



Ged Tyrrell
Group CEO



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IoT and Automation Products,
R&D, Distribution and Training



Master System Integrator,
Maintenance and Support



Smart Building, Analytics and
ESG Reporting Platform

Tyrrell Building Technologies is a PropTech SaaS analytics,
IoT/Automation, and engineering business helping clients optimise
building performance reduce running costs and achieve their ESG goals.



WSP is a leading engineering and professional services consulting firm with over 66,000 passionate people globally. We help our clients achieve their ambitions by providing strategic advice, technical expertise, and a passion for impactful results.

SMART BUILDING TECHNOLOGY, ENABLEMENT AND BENEFITS



SECTION TOPICS

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1.UDMI

2.DBO

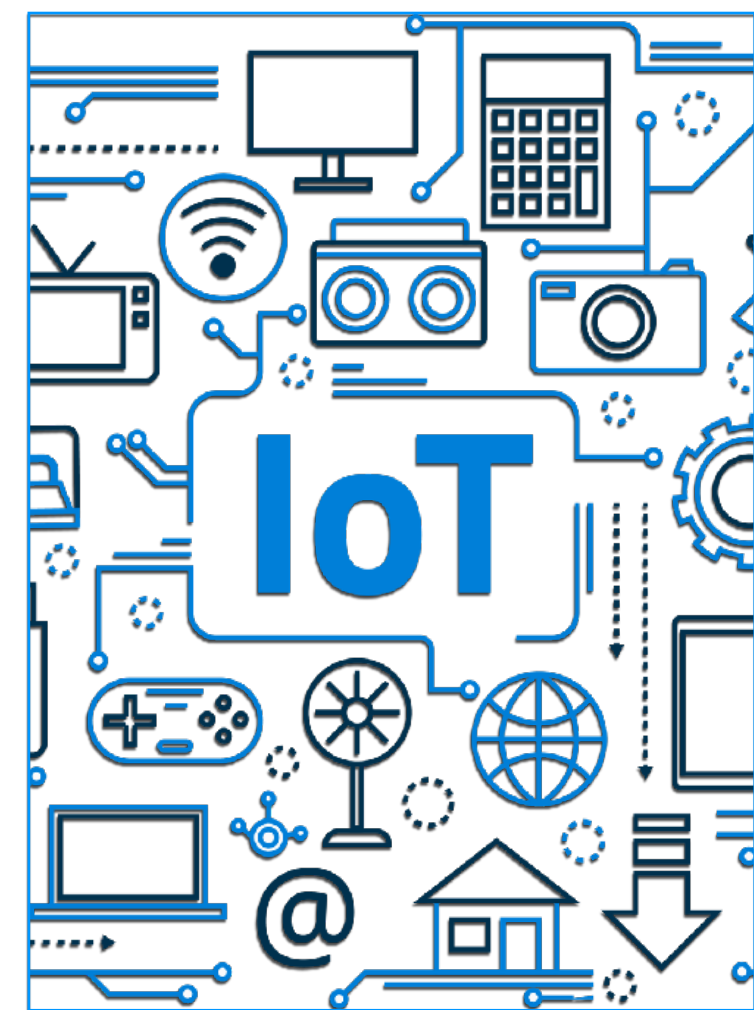
3.DAQ

4.Project Examples

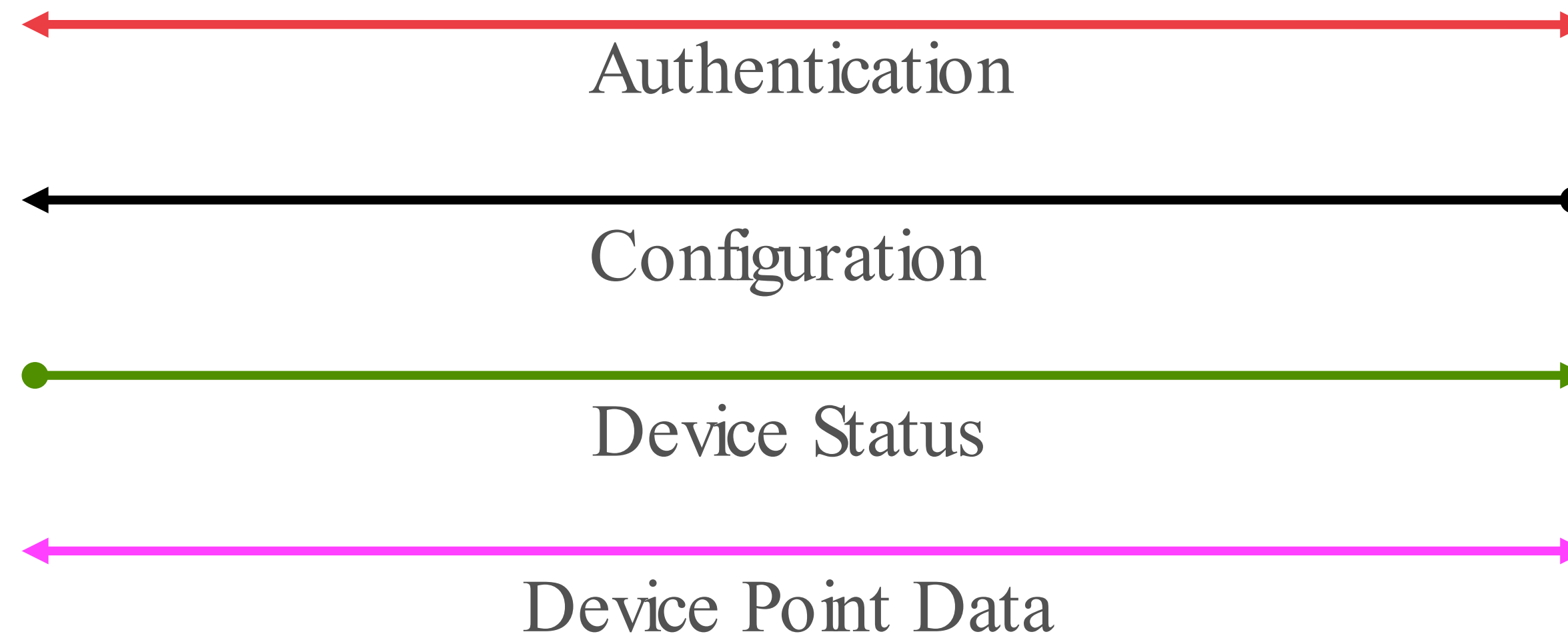
UDMI

6

Universal Device Management Interface

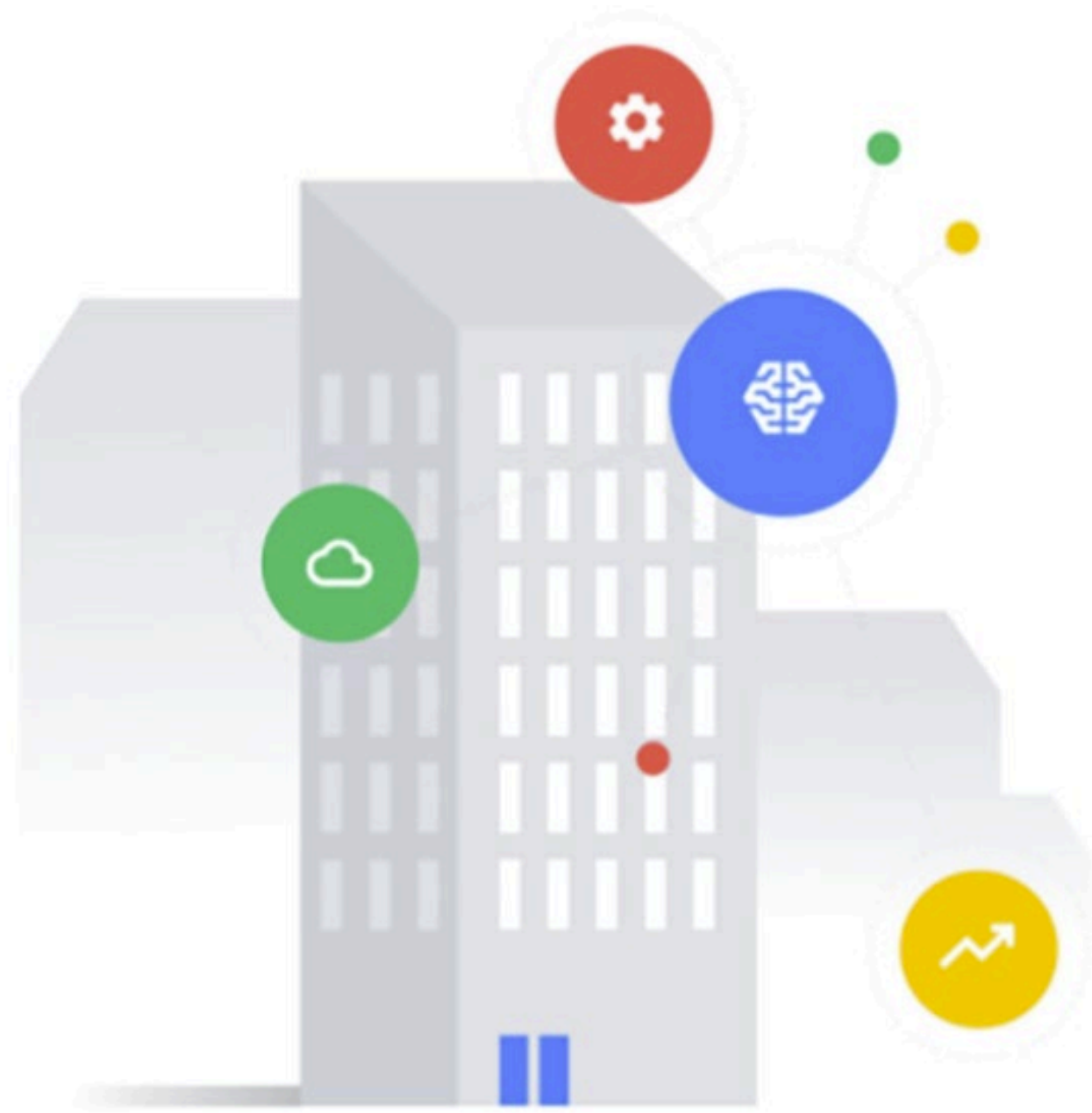


Devices

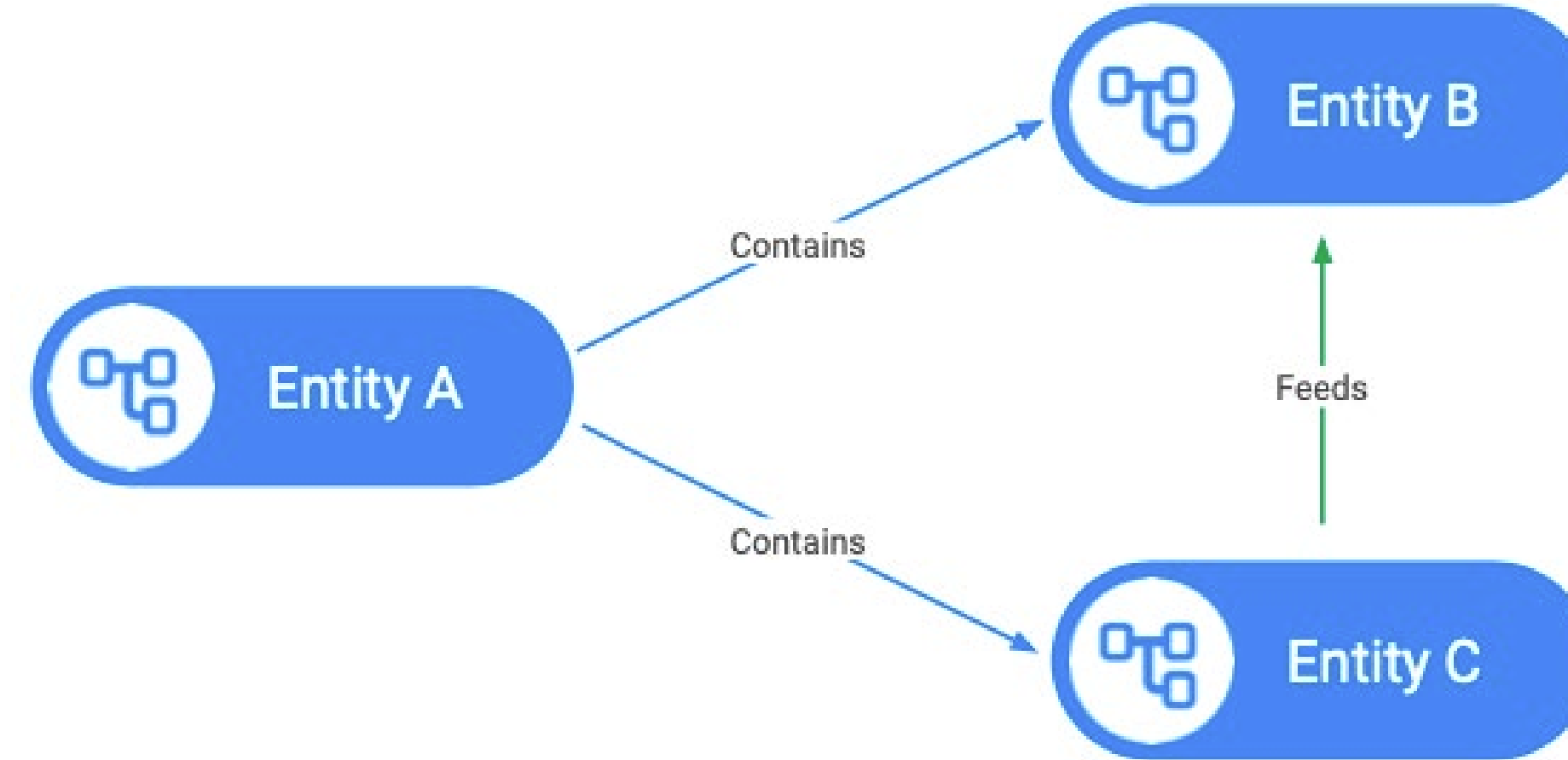


DBO

Digital Buildings Ontology



- Entities
- Entity Types
- Properties
- Relationships



Relationship Example

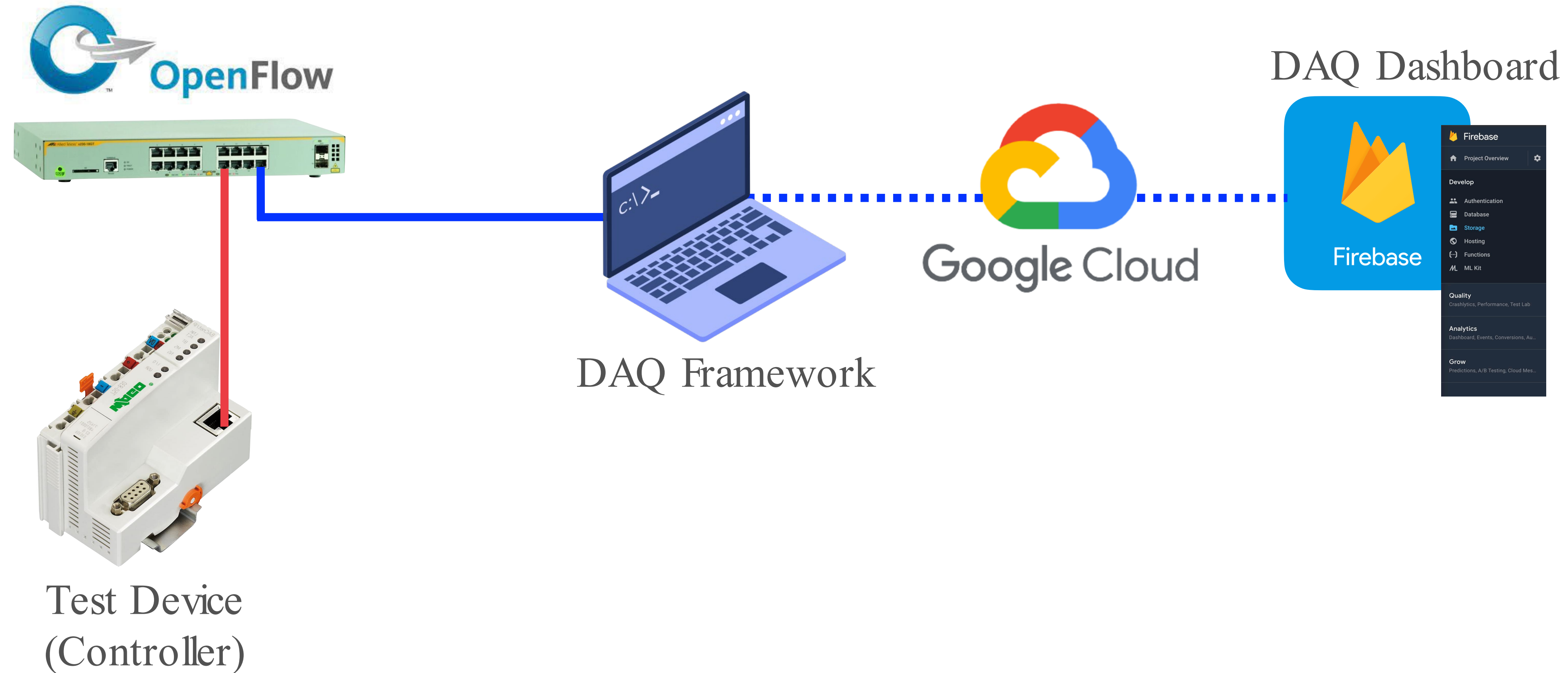


Real World 'Entity' Example

DAQ

Device Automated Qualification

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PROJECT EXAMPLES



The above example point name (field) has combined the following sub

- 1. max – Aggregation subfield
- 2. discharge – Descriptor subfield
- 3. air – Descriptor subfield
- 4. temperature – Measurement subfield
- 5. setpoint – Point type subfield

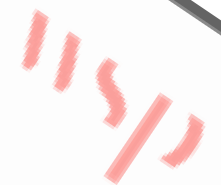
The following subfields have not been used:

- Aggregation descriptor because max isn't
- Component because air temperature entity
- Measurement descriptor because dry-bulb temperature. A wet-bulb

VALIDATION

The validation procedure shall

- Expression matching



5.2 POINT INSTANCE NAME (point.name)

DEFINITION

A human readable control point name.

ORIGINATOR

Master system integrator or specialist subcontractor.

FORMAT

The format shall align with the [telemetry fields](#) defined in the [Google Digital Buildings Project](#). Each field consists of a group of subfields in a specific order:

Where:

- (<agg_desc>)? – Aggregation descriptor subfield; optional; can only be used once with an aggregation subfield
- (<agg>)? – Aggregation subfield; optional; can be used multiple time
- (<descr>)? – Descriptor subfield; optional; can only be used once
- (<component>)? – Component subfield; optional; can only be used once
- (<meas_desc>)? – Measurement descriptor subfield; optional; can only be used once
- (<meas>)? – Measurement subfield; required; can only be used once
- (<pointtype>)? – Point type subfield; optional; can only be used once
- (<num>) – Numerical identifier; optional; can only be used once

An extensive list of subfields can be found [here](#).

EXAMPLES

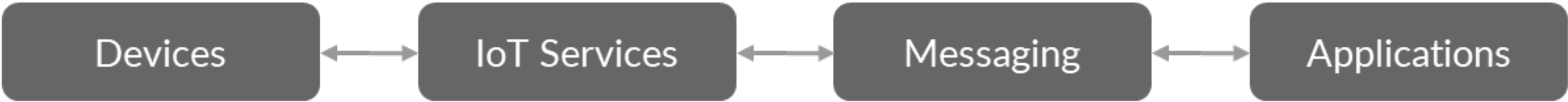
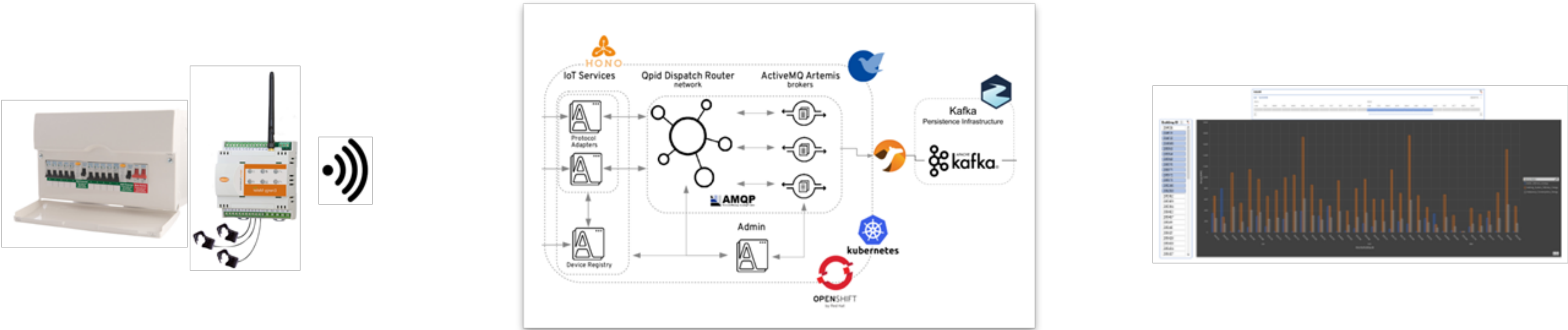
The example below is taken from [DBO Module 1 Lesson 4](#).

max discharge air temperature setpoint

Verical
Project No.: 70090575
Tel Aviv

Verical
Project No.: 70090575
Tel Aviv

PROJECT EXAMPLES



579
Homes Monitored

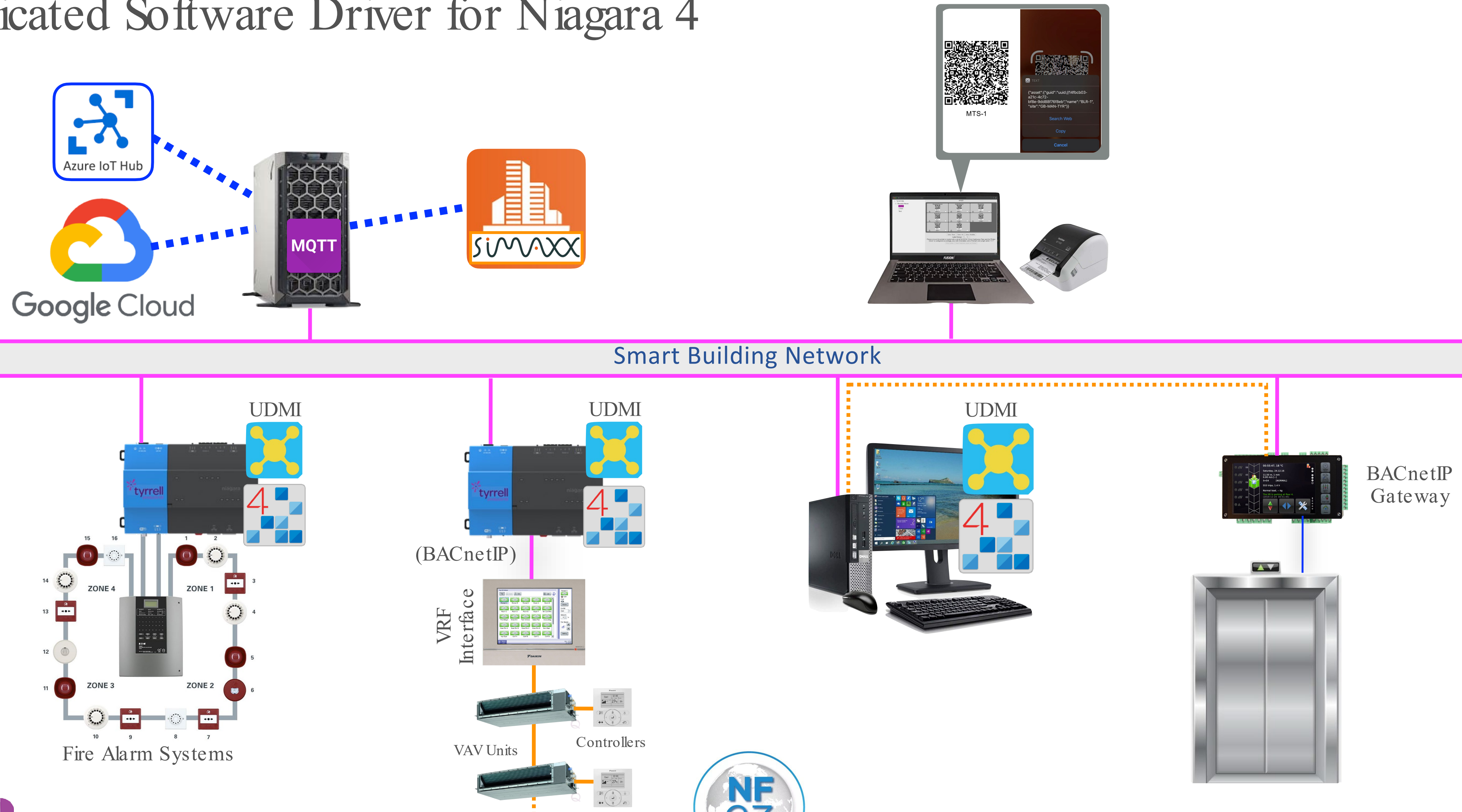
7371
Unique Data Streams

500 million +
Data Points Collected

UDMI GATEWAY

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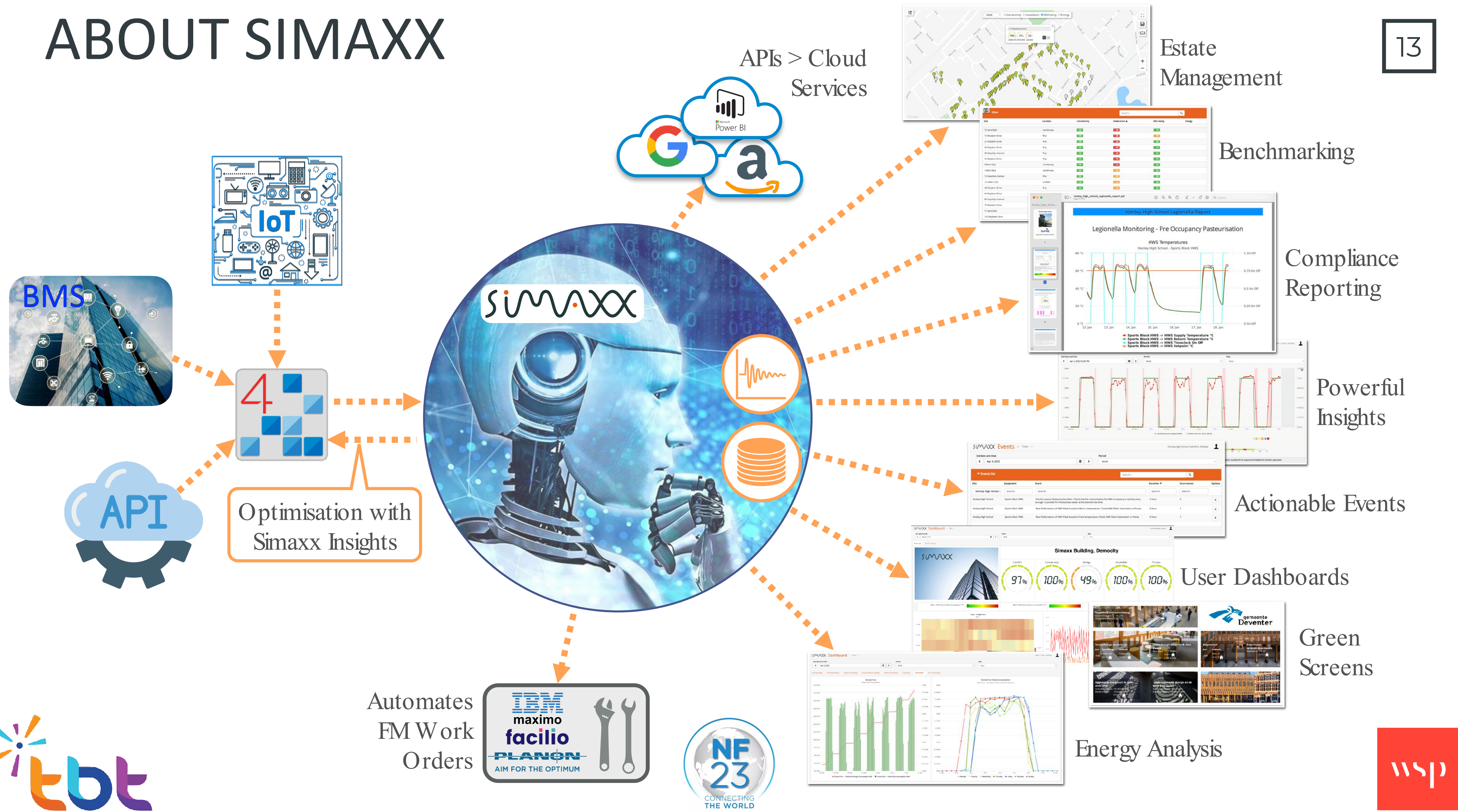
Dedicated Software Driver for Niagara 4



simx

ESG MADE EASY

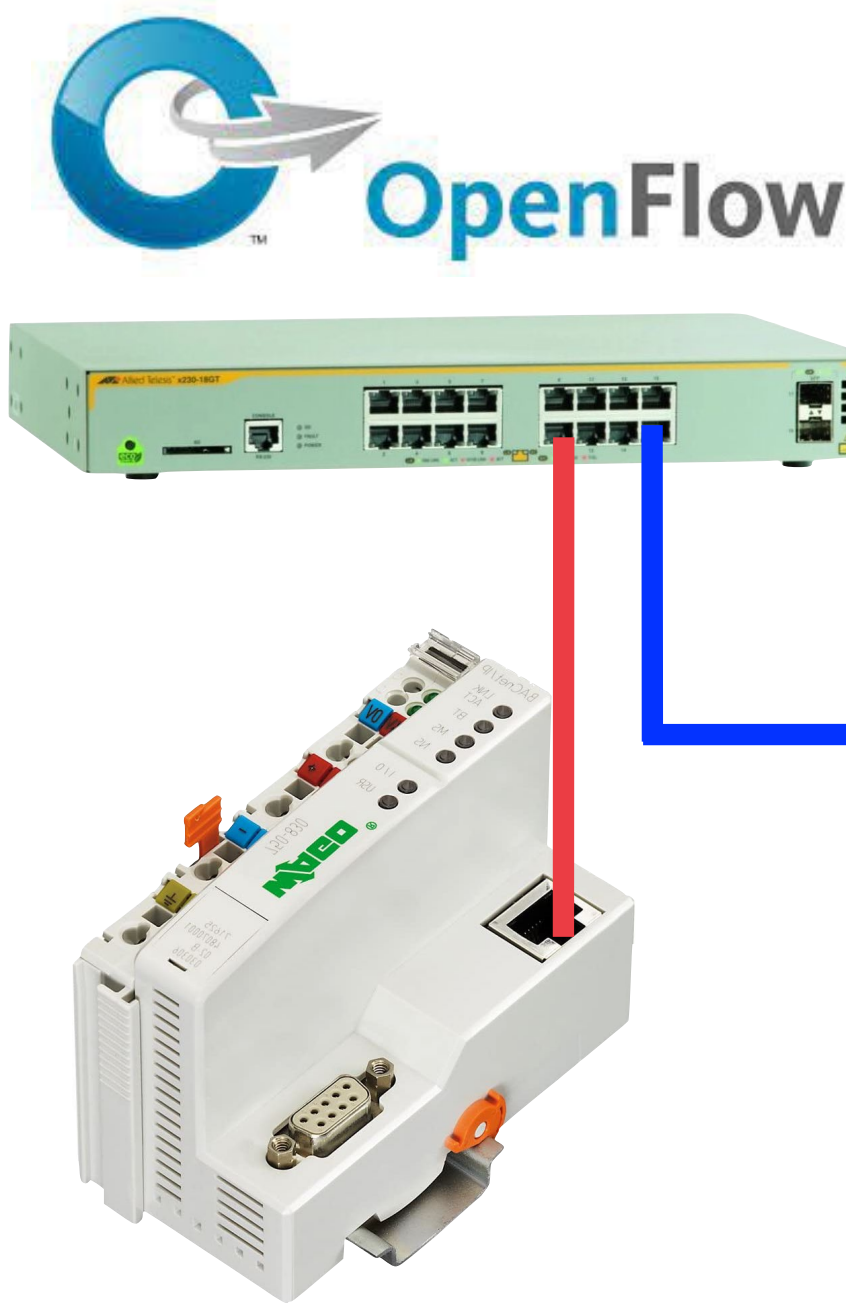
ABOUT SIMAXX



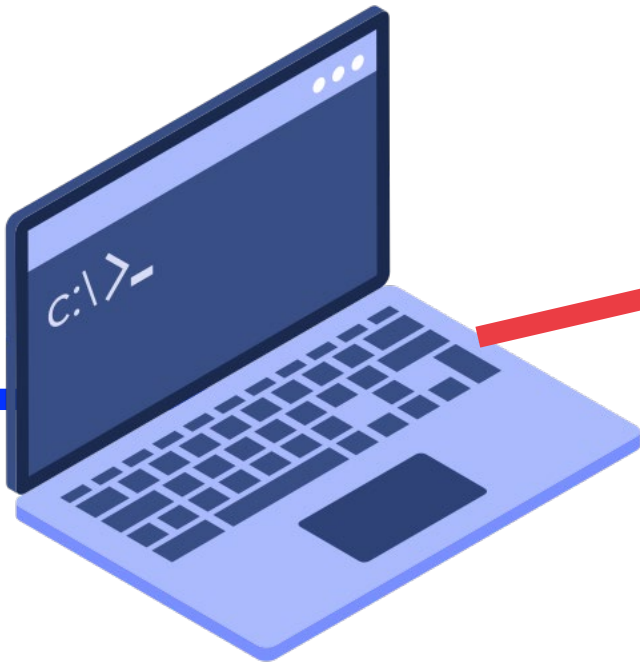
SIMAXX DAQ AND S-DAQ

Device Automated Qualification

Simaxx DAQ App



SDAQ Framework



SSL



NSI - HNK Antareslaan, Hoofddorp

localhost

▼ Reports

Search...

Date ▼	Model	Mac Address	Qualified	
M/d/yy h:mm a	search	search	search	
29/12/22 21:15	UPRL-JEZ	dca632ba6707	QUALIFIED	<div></div> <div></div> <div></div>
21/12/22 04:22	Model ZK-322	fc694782224e	UNQUALIFIED	<div></div> <div></div> <div></div>
20/12/22 10:55	Model A-IVCTP	1c697a02fe87	QUALIFIED	<div></div> <div></div> <div></div>
1/1/23 18:02	MKKLI-89-VV	fc6947822244	PENDING	<div></div> <div></div> <div></div>

×

Metadata for device UPRJ-JEZ

Metadata data for device UPRJ-JEZ

Unqualified

Pending

Qualified

Input type: ☒ Ad Hoc ☐ Configuration

Manufacturer

Model

Witnesses

W.W. Grainger

M & M Control

UPRL-JEZ

John Doe
Emily Smith
Michael Johnson

Onboarding device

Equipment Model

Name (BDNS)

Name (Human Readable)

Supplier

Equipment Manufacturer

Serial number

Date of manufacture

MAC address

Software version

Machine readable identifier (GUID)

Human readable identifier

Network configuration records (IPv4, IPv6, DHCP capable, 802.1X etc.)

UPRL-JEZ

UPRI-1000-001

UPRI Cooling System

W.W. Grainger

M & M Control

1000-01-2021-12345

01/01/2020

12:34:56:78:9A:BC

1.0.0

8ee7c82e-5a4f-4f9d-ab69-c8b4f0c2d3e4

UPRI-1000-001-2021-01-01

IPv4: 192.168.0.10
IPv6: 2001:0db8:85a3:0000:0000:8a2e:0370:7334
DHCP capable: Yes
802.1X: No

Save

Cancel

Test Device
(Controller)

DAQ scan report for device 88c9b3d067e9				
Report summary				
Overall device result PASS				
Category	Total Tests	Result	Other	
Other	0	N/A	0/0/0	
Syntax: Pass / Fail / Skip				
Expectation	pass	skip	info	fail
Other	12	17	2	1
Result	Test	Category	Expectation	Notes
pass	base_startup_delay	Other	Other	
pass	base_switch_ping	Other	Other	target
skip	cloud_admin_event_pointset	Other	Other	No device id
skip	cloud_admin_event_system	Other	Other	No device id
skip	cloud_admin_provision	Other	Other	No device id
skip	cloud_admin_state_pointset	Other	Other	No device id
skip	cloud_admin_state_system	Other	Other	No device id
pass	communication_network_min_send	Other	Other	ARP packets received. Data packets were sent at a frequency of less than 5 minutes
info	communication_network_type	Other	Other	Broadcast packets received. Unicast packets received.
pass	connection_base_target_ping	Other	Other	target reached
info	connection_network_name_address	Other	Other	Device MAC address is 88c9b3d067e9
pass	connection_network_name_sni	Other	Other	Manufacturer: Secomms found for address 88c9b3d067e9
pass	connection_switch_port_duplex	Other	Other	Full duplex mode detected
pass	connection_switch_port_link	Other	Other	Link is up
pass	connection_switch_port_speed	Other	Other	Speed auto-negotiated successfully. Speed is greater than 10 MBPS
pass	dns_network_hostname_resolution	Other	Other	Device sends DNS requests and resolves host names
pass	ntp_network_ntp_support	Other	Other	Using NTPv4

DAQ Device
Test Reports



SIMAXX DAQ AND S-DAQ IMPLEMENTATION

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Q MILEGROUP

- ◎ 350,000 sq ft Grade A offices
- ◎ 190-room hotel
- ◎ 40,000 sq ft provisional retail
- ◎ Smart Building provision
- ◎ Full systems integration
- ◎ Unified data schema



EBMS IOT CONTROLLER

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Fastest
Ever
Boot
Time

Unrivalled Capability with **intel**®

- Elkhart Lake Fanless Dual core 1.3 GHz
- 16GB DDR RAM
- 32GB eMMC
- Intel Edge Controls for Industry (ECI) with virtualisation and deterministic control

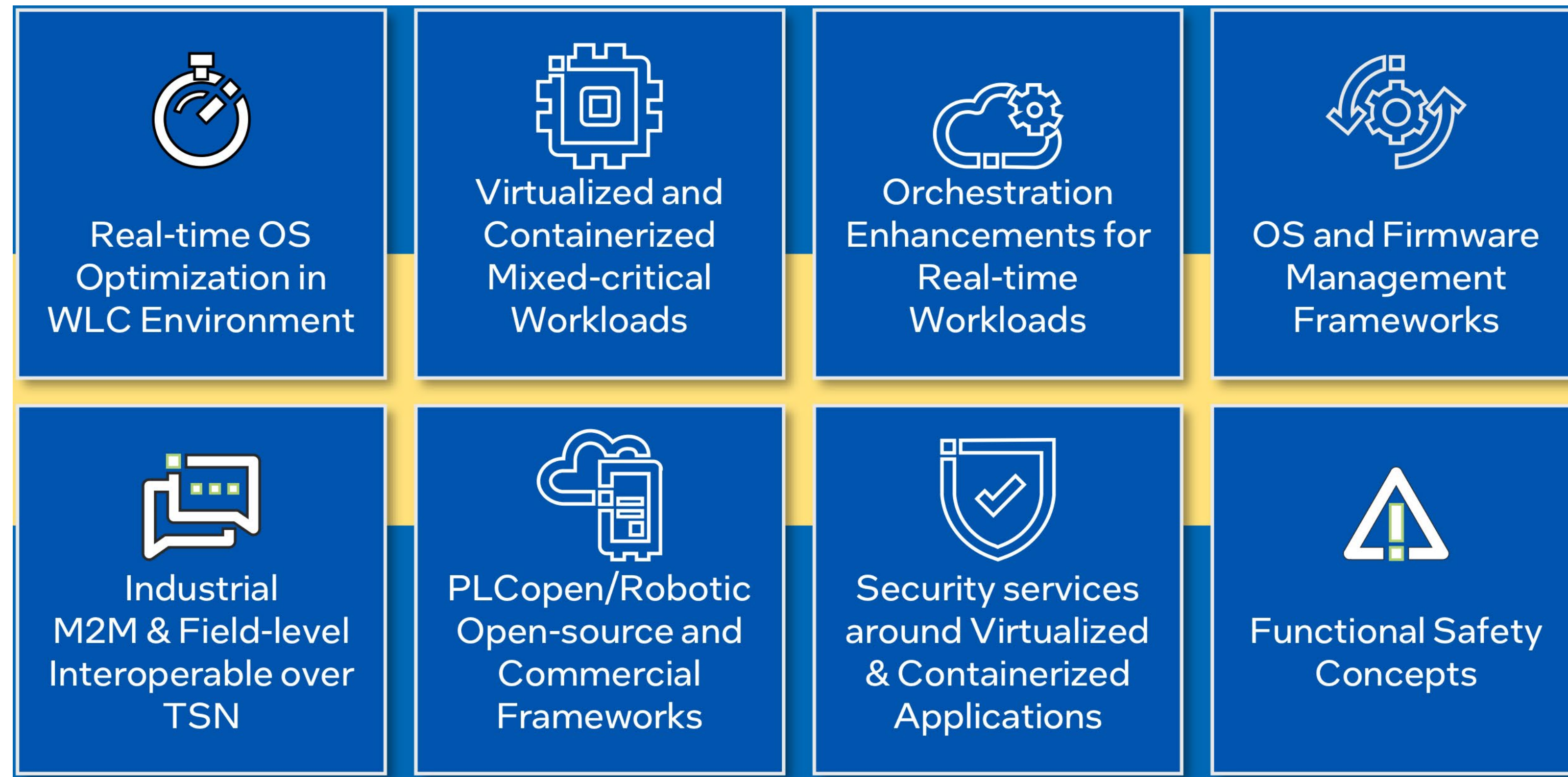
Fully Featured Expandable Hardware

- 8 x Universal Outputs
- 4 x 230VAC 2Amp Relay Outputs
- 6 x Universal Inputs and 6 x Digital Inputs
- 2 x Ethernet Ports
- 2 x USB3.0 Ports
- 2 x RS485 Ports
- 1 x Side RS485 IO Module Connector
- 1 x RS232 Port
- Expansion up to 93 External I/O
- M.2 Option Slot

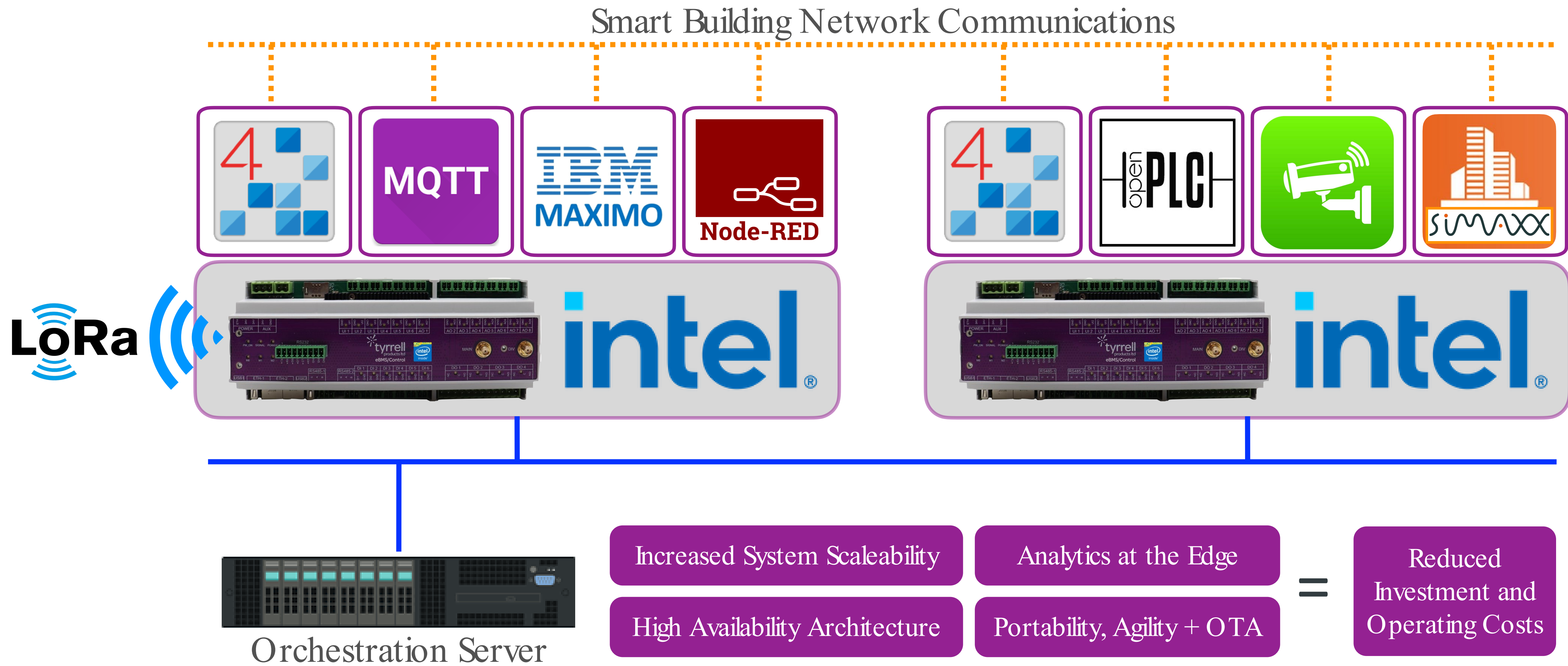
INTEL CAPABILITY FOR SMART BUILDINGS

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intel® Disruptive capability through Convergence of OT and IT



UNRIVALLED CAPABILITIES





Ged Tyrrell
Group CEO



Josh Sykes
Associate Director

