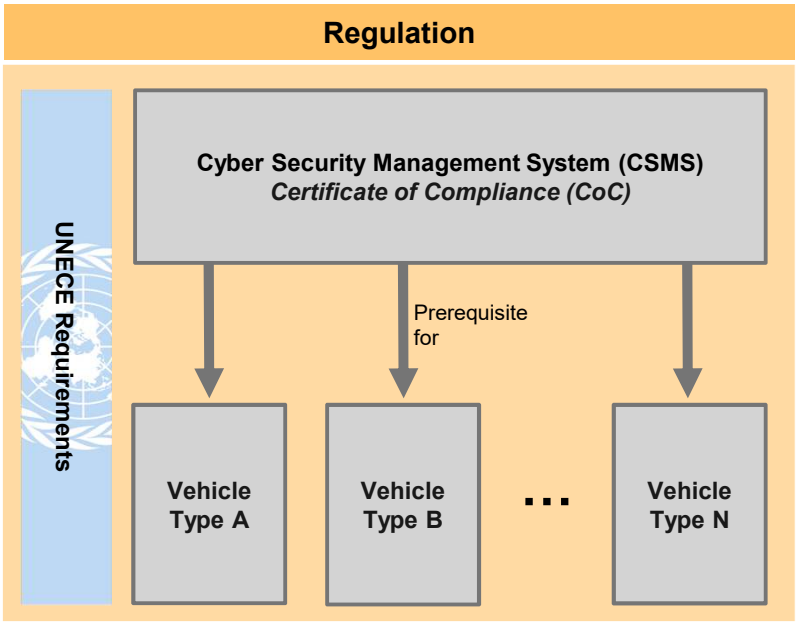
UN Regulation on Cybersecurity
Backgrounds

- Regulation requires that a manufacture has a Cyber Security Management System (**CSMS**) in place which covers the phases of

  (1) Development,
  (2) Production and
  (3) Post-production (Maintenance → decommissioning)

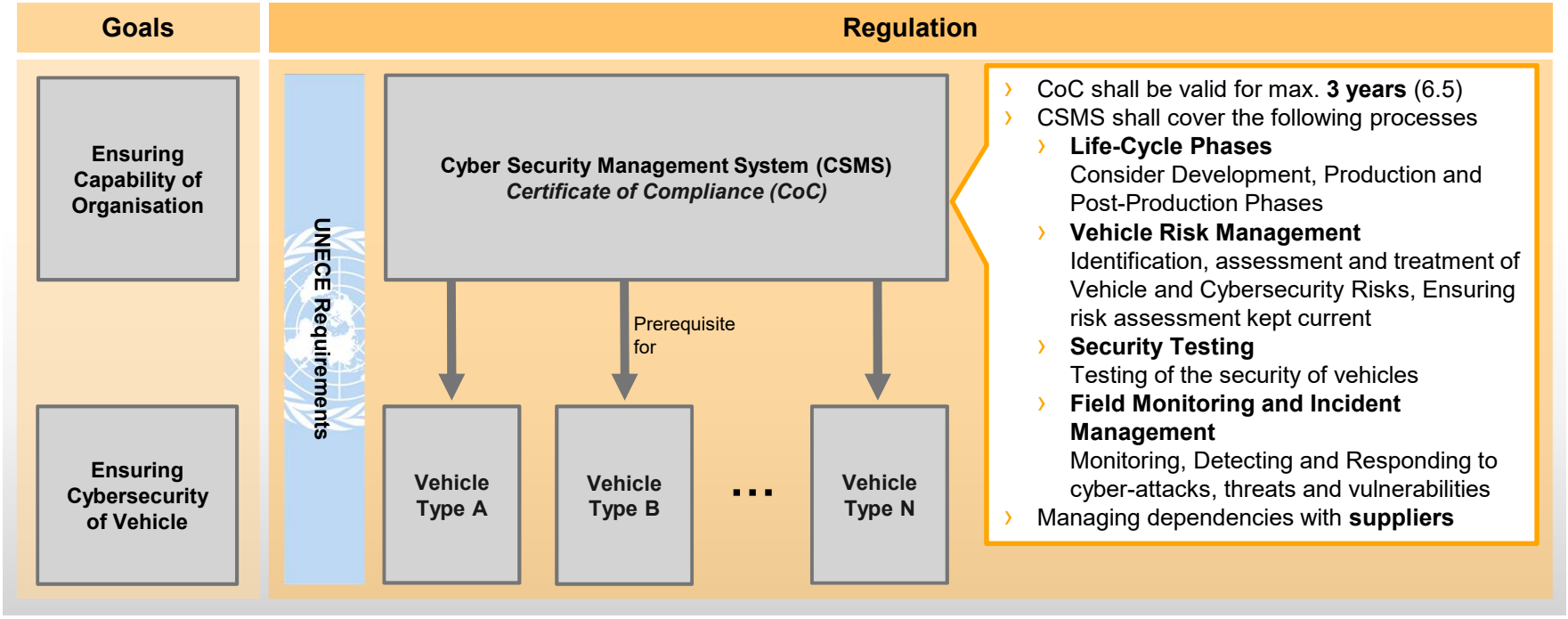
- Before type approval and assessment will be executed to show **compliance** to **the Approval Authority** or Technical Service.

- Vehicle Manufacturer has to ensure Cybersecurity along the Supply Chain. This will be done by **mandatory audits of suppliers CSMS implementation**.



UNECE Regulation on Cybersecurity

Requirements on the Organization and the Vehicle Types



UNECE Regulation on Cybersecurity

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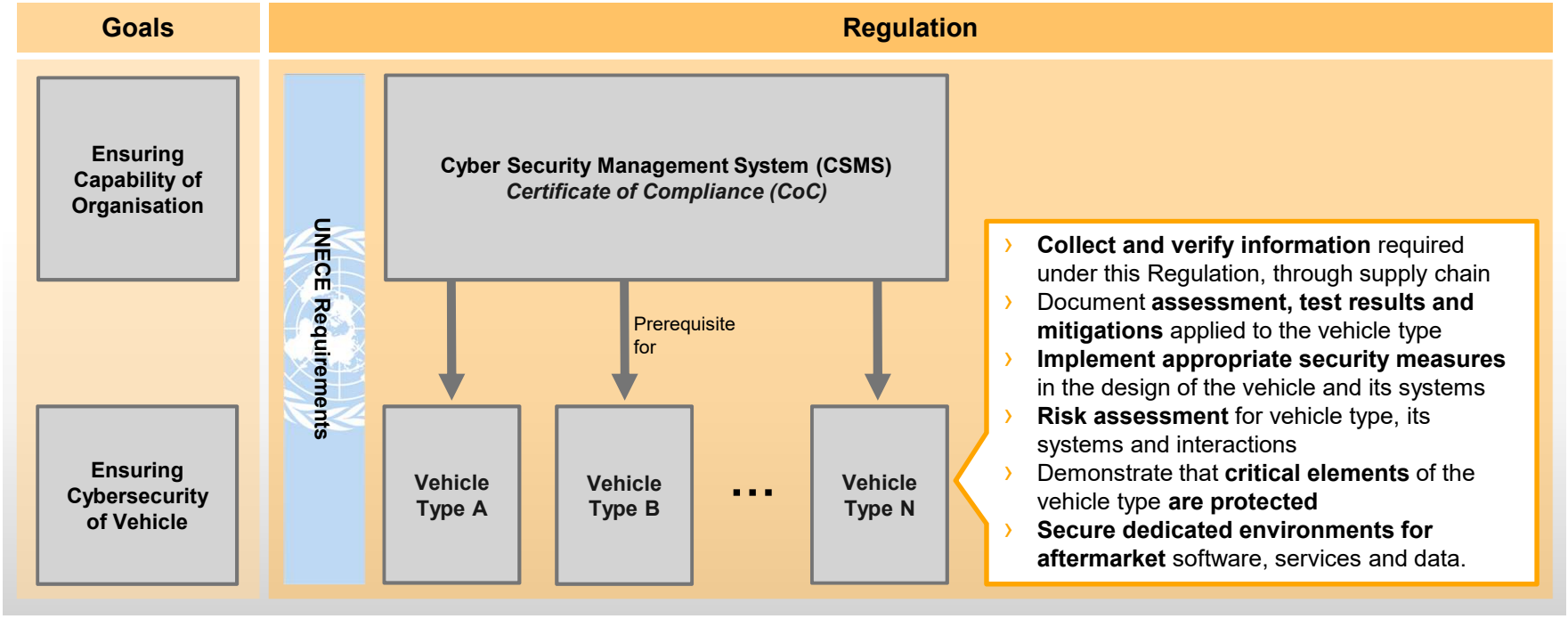
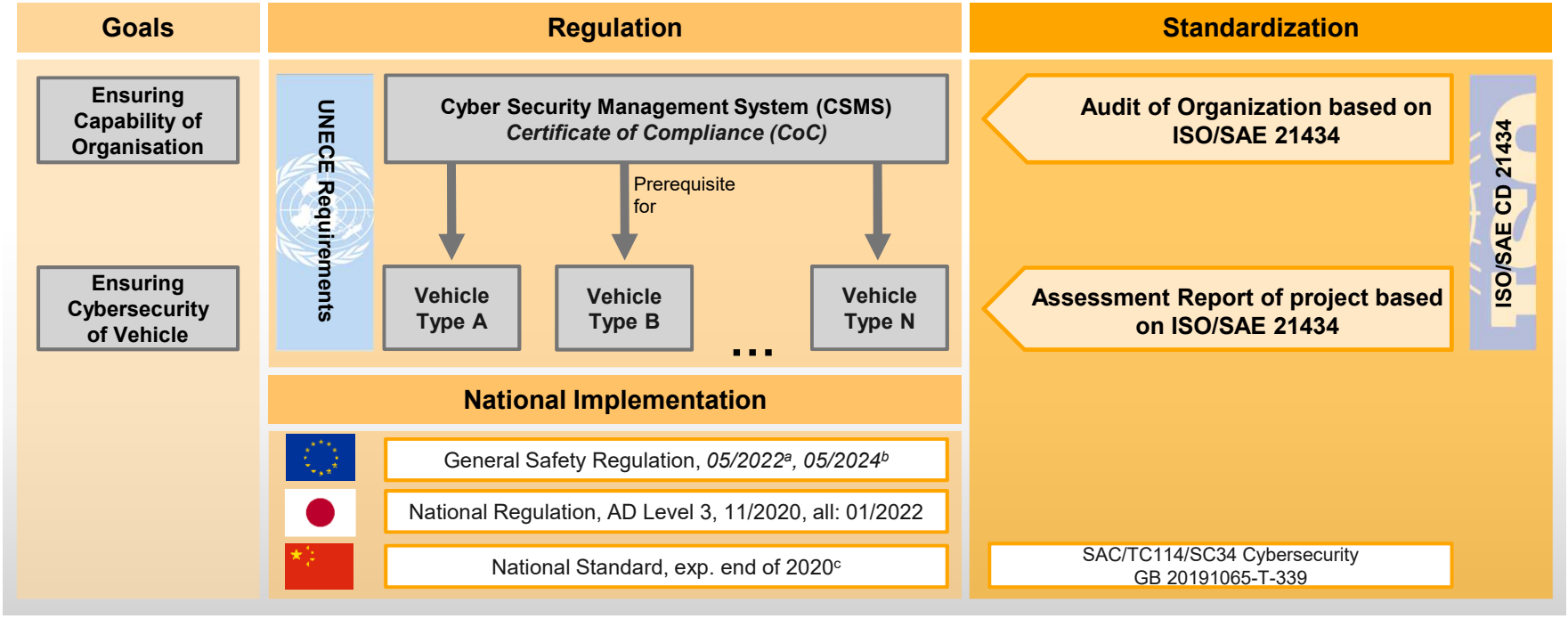


UNECE Requirements on Cybersecurity for Type Approval

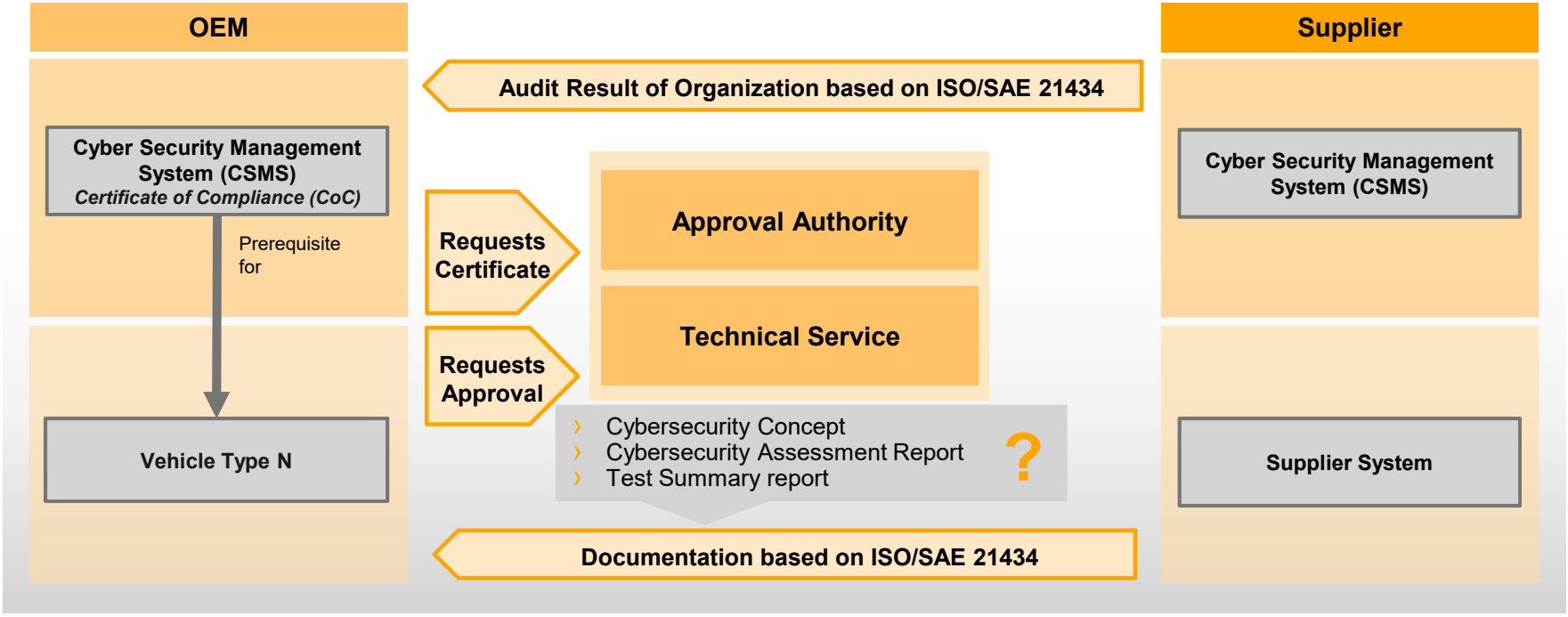
ISO/SAE 21434 can Prepare Supply-Chain for Compliance



| **a:** New European whole vehicle types | **b:** first registration of vehicles, entry to EU market | **c:** not 1958 agreement but adoption |

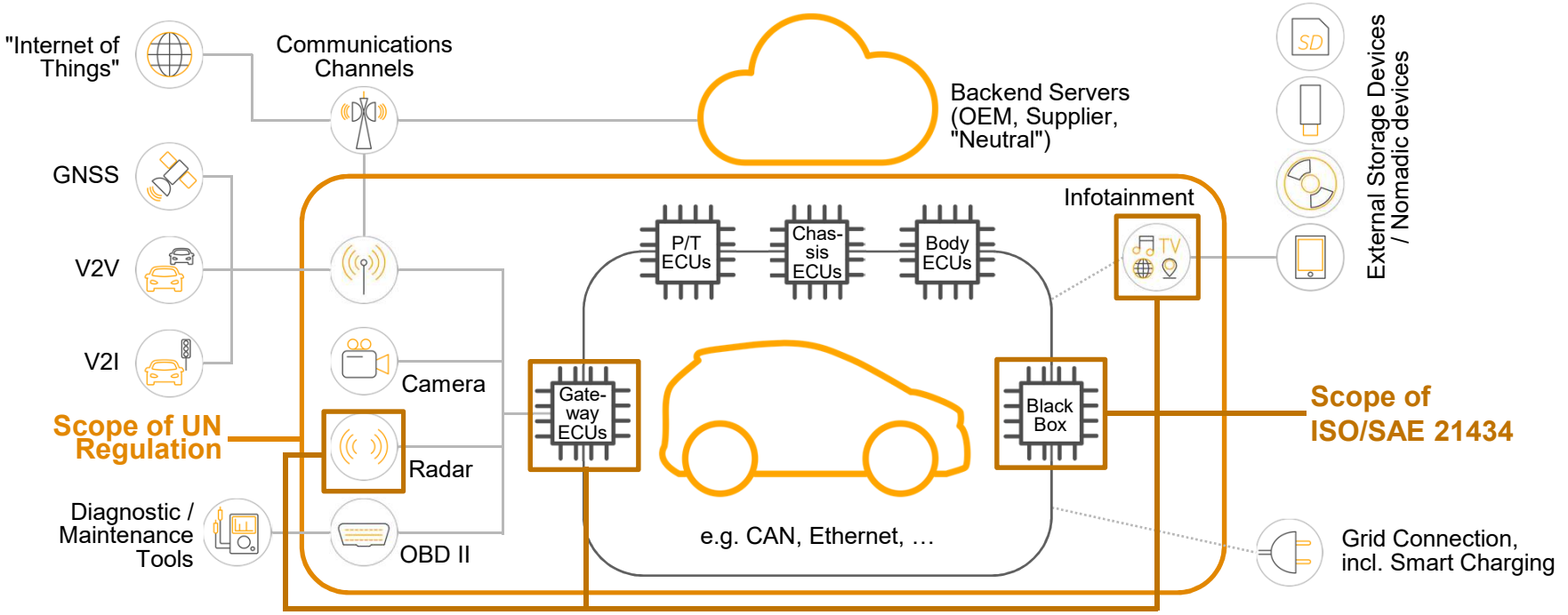
World Forum for Harmonization of Vehicle Regulations

Continental CSMS Proof Based on ISO/SAE 21434 Audit



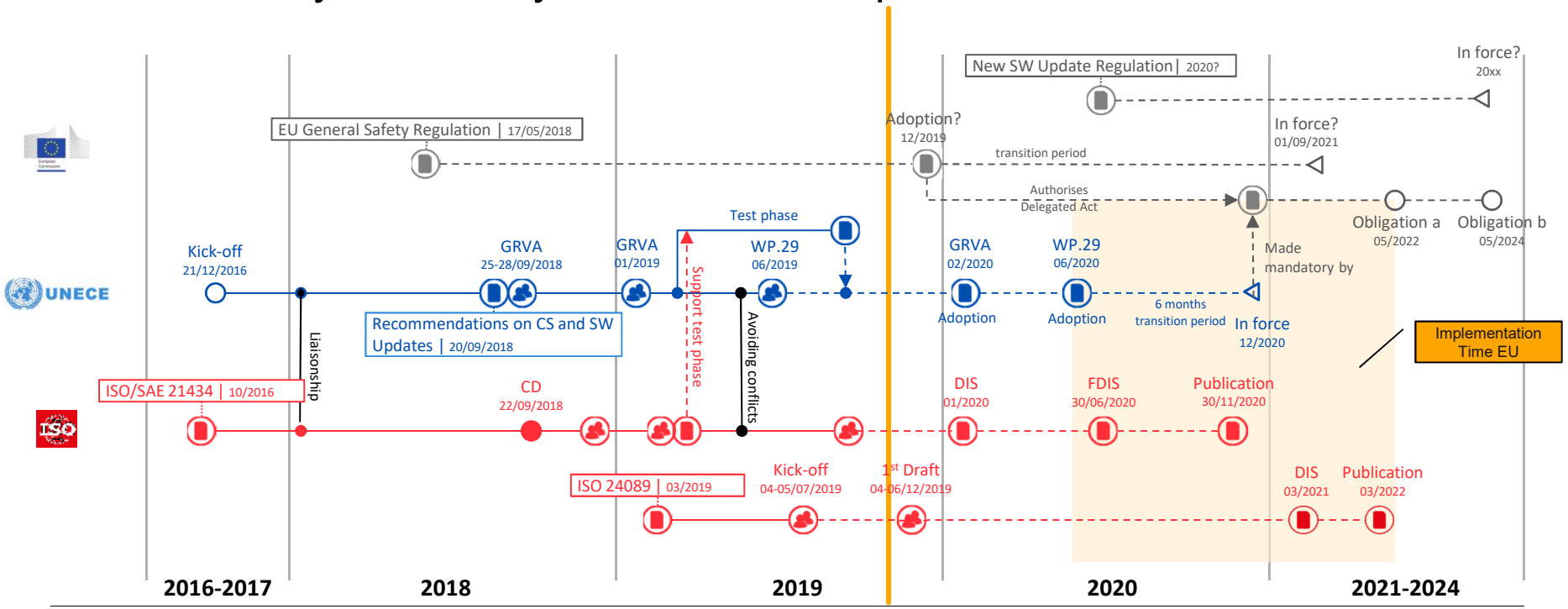
UNECE Requirements on Cybersecurity for Type Approval

Different Scopes of UN Regulation and ISO/SAE 21434



Roadmap for Implementation

Timeline of Cybersecurity and Software Update Activities



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Roadmap for Implementation

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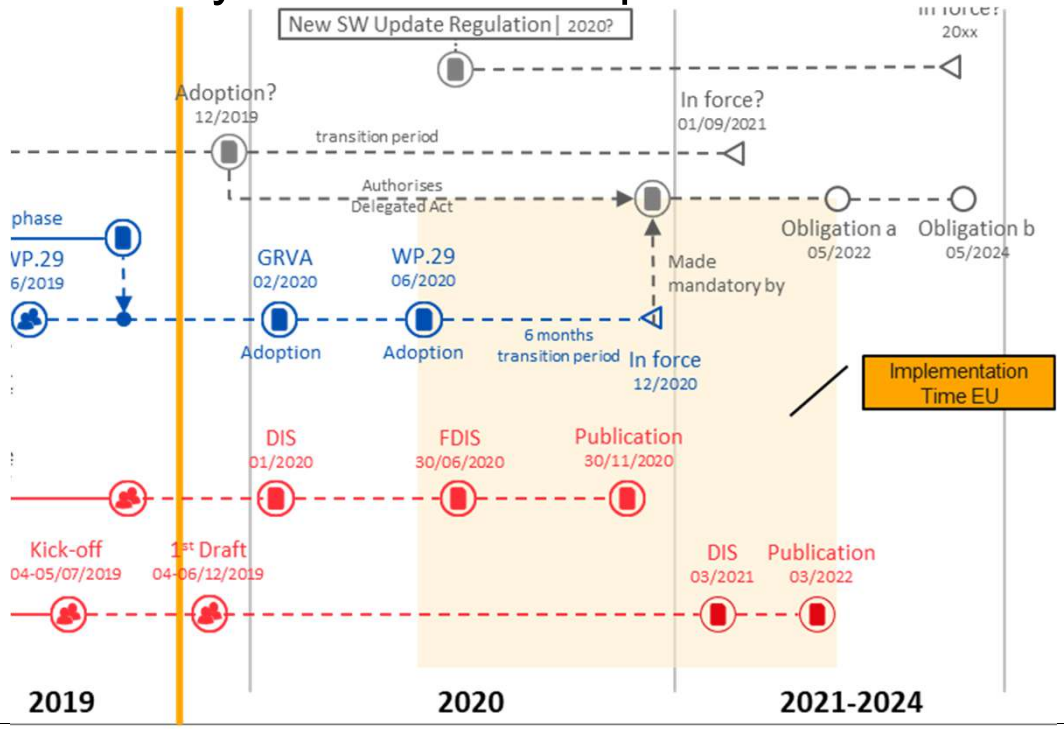

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Questions?

Contact

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