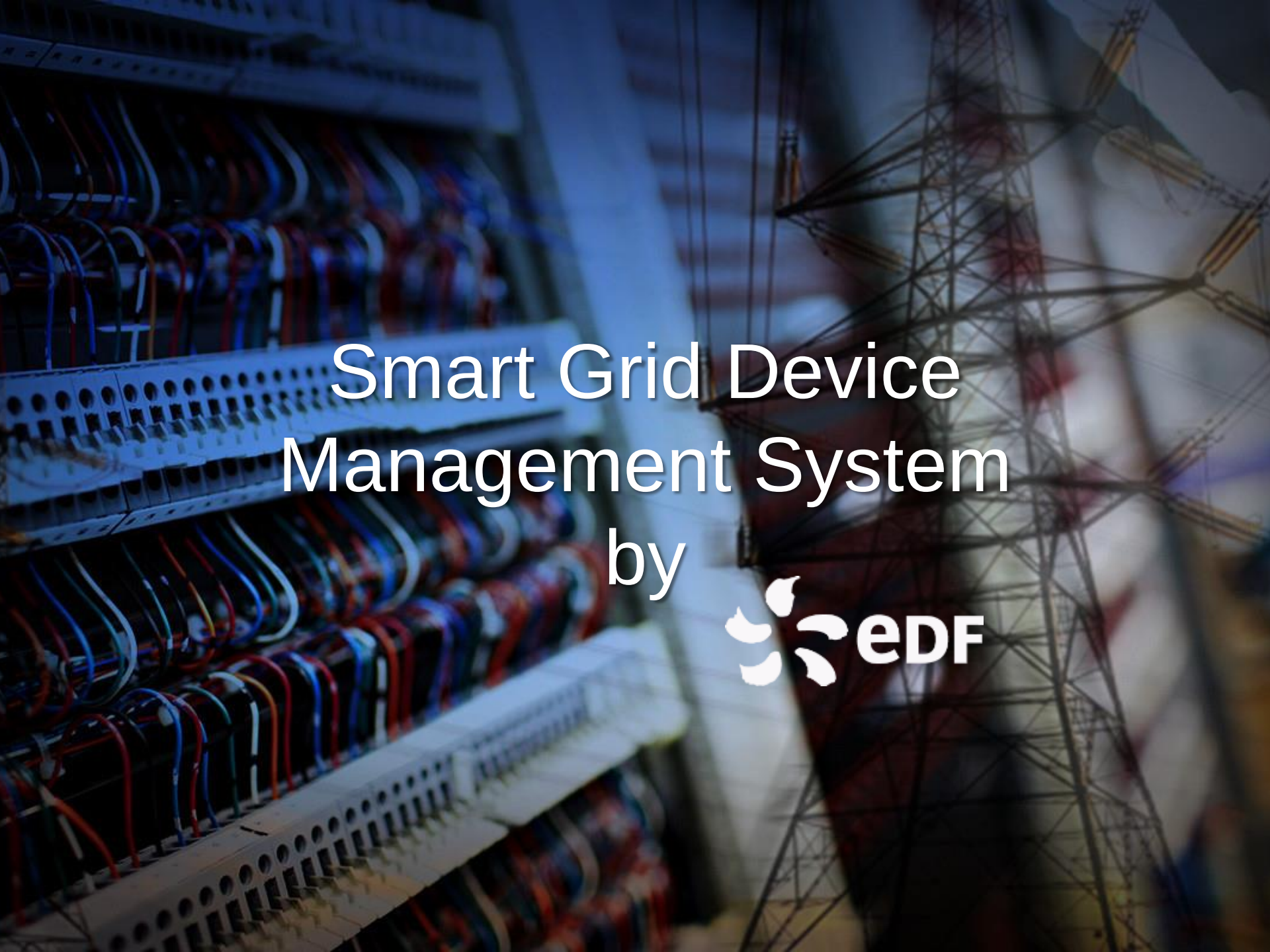

Smart Grid Device
Management System
by
EDF

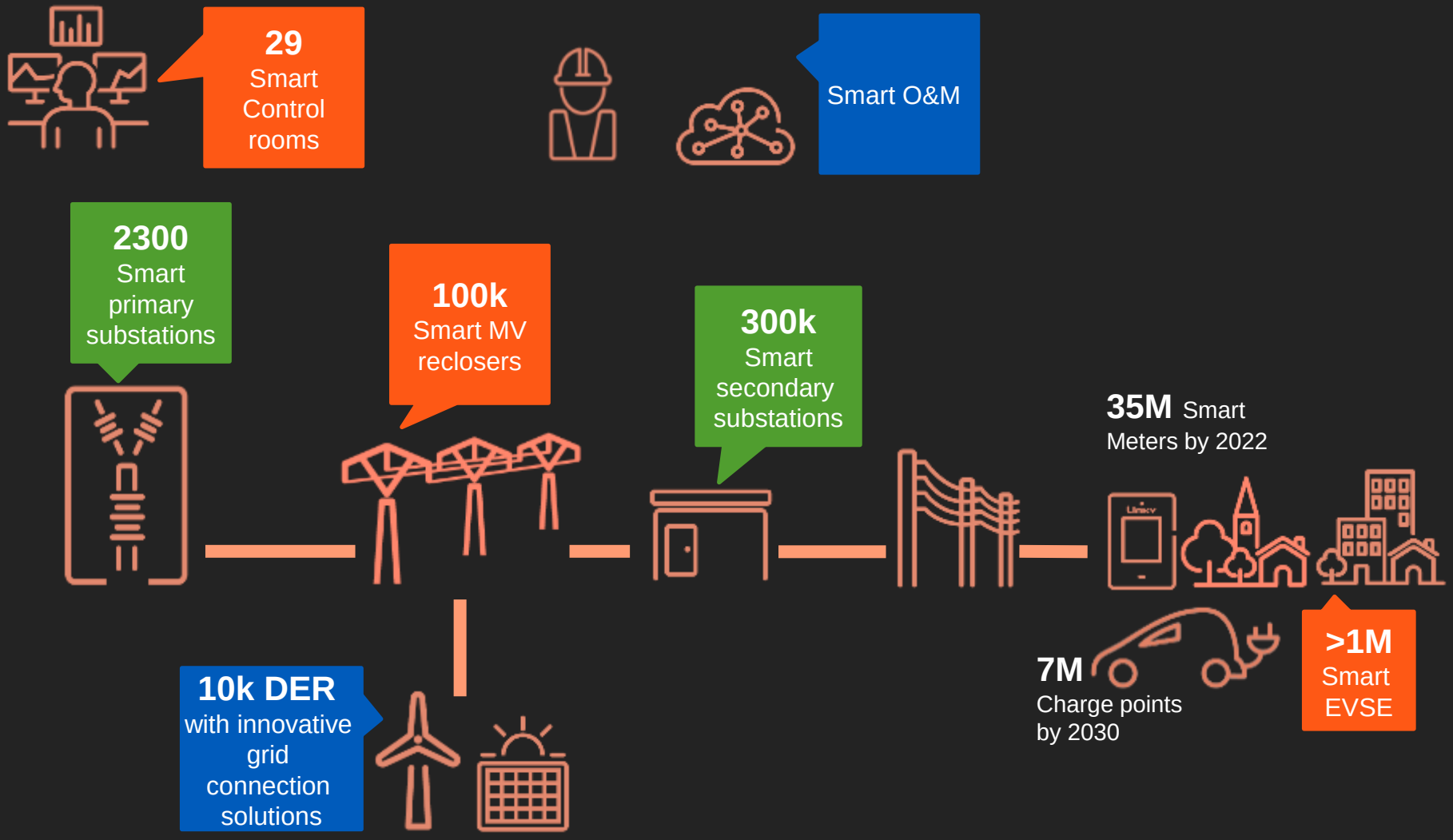
TODAY’S TOPIC

SMART GRID DEVICE MANAGEMENT SYSTEM

AN INTEROPERABLE SYSTEM
THAT MANAGES REMOTELY
SMART GRID DEVICES

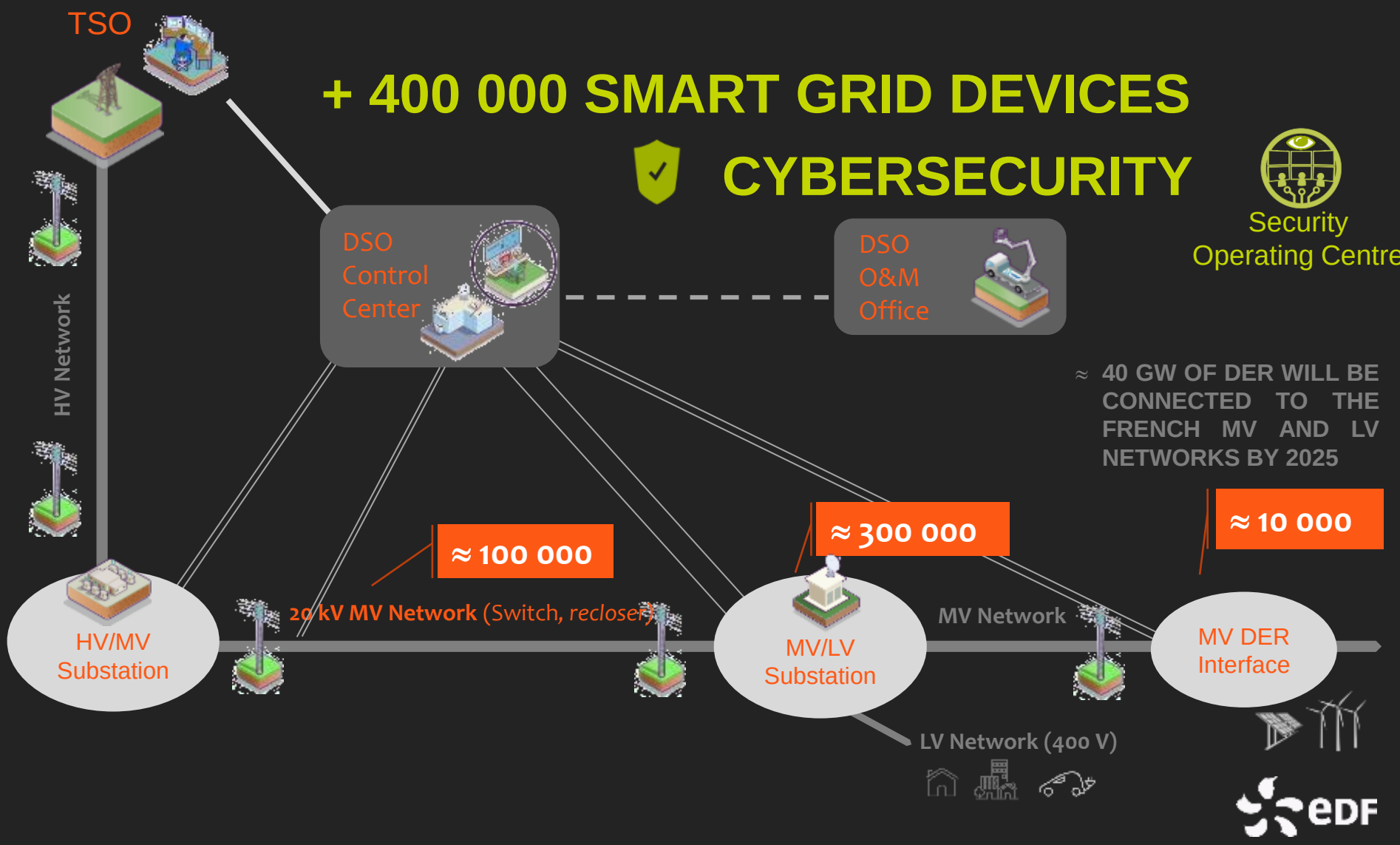
THE FUTURE DISTRIBUTION NETWORK

SMART GRID DEVELOPMENTS IN FRANCE

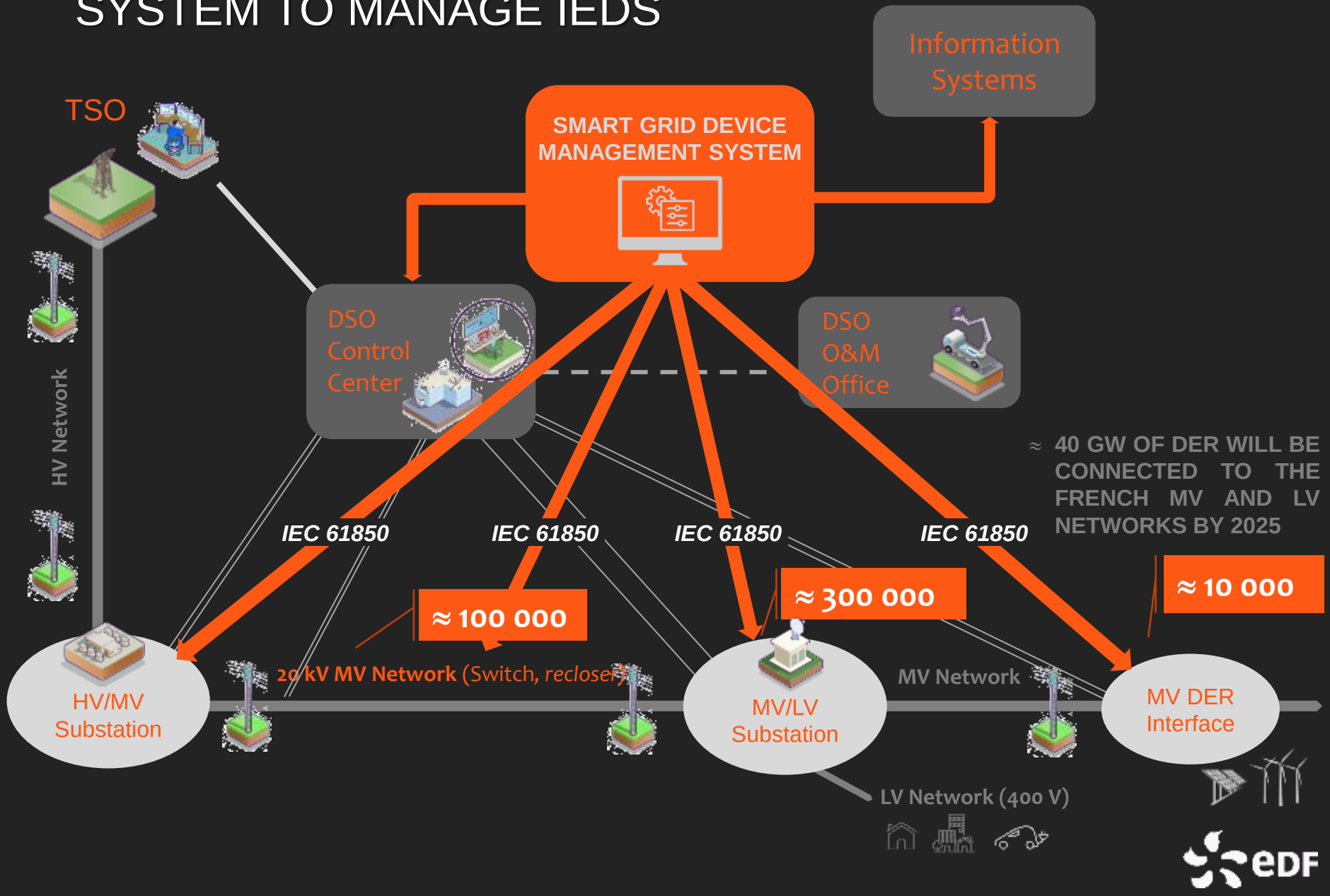


CHALLENGES TO ADDRESS:

MANAGE THE INCREASING NUMBER OF SMART GRID DEVICES BEING DEPLOYED ON THE FIELD WITH A VERY HIGH LEVEL OF CYBERSECURITY



SMART GRID DEVICE MANAGEMENT SYSTEM : A NEW SYSTEM TO MANAGE IEDS

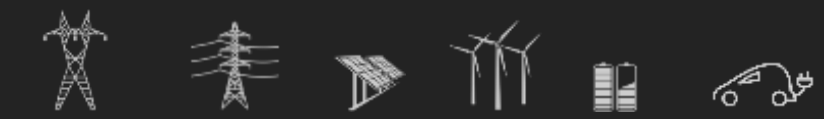


MAIN REQUIREMENTS ?

- **An Interoperable solution**

Smart Grid Core Standards (CIM, 61850, 62351)

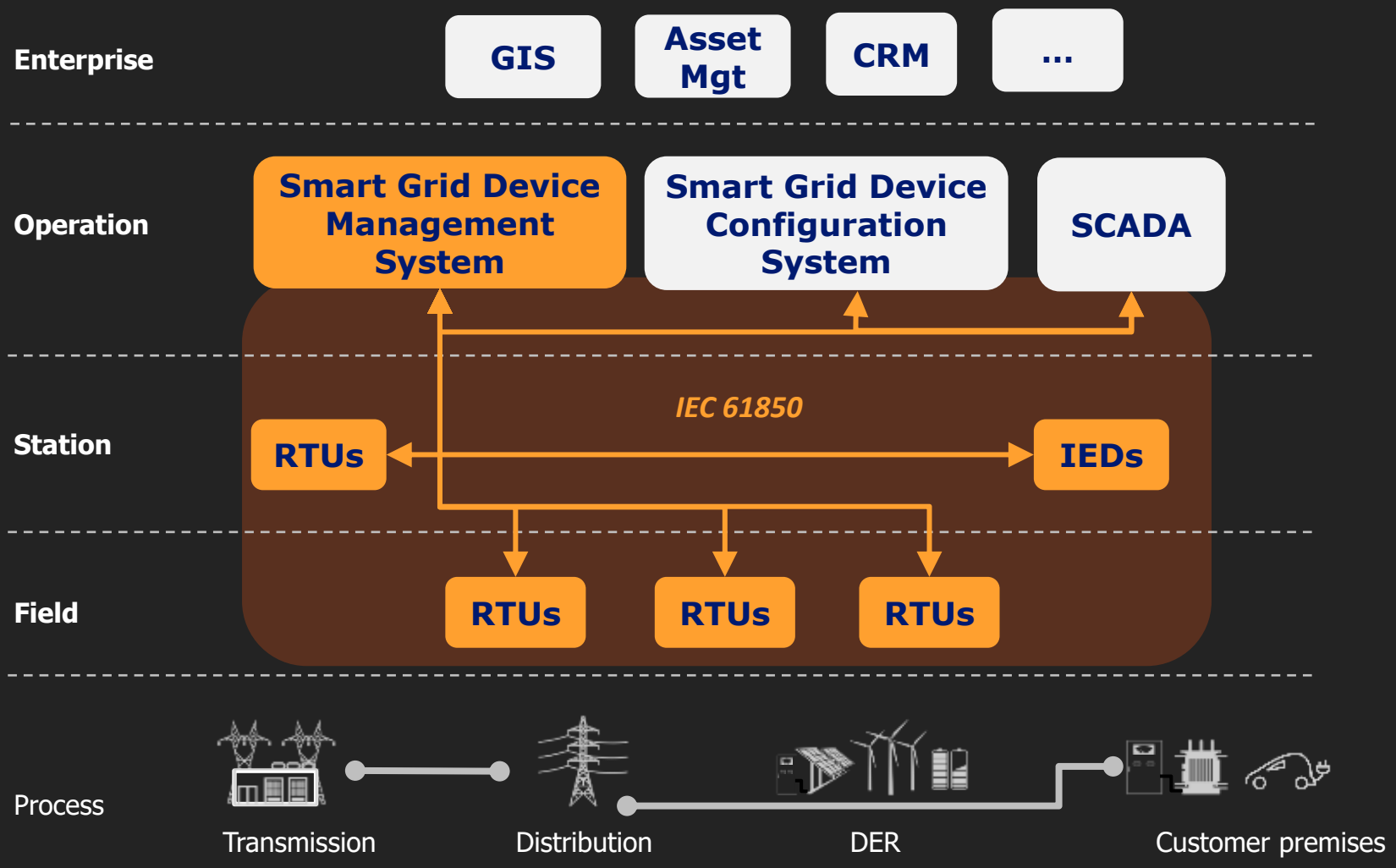
- **A Scalable solution**



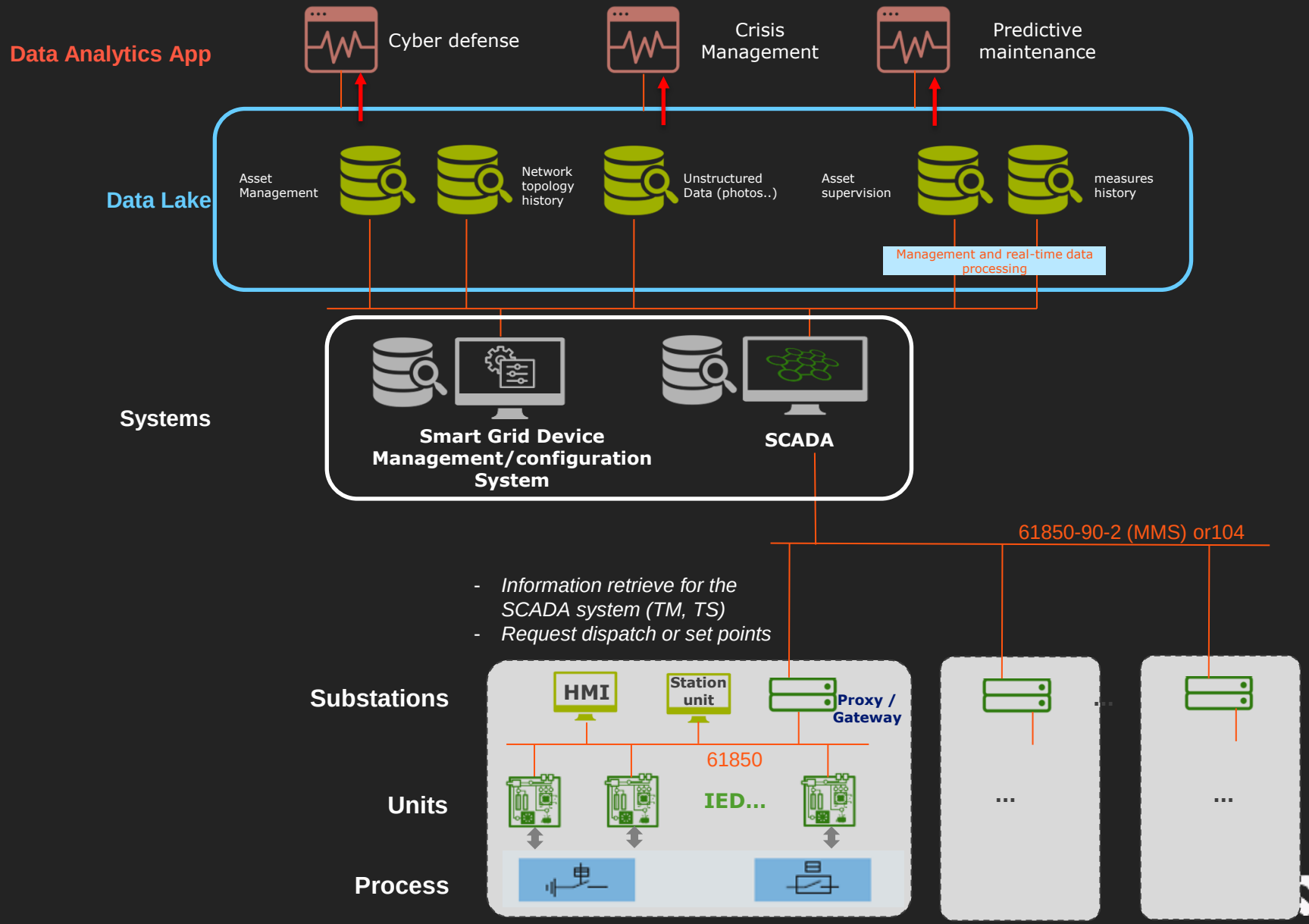
+ new Smart Grid functions

- **A Cybersecured solution**

SMART GRID DEVICE MANAGEMENT SYSTEM IS ONE PIECE OF A BIGGER PUZZLE…

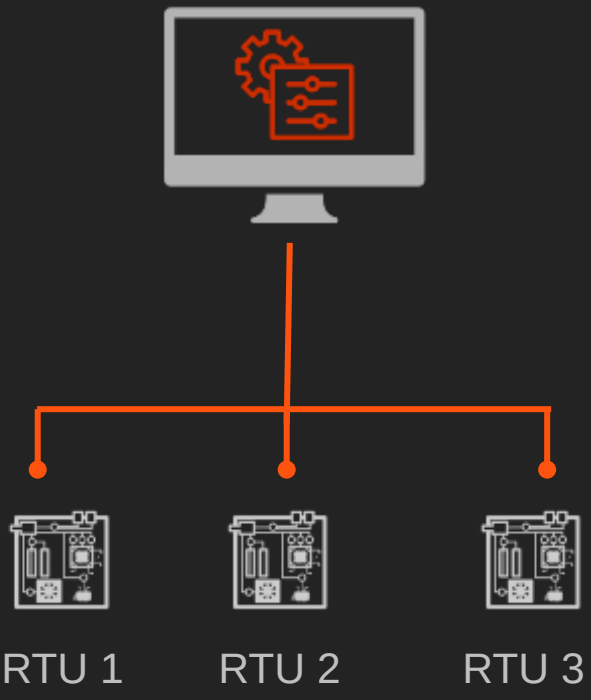


SMART GRID DEVICE MANAGEMENT SYSTEM BETWEEN THE PROCESS AND THE DATA ANALYTICS



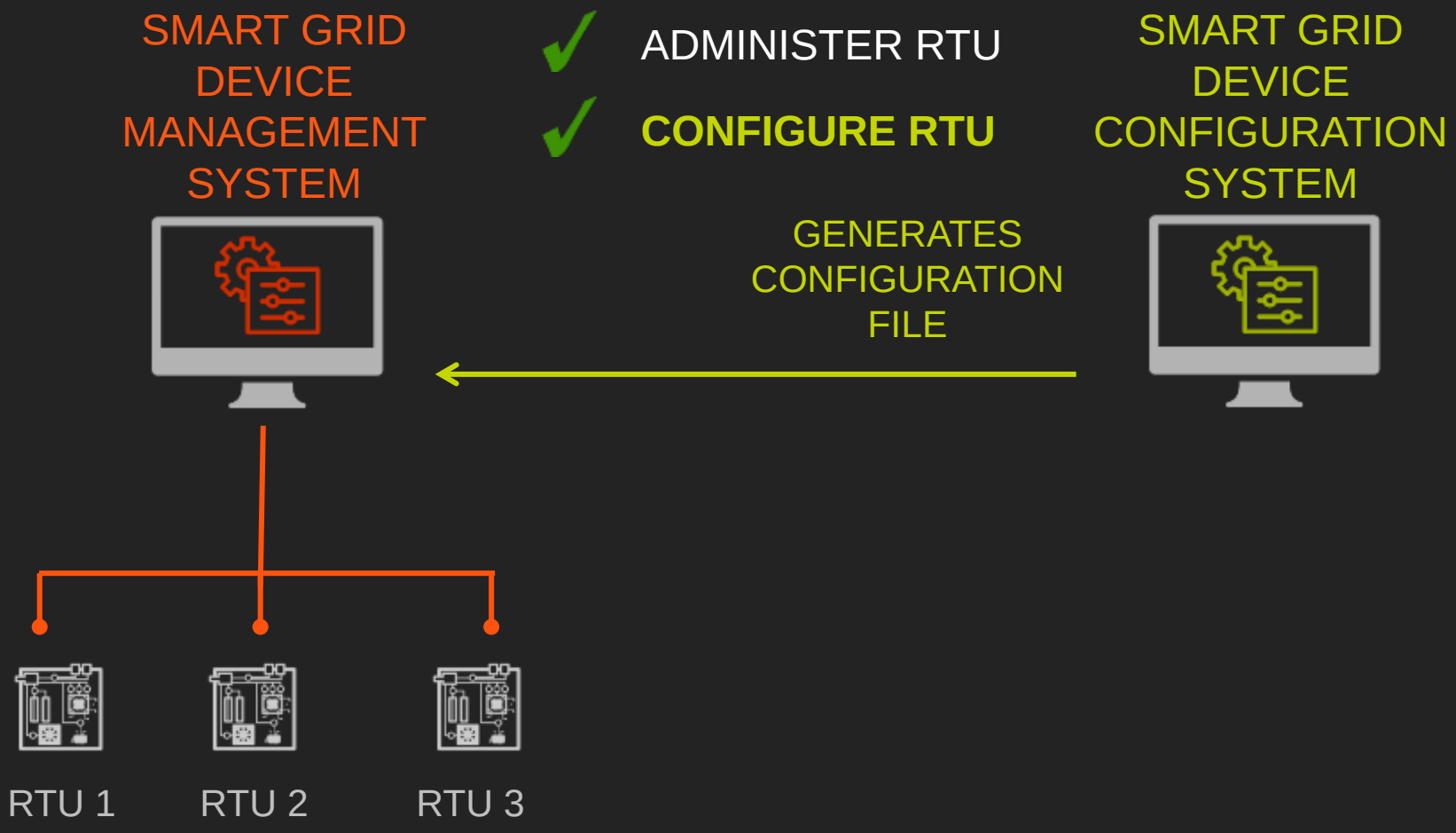
FUNCTIONAL SCOPE

SMART GRID DEVICE MANAGEMENT SYSTEM

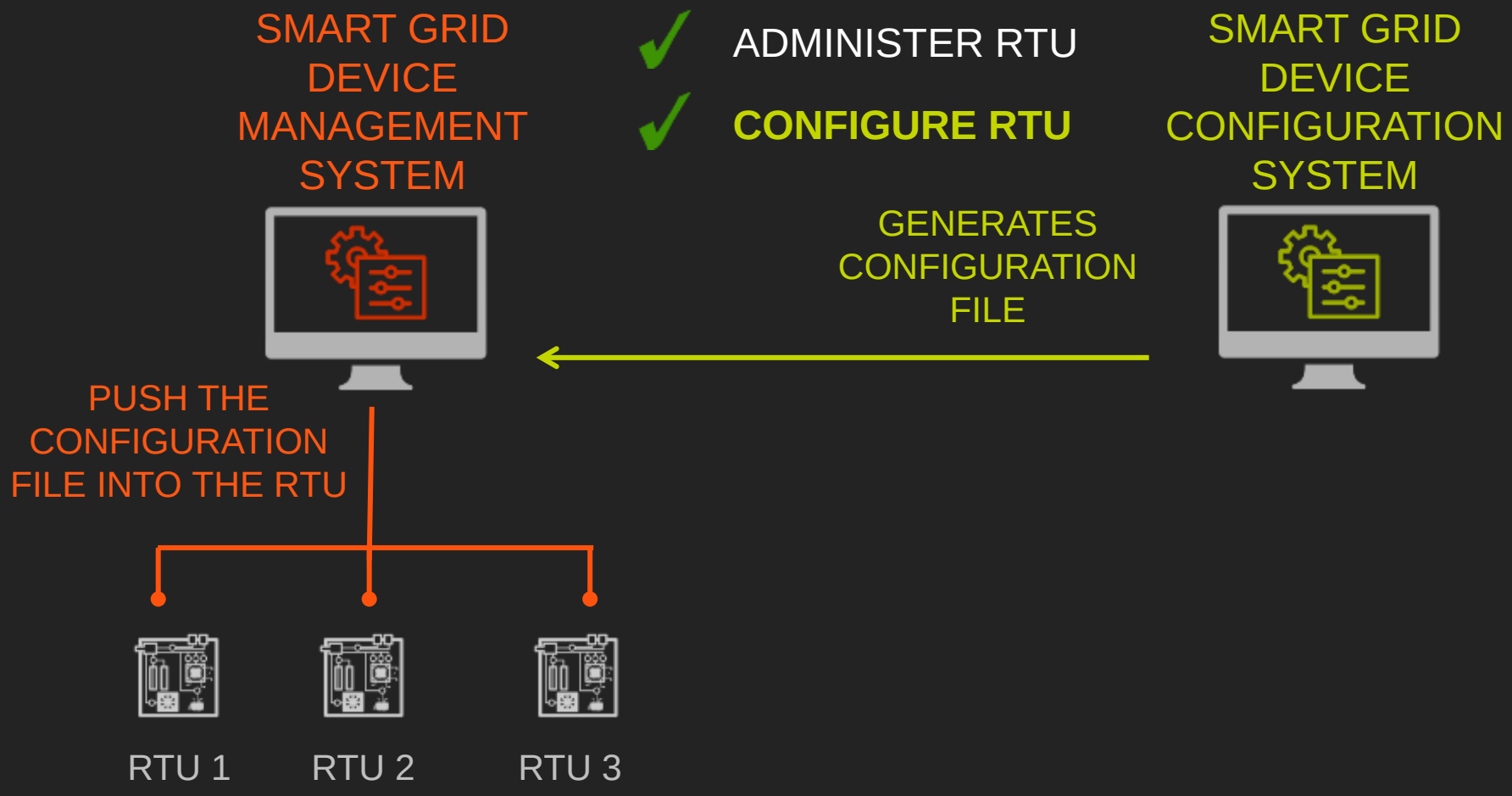


- ✓ ADMINISTER RTU
- ✓ CONFIGURE RTU

FUNCTIONAL SCOPE

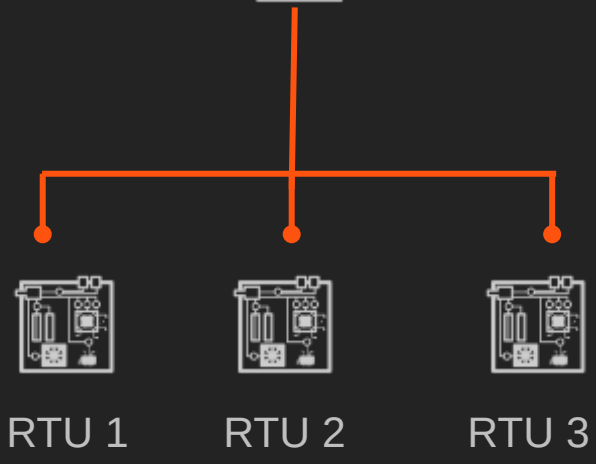


FUNCTIONAL SCOPE



FUNCTIONAL SCOPE

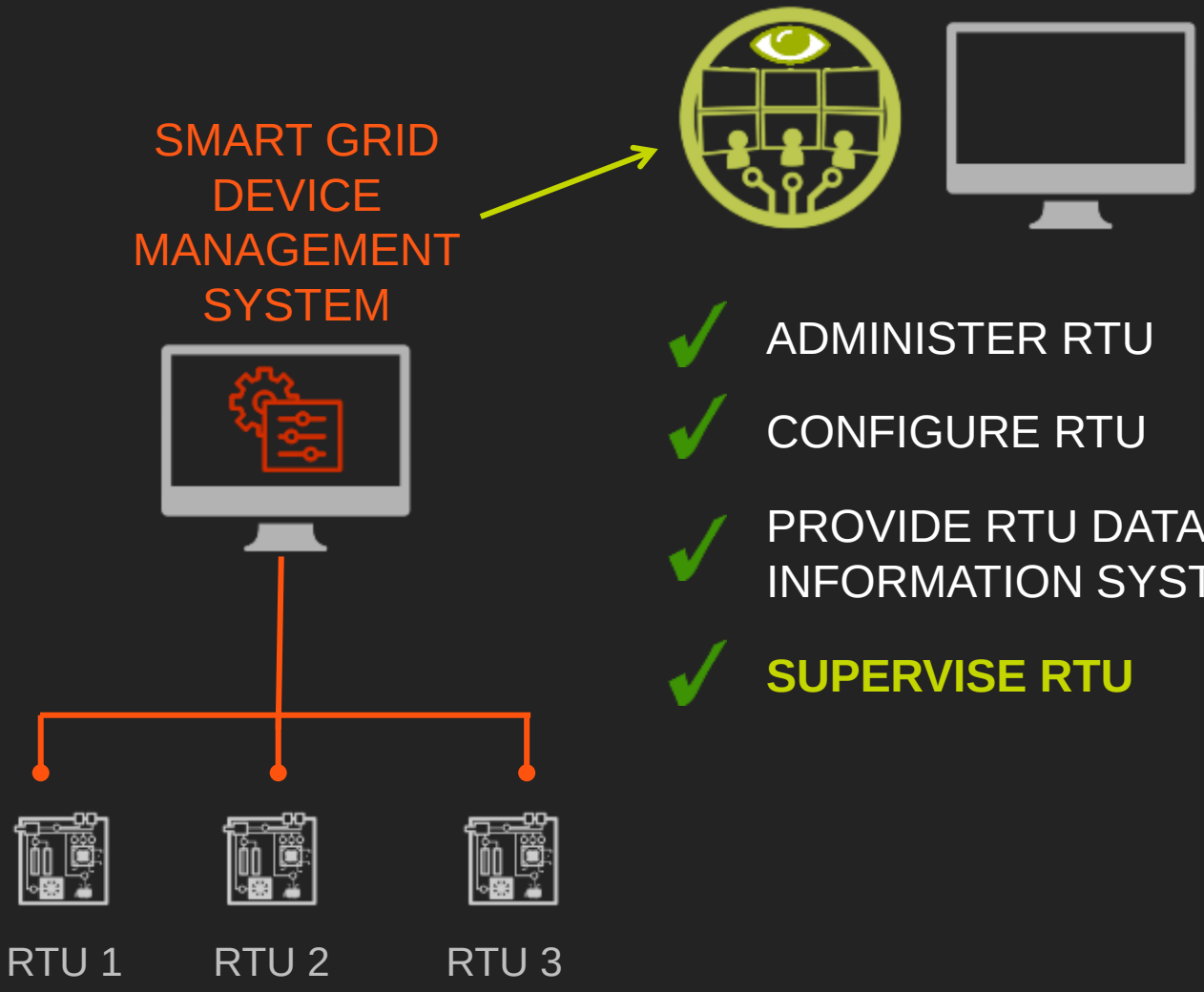
SMART GRID DEVICE MANAGEMENT SYSTEM



ASSET MANAGEMENT INFORMATION SYSTEM

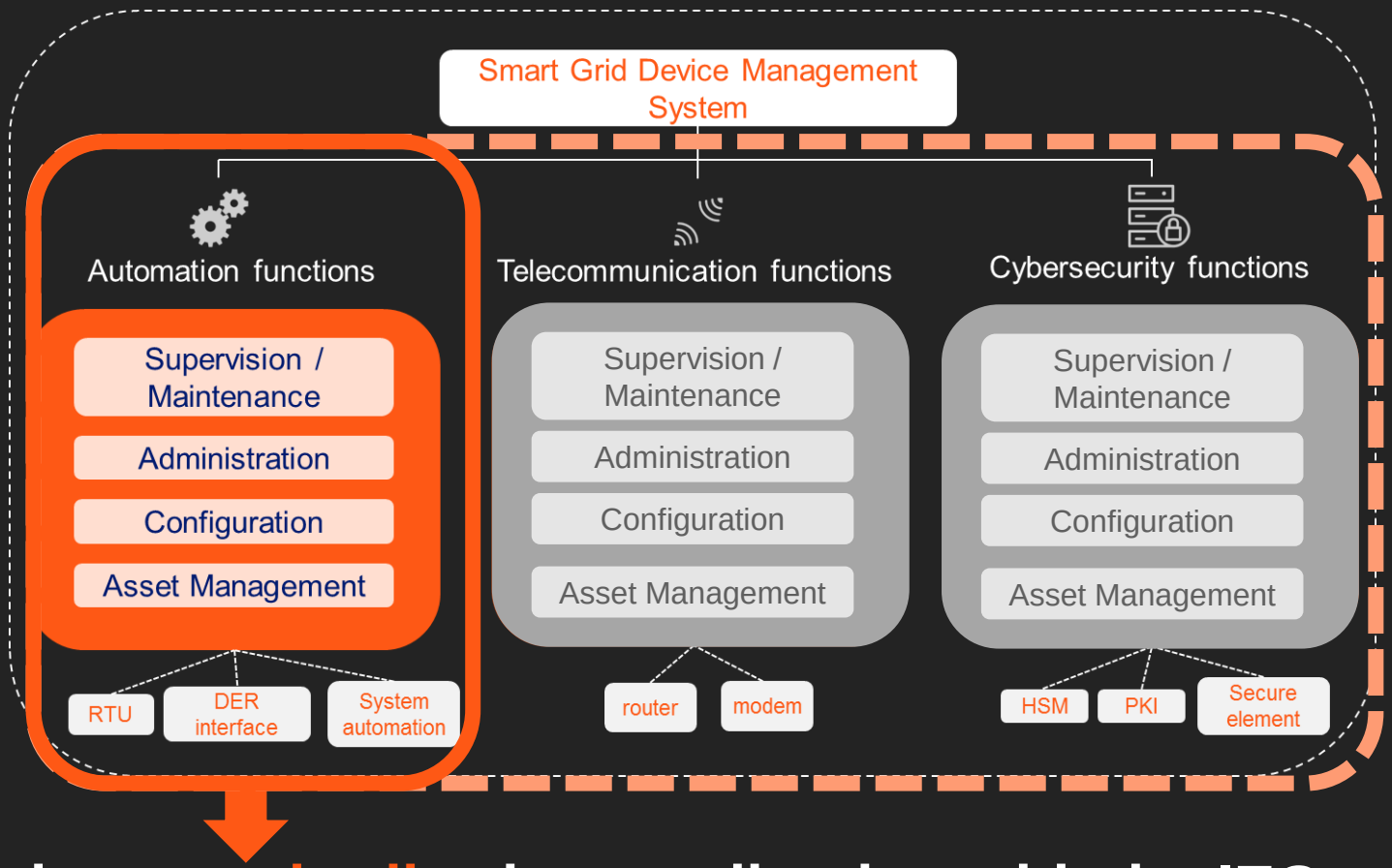
- ✓ ADMINISTER RTU
- ✓ CONFIGURE RTU
- ✓ **PROVIDE RTU DATA TO DIFFERENT INFORMATION SYSTEMS**

FUNCTIONAL SCOPE



- ✓ ADMINISTER RTU
- ✓ CONFIGURE RTU
- ✓ PROVIDE RTU DATA TO DIFFERENT INFORMATION SYSTEMS
- ✓ **SUPERVISE RTU**

MANAGEMENT FUNCTIONS TO BE STANDARDIZED



Need to standardize in coordination with the IEC 61850 standard - IEC Task Force SM, hosted in the WG17 of the IEC TC57

IED LIFE CYCLE AND USE CASES IDENTIFIED BY THE IEC TASK FORCE SM

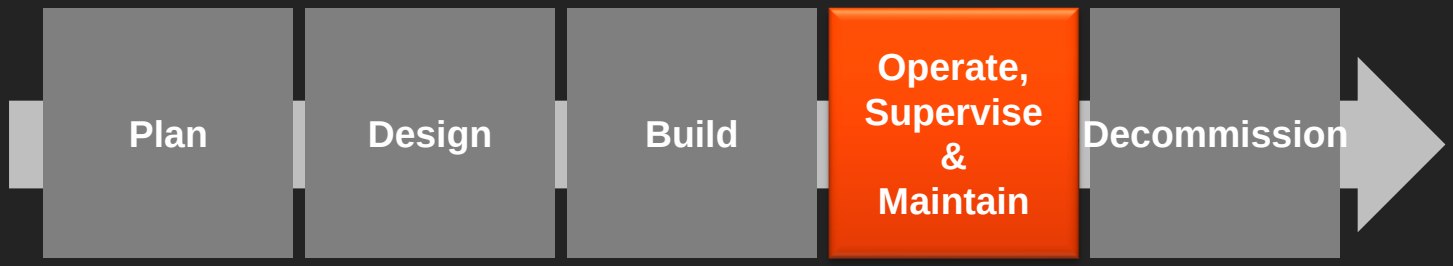
Configuration Use Cases
- *Update configuration files*
- *Set online configuration parameters*
- *Synchronising configuration update along a feeder/in the same substation*

Asset Management Use Cases
- *Introducing a new component*
- *Replacement of an existing component*
- *Store and provide asset information on an IED*
- *Decommissioning*

Administration Use Cases
- *Update IED Firmware*
- *IED files upload management*

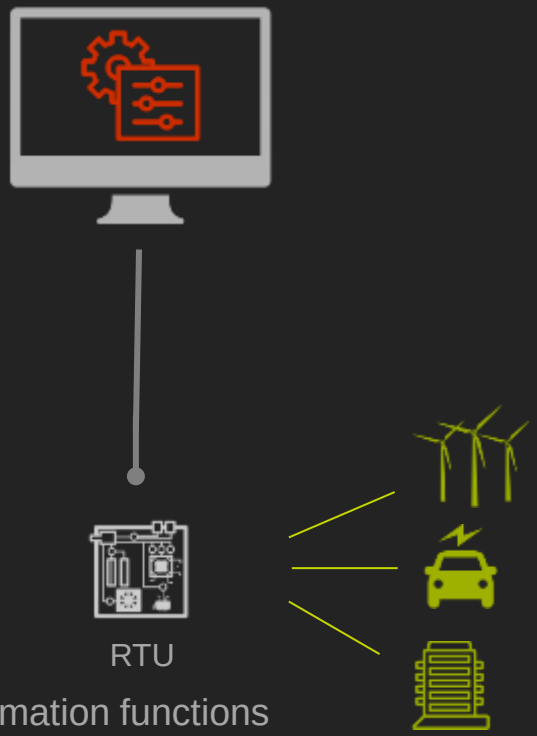
Supervision & Maintenance Use Cases
- *Manage logs,*
- *Retrieve disturbance measure files from an IED*
- *Restart an IED*

Smart Grid Device Management



THE SMART GRID DEVICE MANAGEMENT SYSTEM : A DESIGN TO MANAGE DIFFERENT TYPES OF FUNCTIONS

SMART GRID DEVICE MANAGEMENT SYSTEM



RTU

- ✓ Automation functions
- ✓ Telecommunication functions
- ✓ Cybersecurity functions

The Smart Grid Device Management System will address different types of functions in a consistent and uniform way.

- *Automation functions*
- *Telecommunication functions*
- *Cybersecurity functions*

These functions may be integrated in one or several RTUs