



Contact Tracing Sensors DataScope Systems Ltd

July 2020

Introduction

The DataScope DataTrace Contact Tracing Solution is a combination of a range of established technology and DataScope components. These will be configured to provide an innovative and flexible contact tracing solution for a construction site environment.

DataScope has a wealth of experience in providing sophisticated and complex logistics, people, planning and resource management solutions to the Construction Industry.

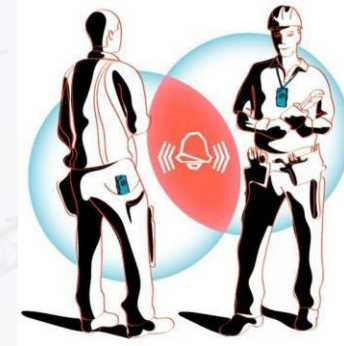


PROXIMITY POLICY ENFORCEMENT

Key Features

Social distance enforcement

Every person of a team gets an BLE Micro Tracker or Smart Badge that can detect the proximity of other trackers and activate audio warning in case the distance is closer than a predefined threshold value. This type of proximity monitoring takes in account distance and time too.



Full integration with DataScope's Time & Attendance System

As well as providing audible alerts, our contact tracing hardware fully integrates with DataScope's Time & Attendance Solution.

Contact Tracing

In the event that an operative reports to be unwell, the our system can be interrogated and the tags that have been in close contact are provided as a report. The report then shows which operatives have been in close proximity and the duration interaction.

Plug and Play Hardware

All equipment is pre-configured so is plug and play with the device only requiring power.

Hardware comes as a wearable sensor which can be attached to a lanyard and worn.



Key Challenges

1. Data Protection:

- Explicit user consent required. Personal data storage covered in by Datascope's Data Protection agreement with Data Controller.
- Doesn't collect personally identifiable information or operative location data
- Tags contact data is securely stored and deleted after an agreed retention period (14 days)
- Data will only be used for contact tracing
- Ability to view the contract tracing report is protected by permissions in the web application.
- Doesn't rely on operative installing applications on personal phone.

2. Contact Tracing :

Contact Tracing – ability to run a report for the previous 14 days that show all individuals that came in close proximity (within 3 meters) and how long (duration) to a suspected or confirmed COVID employee.

- a) This report will be provided to the system users via a secure web portal and be part of the current Access Control / T&A solution.
- b) Overview
 - A tracking beacon will be issued to an operative via a simple process or phone application linked to the Access Control System
 - Beacon data recorded
 - Beacon data is uploaded to a secure server and held without personally identifiable information or operative location data
 - In the event that an operative reports to be unwell the web application can be interrogated and the tags that have been in close contact are provided as a report
 - The report then shows which operatives have been in close proximity and the duration of that interaction. The data stored in the Access Control system can then be leveraged to contact operatives impacted.

Key Challenges

3. 2 meters Social Distancing Alerting – ability to alert the worker in real-time

- Tags use BLE beacon technology to identify proximity of other tags.
- The proximity is based on a distance calculation using RSSI (signal strength).
- Audible / physical (vibration) alerts are triggered when tags are identified to be within a pre-defined range.
- Data is uploaded to the server via secure (BLE / LoRaWAN) mechanisms.

4. Total Crew Count – ability to determine how many individuals are onsite at any given time, including FB, GC's, and Trade Partners

- Already available on DataScope Time & Attendance System, Assuming Datascope access control solution being used by the project. The contact tracing solution will fully integrate.

5. Ease of Use – ease of installation and maintenance in the field; reasonable lead time to replace; battery life greater than 12 hours; ruggedness

- All equipment is pre-configured so is plug and play.
- The device will only need power.
- In the event that Datascope engineers are not attending site, best practice for installation of hardware will be sent to the project teams.

6. Data and usefulness of reports – pre-populated reports and ability to run on demand

Key Challenges

4. **Total Crew Count – ability to determine how many individuals are onsite at any given time, including FB, GC's, and Trade Partners**
 - Already available on Dataroscope platform. Assuming Dataroscope access control solution being used by the project.
5. **Ease of Use – ease of installation and maintenance in the field; reasonable lead time to replace; battery life greater than 12 hours; ruggedness**
 - All equipment is pre-configured so is plug and play.
 - The device will only need power.
 - In the event that Dataroscope engineers are not attending site, best practice for installation of hardware will be sent to the project teams.
6. **Data and usefulness of reports – pre-populated reports and ability to run on demand.**
 - DataScope will configure reports to suit Client

LoRaWAN Gateway

LoRaWAN is a protocol designed for creating large-scale public networks; the technology allows for sensors to talk to the internet without 3G or WiFi.

BLE Gateway

Bluetooth Gateway is designed based on LoRa and Bluetooth 5.0 technology. It receives nearby Beacons information and re-sends it to LoRa gateway

BLE TAGS

BLE (or active RFID) systems operate by a **tag** “beaconing,” or sending out transmission, to a reader, and then transmitting that location to the cloud

DataScope UI

Live crewe Information, dashboard & reports available via secure web application



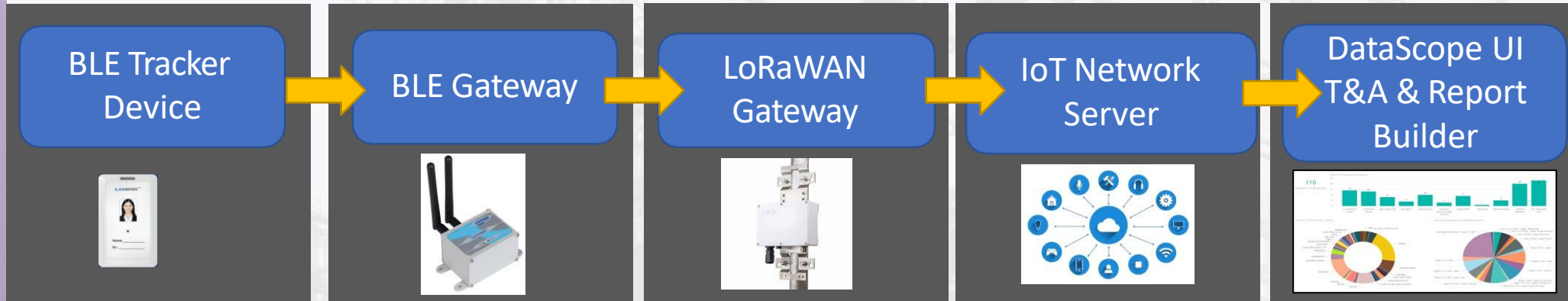
Technical Information

DataScope Hardware Solution

DataScope's solution is built of the following components:

- BLE Tracker devices that can be used for indoor/outdoor geo-localization, activity Monitoring and proximity detection
- IoT Enterprise
- IoT Network Server

These components are presented in figure below.





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