

Association of Communications Engineers



Gateway to the Future

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Association of Communications Engineers

IPTV Headends and Programming



INNOVATION TO THE NEXT POWER

Presented by:

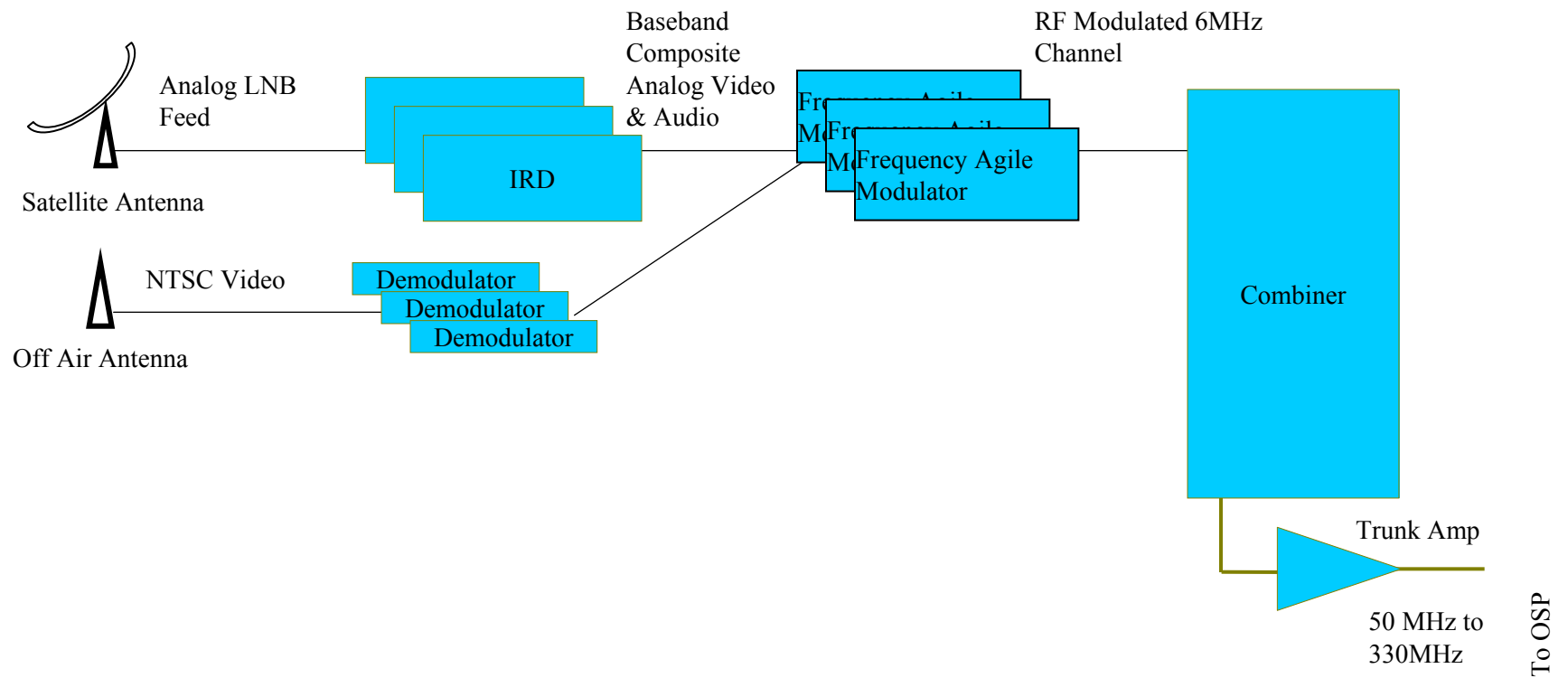
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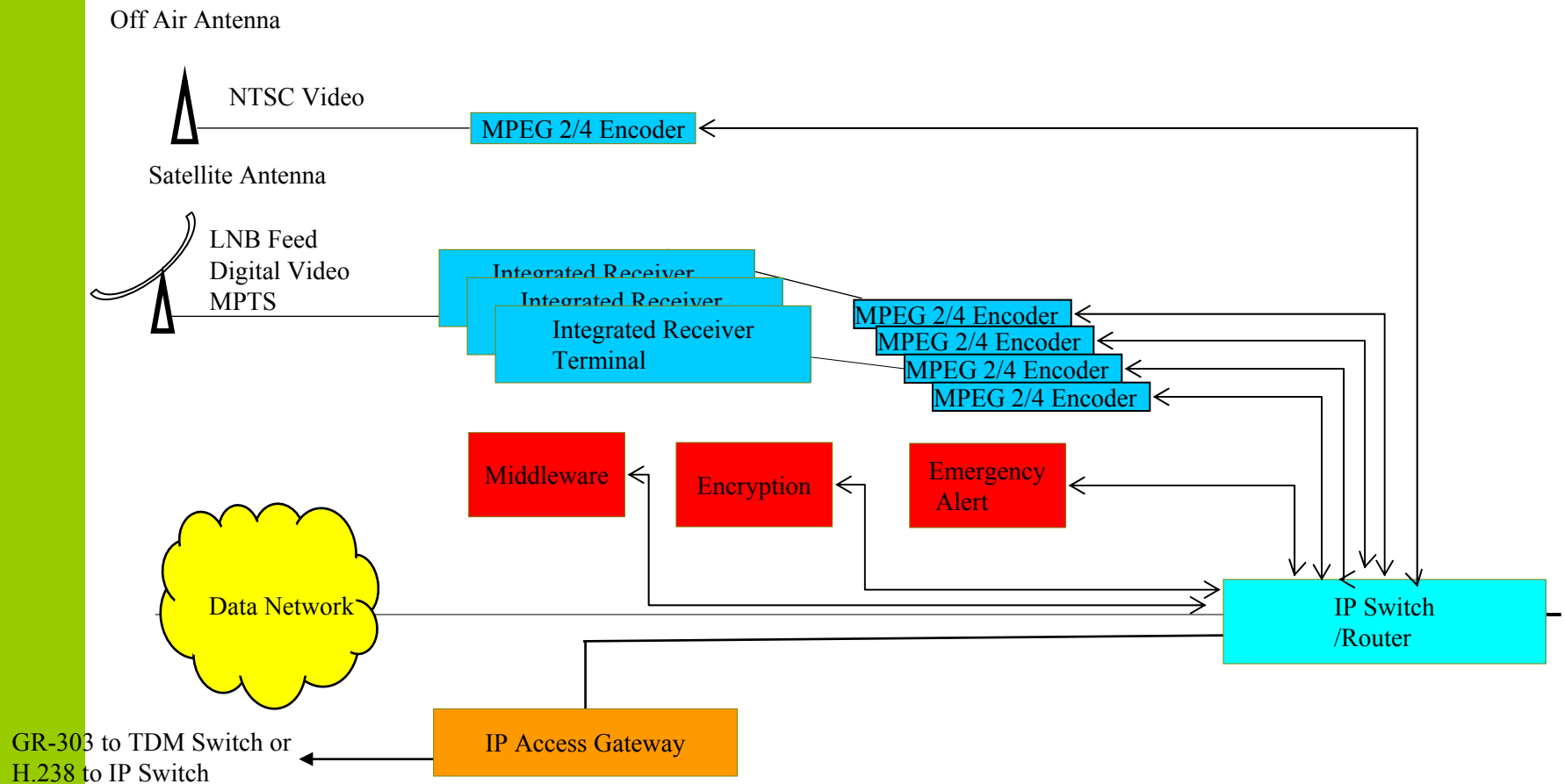
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Analog CATV Systems



Evolution of IPTV System



Video Services Implementation Challenges

- Acquiring content
 - Standard Definition
 - High Definition
 - 3D
- Program Content Packaging
- Must Carry Requirements
- Retransmission Agreements

Video Services Implementation Challenges

- System Integration
 - Transport Systems
 - Emergency Alert Systems
 - Billing Systems
 - Middleware
 - Encryption
 - Set-Top Boxes
- Lack of interoperability between vendors

Video Services Implementation Challenges

- Different Requirements for Different Video Deliver Systems
 - CATV Systems
 - Variable Bit Rate MPEG 2 for SD and HD
 - DSL based IPTV System
 - Constant Bit Rate MPEG 4
 - Fiber to the Premise IPTV Systems
 - Bandwidth available to support both technologies
 - Over the Top Providers
 - 4-9 Mbs Pipe

Over the Top Video

- A **disruptive** force in video content distribution
- The customer purchases content directly from the Content Provider not from a CATV, Satellite or IPTV Service Provider
- Content is downloaded over CMTS or DSL system to the customer's set top box.
 - Service Provider provides a pipe only
- Growing number of downloaded video apps
 - Netflix
 - Hulu
 - Amazon
 - Walmart-Vudu

Over the Top Video

- **BENTONVILLE, Ark., Feb. 22, 2010** — Walmart announced today a definitive agreement to acquire VUDU, Inc., a leading provider of digital technologies and services that enable the delivery of entertainment content directly to broadband high-definition TVs and Blu-ray players.

Over the Top Video

- "The real winner here is the customer," said Eduardo Castro-Wright, vice chairman for Walmart. "Combining VUDU's unique digital technology and service with Walmart's retail expertise and scale will provide customers with unprecedented access to home entertainment options as they migrate to a digital environment."

Headend Aggregators

- They provide:
 - “Packaged” solutions for Video
 - Integration of system components
 - Management of the system

Types of Providers

- Transport Only
 - Independent of content provider
- Integrated Headend
 - Provides Turn-Key Solution with:
 - Middleware
 - Encryption
 - Set-Top Box
- Managed Headend Services
 - Turn-Key Solution along with system management and support

Underlying Satellite Transport and Programming Vendors for Headend Aggregators

- Limited Number of Satellites in Orbit
- Avail Media
- NRTC and NTCA TelcoVideo
- Comcast HITS
- EchoStar VIPTV
- DIRECTV's IPAdvantage
 - Targeted at MDUs

Advantages of Headend Aggregators

- Lower Headend costs by eliminating the need to Encode, Transcode or rate limit video streams at the Headend.
- Provides a solution with interoperability issues are worked out prior to deployment.
- Ongoing interoperability issues associated with vendor software upgrades should be resolved.
- Managed system simplify technical issues for smaller operators.

Disadvantages of Headend Aggregators

- There may be limitations on sharing Headends with neighboring companies.
- Ongoing monthly costs for transport and management.
- Limited to equipment supported by the Headend Aggregator.
- Single vendor solutions-
 - What happens if a vendor leaves the market?

Regional and Shared Headends

- There may be limitations on sharing Headends with neighboring companies.
 - Programmers may require separate Black out zones
- Ongoing monthly costs for transport and management.
- IP based Video is easier to cost justify in a NECA environment than dedicated fiber for Analog Video Transmission between exchange

Questions?



