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Conditional Access System (CAS)
CC-102 Unit-4

The Business model of the TV industry was to put advertisement or product placement to pay for channels.TV transmission was one-way distribution and TV Signals were available to everyone without any encryption. Transmission organizations were unable to get any feedback about their feed. Problems were faced by TV operators in monetizing their content so that revenue generation could be up and dependence on advertisement be minimal. Another problem faced by TV operators was piracy. The quality of analog content deteriorated after each subsequent copy but a copy of digital content is as good as the original. So to overcome these entire problems content creator adopted a variety of proprietary as the solution.

CAS (Conditional Access System) is used by the content provider in such a manner that who fulfills certain condition can access the content. It works by encrypting the transmission signals and sending entitlement messages to the user's receiving device to decrypt authorized content. MPEG and DVB are some of the global standard CAS systems. The rise of digital content made content providers to use a blend of CAS and Digital Right Management (DRM).

CAS work by:

Encrypting content: anybody can receive signals but some protocols are used to encrypt them so that those who do not have authorization cannot watch it i.e. scrambled.

Defining Condition of Access: user must meet certain criteria to decrypt the signal.

Checking Authorization: Entitlement messages are sent to the user receiver to decrypt the content accordingly.

Decrypting Content: The receiver decrypts the signal when all conditions are met.

User can get their authorization by subscribing to the service provider. CAS model is still used for transmission of digital video broadcasting over satellite and terrestrial networks as well as for IPTV. DRM is used for OTT (streaming over the network).