Generating Enhanced Augmented Reality Surveillance (G.E.A.R.S.): Design Document

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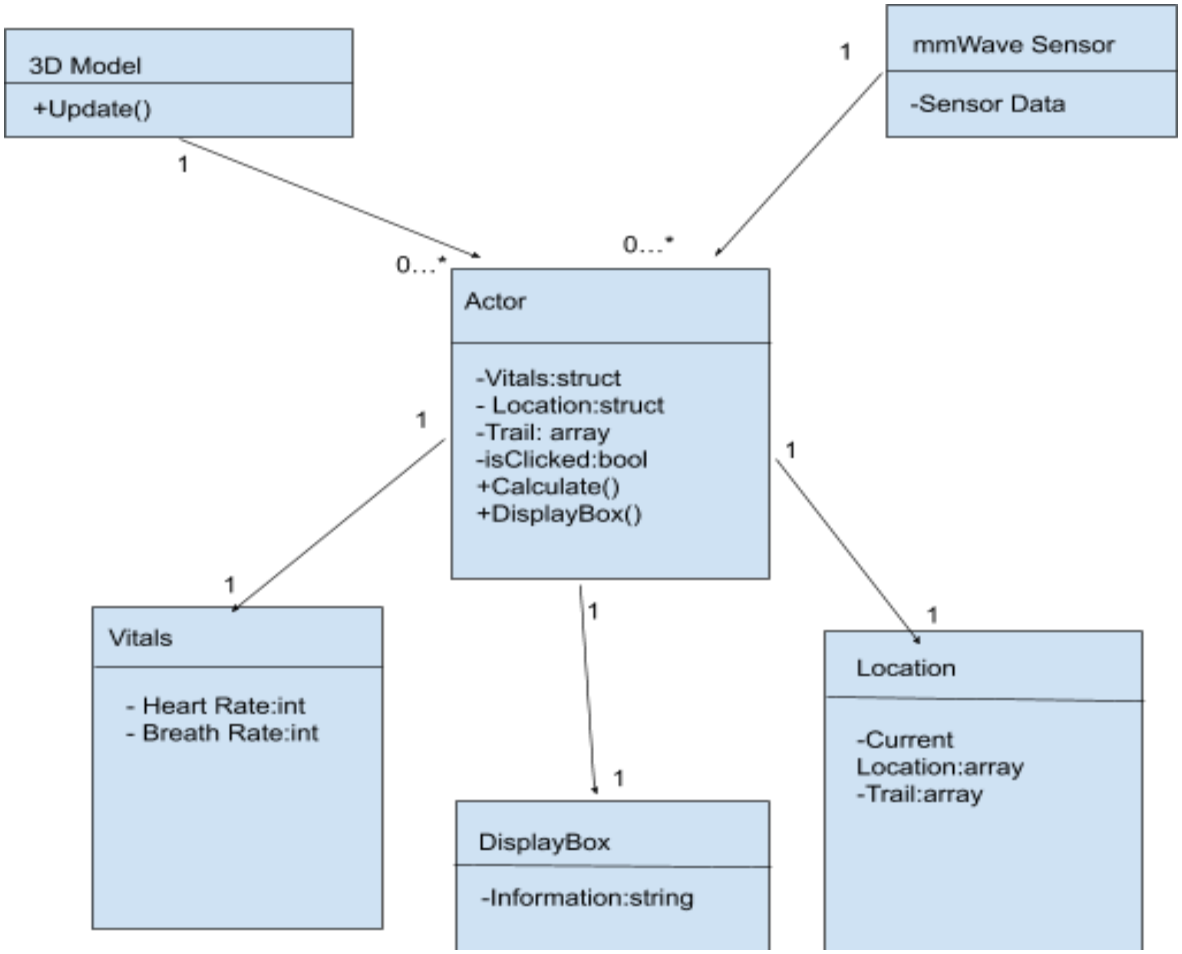
Client: Sentry View System

1. Visual Component

1.1 UML Diagram



1.2 Objects

1.2.1: Actors

The mmWave sensor will feed data into Unity which will create a virtual simulation of the objects moving around within a room. The three-dimensional model created in Unity will update as new information is obtained by the sensor. The Actor object will contain the vitals, location, and trail collected by the sensor. A method,

Calculate(), will interpret the data received by the mmwave sensor. The DisplayBox() function will display the vitals of an actor if the isClicked() method returns as true.

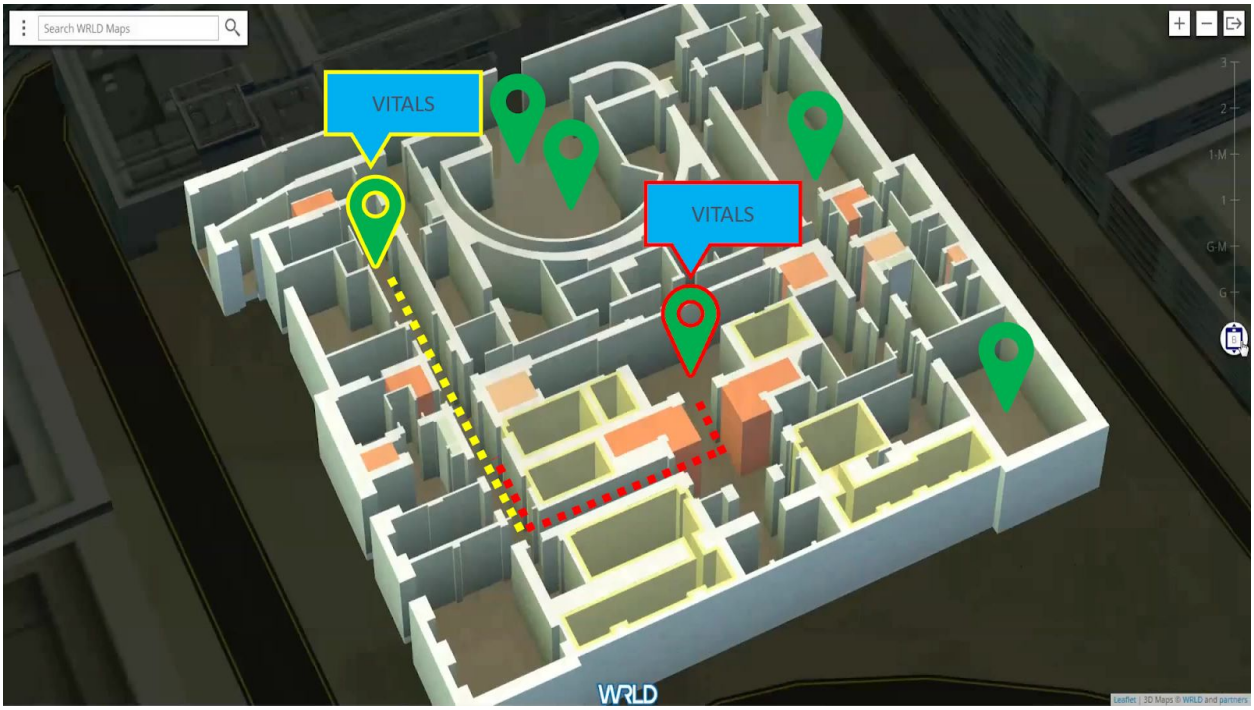
1.2.2 : Vitals

When an actor object is clicked the DisplayBox() method will create a text box relaying the vitals of the actor. The text box will appear above the actor, but will be a moveable object that can be relocated off of the display if the user chooses to keep that particular actor's vitals open.

1.2.3: Location

When an actor object is clicked the DisplayBox() method will create a text box relaying the current location and trail of an actor. The current location shows the real-time position of the object within the 3D model while the trail is a list of previous locations for that particular object. Once an object is instantiated within a room, their location will be stored in order to track and observe the trajectory of said object. This information, along with the vitals data will be used by security personnel to determine if an object is a threat.

1.3 GUI Representation



1.3.1: Summary

The GUI representation visually summarized what was stated previously. A 3D floor plan like the one above will be created in Unity. Actor objects will be displayed within that model as they move about the floor/room. When an object is clicked their vitals will be displayed as well as a trail showing their previous locations. In this particular example, if more than object was selected then their trails would be represented using different colors so that the user can differentiate between the two.