

SPEDE Steel Coil Locator System using BLE Beacons



Do These Coil Issues Sound Familiar?

1. It's time-consuming to find the specific coil you need
2. Putaway locations are manually recorded; subject to operator error
3. New locations are not always recorded when coils are moved
4. Risk of picking the wrong coil
5. Cycle and Physical counts are labor-intensive, time-consuming, costly



The SPEDE BLE Steel Coil Locator System

Automates and Controls these Processes:

- Receiving
- Putaway
- Tracking
- Counting
- Picking
- Shipping

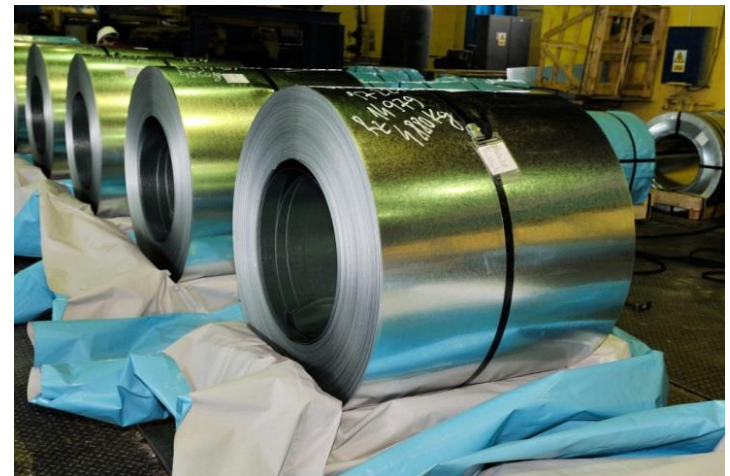


Automates Coil Tracking & Traceability

Tracks Each Coil by Unique ID

Benefits:

- Real-time verification that the selected coil is correct
- No labor time spent searching for, counting and record-keeping
- Real-time visibility of inventory
- Backward/ forward Traceability by Coil ID
- Low cost to begin and expand
- Easy to use



Uses Bluetooth BLE Technology

Using Bluetooth Low Energy (BLE) Beacons vs. RFID

Advantages of BLE Beacons:

- Small, inexpensive, precise and simple technology
- A BLE beacon is attached to the Coil to track the Coil by unique ID
- Beacon automatically transmits its ID to the SPEDE Locator App whenever the Coil is lifted or moved



The white BLE Beacon is slightly larger than a U.S. quarter

Disadvantages of RFID:

- Earlier solutions used RFID tags to identify coils
- RFID reader can pick up signals from other RFID tags surrounding the Target tag
- Incorrect RFID reads will cause errors in picking, location tracking, shipping, inventory counts
- RFID tags are expensive compared to BLE Beacons

Key Features of the BLE Beacon

Size, Battery Life, Unique ID, Transmit Distance and More...

- Beacon is only 1.5 inches diameter x .5 inches height
- Long Battery Life (3 years)
- Replaceable internal button battery (CR2032)
- Extended Bluetooth transmit distance of up to 300+ feet
- Internal Accelerometer inside Beacon wakes up on coil movement, and automatically triggers BT data transmission
- Beacon has a magnet for easy attachment and removal
- Beacon has an optional 2D barcode that can be scanned to associate the Beacon ID to the coil's data, e.g., part nbr, heat, supplier, etc.
- Beacon transmits its unique Beacon ID to a SPEDE App on a handheld Windows 10 PC tablet, where the Coil Location database resides
- Optional WiFi support for multiple tablets and/or interface to a host computer system.

How The System Works

At Receiving -

- A BLE beacon is attached to the Coil via magnet
- BLE Beacon has a unique ID
- SPEDE Locator App, residing on a handheld tablet PC, associates the Beacon ID to the Coil ID
- Operator can scan the Coil specs (part nbr, heat, supplier, etc.) or enter them using the tablet PC
- Specs can also include specific attributes such as previous Processor Tag, Heat Number, Lot Number, Grade, Mill
- This Receipt txn is recorded in the SPEDE Locator App
- BLE beacon will transmit its ID to the Locator App when the Coil is lifted or moved

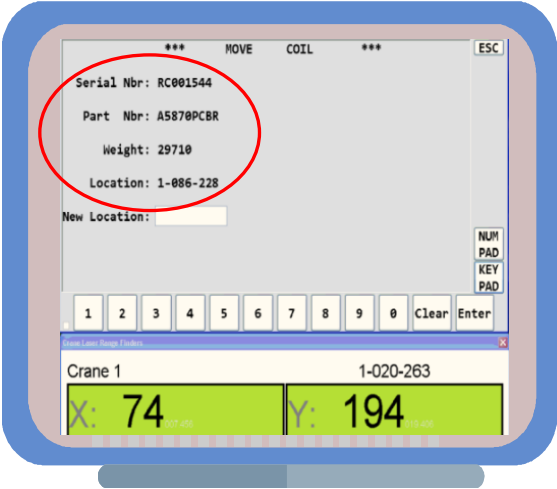


Note: BLE beacons can also be attached to WIP containers to track WIP units

Distance Laser Can Identify Location

At Putaway -

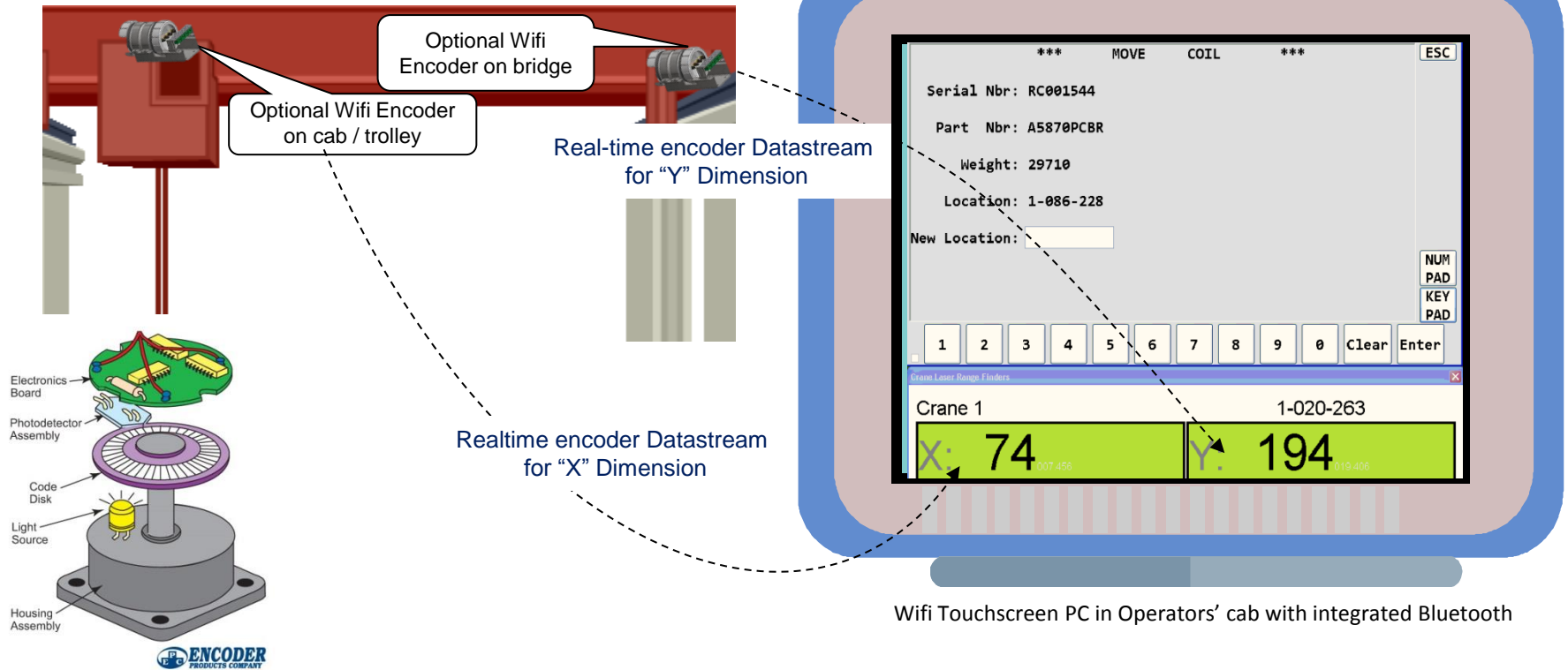
- Crane-mounted distance lasers can identify the XY or XYZ location where the coil is put
- Coil location is updated automatically whenever the coil is moved
- Coil ID and location are recorded automatically in the SPEDE Locator database when the coil is put away



Optional Encoder-to-WiFi on the Crane Can Stream Position Data

As the crane and trolley move, a wireless Touchscreen in the cab is updated with the real-time X-Y trolley location data from the encoders or the distance-measuring lasers on the bridge. Alternatively, the cab operator can enter the row/position manually when coil is stored.

XY position data is sent to Cab TouchScreen



Confirms the Correct Coil is Picked

At Picking / Shipping

- Operator enters search criteria for desired Coil into the SPEDE Locator System App (e.g. part number, heat, ID)
- SPEDE displays specific location of desired Coil
- Distance lasers on the crane verify the crane is at the correct location
- Locator System confirms the desired Coil ID is being picked / loaded
- SPEDE Locator database is instantly updated with the coil transaction



How to Try SPEDE Coil Locator in your Facility

Simple Entry-level Package is ready to use

- Start with 100 BLE beacons
- Get 100 coil Moves with the SPEDE Coil Locator App
- Add more BLE beacons later
- Add more functionality later
- Inexpensive; easy to get started

100 Entry-Level functions include:

- Receives
- Putaways
- Moves
- Counts
- Picks
- Ships



Easy to Get Started

The Entry Level Coil Locator Kit includes:

- 1 tablet PC with Windows 10 and Bluetooth
- The SPEDE Coil Locator App installed on the tablet PC
- Functionality to Receive, Put away, Move, Count, Pick, Ship
- 100 BLE beacons to attach to coils
- 100 coil movement transactions

Kit Cost: \$3,000

- Note: No server PC is needed to run the Entry Level system
- Additional beacons can be purchased in quantities of 100

SPEDE Coil Locator System

Upgrades include:

- Interface to your host systems
 - Send Receive txns to host
 - Send completed Picklist txns to host
- Unlimited Move transactions
- Support for unlimited Bluetooth beacons
- Locator System database can reside on a PC Server
- Will allow multiple-user access
- Transaction Reports for tracking, traceability, auditability



To Get More Information...

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About Us:

SPEDE Technologies is a software and systems company with 40+ years of experience in the automotive manufacturing industries. We specialize in Automated Line-side Solutions that control and standardize production area processes to eliminate errors, reduce labor, increase efficiency, and provide 20/20 visibility into line-side operations.

Our Customers are mid-size to Fortune 500 auto suppliers and manufacturers with multiple plant sites throughout the U.S. and in Mexico. They rely on SPEDE Automated Line-side Solutions to keep their mission-critical processes running smoothly, 24/7.



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