

Product Test Review Summary

FX – Functional eXperience

AltumView Sentinare 2

Video camera/sensor, single camera package.

The vendor website can be found [here](#).

Full product specifications can be found [here](#).



Product Review Summary

Updated October 2023

Sentinare 2 is a camera-based activity and fall detection sensor. It's primary functionality is to detect when an individual has fallen, and to alert a caregiver via a mobile app, in near-real time. It does so by using artificial intelligence (AI) to detect that the fall has occurred.

The camera has gesture (hand waiving) recognition to enable the senior to generate an alert without having a fall take place.

Other functionality includes observing the activity pattern of the individual. These movements are categorized into sitting, standing, lying, and bending. Categories of individuals can be custom created or the default of Senior, Staff, Visitor can be used.

The camera can be set up to detect entry and exit from rooms, or to send alerts when entry, exit or elopement occurs.

A mobile app is used to set up the camera and view alerts, activities, etc. A web app is also available to view alerts, activities, and history.

The individual is represented as a stick figure in the app, as a privacy feature. Multiple individuals can be distinguished if the face recognition feature is set up.

Target Market

The product targets 3 markets:

- 1) The Consumer market - intended for use by the adult child or designated caregiver to monitor the senior for falls and activity.
- 2) The Long Term Care and Retirement Home market - operators can deploy this selectively or community-wide as a technological complement to the care they provide.
- 3) The Home Care market - operators can use this as a technological aid that complements care being provided to seniors in their communities.

Test Results

Overall, the simplicity and functionality of the Sentinare 2 camera (sensor) is quite impressive. At roughly \$250 CAD, this product delivers on fall detection, activity detection, ease of use, privacy, and completeness, at a reasonable price point.

Fall detection worked well enough that it was a valuable feature, with about 80% accuracy. False positives can be marked in the app, helping the machine learning algorithm get better, though we did not experience any.

We were impressed with the system's ability to differentiate between multiple individuals (some configuration required), which we have not seen in other similar products. This enables the camera to be used in settings with multiple occupants, and to see when staff or visitors are present.

False positives increased at the edge of the camera's usable vision, in the last 5-10 degrees of viewing angle.

We also tested this in a busy conference area with >10 people in view, and the fall detection worked occasionally. This would not be a typical use case, but it was positive to see that it worked at all in a crowded room.

Challenges included installation and the form factor.

The installation needs to be user friendly for this product to be ready for broad consumer adoption. Current installation suggests screwing the camera to a surface (door frame, shelf, wall), causing associated damage. Running power to the camera from a standard wall outlet can be difficult due to the height at which the camera must be mounted (2 m) and the typical height of wall outlets (30 cm). A battery powered version would provide a better installation experience, though would also need to meet performance requirements. We solved for these issues by using velcro tape (Gorilla) rather than screws, and a lightweight 1 metre extension chord (works but aesthetically not awesome).

There are some issues with the camera configuration and set up that will prove challenging to most users (manual adjustment of floor area), and they have an important impact on potential accuracy for fall detection. These issues can be overcome with improved app user interface design to facilitate usability.

Commercial Readiness

Retail, and some enterprise customers may dislike the camera form factor as it may seem intrusive for seniors who would feel like they are being watched over. A more discrete housing could be an option (e.g. picture frame) for the consumer market in particular. Also, the activity indicator light should be disabled once deployed.

We believe there may be reasonable product-market fit for cost-sensitive Long Term Care and Retirement Home operators due to the price point, good functionality, and simple deployment and management of the solution. The Sentinare 2 could be installed in each LTC room to provide fall detection and visibility to resident activity levels. The form factor may not be an issue with LTC operators or residents. Challenges will be to tuck away the power cable and any extension that might be needed to avoid creating a hazard, and also managing each location individually using a generic email (e.g. location123@sampledomain.com).

Operators deploying the Sentinare 2 would need to manage staff and visitor configuration in the system (for face recognition), or forego that altogether if staff churn is too high to make it feasible to maintain and keep current.

AltumView has well documented integrations available through APIs and web hooks, so data from the Sentinare 2 could be integrated into a nurse call system, or other higher order resident management system to minimize the number of apps that staff have to use (context switching).

Potential Product Roadmap

We envision the product roadmap will address some of the challenges noted, and that the device form factor may look more like a motion detector than a camera that can be securely mounted high in the corner of a room on a wall, and wired into building electricity or a wall outlet, preferably while hiding the wiring.

The associated mobile and web apps could be (re)built in a modular fashion to enable toggling of features associated with specific market segments, or tiered paid functionality. In this way the vendor would have to maintain only one software stack while supporting the development of various hardware versions. Optimizing the UI/UX is a required exercise in continuous improvement. Evolution of the AI functionality is expected to make fall detection and activity categorization increasingly accurate.

For the enterprise operator environment, the fleet management functionality would need to be robust and easy to use, which is not the case today for multi-location installations. We would also recommend pre-built integrations with the most common target platforms (e.g. nurse call systems like Notify, Sara, etc) for easy connectivity and data flow. This can all come with time as the product matures.