



ATSC 3.0 Modulation Update

The future is closer...

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IBC2015

Featuring
GatesAir's



Steve Rossiter
TV Applications Engineer

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The future is closer...



Create



Transport



Transmit Television



Transmit Radio



- ATSC is on track for candidate standard documentation by the end of this year.
- Many of the physical layer decisions have been analyzed and tentatively decided.
 - Constellations
 - Forward Error Corrections
 - Waveform structure elements
- Issues such as IP delivery method / technologies have also been reviewed.
- Less contentious items such as video codec will be added.
- Still no official tie between ATSC 3.0 and FCC Auction.

- Lowest level physical layer signal, known as Bootstrap, is already a candidate standard.
 - Document A/321 (officially “System Discovery and Signaling”)
- Healthy discussions taking place regarding audio system(s) to be chosen.
- Once the physical layer foundation is in place, the upper layers have the framework needed to move forward in short order.



Highlight on Advanced Emergency Alerting

- ATSC 3.0 embeds the ability to advance the state of the art emergency Alert System.
- Moving alerting from a video overlay to a digital pipeline, triggerable at the lowest level to “wake up” receivers.
- Ability to insert rich media (such as maps with pertinent information) that a receiver can display.

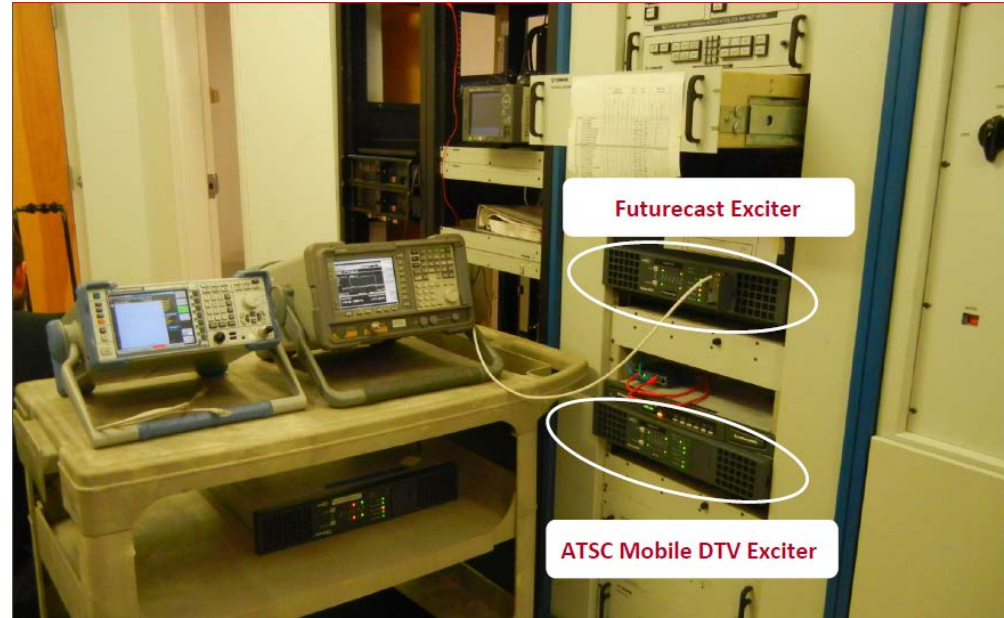




Field Testing and Demonstration of LG / Zenith /
GatesAir's Futurecast system, Cleveland, Ohio
July 2015

Modulation Information

- ATSC 3.0, 3 data pipeline (PLP) configuration was put on air for testing.
- ATSC 2.0 mobile DTV signal was also used for reference data since it's mobile performance is well known and documented.



Bus Demo

- Demo from Rock and Roll Hall of Fame
- Bus route varied from highway speeds to downtown “concrete canyon”
- Format used for bus reception:
 - 720p, HD @ 1.25 mbps
 - CNR / TOV: 3.3 dB



Indoor reception

- Basement of Oswald building, downtown Cleveland.
- Highlight of standard definition, handheld mode.
- Format used for reception:
 - 0.59 mbps
 - CNR / TOV: -1.3 dB



- Rock and Roll Hall of Fame
- Format used for reception:
 - 4k, 15 mbps
 - CNR / TOV: 13.9 dB



GatesAir and LG demo ATSC 3.0 in Seoul

- During “UHD Days” in Seoul
- September 1
- In cooperation with Korea’s SBS
- 707 MHz, Ch. 53
- Korea is keen on UHD broadcasting and has set aside channels in the 700 MHz band dedicated to UHD. Currently using DVB-T2.



- ATSC 3.0 frame structure will allow for other service to be in bedded within frame structure.
- One of those possible services is the LTE offload service.

