

FM RADIO BROADCAST-BASED EMERGENCY ALERT SYSTEM OVERVIEW

A NO-POWER, NO-INTERNET, NO-CELL SOLUTION TO ALERT

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COMPANY OVERVIEW

- FOUNDED IN 2003, VALIDATED BY FEMA, NORTHROP GRUMMAN AND OVER 250 CUSTOMERS
- PROVEN, FAILSAFE RAPID ALERT SYSTEM (DELIVER ALERTS IN LESS THAN 5 SECONDS)
- CLIENT EXAMPLES INCLUDE: MISSISSIPPI STATEWIDE IN 2006, LA 2012, AL 2013, OK 2014, NASSAU NY 2018, BVI 2019, CHEMICAL STOCKPILE 2020 USING HMGP FUNDING, NUCLEAR POWER PLANTS
- OVER 250 CURRENT HS\EMA CUSTOMERS (STATE, COUNTY/PARISH, UNIVERSITY, TRIBAL)
- SATELLITE-BASED GSSNET AND ALERT FM EMERGENCY NOTIFICATION NETWORK CURRENTLY DEPLOYED ON 850 FM STATIONS IN US AND CANADA
- BUILDING OUT NATION-WIDE FM RDS ALERTING NETWORK SMART PHONE APP LAUNCHED IN EARLY 2013
- CURRENT LICENSEE OF THE USGS SHAKEALERT PROGRAM, THE ONLY RADIO-BASED LICENSEE



**BASIC TOOLS
OF A
FM BROADCAST BASED
EMERGENCY ALERT SYSTEM**

FM BROADCAST-BASED ALERT USING RDS IS UNIQUE

- PURPOSE-BUILT FOR RAPID DELIVERY ON A DEDICATED RDS CHANNEL, ALWAYS FIRST PRIORITY. NO DELAYS DUE TO VOICE/DATA SESSIONS OR COMMERCIALS
- ALLOWS AUTHORIZED USERS AND DATA PROVIDERS (USGS/NWS/NOAA/ETC) TO SEND AN 8-POINT POLYGON TEXT-BASED ALERTS TO FIRST RESPONDERS AND RESIDENTS BASED ON LOCATIONS AND ORG GROUPINGS
- WORKS WHEN POWER GOES OUT AND CELLULAR NETWORKS FAIL OR ARE CONGESTED
- MESSAGES ARE DELIVERED BY SATELLITE TO FM RADIO STATIONS RDS CHANNEL AND THEN BROADCAST TO BATTERY OPERATED FM RECEIVERS; LOSS OF STUDIO OR INTERNET NOT ISSUE
- PIGGYBACKS ON EXISTING FM RADIO NETWORKS; USES OVERLAPPING SIGNALS OF FM STATIONS FOR REDUNDANCY AND TO ENSURE DELIVERY IN LESS THAN 5 SECONDS
- THERE ARE NO RECURRING USAGE FEES AFTER THE INITIAL LICENSE FEE



PRODUCTS AND SERVICES

- A COMPLETE LINE OF **WIRELESS** EMERGENCY COMMUNICATION AND NOTIFICATION SYSTEMS.
- PRIMARY 1-WAY (WITH 2-WAY UPGRADE OPTION) SATELLITE BACKBONE WE CALL GSSNET
- EASILY EXPANDABLE JUST ADD TOWERS AND AS MANY RECEIVERS AS YOU WOULD LIKE. SATELLITE NODES CAN BE MOBILE.
- 1 OR 1,000,000+ RECEIVERS CAN RECEIVE AN ALERT IN SECONDS AND ONLY WITH A SWITCHLESS WIRELESS BROADCAST NETWORK

**alertstudio**TM

MESSAGE CREATION
NEW FEATURES:
DATA/VOICE CHAT
VIDEO WINDOWS

+



WIRELESS BEGINS
WITH SATELLITE

+

EASY TO USE, RELIABLE, RECEIVERS



MESSAGE CREATION EXAMPLE



Create an Alert

Author and send an emergency alert

- Contact Paths >
- Basic Alert Information >
- Alert Options >
- ALERT FM™ >
- ALERT FM™ Mobile App >
- WEA (CMAS) >
- IPAWS COG-COG Message >
- IPAWS NWEM (HazCollect) >
- Social Media >
- Attachments >
- Map >
- Review & Send >

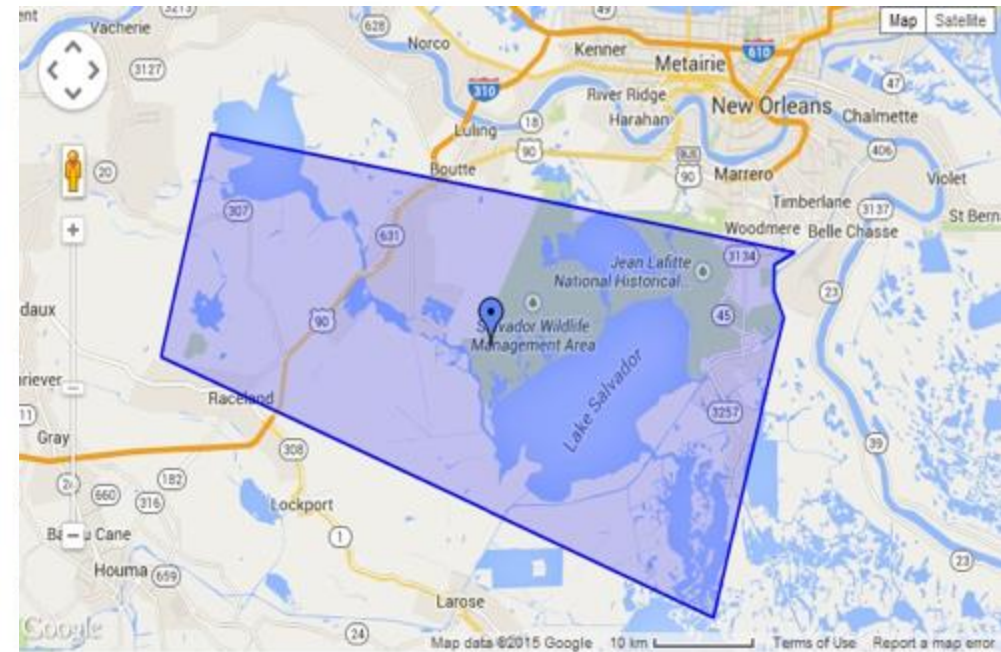
Contact Paths

What type of alert would you like to create?

- ALERT FM™ Receivers
- ALERT FM™ Mobile App
- Twitter Tweet
- GSSNet Direct EAS

IPAWS

- FEMA IPAWS EAS
- FEMA IPAWS WEA
- FEMA IPAWS NWEM (HazCollect)
- FEMA IPAWS COG-to-COG



ALERT FM MESSAGE CREATION

The screenshot shows a web browser window with the URL `https://app.alertfm.org/alert/create`. The page header features the **alertstudio** logo and navigation buttons for **Create an Alert**, **Incoming Alerts**, and **Reports**. The main heading is **Create an Alert** with the subtitle **Author and send an emergency alert**.

A left-hand sidebar contains a menu with the following items:

- Contact Paths
- Basic Alert Information
- Alert Options
- ALERT FM** (highlighted)
- ALERT FM Mobile App
- Social Media
- Attachments
- Map
- Review & Send

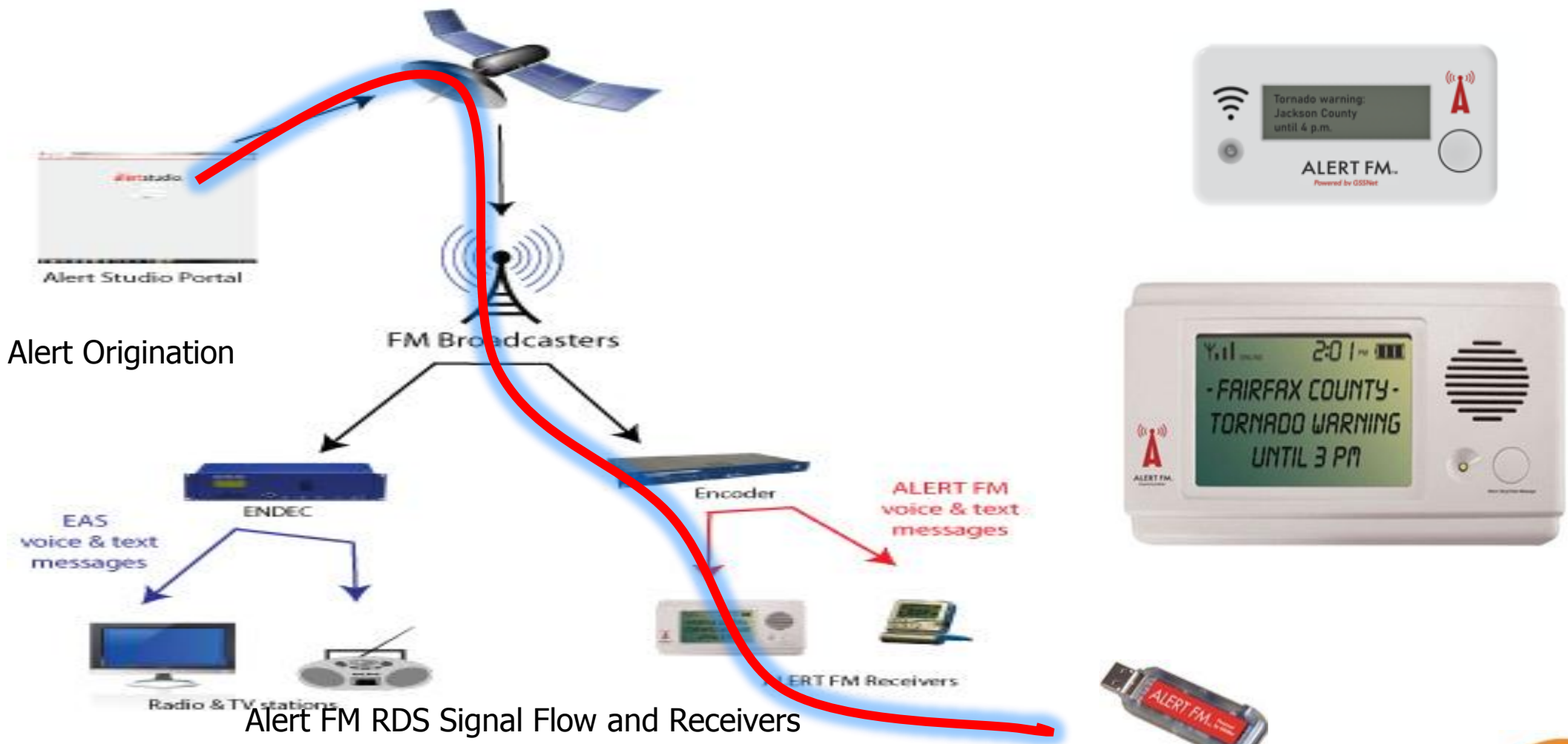
The main content area is titled **ALERT FM Alert** and contains a text input field with the message: `Thursday Morning Test. Please disregard.` Below the input field, it indicates **Characters left: 100**.

Below the input field is the **ALERT FM Addresses** section, which includes two checkboxes:

- All Centenary Recievers
- Centenary Police Dept.

The Windows taskbar at the bottom shows the system tray with the date and time: **9:08 AM 10/10/2013**. The taskbar also displays icons for various applications including Internet Explorer, File Explorer, and Google Chrome.

Typical "Alert" Workflow at a Radio Broadcast Station



Alert Origination

Alert FM RDS Signal Flow and Receivers

Rapid Alert System Architecture for Wildfire/ShakeAlert/Tsunami/Power Outages/Terror/Other

Alert Origination

Sheriff Office
EMA

Aggregator /
Gateway at
Satellite Uplink

GSSNET

Broadcast Station
Alert Dissemination
Equipment

Satellite Receivers

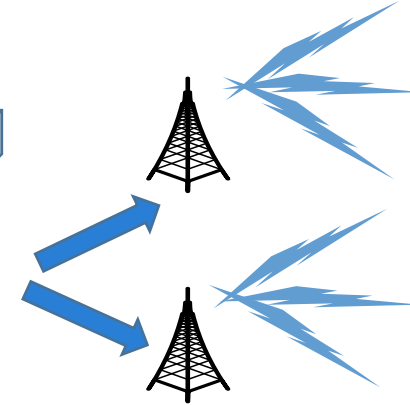
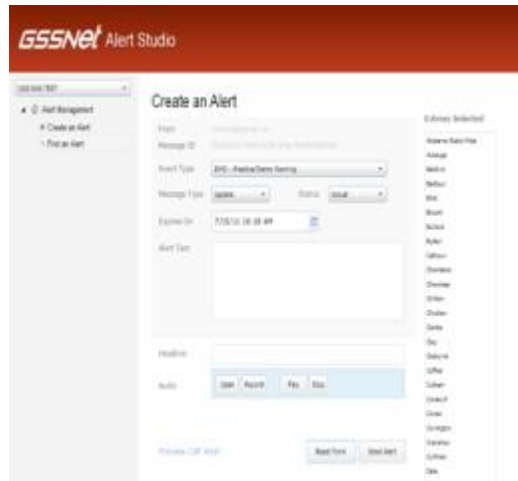
Addressable ALERT
RECEIVERS including
ALL CALL

Fire Department
EOC

Law Enforcement
EOC

County EOC

Customers



GSS ShakeALERT Workflow



NOAA



Raw Seismic and Weather Data

Any Input will Trigger our system

Processing of EEW data for distribution

- 2-port VoIP Interface
- 2-port 4-Wire Analog VF/VOX
- Two Channel 2-Wire Analog Line Interface (Hybrid)
- 2 port 2-Wire/4-Wire Analog VF/VOX
- Conference Interface (Large Systems)
- Telephone Interface
- PSTN (or SNI) Interface
- Relay Module
- I/O Interface (Alarm/Control)
- 2-Channel RS-232 Interface (Serial)
- AMBE/DVSI Module (e.g. NEXEDGE®, DMR)



RDS Broadcast connected by Satellite



Automation + Interoperability



Automatic Natural Disaster Alerts Across All Communication Platforms

Any Radio Manufacturer



Direct Interface into any Dispatch system currently used:

- Motorola
- Zetron
- Telex
- Avtec

Any POTS phone systems



VOIP phone system



PTT & Direct-Connect

RADIO BROADCAST BASED EMERGENCY ALERT SYSTEM RECEIVERS

RECEIVERS

- PORTFOLIO OF FIXED AND MOBILE RECEIVERS
- BLUETOOTH CONNECTED OPTION
- ALL ADDRESSABLE CURRENTLY 30 GROUPS AND SERVICES CAN BE EXPANDED
- RECEIVERS AUTOMATICALLY TUNE TO THE STRONGEST GSSNET STATION AROUND COUNTRY



Warner Demonstration



Warner Receiver 'No Cell Area' Demo



Public Alert Receiver Demonstration

