Smart
Sensor
Systems

ESensors

A Case for IEEE-1451 Reference Implementations

Putting it Together

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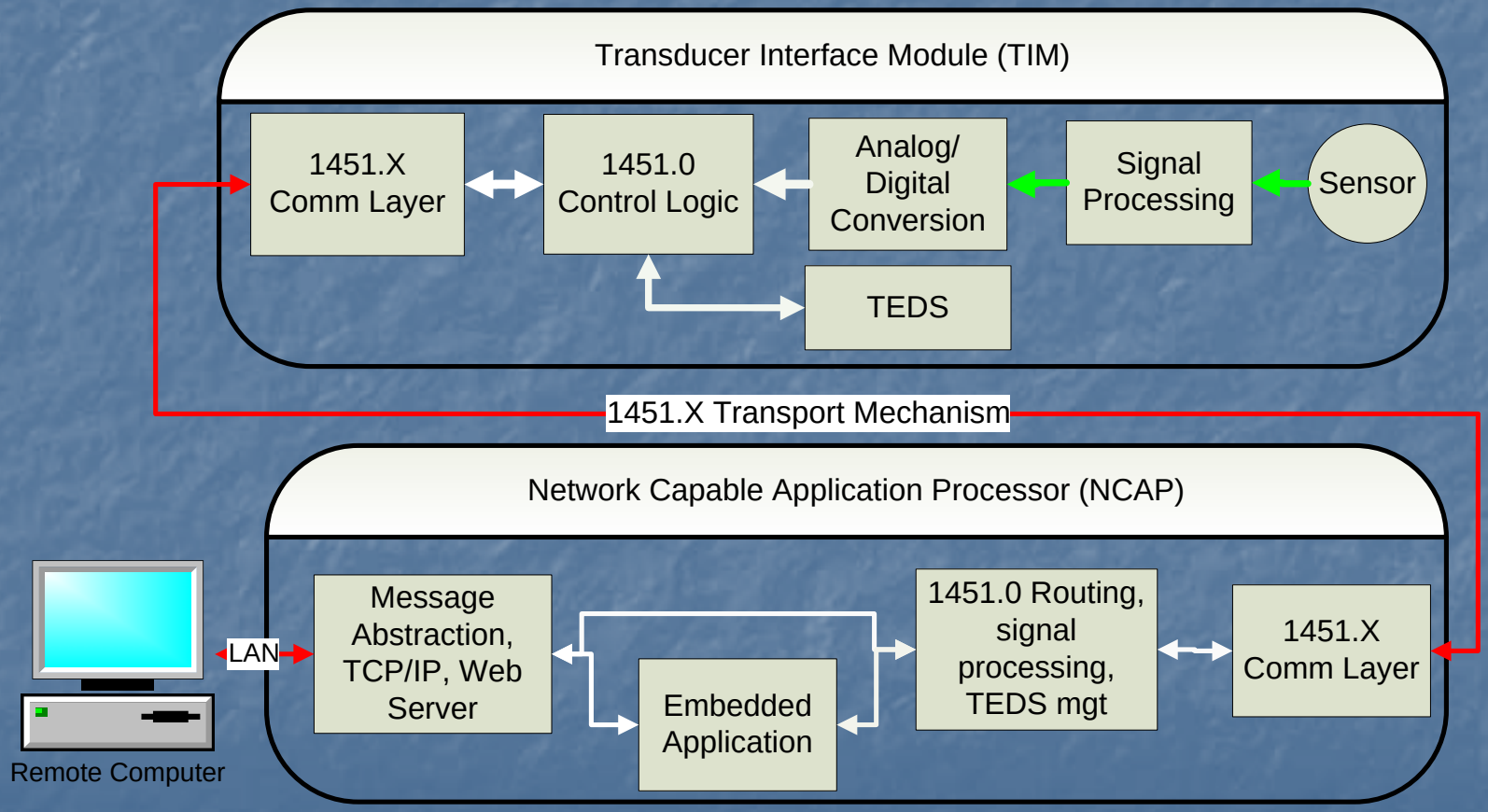
What is a Reference Implementation?

- A Full Implementation of Most Common Capabilities Defined in the Standard
- Open Source
- Well Documented
- Written by Multiple Implementers and Cross Checked for Accuracy

Why is it Needed?

- Test the Standard
  - Issues are being discovered in individual implementations
- Lower Entry Barriers for new Implementations
- Provide a Reference Point for Specifications
- Provide Compliance Standard

Anatomy of a 1451 Sensor



What Pieces are Part of a Reference Implementation?

- Simple TIM (dot 0 and example DAQ)
- NCAP Dot 0
- Several Dot-x Layers (Wireless First)
- TEDS Reader/Writer
- NCAP Web Server

IEEE 1451 Family

Smart Sensor Systems

ESensors

www.SmartSensorSystems.com
www.eesensors.com

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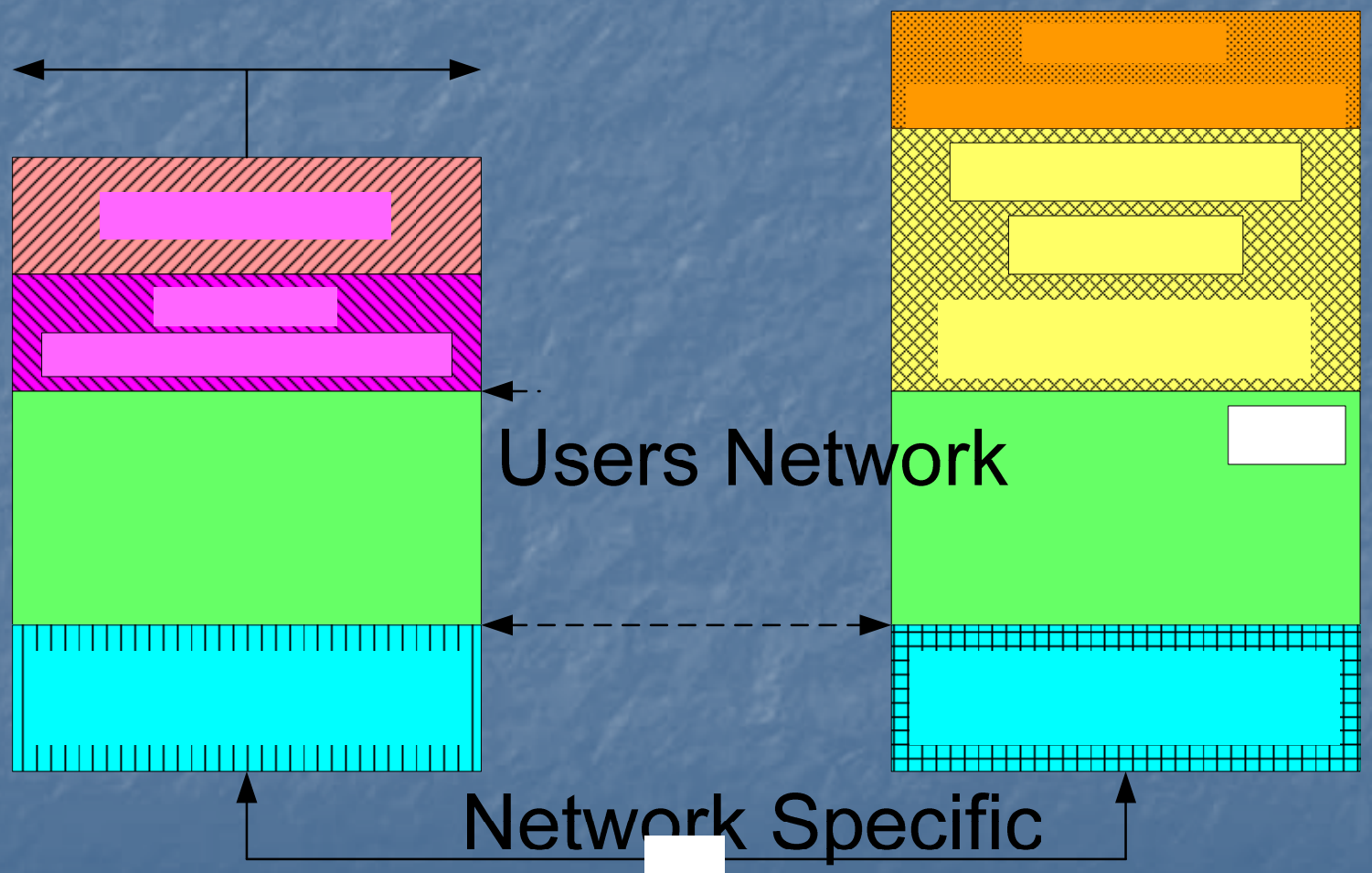
1451 Software Architecture



IEEE 1451.1

Measurement Application

Transduc

Software Engineering

- Done in a Standard Language and Platform Independent
- ANSI C or Std JAVA
- Source held in standard public archive (Sourceforge)
- All copyrights released

Who Should be Involved

- Government Agencies Specifying the Standard in Contracts or RFP or RFQ
- Private Companies Developing and Marketing Products Using the Standard
- Industry Associations (such as ISA) and Consortia (such as WINA, OGC) that Have Endorsed the Standard

Benefit to Government

- A Viable Specify Standards-based Solution
- COTS Potential
- Multiple Sources
- Lower Cost
- Compliance with Reference Implementation Interoperability can be Specified in Contracts

Proposal

- Agency or multi-agency supported reference implementation to demonstrate feasibility of standard-based solutions.
- Implementation will be owned by agency for in-house or public demo to support larger development and implementation effort.
- Interested parties can contact me.

Benefits of Doing This

- Speeds adoption of IEEE 1451 with implementation and readily available open source implementations, a distinctive advantage in the acquisition process.
- Avoids Proprietary Implementations that Claim 1451 Conformance, but are not Interoperable.
- More availability of 1451-standards based products in the market to choose from.