

Reimplementation of the Army's Forward Operating Base Situational Awareness System

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The Current System

The Army currently delegates their security surveillance tasks to at least two operators:

- The Joint Defense Operations Center (JDOC) operator is tasked with the top down supervision of base security. JDOC operators are responsible for maintaining overall base defense integrity through apportionment of defense assets and forces.
- Sector Command Post (SCP) operators are tasked with monitoring a single sector within a sector. Their primary task is to filter alarm information and pass relevant data on to the JDOC operator.

Issues and Solutions

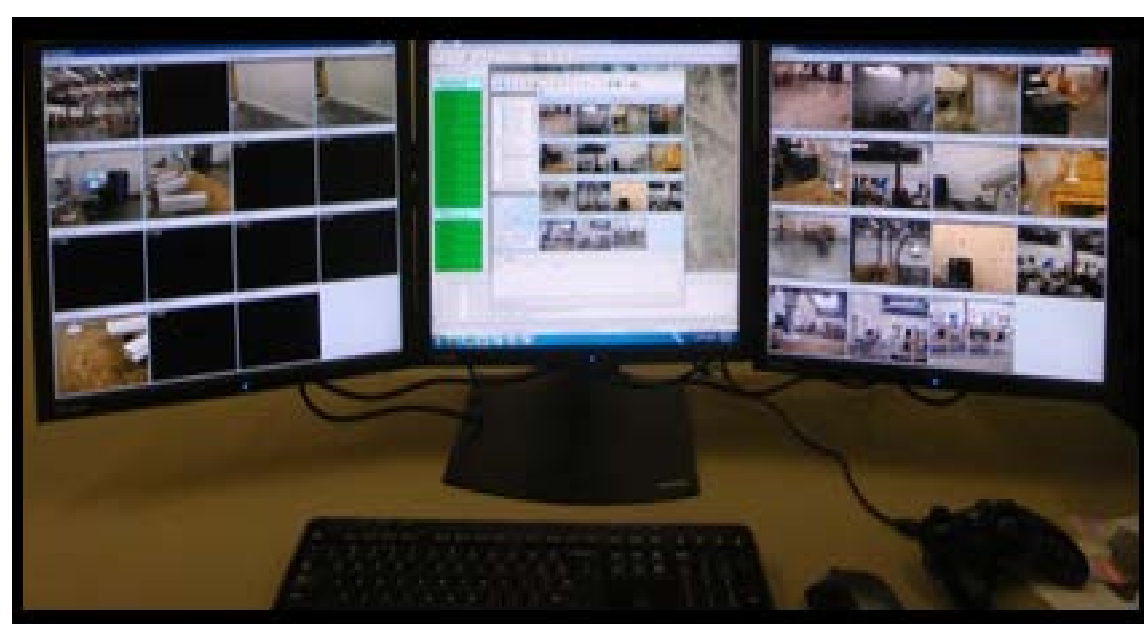
The current JSAS interface does not present and organize the sensor/video information in a way that is indicative of the JDOC task. All of the available information is presented at all times. Relevant data is presented the same as irrelevant, and the JDOC operator is tasked with filtering, assessing, understanding, and deciding the proper action to take.

Our proposed JDOC interface presents information to the user in a way that assists the JDOC operator to:

- Quickly assess the overall state of the FOB.
- Quickly and accurately detect the location of significant activities.
- Detect patterns of activity over time.
- Easily differentiate between false alarms and detections.



The current JSAS interface does not present and organize the sensor/video information in a way that emulates the SCP operator's task. Every camera feed is displayed to the SCP operator, with no way to turn off or rearrange camera feeds from other sector's. Testing showed that the SCP operator's rarely used the screen with the zone map, despite it being displayed on the center monitor.



Our proposed JDOC interface presents information to the user in a way that assists the SCP operator to:

- Primarily focus on the video/sensor information from their sector.
- Quickly and accurately pass false alarm and detection information from sensor alarms to the JDOC operator.
- Maintain a general awareness of the overall state of other sectors and across time.



Projections

Reduced physical and mental effort:

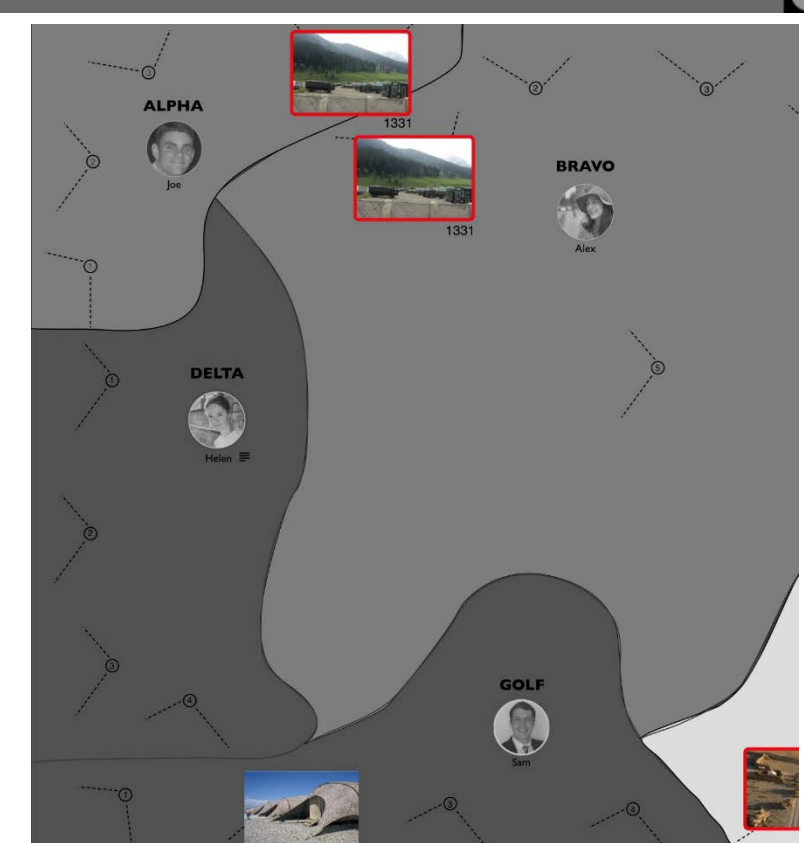
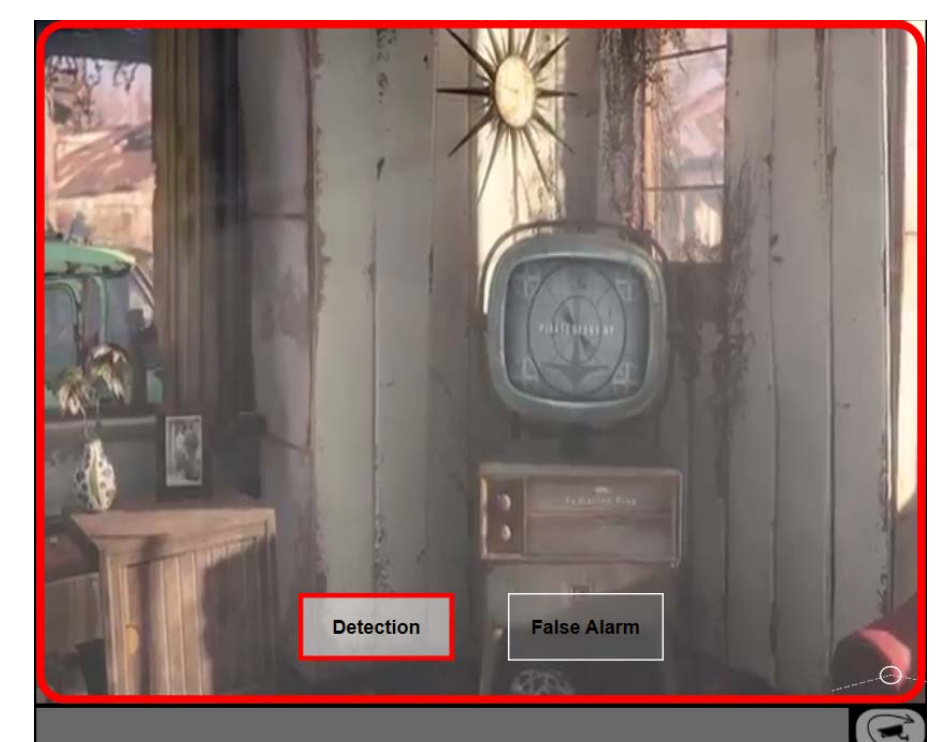
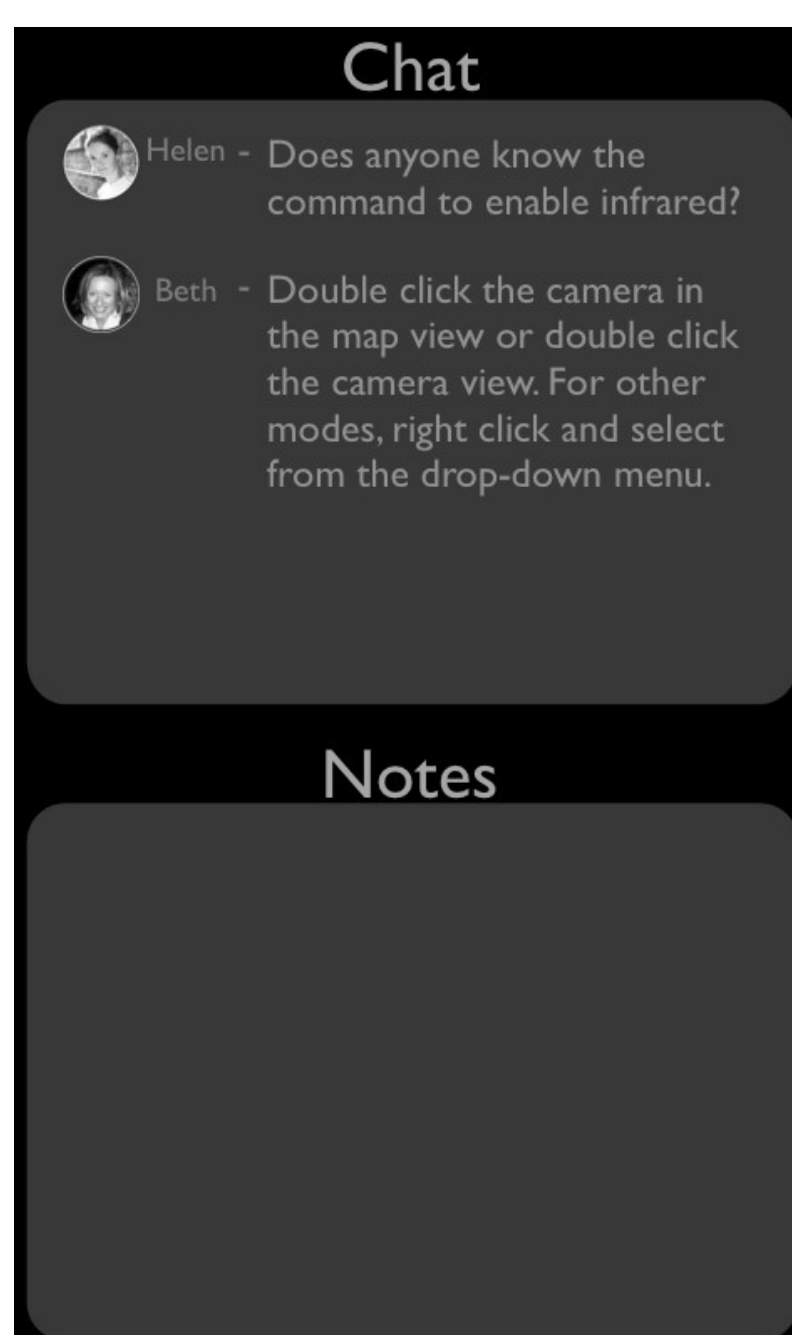
- Integrated note taking abilities remove the need for a separate pen and paper, reducing physical stress.
- Chat identifiers in the form of pictures and names, increase transparency within the JSAS team.

Aide pattern detection:

- By presenting alarm data over time the user can detect and subsequently predict any patterns therein.
- Sparkline graphs provide the operator with a quick reference for relational data over the past 24 hours.

Reduced response times:

- UI's tailored for each specific task allows the SCP operators to filter information, and the JDOC operators to act on that filtered information.
- Use of color on an otherwise dark background draws attention to alerts, reducing the time it takes for the operator to notice an alert.



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