Use Case Document –Emergency Response for Situational Awareness– V1.0

Kerala State Disaster Management using IBM Intelligent Operations Center

Presented by:

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1. Introduction to User Story

This user story talks about providing analysis and managing response activities for Situational Awareness of any emergency situation by leveraging the capabilities of situational awareness tool.

This section of the documents explains the requirement of the user story and what we are trying to achieve from this user story. Below are the details of the user story:

Sno.	What is required?	Why is it required?
1.	See on Geo Map the assets and resources available in an area	We can 1. Monitor the area for any emergency response 2. Keep track of surrounding assets around any affected area due to disaster 3. Deploy emergency response team to the affected area
2.	Be able to get the data of any disasters occurred in the past 1. Data coming from database	We can 1. Get appropriate data of all the disaster events 2. Plan for future response actions at the time of any disaster event
3.	Be able to get best routes from one place to other for quick response	We can 1. Intimate appropriate departments and officers to take necessary routes 2. Make the response team ready for the rescue operations 3. Aware the public to take safety precautions on roads
4.	See on Geo Map the assets available around the affected areas. For example 1. Colleges/schools 2. Police Stations 3. Hospitals 4.Bus Stations	We can 1. Rehabilitate public to a safe location 2. People who needs medical attention can be sent to nearest hospitals 3. Availability of beds, Occupancy of Schools, Colleges and other assets etc can be determined
5.	Get historic data of any disaster event occurred in the past	We can 1. Get the historical data of disaster event for evaluation 2. Analyze the data for determining the priority areas of interest

2. Objective and Understanding of User Story

The key objective of this user story is to assist and analyze any disaster and provide awareness of assets and resources present in an area with actionable intelligence which will aid in taking proactive steps for the management of disaster events with smart decision making and quick response to the event.

The main objective in implementing this user story aims to address the following:

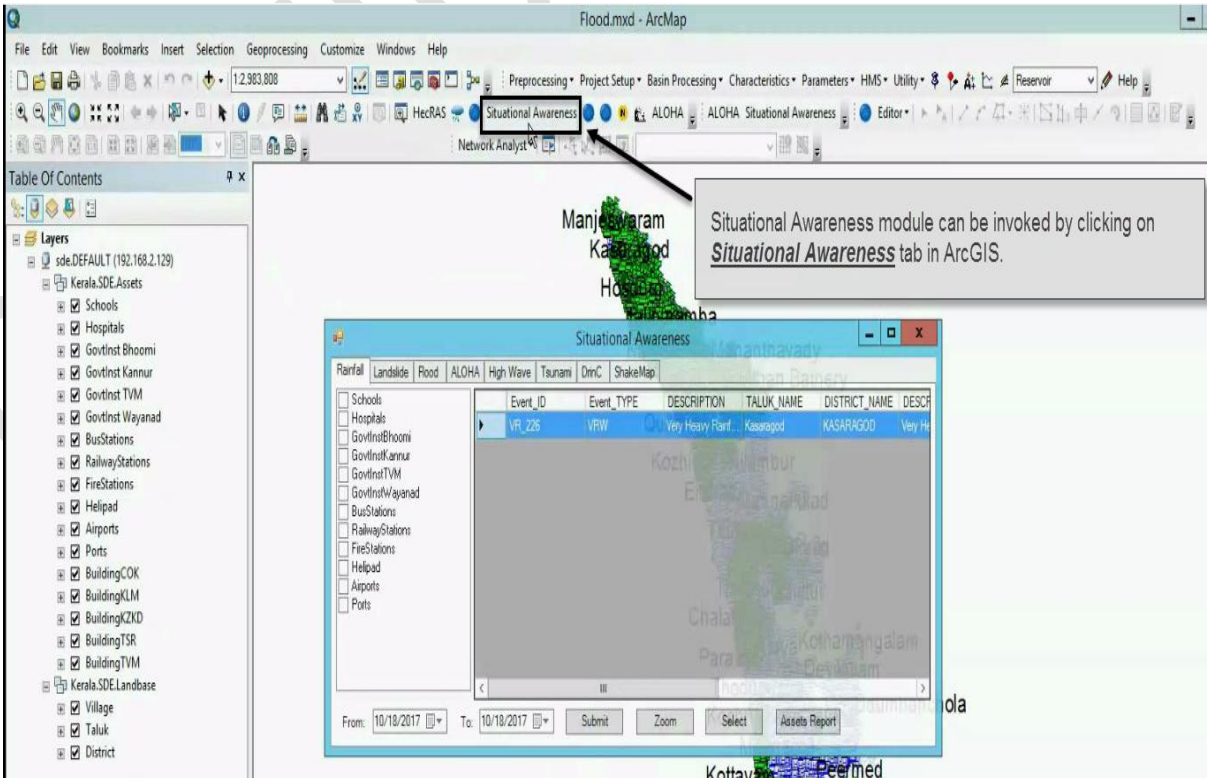
- Effective utilization of available nearby resources like schools, hospitals, police stations, bus stations etc.
- To include response action for faster operations.
- To continuously monitor the status of the Situational Awareness and take necessary actions or dispatch required amenities and resources effectively.
- Improve overall safety and security measures.
- Decrease the number of human loss and loss to the state and improve the quality of living.
- Enable strategy for data sharing within different departments of the state.

3. *Proposed solution to User story*

By following the best practices and leveraging IBM IOC, will meet the requirements stated in the user story by building solution using IBM IOC and the high level use case that is required for operator to monitor, manage and provide various functionality to manage any event as well as gives quick response mechanism for emergency situations occurred at the time of disaster.

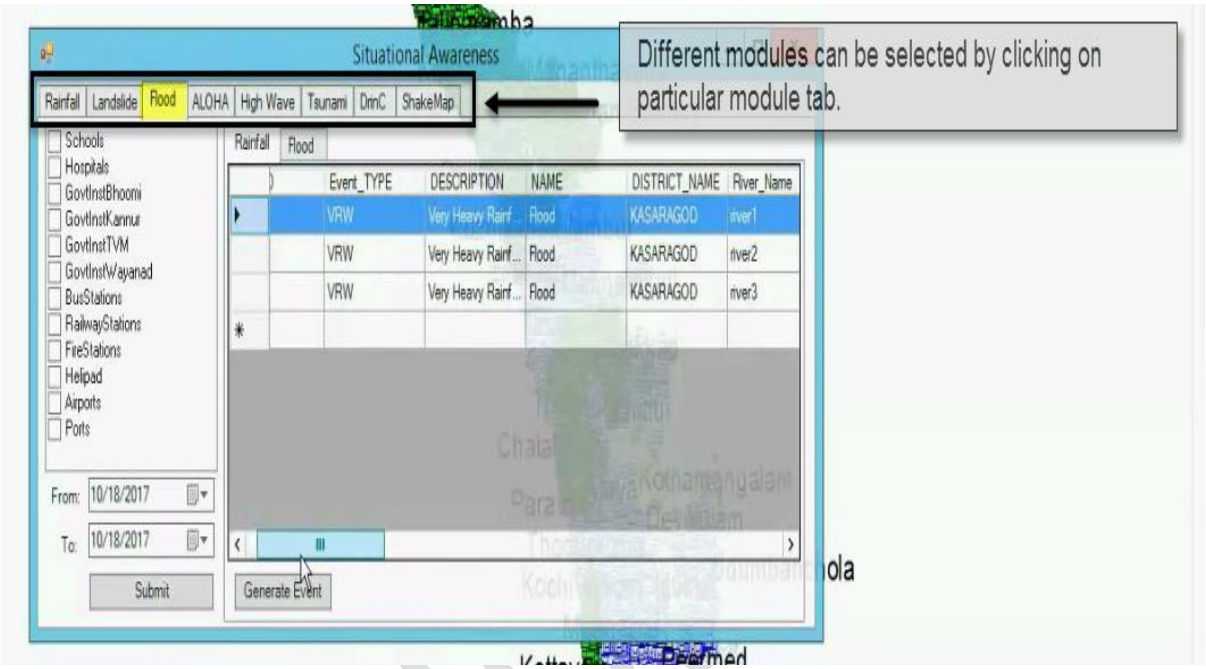
STEP 1: Invoking Situational Awareness Tool:

- ✓ Situational Awareness Tool can be invoked by clicking on Situational Awareness tab in ArcGIS Desktop application.



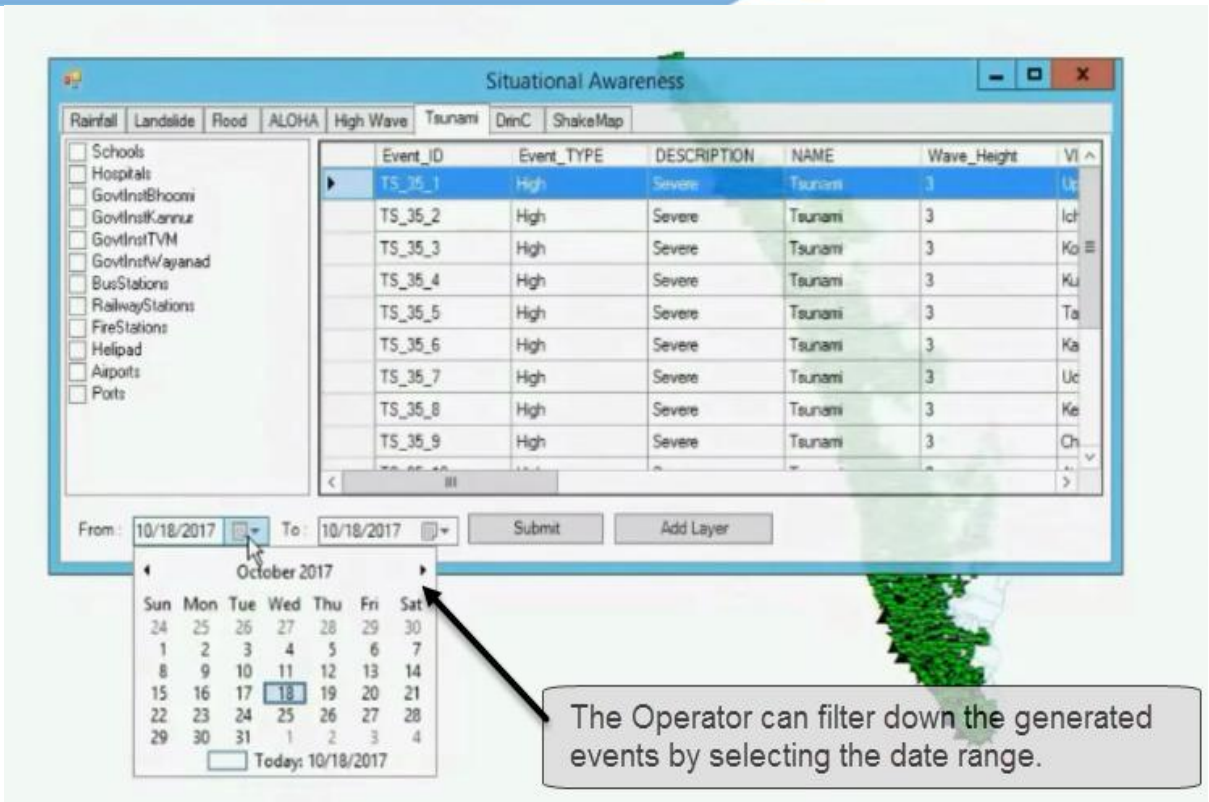
STEP 2: Select particular module:

The Operator can select required module by clicking on the given tabs for multiple modules.



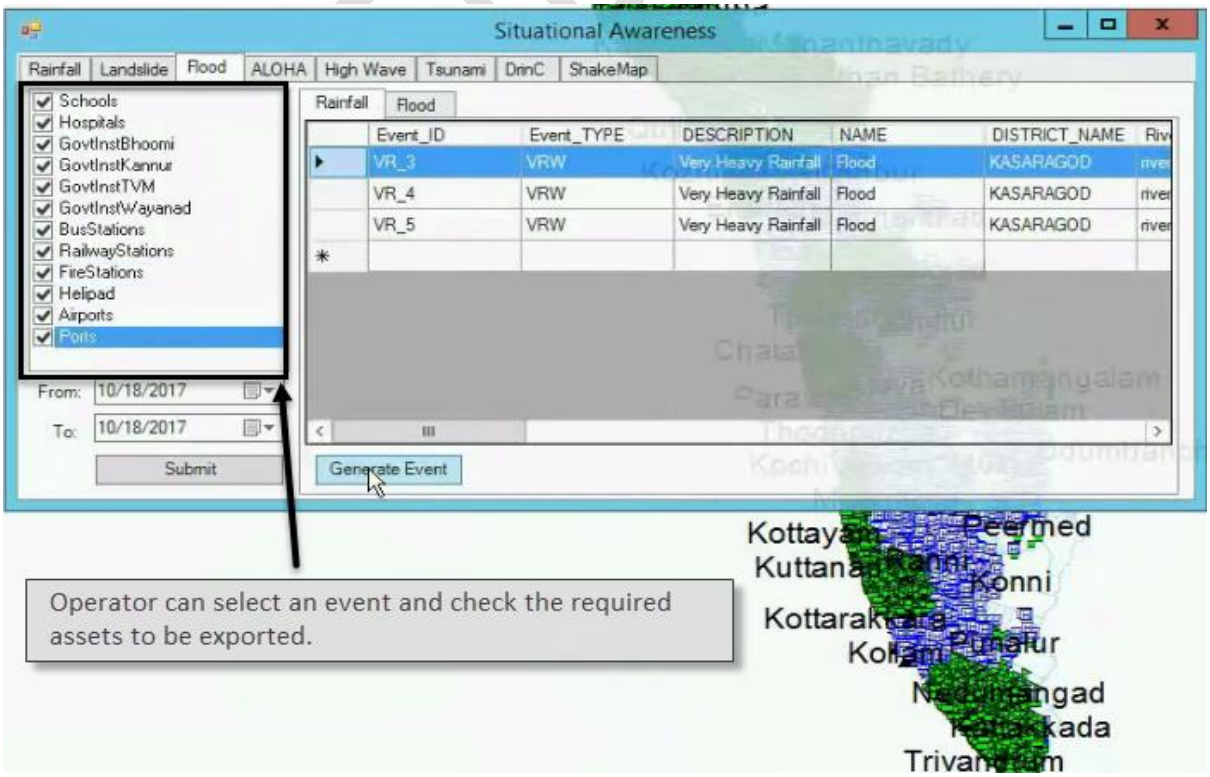
STEP 3: To filter down date:

- ✓ The operator can further filter down the events by selecting the date range.



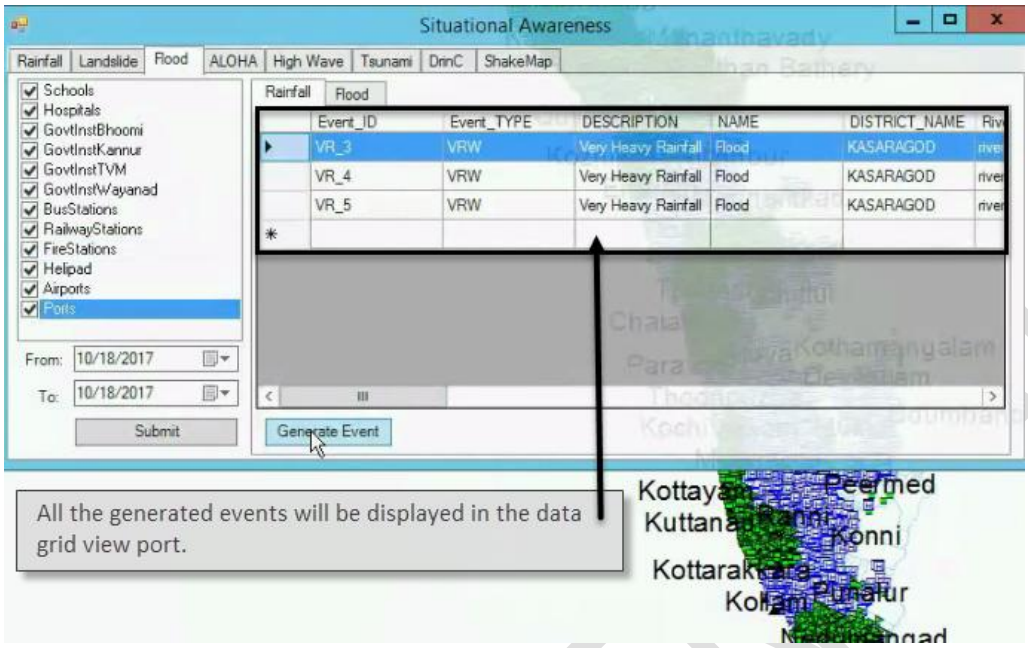
STEP 4:To get the required assets:

- ✓ Operator can see then select required assets to be exported.



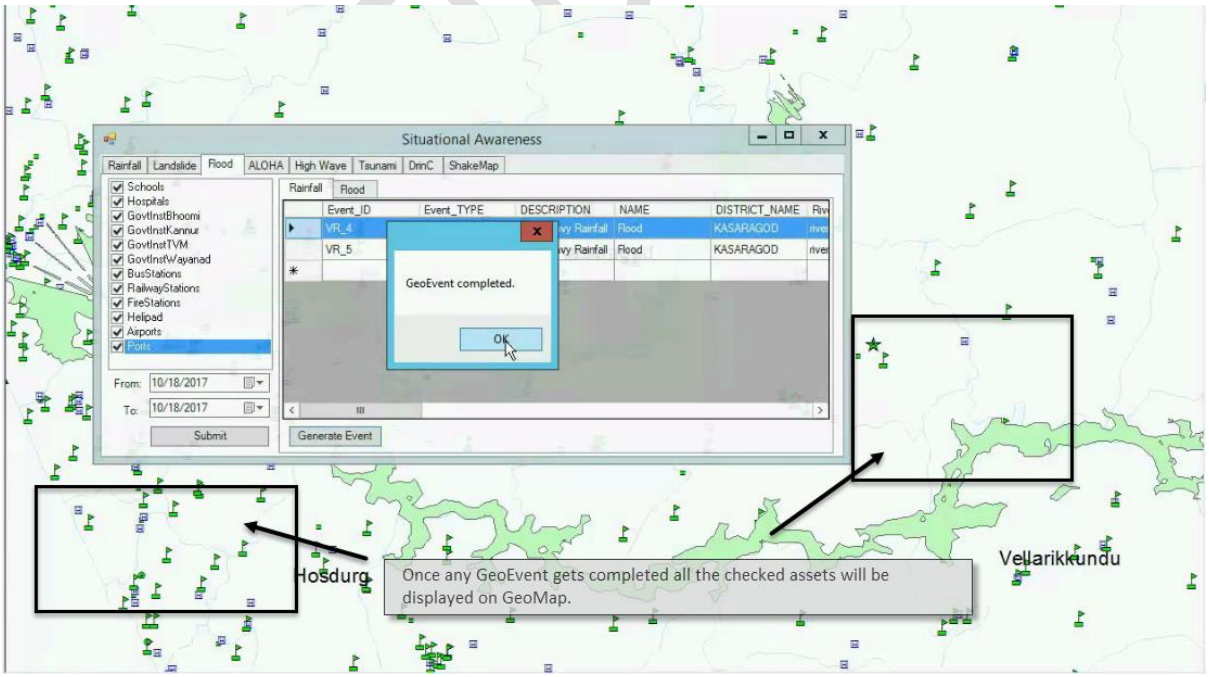
STEP 5: To get the full details of the event:

- ✓ Operator can then check all the details of the event on data view grid wherein he can get get information about the event like event type, description, location, references etc.



STEP 6: To check assets in event zone:

- ✓ Operator can then check assets in event zone to make fast and reliable decision and provides necessary steps to be carried out.



Solution will provide integrated data visualization, real-time collaboration, and deep analytics that can help leaders prepare for problems before they arise and to coordinate and manage problems as they occur, to improve the efficiency of operations.
Solution delivers the following major functions:

- Visual workspace
- Events and incident management
- Resource, response, and activity management
- Status monitoring
- Collaboration, instant notification, and messaging
- Reports
- Semantic model
- Preventive mechanism

This solution makes supervision and coordination of complex sub-systems more effective. The solution helps you evaluate the effectiveness of the decisions and applied procedures and make improvements. The solution helps to:

- Handle events and alerts, in both emergencies and non-emergencies.
- Organize response teams, enabling fast and clear communications between team members.
- Define and provide standard operating procedures for handling the different situations that arise, with the correct assignments, which are based on legal requirements or historical experience.
- Track the progress of the performance of those procedures, including the results of the actions.
- Locate resources with the required capabilities to handle the events.
- Enable the continuous improvement of the organization's services and responses.

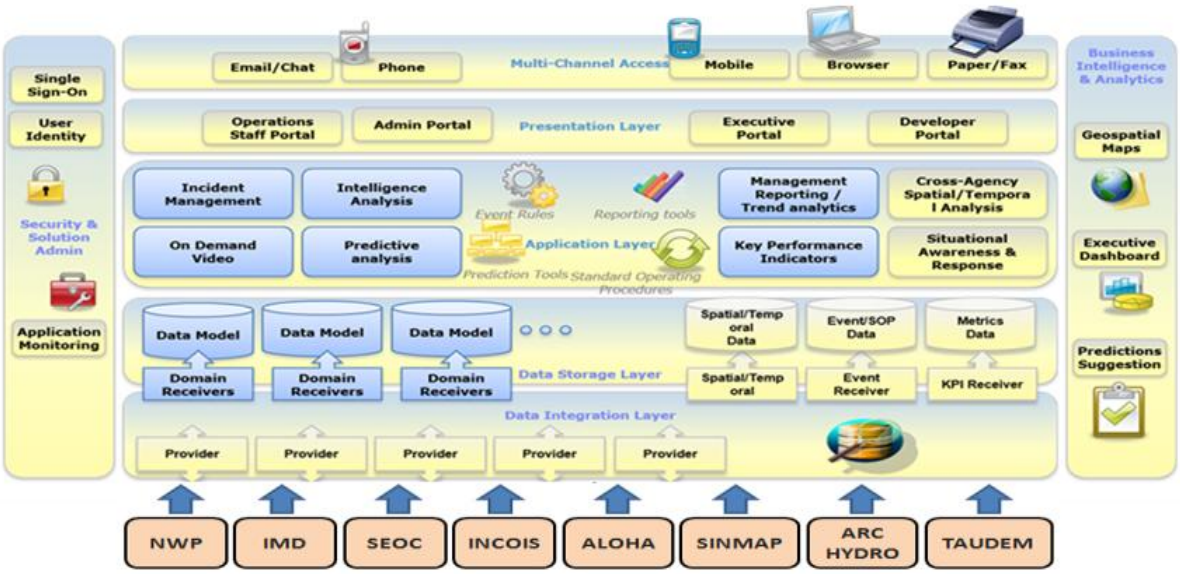
4. Solution Features, Functions and typical use case description

The following steps describe typical flows through the IBM Intelligent Operations Center solution infrastructure:

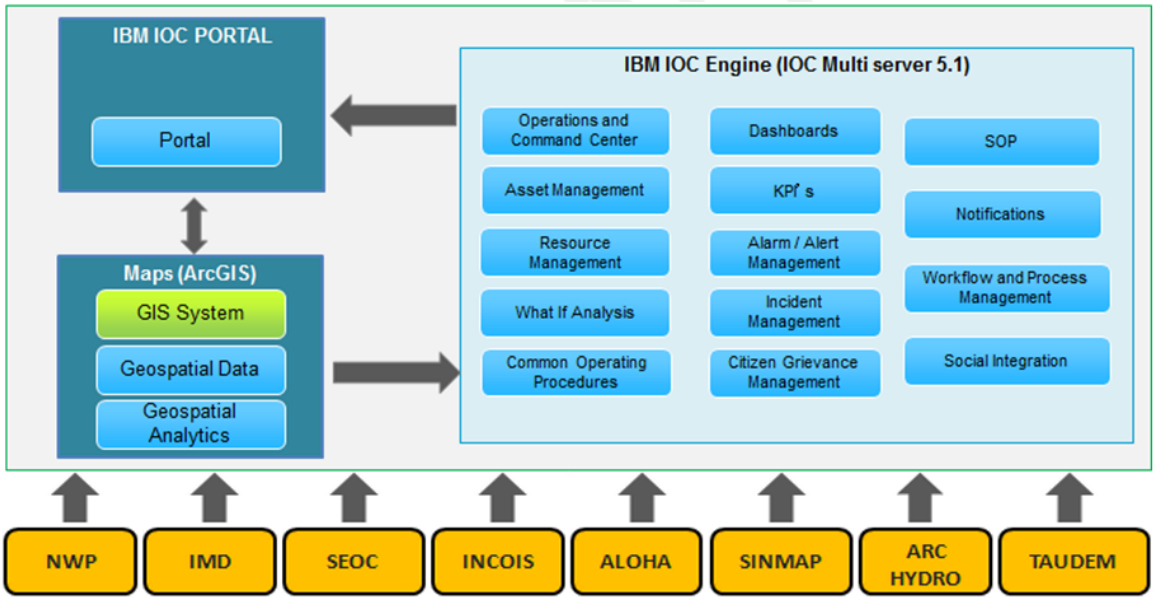
If IBM Intelligent Operations Center receives an event, it performs several actions to mediate or manage the event. Some of the actions include:

- Display the event as an item in the event list.
- Add an entry in the geospatial database and show the event location on the Map on the operator dashboard.
- Check the characteristics of the event against the SOP matrix, which maps event characteristics to specific procedures.
- If the event matches one of the defined SOPs, a new standard operating procedure workflow is initiated and is visible in the IBM Intelligent Operations Center portal My Activities window.
- Correlate events that are received within a specified time and location. For example, trigger a notification whenever two or more events happen within a specific period of time.
- Check the resources and capabilities database, link the event to the appropriate resource, and display the information in the user interface.

5. Solution Architecture



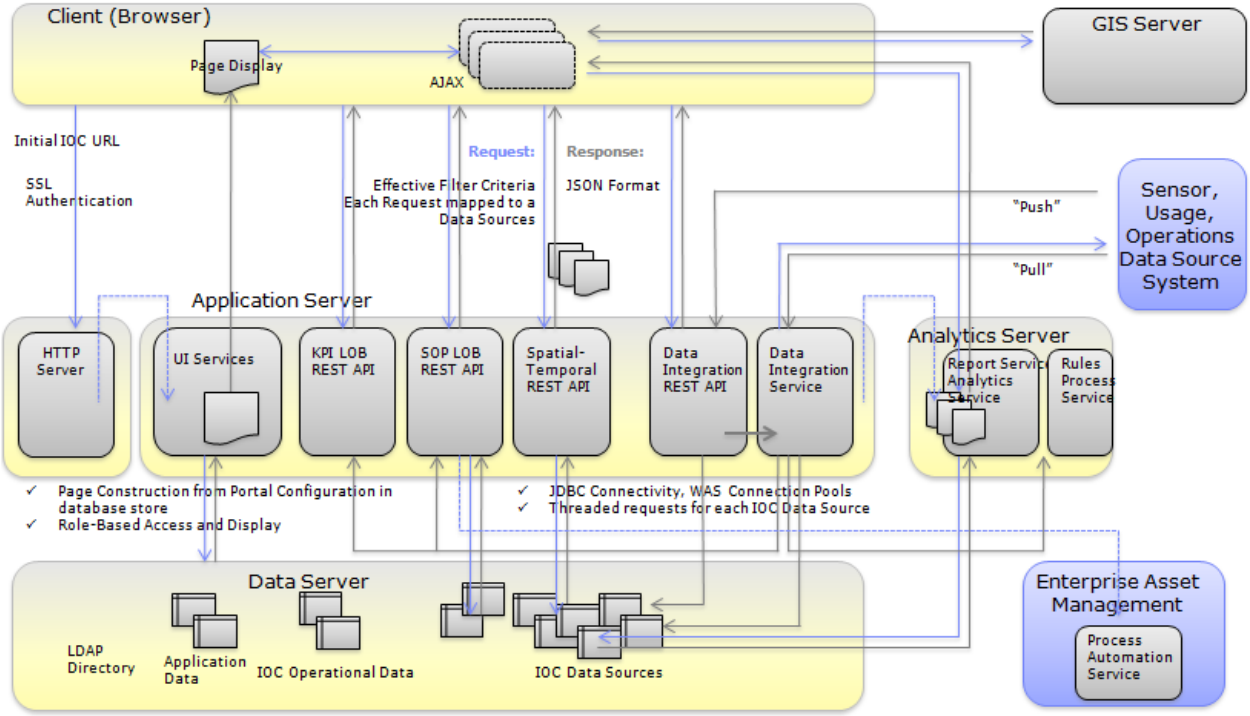
6. Integration Architecture and Approach



Integration approach to this user story is as follows.

1. REST Service based Integration: Alerts / data can be pushed from the subsystem using REST Services exposed by IOC

7. THE IOC 5.1 REQUEST/RESPONSE FLOW ARCHITECTURE



8. Conclusion:

Using this approach, we are able to achieve the following:

- Verifying the details of the any disaster event data if there is any event generated in the past.
- Monitoring for emergency situation and providing quick response to the situation.
- Utilization of state resources and assets in an efficient way at the time of disaster.
- Analyzing the disaster events and giving an insight to emphasize on events which needed to be taken care of.