



# Asset Tracking and Contact Tracing in Healthcare

Secure people and assets, improve the patient experience, increase procedural accuracy and operational efficiency, while keeping patients, visitors, and staff safe.

# How Asset Tracking can improve the patient experience

Asset tracking enables healthcare providers to know where critical and non-critical assets are located in real-time on a floor plan map. This includes items such as, beds, wheelchairs, infusion pumps and biometric monitors, among others. Staff, and high-risk patients, such as new-born babies, and elderly patients who may wander, can also be quickly located in real-time.

Asset tracking also provides information about usage patterns – even when the equipment is not in use. Knowing if assets are overutilized or underutilized can provide information such as:

- How long people wait to get access to medical equipment
- Whether assets are sitting in a storage area for long periods of time
- How regularly equipment is being serviced
- How much time personnel spend looking for people and equipment

The latest technology to make its mark on asset tracking is Bluetooth Low Energy (BLE). BLE is a near-field technology that generally provides

better location accuracy than other technologies, such as RFID or Wi-Fi, and because it uses less energy, BLE devices have a longer battery life which reduces operational and maintenance costs. A BLE solution with an intuitive smartphone app can enable staff to locate personnel and assets on a floor plan map, with a simple auto-text search. And the ability to easily register BLE tags for relevant assets or staff makes life easier for IT.

A BLE asset tracking solution:

- Provides accurate tracking of assets without additional/expensive overlay solutions
- Is compatible with existing Wi-Fi infrastructure
- Improves battery efficiency for devices using BLE versus Wi-Fi technology
- Ensures better ROI than non-BLE solutions based on equipment, deployment and operational costs



## Brochure

Asset Tracking and Contact Tracing in Healthcare



## Increase procedural accuracy and operational efficiency

Healthcare organizations face a variety of financial, operational and security challenges every day. Time spent looking for people, or equipment may not seem very high on the priority list, but wasted time means wasted money.

Whether it's for an emergency, for regular use, or for maintenance, assets need to be easily located. In addition to understanding where assets are located, personnel safety and security are also important factors to address. Knowing the location of people, including patients and clinicians, means assistance can be quickly dispatched in the event of an emergency.

Analytics provided by asset tracking offers information about how assets are used, and where they are located. This information helps organizations optimize equipment utilization and reduces the cost of replacing, leasing and over purchasing equipment to ensure availability. Inventory lists can indicate that equipment is properly maintained and optimized based on the data provided. In addition, geonotifications can provide alerts such as, when service is due, or when an asset is being removed or stolen from a building. Having the right equipment, properly maintained, readily available and easily located, enables clinicians to increase procedural accuracy as they don't have to rush or reschedule tests or procedures, or compromise delivery of medical services, due to issues locating medical equipment when needed.

BLE tags equipped with an alert button, provide the ability to notify of an event/action with indoor geolocation information, in real-time with the press of a button. The alert button function is programmable for use case flexibility and enables configuration for button press request actions.

## Saving time means saving money

Nurses spend more than one hour a day looking for someone or something\*. That is time that could be better spent caring for patients. And since there are approximately 15–17 devices per bed, and about one quarter of those bedside devices are networked\*\*, locating devices has become more important than ever.

If you can't find a device or piece of medical equipment you can't use it. A GE study found that many hospitals are reporting equipment utilization rates of less than 50%\*\*\*. That's well below the industry average of 70% to 80%. In addition, misplaced or stolen medical equipment (such as wheelchairs) can cost hospitals millions of dollars each year to replace or lease.

Assets need to be found quickly, whether it's to address an emergency, or to ensure they are accounted for proper maintenance. If medical equipment, such as infusion pumps and patient monitors, aren't regularly serviced, they cannot be used and must be replaced, which can further increase hospital capital expenses.

Sources:

\* ROI of Locatable RTLS for Healthcare whitepaper, April 2015

\*\* Cybersecurity: It's Clinical, Too, Trustee Magazine, 2017

\*\*\* GE Study, 2016



## Alcatel-Lucent OmniAccess Stellar Asset Tracking solution

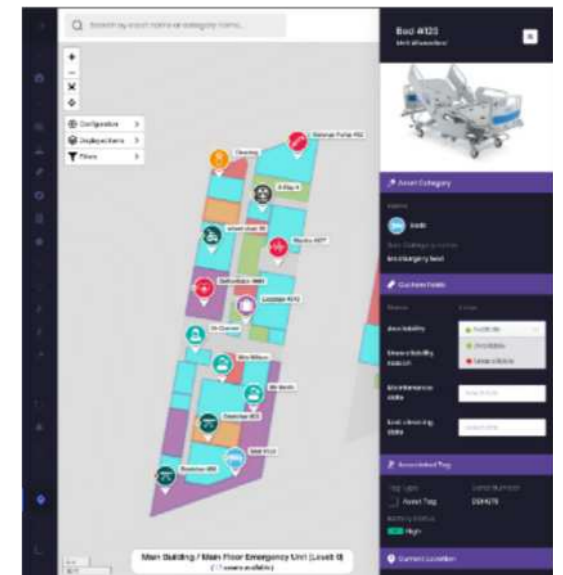
When it comes to locating equipment and people, [Alcatel-Lucent OmniAccess® Stellar Asset Tracking](#) provides the smart connections that help healthcare organizations improve patient outcomes, provide a safe and secure environment, and optimize efficiency.

The ALE Asset Tracking solution enables hospitals to locate clinicians, patients and medical assets, quickly and accurately. This allows clinicians to have more time to spend with patients, leading to improved patient care and patient experience.

Tracking the whereabouts of patients who may wander, confirming the location of a new-born, or locating contractors working on-site, can help keep everyone safe and secure. From a business perspective, asset tracking can reduce the amount of lost or missing equipment, improve hospital workflows and reduce operating costs.

With OmniAccess Stellar Asset Tracking, healthcare organizations can:

- Free up time that can be better spent attending to patients
- Reduce the cost of replacing equipment that can't be found
- Locate clinicians quickly in an emergency situation
- Provide an unparalleled level of security for all
- Assign wearable tags to hospital patients, visitors, clinicians and staff
- Tag medical and non-medical equipment for quick location, security against theft and ensure proper maintenance
- Reassign tags for repeat usage
- Increase nurse safety and security, and help reduce patient assistance response times, using geolocation-based alerts/notifications
- Request equipment maintenance to ensure it is ready for use when it is needed



### Brochure

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## Locate patients, clinicians and assets in real-time

OmniAccess Stellar Asset Tracking saves staff time with simple-to-use features such as:

- Easy search interface for non-technical staff
- Role-based access for locating an asset
- Search based on individual asset/person name or on a category of asset/person
- Web and mobile app-based asset search with optimized responsive design
- Customizable asset category parameters for various healthcare use cases

Tracking objects and people in real-time makes patient care more efficient and can help improve process and workflows in hospitals, clinics, and assisted living facilities.

Benefits include:

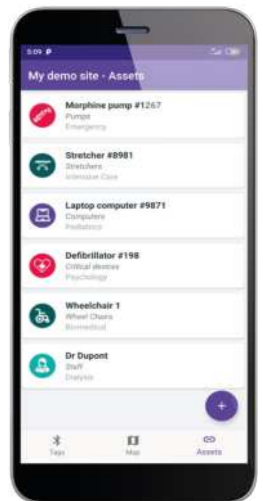
- Improved equipment utilization and reduced overhead costs
- Better tracking of assets in and around the facility to avoid theft
- Improved caregiver satisfaction by reducing the time required to locate resources
- Improved patient experiences as caregivers can spend more time with them
- Increased procedural accuracy as clinicians have the proper resources at hand when needed

## View all assets

See which assets are available then find them on a floor plan map. You'll know which equipment is nearest to you or to your patients. Equipment and role specific icons make it easy to locate the person or asset you need based on the icon graphic and color. Custom fields can be implemented to set up personalized parameters directly through the app.

## Send automated alerts/geonotifications

The Asset Tracking solution sends automated alerts/geonotifications to individuals or groups using either geofencing or the press of a tag button, in real-time. This can be used for a variety of events such as area entries/exits, nurse emergency, patient assistance, room cleaning, and maintenance, among others. Alert history is available for post-event/notification analysis.





## Contact Tracing with Real-Time Monitoring

As the spread of the global pandemic begins to decrease and businesses slowly resume operations, it is imperative that regulations defined by national and local health authorities are followed, to reduce the risk of further spread among employees, customers and local communities. We must all work together in this new normal while leveraging technology that can help prevent the spread of a virus or disease, today and in the future.

It is crucial to ensure people are kept safe. Following health authority regulations, such as wearing approved face coverings and maintaining a physical distance (where required), is a good start, but you also need to have the tools to identify how people interact in real-time, along with the ability to trace historical contact and people flow, if required.

Contact Tracing is a key feature of the OmniAccess Stellar Asset Tracking solution. Contact Tracing, with real-time monitoring, enhances the asset tracking solution by providing real-time and historic analytics that can be used by hospitals to proactively track and protect people while on hospital premises.



Hospitals may need to manage the number of people in a specific area and enforce social/physical distancing by providing real-time density monitoring and occupancy management. This is difficult when done manually so tools that automate this process are extremely helpful in healthcare environments where clinicians and staff can focus on patient health versus people management. Contact Tracing can help.

Contact tracing enables hospitals to:

- Use analytics to trace historical contact flow
- Identify individuals who may have caused the spread of a disease and contact those that were in close proximity to the individuals
- Keep patients, clinicians, staff and visitors safe
- Comply with the government and health authority requirements

Hospitals also need real-time monitoring to:

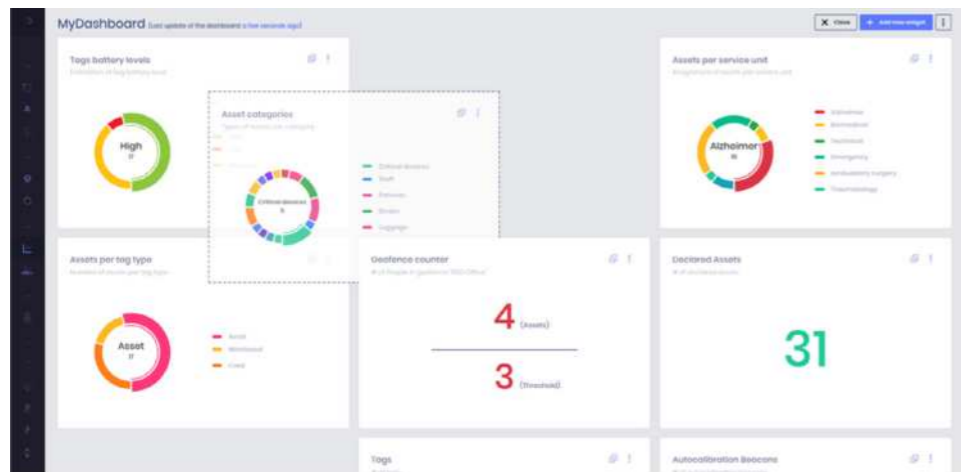
- Define an area to be monitored with people density limits (hotspots)
- Identify the number of people in that area
- Enable automatic notifications to relevant personnel based on: people moving beyond a boundary, or maximum number of people in an area

# Analytics and MyDashboard User Interface

The ALE user interface called MyDashboard contains multiple widgets which can be arranged in a variety of ways to make information readily available and easily viewed. Administrators have the ability to enter, edit and manage the data, while authorized staff have the ability to view assets and people locations in real-time.

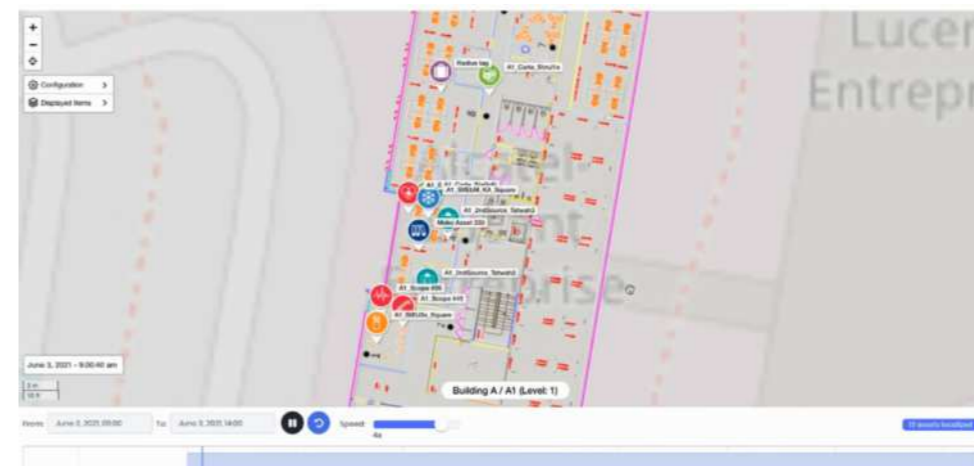
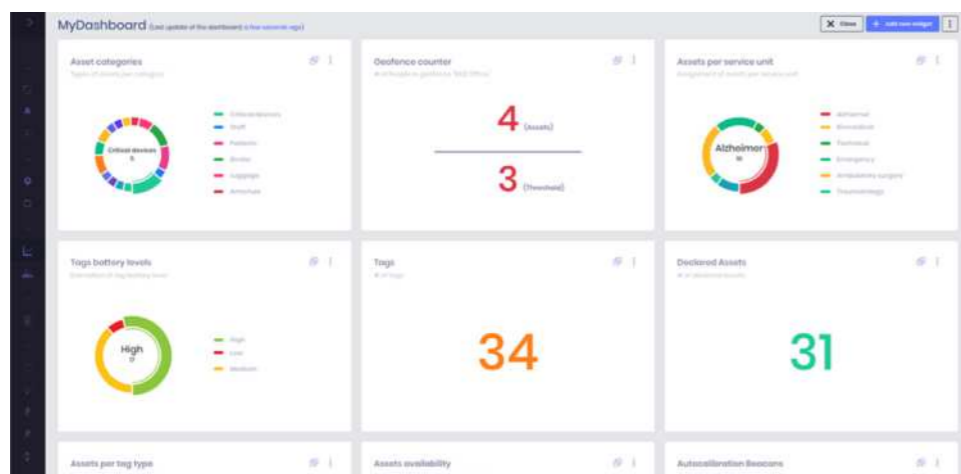
MyDashboard enables hospitals to:

- Create and organize widgets
- Set up virtual zones, such as patient rooms, wards or floors, to be monitored



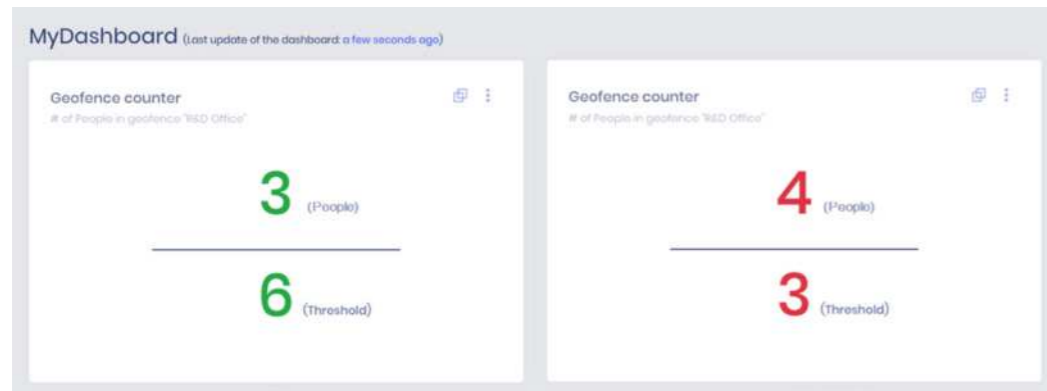
- Get status of all asset tags and gateways, including battery status

- Track people while in defined areas (real-time and historic with playback)



# Analytics and MyDashboard User Interface

- Know your density limits and get alerts when those limits are exceeded



see hotspot areas

Best All: [Subscription Limit: 0, 0, 0] | [View contact events]

Filter by:

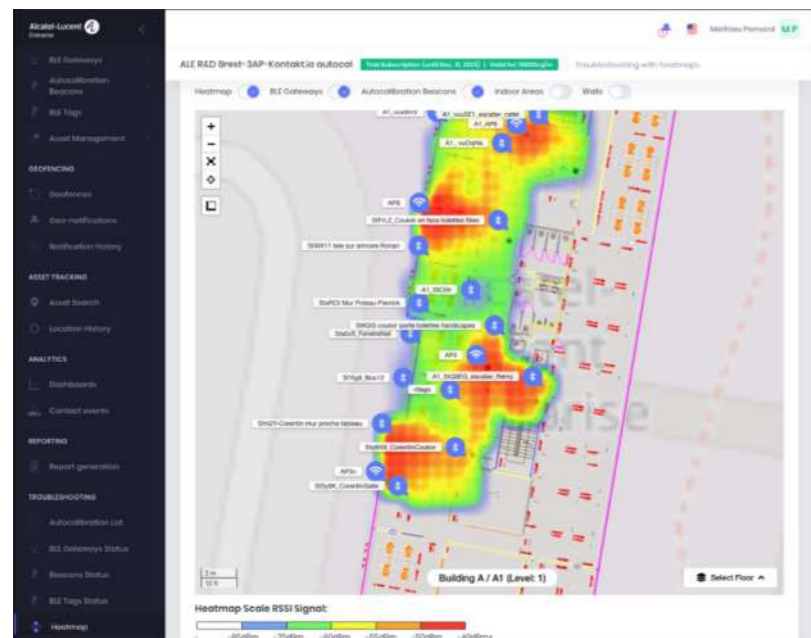
- The asset: [Select asset from list]
- Any asset from the following category: [Select asset categories from list]
- Any asset from the following subcategory: [Select asset subcategories from list]

Search

Contact events list

Asset name / Primary contact list	Asset	Contact start date	Contact end date	Distance (m)	Minimal distance (m)	Contact duration (min)	Average distance (m)	Duration of average distance (min)	Risk
John Doe (Staff) / [ID]	Staff	2023-07-01 09:00	2023-07-01 09:05	10m	5m	5 min	10m	10 min	Low
John Smith (Staff) / [ID]	Staff	2023-07-01 09:00	2023-07-01 09:05	10m	5m	5 min	10m	10 min	High
John Doe (Staff) / [ID]	Staff	2023-07-01 09:00	2023-07-01 09:05	10m	5m	5 min	10m	10 min	Low
John Doe (Staff) / [ID]	Staff	2023-07-01 09:00	2023-07-01 09:05	10m	5m	5 min	10m	10 min	Low

- Identify how long people are in specific areas (occupancy management) and



- Get contact event reporting with a risk factor (combines time duration and distance)

Alert - Lucien [Avatar]

ALE Brest Multifloor | [Subscription Limit: 0, 0, 0] | [View notification history]

Manage notification list

Total: 12 (Number of notifications)

Unacknowledged: 3 (Unacknowledged notifications)

Acknowledged: 9 (Acknowledged notifications)

In Last Hour: 3 (Notifications received in last hour)

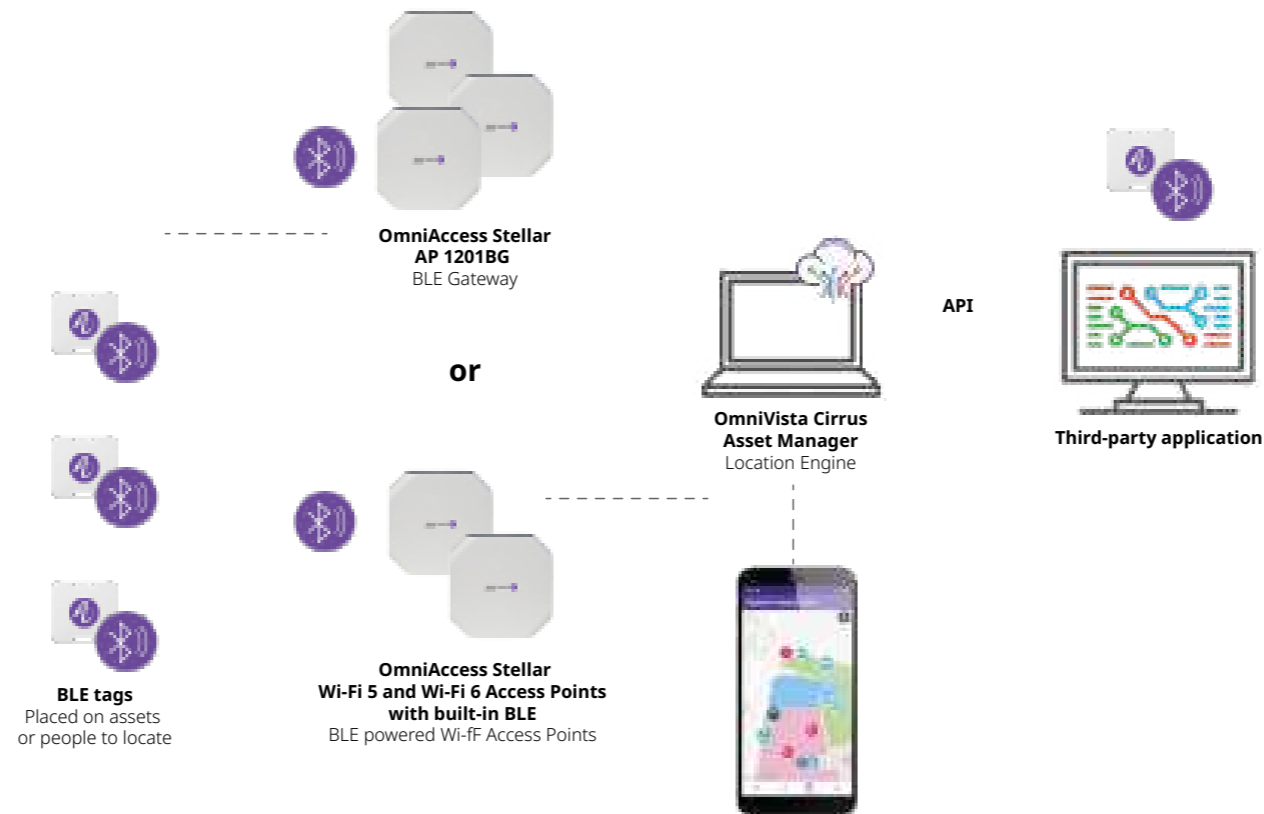
Notification history

Full description	Notification status	Asset name	Geofence name	Issued at	Actions
Test 188 Kontakt entered the geofence Scanner	Unacknowledged	Test 188 Kontakt	Scanner	Jun 8, 2023, 10:28:45 am	[Check] [Close]
Test 188 Kontakt entered the geofence Scanner	Unacknowledged	Test 188 Kontakt	Scanner	Jun 8, 2023, 10:34:30 am	[Check] [Close]
Test 188 Kontakt entered the geofence Scanner	Unacknowledged	Test 188 Kontakt	Scanner	Jun 8, 2023, 10:35:04 am	[Check] [Close]
Motor Asset 333 entered the geofence Plot de Mathieu	Acknowledged	Motor Asset 333	Plot de Mathieu	Mar 8, 2023, 10:14 pm	[Close]
Radus tag entered the geofence Plot de Mathieu	Acknowledged	Radus tag	Plot de Mathieu	Mar 8, 2023, 10:06 pm	[Close]
Patent 858 entered the geofence Plot de Mathieu	Acknowledged	Patent 858	Plot de Mathieu	Mar 8, 2023, 10:02 pm	[Close]
Patent 858 entered the geofence Plot de Mathieu	Acknowledged	Patent 858	Plot de Mathieu	Mar 8, 2023, 10:02 pm	[Close]



# Asset Tracking and Contact Tracing solution components at a glance

The following diagram highlights the key components of the OmniAccess Stellar Asset Tracking solution.



- Get email notifications or use Webhook to post to Twitter, Slack, Rainbow, etc.

## OmniAccess Stellar BLE infrastructure

- **OmniAccess Stellar AP1201BG BLE Gateway and/or OmniAccess Stellar Access Points with built-in BLE radios** receive BLE frames from the asset tags and then relays the location information to the Alcatel-Lucent OmniVista® Cirrus Asset Manager via Alcatel-Lucent OmniAccess Stellar Access Points, or third-party Wi-Fi or LAN infrastructure.
- **Autocalibration beacons** provide fixed reference points for the gateways, which improves tag accuracy.

- **Mobile BLE tags (square, card-shaped, coin-sized, and with wristband)** for people and assets provide a simple and non-obtrusive way to track what's important, whether it's clinicians, patients, or equipment. Tags have built-in accelerometers to reduce battery consumption and can be used to generate alarms/alerts on movement or with the press of a button. Tags also support programmable alarm capability to cover various uses where physical security or assistance is required. Assigning an asset tag is as simple as scanning the tag's QR code into the smartphone app. Various attributes can be assigned to each tag including: asset name, department to which a tag is associated, asset category, future service date, geonotifications based on location/movement, etc.



## Cloud management

Alcatel-Lucent OmniVista® Cirrus Asset Manager provides management, search, statistics and analytics, and geonotification capabilities. It stores and organizes every data point to enable accurate analysis and workflow optimization. It also provides real-time floor plan map views of all assets and people wearing tags, including clinicians, patients, security staff, as well as daytime contractors.

- **Asset management:** Site configuration, subscription; assign or reassign a device or person to a tag; each device can be associated with an image, a category, customized relevant parameters like push button alerts or geonotifications which issues notifications when an asset is removed from a designated area or geofence.
- **Search:** Provides real-time location data on assets:
  - Simplified search for equipment, a person or a category of equipment/person
  - Advanced search with filtering feature
  - Future advanced search combining multiple choices (asset + service + availability)
  - Optimized and responsive search, which enables a user to modify and manage custom fields directly by clicking on an icon, for example: notify that a bed is not available or add a note on a new patient or new service

- **Asset inventory:** A complete inventory list of asset tags ensures all your equipment is accounted for. This simplifies IT's role in managing and maintaining the asset tracking network, while providing real-time audit data for hospital operations, like current battery life status of all tags.
- **Statistics and analytics:** Provide real-time and historical location data that allows IT, clinicians, heads of staff, patient flow/experience and operations to fully understand the location, movement and utilization of assets. Insightful analytics like heat maps and geonotification data help organizations make better business decisions. Cloud APIs can also be leveraged by a third-party system for even more business intelligence analytics.

## Mobile application

The simple smartphone app and web interface are essential tools that help track objects and people in real-time. It also provides a full inventory of people and assets and their respective locations on a floor plan map. Additionally, web-based and mobile app-based notifications ensure the right people get notified about a relevant event or when equipment needs maintenance.





## How it works

The Alcatel-Lucent Enterprise Asset Tracking hardware components work together with the OmniVista Cirrus Asset Manager to provide location information for people and assets using ALE BLE tags. OmniAccess Stellar BLE Gateways and autocalibration beacons provide location accuracy in all areas of coverage, including patient rooms, without the need for additional technologies, such as Wi-Fi, ultrasound or infrared technologies and the OmniAccess Stellar Wi-Fi Access Points with built in BLE replace the need for BLE gateways at their individual locations. Based on the accuracy level expected and environment to be monitored, a specific density of BLE gateways and autocalibration beacons are required.

The Stellar BLE gateway (or Stellar AP's with built-in BLE) collects asset tag data from people and/or equipment and relays it to the OmniVista Cirrus Asset Manager (and location engine) via existing Wi-Fi infrastructure, LAN infrastructure, or optimized when used with an OmniAccess Stellar Wi-Fi infrastructure, which accurately calculates the position of people and assets on a floor plan map, with multi-floor support. The location information is then displayed in the OmniVista Cirrus Asset Manager web interface and mobile app to be used by hospital staff. This information is never shared and only used for location accuracy and conforms to the European General Data Protection Regulation (GDPR) and similar personal security regulatory requirements. All location data collected is stored in a secure cloud database and can be easily deleted upon request, by the hospital network administrator.

## Conclusion

Healthcare facilities need to provide the best care possible, keep patients, clinicians, staff and visitors safe, while keeping an eye on costs. Knowing the location of patients and staff, as well as asset utilization, arms you with the tools to secure and maximize the safety of your people and value of your assets. Comprehensive analytics, such as historical data, management of flows within a geographic area, and occupancy management with contact tracing, lets you optimize and adapt your environment for maximum results, to improve care delivery, reduce operational costs, and increase patient and clinician safety and satisfaction.

The ALE OmniAccess Stellar Asset Tracking solution lets hospitals, clinics, and assisted living facilities locate assets and people, in real-time. Knowing where your assets are can save the cost of acquiring new equipment if it can't be found. The ability to quickly locate equipment such as beds, infusion pumps, monitors, and wheel chairs, also reduces the time that staff spends looking for assets and frees up time to address patient care, while improving procedural accuracy and operational efficiency. Patient satisfaction translates into improved outcomes, which is the goal of every healthcare provider.

To learn more about the ALE Asset Tracking solution or request a demo, contact us today.