

LRNI-Global Asset Tracking System (GATS)

The LRNI Global Tracking System (GTS) is a sophisticated integration platform designed to track assets products in both fixed locations and mobile environments. LRNI GTS was designed to scale not only to an enterprise level but across the entire assets industry; providing tracking and security. LRNI GTS is comprised of 4 major components.

The first component of LRNI GTS is the data repository which stores real-time data about every asset registered with the system and allows authorized and authenticated users to access this data. The data repository is a securely hosted site and all its data is stored in encrypted databases that are only accessible to authorized users. It also provides multiple data centers for disaster recovery should the primary data center become disabled or destroyed. This data repository is the central location to which all other LRNI GTS components report their collected data. It performs data analysis to identify possible security problems and reports these problems to the proper authorities depending on a configurable level of severity.

LRNI GTS also provides the real-time updating map the assets current location. This map is updated with the current location and any changes in inventory or status.

- Hardware: RFID readers/GPS-GPRS devices, software and servers
- Software: Local and central databases and application programs for end-to-end visibility for all goods in storage or in transit
- Network: Secure communications, hosting, provisioning, devices
- Services: Internet based inventory control and security monitoring, system maintenance/upgrades; training and consulting

The second component is applied in the manufacturing setting. As assets products are tagged the association starts the tracking process. When a tag is married to a product, data is sent to the data repository to record the association. From this point on, the product can be tracked and secured using LRNI GTS. While in storage at the factory they are continuously monitored. The full inventory will be visible via the data Repository secured web portal through which companies/agencies can track.

LRNI GTS also provides a mobile component for tracking products en route. The RfIP (pronounced RIP) device is the RFID Integration Platform which makes mobile tracking possible. RfIP uses GPS tracking hardware to monitor the vehicle's global position and RFID readers and antennas to read the tags in and around the vehicle. RFID tag and location information are also reported to the data repository for real-time inventory and location tracking of the assets

while being transported. RfIP uses a cellular link to report this information to the data repository. For instances where cellular networks are not available, a satellite link will be used for the data reporting. If for any reason the communications link is broken between the data repository and RfIP, RfIP will log the data locally and resend the data when the communication link is reestablished. In extreme cases, the log information can be downloaded directly from RfIP over a hardwired or local area wireless network if there is not a cellular or satellite connectivity option.

When tags are assigned to employees, RfIP can report which employees were involved in each assets transaction. Employees can also be outfitted with RFID distress tags which look like a standard employee badge. Distress badges can send a real-time distress message by simply pressing the face of the badge. RfIP recognizes the distress signal and relays the distress message to the data repository. It then sends alerts to all necessary parties that inform the parties about which employee is in distress and where that employee is currently located.

The RfIP software includes RFID data smoothing algorithms that ensure the correct RFID data is reported to the data repository even in noisy RF environments. The RfIP device can be also be remotely managed while in the field so that configuration changes and software upgrades can be installed from a central location. RfIP is guaranteed to withstand extreme temperatures and survive in the harsh environments commonly found in most industries.

The final component is deployed in fixed locations such as on an asset. This system is basically a modified RfIP device in that it doesn't require GPS because the location is fixed. For fixed assets, the RfIP device would control access to the entrance/door and monitor and report the current inventory.