

## AFRL JBI Homeland Incident Response

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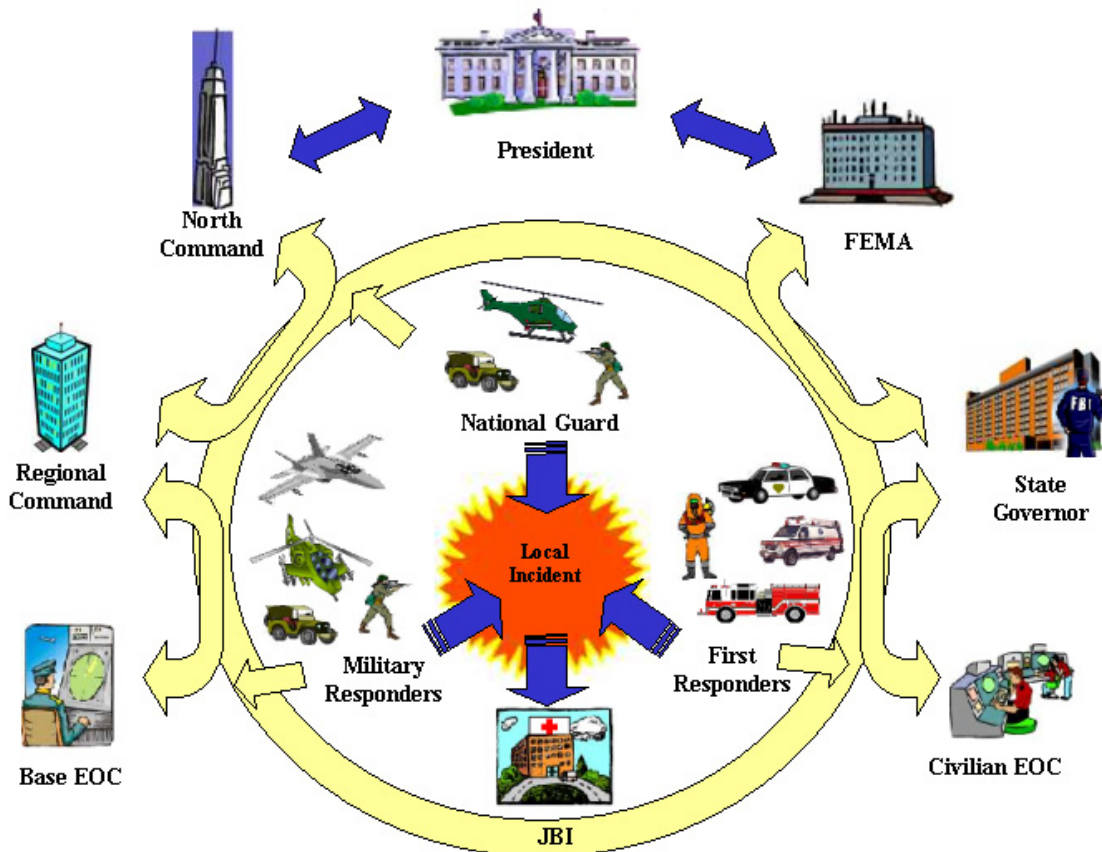
JBI is a Publish-Subscribe middleware infrastructure being developed at the Air Force Research Lab (AFRL). AFRL engaged ASEG to investigate the potential role of a JBI-based set of applications in Homeland Defense. Since Homeland Defense is a very broad topic, ASEG and AFRL agreed that we should identify a particular scenario that would form the basis of our investigation and subsequent Use Case Analysis. After a preliminary analysis, we chose to model an emergency response to a hypothetical attack using a Chemical Weapon of Mass Destruction (e.g., a Nerve Agent).

ASEG then conducted interviews with numerous representatives from civilian and military organizations, primarily in the San Diego area. From these interviews, we learned:

- The role of the military in various Homeland Defense scenarios
- Current procedures for preventing and responding to attacks in the San Diego area
- Existing procedures for involving the military in joint operations with civilian organizations in Homeland Defense scenarios
- Areas in Homeland Incident Response that could be improved upon by employing JBI-based applications

During our interviews, several of the first response groups identified improvements that could be made in the area of data communication. These comments led ASEG to document a JBI-based approach that supports the following capabilities:

- Communication flow across all echelons of command, from the first responders all the way up to the President of the United States (as shown in the figure on the next page)
- Allows personnel on-the-scene will be able to add, edit, view, and store emergency messages flowing through the data network
- Allows a local-response official to tap into expert assistance throughout the country, which offers the potential to greatly enhance the quality of a response in specialized rare incidents such as attacks using Weapons of Mass Destruction
- Distributes video feeds from the incident scene to both display real-time information in command centers and tag this information for later distribution and analysis



The results of this analysis included

- A Model Description of the Incident Response, including a Scenario Workflow
- A UML-based Operational Process Model diagram
- Descriptions of Entities (Actors) involved in the Incident Response
- Identification of Information Object Types that represent messages flowing through the JBI system in this scenario
- Client applications that would be used by the entities and the functionality that these clients should support
- Identification of Fuselets that can be incorporated into the JBI environment to process Information Objects related to Incident Response

For more information, please contact **ASEG Inc.** at (858) 550-0500 or [www.aseg.com](http://www.aseg.com).