Digital Transformation in Hospitals: Leveraging IoT

How Smart Hospital Solutions are delivering better clinical outcomes, greater efficiencies, and higher patient satisfaction through digital transformation using technologies like Internet of Things (IoT) and Artificial Intelligence (AI)
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Kontakt.io is driving digital transformation in Healthcare through the application of location data.
Introduction

The Healthcare industry is embracing the same digitization processes that have brought so many benefits to other fields.

Asset tracking, workflow optimization, wayfinding services, better working conditions for staff — this is just the beginning of the ways in which the Internet of Things (IoT) is revolutionizing how facilities in the Healthcare industry operate.

Now, every facility can streamline its operations and achieve new levels of operational efficiency with infrastructure that is simple and easy to deploy, scalable and with near-immediate time-to-value.

We’ve put this white paper together to illustrate many of the primary applications of Real Time Location Services (RTLS) and IoT in Healthcare and share how these powerful technologies work, how they can transform your facility and how it improves performance and patient outcomes.

The road to building a smart Hospital is shorter and easier to navigate than you think. Let Kontakt.io show you just how much there is to gain with technologies that put a world of benefits within your reach.
Common challenges in hospitals
Common challenges in hospitals

The size and complexity of healthcare facilities often make it easy to lose organizational control over workflows, locate assets and match resources with needs in real time.

The following are some of the primary challenges that erode efficiency, damage the patient experience and lead to wasted resources in healthcare. What do they all have in common?

They result from an inability to track people and things in real time, with a resulting need to waste time personally verifying statuses and locations.
Top 4 administrative domains that may cause a poor patient experience

Medical Device Management

• **Availability of Clean/Ready to Use Devices.** With thousands of devices floating around a hospital, it is easy to lose grip on those which are cleaned and ready to use without real time visibility into their location and status.

• **Uncalibrated devices or missed maintenance.** Biomed departments are usually playing catch up with their preventative maintenance, software upgrade programs and it is not uncommon to use a device for patient care that has not been worked on over years. This could risk patient care and make the health system vulnerable to citations and loss of accreditation

• **Loss of devices.** It is not uncommon for hospitals to lose critical patient monitoring devices in laundry or trash not only leading to replacement costs but also causing delay in care resulting in poor patient experience

• **Low Utilization and over-procurement.** With lack of real time location and inventory visibility into high volume medical devices such as IV Pumps, it is typical for these assets to be utilized only at an average rate of 35-40%. The same issue is also responsible for procurement of additional quantities of these assets further reducing their overall utilization. This leads to avoidable increases in CapEx and OpEx spent on medical devices. While there is no direct impact in patient care due to over-procurement, these avoidable costs affect the hospital’s ability to spend on resources that are actually impacting patient care directly.

Staff Safety, burnout, high churn

• **Staff Duress.** Our healthcare workers especially nurses are being attacked on a daily basis by patients, visitors and co-workers. Attacks can range from verbal to physical abuse and high grade injuries. The reports have increased significantly in the past 2 -3 years.

• **Burnout.** Frustration with massive amount of tedious and manual administrative tasks nurses have to manage along with patient care is causing overwork that spirals into a burnout.

• **High Churn** - This combination of safety concerns along with burnout has increased the number of nurses quitting their jobs at a staggering rate. As nurse to patient bed ratio decreases, the quality of care is further deteriorated.

• **Spread of infection** - Hospital staff members are most exposed to infectious diseases and are also careers of infectious diseases which may cause patient health to be worse than when they were admitted.
Inefficient Patient Room Utilization

- **Long wait times.** When a bottleneck causes a chain reaction, longer wait times at every stage are inevitable. This fundamental metric of the overall experience is foremost in the mind of every patient.

- **Recognizing bottlenecks.** With so many moving parts, it can be hard to see how just one or two of them cause backups and delays for everyone. Without insights into workflows, identifying the problem is difficult.

- **Measuring true capacity.** With so much in-and-out traffic spread over often massive facilities, the question of how many rooms or beds you have available right now is often a matter of guesswork.

- **Missed opportunities for patient intake.** The sooner patients are processed into a hospital, the better. When it takes longer to verify room or bed availability, that extra time directly counts against the patient experience and possibly patient outcomes.

- **Optimizing capacity to meet demand.** The complexity of hospitals makes it easy to misallocate resources or even to be unaware of how many and what kind of resources are free at a given moment. When you know where everything is, it’s easier to adjust to changing levels of patient traffic while ensuring assets are ready to go when needed.

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**Poor patient outcomes and experience takes a massive financial toll on the hospital.**

Environmental Conditions

- **Sub-optimal temperature, air quality, humidity.** When not monitored properly, all three of these metrics can impact patient health, comfort and potential for contracting or prolonging infections.

**Poor patient satisfaction** - Frustration with wait times almost immediately translates into a negative impression of the facility, no matter the reason for the delay or how well the patient issue is resolved. This is reflected in surveys and visit scores affecting the hospital’s overall H-CAP Scores. Since the quality of patient care contributes 30% towards total reimbursements calculations by Medicare/Medicaid, it affects top line revenue by up to 2%. 

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What is a smart hospital?

A smart hospital is one that uses advanced technology, such as digital workflows, big data+artificial intelligence, IoT and connected medical devices, to improve the delivery of care and increase operational efficiency. The goal of a smart hospital is to provide high-quality, patient-centered care that is more efficient, cost-effective, and safer than traditional healthcare delivery. One of the key features of a smart hospital includes access to real-time location and status of key human and capital resources that keep the hospital functioning efficiently.

Many of the most beneficial use cases in smart hospitals are based on this ability to monitor locations in real time.

The digitization of physical locations gives stakeholders insights into things like workflows, asset utilization, patient care and overall operational efficiency. Smart hospitals can adapt clinical processes, patient care policies and general facility management based on the data available from tracking the physical location of people and assets.

There are three primary technologies that can provide the basic network for smart hospitals.
Proprietary Active RFID

These systems are developed over a proprietary RF protocol that can communicate only with IoT devices within a closed, monopolistic ecosystem limiting the health system’s ability to scale into many different use cases. Moreover, these systems are cumbersome to deploy, require frequent maintenance and result into a really high cost of ownership. The most popular systems are based on a 900MHz proprietary radio protocol.

WiFi based Tracking

Are able to, in part, leverage existing WiFi ecosystems, making them very popular in industries like healthcare. Limited by the WiFi design of the hospital. The accuracy of these systems may not provide the workflow automation a hospital expects out of these systems. Since WiFi is a high power consuming radio, battery maintenance makes it cumbersome and expensive.

Bluetooth Low Energy

BLE is an open standard RF protocol that can securely communicate across IoT Devices from multiple vendors allowing the hospital to scale into multiple use cases beyond RTLS. BLE was also designed to use less energy than other standard making its maintenance easier and less expensive compared to other leading technologies.

While each of the three technologies has its pros and cons, on balance, Bluetooth® Low Energy (Bluetooth® LE) is the best choice for several reasons:

- Open source, scalable into multiple Use Cases as most IoT sensors incorporate a BLE communication protocol.
- BLE is embedded in most infrastructure networking devices like WiFi access points, cameras, tablet displays and even lighting which can participate in location detection as well as data backhaul.
- Battery life in Bluetooth® LE devices is much longer, meaning less maintenance and lower cost of ownership.

Kontakt.io solutions use Bluetooth® LE for these primary reasons with a vision and promise to our customers that their IoT roadmap is secured for the next 5-10 years. Kontakt.io enhances the standard location accuracy to room-level by incorporating InfraRed room-level sensors that help achieve workflows that are specific to a room within the clinical areas. Let’s take a deeper look into various challenges that affect patient care as summarized above.
2.1 Medical Device Management

Checking the availability and ease of access to the equipment, instruments, and medical devices needed for virtually all patient care, including patient comfort and safety, is a major influence on the overall workflow in hospitals. Having to spend excessive time searching for a device that is clean and ready to use is frequently a complaint of staff and concern for management for obvious reasons — time spent looking for machines or devices is time not spent facilitating the overall workflow and attending to patients.

RTLS using Kontakt.io’s Bluetooth® LE assets tags, available even for very small items that are often lost, transmit the location and identity of assets at the room level. That includes areas for laundry and trash, where smaller devices may be lost. It also includes „hoards“ of certain equipment that departments and divisions may maintain to solve their own search problems. RTLS maps asset location at the room level, floor level, and hospital level, making the scan useful for periodic inventories and scheduling maintenance by the BioMed engineering department.

The essence of workflow efficiency is having the right tools at hand when they are needed. Asset tracking represents a partial solution for many workflow challenges.
CASE STUDY

Riverside Healthcare

Riverside Healthcare is a fully integrated healthcare system serving the needs of patients throughout the counties of Kankakee, Iroquois, Will, Grundy, and beyond. As part of the system, Riverside Medical Center, a 300-bed hospital, provides a full scope of inpatient and outpatient care and is a nationally recognized, award-winning Level II Trauma hospital with nationally leading programs in heart care, cancer care, neurosurgery, and orthopedics.

Riverside is a nationally recognized trauma hospital that is consistently one of the best performing medical centers of its nature. It has the distinction of being one of the best trauma centers in the nation when it comes to cancer care, heart care, neurosurgery, and orthopedics.

Problem

Riverside wanted to address two primary issues, both related to their ability to track locations. In the first instance, they wanted a more reliable way to quickly locate devices. Like every hospital, Riverside Medical Center is full of small, expensive devices that are essential for various aspects of patient care. Their size and the fact they are used across a wide area usually result in them being dispersed and their locations going undocumented or, at a minimum, not updated. When these devices are needed, time is often wasted searching for them, creating inefficiencies resulting in a poor patient experience and frustration for staff. When the devices are needed during an emergency, these problems are intensified for obvious reasons, creating an additional stress factor and further complicating the staff’s efforts to treat the patient.

The other tracking capability Riverside wanted to gain involved the patients themselves. Patient elopement when patients leave hospital property without having been formally released — is an issue for any healthcare facility. This includes both patients whose treatment has been completed and others who suffer from mental health issues that require more attention. Riverside’s commitment to patient safety made the ability to track patient location attractive, something that was more easily achievable through an RTLS. On top of that,
the same system could be used to monitor patient location to ensure they did not wander into restricted or
dangerous areas of the building. Being able to instantly locate any patient and get alerts when someone
left the hospital property or entered a particular zone was something that could dramatically enhance
safety protocols throughout the facility. Nurses to be immediately notified when a patient leaves a
designated area.

The plug-and-play solution came with preprogrammed hardware. Riverside deployed it during COVID,
which required them to execute the entire deployment on their own. Kontakt.io’s philosophy of delivering
simple, affordable, and accessible solutions fit their needs perfectly.

Kontakt.io Medical Device Tracking & Patient Elopement Solution

RTLS & IoT capabilities powered by Kontakt.io have delivered exactly what Riverside needed to address
these issues. Kontakt.io supplied a complete solution, from IoT devices and asset tags to gateways, patient
wristbands and a software solution that allows their clinical and BioMed engineers to easily understand the
PAR level of devices, locate where the devices are on the map, quickly find them on the floor, and, most
importantly, quickly and easily identify the location of each patient in the hospital. The alerts in the platform
allow nurses to be immediately notified when a patient leaves a designated area.

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Erik Devine,
CISO at Riverside describes the instant
improvement that RLTS brought to the hospital

When we looked at the data collected by the medical pumps, we discovered that the
combined amount of time the staff spent looking for the pumps added up to a full-time
staff position. That means over forty hours a week was dedicated just to finding medical
pumps!
2.2 Staff Safety & Duress

The American Bureau of Labor Statistics considers health care workers to be nearly four times more likely to be assaulted on the job compared to all other workers in the private sector combined. Nearly all of these attacks come from patients and visitors to the healthcare facility.

Security guards have a role to play in these situations, but it is impossible for them to detect and immediately respond to staff duress cases in every room in such a large facility. Often, there is not much time between the start of the problem and a full-scale assault; hence the need for a real-time location solution that alerts concerned parties the moment a situation gets out of control.

But there is a solution that can significantly upgrade the security readiness in healthcare facilities. Real-time location tracking technology using wireless devices can create a safer working environment and reduce cases of staff duress. RTLS delivers a reliable wireless solution that provides immediate room-level accurate response to concerned parties during a threatening security emergency.

Healthcare RTLS solutions provided by Kontakt.io enable an immediate response during security emergencies by instantly identifying the exact location of the employee under duress. The technology can be used to activate customizable notifications through visual and audible alarms and alerts, which are pushed to a central command system or wireless mobile device. Nurses can have wearable wireless devices such as smart badge holders that can be activated in different ways in the event of a threatening situation.
The most basic badge solution is a simple button press badge or panic button that healthcare staff can press once they feel threatened. If a worker notices the possibility of an attack by a patient or visitor, they can press the button, which sends a web-based or text message notification indicating their exact location and a timestamp, allowing immediate assistance to be sent to exactly the right location.

Here's what Kontakt.io does to enhance staff safety

- During threatening emergencies, security staff can locate the precise location of an employee under duress.
- Employees have the peace of mind of knowing they are always protected through a simple button-press.
- Patients remain unaware of staff duress solutions. When a violent patient attacks a nurse, sending a panic alert can escalate the situation if the patient learns about a security solution.

Kernel Thomas
Director, IT Infrastructure and Security at Los Angeles LGBT Center.

"Protecting our staff from potential dangers is a top priority. Kontakt.io is giving us a way to provide personal safety solutions to our staff so they can request and receive assistance quickly when an incident occurs."
2.3 Indoor Wayfinding

Hospitals and healthcare complexes can be massive, multi-floor and often multi-building facilities, sometimes not unlike a university campus. Even long-time employees may be challenged to quickly locate a particular office or even entire department that is not part of their normal routine.

Visiting or temporary staff, vendors and others in the facility on business frequently have issues when trying to navigate their way around but this is nothing compared to the challenge often posed to the most important group of all — patients.

Traditionally, hospitals and other large healthcare offices have used physical signage, paper maps and even a simple help desk to direct patients and their families to their destinations.

Now, with digital solutions based on location data and easy access to Bluetooth-powered applications, connected hospitals can offer real-time maps and even turn-by-turn directions, providing a Google Maps experience but indoors.
A waste of time and resources

How much can you save by implementing digital solutions for wayfinding? Emory University wanted to know how much time staff members spent assisting in wayfinding—i.e. offering directions. They found staff members—including doctors and nurses—spent over 4,500 hours per year giving directions to visitors. That’s two full-time staff positions of just giving directions.

And what about physical signage? The Magazine has reported that an overhaul at the Children’s Hospital of Boston involved the installation of 15,000 new signs on their premises.

The cost of hospital signage is no trivial matter. Each year, hospitals have to update or refresh old signs across huge properties with numerous departments. It’s unlikely physical signage will be done away with in hospitals any time soon but moving as much as possible to a digital form can decrease reliance on and the costs of signage.

Digital maps are easy to change and instantly updated. They can also include far more information than physical signs, including numerous languages, descriptions, or other directions that simply can’t fit on a wall.
CASE STUDY

Virginia Hospital Center & Phunware

Virginia Hospital Center Health System (VHC) is a 437-bed not-for-profit teaching facility in the Washington, DC metropolitan area. VHC was recently designated a Newsweek 2020 Best Maternity Care Hospital, received a 5-star rating from the Centers for Medicare and Medicaid Services (CMS) and was once again named a Leapfrog Top Hospital in 2019. The Hospital is a proud member of the Mayo Clinic Care Network and is designated as a Magnet® hospital by the American Nurses Credentialing Center.

Phunware, Kontakt.io’s solution provider partner, was contracted to provide a fully configured and flexible digital front door solution for Virginia Hospital Center to improve its patient experience. The project was designed to bring a number of services into one cohesive mobile app and make it easier for patients to schedule appointments through remote telehealth services. It was also intended to message service providers and even help patients navigate the VHC campus on their way to meetings with healthcare professionals.

Essentially, Phunware’s task was to enable an enhanced level of convenience and care to VHC patients by fulfilling a number of specified “musts” for their app, two of which were based on RTLS: wayfinding and easy navigation of the Virginia Hospital Center facility and help with finding a doctor.

Kontakt.io’s Bluetooth® LE beacons with Phunware’s platform enable Virginia Hospital to have real-time indoor wayfinding. With Phunware’s Blue Dot SDK, GPS-like indoor navigation allows patients, visitors, and staff to access interactive maps that route them to their locations in real-time by using their actual position. The iOS- and Android-compatible solutions pinpoint a device’s location to real-world latitude, longitude, and floor level. The whole project, from concept to going live, took five months.
Kontakt.io was also an ideal choice as a partner because of their expert knowledge and use of Bluetooth® LE which was the ideal way to integrate with their platform.

The best validation of all comes from patients who use the app, who have provided extremely positive feedback since the launch.

Nick Lutz,
Director, Sales Engineering of Phunware

Kontakt.io has industry-proven and reliable beacons that are economical and easy to deploy. Other solutions we explored would have added months to our deployment timelines and incurred tens of thousands of additional dollars in installation costs while still not providing an equivalent level of performance.

Great improvement
Mon
I was able to download and use this new updated VHC app. It is waaay better than the previous version. So far it feels more friendly and intuitive, which is super helpful

Amazing App!
Thu
You can literally get directions thru the hospital and even access the portal as well! A++

Amazing App!
Mon
This app lets me schedule video appointments with my Doctor which is helpful during COVID. Also has map feature that I use to get around at the hospital.
2.4 Hand Hygiene Monitoring

Hand washing protocol is and will always be a fundamental component of hygiene practices. Location-based services can now be used to monitor compliance, create a historical record of hand washing for each employee and, most importantly, support efforts to make regular hand washing part of the daily institutional culture.

Tracking capabilities allow you to monitor which employees have interacted with a hand washing station, how often and for how long. This helps to boost compliance and reduce infections, thus improving patient safety and helping to minimize the chances of an infectious outbreak.
2.5 Occupancy Monitoring

Healthcare facilities are often large areas, divided and subdivided into smaller wings, departments and other independent spaces. Gaining an awareness of the number of people in an area, tracking individuals and a general understanding of how space is used is key to many areas of a facility's operations.

Occupancy Monitoring enables:

- Easy access to patient and other room-level occupancy levels, especially in case of emergency triage
- Fast check-in of patients thanks to immediate confirmation of available beds and rooms
- Notifications of unauthorized access to sensitive or restricted areas
2.6 Environmental Monitoring

Our Bluetooth® LE-enabled sensors are also equipped with temperature and humidity sensors that allow for comprehensive environmental monitoring and automatic remote reporting.

Humidity has a proven impact on the spread of infectious diseases. According to the EPA, healthy indoor humidity should remain between 30-50%. At or above 40% indoor humidity, the influenza virus has a much lower likelihood of spreading when aerosolized. Research indicates that low temperatures and low relative humidity can also cause COVID-19 to spread more easily.

Controlling humidity in a medical space can prove critical to creating a healthier environment for patients. At extremely low relative humidity — below 20% — patients and visitors to a facility may more easily transmit germs that spread through the environment, leading to facility-based outbreaks. Maintaining optimal humidity may not completely eliminate the risk of spreading infectious disease but it can lower it significantly, which can help keep patients safe.

Maintaining the right balance of humidity is hard. At low levels of humidity, you may have optimal conditions for increased virus growth. High levels of humidity can raise the risk of mold growth.

Kontakt.io Environmental monitoring for patients delivers:

- Notifications of uncomfortable or dangerous temperature levels at room level
- Control over the creation of virus-friendly air quality
- Prevention of mold spores
- Better patient experience
Apart from patient health concerns, temperature monitoring is also an asset in Healthcare when applied to the control of temperature-sensitive supplies, including vaccines, blood and various drugs.

The ability to monitor temperature levels in storage devices and facilities helps to ensure the integrity of the substances, avoid spoilage and preserve what is often a significant investment.

**Kontakt.io Environmental monitoring for assets delivers:**

- Reports on temperature variance
- Real-time notifications of temperature changes
- Historical temperature reports
- Compliance monitoring & corrective action logging
Unlock the full potential of the smart hospital vision
Unlock the full potential of the smart hospital vision

Although “IoT” has become one of the most common buzzwords in business, it still suffers from an image that is stuck in the past, when it was not nearly as developed as it is today.

Expensive | Lack of Standards | Complex Integrations | Monopolies | Proprietary Technologies

Kontakt.io’s mission is to make implementing IoT solutions amazingly simple.

- We base our solutions on Bluetooth® LE, an open standard the makes lower costs possible
- SaaS model for cloud-native scalability
- Use case-centric, with prepackaged solutions for asset, patient and clinician scenarios
- Single platform and IT-free infrastructure dramatically reduces total cost of ownership
- Long battery life minimizes post-launch operation and maintenance obligations
- Turnkey solutions ready to combine devices, software and training to digitize your facility in less than a month

Use-Case Centric
We’ve pre-packaged smart works- paces use cases for real-time people occupancy, environmental monitoring, so you can make a real impact on your employee and visitor safety and experience.

Fits Your Budget
Start where your business focus is. You control the roadmap. We handle the scale.

Turn-Key
Forget the complex setup. No need for IT heavy lifting. We will provide you with the devices, software, and training to digitize your workplace in less than a month.

Get started with an amazingly simple healthcare IoT strategy: www.kontakt.io/healthcare
Kontakt.io vs Legacy Systems
Kontakt.io vs Legacy Systems

Some facilities with legacy tech infrastructures already in place have tried to implement solutions that deliver similar benefits, but invariably encounter one or more of the following issues:

1. **Closed ecosystems.** Their tags will only talk to their gateways, and their gateways won’t talk to anyone else’s tags. Hardware cross compatibility is typically rare. From the vendor’s perspective, this makes a certain amount of sense. After all, they are there to make money. However, this can cause scalability issues. In the worst case scenario, the vendor goes out of business and you can no longer add to the system, hence you may be forced to install a completely new infrastructure from scratch.

2. **Need for multiple vendors.** Closed ecosystems feed right into needing multiple vendors. You might have one system for asset tracking, another for patient and visitor wayfinding, and yet a third for staff duress. It’s unlikely that all these systems will talk to each other, leaving you with multiple software dashboards that you need to purchase, and train your staff how to use. This, needless to say, increases complexity and cost.

3. **Need for on-site servers.** You need to have on-premises servers to handle all of that data. These then have to be managed by IT.

4. **High maintenance needs.** Changing batteries every other year often costs a lot in terms of maintenance.

5. **Cumbersome integrations.** Sharing data between multiple systems requires months of interface development because of lack of open standard APIs.

6. **Long time to value.** Most of these systems require professional installation. Installers may need to run a lot of cable, causing expense and disruption. You also often have to subscribe to a maintenance service to keep everything running.

The temptation to build on legacy infrastructure for cost reasons is understandable but in the long term it will always cost more. Being based on Bluetooth® LE gives Kontakt.io an unbeatable advantage when it comes to scalability, accessibility and future-proofing your investment.
Commonly Used Healthcare Applications

Leveraging Kontakt.io cloud and hardware

Kontakt.io Healthcare apps suite was created to help you master the day-to-day workflows of your healthcare organization. Smart Healthcare software provides you with the real-time data and reports that help you ensure your patients and staff members are receiving the first-class experience you’ve promised. Here is a list of a few apps that are most commonly used by healthcare workers on a daily basis.

1. Medical Device Tracking and IV Pump Distribution Management

- Creates a digital twin of the facility and the real-time location of all medical devices
- Improves availability and delivery time of clean, ready-to-use devices by automating PAR Level management
- Reduce hoarding, lack of trust between nurses and supply chain
- Reduce dwell time of unused dirty devices in patient rooms, soiled rooms, hallways
- Improve productivity by reducing search time of devices during PM Cycles, recalls and software upgrade
- Improve utilization, optimize fleet size and reduce CapEx and Opex on buffer medical device purchase and maintenance
- Improve patient safety and satisfaction resulting in higher HCAP scores and reimbursements
2. Staff Safety & Duress

Nurse staff carrying smart badges equipped with emergency buttons can quickly call for help from any place inside the building. By leveraging cloud Location Services we can quickly digitize the identification of the location where a person calling for help rather than relying on human intervention. Using programmable capability, each button can be assigned for a specific request, e.g.

- Notify nurse station and security staff including event location in case of emergency
- Ensure staff members can discreetly alert of dangerous situations at the press of a button
- Locate on a map in real time
- Ability to view staff on multiple floors in a single view
3. Patient Workflows & Elopement

Kontakt.io Bluetooth® LE tags carried by patients or attached to the patient bed board continuously stream location data through Portal Lights gateways. Dashboards and notifications driven by an event engine powered by location data can automatically provide actionable information to ED and OR staff to improve workflows to enrich patient experience and health outcomes resulting in higher HCAHPS scores and reimbursement.

- Automate the understanding of where patients are spending time
- Automate the understanding of time spent between patient and provider
- View room occupancy in real-time
- Ability to view notifications and multiple lists in single view
Asset Tag 2 - Track assets with room-level accuracy. Asset Tag 2 is equipped with LEDs and two programmable buttons that let you trigger various events based on the press of the button. It helps you to quickly locate any tracked asset so that you can understand its flow and movement. It can last up to 8 years (Tx power 3; interval: 1 second; IR disabled).

Smart Badge - is the new standard in IoT badges. It turns any standard ISO ID cards (horizontal or vertical) into a powerful one by simply sliding your card inside the badge. Equipped with an IR receiver signal that doesn’t penetrate the walls allowing for room-level granular accuracy. Thanks to two programmable call buttons, red and blue, Smart Badge is an effective response to staff duress situations possible.
Nano Tag - Kontakt.io Nano Tag is the world’s smallest Bluetooth® LE beacon, and the first disposable wearable tag - to solve for worker safety, patient and visitor experience use cases for the healthcare, hospitality and events industries. This amazingly small and waterproof (IP67) device measures just 0.9 in (23 mm) x 0.7 in x 0.3 in (5.3mm) and only weighs 0.07 oz (2g). The Nano Tag is powered by a Silver Oxide, non-toxic battery which provides up to three months of battery life transmitting once every second (1Hz), extendable to a full operating year at a slower location update rate.

Portal Beam - a 9-in-1 Kontakt.io cloud-enabled sensor platform quantifying rooms and delivering building insights in real-time. Portal Beam uses nine different sensors: thermal camera for occupancy and people counting, temperature, humidity, air quality, light, smoke detection, infrared beaconing for room-level accuracy.
Portal Light - low-cost BLE gateways with a Wifi-backhaul allowing you to deliver more location-accurate solutions.

- Enable location services: Retrieve location data of moving Bluetooth® LE tags and badges from the Portal Light or use the Portal Light to augment your existing Bluetooth® LE-enabled access point infrastructure for better accuracy.

- Manage all Bluetooth® LE devices in real-time, and monitor their location: Stay up-to-date and remotely monitor your Bluetooth® LE beacons’ and tags’ battery and location information in real-time across multiple places, independent of mobile phones. In addition, allow for OTA firmware updates.

- Simplify deployment: No extra installation equipment needed. Easily deploy your Portal Light by plugging it into a power socket. Get it up and running in minutes.
Conclusion
Conclusion

Cloud solutions and wireless devices of every kind are now a defining aspect of the modern hospital. This has enabled the creation of networks of connected assets that can be leveraged to improve a number of metrics throughout the facility.

Location-based solutions are driving many of these improvements. This is especially useful in this context for several reasons:

- Hospitals are typically large spaces, with complex layouts that can be challenging for visitors and patients alike
- They are also full of devices and physical assets that are easily misplaced, resulting in time wasted searching for them
- Workflows are difficult to visualize and frequently require the use of assets that become dispersed throughout the building
- These assets become underutilized, resulting in compromised patient care, over-ordering and more

All of these issues and more are addressed by location-based technologies that enable the tracking of assets and individuals. These solutions are easy to implement, budget friendly and ready to grow with you.

It’s amazingly simple to get started on digitizing your healthcare facility.

Contact us today
About Kontakt.io

Kontakt.io Inc. is an industry leader in indoor location services and BLE beacons. Our mission is to help businesses tap into the value of indoor location and sensor data. We better connect people, locations and things to increase customer satisfaction, save costs, and improve productivity and safety.

We empower vertical business applications, with open standard APIs and AI-driven event streams to help enterprises accelerate through digital transformation. To our location-aware technology partners, we offer fleet management software, location and condition services, beacons and gateways to help them focus on core innovation, reducing time to market and costs.

Today, we serve over 2,000 customers across diverse sizes and industries, from transportation and logistics to manufacturing, healthcare, airports, governments, and public spaces. We strive to delight people and make a real difference in the world wherever possible by providing an enterprise-tailored software solution scaled to the internet.
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