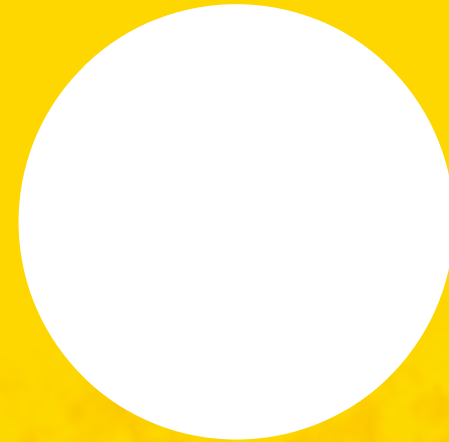




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GOVERNMENT OF GOA



DIRECTORATE OF FIRE & EMERGENCY SERVICES
St. Inez, Panaji-Goa.

A BRIEF OVERVIEW OF SAFE GOA 24x7 EMERGENCY MONITORING SYSTEM



“WE SERVE TO SAVE”

FIREMEN'S PRAYER

*When I am called to duty oh God
wherever flames may rage
Give me strength to save some lives
whatever be its age
Help me embrace a little child
before it is too late
so save an older person from the
horror of that fate
enable me to be alert and hear
that weakest shout
quickly and efficiently
to put the fire out
I want to feel my calling and
to give the best in me
To guard my every neighbour
and protect his property
And if according to my fate
I am to loose my life
Please bless with your protecting hands
My children and my wife*

SCOPE

A key issue for Fire & Emergency Services both at the national and international level is to become more proactive rather than reactive. This translates to a greater focus on preventive activities rather than dealing with incidents after they have occurred.

In order to get the best possible value from growing investments in the Fire & Emergency Services, and to be well prepared for the new safety challenges that the community could face, technology change and up-gradation is essential. Early fire detection and its corresponding safety systems' monitoring are crucial to the overall safety of the facility and its assets.

Goa State Fire & Emergency Services has conceived and developed the state-of-the-art 24x7 Direct Alarm System that uses M2M technology to monitor fire alarm and fire fighting systems in real time for immediate dispatch during an emergency.

As a first step, a Prototype of the proposed Emergency Monitoring System have been designed and successfully tested.

AIM

To provide an Effective Response plan by Monitoring & Preventing Fire, to Reduce & Minimise Loss of Life & Loss of Physical Assets thereby aiming at Making Goa the Safer State in India. This project is developed as an initiative for incorporating Internet of Things (IOT) platform utilising Technological Advancements integrating IT application & Digitization.

OBJECTIVES OF SAFE GOA 24 X 7 EMS

- All Facilities (Industries, Hospitality, Hospitals, Banks, High Rise Buildings, etc. having independent Fire Protection Systems will Connect with Safe Goa 24x7 Emergency Monitoring System (EMS).
- Monitor the Health of the Fire Protection System (Fire, Detection, Alarm & Fire Fighting System) in real time and facilitate immediate dispatch of resources.
- Ensure all Facilities in Goa have a functional Fire Protection System on 24x7 Basis and not just when seeking NOC at Initial or Renewal stage.
- Optimize use of Manpower needed for periodical Fire Safety Audit.
- Minimize loss due to Business/Activity disruption due to Fire incident through Automated Compliance Monitoring System.
- Integration of Global Positioning System(GPS) with the Emergency Monitoring System (EMS) to facilitate optimum utilization of fleet of Fire Figthing Appliances (FFA).

SYSTEM OVERVIEW

The Electronic Hardware (Black Box) is installed in a building and links with the Fire Force Headquarter Control Room and Local Fire Station Watch Room of the Goa State Fire & Emergency Services. Using remote-communication technologies such as GPRS, the system monitors the building in real time, 24x7 and continually exchanges data and information regarding the operational status (Normal, Fault & Alert) of the Fire Protection Measures installed in the premises.

In the event of any fire incident a critical alarm signal is relayed from the Black Box to the Headquarter Control Room and Local Fire Station Watch Room automatically. The system also sends signal if any of the Active Fire Protection Measures is out of order. A Display Unit installed in the Headquarters Control Room and Local Fire Station Control Room are coupled with individual operating workstations which displays the Building location, Identified Problem, important contact details and the nearest Fire Station.

In addition, when the Local Fire Station acknowledges the Alarm Signal in the GUI (Graphical User Interface) the Headquarters Control Room, the Zonal Control Room can also monitor the dispatch of Fire Appliance through the GPS connectivity. The Operator manning the Control Room will respond appropriately by dispatching the Fire Fighting Appliances & Equipments.

Services Monitored on Safe Goa 24x7 EMS (Active Fire Protection Measure)

• Fire Detection System

- Panel On/Off Condition
- Panel Fault Condition
- Panel Pre-Alert Condition
- Panel Alarm Condition

• Fire Protection System

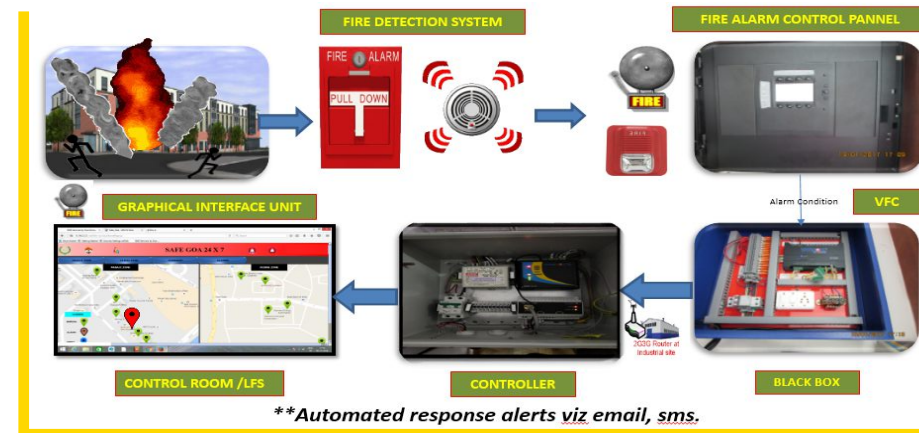
- Pump On/Off Condition
- Pump Fault Condition
- Water Line Pressure Status
- Water Tank Level Status

• Gas Detection System

- Gas Panel Status
- Gas Panel Fault



SYSTEM ARCHITECTURE



A. System is Installed at Industry/High-rise Building: The Electronic Hardware (Black Box) has to be installed near the Fire Alarm Control Panel of the High-Rise Building / Industry. The Industry/Building owner should provide Single Interface panel to provide separate volt free contact.

Black Box at Industry/Building: Below are the requirements to be fulfilled by Industry/ Building Owner;

- **230VAC UPS power supply:** Industry/Building owner shall provide 230VAC UPS power supply to black box.
- **Space for Panel Installation:** A minimum indoor space of 800mm X 800mm X 500mm on wall shall be provided by Industry/Building owner.
- **VOLTAGE FREE CONTACT (VFC) to the black box for connectivity:** Cabling from all VOLTAGE FREE CONTACT(VFC) (Normally Closed) to black box shall be completed by Industry/Building owner.

B. General Packet Radio Service (GPRS) modems connectivity: GPRS modems with M2M sim cards are installed at the site to be monitored. This GPRS modem is connected with the Black Box at line of sight level. GPRS modem is also installed at Central Location that is Goa State Fire and Emergency Services Headquarters Control Room and local fire station Control Room.

C. Centralized Software: Central GPRS modem is connected with centralized monitoring software over TCP/IP (Transmission Control Protocol/ Internet Protocol). Centralized software monitors all sites with customized GUI (Graphical User Interface) application. This system is web based.

- Application User interface displays various information on the video wall mount pertaining to Live Monitoring of Systems, History, Geographic Information Systems, Statistical Reporting (Alerts, Faults, Non compliance),Appliances on route, Traffic updates etc..

The screenshot displays the Gifman software interface. On the left, there is a vertical sidebar with a 'Dashboard' button and a 'Vehicles' button. Below the 'Vehicles' button is a small image of a red fire truck. At the bottom of the sidebar is a large Motorola radio icon. The main area of the interface is a map of Panim, showing streets and landmarks. A red fire truck icon is positioned on a street in the map. A blue line with red dots traces a path through the map. The map includes labels for various locations such as 'Kekkol Beach', 'Kala Academy', 'Immaculate Conception Church', 'PATIL CENTRE', 'LAKE VIL COLONY', 'ST MARY COLONY', 'BORBIA', 'Taleigao', 'ODLEM BHAT', 'SIDDHIVINAYAK', 'NEUDINAGAR', and 'ELECTRICITY COLONY'. The map also shows the 'Mandovi River' and 'Mandovi Canal'. The bottom of the interface has a status bar with the text '© GIFMANIA'.

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- Controller is connected to a wireless

radio modem having GPRS (General Packet Radio Service) connectivity. Signal triggered information will be passed via the internet using GPRS technology to the Servers at NIC.

- Fire Department will be able to monitor the systems at various facilities through web based application hosted at NIC servers via Goa Broad Band Network.
- Fire Protection Measures installed in vulnerable occupancies play an important role in immediate response to fire incidents. However,



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