# From the Cloud to the Edge for Barcode and RFID Data Collection

A White Paper by Dr. Peter Green describing the transition of barcode & RFID data collection from client-server, then Cloud, and now in Edge IIOT computers.

MILLBURY, MA, USA, January 4, 2023 /EINPresswire.com/ -- Using the example of KnarrTek's BellHawk job and materials tracking system, this White paper traces the evolution of barcode and RFID based tracking systems from client-server systems, to running in the Cloud, and now to being deployed in ruggedized IIOT (Industrial Internet of Things) computers, at the Edge, in each manufacturing plant and warehouse.
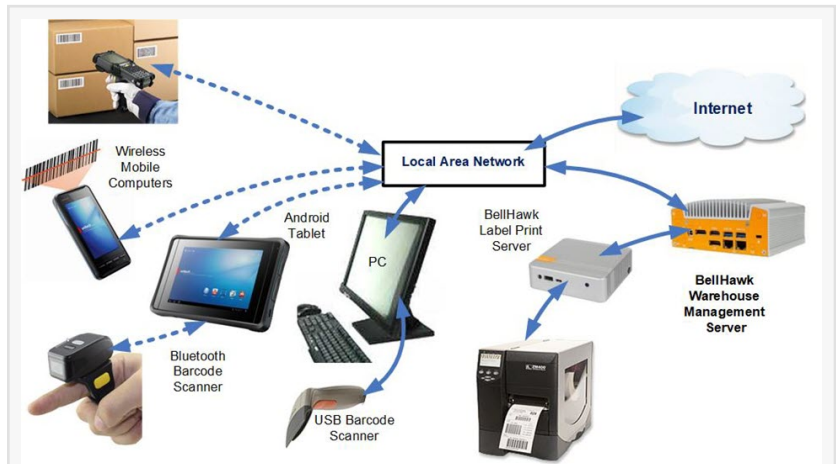
Barcode Data Collection using IIOT Computers at the Edge

KnarrTek Logo

We see, with each evolutionary stage, how we gain and lose capabilities, and how each architecture had to evolve to compensate for these losses. This evolution has been primarily driven by increases in computing power at ever lower prices. It has also been driven by the reductions in IT staff, from typically having half a dozen IT support staff and programmers in each plant or warehouse, to having one, and now none.

Instead we now have manufacturing and process control engineers, for whom we now provide a set of ruggedized boxes, complete with software and remote support, which they can integrate into their production lines and distribution warehouses, just like any other process control equipment.

This White Paper can be downloaded as a PDF document from the "White Papers" link at the bottom of www.KnarrTek.com.

This white paper also describes how we now perform RFID data collection, barcode label printing

and RFID tag encoding, as well as interfacing to weighing scales and process control lines, in separate IIOT "boxes" rather than using one centralized Cloud-based computer.

This enables organizations like KnarrTek to ship-in the needed boxes, already loaded and setup with software, into each plant, ready to plug-in and run. These boxes can then be supported remotely by KnarrTek, over the Internet, just like any other Cloud-based resource.

RFID materials tracking data capture at the Edge
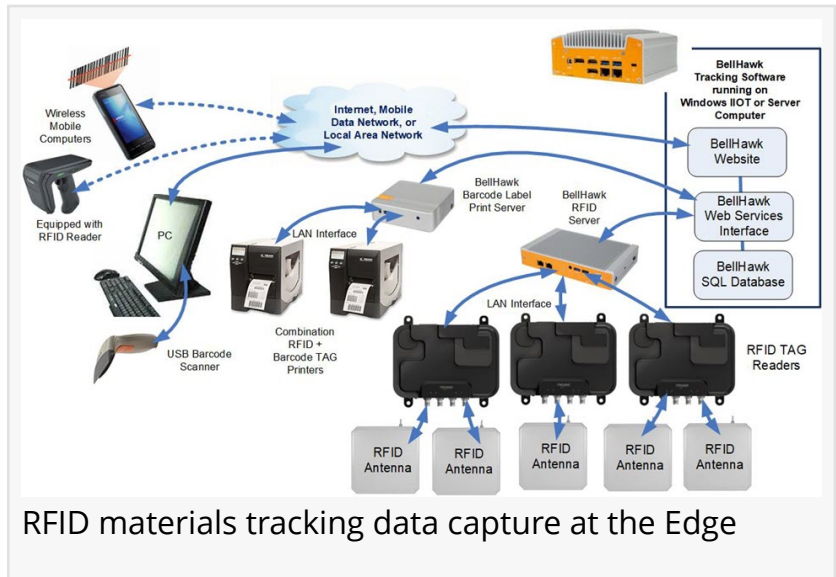
The data collected by the separate data collection IIOT "boxes", at the Edge, can then be combined over the Internet into an integrated view of inventory and production operations using KnarrTek's MilramX Enterprise Integration Software and used to make operations management decisions using KnarrTek's KnarrOps Enterprise Decision Support software.

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Relative to Cloud computing, using IIOT computers at the the Edge cuts cost, improves reliability and performance, as well as providing a more responsive barcode and RFID data capture environment."

Dr. Peter Green

It is noteworthy that, while data collection has moved to the Edge, Enterprise Integration and Decision Support systems, such as MilramX and KnarrOps, need to run in the Cloud for performance, efficiency and availability.

This White Paper concludes that we need a hybrid of Edge-based data collection, with Cloud-based decision support, to provide operations managers in manufacturing plants and industrial distribution warehouses with the information they need to run their operations efficiently.

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