

BVITS Alarm Mode Instructions

BVITS Alarm Mode Uses

The BVITS system Alarm mode is based on the simple functionality that the BVITS App will alarm whenever it is not seeing its tag. This functionality supports at least three uses:

- a) The BVITS App can serve as a personal alarm that sounds whenever some object comes between the smart device camera and a BVITS tag.¹
- b) Multiple pairs of BVITS App devices can be used to set up a virtual perimeter around an area such that travel into or out of the area will trigger an alarm.¹
- c) The BVITS Alarm mode functionality, used with an even number of smart devices hosting the BVITS App can be used to establish invisible corridors that can comprise environmental sensing and Orientation and Mobility (O&M) training courses.

¹ A BVITS host device establishes a line of detection sensitivity between the imager of the host device and a BVITS tag. Depending on how the imager and tag are placed it may be possible to step over or crawl under that line and cross the perimeter without being detected. The maximum recommended distance between a BVITS App Host imager and an 8" event tag is 30 ft.

The Alarm Mode Tags

Any BVITS target or event tag can be used to support the Alarm mode functions. For multiple imager applications different tag numbers might be required. The BVITS Event tags are available for free download from the BVITS product website at <https://dxdtengineering.com/BVI-Target-System/>.

Configuring the BVITS App for Alarm Mode Function

Alarm mode functionality is typically based on targets being a fixed distance away from the BVITS App host imager. For this reason the following general app control settings are recommended:

- Match a Specific Tag: On- slider to the right
 - Enter the tag number to be used in the "Tag ID" field.
- Manual Zoom: On- slider to the right

- Vibrate When Centered: Off – Slider to left

The specific application will determine how the “Alarm Stops” control should be set. The optional settings are described below:

- “When Reset is Tapped”
 - In this case the alarm will sound until it is commanded to stop from the Reset button that appears on the main screen.
- “When Tag Returns”
 - This is the most permissive setting. The alarm will silence once the tag returns in view.
- “After 10 seconds”
 - This setting will have the alarm automatically quiet and reset itself after 10 seconds.

Setting up Alarm Mode for Different Functions

The directions below are specific to each of the three Alarm mode applications.

Personal Alarm

This application involves the use of one BVITS host app and one tag to monitor a doorway or corridor for passage. A BVITS host device and a tag will be required. Also, some means to secure and aim both the BVITS App host device and the tag will be required.

1. Consider the line between the BVITS App host imager and the event tag as an invisible tripwire. Place the imager and the tag across the doorway or corridor you wish to monitor.
2. From the BVITS App, select “Alarm Mode” (Bottom button). Adjusting the zoom manually as necessary, train the BVITS system on the tag to arm the Alarm function.
3. Wave your hand in front of the imager or walk in front of it to ensure that the alarm sounds as expected.

Perimeter Protect

The Perimeter Protection application will require multiple pairs of BVIT App hosts and event tags- each with some mounting or staging concept that will allow each imager to maintain a stare at its assigned tag.

1. Plan the layout of the perimeter protection system keeping in mind the need to establish clear line of sight between every imager and its assigned tag and the maximum recommended separation distance between an imager and an 8' tag of 30 ft.
2. Place the BVITS host devices and their associated event tags consistent with the overall plan.
3. For the first imager/ tag pair:
 - a. From the BVITS App, select "Alarm Mode" (Bottom button). Adjusting the zoom manually as necessary, train the BVITS system on the tag to arm the Alarm function.
 - b. Wave your hand in front of the imager or walk in front of it to ensure that the alarm sounds as expected.
4. Repeat step 3 for all remaining imager/tag pairs.

O&M Challenge

The O&M Challenge concept is one where an area that contains various nonvisual environmental stimulus-potentially including sounds, obstacles, terrain, directional light, scents and moving air is chosen. One or more waypoints are chosen within that area. Each way point supported will typically require two BVITS App Host imager/ Event tag pairs- unless a "virtual corridor can be bounded by something else, like a wall. A virtual, straight line corridor is established from the starting point to the first waypoint. And then from the first waypoint to any additional waypoints (in succession) or to the ending point. For the participants, the O&M Challenge will involve a phase where one or more participants are led to each way point, along the planned path. They are allowed time to examine the environmental cues that converge at that each way point and to consider all of the movements that they took to arrive at each waypoint. Once the walkthrough is complete, the participants, one at a time, are given the chance to walk the course again, without triggering any of the invisible corridor alarms. The participants that traverse the course the furthest before triggering an alarm is the winner of the challenge.

Setting up an O&M Challenge Using BVITS Alarm Mode

1. Having located a desirable and safe area to establish the O&M Challenge course, identify the number and location for each waypoint. Keep in mind that each waypoint will likely require two imager/tag pairs. A skewed, U-shaped concept would support two angular turns and three straight line, fixed distant travels and would require 6 BVITS App imagers and related tags. The figure below shows this potential layout.

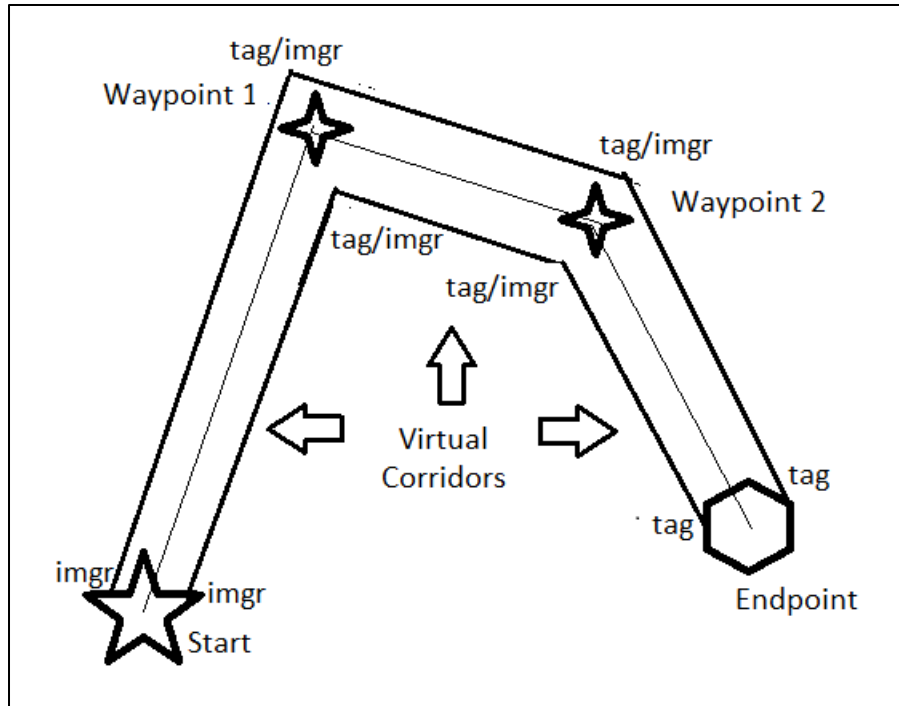


Figure 1 Potential O&M Challenge layout with 2 waypoints.

2. Place a marker of some variety at the starting point, the waypoints and the endpoint.
3. Use pairs of BVITS App Imagers and event tags, with mounting or free-standing concepts- to establish the virtual walls bounding each path to each waypoint or endpoint. Allow a corridor width of 6'.
4. The BVITS App "Match a Specific Tag" feature may be necessary in order to establish one side of a corridor when two event tags might be within view. Use the feature as necessary.
5. For the first virtual corridor choose one imager/ tag pair:
 - a. From the BVITS App, select "Alarm Mode" (Bottom button). Adjusting the zoom manually as necessary, train the BVITS system on the tag to arm the Alarm function.
 - b. Wave your hand in front of the imager or walk in front of it to ensure that the alarm sounds as expected.
6. Repeat step 5 for the imager/tag pair for the other virtual corridor wall.
7. Repeat steps 5 and 6 for each remaining virtual corridor until the endpoint is reached.

Initiating the O&M Challenge

An O&M Challenge can be undertaken by individuals, or as a group in single file, with the leaders switching out at each waypoint. Determine which concept you intend to carry out.

1. Ensure that all of the virtual corridor walls are active.

2. In a single file or one-by-one fashion take each participant to each of the waypoints, in the prescribed order, completing the course.
3. Return the participants to the starting line. Start one individually or start them as a group. Monitoring their positions as they go, and perhaps timing them, to see how far along the course they can travel before venturing outside the invisibly bounded corridors of the course.

This challenge brings to bear environmental sensing, mental mapping and basic cognitive and practical O&M skills in a simple and repeatable challenge that can return quantitative results that can be tracked over time.

Be aware of dxdt Engineering and Research, LLC's pioneering concept for cognitive O&M training- the Farmer Noah System.

<https://FarmerNoah.com>