



## System Functionality

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## **Executive Summary**

FireWeb is a mature web-based information, incident and communications tool which has been tailor made for fire and rescue services and has been successfully utilised in national, provincial, district and local government throughout South Africa.

FireWeb delivers the vital features necessary for the effective communication, management, dispatching and reporting on fire and rescue operations. These range from assignment rosters to the recording and mapping of every incident logged. Workflow management ensures that tasks are attended to and signed off according to the policies of the organisation.

Our philosophy is to provide simple solutions for complex problems and is designed to be an intuitive "one click" solution resulting in minimal training requirements. FireWeb is accessible wherever there is an internet connection - whether it be via a network in your building or data from a mobile operator.

FireWeb has been developed to enable the hierarchical structures and institutional arrangements at every level of government and has allowed for all stakeholders across these boundaries to engage with one another and share information and knowledge within their relevant forums.

Through the application, you are able to create places (geographical in nature) and groups (logical groupings of people and places, for example; departmental planning groups, risk reduction project teams, joint response and relief project teams and your advisory forums at each level of government) which you are able to communicate with via one of the many integrated inbound and outbound communication methods.

## **Application Functionality**

### **Contacts**

#### **Contacts and System Users**

The FireWeb platform has a built-in contacts book which allows for a central storage location and communication platform for all key personnel and contacts associated with the organisation.

Contacts can be added, managed and edited within the system using the contact book functionality. The availability status of contacts can be updated easily through the system, which automatically defines the availability status when deploying and dispatching resources and personnel to incidents or locations via the integrated rostering system.

Contacts may be logically grouped based on communication needs, the severity of incidents from a notifications perspective or geographically, such as at a dispatch centre.

## Users and Access Permissions

Depending on the requirements, you are able to either create a contact or a system user. System users have access to login and interact with the application, as opposed to contacts which are used for dispatching, reporting and communication purposes.

The application allows you to change a contact to a system user at any time. System Users are audited on all their system interactions and an export of system usage can be downloaded assuming the user account has the correct permissions.

## Personnel Availability

Personnel availability may be changed either via the attendance register in the roster for the current day, or in advance via the contact card for the user.

## Logical Grouping Tools

### Basics

FireWeb allows you to create places and groups such as fire stations, disaster management centres and other services like a police station or community centre in a hierarchical style structure. This hierarchy between places and groups is used to inform organisational structure and assists with reporting, allowing the platform to build statistics over time.

Attached to any one of these structures, you are able to associate resources and personnel, as well as see further information such as a map of the location containing linked boundaries, linked vital weather stations, incidents and the availability of personnel which are linked.

Groups are ideally used in order to allocate personnel to roster shifts, associate personnel to teams for places or to allocate personnel to specific notification groups for categories of incidents at a place.

### Institutional Arrangements

FireWeb allows for the population and management of co-operative links between places and groups (such as between a district and local municipality) within the application hierarchy. Attached to each of these, you are able to store an agreement (such as the signed Memorandum of Agreement/Understanding) in the integrated document management system.

### Institutional Capacity

Attached to each role profile within the application, you are able to store the expended competencies of persons filling the role. When managing personnel at a place by place basis, you are able to confirm which of the competencies are fulfilled by the person, and as such provides an accurate skill gap analysis, as well as provide a high-level overview of the institutional capacity within your organisation.

## Notifications

FireWeb allows you to allocate personnel to receive notifications either at a generic level (for all incidents at a place) or to specific incident categories and severity levels. This ensures that all individuals are kept up to date with information pertaining to them and their portfolio.

## Communication Tools

### OUTBOUND METHODS



SMS & Text Messaging



Digital Radio Integration



Email



VoIP Telephone Integration

### SMS and Email

FireWeb has a fully integrated email and SMS text message communication system allowing for real-time updates for key role players directly out of the application.

Users of the FireWeb application are able to send messages to individuals or all contacts within a group or place. The system maintains a full message history which can be searched, not only on message content but on recipient and date range.

FireWeb enables users to communicate directly with selected recipients from any page within the application, from the Occurrence Book or from within an incident from the action updates based on pre-defined notification groups.

### Voice and Radio

Additionally, FireWeb integrates with PABX (Voice over Internet Protocol and Radio over Internet Protocol) systems allowing for integrated telephony, conferencing and patching of communication channels used. All communications through these protocols are enabled for recording and may be associated with the incident within the application for record keeping purposes.

### Incoming Feeds

The FireWeb platform is able to connect to a number of incoming feeds to ensure that public information is also included in the platform and can be linked to incidents and monitored. These feeds could include an SMS hotline and a public reporting portal should it be implemented in your installation.

## INBOUND ALERTING METHODS



SMS Hotline



Platform Monitoring



Public Reporting



Early Warning Detection

### SMS Hotline

The FireWeb platform is able to monitor a dedicated SMS inbound line to allow for the public to report incidents. These messages will then go into a moderation queue for verification and may either be added to an existing incident or used to initiate a new incident.

### Public Reporting Portal

Should it be required, you are able to publish a public reporting portal branded to your organisation which allows the public to report an incident, provide additional information as well as upload photographs and other supporting documentation.

Should location services be enabled on the reporting device, the FireWeb application will automatically geo-tag the location where the incident was reported as well as where the uploaded photographs were taken.

These reports are also added to the moderation queue for verification and may either be linked to an existing incident or may be used to initiate a new incident.

## Occurrence Book

### Basics

The occurrence book is a combination of general message updates (which are not associated with an incident) and incident action updates captured against incidents as and when they are required. All messages and incident action updates allow for an action time (for cases when the messages need to be backdated) as well as a system capture time to ensure that an audit of the interaction is kept.

By clicking on any of the occurrence book entries, you are taken to the full incident report, providing further information and context. Highlighting and right clicking on any text within the Occurrence Book enables you to send the selected text via email or text message as well as add it to a situation report in cases where you are managing a collection of associated incidents.

## Reporting

The FireWeb platform allows you to export all entries loaded into the occurrence book by date range. This provides you with a PDF report which is categorised by day, with all entries loaded from the different incidents as well as general updates.

## Incidents

### Overview

FireWeb allows for users to capture incident reports for a collection of types and categories. Based on your organisational needs, these incident categories will be defined and set up for your installation of FireWeb.

The incident capture process guides the user through the process of obtaining the essential information required in order to provide an efficient response. Through this process, you are provided with information on specific Standard Operating Procedures related to the incident which is being responded to. These Standard Operating Procedures can be defined within the application on an incident by incident basis should it be required.

Once the initial data has been captured, the system will automatically trigger a notification to key persons as set up in the system and then direct the user to capture the secondary information associated to the incident type. All additions and changes to incidents are audited and stored with information pertaining to the responsible capturer and the time in which the information was added or changed.

All incidents are moved through a workflow process which is completely customisable with associated authority levels at each state change.

### Interactive Standard Operating Procedures

The FireWeb platform allows for the creation of dynamic and interactive Standard Operating Procedures. This prompts those involved in the response as to the steps required in order to comply with organisational procedures. This includes a prompt alongside the incident capture with a range of pro-active integrations to assist in the compliance of the Standard Operating Procedure such as click to dial, automated text message notifications to the relevant stakeholders or the notifying of other assisting agencies.

### Mapping

All incidents in FireWeb have the option to be loaded with an address, as well as a latitude and longitude. This allows the application to plot the incidents on the overview map which shows a high-level overview of all incidents currently active within the jurisdiction.

## Boundary Marking

Incident boundaries allow you to track the area of an incident at given intervals. For each boundary added, you are able to add a description providing additional context which is useful for post-incident analysis, debriefing and for statistical purposes to find common trends over time.

## Actions

Action updates are used to capture any new information as and when it becomes available. This is done in the form of a text input field and is automatically pulled through to the occurrence book. Each of these updates may be sent out via Text Message or Email.

## Document Uploads

There is a document management system integrated into FireWeb allowing for documents to be uploaded against an incident. These may be PDF documents, Spreadsheets, XML files or even photos or videos. They are all automatically allocated into a structured folder hierarchy, accessible either via the incident or the document management page.

## Dispatching of Units and Personnel

Based on the roster setup, you are able to dispatch units and personnel which are on shift and available directly from within the incident. This allows you to track where vehicles and personnel are at any given time and to track time on the scene as well as kilometres driven on dispatched resources. This is integrated into the resource and personnel history for audit purposes.

## Reports and Printouts

The FireWeb platform comes standard with the following reports:

1. Immediate Incident Report which contains limited information only.
2. Full Incident Report which contains all the information captured.
3. Incident Action Report which only contains action updates loaded.

## Situation Reports

The FireWeb platform is able to group associated incidents together. This is useful in cases that require a single view to display information about the location of each of the linked incidents. This is overlaid with applicable risks, critical facilities and any other points of interest or base layers you may have added to the application.

The situational reporting view provides a filtered occurrence book with updates from the linked incidents as well as a function that enables you to allocate sitrep updates which may be disseminated to key stakeholders as per your organisational procedures. Each situational report allows you to allocate roles and responsibilities to personnel.

## Search

FireWeb has an advanced incident search tool which allows you to specify criteria from a collection of incident fields ranging from category, date, actions, addresses, references to units and personnel.

You have the option to either export the incidents into an Excel spreadsheet or to display them on a map which clearly indicates incident-prone areas. The export tool allows you to specify which fields you would like included and allows the report to either be downloaded or emailed.

## Billing

FireWeb makes provision for the management of multiple billing and cost sheets against a single incident record. This automatically includes information about the units and personnel dispatched as well as any additional services in attendance. These can be downloaded or shared from within the application.

## Vital Weather Integration

FireWeb allows for the linking of Vital Weather stations to locations within the application. This is a near realtime weather update from over 200 locations throughout South Africa. The information from these weather stations are automatically linked to incident records for the period of the incident as well as displayed on a map with details such as the Fire Danger Index, temprature, wind speed and direction, humidity and amount of recent rain.

## Rostering

The rostering system allows users to create shifts and to add personnel to a particular shift period and resource. This rostered personnel are assigned a role for their shift (for example, a driver, site supervisor, incident commander). Once created, users are able to download a PDF printout of upcoming shift assignments and distribute accordingly.

The application has a built-in attendance system based on the defined roster, which may be used to identify which personnel have reported for duty on a given day. This informs the coordinator when dispatching units to an incident. Personnel availability changes are automatically included in the live occurrence book when completed, ensuring all key parties are kept informed of changes in personnel availability.

## Resources

FireWeb has a lightweight resource management system which allows administrators to create and manage their fleet of resources. Resources may be linked to a geographical location such as a fire station or dispatch centre.

Resources are automatically available in the rostering system, allowing for personnel to be assigned to resources during their shifts. Based on the roster setup, these resources will show

as available when dispatching units and personnel from within the incident management process.

When viewing a resource, you are able to see a list of all incidents the resource has responded to, which personnel were on the resource as well as the kilometres logged and the time on scene and in attendance.

## Document Management

FireWeb has a lightweight, easy to use document management system built into its core. All incidents (such as photographs from the incident, attached XML boundary files or any other associated media needed for incident audit purposes), risk profiles and situation reports allow for uploaded media to be attached. These uploads are stored in the document management system within an automatically generated folder structure.

All files and folders within the document management system may be downloaded file by file, or by folder in a zipped format and thus complying with the requirements of the National Archives Act.

## Early Warning Systems

### Advanced Fire Information System

The Advanced Fire Information System (AFIS) from the Council for Scientific and Industrial Research is a mature operational Wildfire Information System focussed on the prediction, detection, monitoring and assessment of wildfires.

The system utilises a portfolio of sensors for early detection of fire events as well as for the mapping of burn scars at 20m/30m resolution every five days. In addition to the detection and mapping of fire events, the system also provides users with 5-day high-resolution weather forecasts as well as fire danger forecasts based on both the Lowveld as well as the Canadian Fire Weather Index.

#### EARLY WARNING INPUTS

-  Satellite Detection
-  Forest Detection Cameras
-  Weather Stations
-  Lighting Detection

#### VALUE DERIVED

- Precise Fire Danger Forecasting
- Multi Active Satellite Monitoring
- 30m Burn Area Mapping
- Dynamic Fire Spread Modelling
- Automated Early Warning Alerts
- 20m Resolution Burn Scar Mapping

By subscribing to the AFIS system in conjunction with this proposal, we will bring the following services from AFIS into the FireWeb platform:

- Active fire detections by the AFIS Polar Orbiting portfolio of satellites during the following time intervals - 09:30am, 10:30am, 14:00pm, 15:00pm, 21:30pm, 22:30pm, 01:40am, 03:00am.
- Active fire hot spot detection by the Geostationary MSG satellite every 15 minutes.
- Fire Danger now-casting (current and forecasted weather) on more than 200 Automated Weather Stations across South Africa.
- Integrated active and recent fire hotspot detection within the FireWeb platform, linked to incidents and situational reports.
- Five-day fire danger forecasts (including weather forecast) based on the Canadian Fire Weather Index as well as the Lowveld FDI available as email reports from within the FireWeb platform.
- SMS's and email fire alerts to designated managers and staff as per notification settings setup within the FireWeb platform.
- Annual or post-fire season statistical report for the subscription area.
- A database of historic fire information and statistics is maintained and updated and is available.