IEEE 1451

Smart Transducer Interface for Sensors and Actuators
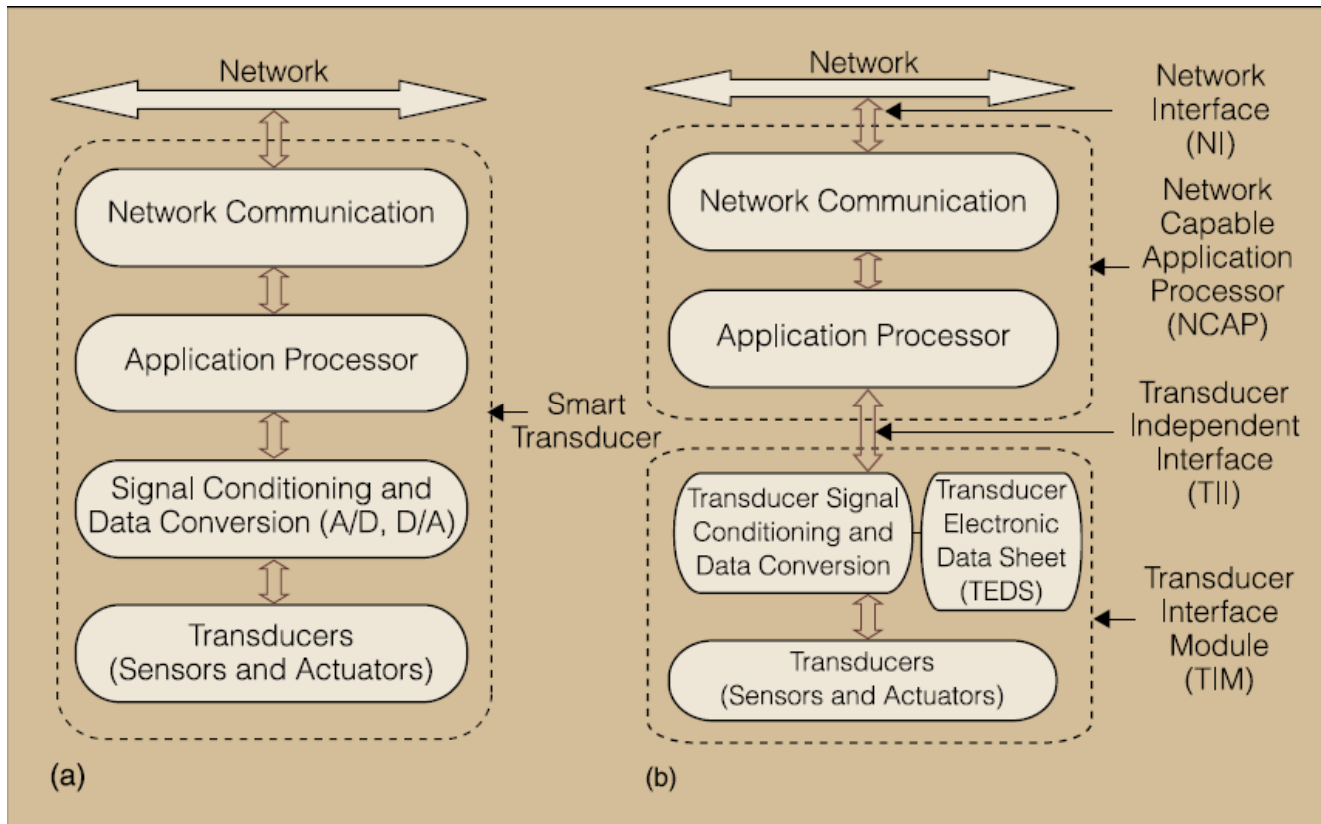
Haitao Bian

Introduction

- Low-cost, networked transducers

- Senor networks and fieldbus

- Interfacing the smart transducers

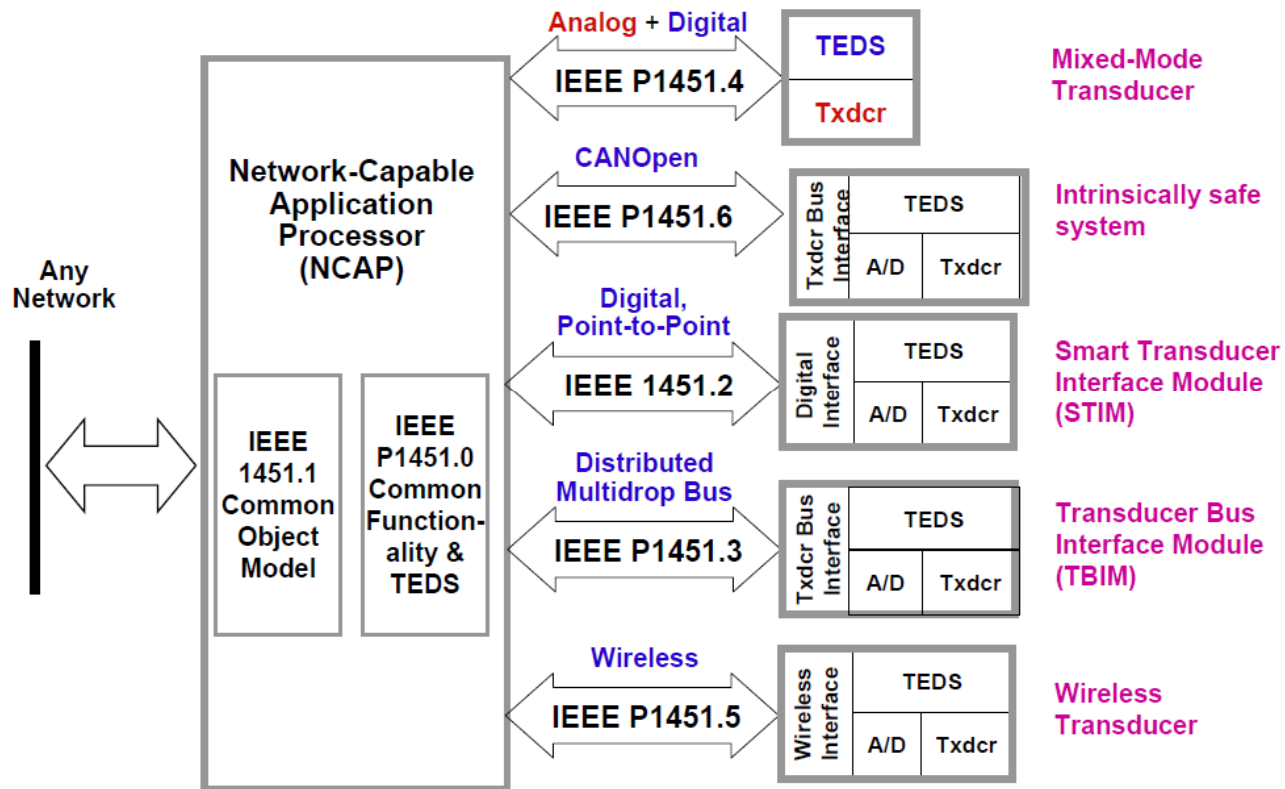- IEEE 1451 - The new standard

Objective of IEEE 1451

- Independent Transducer

- Easy Sensor Networks

- Standard for System

What is a Smart Transducer

Source: Understanding IEEE 1451 Networked
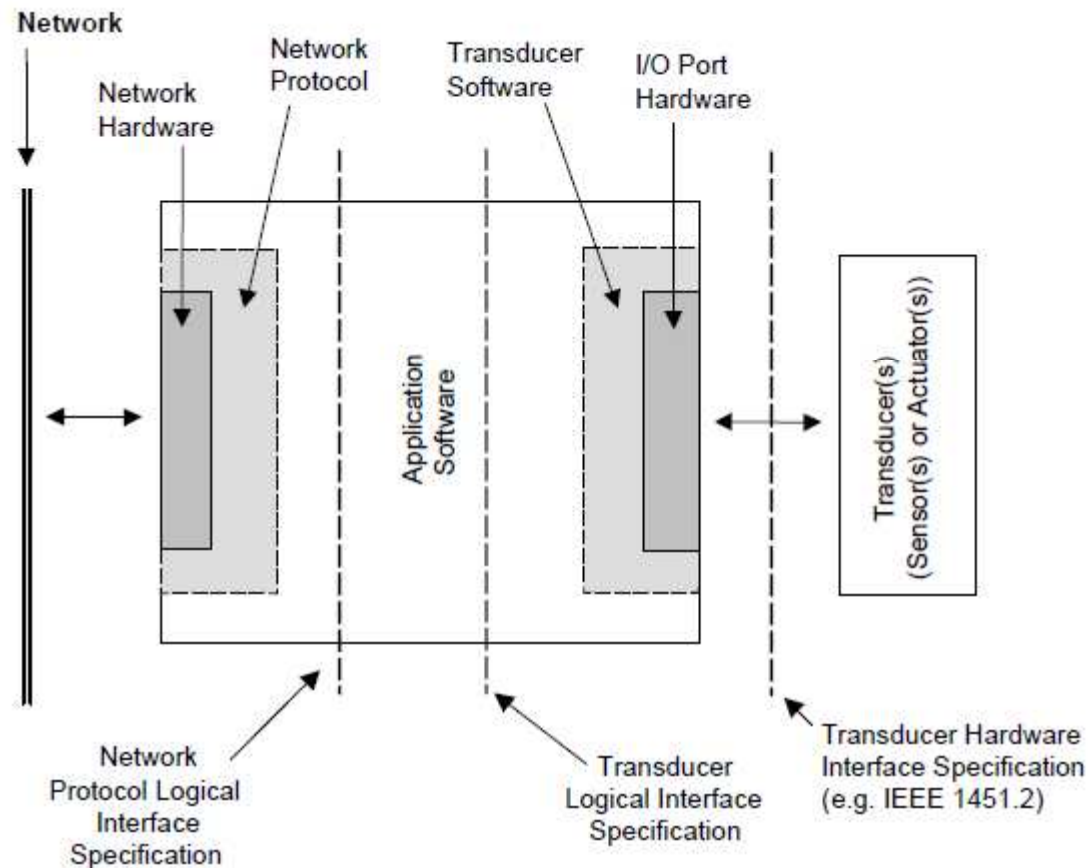Smart Transducer Interface Standard
Eugene Y. Song and Kang Lee

Framework of IEEE 1451

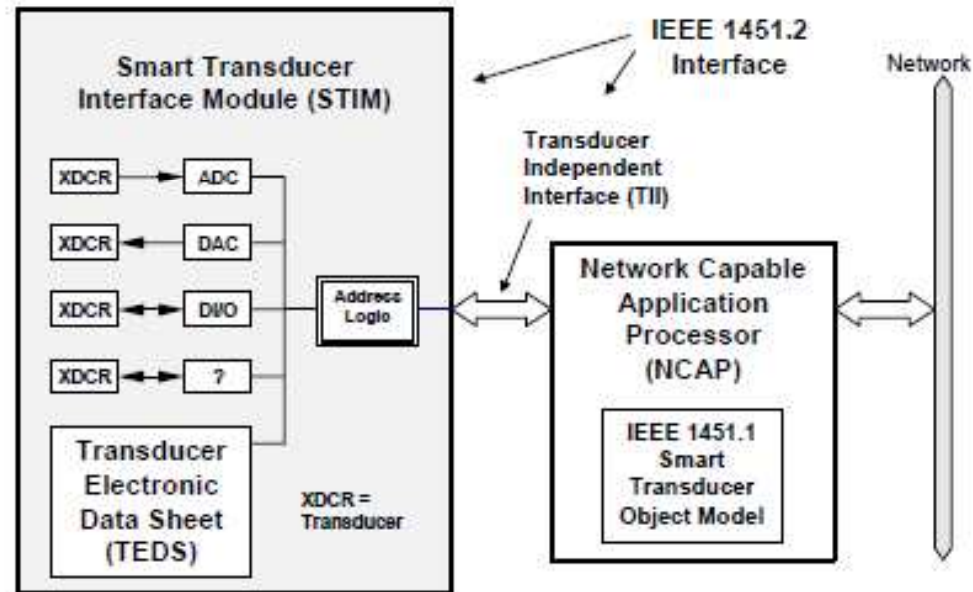Source: Introduction to IEEE 1451 Family of Standards
Kang Lee

IEEE 1451.1 Common Object Model

Source: IEEE 1451 – A Standard in Support of Smart Transducer Networking
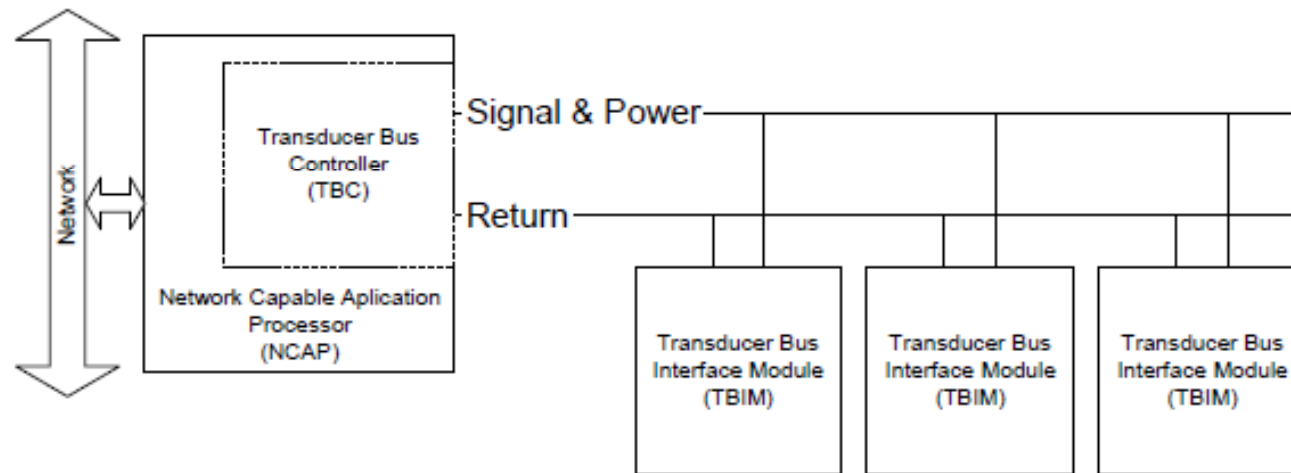Kang Lee

IEEE 1451.2

- Txdcr to MCU Communication Interface

Source: IEEE 1451 – A Standard in Support
of Smart Transducer Networking
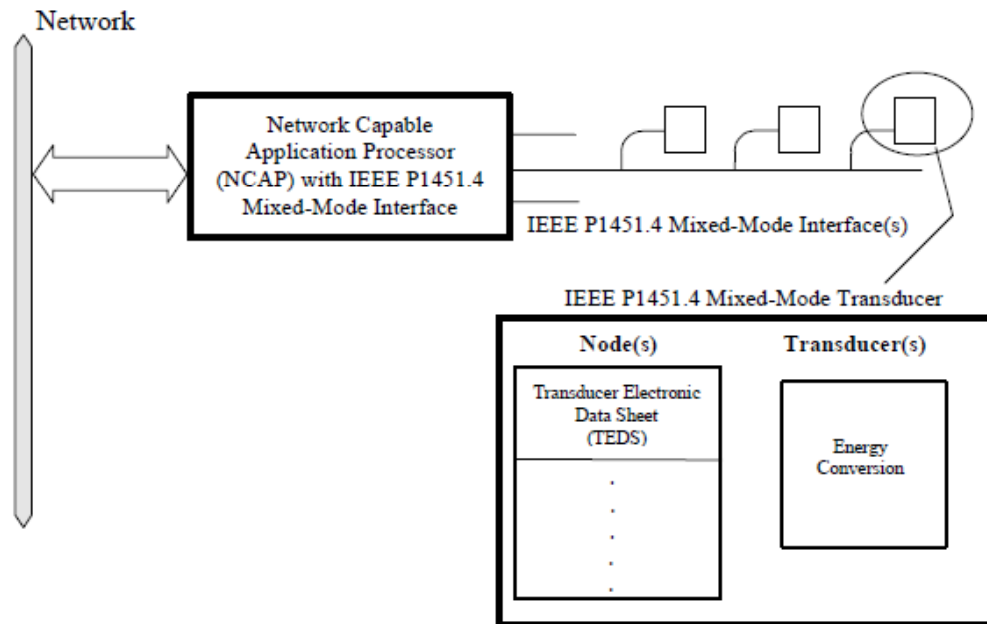Kang Lee

IEEE 1451.3

- ## Distributed Multidrop System

Source: IEEE 1451 – A Standard in Support of
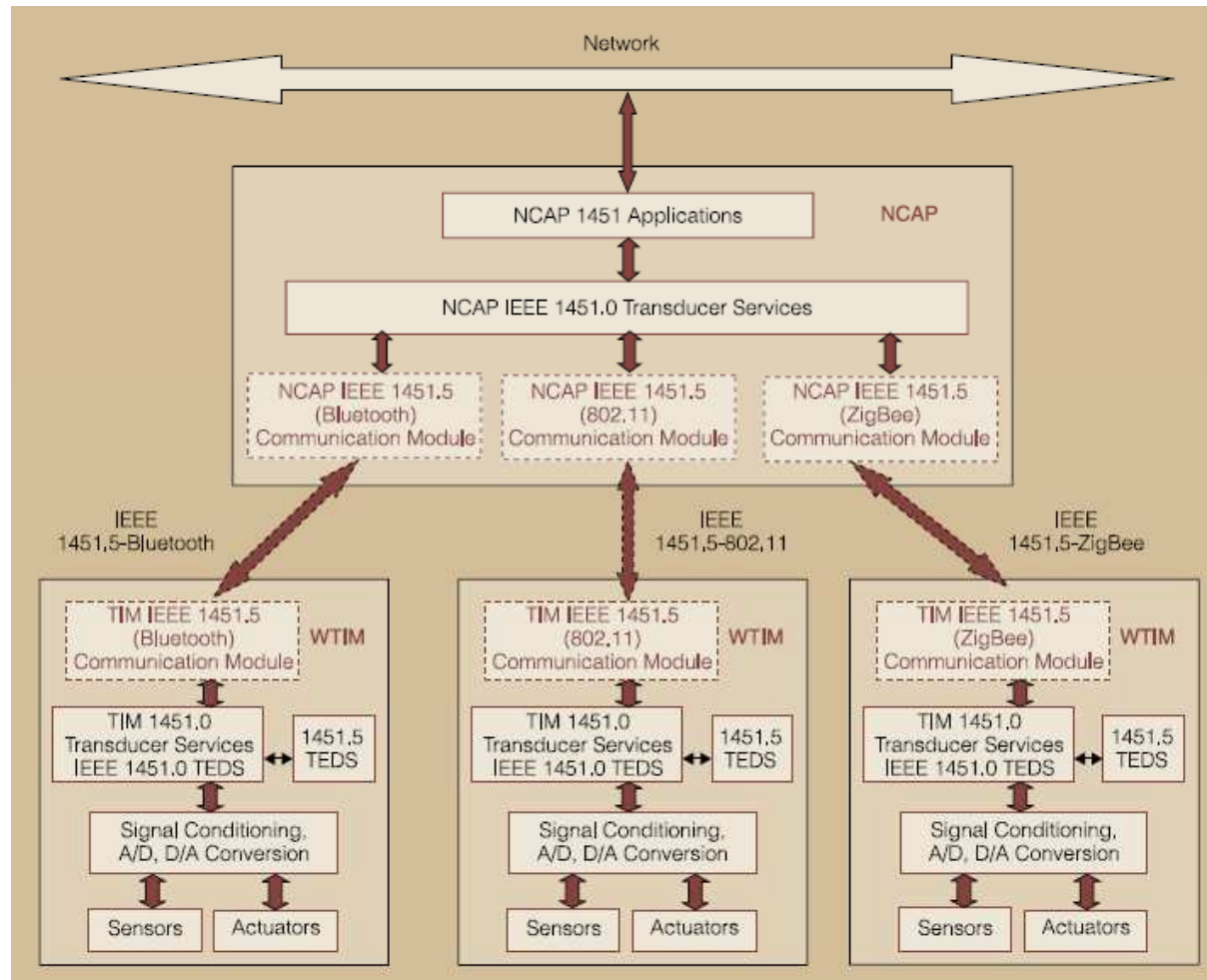Smart Transducer Networking
Kang Lee

IEEE 1451.4

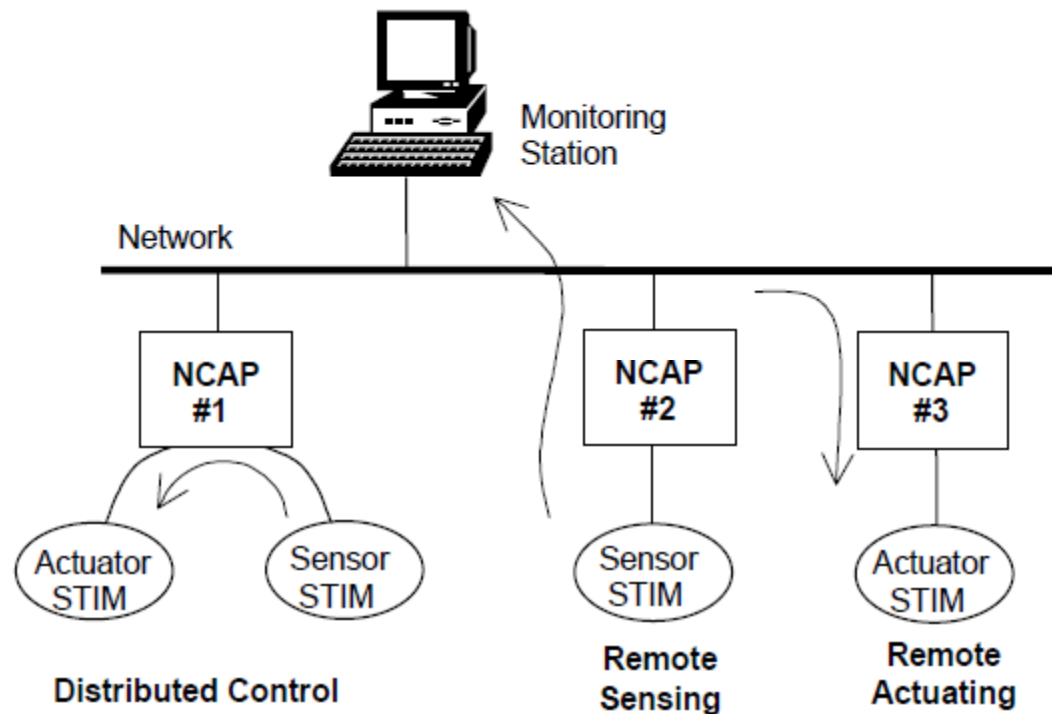- Mixed Mode Transducer and Interface

Source: IEEE 1451 – A Standard in Support of
Smart Transducer Networking
Kang Lee

IEEE 1451.5

Source: Understanding IEEE 1451 Networked
Smart Transducer Interface Standard
Eugene Y. Song and Kang Lee

Application of IEEE 1451

Benefits of IEEE 1451

- Auto-Identification

- Plug and Play

- Easy to Installation

- Reduce Human Configuration