



EPISODE 18: SHOW NOTES AND ACTION ITEMS

In today's podcast we heard about a vision of a connected manufacturing system that can sense, analyze, and respond. Erik Fogelman, one of the authors of "The Future of Connected Devices," talks about the importance of "connectivity" and communication protocols for interconnected devices. His article for the NIST manufacturing blog is worth reading: <https://www.nist.gov/blogs/manufacturing-innovation-blog/future-connected-devices>.

As the podcast wrapped up you heard about the convergence of OT (Operations Technology) and IT (Information Technology.) For more information about the integration of IT with OT, take a look at this informative post, <https://searchitoperations.techtarget.com/definition/IT-OT-convergence>.

Your action item this week is to familiarize yourself with these communication protocols. Look for ways that you can devise learning activities to help technicians improve their Knowledge, Skills and Abilities in the areas these standards and protocols include:

- [IO-Link](#) – (IEC 61131-9) defines standard cabling, connectors and a communications protocol for smart sensors and actuators. IO-Link also allows for access to additional information about sensor health and condition.
- [OPC UA](#) – an extension of the OPC interoperability standard that has been used since the mid-1990s for data exchange between operational technology devices. The newer Unified Architecture provides platform-independent communication between devices with added encryption and authentication security while providing future-proof expandability.
- [MQTT](#) – a bi-directional messaging protocol developed to allow for device-to-cloud and cloud-to-device communications. This protocol allows for minimal processor sizes and optimized networks, building in the reliability, security and scalability required for IoT networks.
- [Lightweight Cryptography](#) – emerging standard cryptographic algorithm(s) that can be used to encrypt communication in constrained environments such as with IoT.