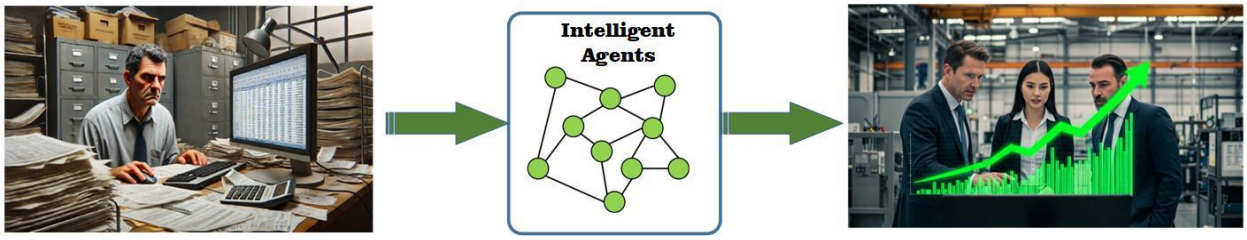
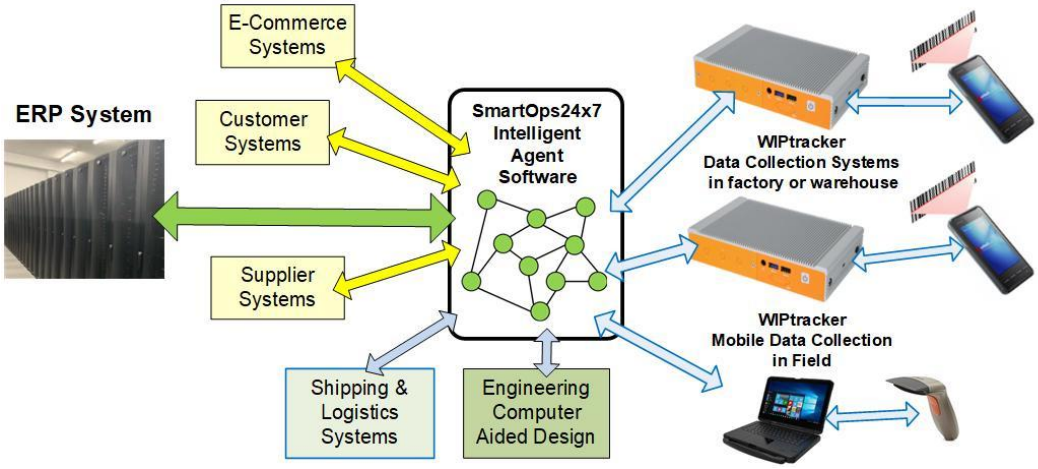
# SmartOps24x7 Overview




The purpose of SmartOps24x7™ is to enable industrial organizations to track and manage the flow of jobs and materials, in real-time, through one or more manufacturing plants and distribution warehouses, as well as through delivery, field, and installation operations.

SmartOps24x7, which is pronounced Smart Ops 24 by 7, uses the concept of real-time intelligent agents to automate much of the "intelligent grunt work" that would otherwise be required by managers and their staff wasting time in tracking and managing these operations by using paper forms, Excel spreadsheets, reading reports about what went wrong yesterday, entering duplicate data into multiple systems, and attending endless coordination and planning meetings.

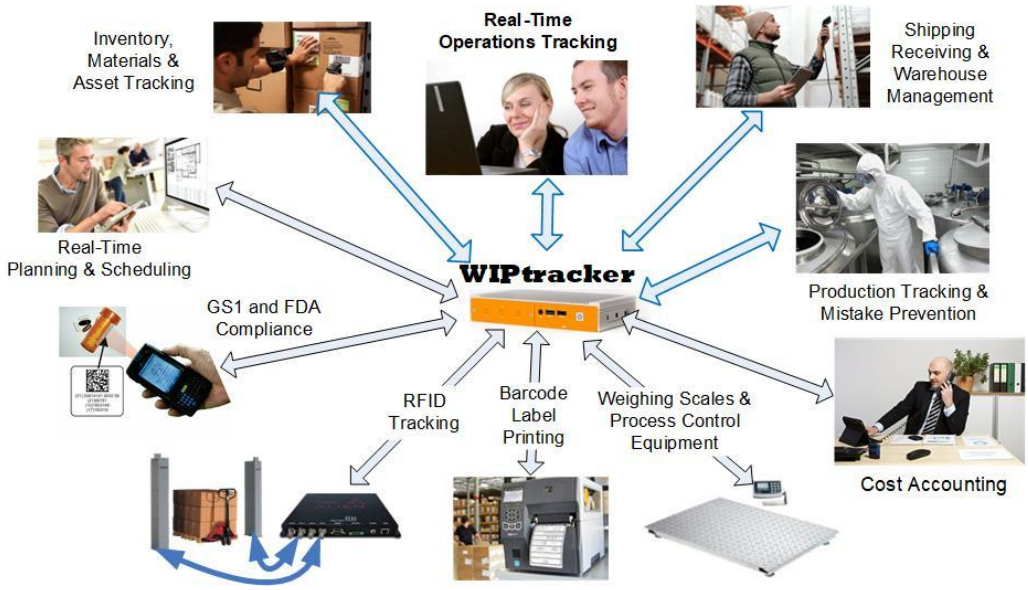



SmartOps24x7 runs on a Windows Server in the Cloud or at an enterprise's data center to link front-office operations with operations on the shop floor, in the warehouse and in the field, where operational data is collected by WIPtracker™ IIOT (Industrial Internet of Things) computers located at each site or by WIPtracker software running on ruggedized mobile computers for mobile-data collection in the field.

The primary use of SmartOps24x7 is to enhance the data collection capabilities of existing ERP systems as well as to manage the flow of customer orders through engineering design, materials procurement, engineering design, manufacturing, distribution, shipping and logistics, as well as through delivery and installation, if needed.

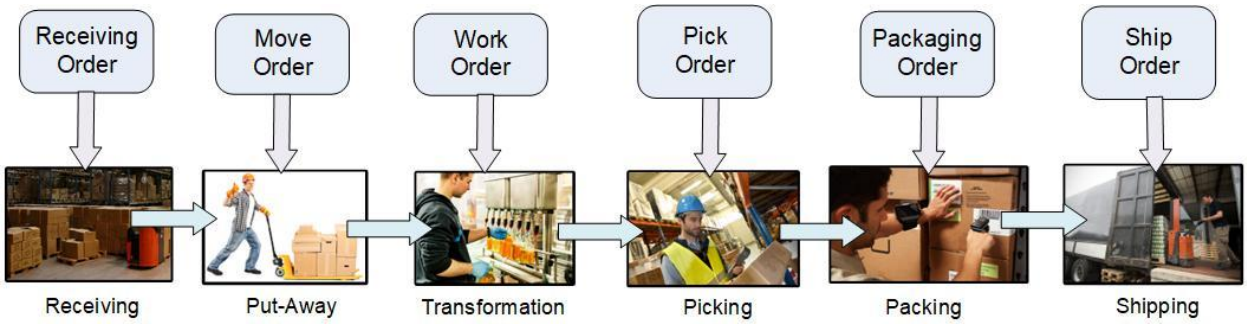
SmartOps24x7 agents run 24x7 to monitor data from multiple sources of information. They then interpret this data into useful information, which is used to automatically update other systems, or to send Email alerts to managers or their staff that there are issues that they need to pay attention to.

The WIPtracker IIOT “boxes” use barcode and RFID technologies to provide a wide range of capabilities for operations tracking and management at the manufacturing plant and warehouse level. These boxes communicate with the SmartOps24x7 server in the Cloud using store and forward communications technology, enabling operations to continue at the local level, even if the Internet goes down or becomes unreliable.

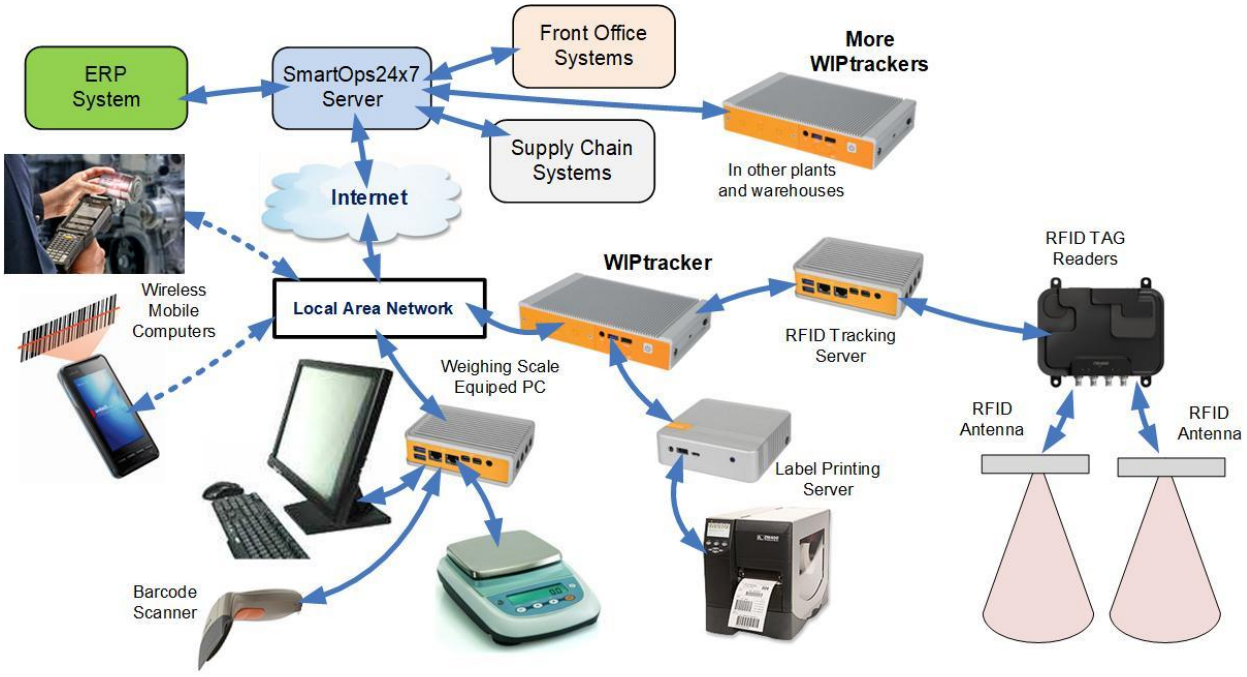



A similar store and forward technology is used for mobile WIPtracker computers, which enable data capture out in the field, where there is no Internet communications. Then data and information are automatically exchanged with the SmartOps24x7 server once the mobile computer is able to re-establish Internet communications.

Each WIPtracker box is capable of operating independently to track Work-in-Process (hence the name) as it flows from the receipt of materials, through the put-away, transformation into products, and then their picking, packing and shipping to customers.




This sequence of operations is typically carried out in response to orders received from the SmartOps24x7 server, with the resultant tracking data sent back to the SmartOps24x7 server.




The WIPtracker software is shipped to customers already loaded in an 8”x5”x1” ruggedized industrial internet of things (IIOT) computer, ready to plug-in and start collecting data. Auxiliary IIOT boxes may also be shipped for barcode label printing, weighing scale connection, and RFID tracking.

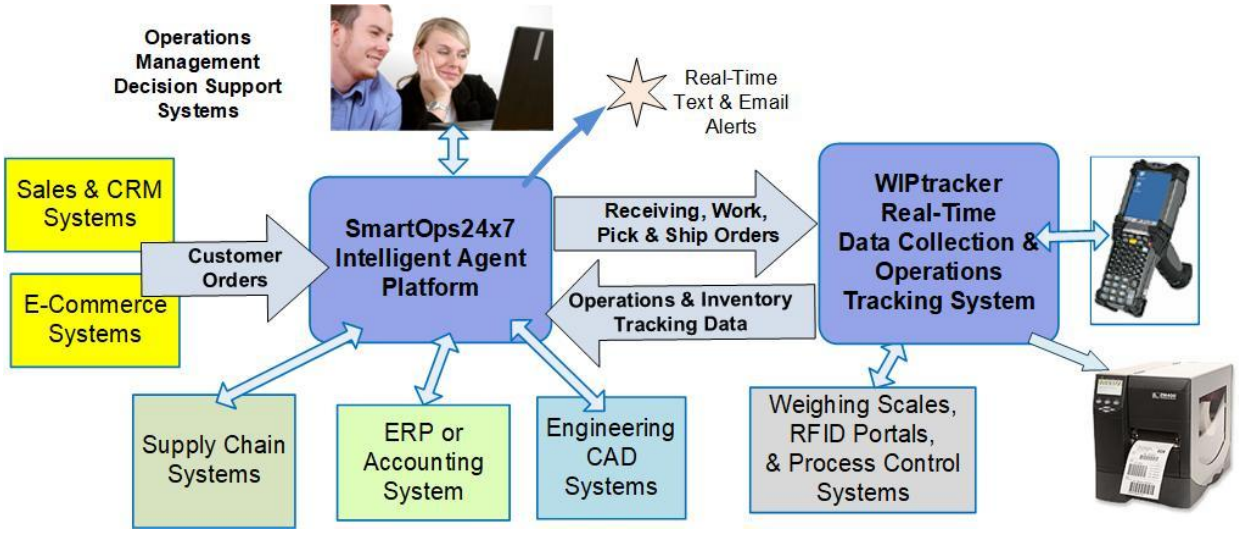
A wide variety of wireless mobile computers, with integral barcode scanners, may be used with WIPtracker, without the need to load any special software onto the devices, as they use a web-browser to communicate with the WIPtracker box. Similarly, PCs or tablets equipped with barcode scanners can be used to collect data along with optional weighing scales.

The label printing server can print out barcode labels, or combination barcode labels and RFID tags on a wide variety of label and tag printing devices. These tags can then be attached to containers of material or individual parts or products and tracked using a mix of barcode and RFID scanning, as appropriate to each work-center or warehouse location.

WIPtracker is ideal for a wide-variety of manufacturing operations, including those, such as in the manufacture and distribution of FDA regulated food, pharmaceutical, and medical devices, which require the ability to keep track of which materials from which suppliers went into each product and who those products were shipped to.

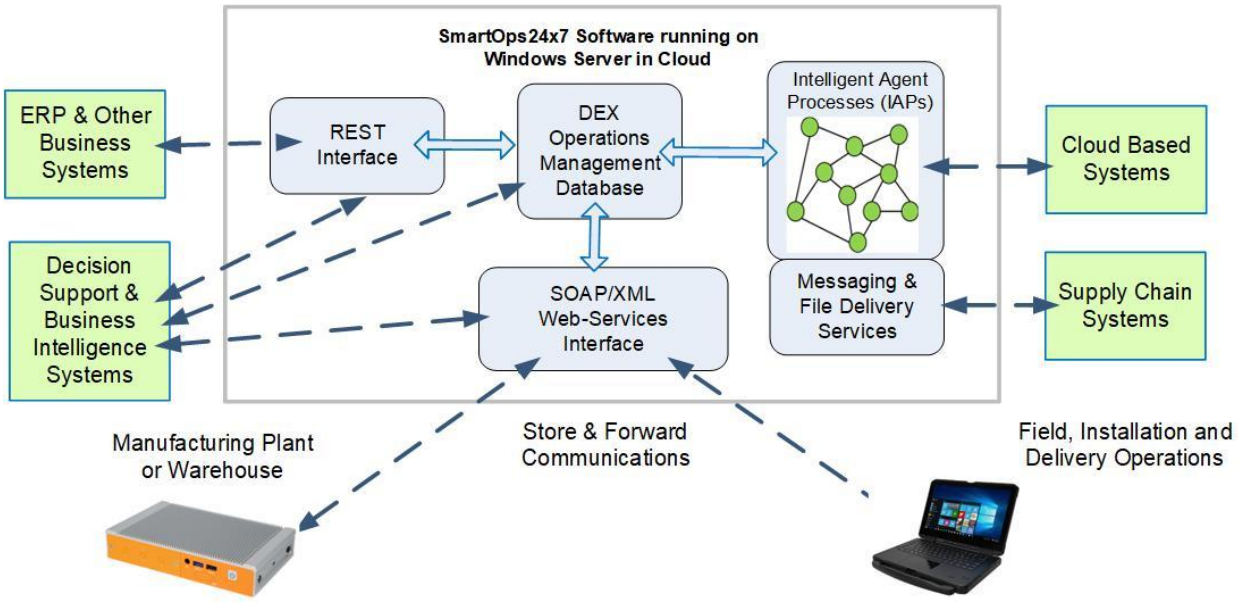
SmartOps24x7 supports such regulated applications by automating the exchange of supply chain traceability data in the form of EPCIS or EDI files.

For those applications, such as farming and construction, where Internet connection may not be available, then WIPtracker running on a ruggedized Windows laptop or tablet is ideal for remote data collection, with automated “Syncing” up with the central operations management database in SmartOps24x7 when in communications contact.




How this all typically ties together is that customer orders from a variety of sources are received by one or more intelligent agents and turned into a customer unified order stream. This customer order stream is then converted into purchase, manufacturing/work, shipping and other orders directly by agents or by being sent to an ERP or engineering design system.

The resultant orders are then sent, through SmartOps24x7, to the appropriate WIPtracker system depending on location relative to customer, capabilities and available capacity. The operations and inventory tracking data is then sent back to SmartOps24x7 for distribution to other systems and can be made available to business intelligence systems.



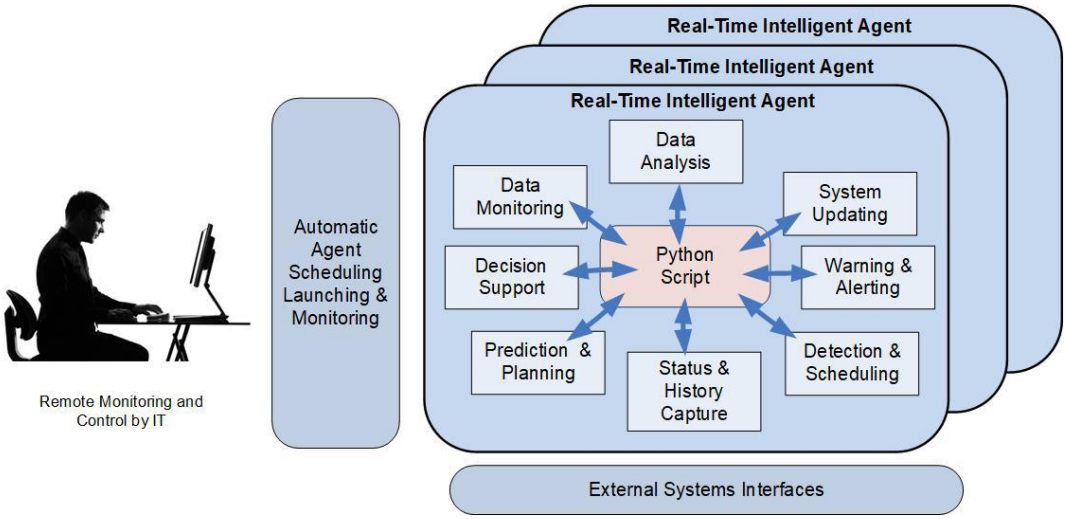

At the core of SmartOps24x7 is the DEX Operations Management Database which is the repository for the status and history of all the orders and operations tracking data for all the sites. This database is into which intelligent agent processes (IAPs) deposit their information and from which they are able to retrieve data to send to other systems.

WIPtracker systems can store data into this database and retrieve data from this interface using a secure, encrypted, store and forward communications through the SmartOps24x7 SOAP/XML web services interface.

Intelligent agents can exchange data with external systems through the web-services interfaces of these systems. Alternately external systems can exchange data with the DEX database through SmartOps24x7's web-services interface.

The DEX database is also used by business intelligence and Artificial Intelligence applications directly or through the SmartOps24x7 web services interfaces to provide interactive decision support to operations managers and their assistants.

Behind the scenes in all of this are the intelligent agent processes that do the routine "intelligent grunt work" of data monitoring and analysis, routine decision making, warning and alerting, predictive planning, detect problems and schedule




activities.

These Intelligent Agent Processes (IAPs) are Windows processes, which are automatically scheduled, launched, and monitored by SmartOps24x7 based on user defined schedules. The running of these intelligent agents can be remotely monitored by IT staff, who can step in should a remote interface get "hung" or other systems issues occur.

Over 90% of the needed code for each agent is provided by SmartOps24x7 support libraries, including prebuilt interfaces to a wide variety of databases. The remaining code is provided by user defined Python scripts, which control the detailed actions of each agent.

This framework enables agents to run 24x7 for months on end, while users dynamically add and modify agents as operational needs evolve.

For more information, please contact marketing-support@SmartOpsMgt.com or see www.SmartOps24x7.com for details.