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Tolling Solutions - Continental



**52nd ASECAP  
DAYS**

Challenges of Future  
Mobility | The Role of Road  
Infrastructure

Organized by **ASECAP** Hosted by **seopan**

# Continental Automotive Technologies

## Future of Tolling Solutions: Using Innovative In-Vehicle Technologies for Tolling

52<sup>nd</sup> ASECAP Days  
Madrid | May 26<sup>th</sup> -28<sup>th</sup>



CONTINENTAL AUTOMOTIVE

**WE MAKE MOBILITY...**

*...safe, exciting, connected  
and autonomous.*

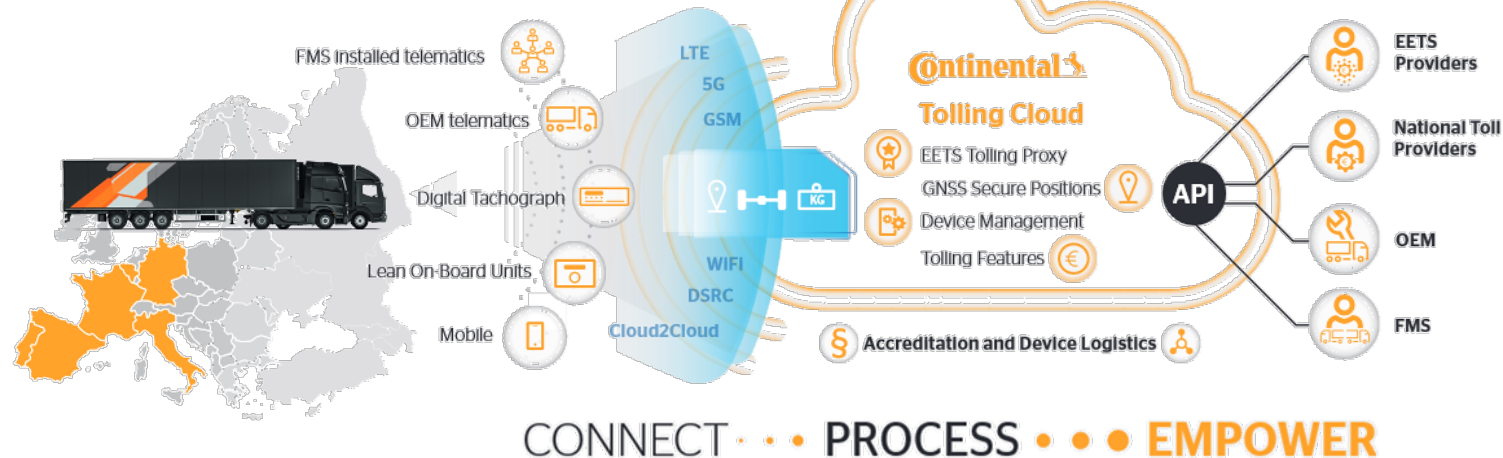
# Continental Tolling Solutions

## CRUS Services

“We **empower** Tolling Providers with all the necessary information and management tools to **create, deploy and run successful Road User Charging Schemes**“

End2End Solutions tailored to specific needs

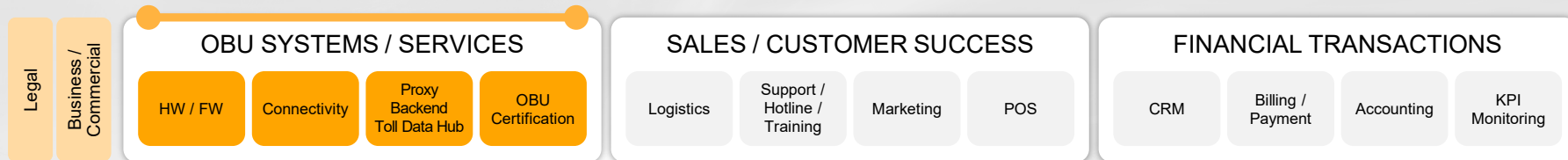
Value Added Services



# Tolling Value Chain and Our Value Propositions

## Continental Tolling Solutions

Continental takes responsibility of data provision for tolling and other value-added services



### CONTINENTAL ROAD USAGE SERVICES

› Value added offers that include not only in vehicle systems but backend connectivity, proxy solution and toll charger interface

#### Tolling Proxy Cloud

Multi-Toll domain backend service with device management and open VAS APIs



#### On Board Unit Services

HaaS and managed device services to Tolling Providers



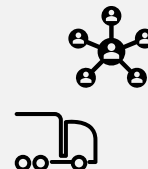
#### Tolling over DTCO

Tolling service based on standard highly secure Digital Tachograph by VDO



#### Agnostic Tolling Front End

Integrating OEM fitted devices and FMS devices as Toll data trusted devices



# Our Customers per Market Segment

## Continental Automotive – Commercial and Special Vehicles Segment

### Commercial Vehicle & Bus



### Tier 1



### 2-Wheeler & Leisure



### Off-Highway



# Continental Tolling Solutions

## Road for emerging Tolling Vehicle Technologies



**OnBoard Unit 5+**



**Smart Tachograph Based  
Tolling**



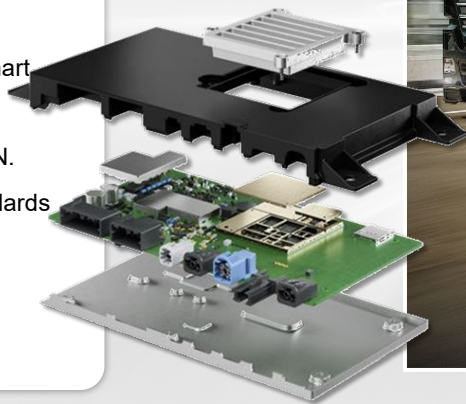
**In-Vehicle Telematics Tolling**

**Total Cost of Ownership to Tolling Providers and Road Users reduces and  
technology advances**

# Powerful OEM Fitted Telematics Embedded in the Vehicle

## FEATURES

- › Powerful Automotive controllers
- › **Linux Based OS**
- › High sensitivity multi GNSS receiver. GPS / Galileo / GLONASS / BeiDou. Assisted GNSS
- › **LTE CATx / 5G**
- › Extended memory for Storage
- › **Multiple application running in parallel.**
- › Full access to vehicle information including Smart Tachograph Data
- › Possibility to send messages for HMI over CAN.
- › Fully compliant with Automotive Security Standards
- › OEM Validated



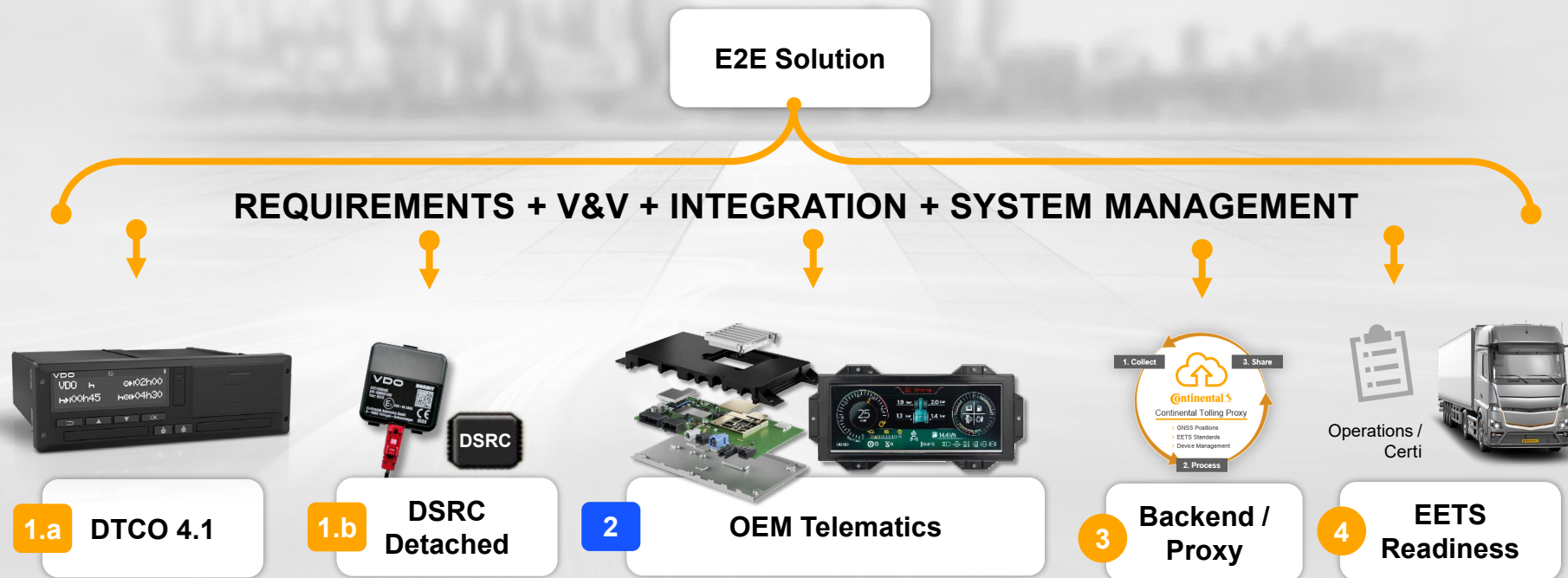
05 March 2025

Road User Charging Conference 2025 © Continental AG

Internal

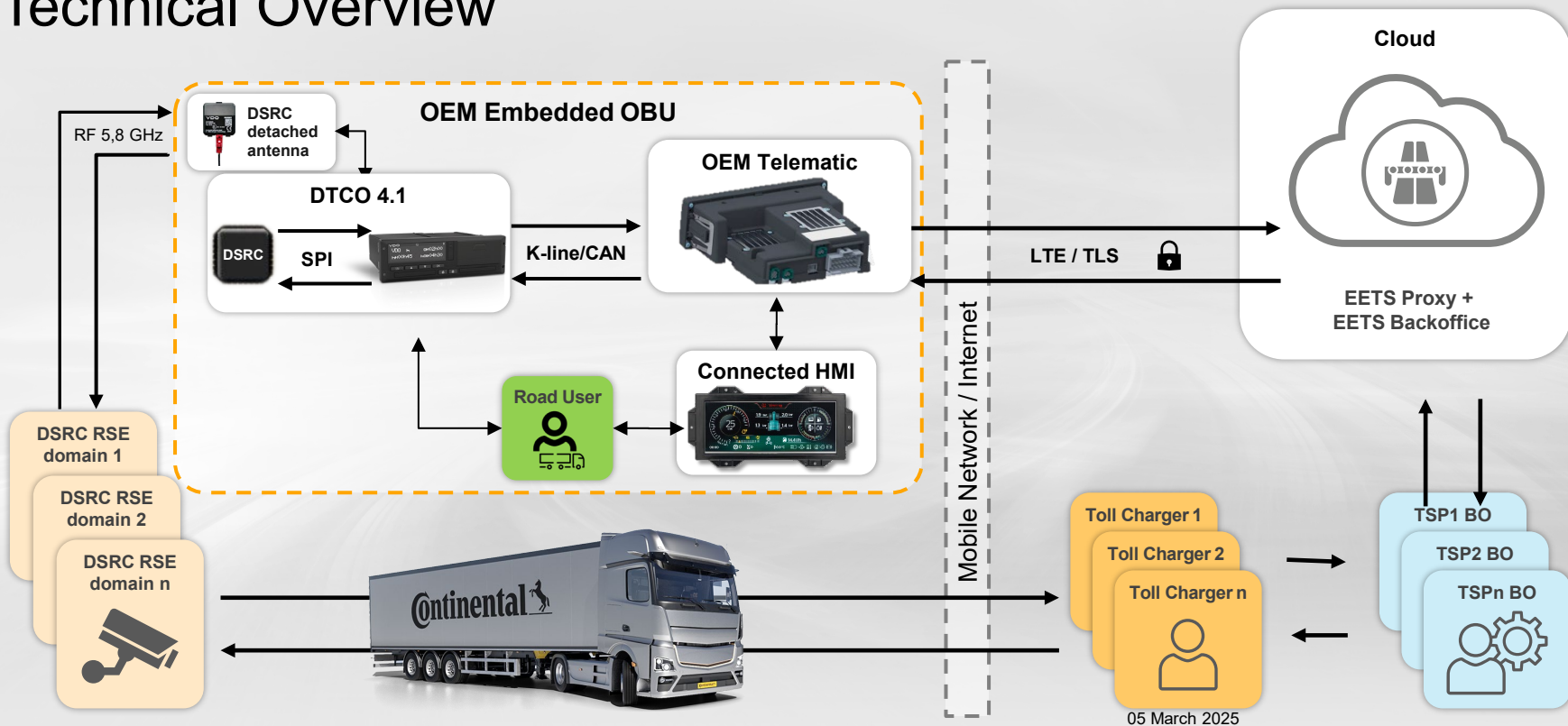
# Continental Road Usage Service Solution

Enabling Tolling without the need of additional Hardware



# Continental Road Usage Service Solution

## Technical Overview



# Continental Road Usage Service OEM Solution

## Function/Feature Allocation (Concept Discussion)



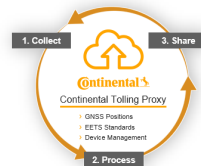
### DTCO 4.1 / DSRC Detached Antenna

- › Vehicle Identity
- › DSRC Chip
- › DSRC Profiles



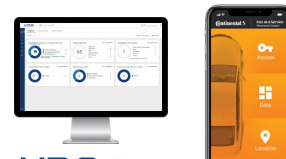
### OEM Telematic

- › Vehicle Communication
- › HMI Messages over CAN (Buzzer + Visual)
- › GSM Connectivity with LTE/5G
- › GNSS High Accuracy Data Collection
- › Data Upload and Management



### Cloud

- › Data Ingestion
- › FOTA
- › Tolling Data Generation
- › Integration with Tolling Providers
- › Tolling Context Data
- › Toll Declaration Data



### Additional Services

- › Remote Digital Tachograph Download
- › Mobility Services

# Tolling Enabled In-Vehicle Telematics

## Game Changer

### Clear Revolution with OEM Telematics Tolling

- › No HW Capex for Providers
- › Seamless experience for Road-Users
- › Environmentally friendly with reuse of components
- › Unapparelled security and reliability preventing revenue leakage
- › Concept can be applied to both Commercial and Passenger Vehicles
- › **Challenges to Overcome:**
  - › Vehicle Certification
  - › Application Isolation
  - › HMI Standardization

OEM

Sales of Trucks  
–  
Sales of After Market  
Services



# Key Takeaways

## The Future of Tolling Vehicle Technologies

### **Tolling Vehicle Technology is Shifting**

Fleets are moving away from hardware-based solutions to more integrated, software-driven tolling.

### **OBUs likely remain, but be shared with other technologies**

OBU-based tolling will still serve legacy fleets, but its market share will drop as new solutions emerge

### **Tachograph-Based Tolling will Grow**

The adoption of tachograph-based tolling is accelerating, especially in EETS international transport.

### **In-Vehicle Telematics likely the Future**

OEM-integrated tolling may become the standard for new trucks, reducing the need for additional hardware.

## Cost Efficiency is Key for Fleets and Service Providers



