

**Inside the Energy Efficient Factory** 

## The gap between "Things" Protocols and the Internet

# Internet

- XML
- Http
- TCP/IP
- Web services
- Plug and play
- Interoperable

- Smart Home Protocols
- Many protocols (ZigBee, Z-Wave, KNX, Modbus, ...)
- Byte oriented communication
- Mostly Proprietary
- Not interoperable

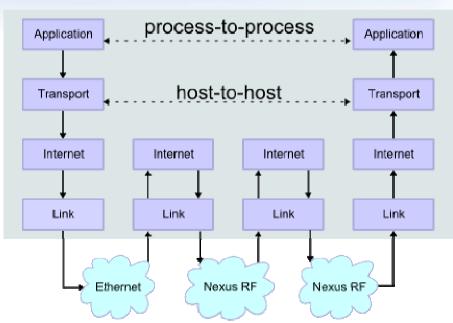
## IOT Protocols and the Internet

#### Our idea:

- $\succ$ A modern IOT Protocol fits fully transparent into the common Internet communication standards
- $\succ$ The last meter device communication is flexible and independent of physical restrictions (RF-signals, wire, fibre etc.)
- Future IOT intelligence can be realized as cloud-services and "internet-of-things"

### **Network Topology** Host Host Router Router Α Data Flow

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# **IOT Application Protocol**

### Using w3c standards:

- > XML
- > XSD
- > EXI
- Service oriented interface
- Self describing devices and services
- Application layer security
- Highly configurable
- Easily upgradable and extendible
- Easy to add new services
- Compression rates of about 90% from XML to EXI

