A Beginner's Guide:
THE INDUSTRIAL INTERNET OF THINGS (IIoT)

The Industrial Internet of Things (IIoT) entails the use of the Internet of Things (IoT) technologies in manufacturing. But to most people – it might seem a bit confusing. We've gathered some of the most common terms and created this helpful glossary:

IoT
The system of internet-connected devices or objects able to collect and exchange data, using embedded sensors.

IIoT
The interconnectedness of technological devices that continuously gather process and analyze information from facility assets in an effort to pinpoint inefficiencies to offer solutions.

Industry 4.0
The term ("Industrie 4.0") coined by the German government to define a set of strategic initiatives, strategically designed to expand the development and adoption of the IIoT.

Big Data
The large volume of complex data – structured and unstructured – that often times arrives at real-time speed and is difficult for traditional data processing applications to store and process; but, much of the data can be analyzed for insights, leading to strategic business decisions.

Advanced Analytics
The autonomous or semi-autonomous examination of data using sophisticated quantitative methods (ie: optimization) to produce deeper insights, make intelligent predictions, and drive real-time actions.

Cyber-Physical Systems
Systems that consist of objects featuring embedded software and electronics that are connected with each other, or via the Internet to form a single networked system. They are playing an increasingly important role in industrial process and production control.

Smart Factory
Creates the framework for efficient production. The smart factory is based on cyber-physical systems which enable machines, resources and humans to intercommunicate over the Internet of Things. The information is exchanged via the cloud, the intranet or directly via RFID chips.

Machine to Machine (M2M)
The automated exchange of information between mobile devices via the Internet and mobile communications that guarantees optimum processes and increases productivity.

Cloud Computing

This is often referred to as "the cloud". Cloud Computing is the delivery of on-demand information technology services, where resources are retrieved from the internet through web-based tools, data centers and applications.

Cybersecurity

The preventative techniques used to protect computers, networks, programs and data from unauthorized access and attacks. All networked systems must be protected from hackers or viruses – both in production and administrative settings.

Predictive Maintenance

Predictive maintenance allows machines to prevent machine downtime. Machines and systems continuously analyze their status themselves and potential problems are reported in real-time. Scheduled maintenance ensures that the machine remains operational.

Industrial Automation

The innovation and application of control systems and information technologies to monitor and control processes and machines to deliver products and services.

Robotics

A branch of artificial intelligence that is concerned with the study, engineering and application of technology associated with creating robots and other devices that can react to sensory input.

Robotic Process Automation

The application of technology that allows employees in a company to configure computer software or robotics to capture and interpret existing applications for processing a transaction, manipulating data, triggering responses and communicating with other digital systems.

Demand Driven Production

This allows for production on demand. It is achieved through exchange of data throughout production systems to quickly and cost-efficiently produce a large number of customized products.

Traceabliity

A log of the products can be kept in the IIoT. Every production step is documented to allow for full traceability of the entire product life.

Additive Manufacturing

The process by which digital 3D design data is used to build a component by joining materials, layer upon layer.

Augmented Reality

The use of current technology and digital information to superimpose information and imagery on an existing environment in real-time to create an enhanced version of reality.