

**INFRABEL**

# Conformity Assessment Guidelines

**Eress Workshop on Cross Acceptance**

Bart Van der Spiegel

17 September 2024





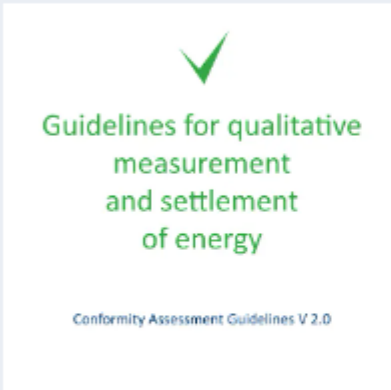
# Guidelines for qualitative measurement and settlement of energy

Conformity Assessment Guidelines V 2.0

# Where can you find these guidelines?

Eress website ([eres.eu](https://www.eres.eu)) > Library > Magazines & documents


## Documents



**Guidelines for qualitative measurement and settlement of energy**

Conformity Assessment Guidelines V 2.0

[Conformity Assessment Guidelines 2023](#)



**Installation routine test summary**

This is a sample installation routine test report that has produced as an annex to the guidelines.

Version	Creation date	Extension	Author
1.0	05-06-2023	Final for service	B. Widmer, G. Hillier

Tradition unit:


Service AC current:

Service AC voltage:

Service DC current:

Service DC voltage:

[EMS Sample Installation](#)



**Hybrid trains**

This document is for Train Builders, IT and other Managers, Manufacturers of Energy Management Systems, Railway Undertakings, Network Operators and Infrastructure Contractors.

[Hybrid trains](#)

Follow the guidelines.








For the Routine Test, the EMS Sample Installation can be used.

# Content

- Introduction
- Normative reference: EC/2018/868, EN 50463:2017 and IRS 90930:2020
- Terms and definitions
- Summary in 7 steps
- For each step extra information



# The 7 steps

	<p><b>1. Use certified equipment</b></p> <ul style="list-style-type: none"> <li>- Each component shall be able to be certified and callibrated</li> <li>- Regulation is on European level</li> </ul>	<ul style="list-style-type: none"> <li>- Which EN applies?</li> <li>- Who delivers certificates?</li> <li>- How do we know that the equipment proposed by Train manufacturer is proper?</li> </ul> <p>More...</p>
	<p><b>2. Start with a plan</b></p> <ul style="list-style-type: none"> <li>- Supplier makes a plan</li> <li>- Notified Body verifies this plan</li> </ul>	<ul style="list-style-type: none"> <li>- What should be in the different plans?</li> <li>- What is a Notified Body?</li> <li>- Why do we need to involve a Notified Body?</li> <li>- Where can I find them?</li> </ul> <p>More...</p>
	<p><b>3. Notified body checks first installation</b></p> <ul style="list-style-type: none"> <li>- Notified Body checks the first installation</li> <li>- You may use existing onboard equipment</li> </ul>	<ul style="list-style-type: none"> <li>- What is delived by a Notified Body in this check?</li> <li>- Why is that needed?</li> <li>- Can we reuse existing sensors?</li> </ul> <p>More... NOTE – In case of national rules apply on EMC in some Member States also checks by Designated Bodies.</p>
	<p><b>4. Install it in a certified workshop</b></p> <ul style="list-style-type: none"> <li>- Workshops need proper certificates</li> <li>- Workshop issues installation reports</li> </ul>	<ul style="list-style-type: none"> <li>- Which certification is adequate for a workshop?</li> <li>- Is any certified railway workshop proper for energy meter and data handling installation?</li> <li>- How should an installation report look like?</li> </ul> <p>More...</p>
	<p><b>5. Choose a Data Collecting System</b></p> <ul style="list-style-type: none"> <li>- The provider collects all data from the traction unit</li> <li>- Data is sent to a settlement system</li> </ul>	<ul style="list-style-type: none"> <li>- What is a Data Collecting System?</li> <li>- Why should I chose one?</li> <li>- Which one should I choose?</li> <li>- Is it provided by my home Infrastructure Manager?</li> </ul> <p>More...</p>
	<p><b>6. Settlement</b></p> <ul style="list-style-type: none"> <li>- Settlement prepares an energy bill for a geographical area</li> <li>- You will get an invoice for your energy consumption</li> </ul>	<ul style="list-style-type: none"> <li>- Who is your Settlement system provider?</li> <li>- What do you have to do? How will data from energy meters be handled?</li> <li>- Where can you find extra information?</li> <li>- What do you have to do?</li> </ul> <p>More...</p>
	<p><b>7. Maintain your Energy Measurement System</b></p> <ul style="list-style-type: none"> <li>- The equipment onboard must be regularly monitored</li> <li>- Some equipment needs to be recalibrated</li> </ul>	<ul style="list-style-type: none"> <li>- Who should I call when I do not get data from an energy meter?</li> <li>- Who can fix broken energy meters or sensors?</li> <li>- Should I report it?</li> <li>- When do we have to recalibrate equipment?</li> </ul> <p>More...</p>

Type test:  
description of device characteristics,  
maintenance plan,  
first test binding with DCS

Routine test / Commissioning:  
date of putting into service,  
test binding with DCS,  
physical IDs of devices

Maintenance:  
change of components (new IDs),  
new validity date

### 3. NOTIFIED BODY CHECKS FIRST INSTALLATION (Type Test)

## Type test



The first installation of an EMS is thoroughly verified.

It includes:

- all devices and functions,
- the integration of the devices into an EMS,
- the installation of the EMS on a traction unit of a certain type.

It is permitted to reuse suitable existing on-board components.



The device manufacturer might perform the type tests on the individual devices (like sensors). Accredited laboratories able to make metrological tests are needed.

The Notified Body verifies the results of the installation type test.

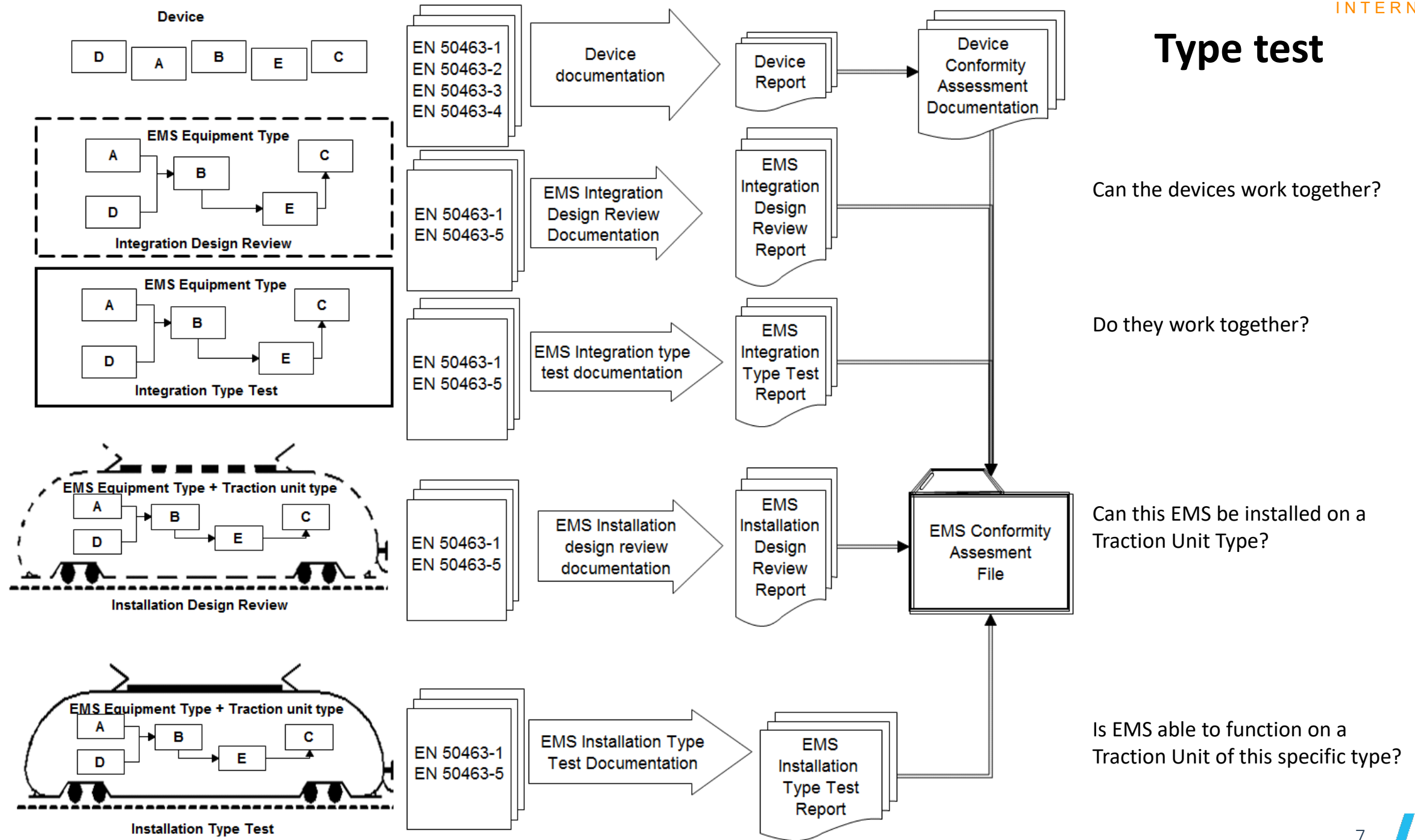
NOTE - Non-accredited labs showing equivalent requirements and control for test acceptable by NoBo, could be used



This results in the EMS Conformity Assessment Folder, containing many files, including the EMS Conformity Assessment Certificate.

*Gregor Hribar: “Type test verification on EMS on new vehicles (SB modules), gives trustable results. But on retrofitting this is not always true.”*

# Type test



## 4. INSTALL IT IN A CERTIFIED WORKSHOP (Routine test)

### Routine test



EMS are installed on-board of a Traction Unit inside a workshop, certified for this installation.  
This can be the workshop of a Railway Undertaking.



The employees of the workshop follow the installation procedure.

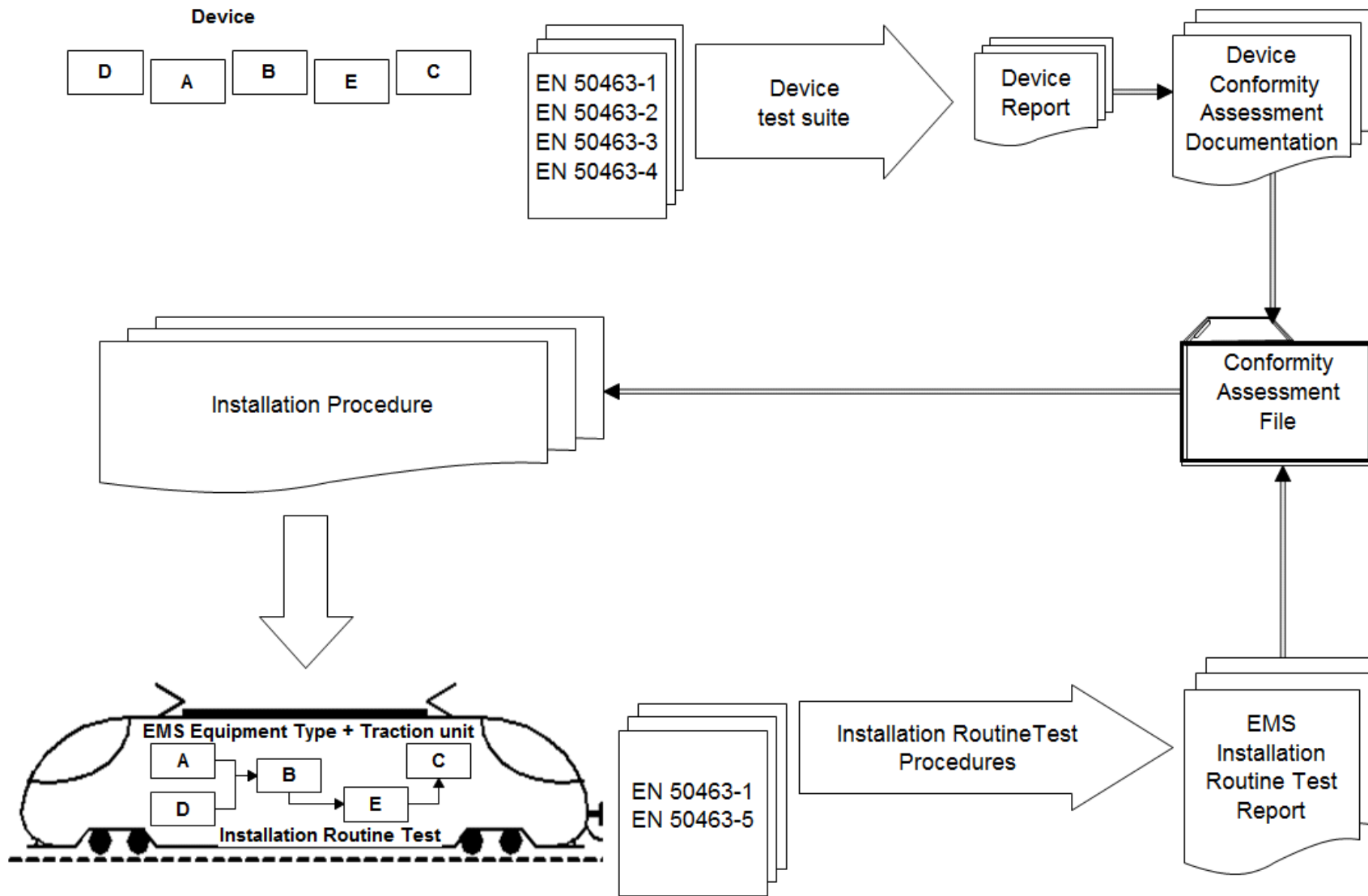


This procedure also results in an Installation Routine Test Report.  
Now you have all the information to create the technical documentation and the Masterdata.

Gregor Hribar:  
*“Extra checks are needed on how and where equipment is installed, especially on old units (SD modules + installation itself).”*



# Routine test



Routine tests on all the devices used

Install them following a procedure in a certified workshop.

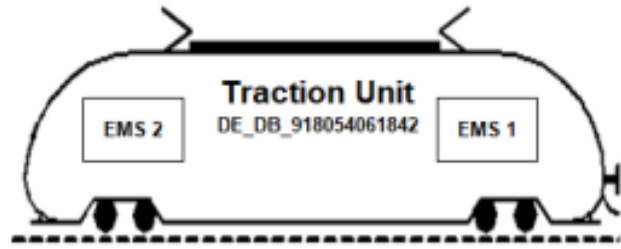
Make a routine test e.g. based on the example on Eress website.

Installation routine test summary

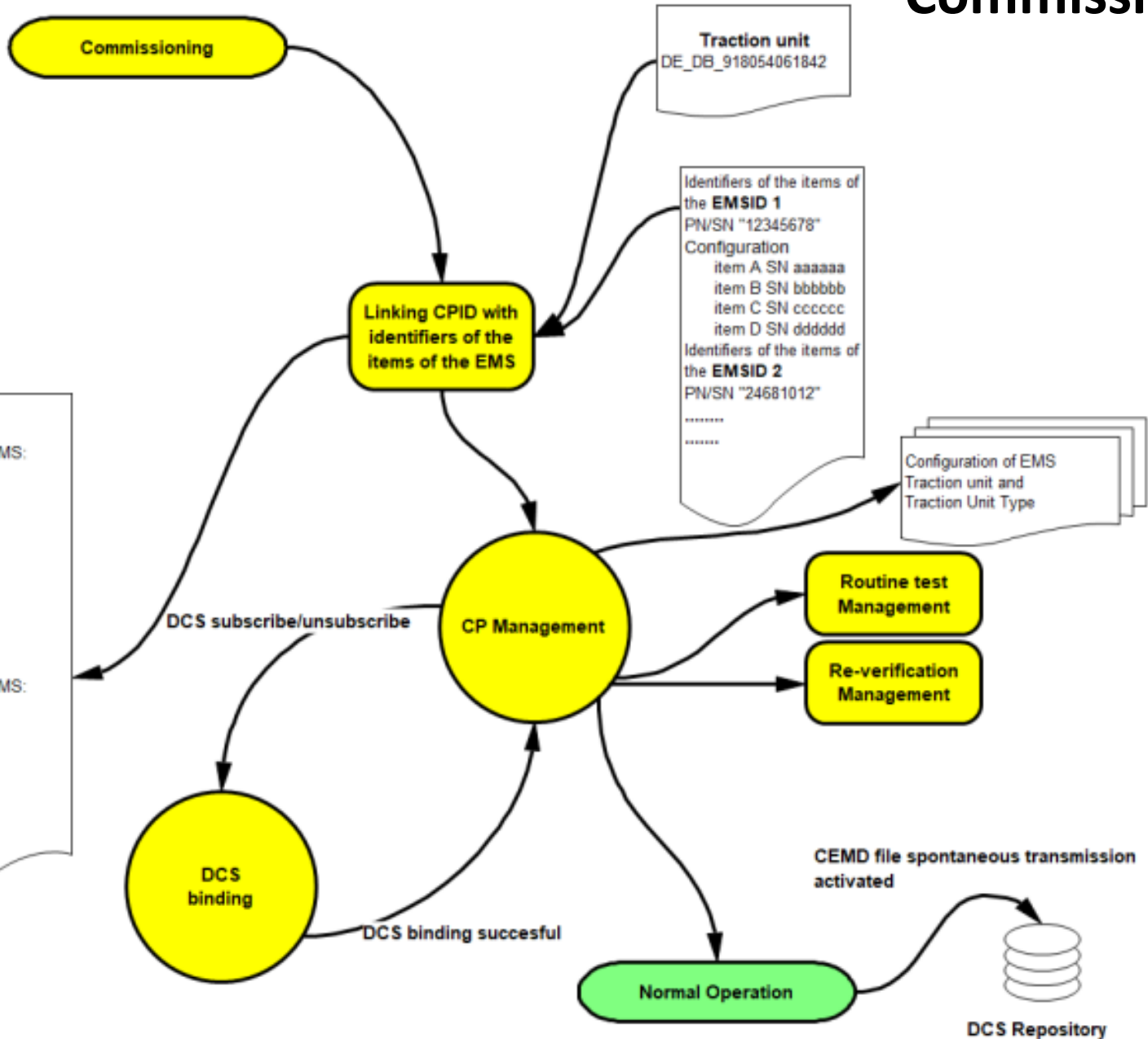
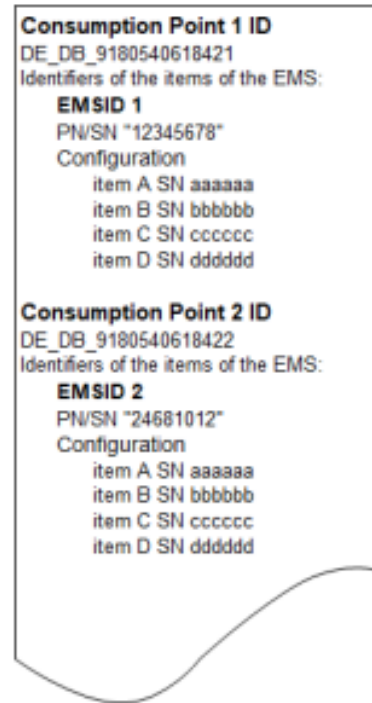
This is an example of the report that will be generated for the customer.

Section	Condition	Value	Unit	Particular
S.E.	ES-96-2802	ES-96-2802	ES-96-2802	0, 96, 2802
Traction unit	City of the unit and of the device			
Select AC name	Type			
	Serial number (SN)			
Select AC voltage	Type			
	Serial number (SN)			
Select DC current	Type			
	Serial number (SN)			
Select DC voltage	Type			
	Serial number (SN)			

# Commissioning



**Consumption Point Identification CPID**  
[CC]\_[VKM]\_[VIN][EMSID]  
CPID of EMS1: DE\_DB\_9180540618421  
CPID of EMS2: DE\_DB\_9180540618422



This figure is already in the international IEC 62888 but will also be added in the next EN 50463.

## 7. MAINTAIN YOUR EMS



The equipment on-board might be subject to ageing. So, you will need some periodic reverification. This might also result in recalibrating some devices.

It should also be possible to replace devices that have major problems or are not no longer able to measure accurately.

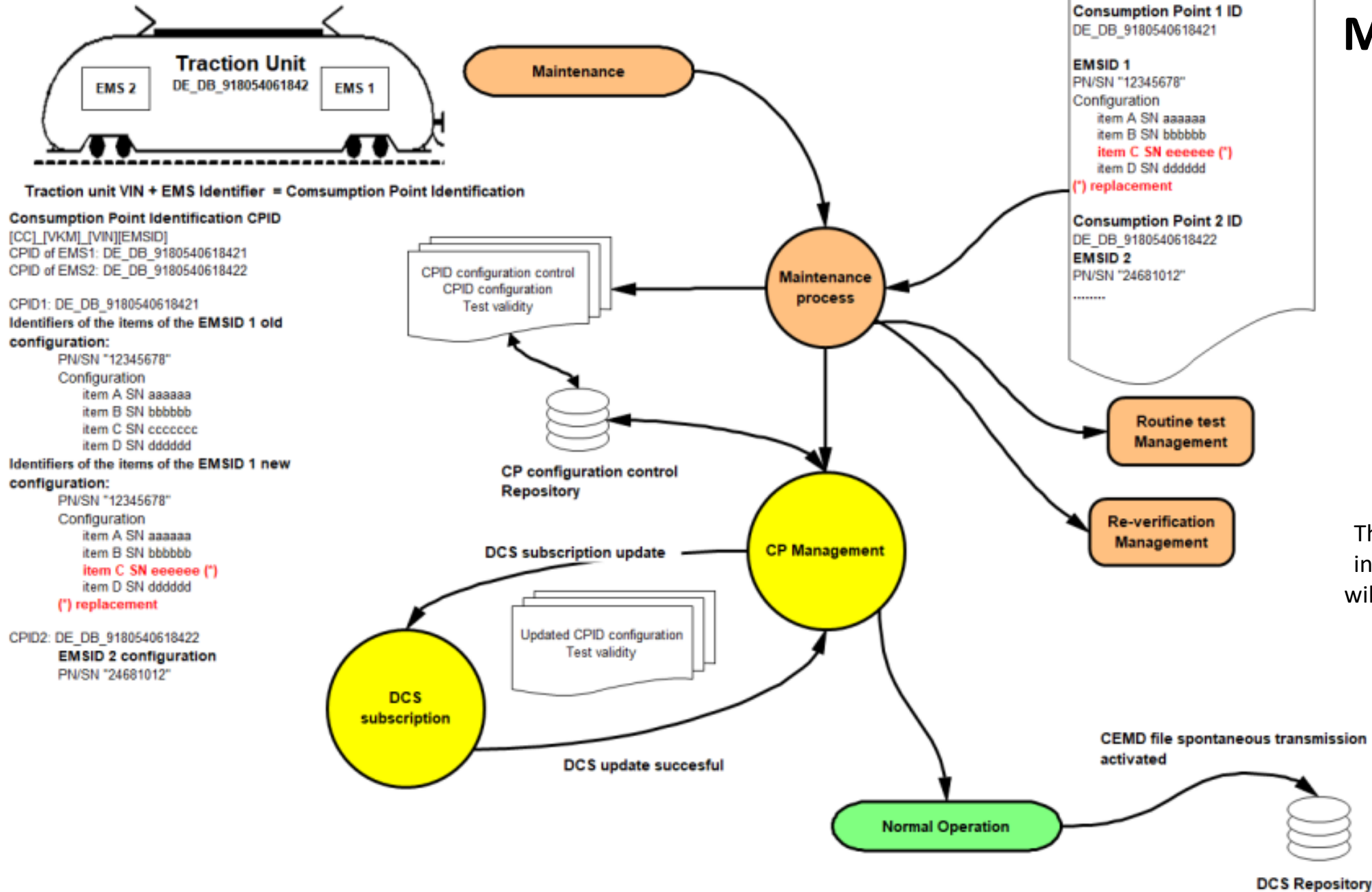


The Entity in Charge of Maintenance shall follow the requirements of the Maintenance Plan.



This will result in a new calibration report, including updated Technical Documentation and new Masterdata.








# Maintenance



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# Use the 7 steps of the Conformity Assessment Guidelines

