Liability in ‘connected cars‘

A systematic approach from today‘s situation up to the fully automated mobility network and mobility ecosystem

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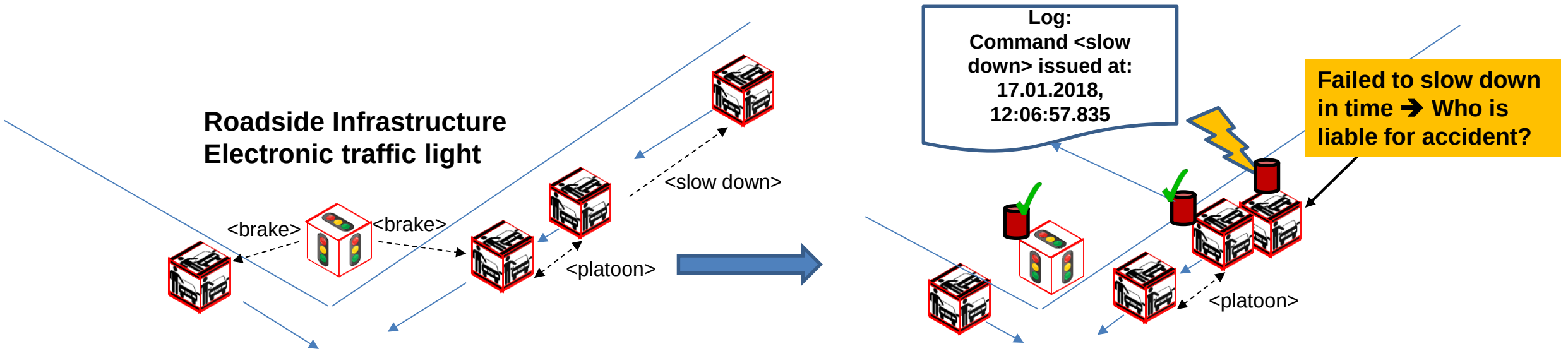
Liability for ‘connected automated‘ vehicle networks

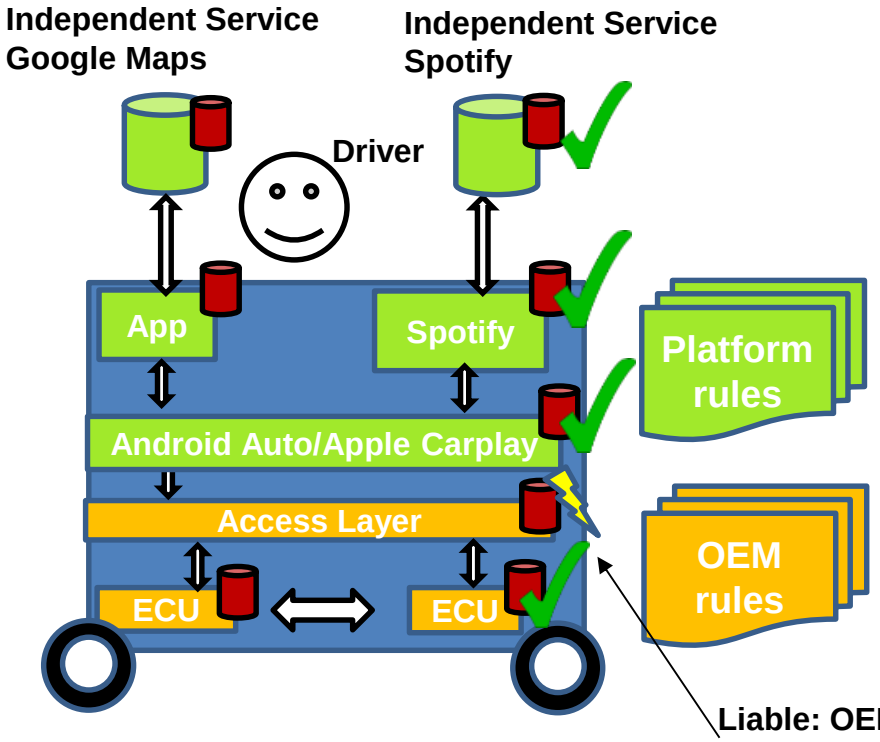


As soon as components in a network have to communicate to ensure smooth collaboration, each component (car or infrastructure) has to follow a standardised communication protocol and stick to the specified behavior, e.g. „brakes within X seconds upon receipt of command <brake>“.

The provider of the component (car or roadside infrastructure) whose product does not comply with the specification, must be held liable for the accident.

Because in modern electronic system every command and reaction can easily be recorded and analysed, it is easier than today to determine the component which caused the error.

Connected car: Liability for a complex product/service of multiple providers



The same situation of different service providers exists already today in modern cars with platforms like e.g. Apple Carplay, Android Auto or GM NGI equipped.

Each element of the service chain has to comply with a defined specification (e.g. the platform rules for Android auto) or the rules set out by a specific OEM for his ECUs.

Violation of the rules can technically easily be verified by examing the technical log files stored by each component.

BUT: This can‘t be left to the motoring customer!

And: Liability can be easily determined in today‘s modern vehicles and should not an excuse to not let other service providers in the car!

Liable: OEM, new update of Access Layer doesn‘t comply with specification for communication to Android Auto.

Example: All of a sudden the Spotify App jumps to full volume whenever the driver changes tracks thus causing driver distraction in a possibly critical moment.
Possible reasons: new Spotify App? New Android Auto version installed remotely? New software version of the OEM headunit ECU installed remotely?

➔ Solving this issues can‘t be left to the customer, teh vehicle dealer or the repair workshop in a „try & error“ method!

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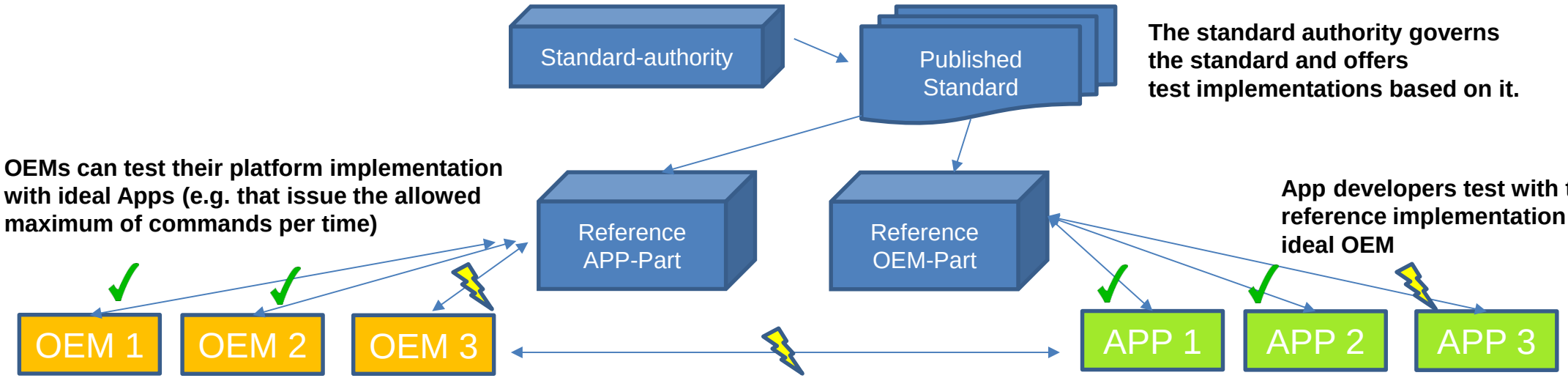
Benefits of standardization for Liability (& Security)

If a standard is set for a platform and the communication and governed by an independend body, multiple benefits result from this:

a.) An OEM platform can be tested against this standard and enjoy the benefits of every app developed for this.
b.) An App developer can test against this standard and have his app run on every OEM-platform.
c.) In case of liability issues, the parties can first check that their component complies with the standard using reference Implementations for testing.
d.) The security level of the standard can be defined by the governing body at a high level, but because every party has to comply with it, security is no longer subject to cost optimisation by an App provider or an OEM, who might be tempted to go for lesser security at lower costs.



Problem: App1 (Spotify) doesn‘t work for OEM 3.
Because App1 works on the Reference OEM-Implementation by the standard authority while the OEM3 has Problems with the reference App-Implementation, it is likely to assume that the OEM 3 is liable for the problem in combination with App 1.

Liability, legal aspects

- **Legal liability follows the established standards and does not differ from the analogue situation. In the European Union product liability is strongly harmonised by the Directive on liability for defective products (Council Directive 85/374/EEC). The existing legal framework seems principally sufficient to rule liability issues as the chain of responsibilities is considered clear and fits in the existing legislation.**

- **Liability regimes in the EU use a concept of causality for determining and allocating liability. Providers are thus liable for the respective component and service provided. e.g. the manufacturer of an application is liable under tort and/or product liability if the application causes damages to its user or to any third party. Additional liability follows from contract law if there is a contractual relation between the application provider and the claimant.**

- **Liability for proprietary systems like OEM-ExVes follows the exact same rules in terms of liability as the variants of standardized on-board application platforms.**
- **Possible room of action: Clarification, that software is legally regarded as a product and thus has to follow the product liability directive.**

Summary

- There is no need for additional „IT-Legislation“ around Liability for the connected and autonomous car. (Clarification: Software = Product)
- Today‘s and future systems/products are developed according to and have to met certain specifications.
- Testing the comliance is even easier for IT systems with their advanced logging possibilities.
- However, standardization will anyhow be needed for the future mobility network of communicating elements (Car2Car, Car2Infrastructure)
- Today‘s customers and future app developers and OEMswill also benefit from a higher degree of standardization that makes adherence to specifications and thus assignment of liability easier for everyone.
- As a highly welcomed side effect, open and independendly defined security standards always raise the overall security of a system.