



The Critical Role of Broadcasting in Emergencies

ITU-R WP 6A Workshop
on Emergency Broadcasting
Geneva, Switzerland
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“There are some who seem to say ‘broad’ only if it is followed by “band.” There are some who openly question the future of broadcasting, who seem to think that Americans who rely on broadcasting every day are stuck in the past. But I’ve said it before and I’ll say it again: Broadcast and broadband are complements, not substitutes.”

Ajit Pai, U.S. FCC Commissioner
Sept. 20, 2013

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public safety emergencies are manifold...

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Weather

tornadoes
hurricanes
snow/ice storms
floods

Geological

earthquakes
tsunamis
volcanoes
meteorites

Accidents

transportation
industrial
technological
forest fires

Health

pandemics
water contamination
air quality

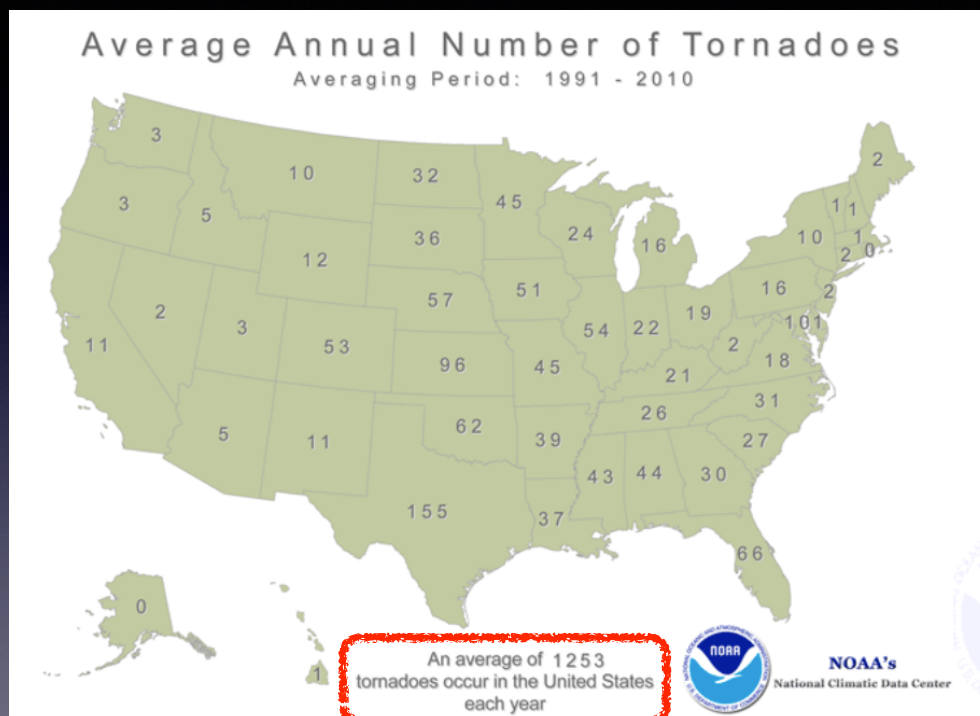
Terrorist Attacks

chemical
biological
nuclear
cyber-attacks

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public emergencies are also *frequent* events

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U.S. Wildfires

Linville Gorge, NC
November 2013

Average Worst Summary

Averaging the data from very active fire years (1996, 1999, 2000, 2002, 2006 and 2007) selected from the previous 17 years, average worst case fire year numbers were derived. Based on these data, NICC can expect as a worst case average the following (categories in **bold** are those where the average worst cases were equaled or exceeded in 2012):

- 76,841 - Wildfires
- **7,583,783** - **Acres burned (~ 3 million Hectares)**

Number of Earthquakes **Worldwide** for 2000 - 2012

Located by the US Geological Survey National Earthquake Information Center
(M4.5+ for most of the world; doesn't include US regional network contributions)

Magnitude	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
8.0 to 9.9	1	1	0	1	2	1	2	4	0	1	1	1	2
7.0 to 7.9	14	15	13	14	14	10	9	14	12	16	23	19	12
6.0 to 6.9	146	121	127	140	141	140	142	178	168	144	150	185	108
5.0 to 5.9	1344	1224	1201	1203	1515	1693	1712	2074	1768	1896	2209	2276	1401
4.0 to 4.9	8008	7991	8541	8462	10888	13917	12838	12078	12291	6805	10164	13315	9534
3.0 to 3.9	4827	6266	7068	7624	7932	9191	9990	9889	11735	2905	4341	2791	2453
2.0 to 2.9	3765	4164	6419	7727	6316	4636	4027	3597	3860	3014	4626	3643	3111
1.0 to 1.9	1026	944	1137	2506	1344	26	18	42	21	26	39	47	43
0.1 to 0.9	5	1	10	134	103	0	2	2	0	1	0	1	0
No Magnitude	3120	2807	2938	3608	2939	864	828	1807	1922	17	24	11	3
Total	22256	23534	27454	31419	31194	30478	29568	29685	31777	14825	21577	* 22289	* 16667
Estimated Deaths	231	21357	1685	33819	228802	88003	6605	712	88011	1790	320120	21953	768

what are the **emergency roles** for
broadcasting?

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first, emergency **alerts** are broadcast

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U.S. Public Alert Systems

- **Emergency Alert System (EAS)**

- *via mass media – television & radio*



- **NOAA Weather Radio - All Hazards**

- *1,021 VHF broadcast transmitters*
- *VHF public service band at 162 MHz*



- **Wireless Alert System (WEA)**

- *to mobile phones*

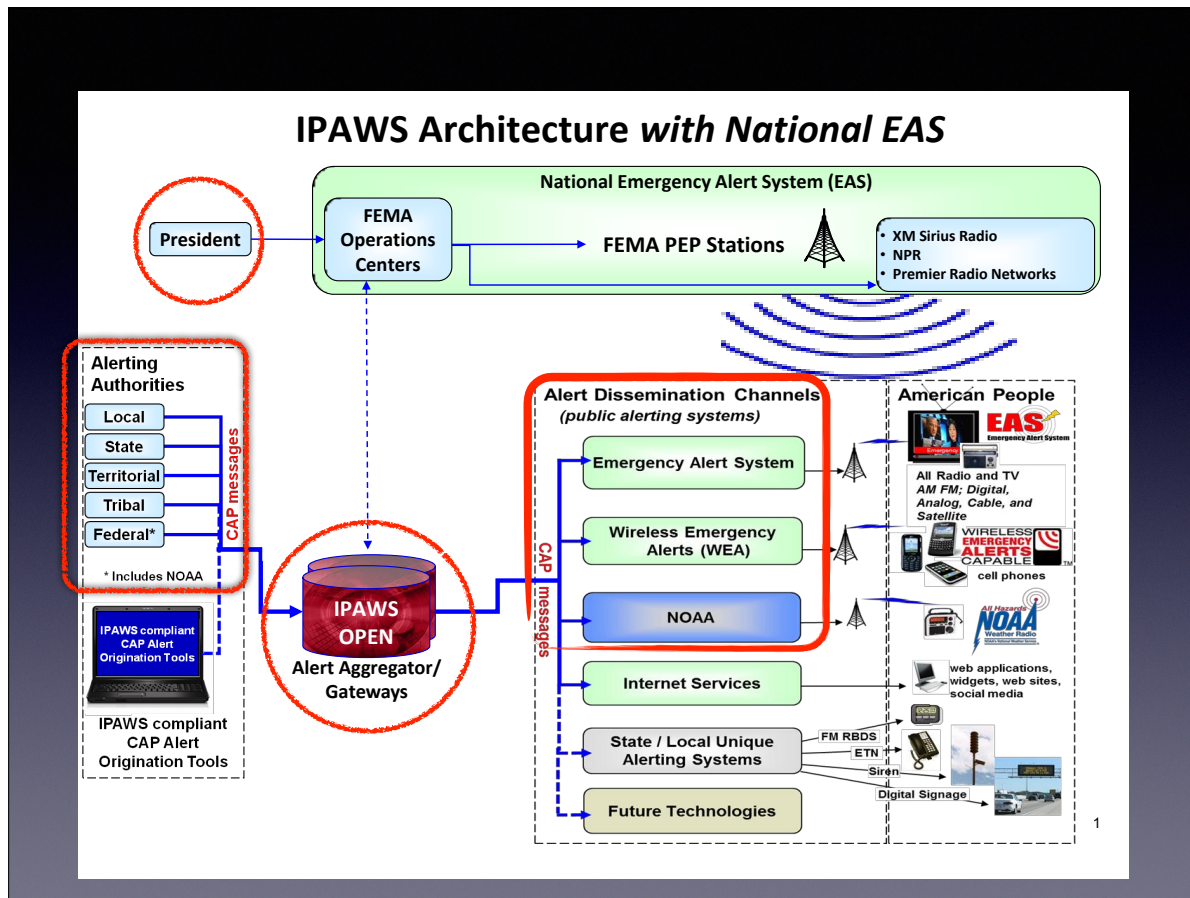


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Emergency Alert via Broadcast HDTV



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- NOAA Weather Radio - All Hazards
- 1,021 transmitters in the VHF Public Service band on 7 frequencies at ~162 MHz (30-50 mile radius)
- Provides 24/7 weather & federal, state and local emergency information

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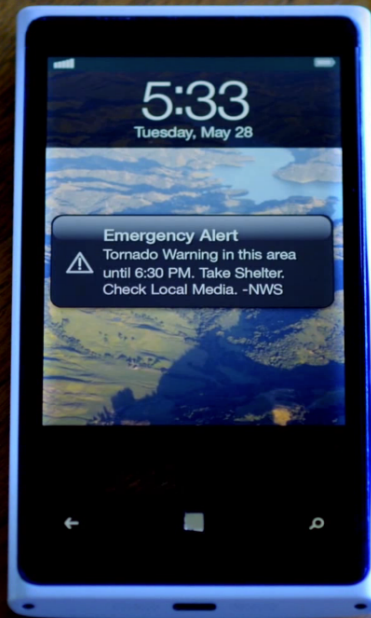
- *to mobile phones*



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Wireless Emergency Alerts

A text message via
“cell broadcast”



“If you are engaged in a voice or data session when alerts are released, you will not receive the alert. Alerts may be re-broadcast at specific intervals in the targeted geographic locations, in order to reach as many devices as possible.”

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while alerts are essential, they are *brief*

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- **alerts** are summary in nature
 - audio announcements & text crawls
 - nature, location of the danger
 - brief shelter/safety advice
- alerts then urge **tuning to local television & radio**

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broadcasters cover emergencies *before, during* and *after*



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Video: Tornado Disaster in Moore, Oklahoma May 20, 2013

<http://www.youtube.com/watch?v=AP6vZRz6e54>

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Radio Listening Explodes During Superstorm Sandy In The New York Metro Area; Arbitron Data Releases To Be Affected

Arbitron Adjusts Upcoming Data Releases To Account For Hurricane Sandy Downtimes

November 19, 2012 at 8:50 AM (PT)

92 percent of Americans listen to broadcast radio each week.

3 Comments



Radio Listening Levels During The Storm

ARBITRON has released data showing radio listening increased in the NEW YORK radio market as the SuperStorm SANDY made landfall during the evening of MONDAY, OCTOBER 29th. In fact, there was a 70% increase in radio listening as the storm hit the coast.

Compared to the week prior, the average number of people using radio in any

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Share on Facebook

Just click the Share button

42



Share

Superstorm Sandy - radio listenership in the New York City market increased **70 percent** above the prior week.

In coastal areas, audiences skyrocketed by **367 percent** along the Connecticut coast & **245 percent** on Long Island.

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Distinctive Attributes of Local Broadcast Television

- long-form, continuing coverage (hours, days)
- practical, actionable information for viewers/listeners
- professionals with credibility & local area knowledge
- meteorologists, anchors, field reporters, studio analysts, remote reporting, traffic expertise, helicopter coverage
- aggregation & reporting of information from many sources
- established relationships with police, fire, medical services, hospitals, government agencies, and independent experts

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- Local broadcast TV coverage is uniquely local
 - national cable news networks will provide “news”, not “public safety information”
 - without critical local details for those in danger
 - only local TV & radio seeks to aid its community

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- **emergency management professionals** also benefit from broadcast emergency information
- **broadcast receivers** are commonly placed in:
 - police, fire and EMS stations
 - hospitals and public shelters
 - electric power & telecom utility offices
 - government emergency management offices

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- Broadcast television news uniquely offers efficient **visual assets**:
 - **maps** communicating contextual messages to viewers in different locations
 - **on-scene video** to reinforce the messages on safety measures
 - a **distillation of information** presented graphically

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- Broadcast TV and radio are **highly reliable**
 - assets are centralized and well protected
 - architecture is simple: transmitter & receiver
 - congestion not an issue
 - broadcasts are secure from tampering
 - local power backup with large fuel supply
 - contingency plans for xmtrs, studio facilities

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When you step out the door...

- Broadcast radio is **mobile**
 - vehicle & portable radios - ubiquitous
- **Mobile broadcast DTV** has been launched
 - 120 stations covering 57% of the U.S.
 - two mobile content ventures (Dyle, Mobile500)
 - battery-powered Mobile DTV receivers
 - ATSC standard for Mobile EAS alerts

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amazon.com

Mobile ATSC DTV Receivers



Audiovox Dyle Mobile TV Receiver (WIDTV1), White

\$99.99 Prime

Order in the next **15 hours** and get it by Friday, Nov 22.

More Buying Choices
\$87.11 used (2 offers)

★★★★☆ (8)

Product Description

... Wi-Fi hotspot to watch TV. Audiovox mobile TV does not touch your data ...



Belkin Dyle Wireless Mobile TV Receiver for 30-Pin iPhone and iPad in Select Coverage Areas

~~\$149.99~~ **\$111.12** Prime

Order in the next **12 hours** and get it by Friday, Nov 22.

More Buying Choices
\$65.72 used (7 offers)

★★★★☆ (15)

Product Description

... The Dyle Mobile TV Receiver transforms your iPhone 4, iPhone 4S, iPad ...



Belkin @TV Plus - Mobile Television Anywhere

\$239.95 new (2 offers)

★★★★☆ (151)

See newer model of this item

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audiovox® mobiletv WIDTV1

WIRELESS LIVE LOCAL TV ON THE GO

TURN YOUR SMARTPHONE OR TABLET INTO A PORTABLE TV

- Works on Apple (iOS) or Android
- No Data Plan or Internet Necessary
- Over 120 Stations Nationwide
- Coverage in Select Major Markets
- Wireless Receiver Fits in Your Pocket
- FREE, easy-to-use Dyle™ Mobile TV App by Siano from the App Store and Google Play
- Battery life — over 4 hours of TV viewing. USB charging cable included
- View high-quality Digital TV (ATSC-M/H)
- Program guide and pause/rewind

System Requirements

- iPod, New iPod, iPod mini or newer
- iPhone 4s, iPhone 5 or newer
- Android 2.2 or newer
- Advanced Android devices with 4GB or more, including Samsung Galaxy S2/S3, Nexus Nexus, Nexus 7, Acer TF1010, HTC One, and HTC Sensation

SCAN FOR AVAILABLE COVERAGE & STATIONS.

Dyle™ mobile TV offers the ability to watch live, local broadcast television in select U.S. metropolitan areas. Dyle mobile TV is only available in these select metropolitan areas and not all channels are available in all cities. Coverage may vary across participating markets and by zip code within a market. More stations and markets will continue to be added. City Coverage & Stations subject to change without notice. For complete information on what markets may be available in your area, please scan the QR code at left or visit: www.dyle.tv/coverage.

1 / 1

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Broadcast Emergency Coverage: Cost to the Public?

- Zero.
- broadcasters fund **all** emergency coverage
- **free** to the public, **no cost** to government/taxpayers
- a **public service commitment** of local broadcasters
- preserving local spectrum is **essential** to preserving this public service in times of crisis

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Some **context** regarding reliability...

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On 29 June, 2012...

- ...a rare, fast-moving, destructive storm called a **derecho** swept 10 states in the northern U.S.A.
- this derecho traveled 600 miles in 10 hrs.
- caused 22 deaths, and widespread damage
- >3.7 million people lost power (up to 2 wks)

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600-mile path of the derecho – June 2012

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They **key role broadcasters played** during and following the **derecho** should also be recognized. As in many times of crisis, broadcasters served as the “first informers,” providing the public with information on the storm’s path, the damage it caused, and its effects on other communications services.”

- FCC Report: “Impact of the June 2012 Derecho on Communications Networks & Services”
January, 2013

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Massive wireline telephone & 9-1-1 outages

- > **1.2 million wireline customers** in 12 states lost phone service
- 9-1-1 Emergency Service Outages
 - Public Safety Answering Points (PSAPs)
 - 77 PSAPs lost some degree of connectivity
 - 17 PSAPs in 3 states **lost service completely**, more than 2 million people could not reach 9-1-1
 - vital location info. for 9-1-1 calls disabled for PSAPs serving > 3.6 MM people in six states

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Causes of Telecom Failures

FCC Report: Impact of the June 2012 Derecho on Communications Networks & Services

- network congestion & physical damage at telco **central offices** and **transport links** (DS3 circuits)
- Inter-switch communications made impossible in certain locations (**SS7 isolation**)
- Insufficient physical/logical diversity - **monitor & control links**
- **loss of public power** and **backup power failures**
- **alarm monitoring systems failed** (only 30 mins. backup pwr.)
- central office equipment **failed due to low voltages** before battery back-ups were depleted

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Wireless Issues

- at the peak, **11% of cell sites** were out of service.
- many other wireless customers could not complete calls due to **landline backhaul failure** & problems in the PSTN in general
- wireline facilities failures had **a sweeping affect** on mobile wireless services

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Numerous interconnected telecom network assets, distributed geographically are inherently difficult to make reliable.

Local broadcast television and radio architectures stand in stark contrast!

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FCC Report: During the derecho, broadcasters reported 9-1-1 failures and gave viewers alternate access numbers

Broadcasters can mitigate the impact of telecom emergency difficulties!

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U.S. Households Receiving Broadcast TV

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31% of U.S. TV Households are equipped to
receive over-the-air terrestrial TV

- GfK Home Technology Monitor 2013 Ownership Report

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For lower income households, the figure is
41% with off-air reception

- GfK Home Technology Monitor 2013 Ownership Report

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Conclusion:

Local U.S. broadcast spectrum is essential
for at least public safety reasons, and must
be preserved.

Broadcast emergency information services
cannot be replaced by mobile wireless.

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