



WHAT USERS OF RTLS SOLUTIONS ARE SAYING:

**SURVEY RESPONSES FROM
HEALTHCARE USERS**

Introduction

Real-life RTLS insights

To better understand the day-to-day impact of real time locating system (RTLS) solutions in the healthcare sector, AiRISTA needed insights from providers across the country. Learning about healthcare professionals' real-life experiences with RTLS tools would help us examine their concrete value within a unique, high-intensity environment. This inspired the AiRISTA team to launch a wide-ranging survey.



AiRISTA conducted the survey in partnership with HIMSS and Braffon. It consisted of 23 questions focused around how RTLS is used in healthcare settings and customers' utilization trends at different points while using the service. For example, were customers more likely to expand their use of RTLS or decrease it based on their experiences? In addition to RTLS use behavior, we wanted to learn about customers' goals and how well the technology met those goals. The survey drew 180 responses — most of them coming from IT professionals. While the specific jobs and positions of respondents varied, the majority of those who provided us with insights held senior positions in their respective organizations.

With the information we collected, we've been able to look closely at the ways in which RTLS is helping medical professionals in various areas, whether it's asset location tracking, patient care, staff safety, equipment maintenance or other use cases. This data has also allowed us to establish what further challenges we can help them overcome with our technology in the future.

In this paper, we'll share key results of our survey and delve into the details to help you understand how RTLS is being successfully used in healthcare — and how your organization can implement the technology and get the most out of it.

How are organizations using RTLS?

The breadth of uses for RTLS solutions is often noted as one of the technology's critical advantages. A well-strategized RTLS implementation will utilize the technology for multiple purposes, such as centralizing information and streamlining operations across several use cases.

Each of the main uses for RTLS can be further broken down into subcategories. This demonstrates organizations' ability to strategically employ various aspects of the technology as necessary to suit diverse operational needs. Asset tracking, patient flow, and staff safety represented the top three use cases, respectively. Wander management was the least common use of RTLS.

The results shown here clearly demonstrate, for example, that two-thirds of those using RTLS for asset tracking are mainly focused on swift equipment location and improving asset utilization. Being able to promptly locate and distribute essential resources is a major priority for healthcare facilities, ensuring the most effective use of devices, materials and supplies.

Breakdown of RTLS uses



Asset tracking
(31.8%)



Patient flow
(20.3%)



Staff safety
(17.8%)



Temperature monitoring
(12.6%)

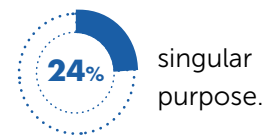
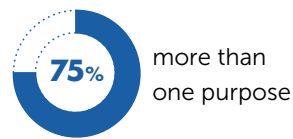


Hand hygiene
(9%)

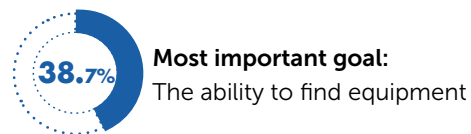


Wander management
(8.4%)

A large majority of respondents — **75%** — claimed to use RTLS for more than one purpose, demonstrating the flexibility and versatility of the solution. Only **24%** of those surveyed said their RTLS use revolved around a singular purpose.



The ability to find equipment was the most important goal for those who used RTLS for asset tracking. This goal made up **38.7%** of the responses.

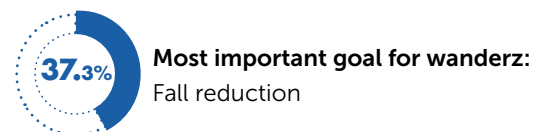


Improving asset utilization to reach a specified target utilization rate was the second-most important goal.

Staff safety came in third. This specifically referred to priorities such as proactively protecting staff and avoiding harmful incidents. Combined, these two purposes represented the most important goals for this use case.

Wander management is worth noting because of how it subdivides into a broader-than-usual spectrum of subcategories:

Reducing unattended falls appeared to be the most important goal than the other priorities for wander management-focused RTLS users. Fall reduction was cited by **37.3%** of these respondents. However, two of the remaining three goals were not far behind in importance:



33.5% highlighted the goal of **reducing missing/lost patient incidents** involving at-risk patients.

29.2% said their biggest priority was to **improve staff efficiency**.

Reducing legal liability appeared to be the least important goal of those most focused on wander management, cited by only **14.2%** of such respondents.

Technology expectations of RTLS deployments

One of the most important things to consider regarding customers that use RTLS is whether they're satisfied with the service. How does it meet their expectations? Were they more or less likely to expand its usage?



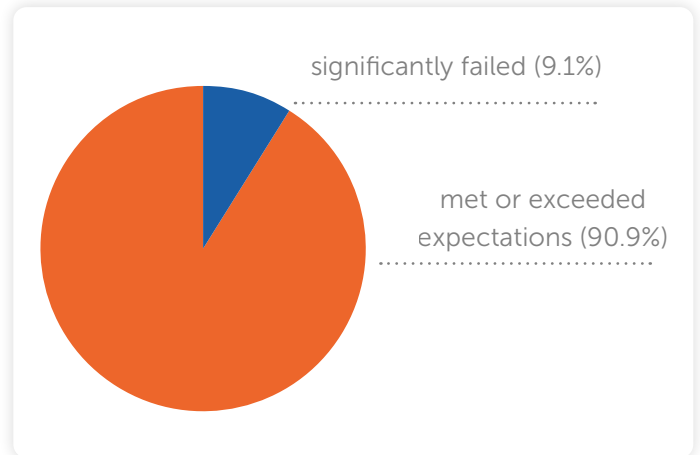
RTLS solutions have proven to be exceptionally effective — the approximately **91%** of respondents saying the tools either met or exceeded expectations is evidence of that.

In addition, after implementing RTLS solutions, most respondents (66%) said they were more likely to expand their use. **Only 30% expected to continue to use them the same amount and a mere 3% decreased their use.** This demonstrates that not only is RTLS making healthcare companies more productive, but also that they want to implement it more broadly far more often than not.

Based on the very high rate of satisfaction among customers, it appears RTLS is effective at asset tracking, patient flow, staff safety and much more, all of which positions the technology as a comprehensive solution for customers to leverage and realize significant short- and long-term benefits.

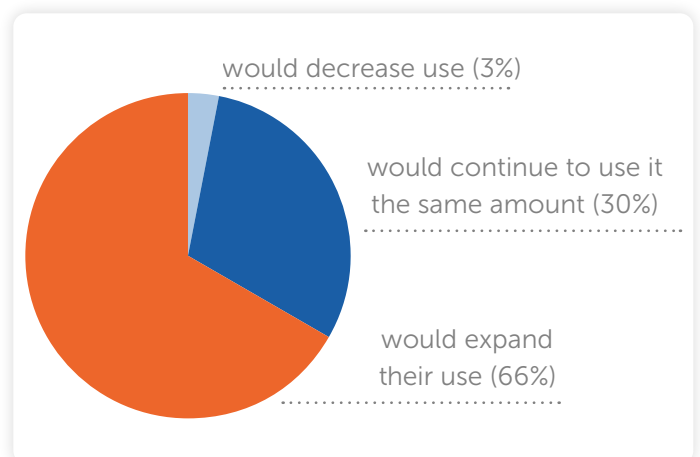
Only **9.1%** of respondents said their RTLS solution “significantly failed” or “slightly underperformed.”

The other **90.9%** said the RTLS solution **either met or exceeded expectations.** A large pie chart would demonstrate this dramatically.



After using the RTLS system, **66%** said **they would expand their use**, **30%** would continue to use it about the same amount, and only **3%** would decrease use.

This suggests overwhelming satisfaction with the service.



Scale and longevity trends of RTLS use

RTLS customers in healthcare organizations can use any number of tags they please depending on their needs. An important statistic to consider, then, is whether RTLS implementation typically led to the expansion of its use with more tags. This brings up another question: Despite the increased management associated with more tags, do customers increase the number of deployed tags over time? Or do they tend to reduce the number of tags used over time?

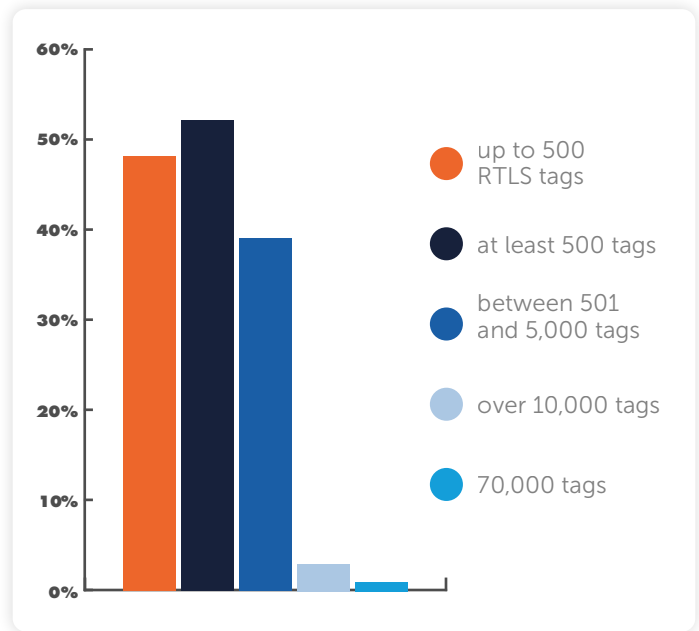
The number of tags utilized by customers ranges massively, though there is an undeniable correlation between a greater number of active tags in facilities and a longer term of RTLS usage: **Generally speaking the more tags in play, the longer RTLS had been implemented.** Some customers use fewer than 10 tags; others have as many as 70,000 in place.



The implication is that customers are more likely to expand RTLS usage the longer they have the technology in their facilities.

Additionally, are customers more likely to use RTLS for a long period of time, or are they less inclined to continue and/or expand its implementation? Our data suggests long-term use is more prevalent than short-term. Specifically, our survey data illustrates that the majority of customers in the healthcare space are using RTLS for longer periods of time (1 year or more). Some have had the technology in place for considerably longer (5 or more years). Only 10% of the RTLS customers queried in this survey stated that they have been using it less than a year. This is a strong testament to the longevity of RTLS.

48% of respondents said they were using **up to 500 RTLS tags**, while the remaining **52%** are using at least that number. Overall, **39%** of those surveyed said they were using **between 501 and 5,000 tags**. A notable few are using **over 10,000 tags** to track and monitor equipment, staff or patients, with **one customer claiming to have 70,000 tags** active throughout their organization. While this is a fairly wide range of responses, it effectively demonstrates that the RTLS use cases most important to healthcare organizations can easily require hundreds or even thousands of tags.



There was a clear correlation between the number of tags used and the duration of RTLS implementation. Only one respondent had over **500 tags in use after less than a year of adoption**, whereas **42%** of those with more than 5 years of RTLS experience reported **more than 1,000 tags successfully in operation.**

Additionally, of those using RTLS solutions for more than five years, **80% now use it for more than one purpose.** Conversely, **only 66% of early adopters** (less than one year of use) **have implemented RTLS for multiple uses.** This confirms that RTLS insights are proving their importance and customers respond by adding more use cases.

Third party integrations with RTLS solutions and platform ownership

Because RTLS can be used in conjunction with various third-party solutions, it's worth noting whether healthcare RTLS customers took advantage of this versatility.

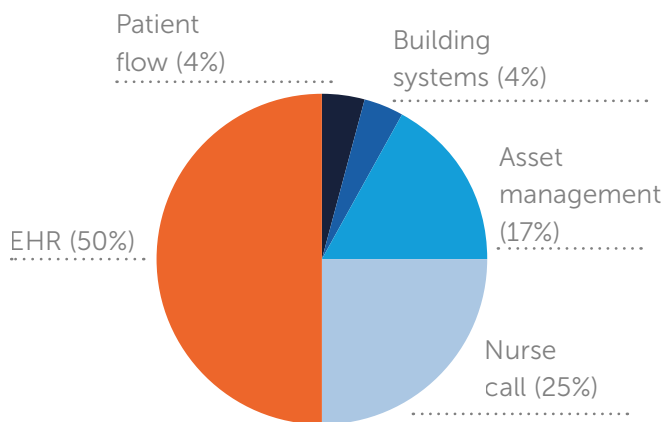
Respondents were split on whether they integrated RTLS with third-party solutions. Of those that did, exactly half (50%) said they used RTLS alongside their electronic health records (EHR) solution, followed by nurse call (25%), asset management (17%), patient flow (4%) and building systems (4%).

This appears to indicate that RTLS can extend its value when integrated with certain other solutions, while also clarifying that the technology is quite valuable as a standalone tool.

It's also worth noting that the team responsible for day-to-day maintenance of the RTLS system varied. IT most often had custody of the technology (cited by 44.3% of respondents). Clinical engineering or biomed staff were next most likely to manage the technology (35.1%). Facilities staff (11.7%) and finally nursing were least likely to supervise RTLS operations (8.9%). Essentially, this illustrates that RTLS is most often in the hands of those with the greatest levels of technical experience.

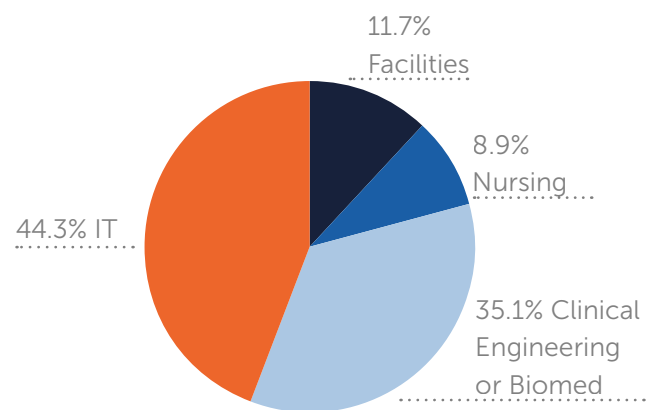
Almost half of all respondents have integrated their RTLS solution with other systems.

Of those that have, they're typically connecting RTLS to:



Who is responsible for the day-to-day maintenance of the system?

(e.g. tag management, system admin, etc.)



Deployment model trends for RTLS systems

RTLS can be deployed in several different ways. For example, what wireless technology is preferred such as Wi-Fi or Bluetooth? On-premises or in the cloud? Should the model be a license or a subscription?



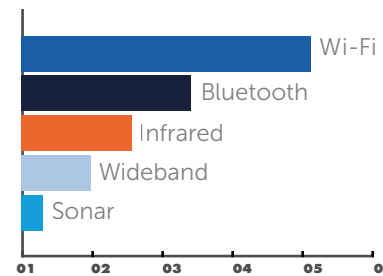
The most popular type of technology deployment was Wi-Fi, followed by Bluetooth.

A majority of users (55%) deployed RTLS on-premises instead of in the cloud, though the trend toward cloud-based RTLS use is increasing: An overwhelming percentage of respondents who utilized on-premises

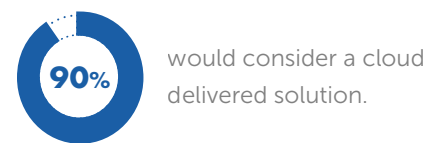
deployment (90%) said they would consider upgrading to cloud delivery. In an increasingly cloud-focused business world, it is little surprise that healthcare is trending in this direction regarding RTLS and various other technologies

More respondents (40%) who licensed their RTLS solutions have deployed the technology for more than five years than those who used subscriptions (just 19%). In other words, a significant number of customers appear to develop enough trust in the software after several years of use to license it outright rather than continuing with a pay-as-you-go model for prolonged periods. That said, most healthcare customers prefer the flexibility of a subscription at the start of their RTLS relationship.

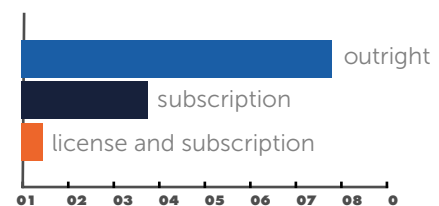
Wi-Fi and Bluetooth® Low Energy are the two most prominent technology choices for RTLS systems. The former is the method of choice for nearly double the number of respondents opting for the latter (47.1% to Bluetooth's 24.1%). A smaller segment of those surveyed (15.7%) used infrared as the delivery system for their RTLS solutions, followed by ultra wideband (9.9%) and sonar (3.1%).



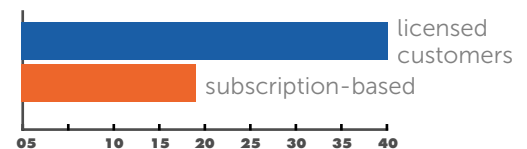
While on-premises deployment (55%) is still prevalent over cloud, the cloud is undeniably burgeoning, **with 90% of on-premises RTLS users stating they would consider a cloud delivered solution.**



The majority of users purchase instead of subscribing to an RTLS service: **67.8% are purchased outright, 27.5% have a subscription and 4.7% have both a license and a subscription.**



40% of licensed customers have been using RTLS for more than 5 years, whereas 19% of subscription-based customers have utilized RTLS for over 5 years.



The trend seems to be toward subscription models as 8% of those who purchase their solutions have been using RTLS for less than a year, while 27% of subscriptions have been active for less than 1 year.

Desired improvements of RTLS solutions

What would our customers like for the future?

As with any other industry, tapping into the wants and needs of RTLS healthcare customers is vital for keeping customers satisfied with the solution and using it in the long term. The more applications customers can find for RTLS, the more likely they will remain satisfied with the technology.

To that end, we asked customers, "If the cost to track each resource decreased, would you expand to use more resources?" 18.5% said no, but a vast majority (81.5%) said yes. This stresses the bottom-

line importance of costs to our clients in this space, and how vital it is that we work to improve our RTLS products in ways that somehow contribute to reduced expenses for users while reducing the cost of the underlying technology.

The addition of new features and improvement of existing capabilities are also paramount to the continued success of RTLS. 82.6% of respondents, for example, wanted better location accuracy — specifically, to locate tags more quickly and with better precision. Second on the list of most-demanded features is longer battery life, with 68.7% of respondents citing this as very important. The less need there is to maintain an RTLS device, the more efficient the service.

How important is it to achieve the following features?

Ease of use:



82.6%
said very important



68.7%
said very important

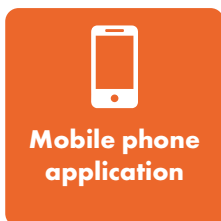


82.7%
said very important

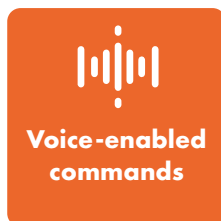


75.4%
said very important

Tech features:



54.5% said very important while **7.9%** said not important



36.9% said not important and **43%** were neutral

Reporting:



62.7%
said very important



65.7%
said very important

Conclusion

RTLS solutions are proving to be surprisingly valuable to the healthcare providers that are using them. Customers' expectations for these solutions are not infrequently being exceeded, and utilization of the systems continues to grow as a result. Location insights regarding patients, staff and assets have proven valuable tool in increasing hospital efficiency and patient outcomes.

At AiRISTA, we believe location information is becoming metadata — a fundamental attribute of the resources in our work environment.

Macro-events are accelerating the need for location insights. More devices enter the workplace as we move to an IoT world and those devices are more intelligent. Additionally, forces like climate change, population migration and fragile supply chains are adding uncertainty to our economic value chains. AiRISTA is helping customers increase efficiency and prepare for the unexpected with RTLS solutions specific to each client's unique requirements.



Contact us

to see how an end-to-end solution that scales to IoT demands can start providing immediate value.



www.airistaflow.com



salesinfo@airista.com



1-844-816-7127