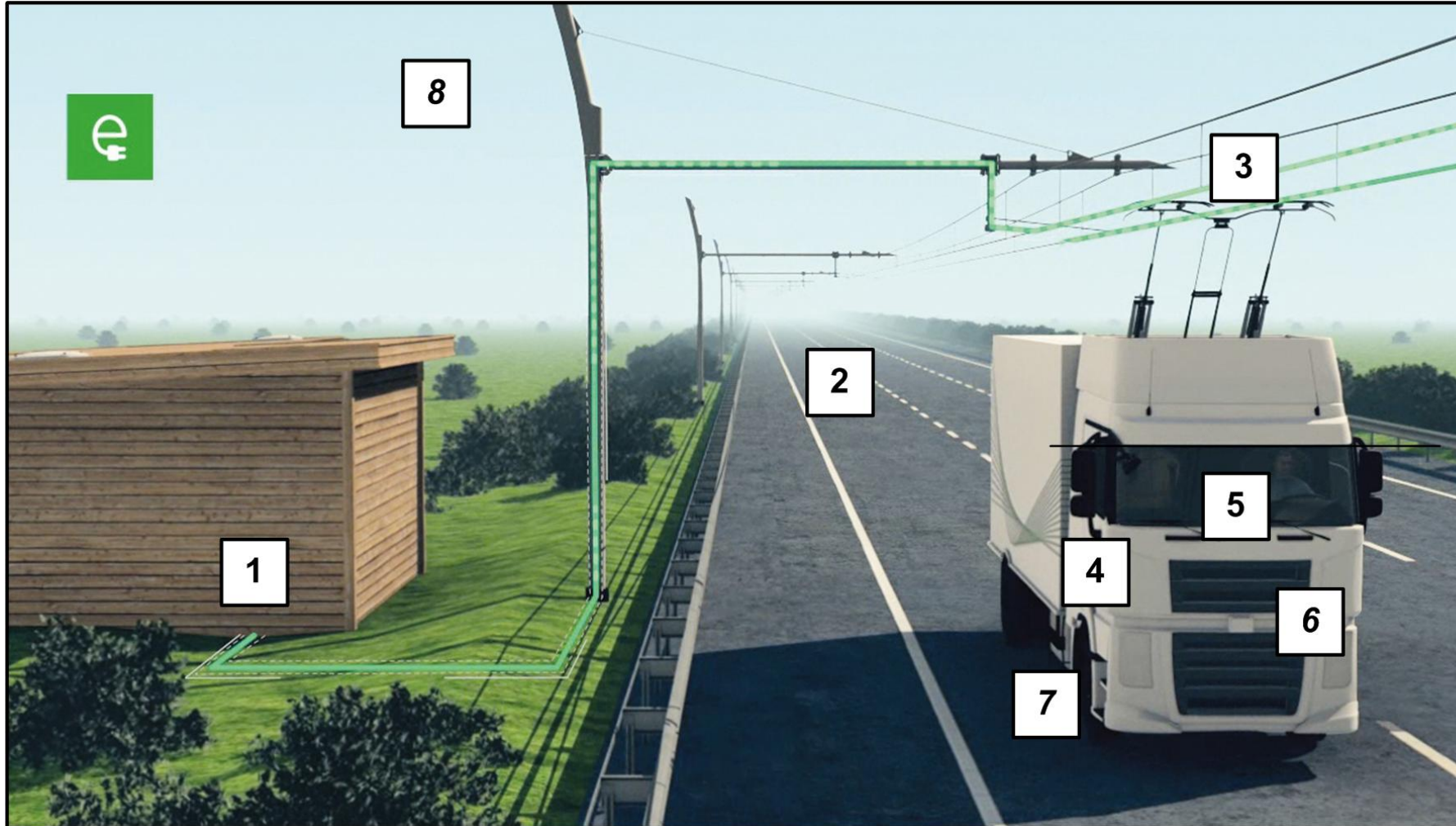


# Standardisierung oberleitungs- gebundener ERS

Markus Staub (SMO), Prof. Michael Lehmann (FHE)



# Subsystems and Interfaces Identification



#	interface
1	substation to overhead contact line (i. e. power supply to transfer)
2	contact line to road (power transfer to driveway)
3	contact line to pantograph (power transfer to vehicle pick-up)
4	pantograph to electric drive (vehicle pick-up to hybrid base vehicle)
5	pantograph to driver/truck cabin (vehicle pick-up to operation)
6	<i>vehicle to hybrid drive</i>
7	<i>vehicle to road</i>
8	<i>vehicle to OCC</i>

# Subsystems and Interfaces Responsibility for S&R



# Standardization Approaches

## 1 - Basics and items

### Basics

#### S&R Roadmap

Collection of standards from different environments: road / rail / automotive

→ Where to act

#### Basic Design Criteria

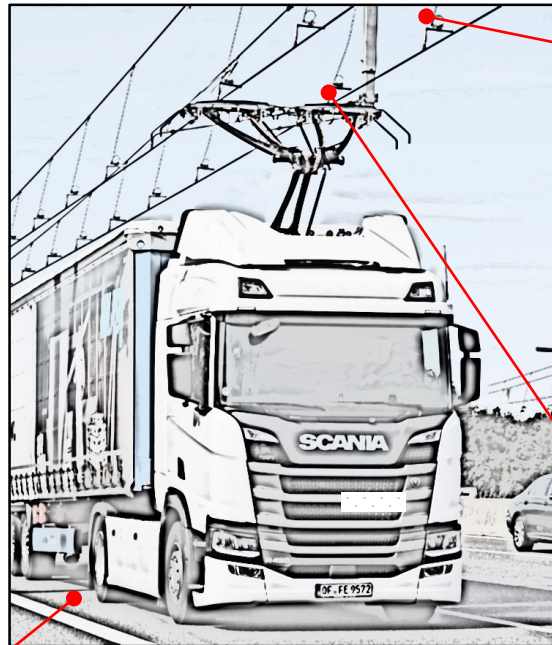
Key document to track system features and related standards

→ How to act

#### Standardization Bodies

regular exchange committee representatives on standard reviews (rail / automotive)

→ Who to talk to



**Road Safety evaluated by Road Authority**

### Rail industry

*EN50119 – Electric traction overhead contact lines*

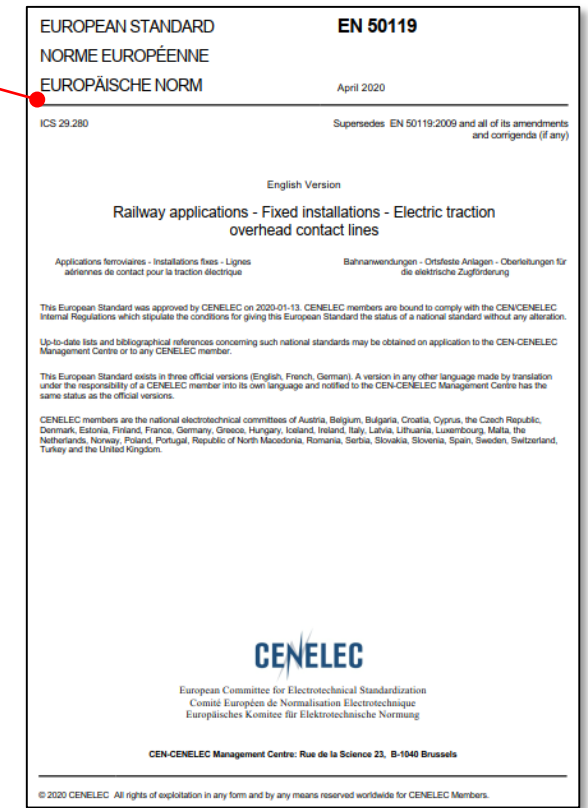
*EN50122-1 – eHighway included in scope*

*Draft IEC 62590 – eHighway included in scope*

### eHighway

*EN50119 – see below*

*CENELEC TC9x – interaction between pantograph and overhead contact lines on electrified roads*



# Standardization Approaches

## 2 – Towards a technical specification

### CENELEC WG 27 – prTS50712

#### ***Technical Criteria for the interaction between pantograph and overhead contact lines on electrified roads***

##### ***Main features:***


*System description, pantograph design and testing, interface description to vehicle, infrastructure specification*

##### ***22 members from 6 European countries involved***

- ***1<sup>st</sup> working draft circulated for Secretariat Enquiry in 06/2021***
- ***Received comments from 10 European countries***
- ***Currently: Addressing comments and preparing for final vote***
- ***Publication scheduled for Q1/2022***

60  
TECHNICAL SPECIFICATION

TS 50712



June 2021

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ICS

English Version

Railway applications - Current collection systems – Technical criteria for the interaction between pantograph and overhead contact lines on electrified roads

Applications ferroviaires – Systèmes de captage de courant  
– Critères techniques d'interaction entre le pantographe et la ligne aérienne de contact sur routes électrifiées

Bahnanwendungen – Stromabnehmer – Technische Kriterien für das Zusammenwirken zwischen Dachstromabnehmer und Oberleitung auf elektrifizierten Straßen

# Standardization Approaches

## 3 – Next steps

### Ongoing Reviews & Work

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*EN50163 – supply voltage*

*→ Decision on future system voltage to be released by involved industry partners*

*Formation of new eHighway working group (UK351.1.11) at German electrotechnical standardization organization DKE*

*EN50155 – Electronic equipment*

*→ Review and update*

*IEC60913 – Electric traction overhead contact lines*

*→ Review and update*

### Mission

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*Develop market for electrical infrastructure, pantograph and hybrid vehicle equipment*

*Adaption of existing standards wherever possible*

### DKE AK 351.1.13 – Elektrische Straßensysteme

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- *Established in Q1/2021, SIEMENS chairmanship (M. Staub)*
- *Exchange between K351 (automotive) and K353 (electric railways) about interfaces of heavy duty trucks under overhead contact lines*
- *4 working meetings so far*
- *First focus on aspects of electrical safety:  
→ overview chart of normative coverage*
- *Definition of different operating modes*
- *Commenting and Review of **prTS50717** and **prTS50712***
- *Proposal to establish a german “Vornorm” that addresses the electrical interface between the PAN and the powertrain of the vehicle which can later be raised to a european level*

# Summary and Outlook

## Cooperation welcome

- different standardization bodies take up work
- for ERS interdisciplinarity is crucial involving different technical committees and bodies, esp. when interfaces are to be considered
- Technical Specifications under development
- AMELIE2 project focusses (among other topics) on a broad ERS related standardization roadmap for all subsystems on a national and European level
- joint approach of industry, operators, research and public authorities
- further reading:  
**<https://www.plattform-zukunft-mobilitaet.de/schwerpunkte/ag-6/>**  
„Schwere Nutzfahrzeuge – Standards und Normen für alternative Antriebe“ (10/2021)

Thank you for your attention!

# Decarbonising road freight with ERS – Moving forward!



**Prof. Dr. Michael Lehmann**  
Fachhochschule Erfurt  
Verkehrs- und Transportwesen  
Eisenbahnwesen im internationalen Kontext

**Fachhochschule Erfurt**  
Altonaer Straße 25  
99085 Erfurt, Germany  
+49 (0) 361 6700-573  
+49 (0) 176 232-50305  
[Michael.Lehmann@fh-erfurt.de](mailto:Michael.Lehmann@fh-erfurt.de)