



# ATSC 3.0

## *It's More Than Just Television*

April 17, 2016

NAB Show 2016

Featuring  
GatesAir's



Rich Redmond  
Chief Product Officer

# ATSC 3.0 - It's More Than Just Television

unleash

anytime

anywhere

connected technologies • immersive experiences • redefined revenue

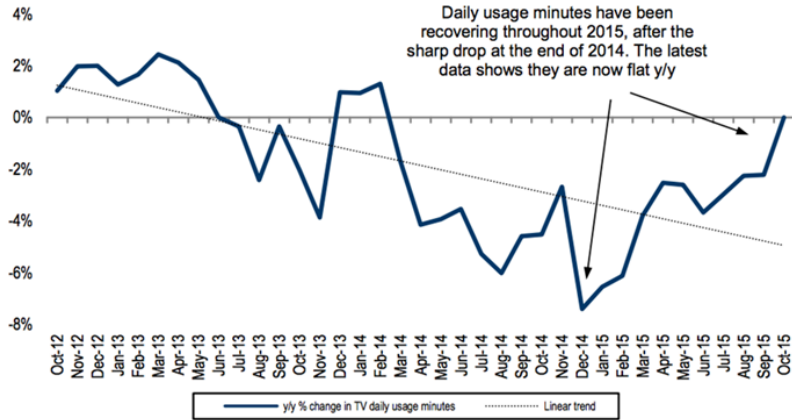


Rich Redmond  
GatesAir  
Mason, Ohio, USA

# Agenda

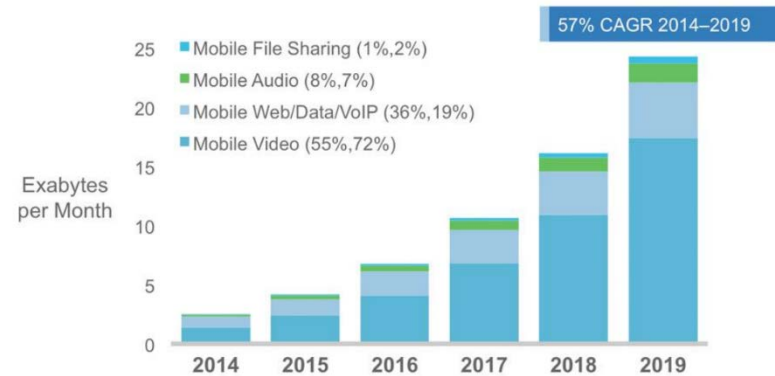
- Background
- Ultra High Definition
- What is the key enabling difference from today
- Mobile network off load
- Geo Locational content – Hyper Local
- In car navigation - traffic
- Mobile digital signage
- File based Multimedia content
- Advanced emergency alerting
- Conclusions

# Evolving Consumer Consumption



Source: Nielsen, Credit Suisse estimates

- Linear TV fluctuates but mostly flat
- People consume media across multiple platforms
- Mobile video consumption continues to grow
- Mobile video payload consumes almost 3 quarters of usage

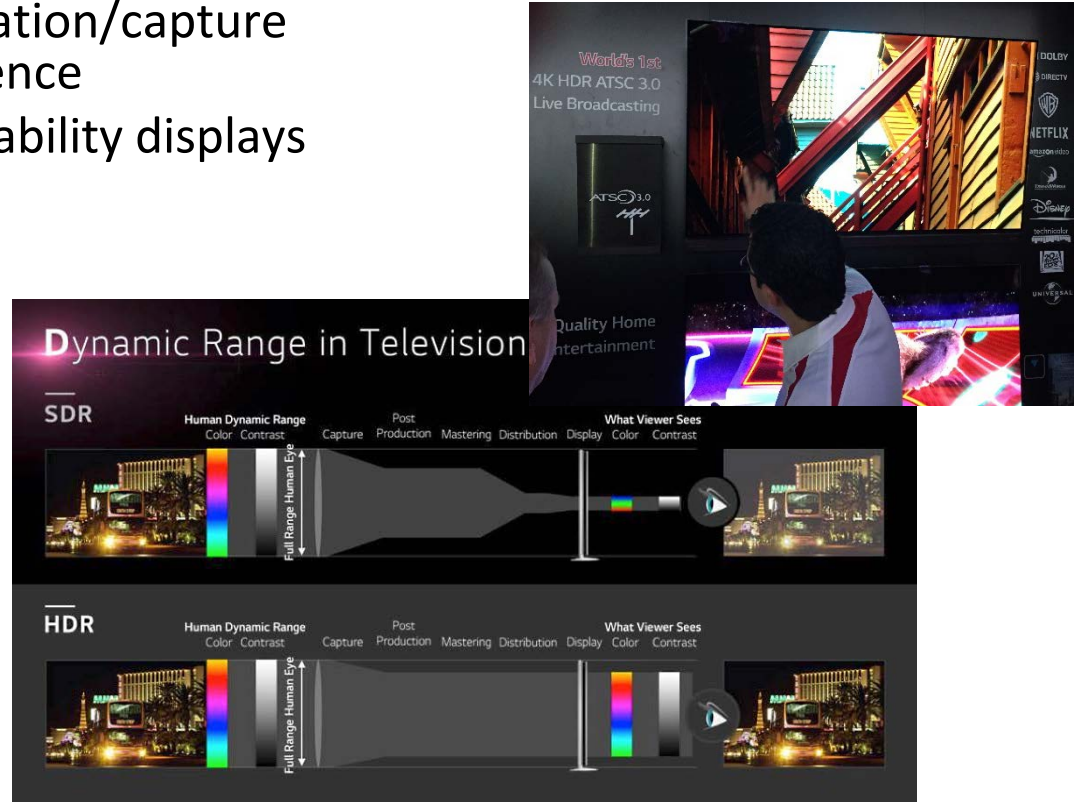


Figures in parentheses refer to 2014, 2019 traffic share.  
Source: Cisco VNI Mobile, 2015

- Unicast nature of mobile data drive one to one connection per user – does not scale well for common content
- EMBMS (broadcast LTE) helps but will not meet demand

# UHD Provide compelling experience

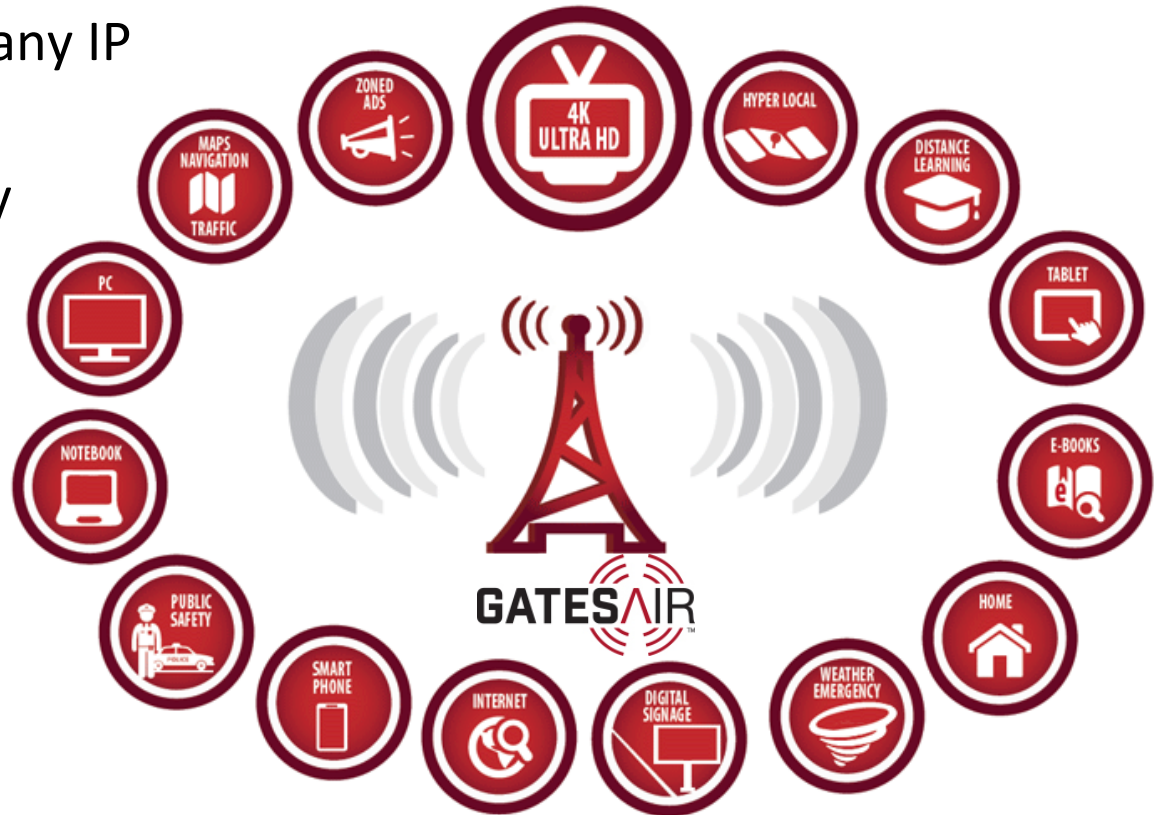
- Advancements in content creation/capture enable more engaging experience
- Proliferation of expanded capability displays
- Greater bits per hz enable more payload over 6MHz channel
- Advanced HEVC encoding reduces bandwidth for high quality content
- On the fly program extension (baseball mode)
- However – the opportunity is just getting started





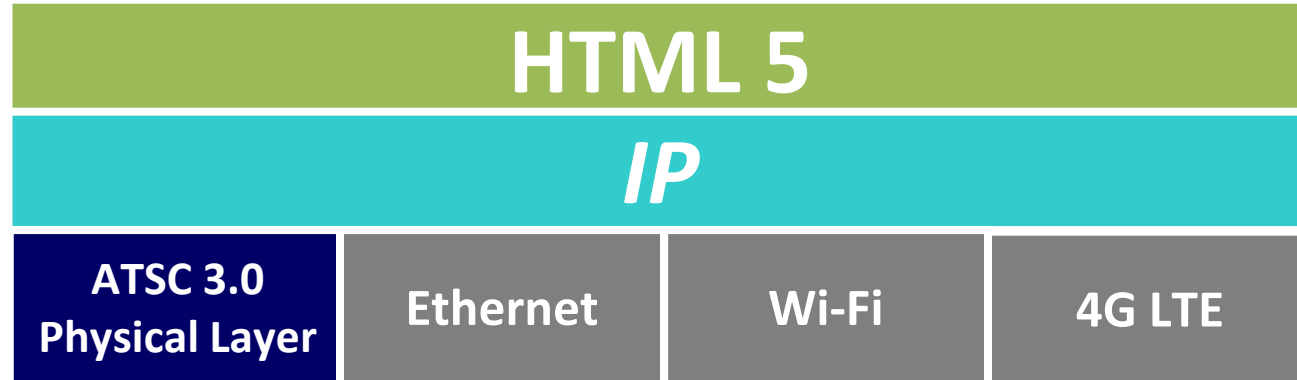
# ATSC 3.0 -Flexible, Adaptable Standard

- Cost effective one to many IP delivery platform
- Native Mobile capability
- Extended TV services
- Ability to target and deliver content to multiple use cases
- Opens new business opportunities for broadcasters



# ATSC 3.0 adds another IP pipe to the device

- Core IP based architecture - elimination of need for MPEG-2 TS
- 3.0 can target IP enabled devices
- Allows for alternative models to target available devices
- Open standards fuels innovative developments



## ***ATSC 3.0 - Flexible Wireless IP Delivery Platform***

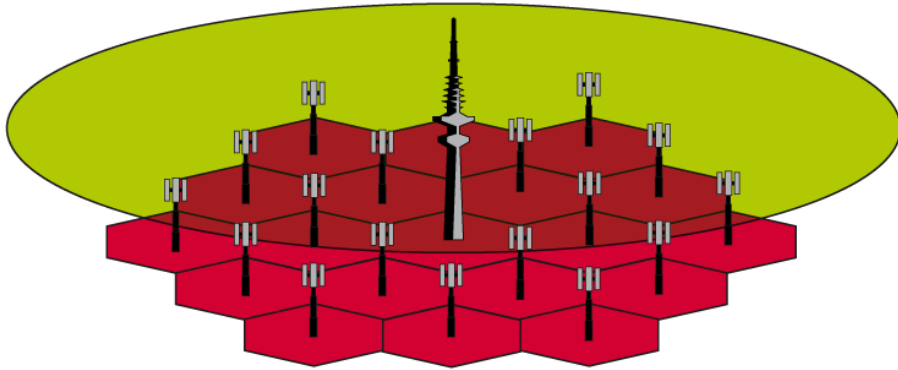
# LTE Mobile Offload

- Time Domain Multiplex digital TV and LTE content to all devices from a broadcast tower.
- The LTE Megacell Overlay model is proven to work using the DVB-T2 broadcast standard today – fits in to ATSC 3.0
- Broadcast and mobile network operators both gain.
  - Leverage broadcast's inherent one-to-many model for popular content.
  - Relieve bandwidth constraints on LTE networks.
- New revenue opportunities for both sides to cooperate.
  - Broadcaster infrastructure high power and robust
  - Mobile network operators save on network infrastructure build out.
- Consumers and the public benefit from optimal spectrum utilization and optimized services.

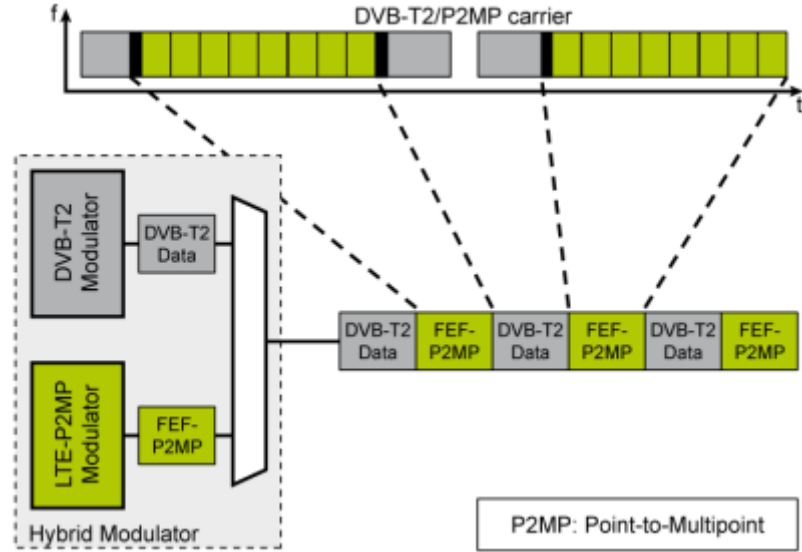




# LTE Mobile Offload – Bootstrap enabled



■ Regular LTE Cells: unicast services  
■ Tower Overlay: broadcast, multicast



# Geo Location Targeted content

- ATSC 3.0- SFN networks for targeted localized content
- Grow revenue by engaging local business
- Capture viewers by hyper localized content



TOP VIDEO

TOP PICKS TRENDING LOCAL WEATHER.COM NATIONAL MOST WATCHED

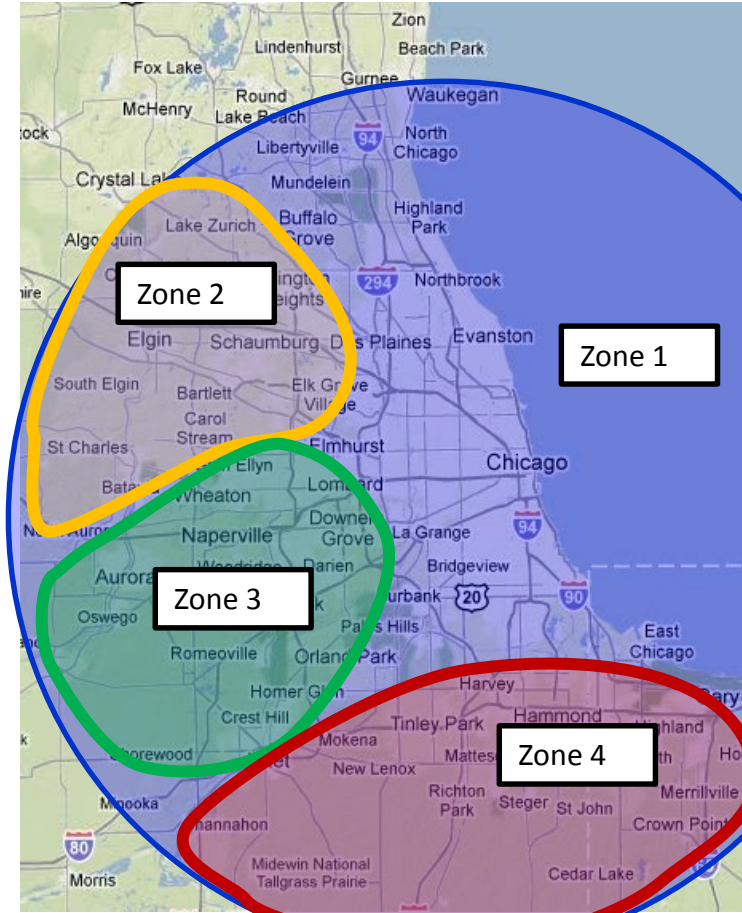
Sneak peek: Seahorses: Unbridled Fun at Newport Aquarium

3 sentenced for invasion of federal judge's home

Man dies after house fire in Covington

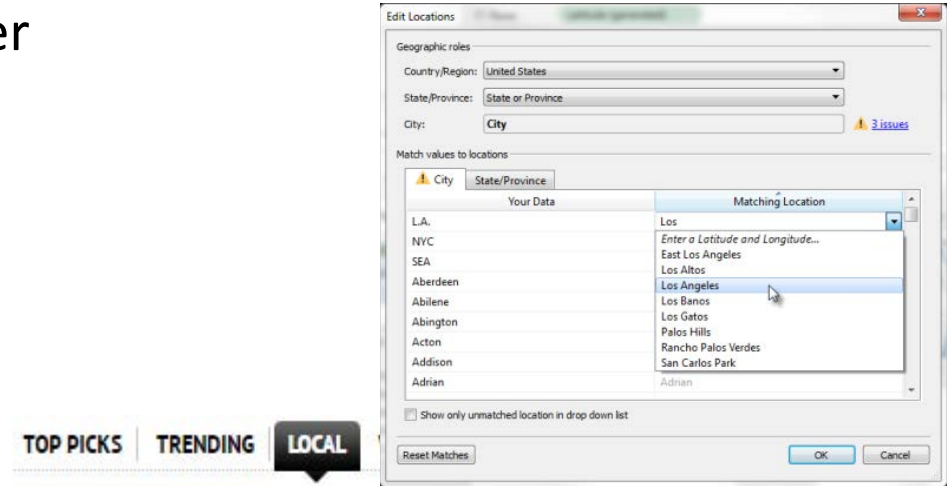
MORE >>

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# Targeted Content

- User based location profiles filter applicable content
- Allows user to see hyper local news and content for their neighborhood
- Content is distributed across ATSC 3.0 IP delivery platform to enabled devices
- Link to existing devices via wifi and home gateway



Staying Chilly With Showers



Man injured in Covington house fire

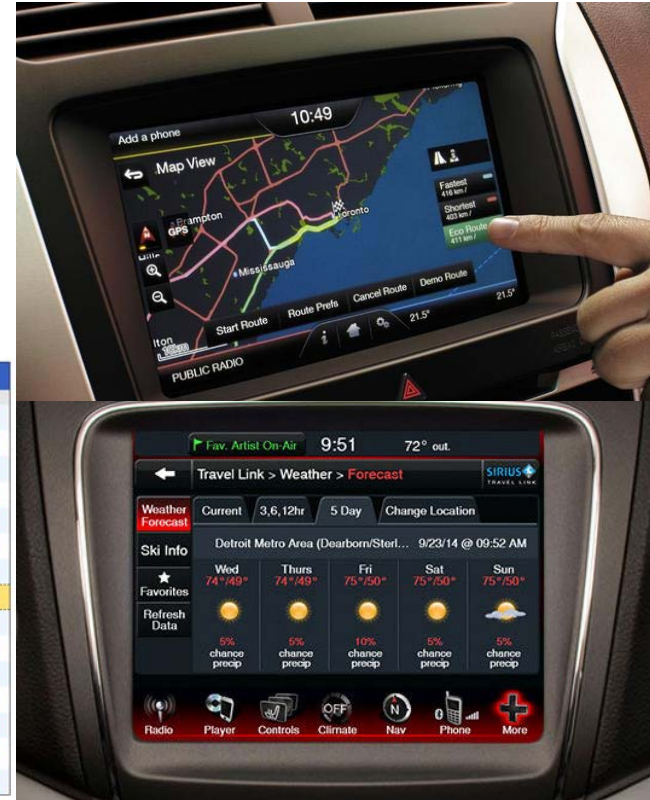
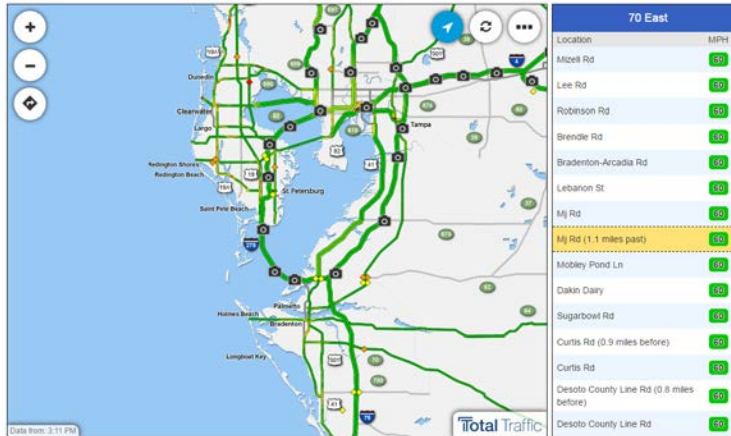


Mom talks about her arrest for putting drug in son's feeding tube



# Connected Car

- Current system for updated traffic info over low bandwidth radio systems
- More robust data delivery enables enhanced traffic data, news weather and local information
- Development of connected car can be ideal target for ATSC 3.0



# Mobile Digital Signage

- Digital out-of-home (DOOH) advertising revenues will almost double over the next five years to ~\$8B by 2020 in North America.
- Public transportation including trains, buses, taxi cabs and ferries offer ideal, captive audiences for digital advertising.
- The challenge is that these vehicles are always on the move and not tethered to a traditional network.
- Deployments using mobile network incur high per node connectivity costs
- Proof of concept shown with MDTV





# Digital Signage over ATSC 3.0

Digital Television  
Content

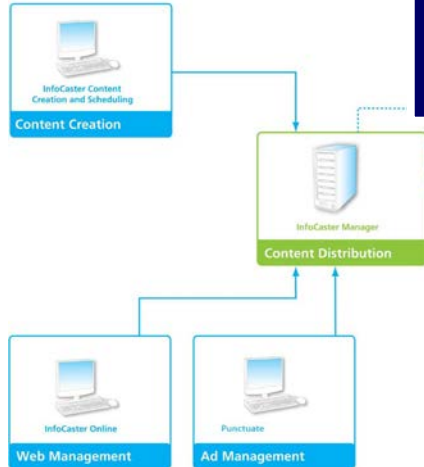


ATSC 3.0  
Scheduler/Framer



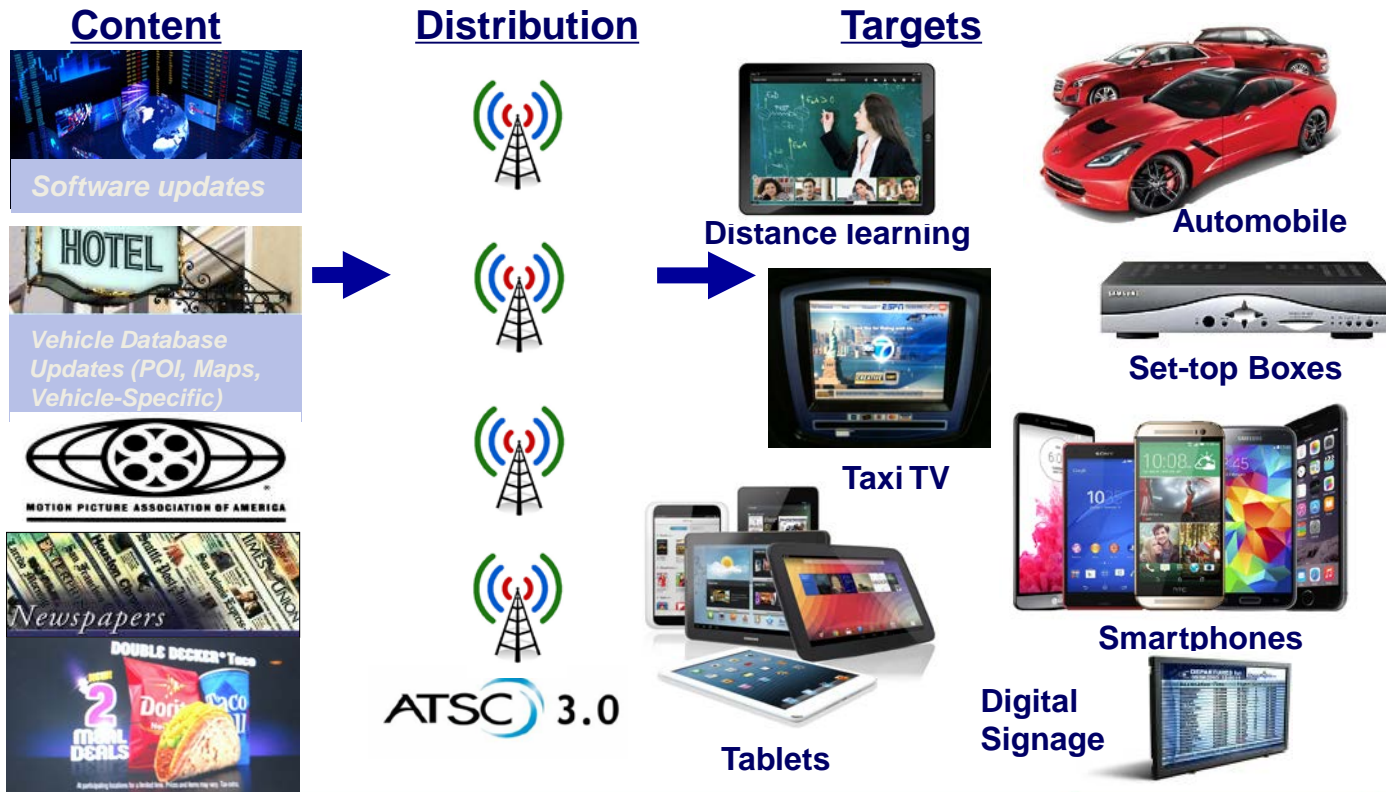
ATSC 3.0  
Transmitter

ATSC 3.0

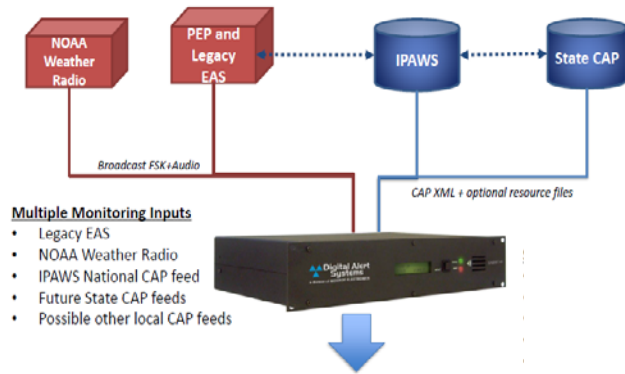


# File based content delivery

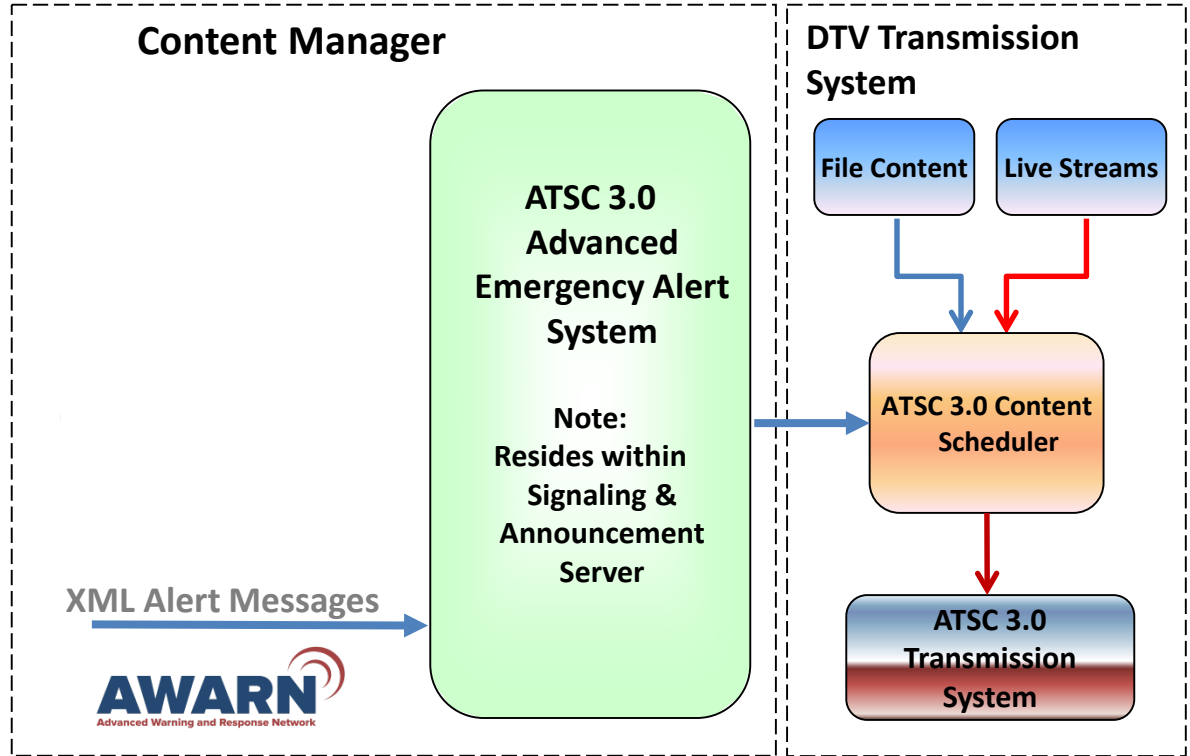
- One to many cost effective IP pipe
- Target a wide range of applications



# Advanced Emergency Alerting



XML Alert Messages

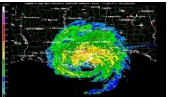


# Advanced Emergency Alerting

First Responder Data

Emergency Event  
Specific Information

Evacuation Route  
Maps



Radar



Graphics



Hyperlinks



Camera



Traffic Cameras



SNG



News Copter



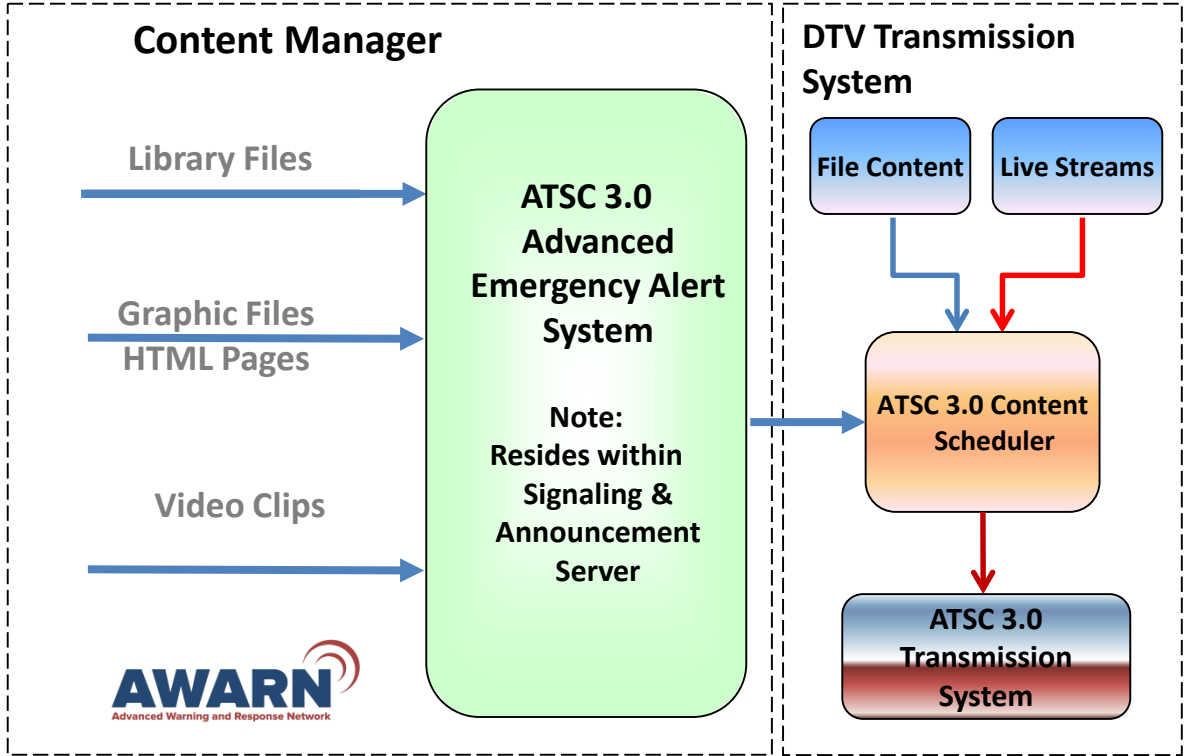
ENG



Tower Camera



Live Studio



# Emergency Message Banners

Emergency Alert is delivered as data to the device and rendered, it is not a character scroll in the video

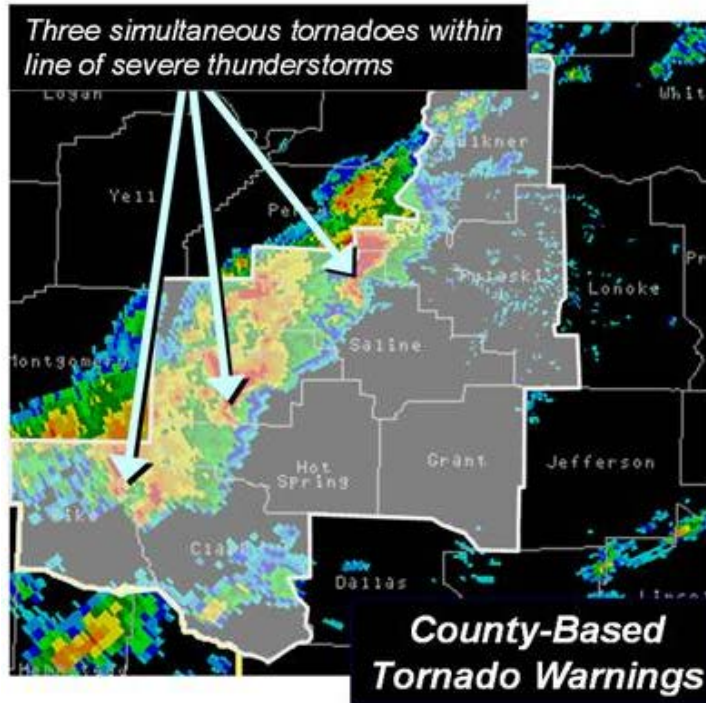
## NRT Content Guide



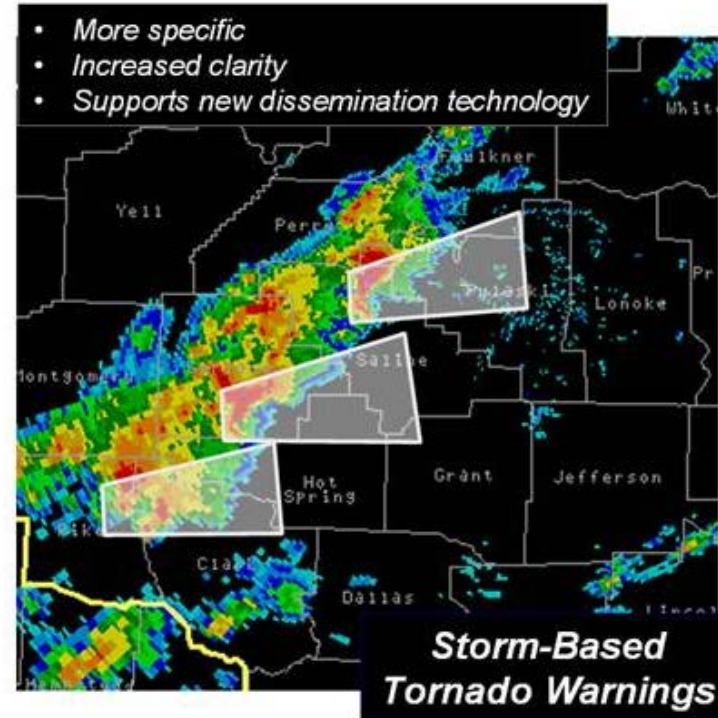
**New alert causes vibration or sound**



# Geo-targeted Alerts



8 counties under warning  
Almost 1 million people warned



70% less area covered  
~600,000 fewer people warned

# ATSC 3.0 -Flexible, Adaptable Standard

Clearly ATSC 3.0 can fuel next generation television – However it can power much more than an extension of today's business

- UHD – HDR content create compelling user experience
- Native Mobile delivery capability
- Wireless IP delivery platform
- Geo locational content –Hyper Local – significant revenue opportunity
- Cost effective delivery of one to many content - new business
- Advances in emergency warning

***ATSC 3.0 is not just Television – It is an enabler for next generation business models***