TECHNICAL IMPLICATION AND ASPECTS OF DAS
REGULATORY FRAMEWORK AND DISPUTE RESOLUTION IN TELECOM, BROADCASTING AND CABLE SERVICES SECTOR IN GOA

A BRIEF OVERVIEW

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PREPARATION BEFORE IMPLEMENTATION OF DAS

A MSO should set up or procure the following before implementing DAS:

- Call center to redress consumer complaints
- Subscriber Management System (SMS)
- Conditional Access System (CAS)
- Set Top Box (STB) of BIS Standard

MSO should provide training to associated Local Cable Operators (LCOs) for installation of STB and activate STB only after receipt of Know-Your-Customer documents from LCOs.
DO’S FOR MSO

- Register with Ministry of Information Broadcasting as a MSO
- Execute a written agreement with each LCO
- Provide a copy of executed agreement to LCOs within 15 days
- Ensure that the agreement conforms to TRAI Regulations and explicitly mentions role, revenue sharing arrangement, dispute settlement etc between parties
- Provide a copy of User Manual to consumers and upload Consumer Charter on website
- Educate LCOs about various schemes of STB and bouquets available on cable network
DO’S FOR MSO

- Provide adequate STB to LCOs to avoid disruptions in service
- Publish requisite notice in newspapers and through TV scrolls before disconnecting signals
- Provide sufficient application forms to LCOs for distribution
- Ensure compliance with technical standards as prescribed under TRAI Regulations
DON’TS FOR MSO

- Provide cable TV services without valid registration as MSO
- Provide cable TV signals to LCOs without a written agreement
- Give pre-activated STB to any LCO or to any customer
- Disconnect signals of TV channels to LCOs without giving notice
Value addition

Revenue
- Acquire content from various Broadcasters via Satellite / Content Delivery Networks
- Decrypt the content (remove Broadcaster’s CA)
- Create packages with different mix of channels
- Encrypt the content (with the platform CA)
- Distribute the secured content
MAINSTREAM
- CABLE
- DTH
- IPTV
- DTT (Terrestrial)

NEW
- Telcos (DVB – H)
- Handheld devices
MAIN SUB SYSTEMS

- Subscriber Management System
- Conditional Access System
- Digital Head end / Compression
- Distribution Networks – HFC / WAN
- Set Top Box
SUBSCRIBER MANAGEMENT SYSTEM

✓ Customer data

✓ Inventory management

✓ Order tracking / Field force management

✓ Provisioning

✓ CRM
SUBSCRIBER MANAGEMENT SYSTEM

- Subscriber dunning / de-activation
- Creating Bouquets & Packages
- Assigning / changing Channels, Bouquets & packages
- Billing
- Fingerprinting
SUBSCRIBER MANAGEMENT SYSTEM

- Send on-screen messages / B - Mails
- Authorize PPV / VoD
- Etc.

For any Distribution platform, the SMS is the sole customer interface and hence the SMS is often called the heart & soul of a Platform.
The CAS does the critical task of Content protection by controlling access vide use of Smart Card in the STB.

The CAS decides who can view what, where and when.

However the CAS is a complex back-end sub-system and needs a user friendly interface to be able to interact with it.

That interface is none other than the SMS.
DIGITAL HEAD END / COMPRESSION SYSTEM

Enter the content!

The content and encryption signals are mixed at this stage in a multiplexer.

Also the Si data to make the STBs work is mixed at this stage in a multiplexer.
DIGITAL HEAD END / COMPRESSION SYSTEM

✓ Receives channels

✓ De-encrypts channels and does DTA or De-encrypts, de-code and re-encode

✓ Multiplexes the channels into Transport Streams

✓ Encrypts audio & Video of each channel

✓ Modulate to RF
DIGITAL HEAD END EQUIPMENTS

- IRDs (Integrated Receiver & Decoder)
  - Pay channel IRD receives channel(s) from Satellite, Decrypts and gives Digital O/P for DTA
  - Pay channel IRD receives channel(s) from Satellite, Decrypts and gives AV O/P or Digital O/P
  - FTA channel IRD receives channel(s) from Satellite and gives Digital O/P for DTA

- Encoders
  - Takes baseband AV input and encodes to MPEG -2 / MPEG-4
DIGITAL HEAD END EQUIPMENTS

- Multiplexers
  - Combines multiple channels (12 – 18) into a single Transport Stream (TS)
  - SI data is added to each TS

- Encryptors
  - Protects the channels by inserting Conditional Access

- RF Modulators (QAM)
  - Modulates the digital stream of channels into RF signal where each QAM carrier carries 12 – 16 channels
HYBRID FIFER CO-AX (HFC) NETWORK

Optical Fiber Networks for reach and Co-axial Networks for local distribution of signals.

Co-axial Networks
- Co-axial Cable
- RF Amplifiers
- Passives

Optical Networks
- Fiber Cable
- Optical Transmitters
- Optical Receivers
- Passives
SET TOP BOX

The Consumer Premise Equipment (CPE) that does exactly reverse of what a Digital Head end has done so that the end subscriber can view the content.

STBs come in different flavors:

- Standard Definition / High Definition / Ultra High Definition
- MPEG-2 / MPEG 4 / HEVC
Thank You