

Digital Gravy? The Mission & Monetization of Multicasting in Our DTV Spectrum!



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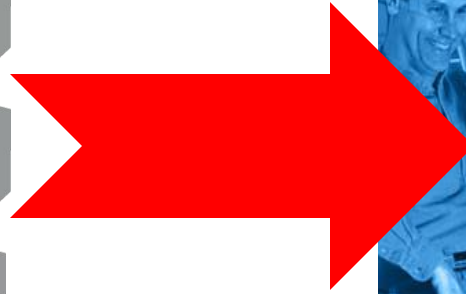
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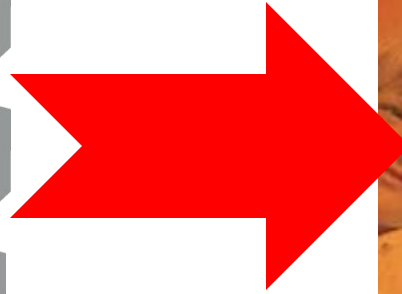
Introduction

The Key is
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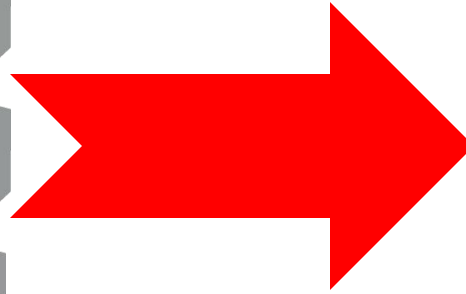
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While
travelling



In the
Office



On the go



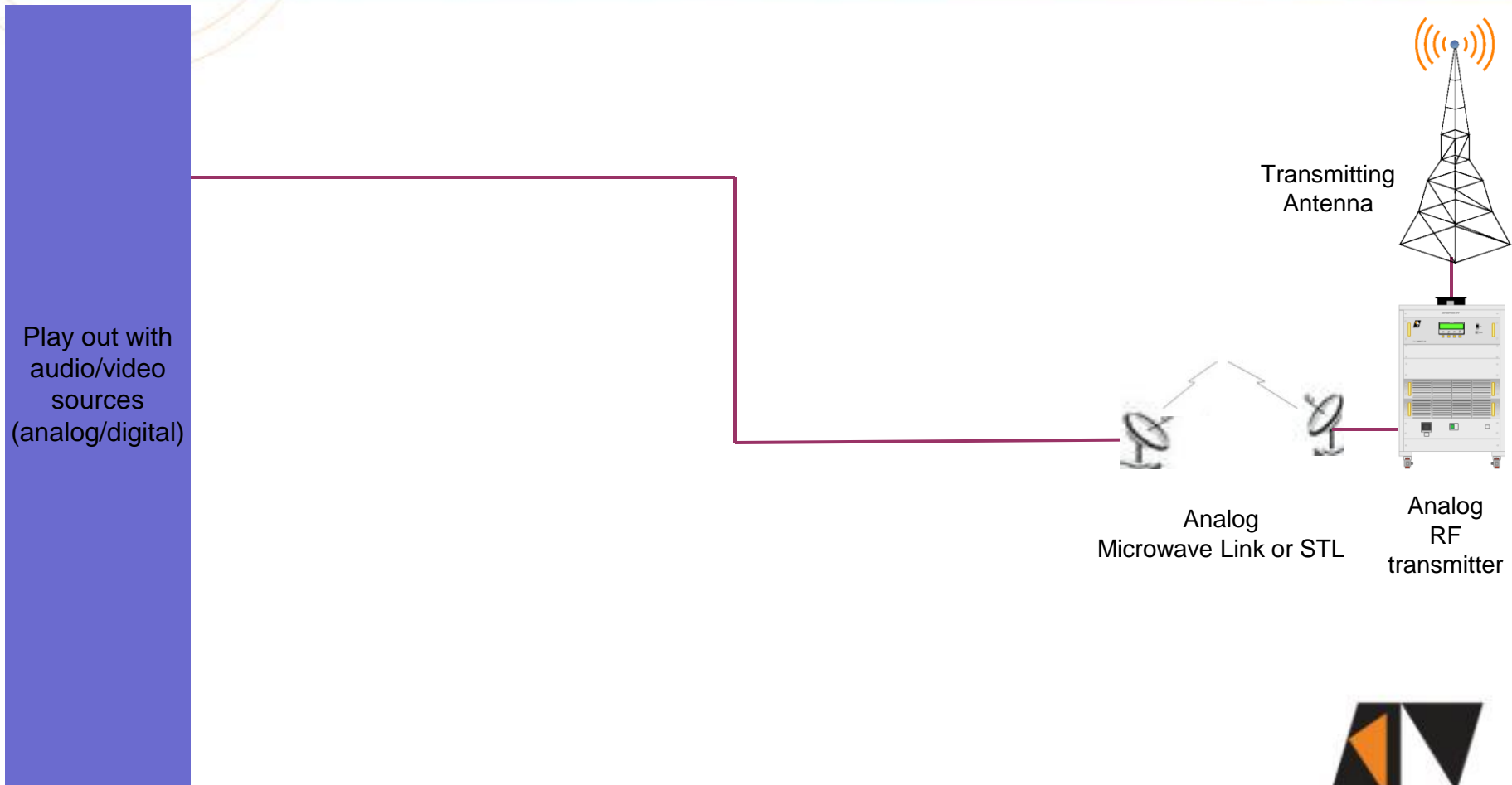
Introduction

How do we do this?

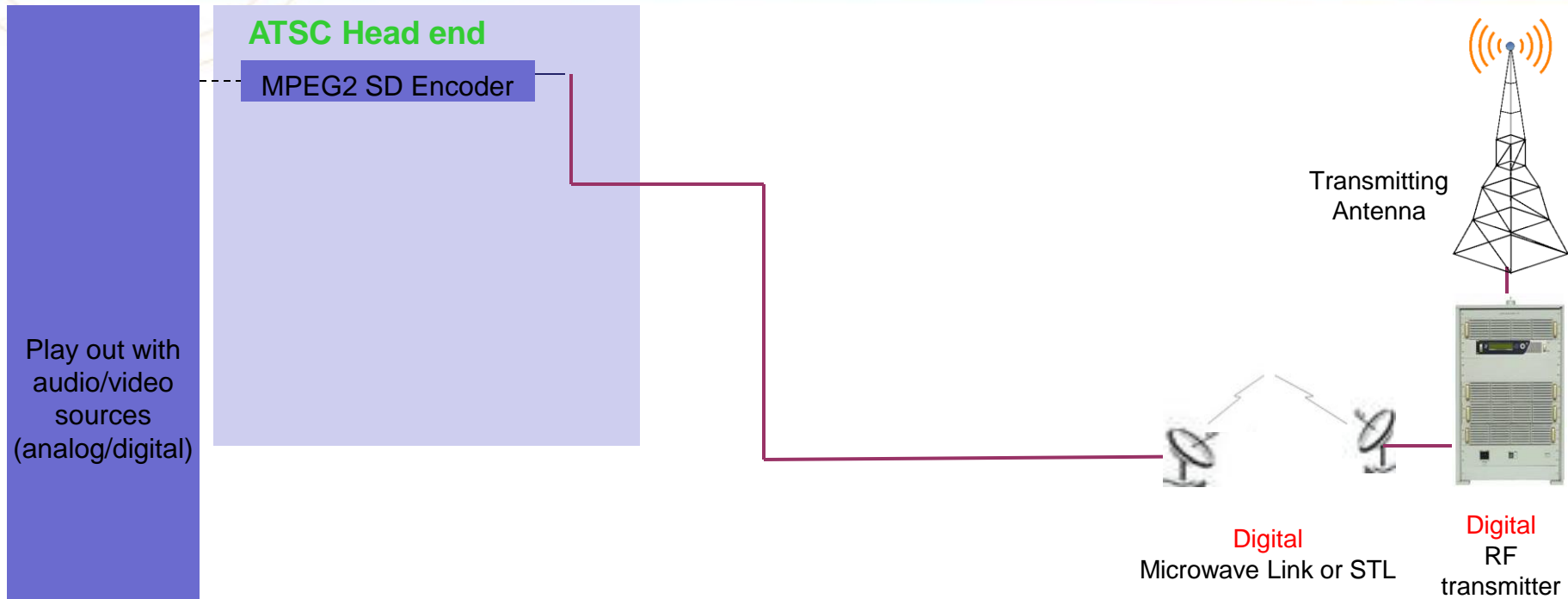
Plan and invest wisely



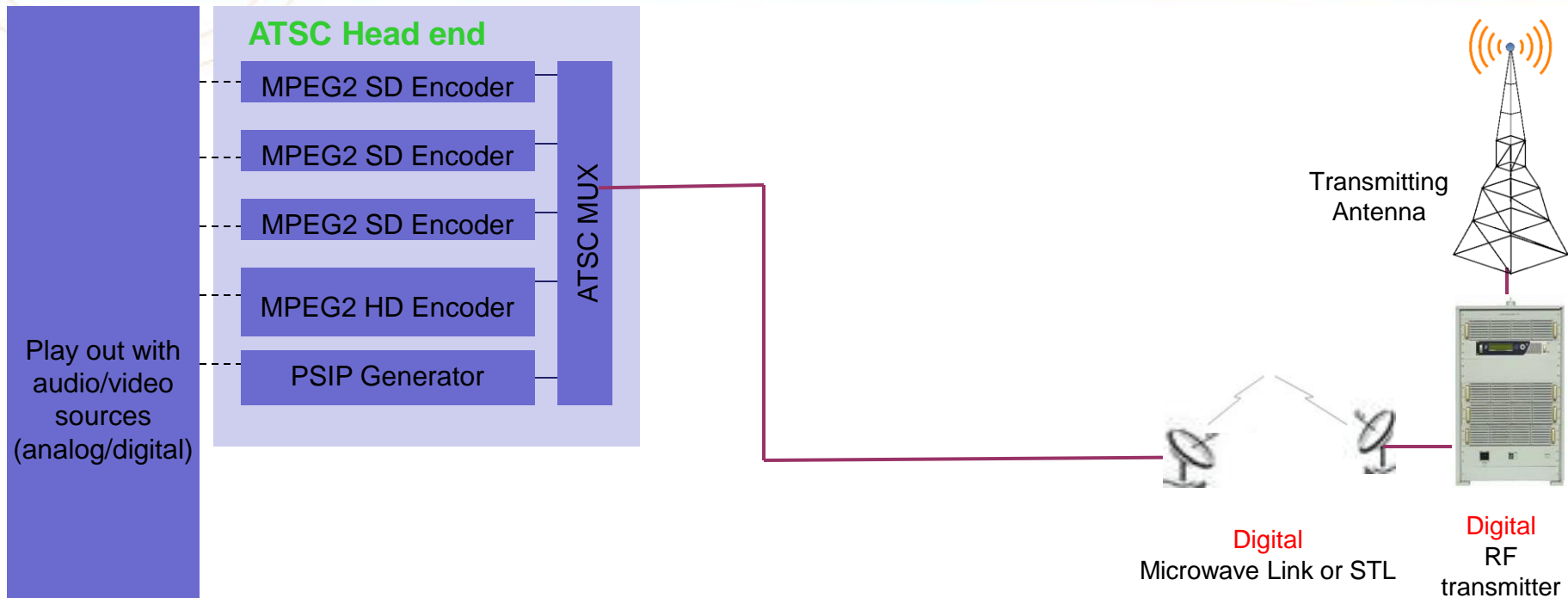
NTSC Analog system



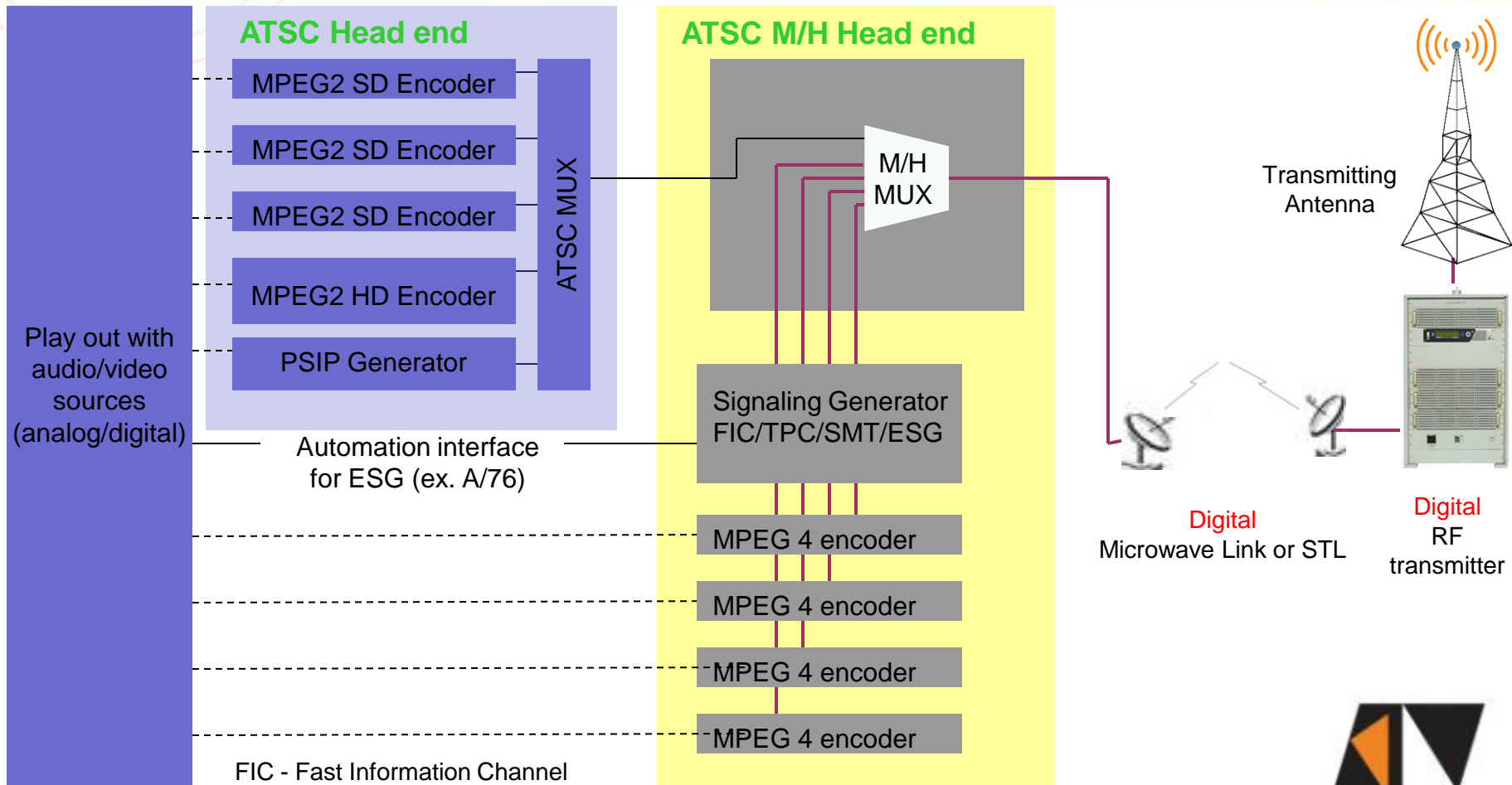
ATSC Digital system



Multicasting system



Multicasting with M/H System



FIC - Fast Information Channel
 TPC - Transmission Parameter Channel
 SMT - Service Map Table for ATSC M/H
 ESG - Electronic Service Guide (optional)



Multicasting summary

Multicasting offers... Opportunity to deliver ...



Sub-channels can provide:

- More programs on the same subject as main channel
- New programs... weather, sports, old movies, short clips...
- Time shifting programs – same shows at different times
- Re-transmission (translators)...of other networks with poor coverage; particularly VHF stations
- Radio stations re-broadcast
- Local sales – Real estate, auto dealers, local stores, antique auctions....
- Horoscopes
- Music clips, videos
- Banner advertising
- Event listings
- Coupons; restaurants, supermarkets

It costs very little to have more channels
so the ROI even for the smallest of
content providers can work out



Mobile Handheld (M/H) summary

Mobile / Handheld offers... Opportunity to deliver ...

- Everything in multicast... and
- to a NEW audience...
- NEW receivers – PDA's, phones, radios, tv's, cars, buses, trains...
- In new locations: stadiums, shopping malls, offices, restaurants, airports... everywhere!
- With Interactivity – polling, voting, rating, requests
- Media clips, pod casts, traffic maps, map updates, sports scores...



Analog

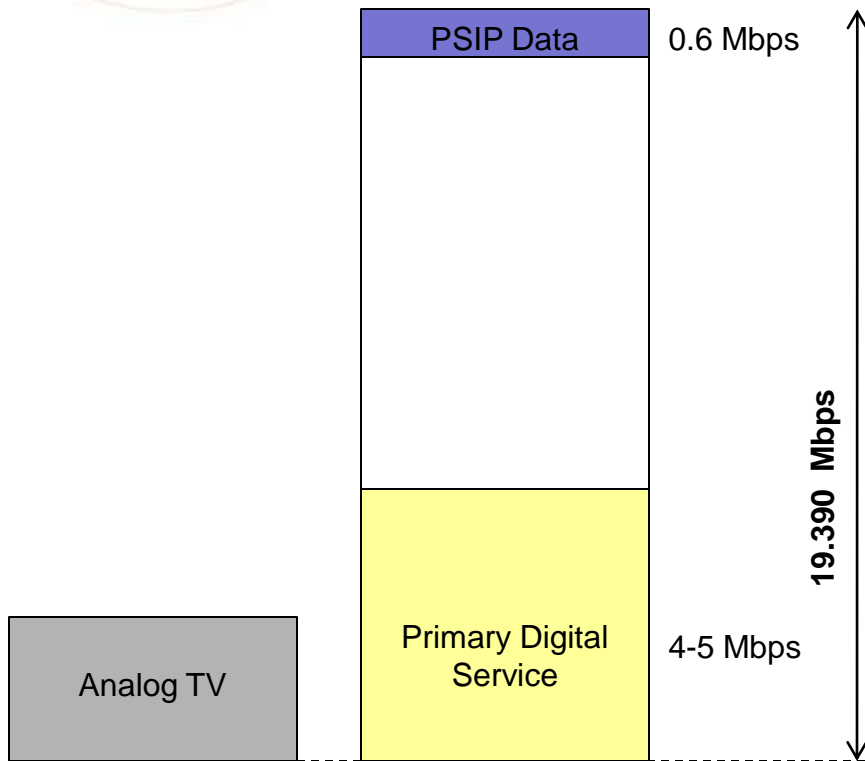
Analog TV

Programs...1



Analog, Digital,

Main ATSC (A/53) Signal

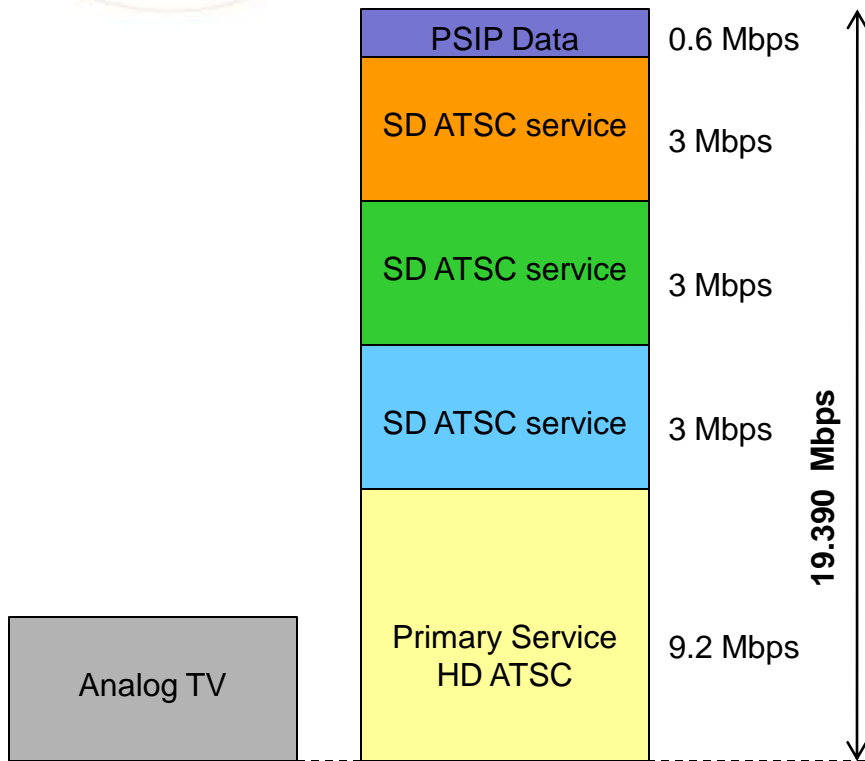


Programs...1,.....1



Analog, Digital, Multicasting

Main ATSC (A/53) Signal



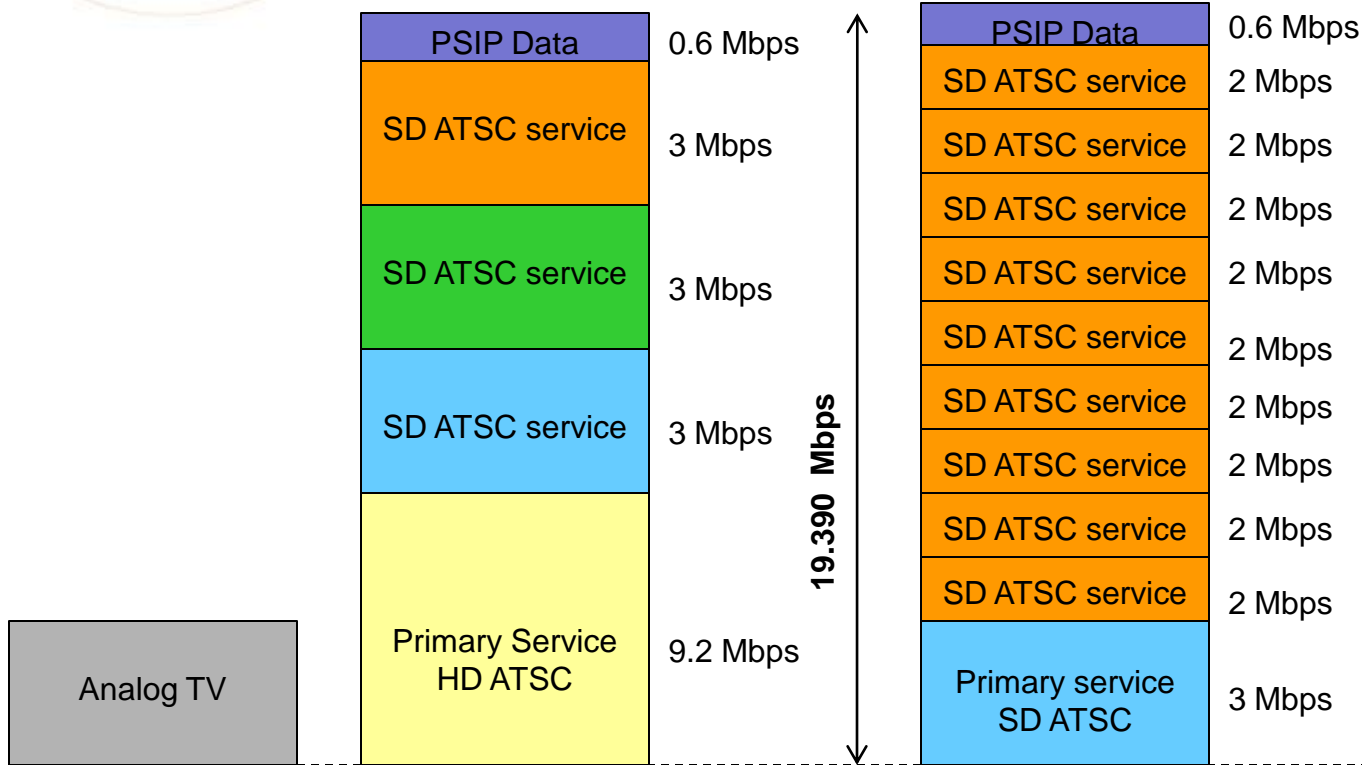
Programs...1,.....4



Analog, Digital, Multicasting,

Main ATSC (A/53) Signal

Main ATSC (A/53) Signal



Programs...1...

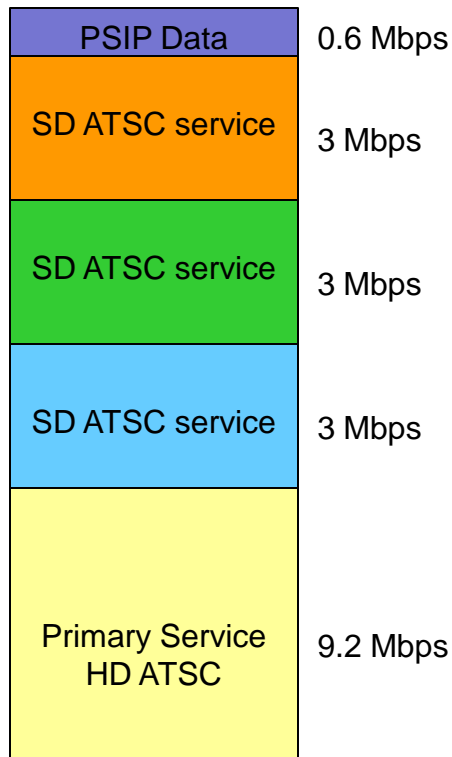
4....

10+

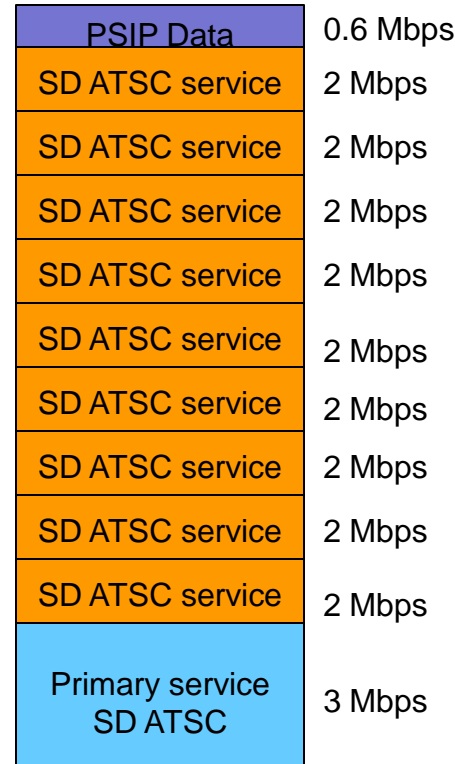


Analog, Digital, Multicasting, Mobile

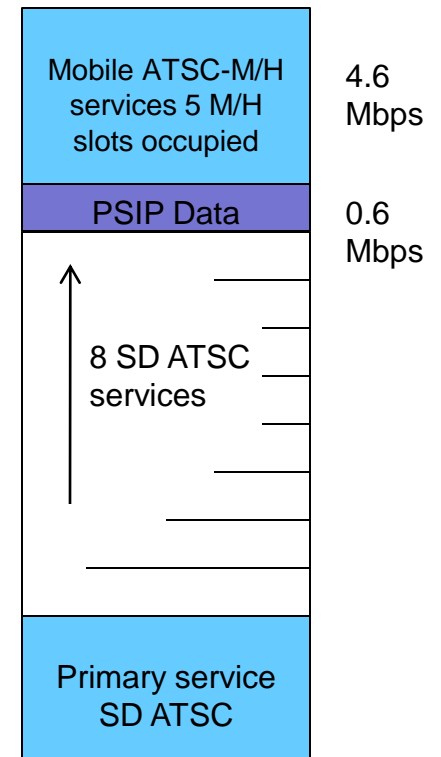
Main ATSC (A/53) Signal



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Main ATSC (A/53) Signal



Analog TV

Programs...1...

4....

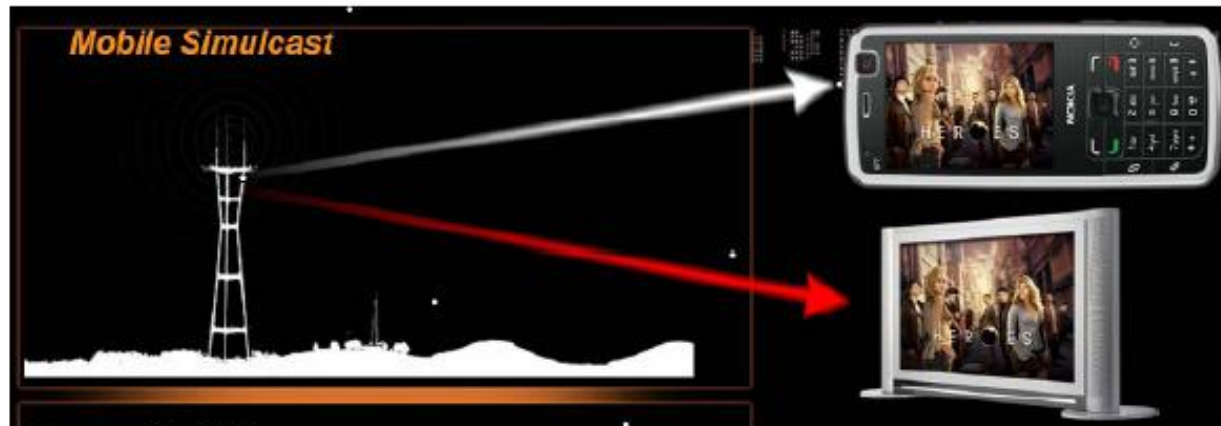
10+

15+



ATSC M/H General Overview

- “Dual Stream” system
- Both streams multiplexed and transmitted on the same 6 MHz channel



Source: MobiTV

Began:
July 11, 2007
Standard
announced
October 18, 2009

- Standard is defined by ATSC Mobile DTV (A/153)
- MPEG-4 (H.264) encoding and AAC V2.0
- 416 pixel x 240 lines and a 16:9 ratio



More on Mobile Handheld

- Mobile Handheld is designed for mobile environments
 - Laptops, portable media players, phones or navigation devices
- Localized services: news, traffic, weather....
- Backwards compatible with ATSC – Same RF channel
- Transmission data burst to preserve Rx battery life
- Complex FEC processes such as Reed-Solomon, turbo codes and training sequences for the Rx equalizer. Data is transported in Internet Protocol format



More on Mobile Handheld

Some key issues for MOBILE TV

- Only really works in UHF (Rx Antennas)
- Ideal to have elliptical antenna polarization (33% vertical)
- Phones, Netbooks, Notebooks, WiFi smart phone accessories already available with prices from \$139
- With “Valups” no need for new phone – communicates over wi-fi to host device
- Consumer trials underway
- Service features such as electronic service guide (with metadata), interactive services & service protection
- Back channel technology available
- Exploration of multiple business models



More on Mobile Handheld

Mobile Digital TV offers:

- Access to free TV and or pay TV

Examples:

- Commuters can listen (on headphones) and watch local news broadcast while train/bus commuting ... then while walking can go to listen only.
- Parents can watch their favorite shows while sitting in their car or the sideline at a children's sports practice
- Children can watch favorite programs in the back of the cars / minivans
- Listen and watch while waiting in banks, airports and a hundred other places....



More on Mobile Handheld

Mobile Digital TV offers:

- Datacasting....

Live data or graphics can be viewed by selecting appropriate menu item. Data can be NRT.

A user stuck in traffic can access local traffic data, including traffic maps

Additional data to any type of program can be added .. Stats, scores, and lots of other information can be accessed from user friendly menus...



More on Mobile Handheld



Mobile Digital TV offers:

- Clipcasting

Short form video and audio clips

An alert can be sent to individual users for requested data...

Browse categories and set up subscriptions

Use the “cell phone” for sending back data to web pages or specific phone accounts

Perfect for donations and impulse viewing and purchases



Conclusion

Planning...

- Selecting the right channel (if you have the choice)
- Encoding systems that are upgradable
 - More channels can be added on later
 - Allows “radio” channels
 - Dynamic PSIP or equivalent
 - Video graphics overlay and Scrolling capabilities
- Circularly polarized antennas (if possible)
- Digital transmitters that are capable
 - Multi-programming
 - Being upgraded to M/H
 - Can increase in power to add vertical transmission component
- Automatic correction systems
- Knowledgeable engineering support – local or manufacturer



Conclusion

Planning...and don't forget about the gaps...



This is another presentation – **contact me: perry.priestley@linear-tv.com**



Thank you...

...Questions?

Contact me: perry.priestley@linear-tv.com

