

# What FMS OPC UA Can Do For Your Facility

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version 1.0 date 01-AUG-2018

# What is OPC and OPC UA?

Originally, OPC was borne from OLE (object linking and embedding) for Process Control. This refers to the original “Classic OPC”.

Today, OPC is an acronym for Open Platform Communications and the UA denotes Unified Architecture.

Here is a short video explaining OPC.....

[OPC in a minute](#)

# Why TSI chose OPC UA for FMS

Essentially, facilities have a common issue of having multiple monitoring systems and machine interfaces.

OPC UA is a means of bringing all of these systems and interfaces together.

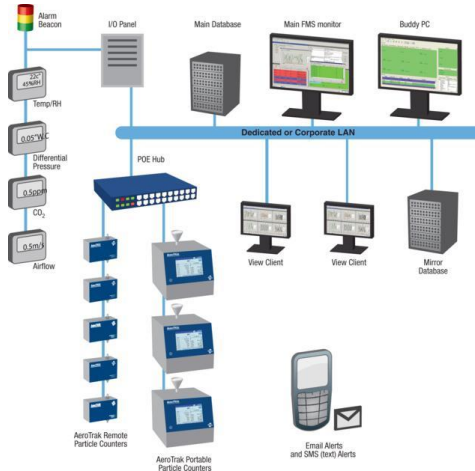
Think of it like me using English to conduct this presentation today. It may not be the first language for all of the people present, but it is my best choice for getting a clear message across to an audience in Australia.

The OPC Foundation has a rigorous certification and compliance programme that ensures that all products certified are compatible, TSI's FMS has passed this programme and is certified. Others can be found at:

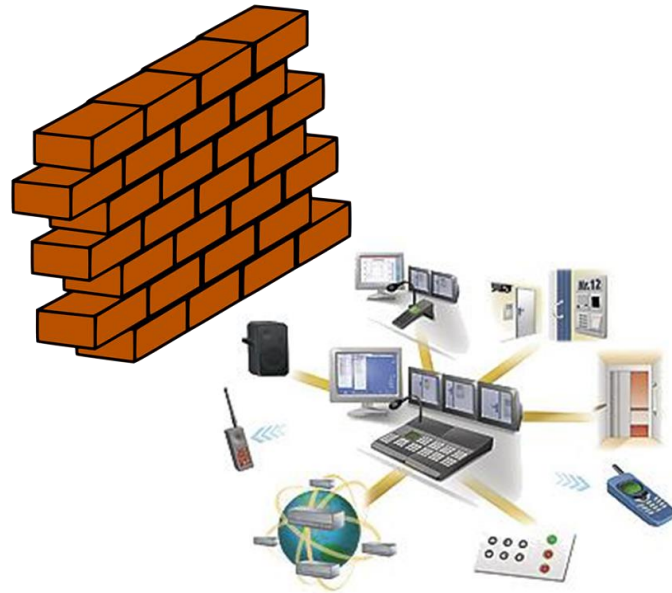
<https://opcfoundation.org/certified-products>



# Previous Challenges (FMS-BMS)



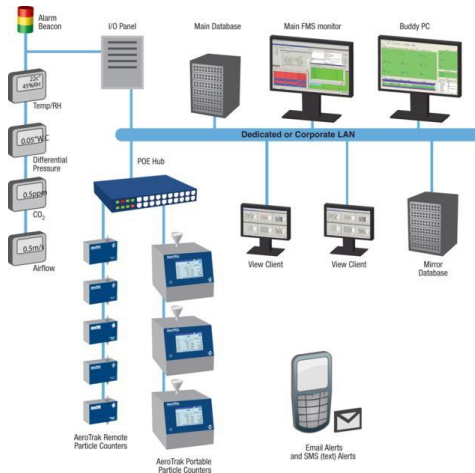
**FMS**



**BMS**

- BMS and FMS designed as separate and closed systems
- Duplicate sensors (\$\$\$)
- Discrepancies in readings (Commissioning problems)
- Particle counters were commonly interfaced to BMS using low level/analogue output (not ideal)

# Solution 1 – FMS OPC UA Client



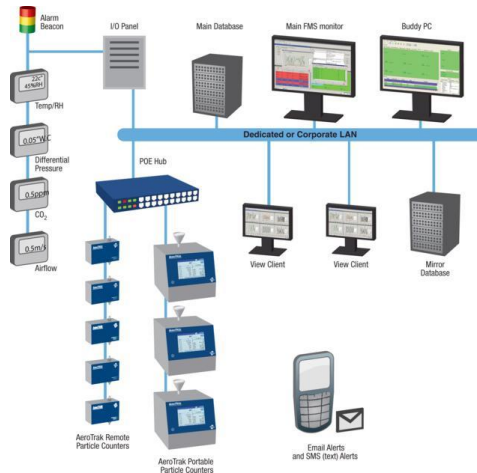
**FMS  
(OPC UA Client)**



**BMS  
(OPC UA Server or OPC Classic Server)**

- BMS can be either an OPC UA Server or OPC Classic Server (a 'wrapper' is used in this instance)
- Data from the BMS can appear as sample points in FMS. BMS and FMS data can be easily viewed, graphed and reported from the same software package
- This enables existing temperature, differential pressure sensors, etc. to be utilised by FMS

# Solution 2 – FMS OPC UA Server



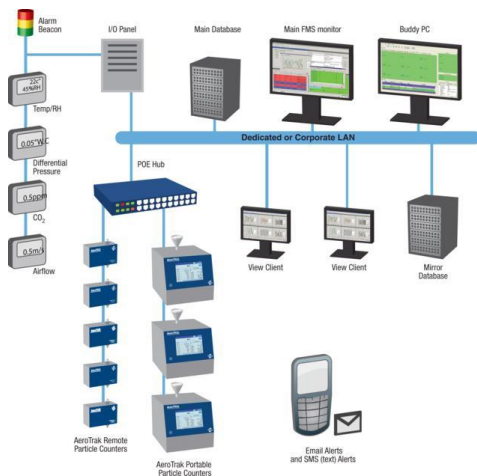
**FMS  
(OPC UA Server)**



**BMS**

- Data from FMS can be sent to the BMS via the high level OPC UA interface
- This enables communication of exact particle count data, status information, etc. to be sent to the BMS
- Redundant OPC UA Server functionality can be built in to the system

# What Else Can FMS OPC UA Do?



**FMS**

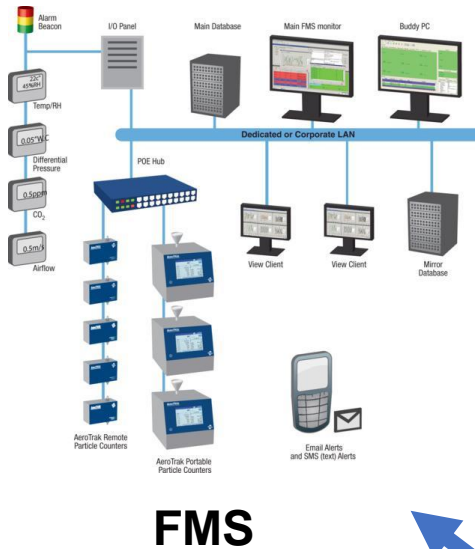


**Filling Machine, Biosafety Cabinet, etc.**



- Data from other equipment can be recorded and integrated into the 21 CFR Part 11 compliant FMS software solution
- This is possible for equipment with native OPC Classic, OPC UA or other protocols such as Modbus using software packages from Matrikon, Unified Automation, Softing, etc.

# What Else Can FMS OPC UA Do?

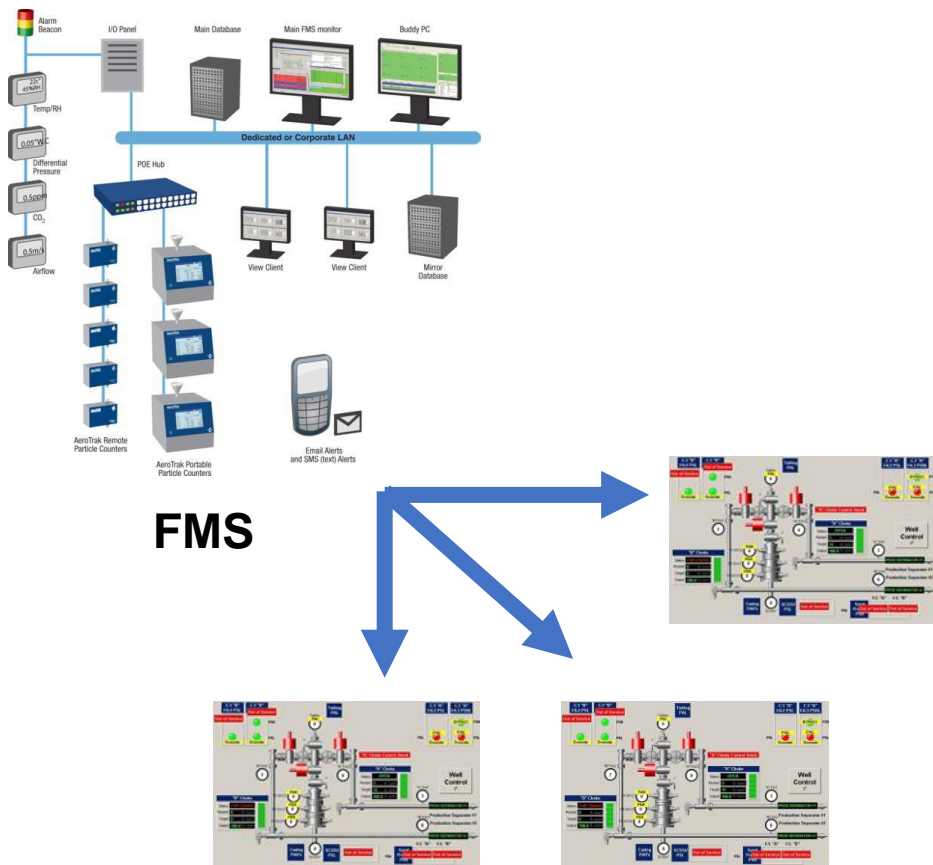


**PLC – HVAC Fan speed controllers, etc.**

- Data from other PLCs can be recorded and integrated into the 21 CFR Part 11 compliant FMS software solution
- This is possible for PLCs with native OPC Classic, OPC UA or other protocols using software packages from Matrikon, Unified Automation, Softing, etc.
- Drivers/Packages exist for most common PLCs (Siemens S7, Allen Bradley, Omron, etc.)



# What Else Can FMS OPC UA Do?

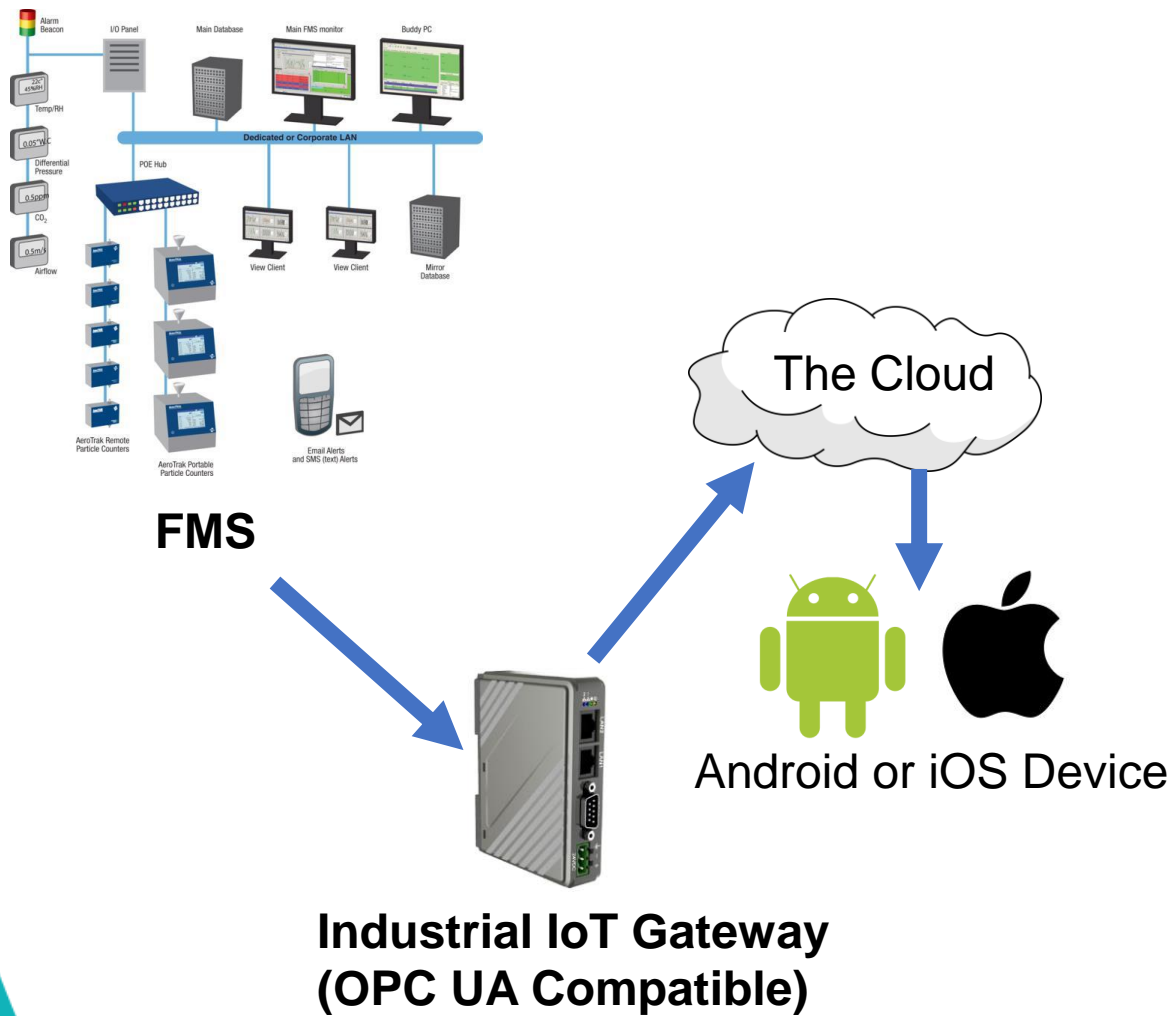


**FMS**

**Industrial HMIs  
(OPC UA)**

- Data from FMS can be displayed on any OPC UA compatible HMI
- This facilitates more displays
- No additional software licencing is required
- This data can be combined with data from the BMS via tag selection

# What Else Can FMS OPC UA Do?

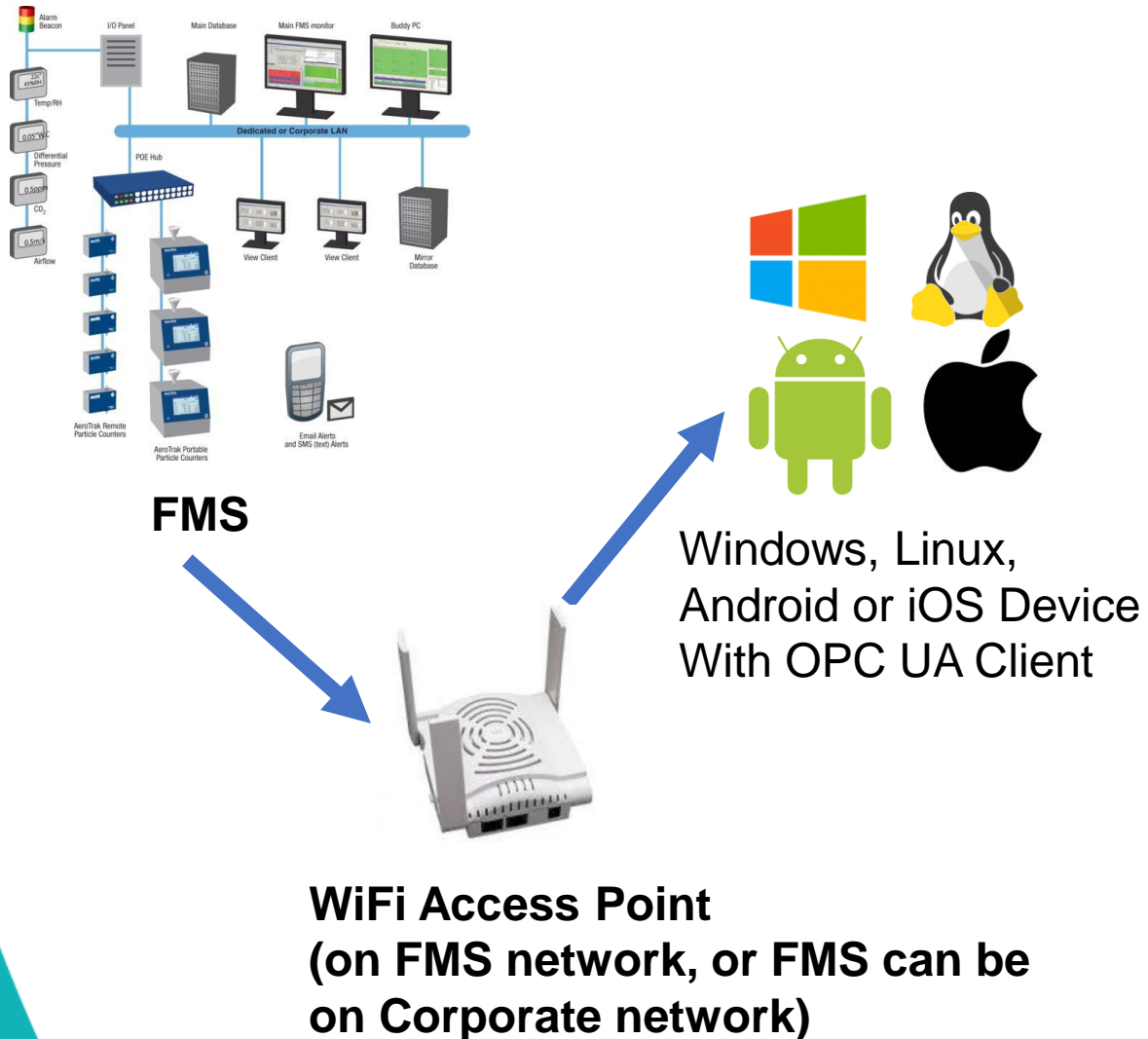


- Data from FMS can be sent to an Industrial Internet of Things Gateway that is OPC UA compatible

- The data is then sent to the cloud and can be accessed via Android and iOS applications

- Any Android or iOS device can then act as a HMI for the FMS (or BMS if it is linked via OPC UA)

# What Else Can FMS OPC UA Do?



- Data from FMS can be made accessible to OPC UA Clients on a common network.
- This network can be wireless, and the OPC UA Clients can be mobile
- Any Windows, Linux, Android or iOS device can then act as a HMI for the FMS (or BMS if it is linked via OPC UA)

# Resources



Company	Description	Link
Kenelec Scientific	Supplier of scientific equipment and calibration services, including TSI's FMS and particle counters	<a href="http://www.kenelec.com.au">http://www.kenelec.com.au</a>
TSI	Manufacturer of particle counters, developer of FMS software and manufacturer of other scientific and engineering equipment	<a href="http://tsi.com">http://tsi.com</a>
OPC Foundation	Certifying body for OPC UA	<a href="https://opcfoundation.org/">https://opcfoundation.org/</a>
Matrikon	Supplier of OPC and OPC UA software and other industrial hardware/software	<a href="https://matrikonopc.com/">https://matrikonopc.com/</a>
Unified Automation	Supplier of OPC UA software and other industrial software	<a href="https://www.unified-automation.com/">https://www.unified-automation.com/</a>
Softing	Supplier of OPC and OPC UA software and other industrial hardware/software	<a href="https://industrial.softing.com/en/startpage.html">https://industrial.softing.com/en/startpage.html</a>