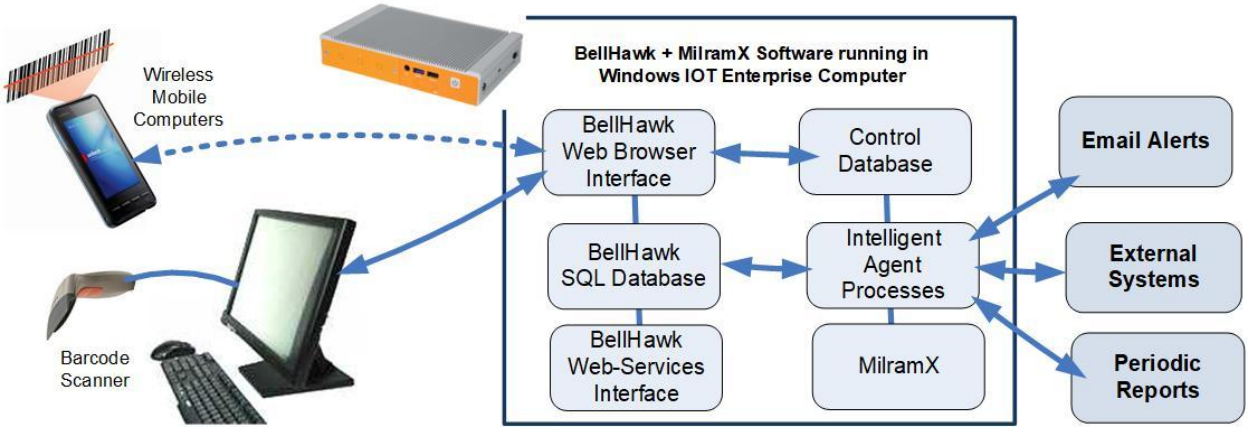
WIPtracker – AI in a Box for Real-Time Operations Tracking and Management

Dr. Peter Green



WIPtracker is an affordable, integrated appliance that enables the real-time tracking and management of manufacturing and distribution operations within an industrial enterprise. Unlike regenerative AI (Artificial Intelligence) applications that require huge data centers in the Cloud that cost billions of dollars, WIPtracker runs on small Internet of Things (IOT) computers that can cost under a thousand dollars to purchase.

Best of all, WIPtracker can run on-premises without needing an internet connection, enabling manufacturing and distribution operations to continue when the internet goes down (which it does frequently these days). Yet, WIPtracker can automatically communicate with most Cloud-based ERP and supply chain systems when internet connectivity is available.

In one small box, WIPtracker provides the two things you need to run a manufacturing plant or industrial distribution operation:

1. Real-time data collection and mistake prevention. Barcode data collection is built in to WIPtracker and RFID tracking is provided through add-on IOT computers.

2. A set of intelligent agents that do the "intelligent grunt work" of communicating with external systems, generating reports, and alerting people when some event occurs that they need to pay attention to.

The small size enables the WIPtracker server computer to be able to be shipped to a plant in a small box overnight by UPS or FedEx with all the software ready installed, in a plug and play format, ready to start collecting and processing operations tracking data.

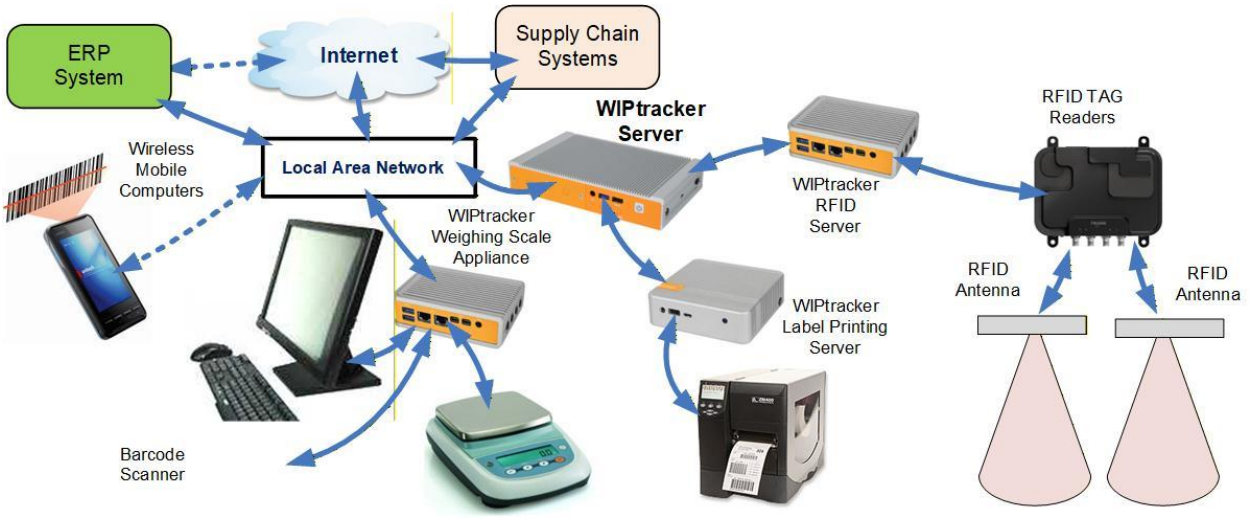
WIPtracker is based on two proven bodies of software:

1. BellHawk, for operations tracking, which has been deployed in hundreds of manufacturing plants and warehouses over the past two decades.

2. MilramX, which has its roots in real-time AI projects funded by DARPA, the US Air Force, and NASA. Its intelligent-agent approach is the same as that used in military applications and is able to run on small multi-threaded processors.

This software is provided in one integrated platform but can be easily customized for each specific application by changing the rules that govern data capture and the Python scripts that manage the real-time decision making. This customization can be performed by each client's own business analysts, manufacturing engineers, and IT people or these services can be provided by partner organizations, such as KnarrTek in the USA.

For applications needing RFID scanning and interfaces to weighing scales, as well as barcode label and RFID tag printing/encoding WIPtracker uses additional IOT computers, which communicate with the WIPtracker server over its web-services interface.



In each case, these add-on IOT boxes can be shipped into each plant or warehouse complete with the needed software. This software can then be tailored to specific operational needs by customizing Python scripts or editing barcode label formats.

In addition, adjunct software is available which can integrate the data from multiple plants and warehouses into to a single enterprise-wide "DEX" database, in the Cloud, which can then be used to exchange data with a single enterprise-wide ERP system. DEX can also be used to relay operational orders to each plant or warehouse.

For details, please see the appropriate WIPtracker, BellHawk and MilramX documentation.

Commentary

WIPtracker is the opposite to "Big" AI. It is affordable, reliable and does not hallucinate. Yet is provides all the capabilities needed to manage industrial operations at modest cost. More importantly the algorithms it uses are battle hardened (literally) and proven in over 2 decades of operational deployment in hundreds of plants.

But, if you really want to use regenerative AI, as part of your enterprise-wide operations management process, then the DEX database provides a straightforward link between Big AI and operations in production floors and warehouses at many different locations.

Author

Peter Green

Dr. Peter Green serves as the Technical Director of KnarrTek Inc. and Smart Operations Management LLC. Dr Green obtained his BSC (Hons) in Electrical Engineering and his Ph.D. Degrees in Electronics and Computer Science from Leeds University in England. Subsequently Dr. Green was a senior member of technical staff at Massachusetts Institute of Technology and a Professor of Computer Engineering at Worcester Polytechnic Institute.

Dr Green is a systems architect who is an expert in technology solutions for materials tracking and traceability in the food, medical, industrial, construction and defense supply chains. He has led the implementation of over 100 such systems over the past decade. Dr Green also led the team which developed the BellHawk barcode tracking, labeling, materials tracking and traceability software as well as the MilramX decision support and supply chain information integration software platform.

For further discussion, or to send comments, please contact pgreen@SmartOpsMgt.com.

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