

African Utility Week

Clean Power Africa

The largest global meeting place from African Utilities

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Enabling Seamless Smart Meter Connectivity Through Rigorous Laboratory Testing

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Why testing?

- Substantial amount of African smart meter projects marred by communication failures
- Driving the adoption of open (open-proprietary) communication standards
- Open standards alone do not guarantee seamless and reliable connectivity
- Needs to be coupled with rigorous testing regime
- Field trials are traditionally preferred approach to testing
 - Generally, resource-intensive with high costs
 - Utility resources used to “cull” deficient products
- Laboratory testing is much more cost-effective

Leading by example

World leading utilities have invested, substantially, in test facilities!



No. of Smart Meters: 10 mil by 2020

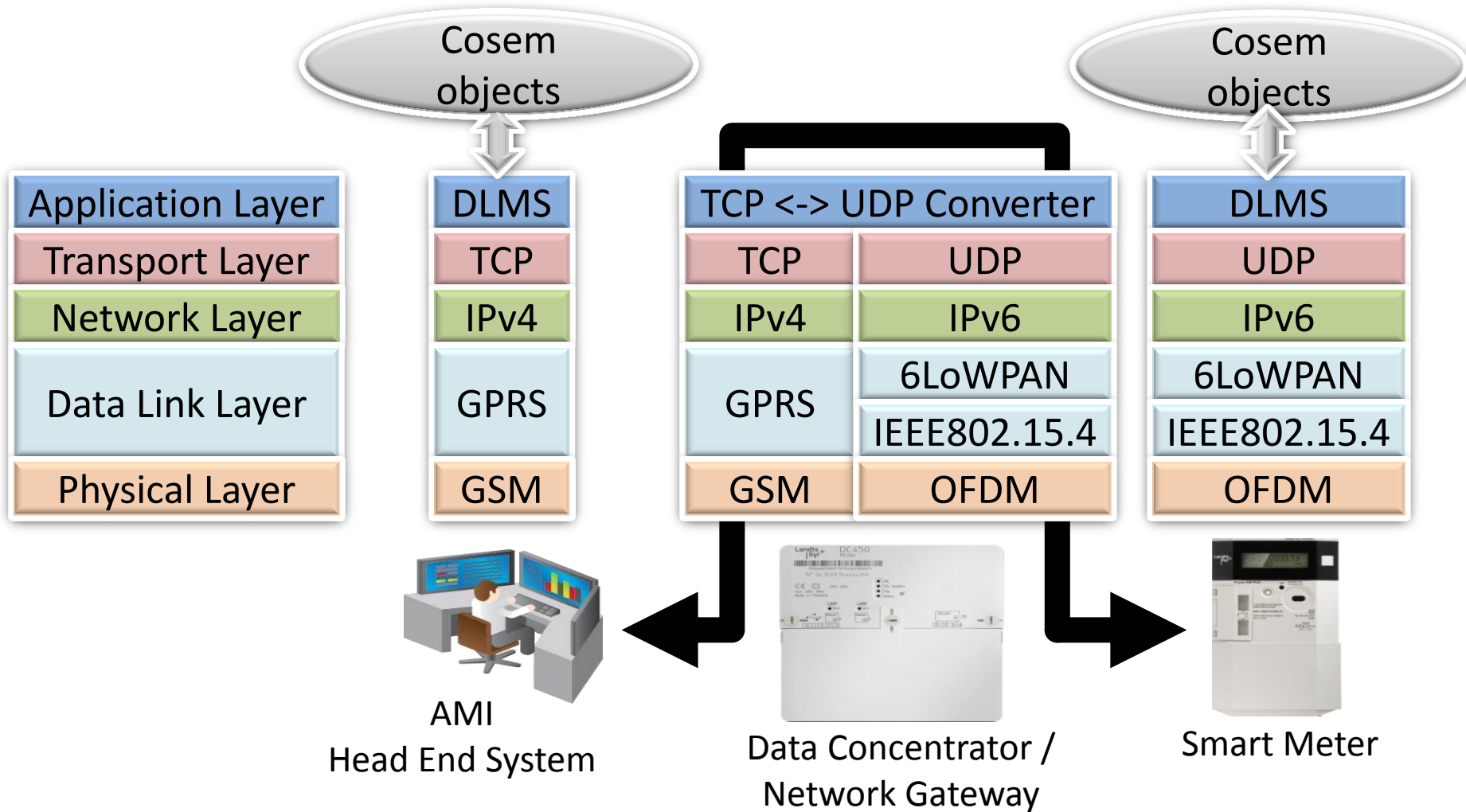


No. of Smart Meters: 32 mil



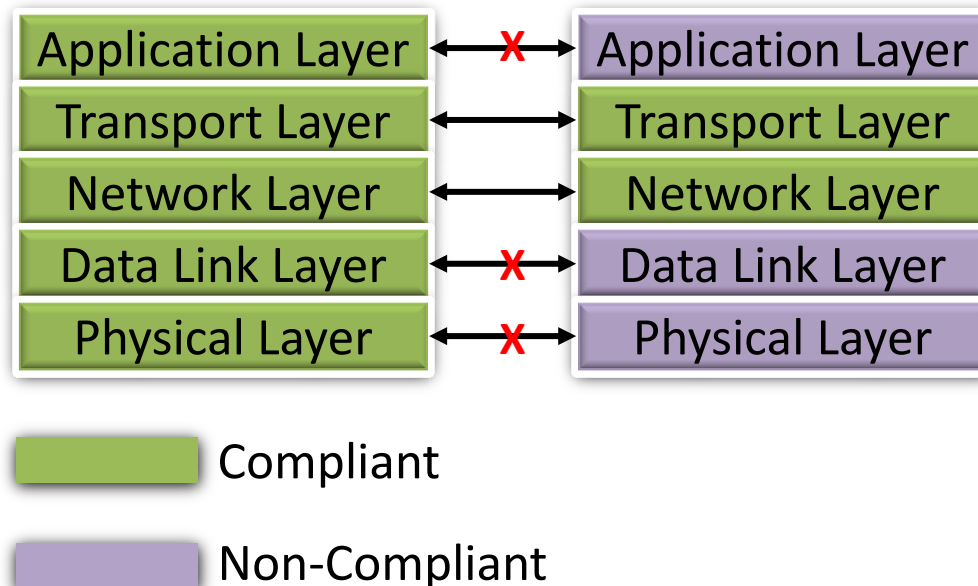
No. of Smart Meters: 35 mil by 2020

Typical smart meter communication architecture



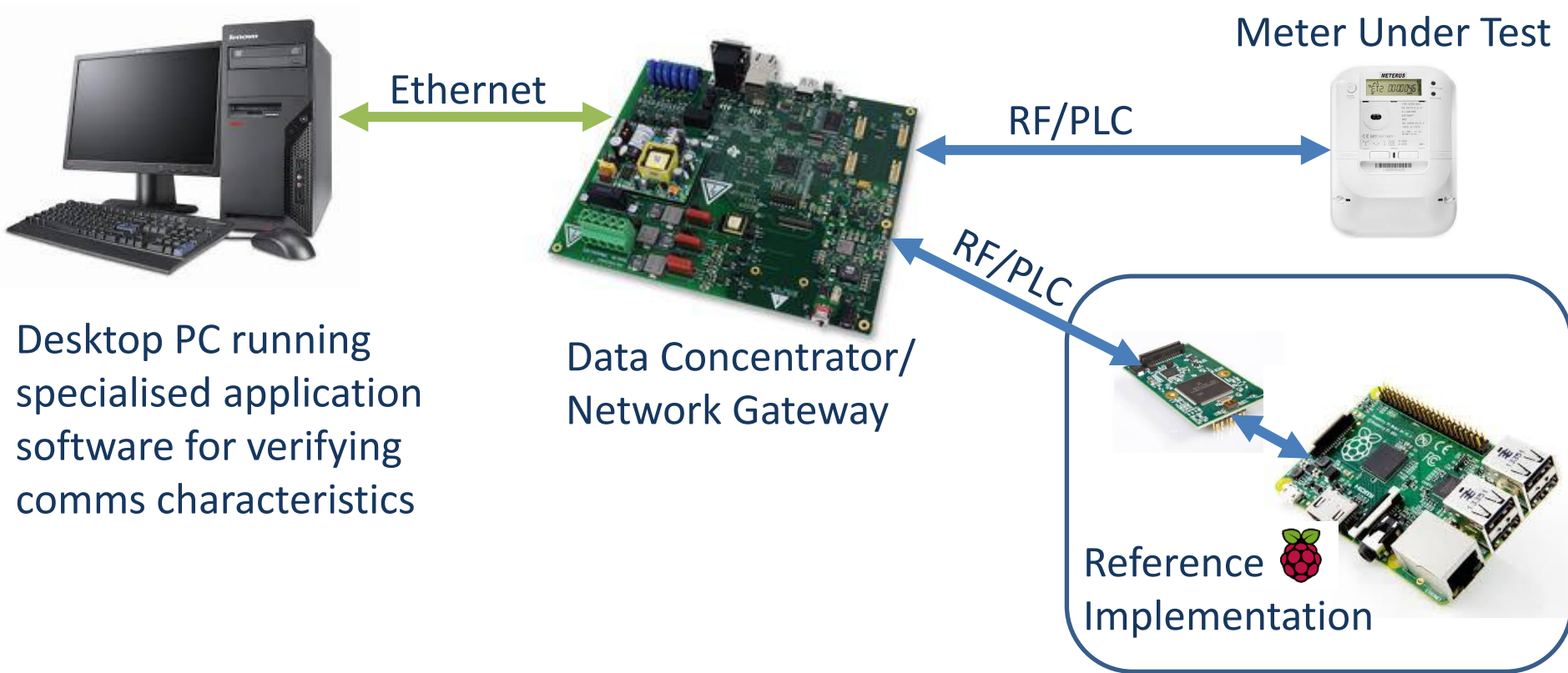
What to test?

- Seamless connectivity requires compliance at all protocol stack layers
- Testing should cover functional and performance verification at all layers
- For example, PHY LAYER tests will include checking robustness against noise, etc.



Example test setup

Functional and interoperability testing



Test tools

- Widely accepted (open) standards have a wide variety of support tools
 - Software libraries
 - Test software
- Some examples:



- OBIS helper
- DLMS comm packages (Java, C++, etc.)
- XML translator



- Open source DLMS/Cosem libraries



- Wi-Sun reference implementation software

Testing strategy guidelines

- Test planning should be considered as early as possible, e.g. specification development phase
- Strategy should be documented, detailing:
 - What the testing covers
 - Test cases/procedure
 - Compliance criterion

Thanks

Q & A