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Disaster Response Platform: A Unified Web-Based Platform for Real-Time Disaster Coordination

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Abstract - *Natural disasters have been a significant concern to the affected communities. This is because they interfere with the lives of the people and restrict the channels to which they have access for relief. The available systems on disaster management function in silos, leading to disjointed communication and delayed reporting [1] [2] [6], thereby causing a situation of mis-coordination among victims, NGOs, and authorities. This paper presents ResQHub, a web-based disaster relief and resource management system designed to connect citizens, volunteers, NGOs, and authorities on a unified platform. The system enables users to report incidents with location details, after which automated notifications are sent to concerned authorities. Administrators can assign rescue teams, while NGOs update the status of resource distribution, such as food, medicine, and shelter. Built using the MERN stack (MongoDB, Express.js, React, Node.js) [20], ResQHub implements a novel four-stage validation pipeline called SCSDA-DM (Semantic Crisis Similarity & Disaster Assessment - Disaster Module) to ensure report authenticity and prioritization [5][18]. A context-aware information retrieval system [15] enhances decision-making by providing relevant historical and environmental data. It provides real-time insights to victims through specific dashboards, enabling them to monitor their requests' status through customized interfaces. Moreover, it ensures smooth flow of communication, thus curtailing delays associated with manual intervention, to make ResQHub disaster response efforts even more effective and well-organized.*

Index Terms: **Disaster Response, Incident Reporting, Resource Allocation, Coordination of Emergencies, Real-time Dashboard, Rescue Team Allocation, Cooperation between NGOs, Crisis Response, SCSDA-DM Validation Pipeline**

1. INTRODUCTION

Natural and man-made disasters still pose a threat in their effects not only in the community but in regard to the lives of humans as well. The rising occurrence of floods, earthquakes, landslides, industrial disasters, and fire disasters has made one realize the susceptibility of the human population in the world. Many disasters can be attributed to population growth, unplanned development, rapid urbanization, and climate change [1]. Millions of people are impacted annually by delayed communication, a lack of preparation, and ineffective coordination [1] [3] among relief authorities, according to reports from international disaster agencies [2] [8]. These findings highlight the necessity of a more structured and successful approach to disaster management.

1.1 Challenges in Current Disaster Management Systems

Traditional disaster response strategies are largely dependent on offline reporting systems or the use of telephonic communication or physical meetings with the authorities. In actuality, victims face a challenge while getting the most basic communication from the relevant entity concerning the disaster specifics, such as the level of severity of the incident or their exact position. It becomes difficult for governments and non-governmental institutions to immediately provide assistance since they receive information in bits [6] [8].

Current systems have a number of serious drawbacks:

1. **Fragmented Communication:** It becomes difficult to achieve unified situational awareness because of reports coming from scattered sources (Helplines, Social Media, and Offline Grievances) [6] [7].
2. **Manual Verification Delays:** In fast-disaster situations, the decision-making process gets delayed by paper-based methods [6] [13].
3. **Uncoordinated Activities:** There are gaps in rescue efforts, owing to the fact that different agencies employ different data platforms [8].
4. **Lack of Resource Visibility:** The authorities cannot track the availability of the resources and the help being provided to the affected areas [9] [16].
5. **Victim Information Gap:** Due to a lack of information, victims are uninformed about the status of their rescue, and this leads to anxiety, with repeated reporting [7] [10].

1.2 Motivation and Contribution

Real events, like the collapse of the Uttarkashi Tunnel in 2025 [2] [13], draw to a unified digital platform [20] that will help speed up the process and integrate relief

efforts. The absence of such an integrated mechanism is further causing delay, fragmented communication, and hurdles in integrating relief efforts.
This paper presents ResQHub, a holistic web-based disaster management platform that addresses these limitations through:

1. A single reporting interface for the stakeholders.
2. A new four-stage validation pipeline, called SCSDA-DM, for report verification and prioritization.
3. Context-aware information retrieval to aid better Decision-making.
4. Real-time Dashboards for victims, NGOs, responders, and administrators.
5. Structuring the work processes for assigning the teams and coordinating resources.
6. Complete case tracking with automated status updates.

The rest of the paper is organized as follows: Section II discusses the related work available for the area of disaster management system design, Section III discusses the system architecture and design, Section IV covers the methodology and the proposed SCSDA-DM pipeline, Section V discusses the implementation, and finally Section VI offers a result discussion and future improvements.

2. Related Work

Disaster management systems have witnessed a remarkable evolution throughout the last ten years, and different techniques are applied to different aspects of coordination during emergencies.

2.1 Existing Disaster Management Platforms

Several solutions have been created to facilitate the operations involved in disaster response. The Disaster Response Reporting Platform created by the National Disaster Management Authority (NDMA) has a central reporting system along with guidelines issued by the government, although it is plagued by manual reporting and update issues [2]. Google's Crisis Map has an excellent mapping facility, but it is devoid of case reporting functionality [4].

Sahana Disaster Management System: It is an integrated system with resource management as well as volunteer management. However, it does not have effective coordination processes, and it even lacks processes to update victim status [5]. The Global Disaster Alert and Coordination System (GDACS) have world-wide alert and natural hazard alerts. However, it lacks processes to report incidents involving cases in particular areas, which enable users to track cases [1].

2.2 Communication and Coordination Research

Unverified reports by citizens, as well as the issue of disseminated communication channels, were raised by Palen et al. [6]. This paper mainly focuses on the importance of report verification procedures for noise removal and the filtration of actual reports. Inaccurate reporting by the victims, which causes confusion, has been discussed by Kaur et al. [7].

In a related development, coordination failure studies carried out by Mehta & Zhao in [8] established that there are considerable delays in disaster relief efforts due to this type of failure in the involved agencies. They cited the fact that the absence of a shared dashboard inhibits simultaneous activities between the police, hospitals, firefighting units, and NGOs.

2.3 Resource Management and Logistics

Alonso et al. [9] addressed the issues of delays in resource distribution in humanitarian logistics. This study indicates that if there is resource visibility in real time and resource allocation based on location can provide beneficial assistance to the affected population. World Health Organization [10] focused on social vulnerabilities whereby the aged and distressed persons struggle with complex reporting systems.

2.4 Technology-Driven Approaches

There has been recent progress in the area of web technology and real-time systems that have made it possible to have responsive systems for managing disaster situations. Roy and Fernandes [11] worked on implementing deep learning concepts in communication systems during emergency situations, whereas Hassan [12] focused on the concept of real-time images for the detection of disaster severity.

2.5 Research Gaps

Results of our analysis show some major weaknesses of current solutions:

- Lack of available organized and normalized report templates
- Not real-time status is available regarding the victims
- Lack of ability to coordinate among stakeholders
- Limited resource visibility and resource management capabilities
- Accessibility problems faced by the vulnerable groups
- No validation processes regarding the authenticity of the integrated report [6] [8] [9] [10]

3. System Architecture and Design

We propose Validated AI Learning Theory (VALT), synthesizing four established learning theories for AI-enhanced education [2, 18].

3.1 Overview

ResQHub is based on a layered architecture, which breaks down the system into distinct components of the platform. This allows the platform to be stable, secure, and have efficient interaction between the front-end, back-end, and database layers. The system uses a modularity approach in design philosophy.

3.2 Architectural Layers

The ResQHub architecture consists of six primary layers:

1. **Frontend Layer:** The front-end presentation layer is built with React.js and powered by Tailwind CSS, assisting in creating a responsive & intuitive interface. The primary functionalities are:
    - role-based dashboards for victims, non-governmental organizations, response teams
    - GPS-enabled incident reporting forms
    - Real-time tracking status interfaces
    - Interactive Map Visualization
    - Mobile-responsive design for field accessibility
2. **API Layer:** The API layer is an interface bridge that enables communication between frontend components and backend services. The API layer contains:
    - REST full API endpoints for all operations
    - JWT-based authentication middleware
    - Request validation and sanitization
    - Rate limiting and security controls
    - Error handling
3. **Backend Logic Layer:** Developed using Node.js with the Express.js framework, the Backend Layer handles the fundamental logic of the business:
    - Report validation of incidents
    - Rescue team assignment algorithms
    - Resource Allocation Workflows
    - Status update propagation
    - Role-based access control (RBAC)
    - Notification generation and dispatch
4. **Data Persistence Layer:** Mongo DB with Mongoose ODM is providing the infrastructure for:
    - Adaptable schema design for incident reports
    - Effective indexing for location queries
    - User information & authentication information storage
    - Resource inventory management
    - Case history and audit trails
5. **Infrastructure Layer:** This is responsible for ensuring the availability and performance:
    - Frontend deployment using Net lify
    - Backend hosting on Render
    - Cloud Storage for Media Files
    - Content delivery optimization
    - Basic horizontal scaling support
6. **Security Layer:** Security systems ensure the safety of the platform and the users' information:
    - Secured through JWT
    - Bcrypt password hashing
    - Role-based permission enforcement
    - Input validation and sanitization
    - Session security management

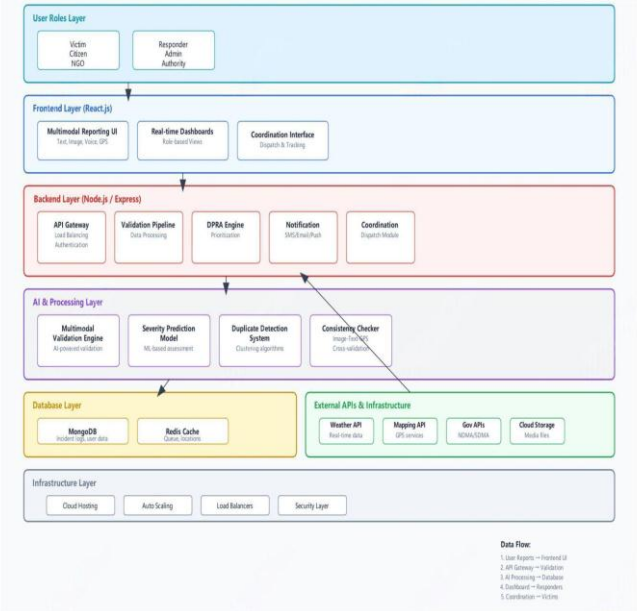


Fig – 1. System Architecture of ResQHub

The diagram shows interaction between users, the React Frontend, Node.js/Express backend, MongoDB database, Authentication module, and Dashboards for victims, NGOs, and Authorities.

3.3 Data Flow Architecture

It also uses a structured data flow process from incident notification to close:

1. **Incident Reporting:** Incidents can be submitted via the web interface through text descriptions, images, and GPS location details.
2. **Validation Pipeline:** The reports are submitted to the four-step validation pipeline in SCSDA-DM.

3. **Case Assignment:** Validated cases are assigned to the relevant authorities through the admin dashboards.
4. **Team Dispatch:** The dispatch of available team members according to their location.
5. **Status Updates:** Case statuses (accepted, on the way, finished) are updated in real time.
6. **Resource Coordination:** NGOs update resource availability and distribution status.
7. **Victim Tracking:** Victims can track the progress of the case through their own personalized dashboards.

3.4 Technology Stack

ResQHub uses the latest in web technologies that can be quite appropriate for emergency response:

Table – 1: Technology Stack of ResQHub

Category	Technology	Purpose
Frontend	React.js, React Router, Tailwind CSS	User interface development; building role-based dashboards; providing for easy and smooth navigation, responsive design.
Backend	Node.js, Express.js, Multer	REST API creation, routing, report handling
Database	MongoDB, Mongoose	Storing incident reports, user data, NGO resources, and case updates
Authentication	JWT (JSON Web Tokens), bcrypt	Secure login and role-based access.
External Services	Cloud Hosting (Netlify, Render)	Deployment
DevOps & Tools	Git, GitHub, Postman, dotenv	Version control, API testing, environmental configuration

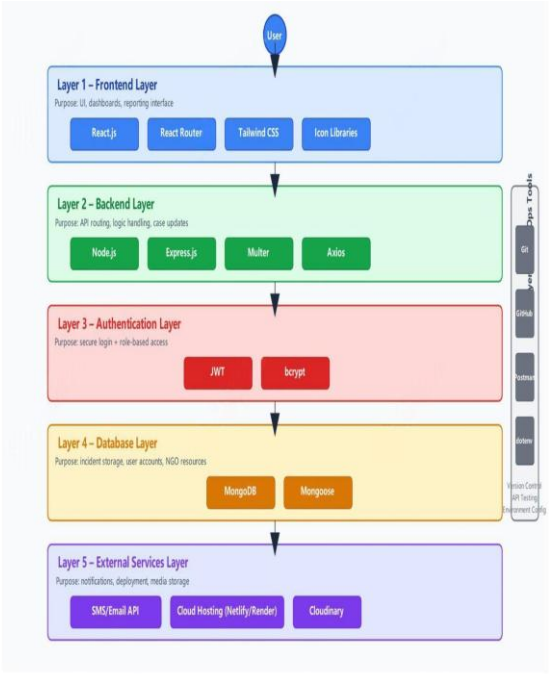


Fig – 2. Layered Architectural Model

This describes the multi-layer composition of the ResQHub system architecture, detailing how the request from the user navigates through the set of the system's frontend, backend, and database layers. The layered architectural model delineates the system's secure authentication mechanism, well-organized data path, role-based dashboards, and the secure storage of data for real-time disaster reporting.

4. Methodology

4.1 SCSDA-DM: Four-Stage Validation Pipeline

The Semantic Crisis Similarity & Disaster Assessment Disaster Module (SCSDA-DM) proposes a completely novel validation mechanism for testing and prioritizing the influx of disaster notifications for validation and arranging their priority for the rescue teams to deal with.

1. **Stage 1: Basic Authenticity and Completeness Validation**
   All disaster reports submitted for rescue action validation are first passed through a primary check for basic authenticity and completeness concerning the following:
   - Verification of GPS coordinates and/or location information
   - Assessment of description clarity and completeness
   - Image quality and relevance validation
   - Determination of missing critical fields
   - Preliminary duplicate detection

   Reports with missing information are identified as

Requiring correction by the user through automated messages. This stage helps eliminate noise and enable the respondents to have relevant information only [6].

2. Stage 2: Contextual & Environmental Consistency Review

Validated reports are compared against such contextual factors that:

- Historical incident patterns in the reported location
  Location close to known attractions and Infrastructure
- Compatibility with the prevailing environmental conditions
- Cross-refer to recent parallel cases
- Geographic feasibility study

Reports with discrepancies that are context-dependent proceed to the revivification cycle, where potentially further inputs from the user or field validation could be required [1] [13] .

3. Stage 3: Severity Assessment & Risk Identification

system analyzes the severity of an incident by based on a variety of factors, including:

- Description analysis for urgency indicators
- Location Risk Assessment-flood areas, high traffic areas
- Analysis of visual evidence from uploaded images
- Reported victim conditions and injuries
- Time sensitivity assessment

Each case is identified with a severity level initially, that is, low, moderate, and high.

The Severity Score is $S = w1 \cdot D + w2 \cdot L + w3 \cdot T + w4 \cdot I$

Where:

D = Description urgency indicator
L = Location risk factor
T = Time sensitivity
I = Image or evidence availability
w1…w4 = predefined weights

4. Stage 4: Prioritized Output Generation

Validated and categorized incidents are converted into structured case entries:

- Generation of standardized incident cards
- Severity Level Highlighting for Dashboard Visualization
- Creating map markers with location view
- Role-specific information formatting
- Assigning to appropriate responder queues

The slides are dynamic, adjusting according to the user role (NGO, Responder, or Authority) to ensure that important information reaches them.

5. Stage 5: Feedback & Re-Validation Loop

Reports that don't pass a validation stage aren't deleted but go into a feedback loop:

- Automated prompting to the user for more information
- Manual review queue for edge cases
- Field verification assignment when necessary
- Refine by iteration until validation requirements are met

This will reduce the chances of any important information being lost, thus increasing the quality of data collection.

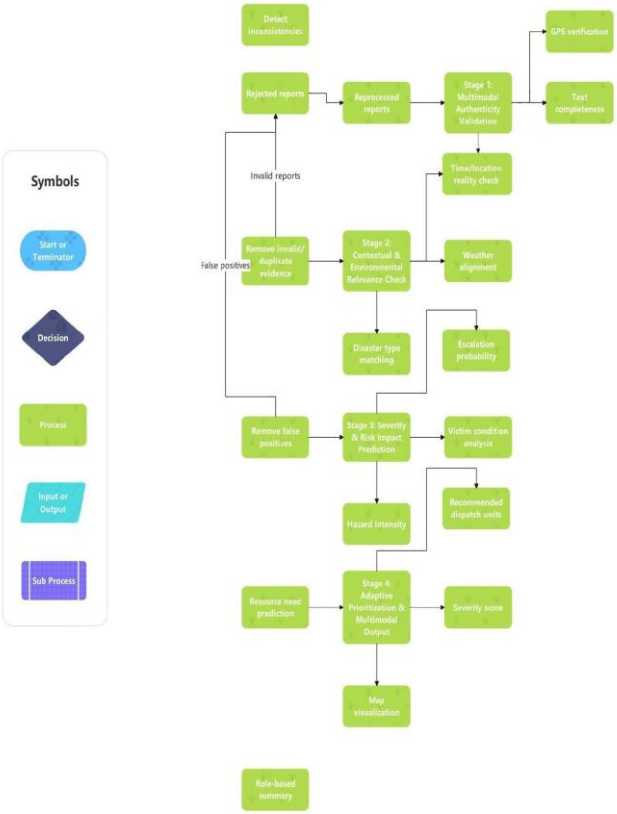


Fig – 3. SCSDA-DM Four-Stage Validation Pipeline

This pipeline includes authenticity, contextual validation, severity assessment, and prioritized output generation. Reports failing at any of the above stages will be routed to

a re-validation feedback loop for improving the accuracy and reliability.

4.2 Contexts-Aware Information Retrieval Pipeline

ResQHub uses a six-level context-aware system for enhancing the quality of the decision-making process by using a structured approach for information retrieval and validation[11] [15] [18].

1. **Stage 1: Input Understanding and Processing**

   This system recognizes the necessary details from reported reports:
   - Text descriptions natural language processing
   - Coordinate extraction and normalization
   - Image metadata analysis
   - Incident category classification
   - Timestamp and urgency indicator detection

2. **Stage 2: Context Retrieval from Internal Databases**

   Relevant information is drawn upon:
   - Historical incident records in proximity
   - Available NGO resources near the location
   - Current roles and responders' accessibility
   - Local infrastructure and landmark data
   - Previous response patterns and outcomes

3. **Stage 3: Context Ranking and Filtering**

   The searched information is processed for its relevance.
   - Temporal relevance scoring (recent vs. outdated)
   - Spatial Relevance based on Proximity
   - Similarity matching with current incident
   - Evaluation of operational utility
   - Filtering of irrelevant or stale data

4. **Stage 4: The system generates well-structured summaries of the global situation**

   - Description of incident with confirmed location
   - Relevant historical context and patterns
   - Contingent capacities in the surrounding regions
   - Recommended response actions
   - Risk Assessment, Considerations

5. **Stage 5: Data Updating and Continuous Improvement**

   The knowledge base constantly alters due to:
   - Automatic recording of the resolution of newly filed incidents
   - Resource status updates from NGO inputs
   - Responder Location Tracking Integration
   - Documentation of case outcome
   - Pattern recognition for better predictions

6. **Stage 6: Feedback and Correction Loop**

   Continuous refinement techniques add precision:
   - Collection of Response Feedback for Recommendations
   - Analysis of Incident Outcomes and Learning
   - Use-Dependent Identification of the Relevant Context in general
   - Workflows for error detection and correction
   - System optimization that is progressive

4.3 Development Methodology

ResQHub follows the Agile development process, which comprises four stages:

Phase 1 - Core System: User Authentication Facility, Dashboard that is dependent on Roles of User, Basic Incident Report System, User can see his/her cases as well as their status.

Phase 2 - Coordination Upgrade: Status updates in real-time, task assignments, coordination in authority for NGOs, and notification automation.

Phase 3 - Communication & Workflow: Advanced responder tools, volunteer management, direct communication systems, and integrated alert systems.

Phase 4 - Deployment & Optimization: The cloud deployment, optimization, and responsiveness, in addition to enabling similar functionalities, allow for complex business to backup solutions.

5. Implementation

5.1 Core Modules

ResQHub has eight primary modules based on its functions:

1. **Emergency Reporting Module:** Facilitates the process of reporting incidents [7] [10].
   - Text Description with Structured Fields
   - Feature of image uploading with compression

- Automatic capture of GPS coordinates
- Mobile responsiveness and design
- Offline functionality for synchronization of queues

2. **Verification & Case Handling Module:**

   Implements verification pipeline according to SCSDA-DM:
   - Verifying algorithms for basic authenticity and completeness
   - Duplicate detection via similarity matching
   - Validation and normalization of the location
   - Automated routing to relevant authorities
   - Quality assurance systems

3. **Responder Dashboard Module:**

   It allows Coordination by the field team:
   - Assigned case queue display
   - Interactive map with navigation aid
   - Real-time status update interface
   - Case completion workflow
   - Communication with victims and authorities

4. **NGO Resource Management Module:**

   Helps in relief coordination:
   - Resource inventory management
   - Availability status updates
   - Request response by authorities
   - Distribution tracking
   - Supply coordination workflows

5. **Real-Time Coordination Dashboard:**

   This is asituational awareness tool for authorities:
   - Active case overview with live updates
   - Map case display
   - Responder position tracking
   - Resource availability monitoring
   - Team assignment interface

6. **Authentication & User Management:**

   Secure Access Control:
   - JWT-based Stateless
   - Role-Based Access Control
   - bcrypt password hashing
   - Session management
   - User profile management

7. **Geolocation & Mapping Module:**

   This module allows the user to have:
   - Integration with mapping services
   - GPS location detection
   - Responder route computation
   - Affected Areas Cluster Identification
   - Proximity-based resource

8. **User Interface/UX Module:**

   Improves usability during emergencies:
   - Clear and clutter-free
   - High-stress scenario optimization
   - Accessibility functionalitiesfor vulnerable groups of users
   - Mobile-friendly design
   - Intuitive navigation and simple user workflows

5.2 Data Base Schema Design

A database MongoDB collections are organized in the following manner:

Users Collection: It includes authentication and profile data, with a role attribute, such as victim, responder, NGO, admin.

Incidents Collection: This helps in storing information about all the reported cases of incidents with details related to the type of the incident, location in the form of coordinates, severity level, status, and the date and time the information was recorded.

Resources Collection: For collection of information relating to resources managed by non-government organizations, including resource type, quantity, location, and availability status that can help in effective relief coordination.

Assignments Collection: Tracks responder assignments by linking incidents to allocated teams and maintaining status updates throughout the response lifecycle.

5.3 API Endpoints

The ResQHub platform exposes a set of RESTful API endpoints to support authentication, incident management, resource coordination, and responder assignment. Key API endpoints implemented in the system include:

- POST /api/auth/register - Users registration
- POST /api/auth/login - Authentication
- POST /api/incidents/report - Submit new incident
- GET /api/incidents Get cases according to the user's role
- PUT /api/incidents/:id/status - Update Case Status

- POST /api/resources - Adding NGO managed resources
- GET /api/resources/available- Query available supplies
- POST /api/assignments - Assign responder to case

Table – 2: CRUD Operations in ResQHub

Module	Create	Read	Update	Delete
Incident Reports	yes	yes	yes	no
Resources	yes	yes	yes	no
Assignments	yes	yes	yes	no
Users	yes	yes	yes	no

6. Results and Discussions

6.1 System Performance

ResQHub is set up. Given it a try and it seems to yield pretty good results:

In the discussions of Reporting Efficiency, what really catches the eye is the reporting interface. The design of the interface is such that it is user-friendly. This implies that people can actually file their reports quite fast. This normally takes less than 2 minutes. This is a difference from the old way of doing things, which was by calling in the reports over the phone. That method was slow. Often it took 5-10 minutes because people had to keep repeating themselves to make sure everything was clear. With the Reporting Efficiency system, the Reporting Efficiency is much better[6, 7].

The SCSDA-DM pipeline does a job of making sure the reports are complete. It removes those which are not completed and hence it scrubs off many entries. Thus, 60% Now, the duplicate entries are removed. So, the SCSDA-DM pipeline aids the responder in dealing with data from the SCSDA-DM pipeline itself [6] [18].

Coordination Improvement is really important. Role-based dashboards are very helpful because they show everything in one place. This means people do not have to look over for the information they need. It helps teams work together better and faster. Authorities say they have an understanding of what is going on now compared to when they had to deal with lots of different communication channels. Coordination Improvement is related to easier and more efficient implementation. Role-based dashboards allow one to view what needs to be accomplished. They can do it faster. This is very good for teams and for Coordination Improvement [8].

Resource Optimization is really important for Non-Governmental Organizations [9, 16]. When we can see what resources the NGO has it helps us plan how to use them in a way. This means we do not give out the things to the same people again and again. We can also find out where people need help and send resources to those areas. In this way, the NGO resource is utilized in a feasible manner, and we will be sure that everybody gets what they need.

Table – 3: System Performance Summary of ResQHub

Metric	Observation
Avg. report submission time	< 2 minutes
Duplicate report reduction	~ 60%
Dashboard update latency	Near real-time
Resource visibility	Centralized

6.2 Advantages over Existing Systems

Carrying out the comparative analysis of the existing platforms for managing disasters, the following important advantages have been identified in the ResQHub system:

- **Relative to NDMA Portal:** ResQHub ensures live status updates on incident status and provides visibility for victims, which tackles lagging issues due to processing and was a limitation in conventional response systems[2].
- **Compared to Google Crisis Map:** Although Google Crisis Map is primarily geospatial visualization-oriented, it lacks features for case reporting, case tracking, and case collaboration for first responders, NGOs, and the concerned authority on the ResQHub.
- **In Comparison with Sahana Disaster Management System (DMS):** ResQHub provides a well-structured validation process and role-based workflows, ensuring incident management is more accurate and well-coordinated[5].
- **Contrasted with Social Media SOS Reporting:** Unlike traditional social media alerts, SOS alerts provided through the ResQhub system involve structured reporting systems, which prevent loss of important information during the process, as is the case with social media[6].

Table – 4: Comparison with Existing Systems

Platform	Key Features	Limitations	Advantages of ResQHub
NDMA National Portal	Centralized reporting, basic resource information, govt. guidelines	Manual processing, slow updates, limited victim-side tracking	Provides real-time updates, structured reporting, and status tracking for victims
Google Crisis Map	Strong mapping and location visualization	No case-level reporting, no coordination tools	Adds incident reporting, team assignment, and status monitoring
Sahana DMS	Open-source disaster management	Limited coordination workflows, no victim tracking	Offers role-based dashboards and clear workflow between admin, NGOs, and victims
Social Media SOS (WhatsApp, Facebook, X)	Fast informal reporting, widely used by victims	High misinformation, no structure, no verification	Provides structured reporting and prevents loss of information seen on social media

6.3 Limitations and Challenges

Although the success of the existing ResQhub system, some undesirable aspects and issues should be remedied during the future development stages.

Scalability Constraints: The system has scalability constraints when it is operating in large-scale disaster environments. In major disaster cases, thousands of incident reports could be produced at once, causing heavy loads to be imposed on the server, databases, and coordination processes. The current system design still has to be optimized in order to maintain efficiency and stability in major disaster environments [20].

Limited functionality in the absence of the Internet: The ResQHub app has limited functionality when the Internet is not accessible. The app may pose a problem to the users who are affected by a disaster and may want to post a notification or get updates. In the event that this situation occurs within a disaster area that may lack a clear road or recovery pathway, limited functionality may imply a possible postponement of reporting and coordination, considering that the affected area may be remote and badly affected.

AI Integration on Basic Levels: The system is now using rule-based reasoning for analyzing the level of severity and assigning priority. Higher levels of AI, like machine learning for prediction tasks, multimodal inference reasoning, and adaptive models of intelligence learning, have yet to be integrated. Thus, the system's capability for automating improvements based on new patterns in disaster data is being constrained [5, 18].

Lack of Native Mobile Applications: ResQHub is currently a web-based system, which hampers accessibility during field work. Without native mobile applications, the ability to leverage push notifications, background location updating, and offline support is missed. Native mobile apps are required on both Android and iOS platforms to increase accessibility, responsiveness, and usability of the system during dynamic environments of field responders and volunteers [10].

6.4 Future Enhancements

Although the present implementation of the ResQHub is able to provide the basic disaster reporting and coordination functionalities, there are a number of improvements proposed for increasing the intelligence and usability of the system.

Advanced Analytics: Future releases will come with advanced analytics capabilities [16] [18] that will aid in disaster severity prediction, efficiency analysis of emergency staff, as well as the discovery of possible hotspot areas. Through these analytics, the authority will be in a position to make decisions.

Payment & Donation Gateway: A safe donation and payment gateway is being proposed, where the collection and disbursement of relief funds can be carried out in a transparent manner. So, this function is also helpful for NGOs and relief agencies because it helps in donations of funds during any emergency situation.

Mobile Applications: Native Android and iOS apps will be designed in order to make it more accessible and usable in the field. These apps will feature offline incident reporting functionality, GPS location tracking capability, and-push notification functionality [7] [10].

Expanded System Integration: Future developments include the integration of ResQHub with the national, state, emergency systems like NDMA, SDMA, Police networks, hospitals, and ambulance services. This

enhances coordination among different departments, thereby eliminating the delay in responses [2] [13].

Predictive Resource Allocation: AI-powered forecasting systems will be made available for optimal positioning of the response team and redeployments of important resources, depending on the nature of the disaster.

Multilingual Support: One of the possible releases in the future will include multilingual support using interfaces. This will ensure ease of emergency reporting and use of system functionalities by users with different languages.

7. Conclusion

The paper is about ResQHub, which stands for Disaster Management Hub. ResQHub is helpful for repairing instances of problematic ways of responding during emergencies. It achieves this by providing us with one method of making reports through a new four-step method of verifying information and allowing teams of different roles to interact and collaborate directly through unique team dashboards. It increases interactions between different individuals and the rapid response of actions required during disasters. ResQHub is very helpful in disaster response.

The system brings all the people who are needed to assist the responders together with the people who are responsible in one room. This makes it easier to control the disaster since it eliminates the difficulties that are experienced by all working separately. The system also considers the situation. Analyzes data that relates to the situation. It considers what has happened in the past situations as well as what is currently happening in the surroundings. This enables the individuals to decide. There is also a procedure in the system on how things will be followed from the time someone complains about the problem until it is solved. This is easily understandable. The system gives disaster management a platform, which is the disaster management system, since it assists the people who are needed to assist the responders, groups who wish to assist in managing the disaster, which are NGOs as well as the authority.

Findings from the implementation process indicate that what we have is bettered by the system. It is more efficient at report writing and at getting facts right when working together and utilizing resources. The system consists of components, and the use of the MERN stack makes the system robust and an excellent foundation for further improvement. This entails incorporating functionalities and components such as analytics, mobile apps, and working with multiple institutions. Findings of the implementation process are excellent. The MERN stack is an excellent foundation for the system.

There are lots of disasters happening, and they are getting worse. This is why we need tools such as ResQHub to assist in rescues and reaching these places as quickly as possible. The individuals who designed ResQHub hope to make it bigger, better, and assist in different places around the world. They would also want to create computer programs which can predict when these disasters will occur. They would like to collaborate with individuals who handle disaster relief in different countries, enabling them to be utilized in every place around the world. ResQHub is an essential component. In the future, it will be even more vital.

The proposed ResQHub system is a significant step towards the optimization of disaster coordination, offering a very effective solution which has the possibility of implementation for a variety of disaster conditions and regions [1, 2, 6, 20].

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