



THE CASE FOR CAPACITY MANAGEMENT AUTOMATION

How Real Time Location Services (RTLS)
can transform the delivery of care

INTRODUCTION

CAPACITY CHALLENGES IN HEALTHCARE

Most hospitals rely on a significant number of manual processes to coordinate the use of beds, including phone calls, spreadsheets and reporting into central teams. Delays in these processes can increase the time required for preparing beds and managing discharges. This all can significantly impact capacity management, and patient flow through a hospital.

OPPORTUNITY WITH RTLS

By implementing Real Time Location Services (RTLS), hospitals will gain real time insights into the location of patients, staff, and assets. With this information, workflows can be orchestrated ensuring the right people take the necessary actions with the proper equipment. Some workflows, such as discharges and cleaning notifications, can occur automatically based on rules, thus minimizing non-value-add time.

ADVANCED ANALYTICS AND ACTIONABLE DATA

Analytical understanding of the movement of people and assets requires seamless access to accurate location data in Real Time within a coverage area. Moreover, quantitative usage data of a facility's people and assets—regardless of its configuration—can help organizations optimize and streamline operations.

In short, knowing where people and assets are and what they're doing produces **situational awareness** to better orchestrate workflows.

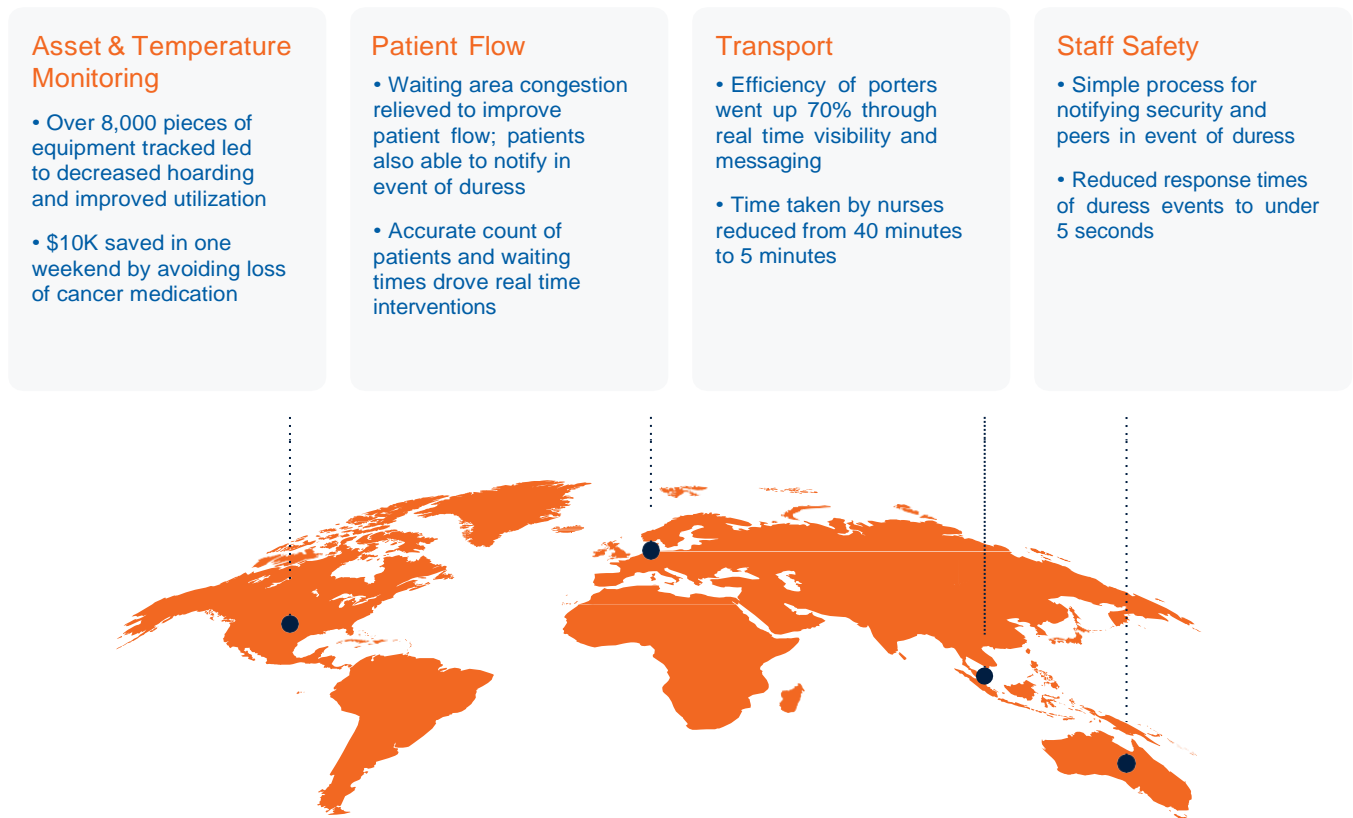
RTLS: IMPACT ON CAPACITY MANAGEMENT

RTLS plays a critical role enabling more efficient capacity management, since location awareness is necessary to adequately orchestrate workflows.

The following benefits have been achieved by hospitals around the world, some of which directly link to improving bed capacity management:

- 70% efficiency improvement for porters through automated workflows enabled by RTLS
- Reduction in time required by nurses to support portering function from 40 min to 5 min per transaction
- Real Time visibility into waiting times, movement times, cleaning times, and more with the ability to create alerting and automation rules
- Reduction in asset loss while improving utilization upwards of 25%
- Ensure compliance with asset management regulations
- Reduced congestion in waiting areas
- Near Real Time responses to staff duress incidents

A few RTLS highlights from around the world are shown below.



AiRISTA USE-CASES

An RTLS-enabled capacity management solution from AiRISTA supports several beneficial use cases:

I Automated Porter Dispatch



The coordination of room/bed turnover can be facilitated using 2-way tags or mobile phones and the Sofia application to supervise the workflow. Sofia receives alerts via automated messages or manual entries and sends notifications to porters based on location-based rules, like an Uber application for drivers and riders. Porters then accept the request using a button on their tag or mobile device. Information, such as the need for a specific type of wheelchair, can be included in the message.

I Automated Bed Cleaning Workflows



Cleaning dispatch alerts can be triggered and automated using 2-way tags or mobile phones and the Sofia application to orchestrate workflows. Alerts can be activated based on messages, buttons on the bed or based on patient location. For example, a left button press at the bedside could initiate a cleaning request, or based on patient location history, the system could determine they are fit for discharge. Sofia receives alerts via these automated messages or manual entries and sends notifications to cleaning staff based on location-based rules. Cleaning staff then accept the request using a button on their tag or mobile device. Once the cleaning process is completed, the staff can press the right button on the bed tag, and Sofia will update the state of the bed in the bed management module to “Available” or “Cleaned.”

I Automated Discharge



Discharge processes can be automated using patient tags and the Sofia application to coordinate the discharge requirements. Via integration with the EHR, Sofia would be updated with pending discharges. Then, once the patient leaves a specific zone, such as a moving from a room to a discharge lounge, Sofia can send a message (eg HL7) back to the EHR that discharge is complete.

I Real Time Data Visualization



The application captures location data and some environmental telemetry via tags. In addition, status information of certain medical devices like infusion pumps can be made available via integrations. Customers can use the Sofia interface to view Real Time data and dashboards to view trends and reports, such as historical asset utilization, waiting times, and bed cleaning times. With the patient flow module, Real Time view of the number of patients waiting and their waiting times is available. Notifications to staff can then be sent if thresholds are met.

I Live Bed State and Allocation



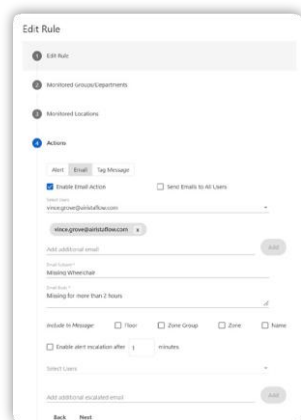
The Sofia application has a bed management module which manages bed state and presents a Real Time view of allocation. The bed state can be defined and managed through rules, buttons on tags, and EHR integrations. If the hospital already has a bed management module, Sofia can send updates to it via an API. This can be used with smart beds that can sense when patients are in bed or not, as well as with standard beds where workflows can be triggered using AiRISTA's RTLS and workflow solutions.

I Embedded Workflow Management

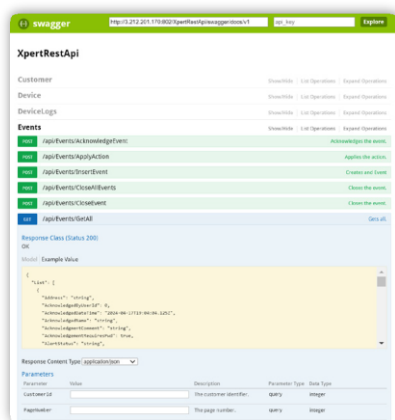


AiRISTA's solution uses embedded workflow management as a foundation for the use cases. Workflow management is handled through rules and APIs. In addition, AiRISTA offers Flow Studio, a low code studio which enables customers to create custom workflows.

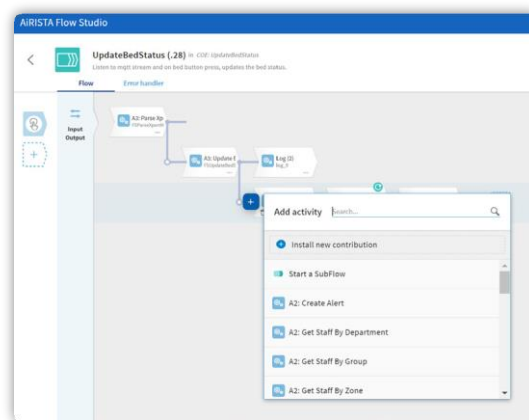
Flow Studio uniquely offers a graphical pallet allowing users to drag and drop off code modules and interconnect them to create cascading logic. Libraries of code modules can be reused to speed development and reduce the development complexity.



RULES ENGINE



LIBRARY OF REST APIs



FLOW STUDIO

I Support Scale of Visibility Across Larger Footprints



AiRISTA's Sofia application supports multi-tenants. As such, a single Integrated Care System could set up Sofia and have visibility into real time status and historical reports for all participating hospitals.

I Asset Management



AiRISTA's solution includes tags which get associated with mobile assets (including beds and wheel chairs). Certain tags have buttons which can be used to trigger actions, such as cleaning requests. Through integrations the Real Time status of assets, such as infusion pumps, can also be populated within Sofia. With this information Sofia reports on KPIs such as Par Level and Utilization. Both nursing and clinical engineering are the major beneficiaries of an asset management solution. Nurses save time during their shifts, because equipment is delivered and available on demand, so they are not spending time searching or hoarding equipment. Clinical engineering can now quickly respond to preventative maintenance

alerts by taking assets out of service for repairs; equipment is automatically removed from workflows so nurses or other staff do not accidentally attempt to use an asset not cleared for clinical use.

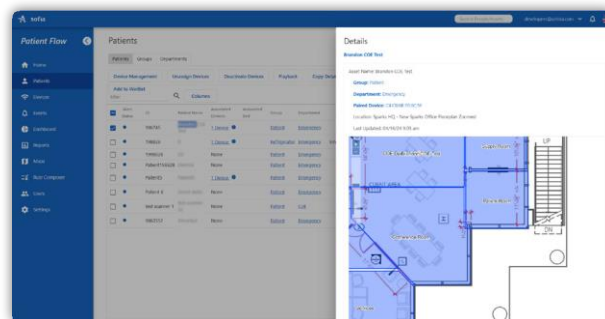


An example asset utilization dashboard for reference.

I Patient Flow



AiRISTA's solution includes disposable or reusable patient tags, enabling the tracking of patients and association of patients within rooms and with beds which can be used to set key operational rules, alerts and automations. Playback of patient flow and length of stay in rooms are available for reporting and analysis.



ADDITIONAL VALUABLE USE CASES

I Rounding



AiRISTA's staff locating badges can be added to the deployment, and be used for advanced rounding workflows.

Notifications for patients overdue for rounds can be automated and fed into a workflow for staff response. This eliminates the need for time consuming manual logging since all of these events can be captured in Sofia automatically.

I Nurse Call Cancellation



Adding AiRISTA's RTLS to your nurse call system provides enhanced communication capabilities for staff, faster response times for patients, and a more hands-free approach to patient care. When a caregiver wears AiRISTA staff badges, the nurse calls can be automatically cancelled upon patient room or bay entry. Additionally, the system logs the response time, and illuminates the corresponding dome light.

I Patient Elopement



By including AiRISTA patient tags, the hospital or clinic can ensure greater visibility and safety of all patients, preventing high-risk patients from wandering into dangerous or restricted areas.

I Hand Hygiene



This infection control tracking technology can be included as part of a RTLS deployment. AiRISTA's solution uses tags worn by staff and tags placed in dispensers. The tags in dispensers have accelerometers which detect a dispense. Upon a dispense, the tag detects the nearest tag worn by staff. That staff member is then credited with a hand washing in Sofia. If staff members enter a room and do not wash, reminders can be sent to their tag.

I Staff Safety



AiRISTA's tags may be worn by staff members to support location-enabled workflows as well as support staff duress and panic alerting applications. A pulling motion of the tag activates the safety alert, and software programmable buttons facilitate a coordinated response with time stamps. In the event an employee falls, a 3-axis accelerometer can trigger a man-down event. The event may generate a location report, sound, and message to other staff and responders, as a function of roles and/or proximity, depending enterprise safety business rules.

I Temperature Monitoring



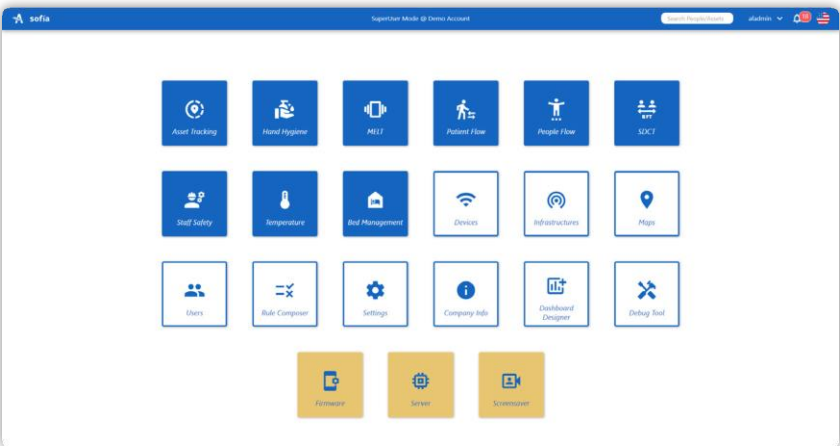
Temperature monitoring is an easy add-on for an enterprise RTLS deployment. AiRISTA uses temperature sensors placed in items such as refrigerators. If the temperature exceeds a threshold, designated staff are then notified to take corrective action.

SOLUTION OVERVIEW

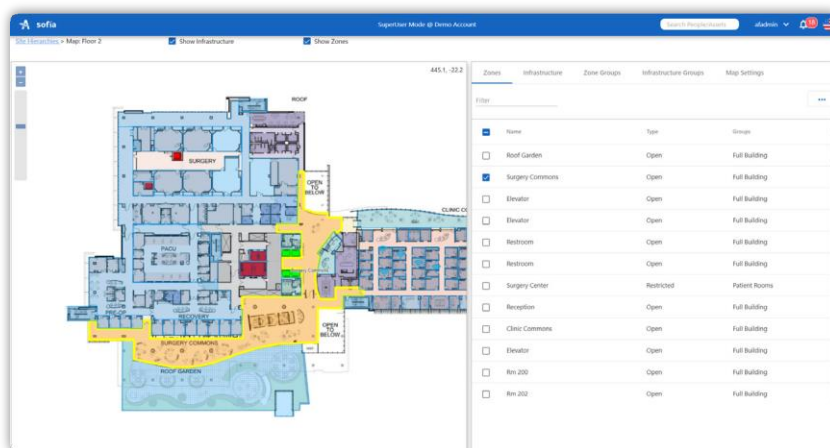
AiRISTA's solution is comprised of devices, infrastructure, and software. The devices send data to infrastructure which provides a means for communication. Infrastructure is used to capture signals from the devices and send data to the software. The software provides the interface to visualize data, manage the system, and integrate with additional systems.



Sofia provides many built-in modules. Blue tiles indicate user modules, while white tiles represent administrative functions.



The ability to create zones is key to orchestrating workflows. Sofia's map module lets users **import maps and draw polygons to create zones**. Rules can then be created based on actions in zones.



ACCOLADES

AiRISTA is proud to be recognized by Gartner for being in the **“Leaders”** quadrant in 2022, 2023, and 2024.

The report is available on request.

PROJECT PROCESS

AiRISTA and our partners provide a consultative sales process to ensure success criteria are well understood and requirements will be met. The process includes the following major steps.



Discovery

Consult with you to understand your challenges and objectives

Design

Develop with you a recommended solution

SW Installation

Deploy an instance of Sofia - cloud or premises

Location Points

Use existing APs or deploy BLE gateways overlaid on maps

Integration

Third-party application integration as necessary

Test/Training

Exercise system, review results, fine tune

Rollout

Assign and deploy tags to people and equipment



WHAT DOES AiRISTA OFFER?

Our experience and expertise results in robust, versatile solutions that integrate our highly adaptable software and a broad range of hardware options to suit your needs.

If you'd like to learn more about how AiRISTA has helped companies develop a flexible RTLS deployment solution, why not take a look at some examples of recent case studies:

- California Department of State Hospitals
- Prisma Health
- Sky View
- Department of Veterans Affairs
- National Indemnity

CONTACT US

Find out what AiRISTA can do for your organization by getting in touch for a consultation.

E: salesinfo@airista.com | P: 1-844-816-7127

airistaflow.com