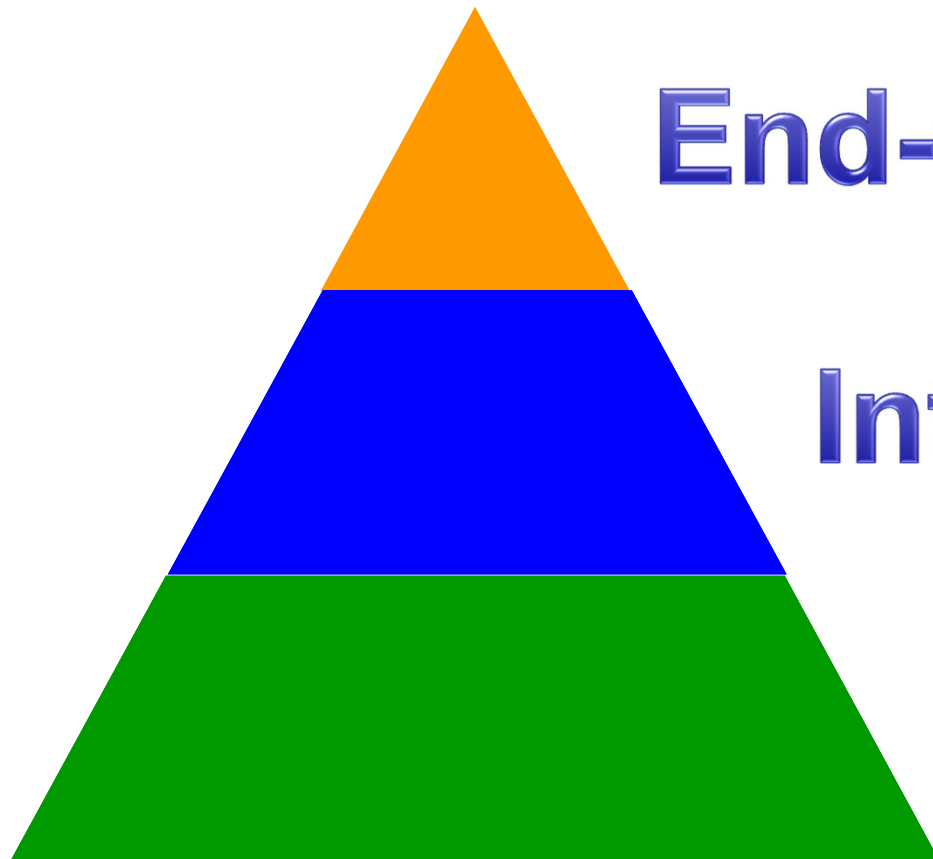




# Advancing Certification Testing From Conformity to Interoperability to End-to-End



**End-to-End**

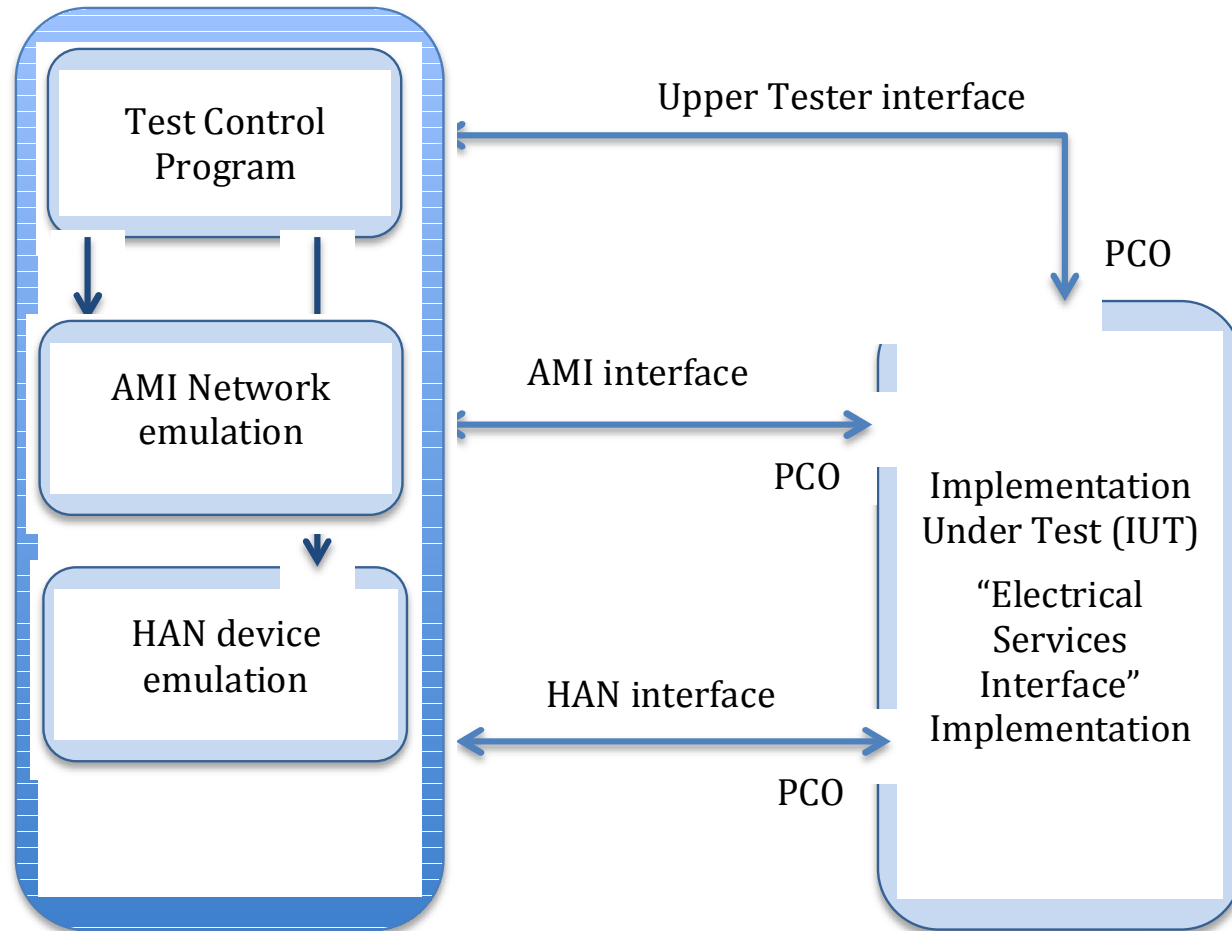
**Interoperability**

**Conformance**

## Conformance

... adhering to both the mandatory and optional functional behavior/features

- Specification/Standard (functional behavior)
- Conformity Statements (i.e. PICS)
- Test Plan (cases) & Test Scripts (harness)
- Positive, Negative & Boundary Testing
- Support Business Use Cases

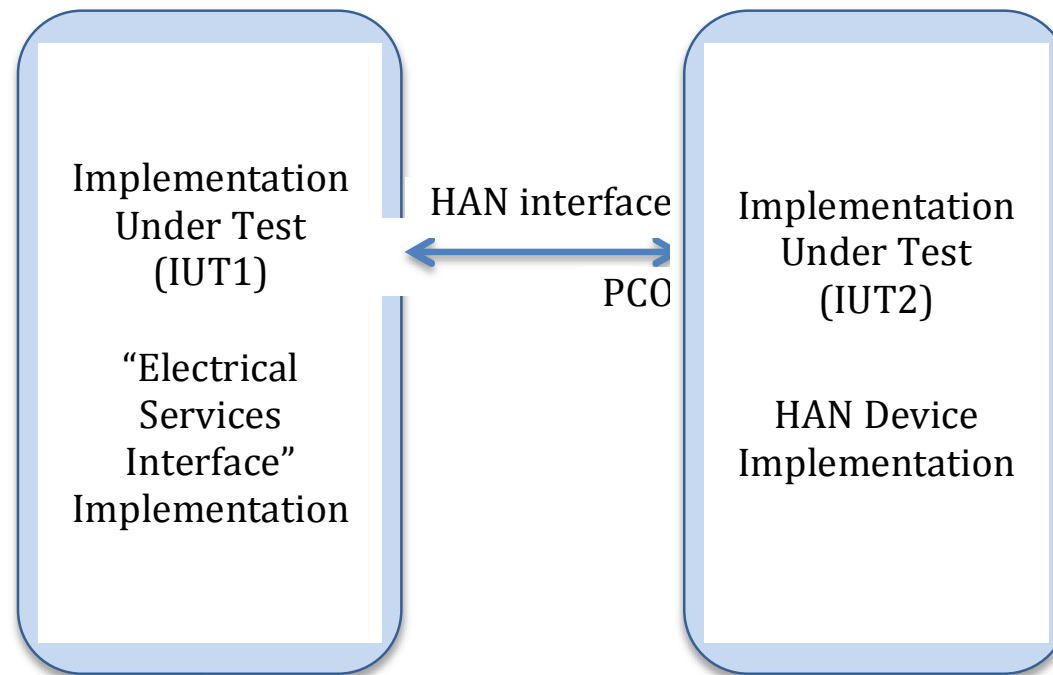


## Conformance Test Logical Setup

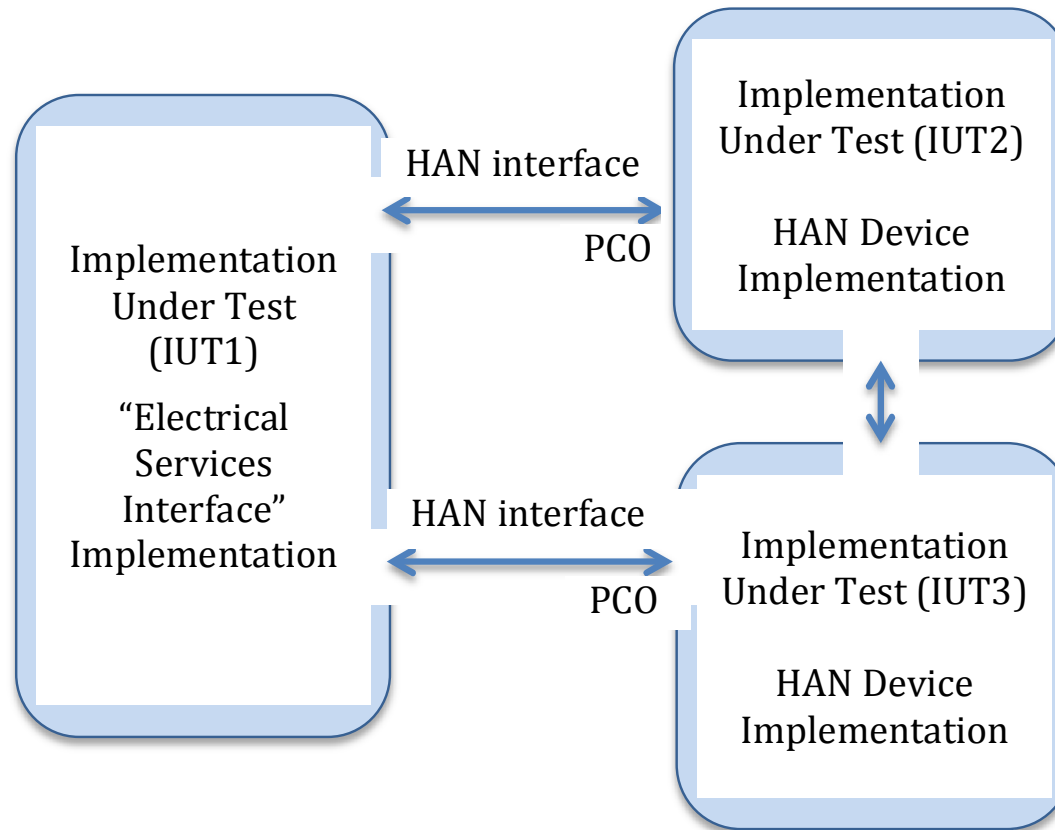
## Interoperability

... ability of a system or a product to work with other systems or products with an “acceptable” level of operator intervention

- Device to Device Interfaces Tested
- Complexity/Interfaces Increase w/ # Devices
- Optionality Increases Test Permutations
- Support Business Use Cases



## Interoperability Test Logical Setup

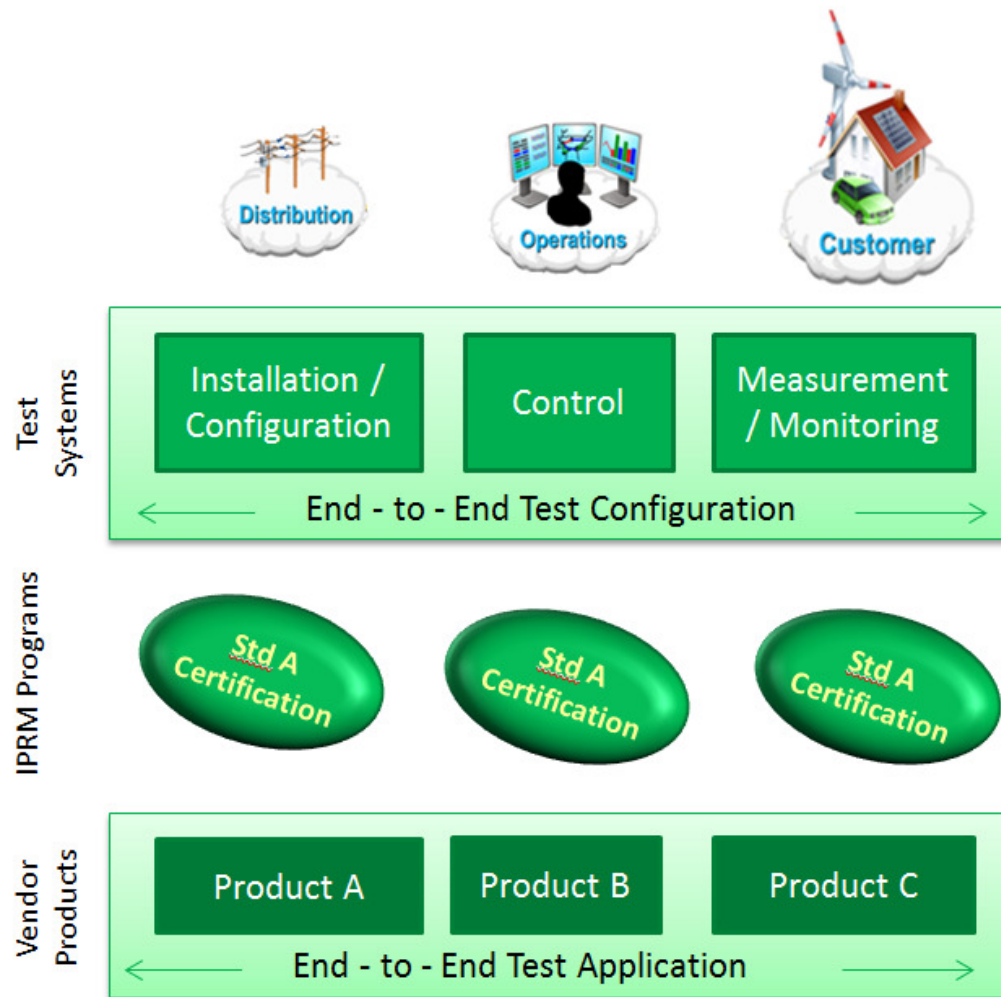


## Peer to Peer Communication Example

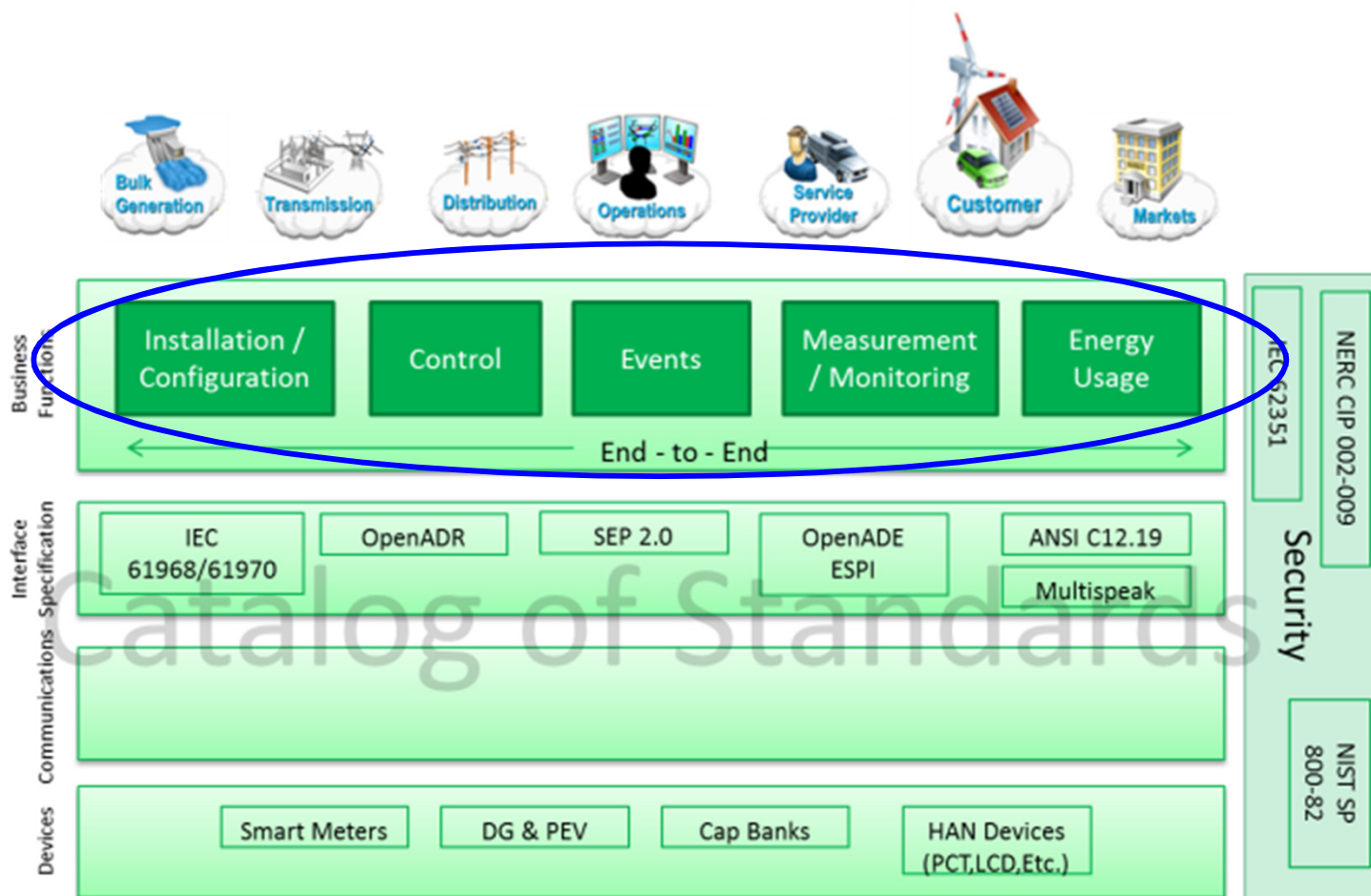
## IPRM

- ... Interoperability Process Reference Manual
- Tool to Assess Quality and Maturity of Certification Programs
- Serves as a Guideline for Organizations Responsible for Certifying Conformance and Interoperability
- Building Block to End-to-End





## IPRM and End-to-End Test System



## Typical End-to-End Interoperability Problem

## HAN Installation

... selected as base test case

### 4 Categories in End-to-End Test Model

1. Test Use Case - common set of SG business req's. and processes
2. Test Requirements - dev. of abstract test suites
3. Testing Process - End-to-End Principles
4. Feed Back - Feedback Loop to



## End-to-End Test Model