Functional Requirements Document

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| No. | Requirement |
| 1 | The System shall provide Communication Tools. |
| 1.1 | The System shall support Push-To-Talk. |
| 1.2 | The System shall support Chat. |
| 2 | The System shall support voice commands. |
| 3 | The System shall include location services. |
| 4 | The System shall include a map. |
| 4.1 | The System shall support marking on a map. |
| 4.2 | The System shall support defining map sectors. |
| 4.3 | The System shall support tracking. |
| 4.4 | The System shall support offline map. |
| 5. | The System shall Monitor Performance. |
| 5.1 | The System shall record action logs. |
| 6. | The System shall Analyze Performance. |
| 6.1 | The System shall identify trends and bottlenecks. |
| 7. | The System shall ensure Web Compatibility. |
| 7.1 | The System shall include Management Interface. (BO) |
| 8 | The System shall ensure Mobile Compatibility. |
| 8.1 | The System shall include edge users’ interface. |
| 9 | The System shall support different user roles. |
| 9.1 | The System shall support adding new roles. |
| 9.2 | The System shall support setting roles. |
| 9.2.1 | The System shall support setting roles manually. |
| 9.2.2 | The System shall support setting roles automatically. |
| 10 | The System shall support alerts. |
| 11 | The System shall support alarms |
| 12 | The System shall include Wellness check. |
| 13 | The System shall support Events. |
| 13.1 | The System shall support adding events. |
| 13.1.1 | The System shall support adding events manually. |
| 13.1.2 | The System shall support adding events automatically. |
| 13.2 | The System shall support removing events. |
| 13.3 | The System shall support joining events. |
| 14 | The System shall support authentication. |
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Non-functional Requirements:

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| No. | Requirement | Type |
| 1 | The Application should be quick and easy to use. | Performance |
| 1.1 | The interface shall require no more than 2 clicks or taps from the home screen to initiate any form of communication. | Usability |
| 1.2 | The application shall load its main content and be ready for user interaction within 3 seconds of launch. | Performance |
| 1.3 | The system must support up to 10,000 concurrent users without degradation of performance. | Scalability |
| 2 | The System shall ensure all chats, recordings and locations are encrypted. | Security (cyber and physical) |
| 3 | The System shall support voice commands in English and Hebrew. | Internationalization |
| 4 | The System shall use mapping API from one of the providers: Google Maps, Leaflet, Mapbox, OpenLayers. | Compatibility |
| 4.1 | Marking on a map should be by selecting the option after right clicking (pc) or clicking (on mobile). | Usability and Flexibility |
| 4.2 | The System shall provide a 'Free Draw' feature enabling users to define map sectors by manually drawing the sector boundaries directly on the map interface. | Usability and Flexibility |
| 4.3 | The System shall track the users’ location by showing them live on the map with an icon. | Usability and Reliability |
| 4.4 | The System shall provide an offline map feature that includes the following: the last known location of each player, and the map detailing all identified sectors and marks. | Availability |
| 5 | The System shall monitor the performance of the follows: Time took between important actions, Number of actions until important action. | Usability and Performance |
| 6 | The System should analyze application by recording data and showing it on a graph on the manager side | Usability and Performance |
| 7 | The System should record and store the bi events on Google Analytics 4. | Auditability and Control |
| 8 | The Application will have the following roles: 1. Commander (מפקד)  2. Officer (סגן מפקד)  3. Area Manager (מפקד אזור)  4. General User (משתמש כללי) | Usability and Flexibility |
| 9 | The System will assign user roles automatically by setting the commander as the user with the highest rank score. | Configurability and Efficiency |
| 9.1 | Rank Score will be calculated by roles for different teams, time and number of events. | Effectiveness |
| 10 | Alerts should be one of the following:  Real Alaram, Test Alarm, Recorded Voice, Wellness Alarm | Usability and Flexibility |
| 11 | The Wellness Check will be by alarm and confirm by each user and will calculate the time it took for everyone to confirm. | Performance and Response time |
| 12 | The Application will allow managing events by setting their name, description, participants and date. | Usability and Modifiability |
| 13 | The Application will be consisted of the next pages: 1. Login Page  2. Sign Up Page  3. Contact Us  4. Request to join Page  5.Users Page  6. Map Page  7. Chat Page  8. PTT Button Page  9. Alert Page  10. Logs Page  11. BO Page  12. Schedule Page | Usability and Scalability |
| 14 | The Application is going to be developed both for web and for mobile. | Platform compatibility and Interoperability |
| 14.1 | Web Tech Stack: 1. ReactJS (Front Library)  2. CSS / TailwindCSS  3. TS (Superset of JS)  4. NodeJS (JS Runtime)  5. ExpressJS (Server)  6. MongoDB / FirebaseDB (DB)  7. Firebase Authenticator (Auth)  8. Axios (HTTP Calls)  9. Jest (testing)  10. Render (hosting) | Compatibility |
| 14.2 | Mobile Tech Stack: 1. ReactJS (Front Library)  2. CSS / TailwindCSS  3. TS (Superset of JS)  4. NodeJS (JS Runtime)  5. ExpressJS (Server)  6. MongoDB / FirebaseDB (DB)  7. Firebase Authenticator (Auth)  8. Axios (HTTP Calls)  9. Jest (testing)  10. android store (hosting) | Compatibility |

**Communication Tools:**

**Push-to-Talk & Chat**:  
Enable real-time voice communication and text messaging among team members for efficient coordination.

**Voice Recognition + Analysis:**Implement voice command functionality for hands-free operation, complemented by analysis features for actionable insights.

**Mapping and Location Services:**

**Dynamic Mapping with Offline Functionality:**  
Provide interactive maps that work both online and offline, showing real-time updates, including marking spots for individual team members and the entire team, defining sectors, and GPS tracking of personnel.

**Offline Functionality:**  
Ensure critical mapping and communication features are accessible without an internet connection.

**Operational Management:**

**Action Logs and Performance Monitoring:**  
Record all actions taken during an operation for accountability, learning, and performance evaluation.

**Management App (Web) & Users App (Mobile):**  
Develop separate applications for management and field teams, ensuring role-appropriate functionalities and interfaces.

**Automated Role Assignment & Emergency Simulation:**  
Automatically assign event commanders during emergencies and facilitate emergency scenario simulations for training purposes.

**Resource Allocation:**  
Design features for defining and managing groups, resources, and exercises, including a system for alert notifications such as SOS and wellness checks.

**Emergency Response Features:**

**Alarms, SOS Alarm, and Wellness Check System:**  
Integrate comprehensive alarm systems including general alerts, SOS signals, and wellness check-ins with automated alerts for non-responses.

**Defining Possible Emergency Events:**  
Allow users to predefine emergency scenarios to streamline response protocols and resource allocation.

**1-Click Actions:**  
Simplify user interactions for critical functions to ensure rapid response capabilities during emergencies.

**System Access and Security:**

**Single Login System:**  
Implement a secure, once-only login system for both management and user applications to streamline access while maintaining security.

What’s important to have on our project

1. Push To Talk
2. Chat
3. Action Logs
4. Map
5. Dynamic Map
6. Marking Spots on Maps (self and team)
7. Sectors In Map
8. Management App (web)
9. Users App (mobile)
10. Alarms
11. SOS Alarm
12. Wellness Check System (plus alarm for that)
13. GPS Tracking
14. Defining Possible Emergency Events
15. Defining Groups
16. Defining An Exercise
17. Automatically Assigning an Event Commander
18. Performance Monitoring
19. Login System (once)
20. 1-Click Action
21. Offline Functionality (Critical Features must work even offline (if they don’t need connection)
22. Emergency Simulation
23. Voice Recognition + Analysis