ATSC 3.0 Modulation Update

The future is closer...

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Featuring
GatesAir's

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ATSC 3.0
Modulation Update

The future is closer...
ATSC 3.0 Standards Progress

- 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
Ultra HD

- 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.