

Discussion Paper  
on ETSI ES 202 336-12  
(ICT equipment power, energy and  
environmental parameters monitoring  
information model)

Orange  
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# Overall picture

- ETSI ES 203 228: Environmental Engineering (EE); Assessment of mobile network energy efficiency

$$EE_{MN} = \text{Performance metrics} / \text{Energy consumption metrics}$$

where:

- Performance metrics are:

- Data Volume
- Coverage

- Energy consumption metrics

- metering information provided by utility suppliers , or ..."

ETSI ES 203 228 describes methods and measurements to calculate « Performance metrics »

ETSI ES 203 228 does NOT describe means to collect « Energy consumption metrics »

- ETSI ES 202 336-12 V1.1.1 (2015-06): Environmental Engineering (EE); Monitoring and control interface for infrastructure equipment (power, cooling and building environment systems used in telecommunication networks); Part 12: ICT equipment power, energy and environmental parameters monitoring information model

ETSI ES 202 336-12 defines means to collect energy consumption metrics

# ETSI ES 202 336-12

## Scope

### 1 Scope

The present document defines measurement and monitoring of power, energy and environmental parameters for ICT equipment in telecommunications or datacenter or customer premises.

It defines the power, energy and environmental parameters monitoring interface of ICT equipment based on generic ETSI ES 202 336-1 [1] interface so that correlations can be made with ICT equipment parameters (traffic, flowrate, number of connected lines, radio setting, QoS KPI, etc.) in the network management system.

Correlations of monitored data (power, energy consumption and environmental values) with the ICT equipment parameters and settings are not in the scope of the present document.

The monitoring interface covers:

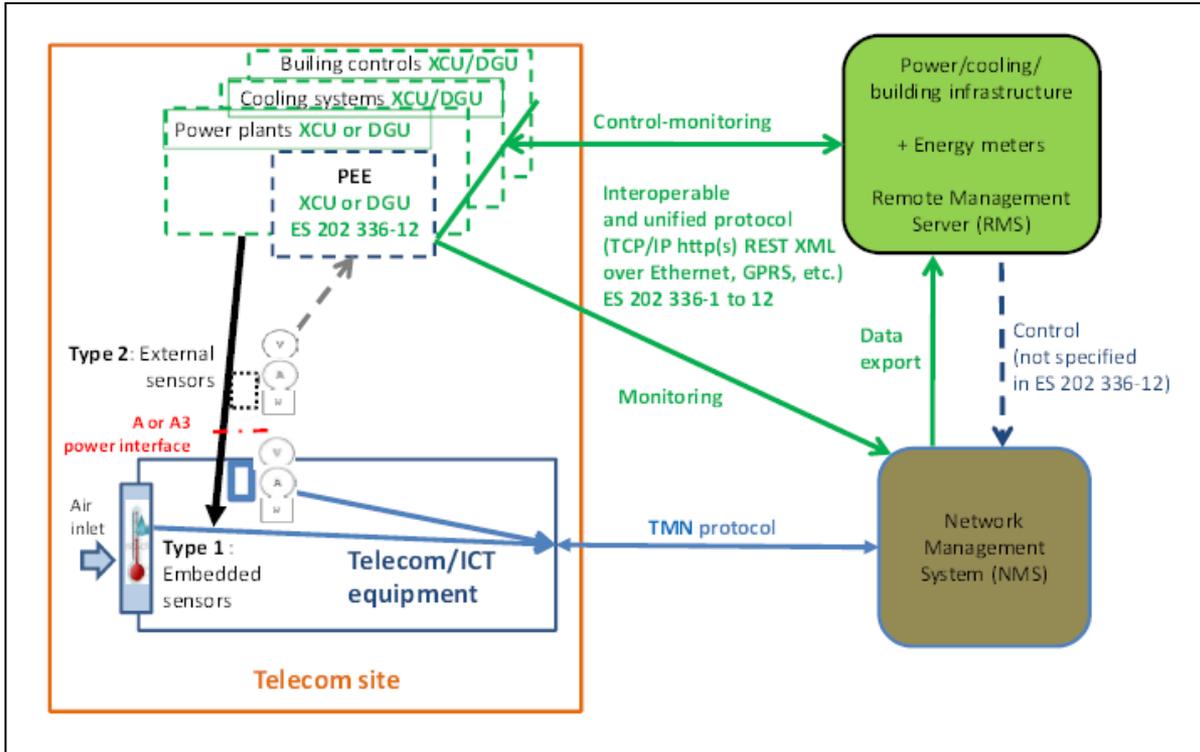
- Internal power consumption measurement on the ICT equipment powered in DC and AC.
- Power consumption measurement external to the ICT equipment (if not implemented internally, e.g. legacy equipment).
- Energy metering based on power consumption measurement.
- Environmental parameters of the ICT equipment (e.g. temperature at air inlet of equipment).

The present document defines:

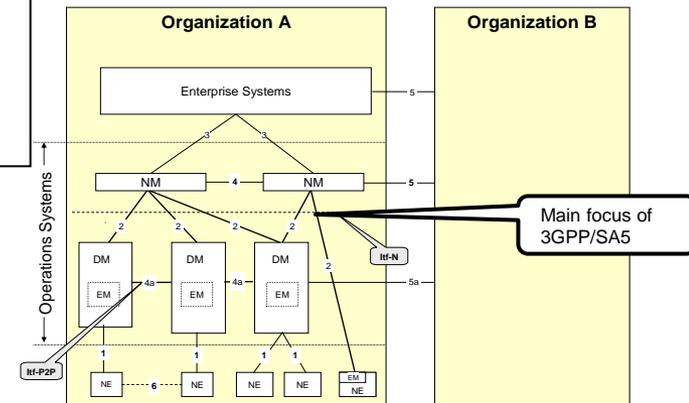
- The minimum set of exchanged information required at the interface, described in "natural language" in text tables including parameters such as precision, range, etc. and settings such as data acquisition periodicity, etc.
- The XML files with tags and variables corresponding to the data in the tables in complement to general rules defined in ETSI ES 202 336-1 [1] and ETSI ES 202 336-2 [4].

# ETSI ES 202 336-12

Principle of the monitoring of ICT equipment power, energy and environment parameters (Figure 1)



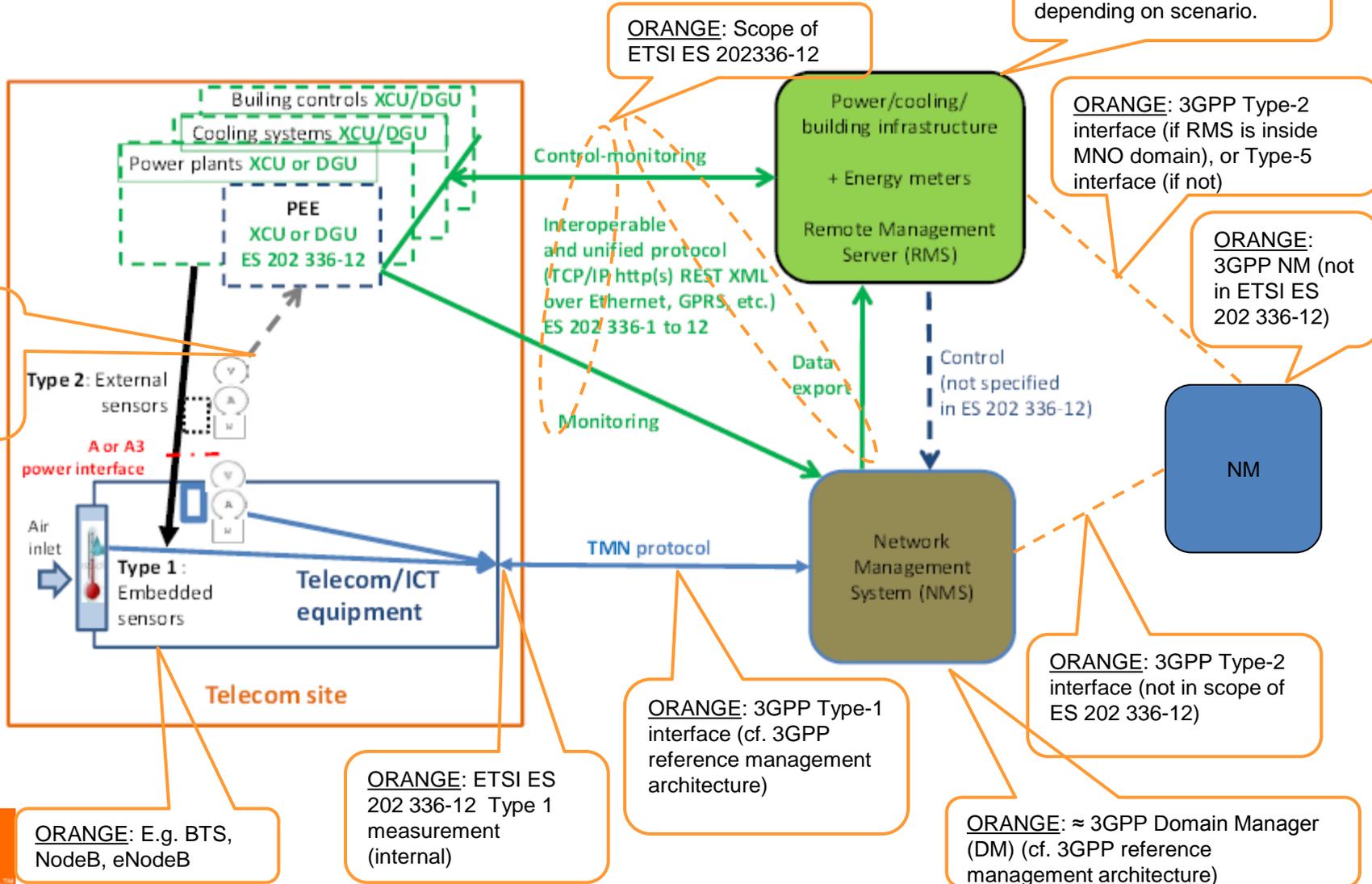
## 3GPP Management Reference Model



# ETSI ES 202 336-12



## Principle of the monitoring of ICT equipment power, energy and environment parameters – ANALYSIS by ORANGE

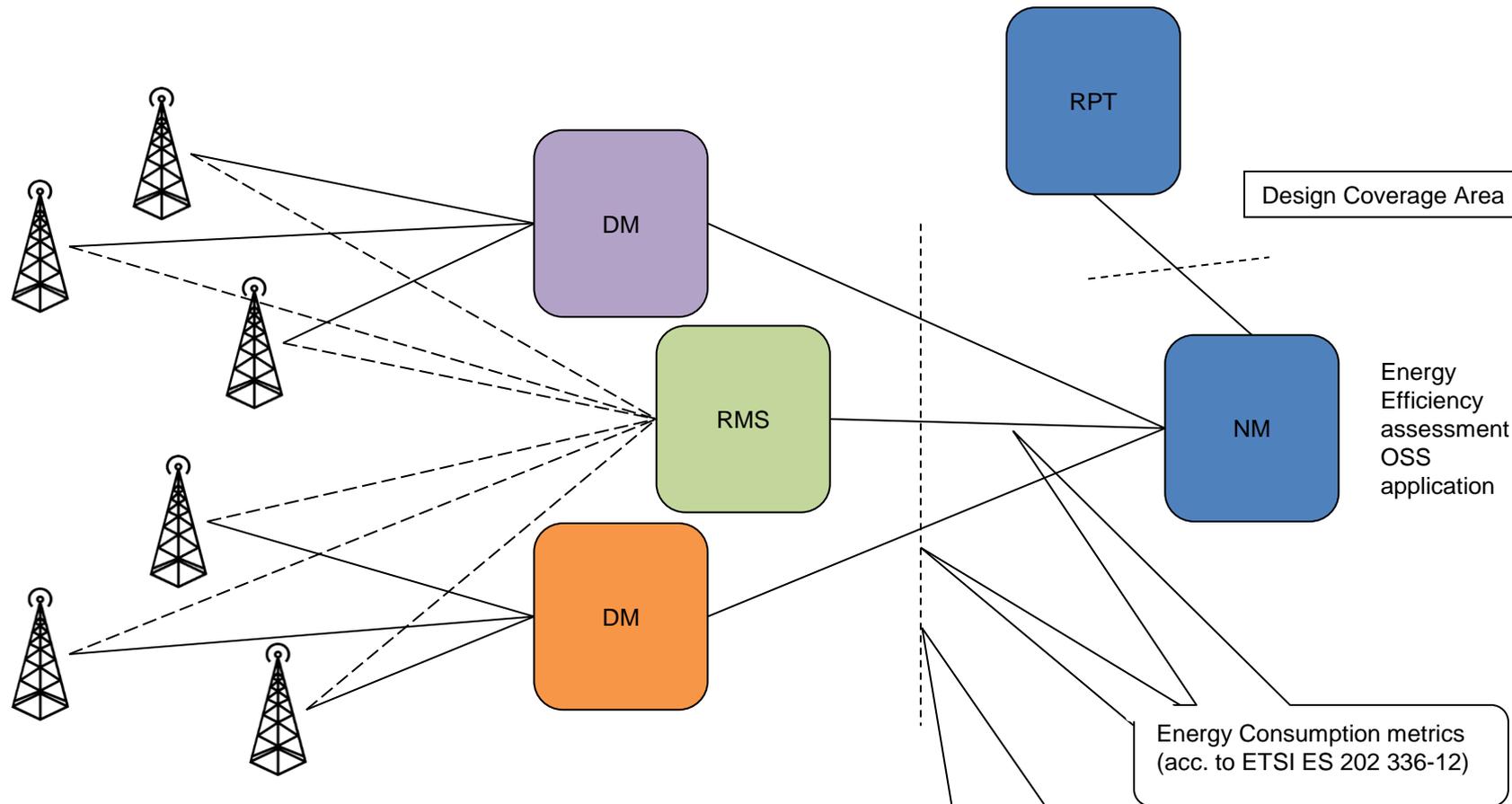


**ORANGE:** E.g. BTS, NodeB, eNodeB



# Possible global architecture for OA&M support of EE assessment of mobile access networks

ANALYSIS by ORANGE



DM: Domain Manager (3GPP) (= ETSI NMS)  
NM: Network Management (3GPP)  
RMS: Remote Management Server (ETSI)  
RPT: Radio Planning Tool (3GPP)

# ETSI ES 202 336-12

## Principle of the monitoring of ICT equipment power, energy and environment parameters – QUESTIONS (1/2)



- 📶 Clarification needed on XCU / DGU
  - XCU generates data in XML
  - DGU gathers raw data and generates data in vendor-specific format to LMA
  
- 📶 Clarification needed on RMS scenarii (inside vs. outside MNO domain)
  
- 📶 Why is RMS-to-NMS interface (data export) not in scope of ES 202 336-12?
  
- 📶 Does ETSI EE plan to define an info / data model for interfaces in its scope (UML, XML, REST ...)?

# ETSI ES 202 336-12

## Principle of the monitoring of ICT equipment power, energy and environment parameters – QUESTIONS (2/2)



 To be confirmed that interfaces in scope of ETSI ES 202 336-12 are:

- From Equipment to RMS / NMS (Outband):
  - Monitoring
    - Data (Power, Energy, temperature, etc.)
    - Events (i.e. configuration change notifications)
    - Alarms, etc.
- From RMS / NMS to equipment (Outband):
  - Configuration (e.g. reading configuration attributes)
  - Control, i.e. setting configuration attributes (e.g. alarm thresholds, « record period », etc.)
- From NMS to RMS
  - Which information?

 To be confirmed that the following interfaces are out of scope of ETSI ES 202 336-12:

- From RMS to NMS
- From Equipment to NMS (cf. « TMN protocol »)

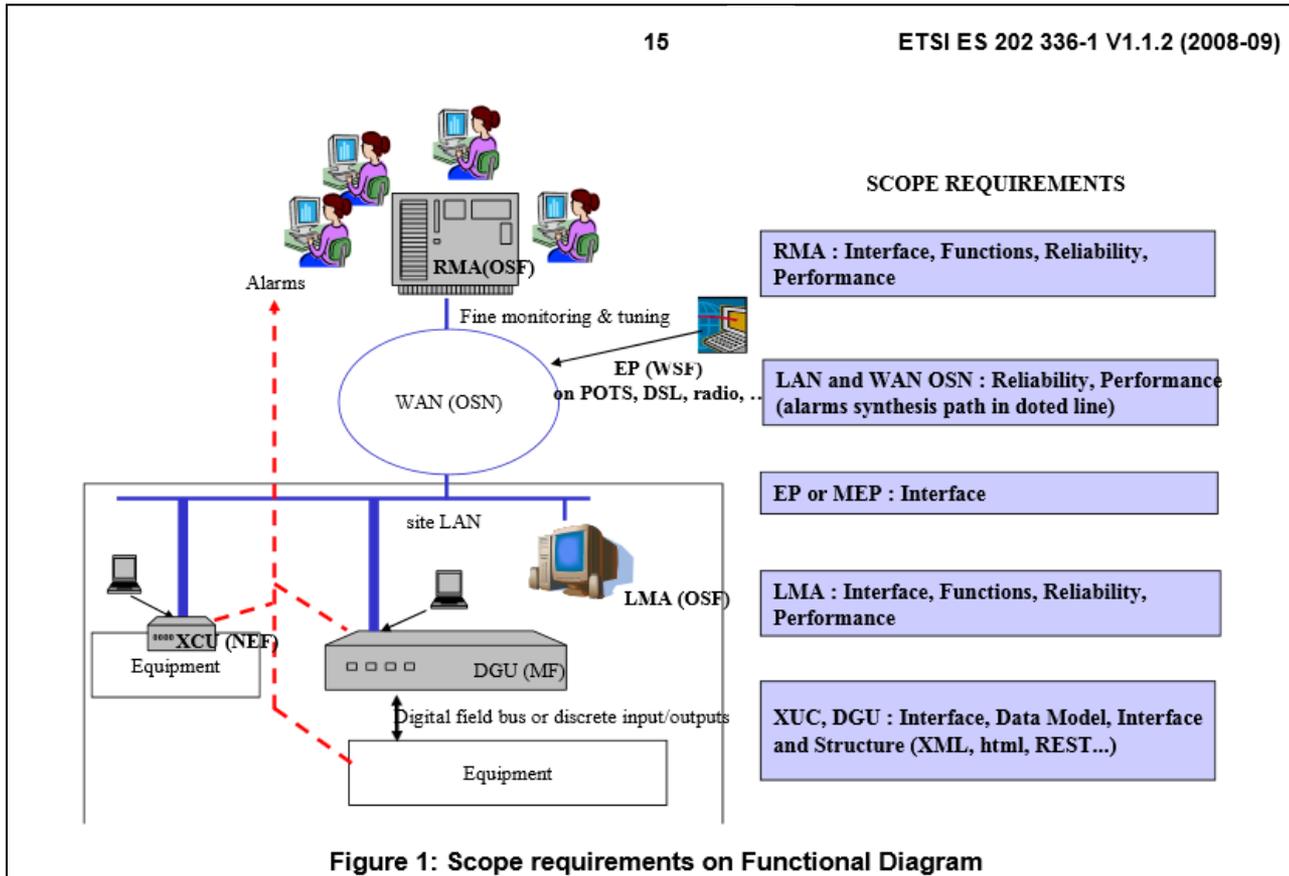


# ETSI ES 202 336-1

Environmental Engineering (EE);

Monitoring and Control Interface for Infrastructure Equipment  
(Power, Cooling and Building Environment Systems used in  
Telecommunication Networks)

## Part 1: Generic Interface



ORANGE: The mapping between this architecture and Figure 1 of ETSI ES 202 336-12 would be welcome.

# Question to SA5

 SA5 to discuss and decide :

- Is there a need for standardizing interface b/w ETSI NMS / RMS and 3GPP NM layer?
- If yes, is SA5 legitimate to do so, for 3GPP networks?
- If yes, start by a study phase
  - New study Item?
  - Or extend scope of current Study Item?

Thank you