Transform your forklift fleet into smart and efficient IoT devices with GlobeRanger's Connected Forklift Solution
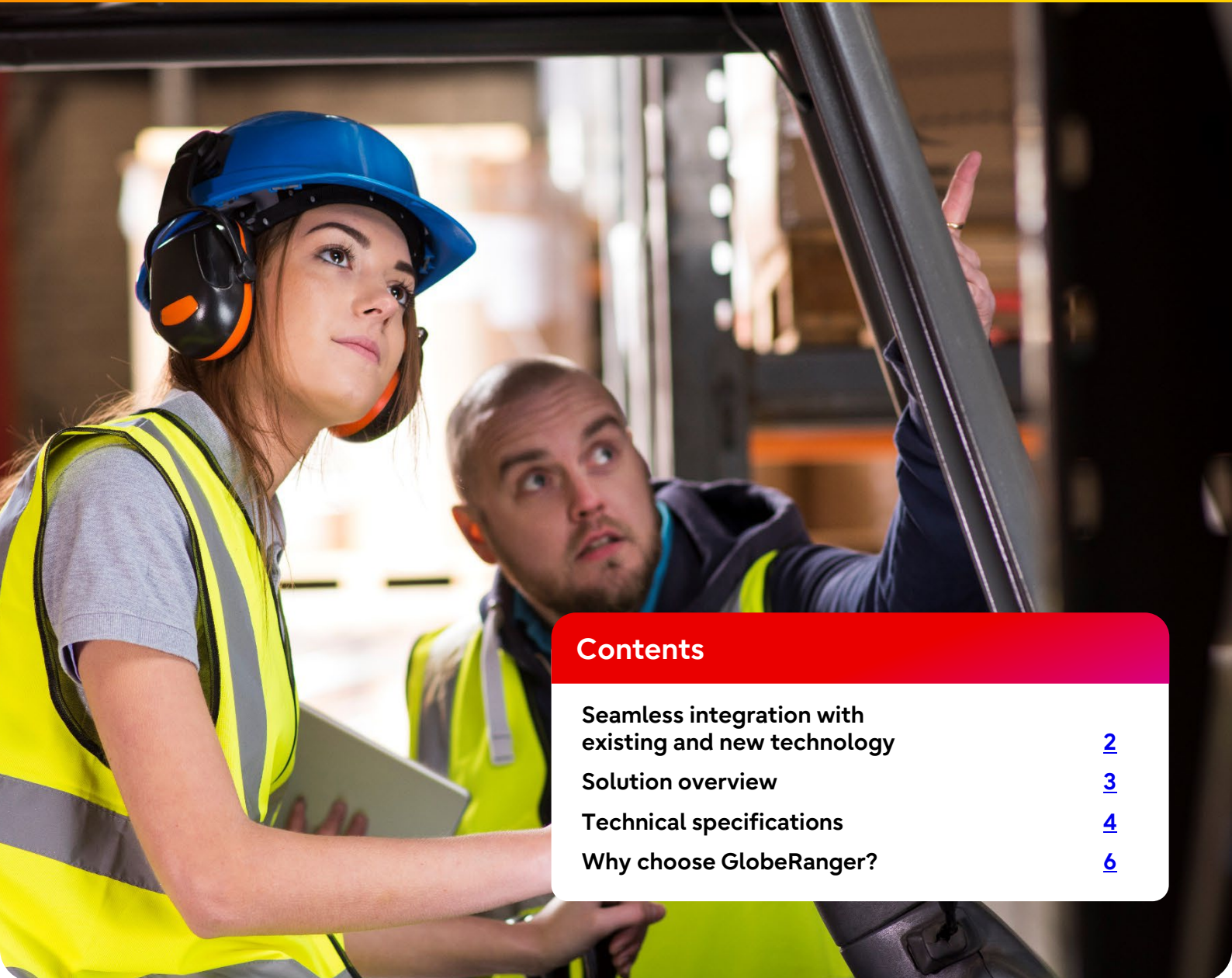
Contents

In an increasingly volatile environment, traditional warehouse management methods struggle to keep up – especially in a climate of cost-cutting and reduced resources.

Manufacturers also need improved asset management solutions to locate parts, reduce losses, prove authenticity of assets and optimise processes.

GlobeRanger's Connected Forklift Solution can help to improve the visibility of assets throughout your warehouse operations by managing data from multiple sources in near real-time.

Utilising the very latest RFID and wireless connected technology, the GlobeRanger Connected Forklift Solution automatically records an item's description, weight, and its location once the item is stored. This data is captured and can be automatically sent to your legacy and backend systems such as ERPs, WMS/WES and others. **The data can be shared and is available for easy retrieval** on web apps, tablets and handheld devices, allowing operators to quickly and accurately track and locate specific items from anywhere within your warehouse operations.

The GlobeRanger Connected Forklift Solution can easily be adapted to many makes and models of forklifts and Automated Guided Vehicles (AGVs). The solution is self-contained in a ruggedised housing and includes GlobeRanger Edge Connect software to enable location tracking and connectivity to back-end and legacy systems. The solution also includes an integrated weigh scale to provide details about an item's weight at pick-up and put-away and can notify you of any changes upon that item's retrieval.

Seamless integration with existing and new technology

Crucially with GlobeRanger solutions, there is no need for any changes to existing supply chain management systems, or back-end infrastructure. The software seamlessly integrates existing and new technologies, preserving past investments while enabling new edge applications. This level of connectivity has the potential to exploit the Internet of Things (IoT), as more and more devices are connected to the internet.

Solution overview

1 Edge Connect (Roof Mounted)

Edge Connect module is fitted in a ruggedised container mounted in the forklift's cab, powered by a 12 or 24v DC power supply.

2 RFID Antennas

The antennas are mounted by the rearview mirrors using variable mounts and connected via RF cables (6' and 8' long).

3 Rugged Tablet

A ruggedised tablet provides near real-time feedback to the driver as weighing operations are completed.

4 RFID Tagged Crate

Loads are tagged with durable RFID tags to allow for automated identification.

5 Integrated Weigh Scale

An integrated weigh scale is fitted to the forklift, interfacing directly with Edge Connect.

Optional iMotion™ – harnessing near real-time data

The optional addition of GlobeRanger's highly configurable iMotion™ platform lets you choose what data will be communicated back to your host systems for analysis and archiving. GlobeRanger's iMotion platform has been designed to truly enable an organisation's business processes and decision-making. Capturing and sharing error-free data and translating it into insightful information with context delivers near real-time intelligence that enables trusted and highly informed decision-making.

iMotion™ gathers, filters and processes data from this sophisticated network of devices and sensors located on assets throughout your organisation's value chain. These magnetic tags are small, discrete, and can be applied to practically any small asset that is considered important enough to be tracked and traced. Flexible data collection and processing at the edge allows organisations to filter input so they can manage by exception and receive near real-time notification when user-determined thresholds are neared, met or exceeded.

Your business rules determine what you want to monitor, what data you receive, when it should be reported and the automated responses and alerts the system should make. Having actionable information can make the difference between planned and unplanned downtime, and associated costs. GlobeRanger delivers unprecedented levels of supply chain visibility. Waste can be reduced, or even eliminated, and bottlenecks easily identified.

Technical specifications
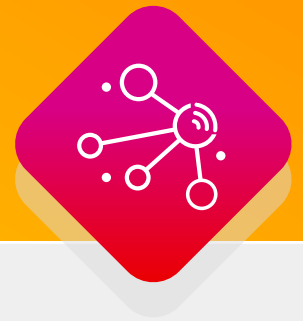
Optional iMotion™ – harnessing near real-time data

Feature	Specification	Option
RFID Antenna ports	Supports 2 external antennas with optional support for 2 additional external antennas	Included
Power Input	Supports a 9 to 36 Vdc power source requiring a maximum of 15 watts	Included
Communication	Reader supports wireless 802.11a/b/g/n/ac (2.4 and 5 GHz) and Bluetooth 4.1	Included
GPS (Outdoor RTLS)	Reader optional support for GNSS (Optional - GPS antenna required)	Optional
Sensors and Alert (GPIO)	Optional support for 2 sensor inputs and 2 alert outputs (for external sensors or notification lights / buzzers)	Optional

Physical and environmental

Feature	Specification
Dimensions (l - w -h)	11 x 7 x 6 inches – Edge Connect Module
Weight	Approximately 4lbs
Operating Environment	-40°C to 50°C, 100% humidity
Environment	IP67 rated SensThys RFID Reader (casing and connectors) IP67 rated Nema Enclosure bulkhead connectors IP67 rated Nema bulkhead power connector

RFID reader

Reader Protocol	EPC Class 1 Gen 2 and 18000 – 6C
Operating Frequency	902.75 MHz – 927.25 MHz
Hopping Channels	50
Channel Spacing	500 KHz
Channel Dwell Time	< 0.4 seconds
RF Transmitter	< 30 dBm
Modulation Methods	Phase Reversal – Amplitude Shift Keying (PR-ASK) Double Side Band – Amplitude Shift Keying (DB-ASK)
20 dB Modulation Bandwidth	< 100 KHz

Technical specifications (cont.)

Antenna and RF interface

Feature	Specification
RF Transmit Power	+33 dBm
Operating Frequency	902.75 MHz – 927.25 MHz (Region code is field assignable)

Software

Feature	Specification
Edge Connect	Communication, business logic and device management software
iMotion™ Edgeware	Optional software platform to support additional integration into existing back-end systems

GlobeRanger Connected Forklift Reader at-a-glance:

Modernise your warehouse and logistics operations by leveraging the very latest IoT technologies, to save time and money by automating previous manual tasks while eliminating lost items.

GlobeRanger Connected Forklift Reader features:

- Easy installation, mounted inside forklift cab or on the AGV
- Supports standard forklift 12 or 24 Vdc accessory power
- Small adjustable rugged external antennas – two antennas available with two additional antennas optional
- Automatic capture of crate's weight on forks through a direct interface with forklift weigh scales
- Automatic read of the crate's RFID tag when a valid crate weight is reported by the weigh scale
- Rugged, waterproof enclosure makes it suitable for harsh commercial or industrial environments.

A comprehensive 12-month warranty is included, with an optional annual maintenance agreement available.

GLOBERANGER
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GlobeRanger simplifies and speeds up the development, deployment and management of Asset Tracking Solutions to connect organisations to the Internet of Things in weeks, even days.

Our story from pioneer of Automated Identification Technologies in 1999 to market leader in IoT-enabled Asset Tracking, Management and Decision-making Solutions today has at its heart a simple but proven principle.

The digital evolution of our customers' organisations doesn't have to be complex, time-consuming, risky or costly – it simply starts with knowing where their assets are.

Using our proprietary iMotion™ platform and suite of applications, we choose best-of-breed devices, sensors and RFID tags and draw on our global experts to connect our customers' physical assets to their digital systems.

Then we help them turn their organisations into flexible, scalable and reliable connected ecosystems that deliver unexpected value.

In the short term, our focus is on early wins to meet their business case and ROI targets. In the longer term, our aim is to help them evolve in a carefully structured risk, cost- and time-managed way to take their share of the fast-growing IoT market, estimated to be worth $25 trillion by 2025.

Today that means delivering to our customers real-time visibility of their assets, more efficient end-to-end operations, optimisation of their processes, and proven accountability.

Tomorrow, that means enabling deeper organisational insight through asset data collection and analysis, opportunity mapping to transform the organisation, faster connectivity by integrating 5G, automated decisioning by integrating AI and unalterable ESG reporting by integrating blockchain.

After all, with the backing of Fujitsu, one of the world's largest technology groups, GlobeRanger has the financial strength, worldwide support and access to a $1.6 billion a year R&D budget we need to invent the future of your connected organisation, every day.

Welcome to your digital evolution

To find out where to start, and where your connected business can take you, visit GlobeRanger.com

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