



**a — t — s c**

Advanced Television Systems Committee

**a — t — s c**  
**MOBILE DTV**

# The Future of Broadcasting

- Going forward, the broadcasting industry must leverage
  - Local
    - Content
    - Brand
    - Sales contacts
  - Un-tethered nature
    - It's wireless (before wireless was cool)!



# Leveraging Wireless



The goal: Reach devices that move!

# ATSC Mobile DTV

- A standard for delivery of real-time and non-real-time television content and data to mobile and handheld devices
  - ATSC Mobile DTV services are capable of being carried in existing DTV broadcast channels
  - ATSC Mobile DTV is backwards compatible
    - The presence of these services do not preclude or prevent operation of current ATSC services in the same RF channel or have an adverse impact on legacy receiving equipment



# ATSC Mobile DTV Applications

- Potential applications include
  - Free (advertiser supported) services
  - Non-real-time content download for later playback
  - Mobile and handheld subscription-based TV, such as
    - Video-on-demand (VOD)
    - Pay-per-view (PPV)
    - Electronic sell-through (EST) services
    - Traffic/navigation data for in-vehicle use



# ATSC Mobile DTV System

## Presentation Layer

AVC h.264 video coding ... HE-AAC V2 audio coding  
Rich Media Environment ... Closed captioning

## Management Layer

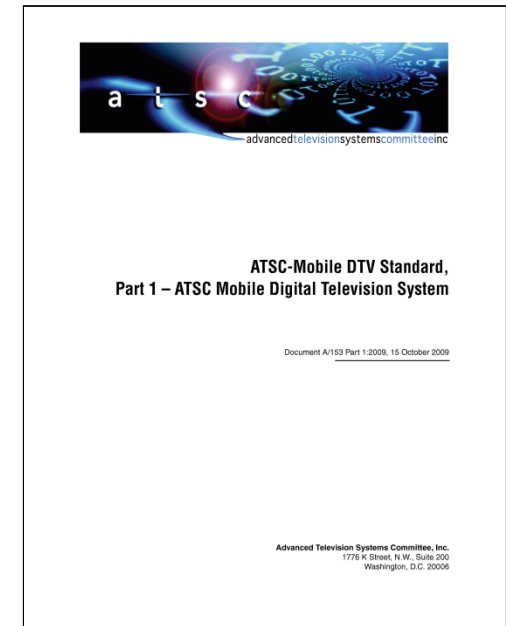
Transport – Internet Protocol  
Streaming and non-real time file transfer – NRT under development in ATSC  
Electronic Service Guide - based on OMA BCAST

## Physical Layer

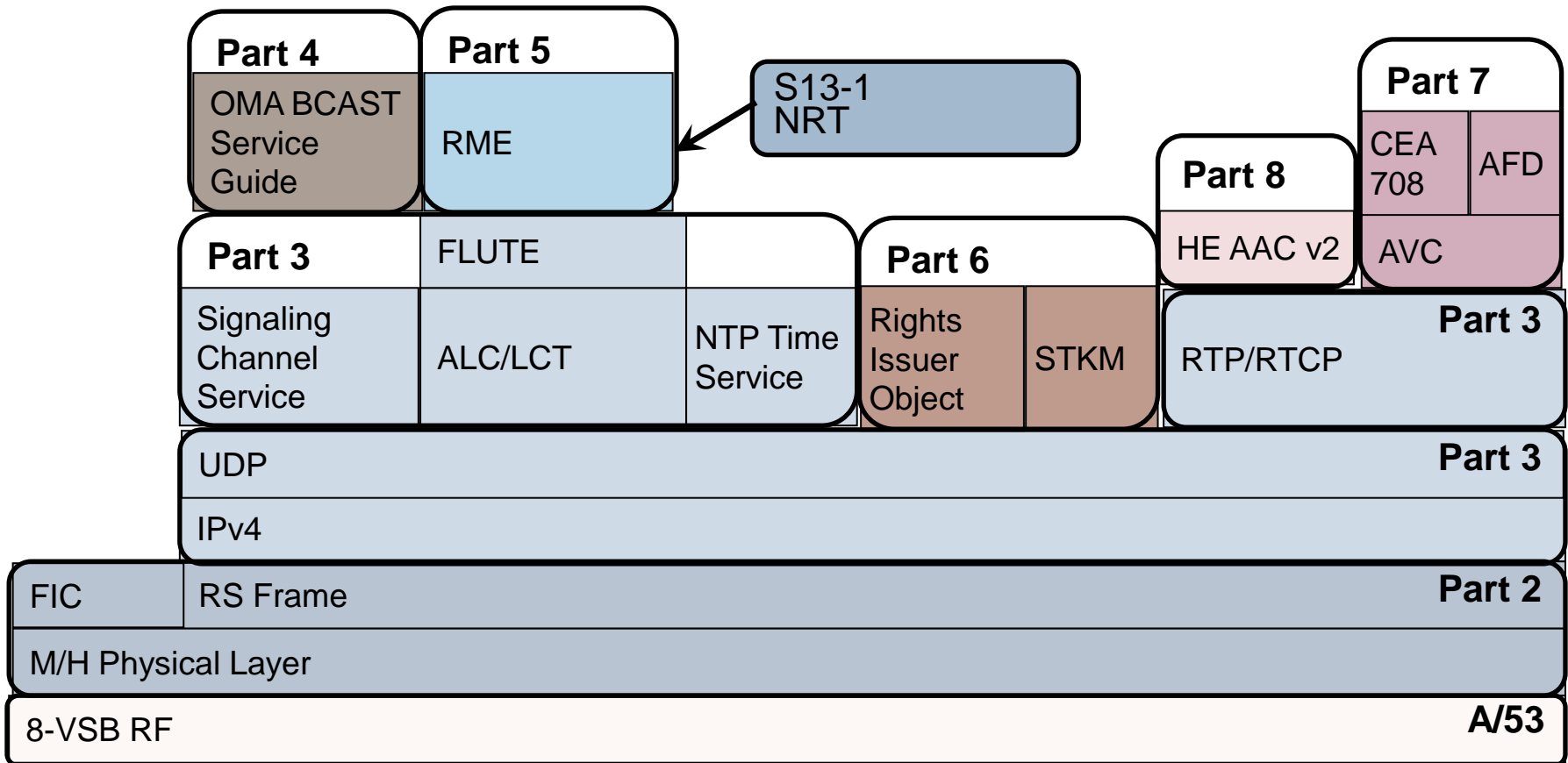
RF transmission and forward error correction  
Compatibility with legacy 8-VSB receivers/decoders

# A/153 Document Set

- **Part 1** – “Mobile/Handheld Digital Television System”
- **Part 2** – “RF/Transmission System Characteristics”
- **Part 3** – “Service Multiplex & Transport Subsystem”
- **Part 4** – “Announcement”
- **Part 5** – “Presentation Framework”
- **Part 6** – “Service Protection”
- **Part 7** – “Video System Characteristics”
- **Part 8** – “Audio System Characteristics”



# A/153 Document Set





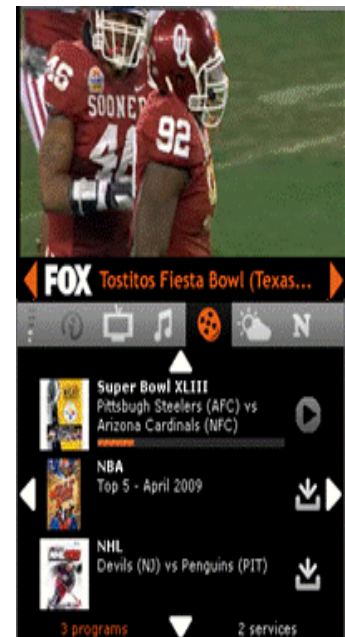
# “Mission-Critical” Tools

- Channel listings for simple signaling
  - Discovering available services for planned viewing or impulse viewing
- Electronic Service Guide
  - Discovering available services for planned viewing or impulse viewing
    - What’s on now / next / later?
- Subscriber Interactions
  - Security, simple permission (OMA BCAST DRM Profile), IP security / keys, billing-enabled services, subscription/one-time/pre-paid options

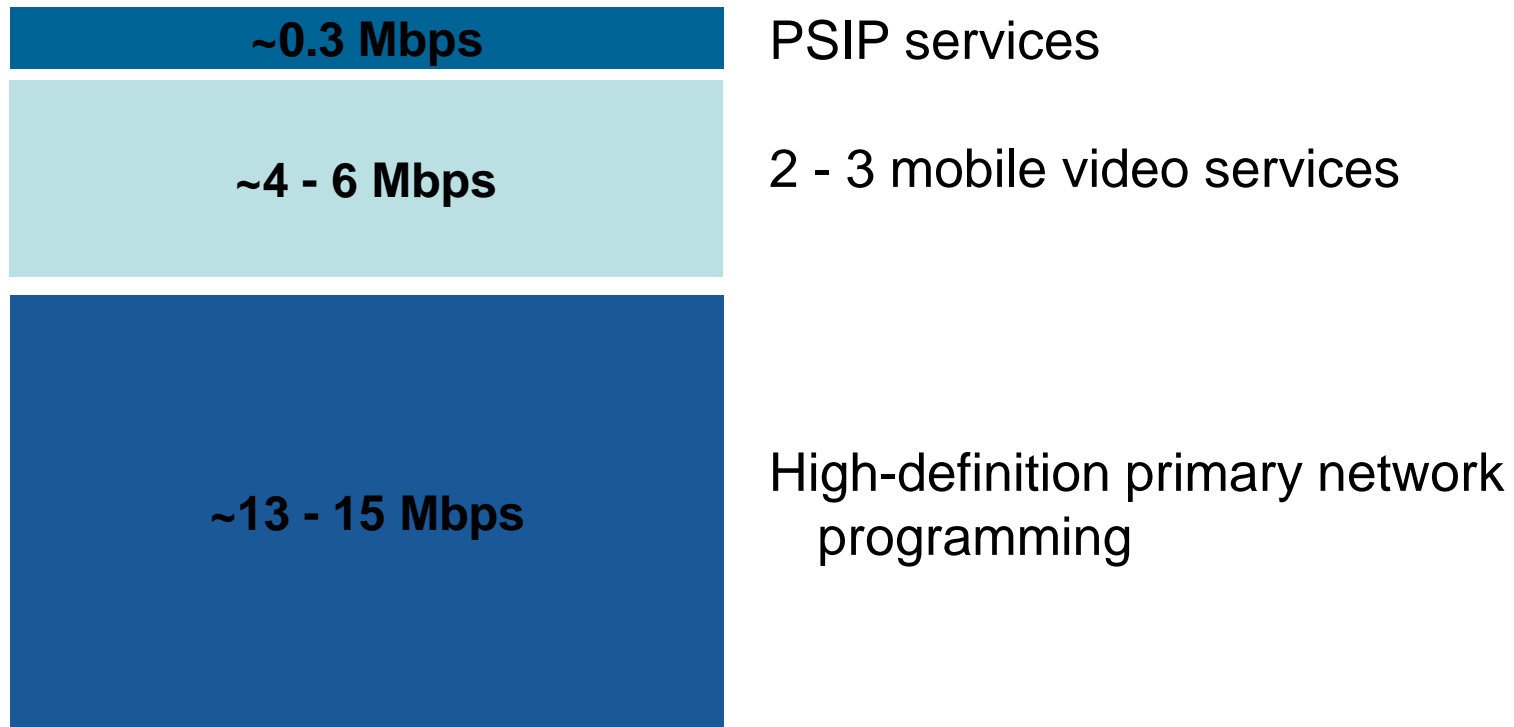


# “Mission-Critical” Tools

- Rich Media Environment
  - RME is a powerful means to script non-persistent applications (interactive and other) that are device-resident
    - RME provides for graphical overlay and access to other applications
- Viewer data collection
  - Passive/active audience measurement, opt-out
- And, of course, the expected services
  - Live TV, live audio, clipcasting, datacasting, traffic, weather, news, and sports

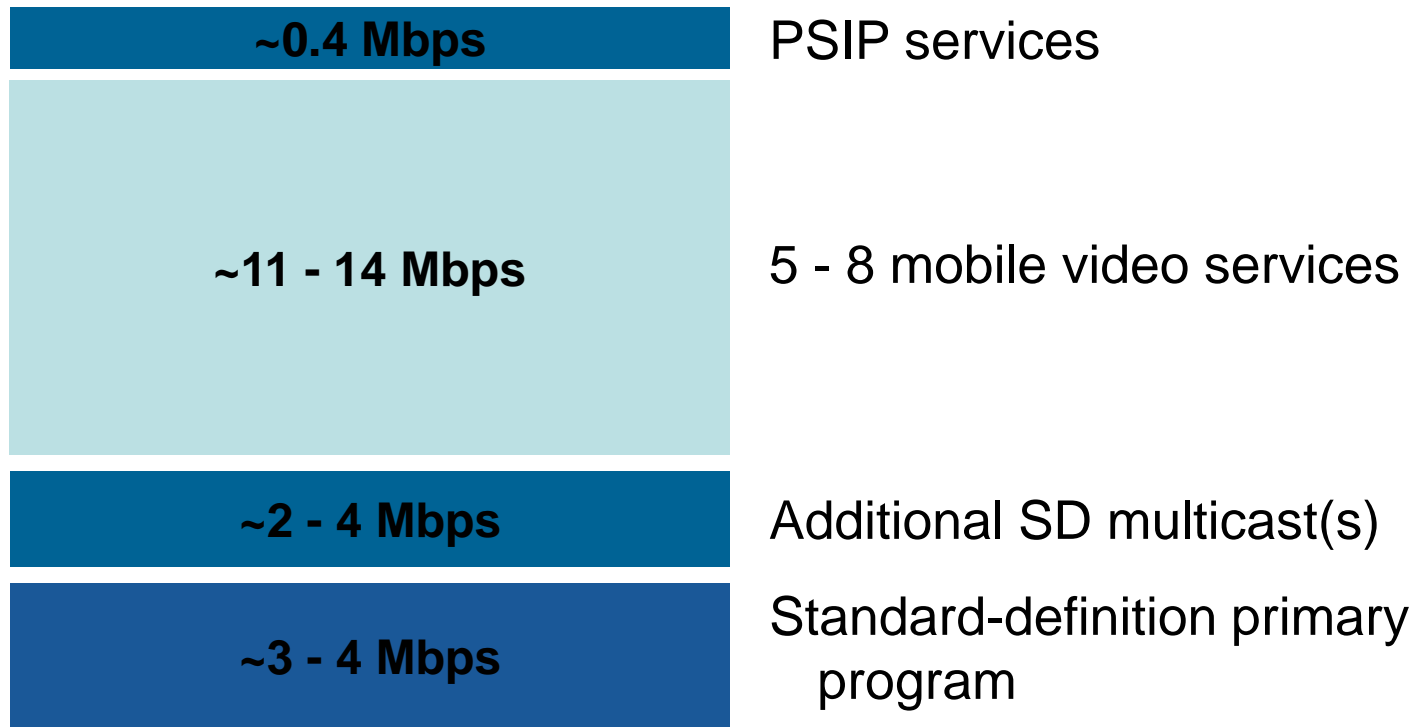


# Bandwidth Allocation Example - HD



Available bandwidth = 19.4 Mbps

# Bandwidth Allocation Example - SD



Available bandwidth = 19.4 Mbps

# ATSC Mobile DTV on the Air

- OMVC is launching an ATSC Mobile DTV consumer showcase the Washington D.C. market
  - Part of a continuing effort to accelerate commercialization of mobile DTV services
  - At least seven broadcast stations participating
  - Core objective is to characterize consumer behavior, attitudes, and expectations
- OMVC has launched a Model Station project for technical research and development
  - Enables manufacturers to develop and test products that meet broadcaster, electronics manufacturer and consumer requirements



# ATSC Mobile DTV Receivers

- A wide range of receiving devices is envisioned
  - Handheld entertainment devices
  - Laptop computers
  - Mobile phones

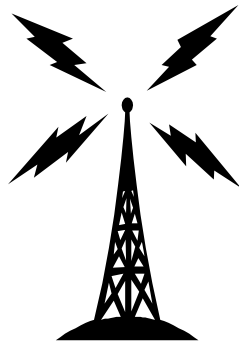


# New Work on ATSC Mobile DTV

- Scalable full-channel option
  - Looking forward to new applications and services beyond what the initial mobile system could enable, work has begun on an extension of the ATSC Mobile DTV system that enables use of up to the full channel bandwidth for mobile services
    - This work is intended to add increased capacity in a scalable manner up to the complete channel bandwidth
    - Scalable channel receivers will be able to receive A/153 transmissions by virtue of forward compatibility of the extended technique
    - A/153 receivers will be able to continue to receive the portion of scalable channel transmissions that will remain backwardly compatible
  - No adverse impact on existing and future A/53 receivers

# New Work on ATSC Mobile DTV

- ATSC is working to develop a broadcast station infrastructure communications standard
  - Current efforts are focused on developing appropriate documentation to facilitate transport of standardized ATSC Mobile DTV data and metadata across various studio-to-transmitter links
  - Because of the current roll-out of ATSC Mobile DTV services, this program is on a fast-track to completion





## For More Information...

- ATSC Mobile DTV at NAB 2010
  - Mobile DTV Marketplace in the Grand Lobby of the LVCC
  - Mobile DTV Pavilion in the South Hall of the LVCC
  - Tech Zone in the South Hall of the LVCC





**a — t — s — c**

Advanced Television Systems Committee

