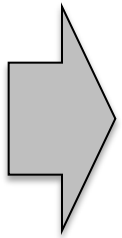
Cross Acceptance of Energy Metering Systems: A Guide

What is Cross-border Acceptance?

Approved in one country

The Energy Metering System is approved for billing in a single country.



Accepted in all countries

The same system is recognised and accepted for billing across all countries.

Three Requirements

Each approval of energy measurement systems (EMS) installed on traction units (TU) for energy billing purposes is built on:

All three requirements must be met for cross-border acceptance of the Energy Metering System.

Cross-border Acceptance Challenge

The goal: one standardised documentation set — accepted by everyone

Standardised documentation

A single, defined set of documents covering all three requirements.

Accepted by all IMs

Covers the relevant national specifics — without being unnecessarily detailed.

Key Stakeholders

EMS Acceptance

VK

Vehicle Keeper

Owner of the Traction Unit

RU

Railway Undertaking

Operates the traction unit

IM

Infrastructure Manager

Owns & runs the network

NoBo

Notified Body

Assesses conformity

ECM

Entity i.c. Maintenance

Keeps the system fit (2019)

Regulatory Framework

EN 50463

Energy measurement on board trains

2017 **2027**

Technical requirements for all parts of the system.

TSI LOC & PAS

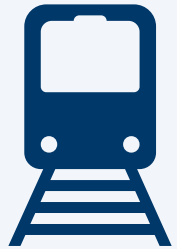
Locomotives & passenger rolling stock

2025 **2027**

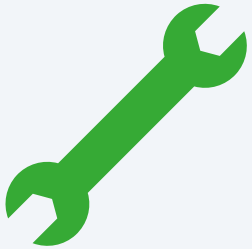
Selected paragraphs relevant to interoperability.

Questions to be Answered

1. Is the Energy Metering System installed on a TSI-compliant traction unit?



2. Is there a complete maintenance plan in place for the system?



Documentation: Key Documents — TSI

TSI route

Proof of compliance with TSI

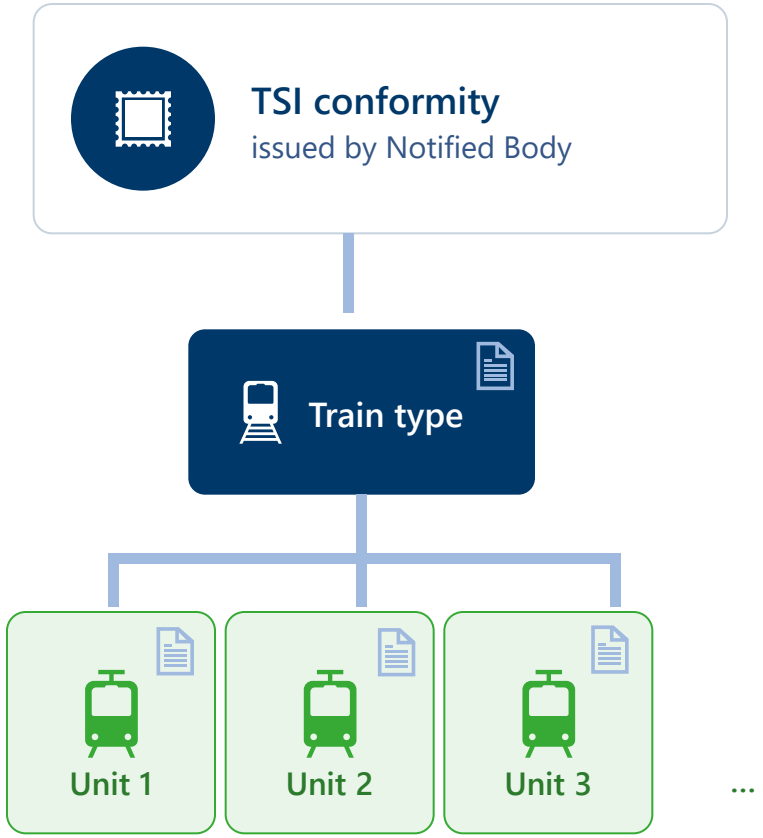
Overall conformity

Installation Type Test Summary

Per vehicle type

Installation Routine Test Summary

Per individual vehicle



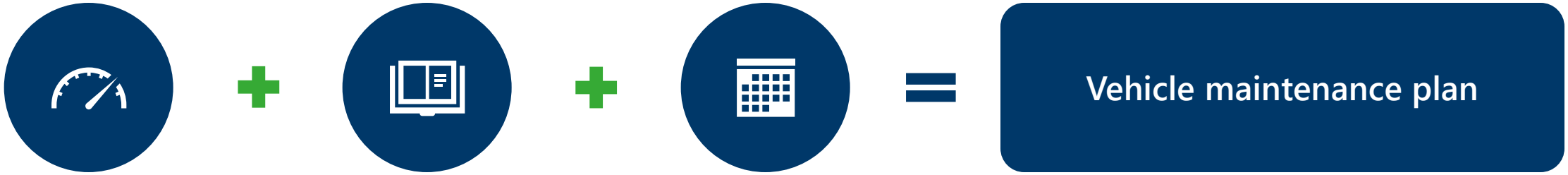
All documents are available in the eress library: **https://eress.eu/library/**

Documentation: Key Documents – Non-TSI

Non-TSI route

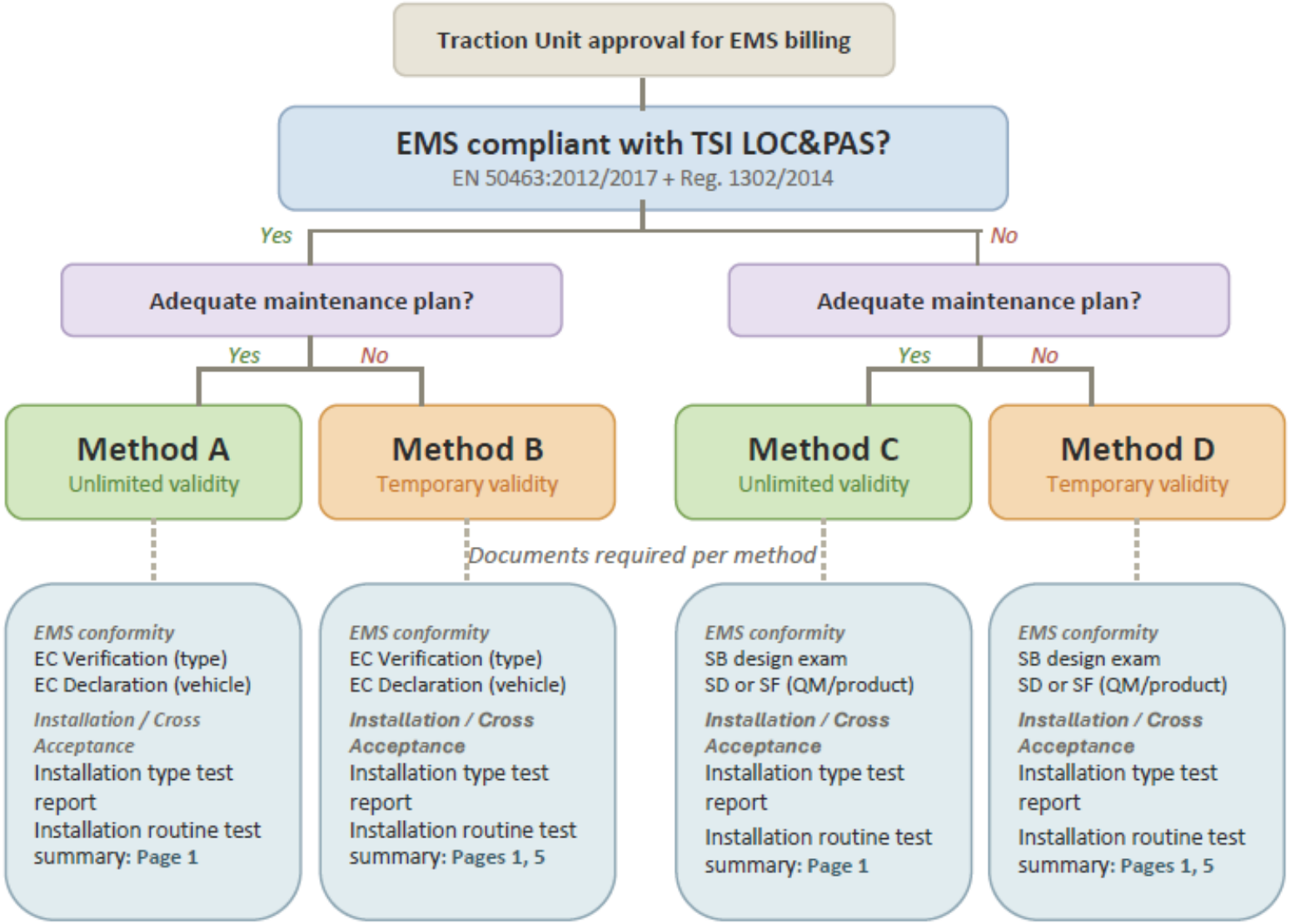
Proof of quality of design	SB module
Proof of quality of installation	SD module
Installation Type Test Summary	per type
Installation Routine Test Summary	per vehicle

A Complete Maintenance Plan



Together, the meters and sensors, the manufacturers' instructions and the maintenance schedule form a complete and correct vehicle maintenance plan.

Approval Decision Tree: Choosing the Right Method



Conclusion

EMS enables accurate energy billing — when properly designed, installed and maintained.

The methodology lets these facts be verified using documents available to the VK and RU.

We aim to align the methodology with all Infrastructure Managers across Europe.

Thereby reducing the workload for everyone involved.