



Creating a Mobile Broadcast Platform

The MediaFLO™ Technology Product Overview



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DELIVERING MOBILE MEDIA TODAY

The MediaFLO system is a mobile broadcast platform that delivers streaming television and video, Clipcasting video and real-time data services to the mobile environment. MediaFLO technology enables the convergence of the broadcast and wireless worlds to provide business opportunities throughout the mobile broadcast ecosystem. Leveraging the global and open Forward Link Only (FLO™) air interface standard, MediaFLO technology provides greater capacity and reduced content delivery costs because it is specifically designed for mobile broadcasting. Three key elements of the MediaFLO system include:

- MediaFLO network
- MediaFLO service platform
- MediaFLO subscriber services

MediaFLO Network Deployment

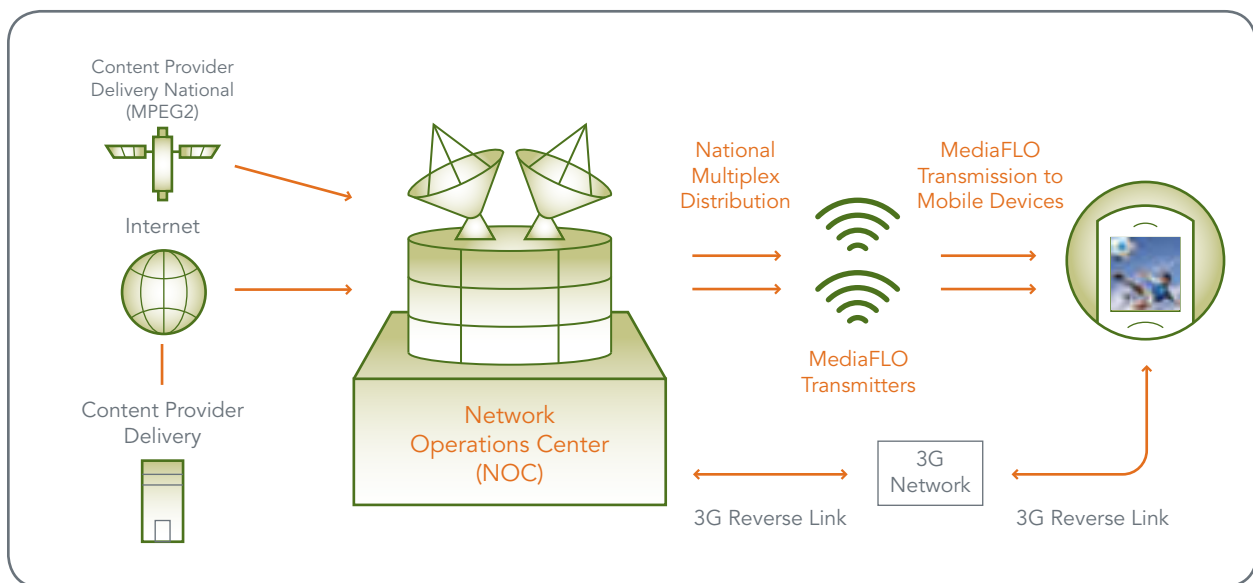
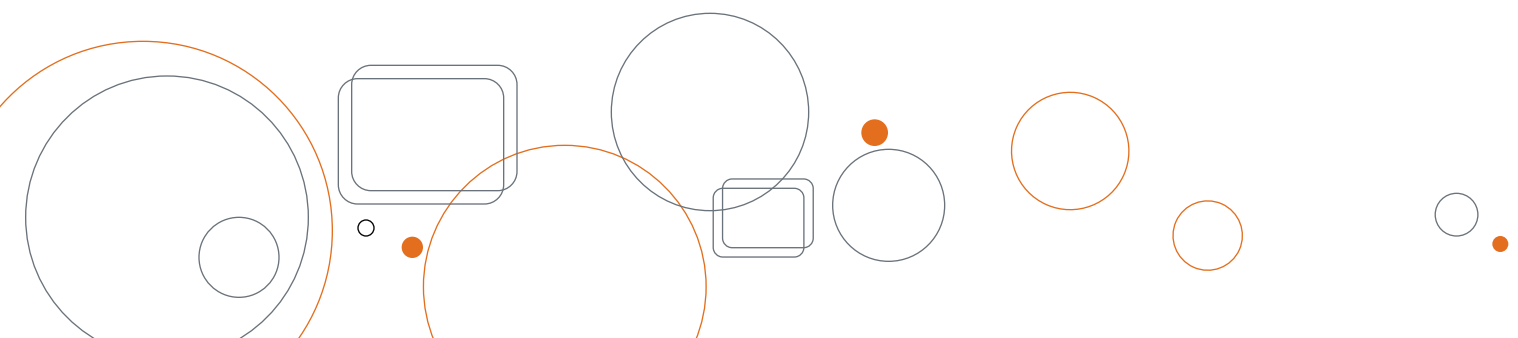


FIG 1. The NOC receives real-time content directly from content providers, while non-real-time content can also be received over the Internet. The content is reformatted within the NOC into MediaFLO packet streams and distributed over a forward haul network. In the target market, the content is received and the MediaFLO packets are converted to the MediaFLO waveform and radiated to mobile devices. A 3G cellular network provides interactivity and facilitates user authorization.



MEDIAFLO NETWORK

The MediaFLO network plays a major role in the delivery of mobile multimedia services. The network manages and controls content distribution from providers to subscribers, and provides wireless operators with tools for package configuration and functionality. The MediaFLO network also serves as the infrastructure that receives encoded content, segregates services by market area, and performs signal processing and transmission to devices containing MediaFLO technology.

The MediaFLO End-to-End Mobile Broadcast Network

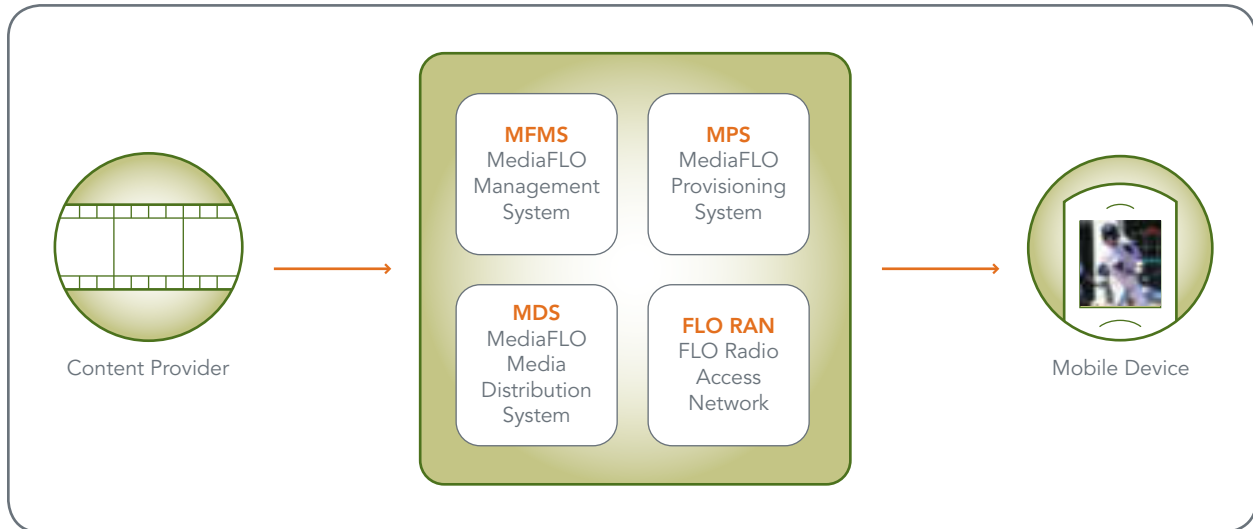


FIG 2. The MediaFLO network supports content aggregation, optimization and distribution for a consistently high-quality viewing experience.

The primary subsystems and functions of the MediaFLO network are as follows:

MediaFLO Media Distribution System (MDS) – Manages non-real-time content, generates the electronic program guide (EPG), manages subscription and billing transactions, and responds to requests for licensing and usage tracking data.

MediaFLO Provisioning System (MPS) – Provides the necessary tools for the service operator to configure network elements, services, packages and functional parameters.

MediaFLO Management System (MFMS) – Monitors the network and reports data to the service operator for managing the daily operation of the network.

FLO Radio Access Network (FLO RAN) – Scales video resolution for the mobile environment, multiplexes data flows, distributes multiplex to transmitters, and transmits the FLO waveform to the device. Included in the FLO RAN are the following sub-sets:

MediaFLO Transcode and Multiplex System (MTMS) – Receives real-time and IP Data Service content from content providers and transcodes and multiplexes all content types.

MediaFLO Transmit System (MFTS) – Provides the infrastructure that receives encoded content from the MTMS, filters the received multiplexes by market area, performs final signal processing, and transmits the FLO waveform to supported devices.

MEDIAFLO SERVICE PLATFORM

The MediaFLO service platform manages subscriber and carrier services provided by the MediaFLO Distribution System (MDS). The MDS carries out core and carrier-specific activities that interact to collect and disperse information about content, programming, subscription/billing, licensing, digital rights and customer usage. The Service Platform also manages the receipt and distribution of live-streaming mobile TV; short-format Clipcasting content; and real-time, personalized IP Data Services such as traffic, news, weather and related information.

The MediaFLO service platform anonymously collects information about how users ingest services and features to help advertisers, service operators and content providers understand more about their audiences. Data regarding viewing times and feature usage can be used to more accurately shape programming and services to match the interests of consumers.

MediaFLO Distribution System (MDS)

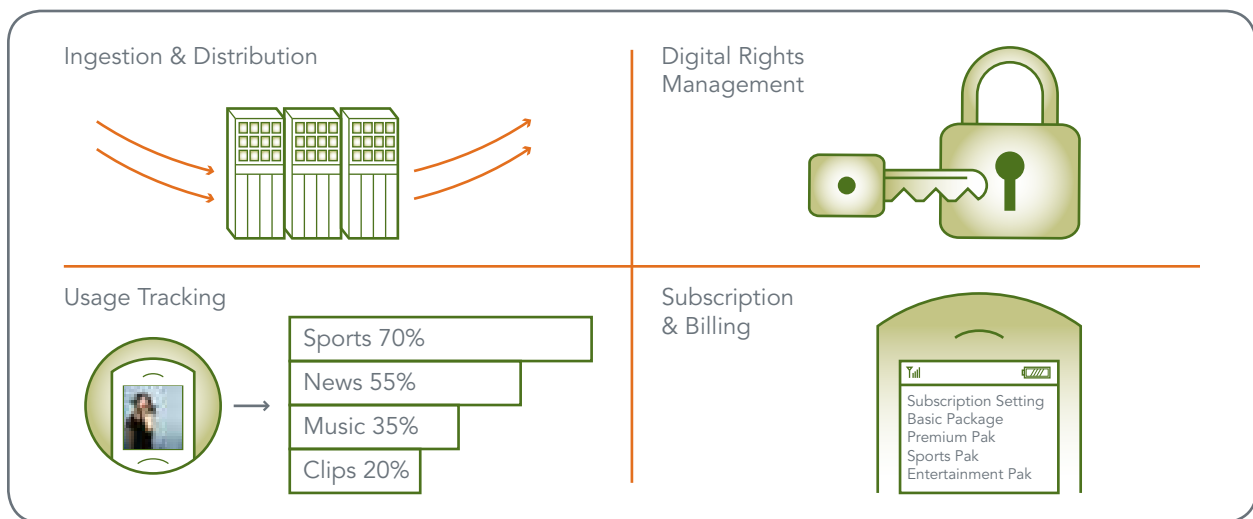


FIG 3. The MDS manages and authorizes distribution of content in the MediaFLO system.

The MDS consists of the following components:

Ingestion and Distribution Component – Ingests non-real-time Clipcasting files via an external interface with the content provider. This same interface also receives electronic program guide (EPG) data about live TV content via the MediaFLO Transcode and Multiplex System (MTMS).

Digital Rights Management Component – Receives and encrypts non-real-time Clipcasting content and linear TV content. MediaFLO protects content by encrypting it upon receipt, using a set of keys generated by the MDS, and then decrypting it when it is viewed by the subscriber.

User Request Handling Component and Usage Tracking Handling Component – These two components work together via the unicast interface between the MDS and the supported device, which allows subscribers to request subscription additions and updates directly from their device. The Usage Tracking Handling Component, which can be turned on or off, logs service usage statistics to reveal user behavior and their response to a certain program or feature.

Subscription and Billing Component – The MDS and the 3G carrier work together to provide device authentication and authorization, service activation and subscription services. This close communication ensures synchronization of their databases of billing and subscription transactions.

MEDIAFLO SUBSCRIBER SERVICES

The MediaFLO system provides additional services that offer the potential to increase revenues, capture and retain users, and create new and unique mobile subscriber services. These value added services offer a rich environment for innovation in advertising, interactivity, usage tracking and the creation of new services. Beyond the benefits available to the mobile ecosystem through MediaFLO technology, further opportunities exist for vendors to work with current and new partners in the creation of additional value added offerings.

The MediaFLO system enables the following subscriber services:

Usage Tracking – Offers a rich source of information about viewing habits and demographics of the user community to enable advertisers and content providers to develop targeted programs and services.

Mobile Channel Advertising – Provides opportunities for advertising campaigns to uniquely reach the on-the-go audience, and has the ability to deliver a targeted experience based upon user data.

Subscriber Interactivity – Includes revenue generating opportunities such as voting, chat and downloads as well as ability for viewers to enter competitions, auctions, elections or games via their mobile device.

Additional Services – Add value to the MediaFLO service by leveraging existing mobile phone services such as SMS/MMS, click-to-call, personalized/user-generated content, games, community and location based services, remote activation/control services (such as remote PVR recording) and “viral” services that exploit the mobile phone as a social networking tool.

MediaFLO Technology Interactivity



FIG 4. Interactivity increases the value of the traditional viewing experience by enhancing on-air content, and it allows for integration with other wireless operator and content provider assets, including video and music on-demand, ringtones, games, browser-based content, SMS and even voice calls.

MEDIAFLO TECHNOLOGY ENABLES THE MOBILE TV OPPORTUNITY

MediaFLO technology is the only platform designed for the complex and demanding task of delivering a true mobile TV experience, and as a result, provides numerous benefits and opportunities for the wireless value chain. Because it is a global and open standard, MediaFLO technology enables the mobile broadcast ecosystem to contribute and profit within its service environment. These opportunities are available not only through capacity, efficiency and quality advantages, but through new service and concept development as well as device manufacturing innovations.

MediaFLO Technology Empowers the Value Chain

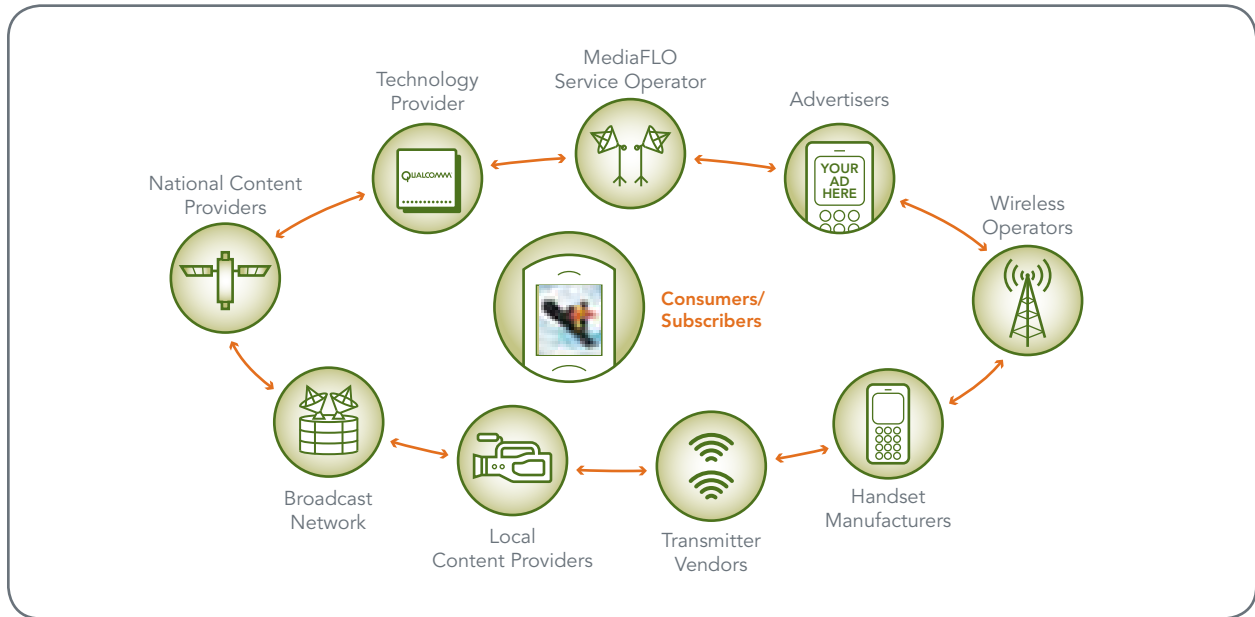
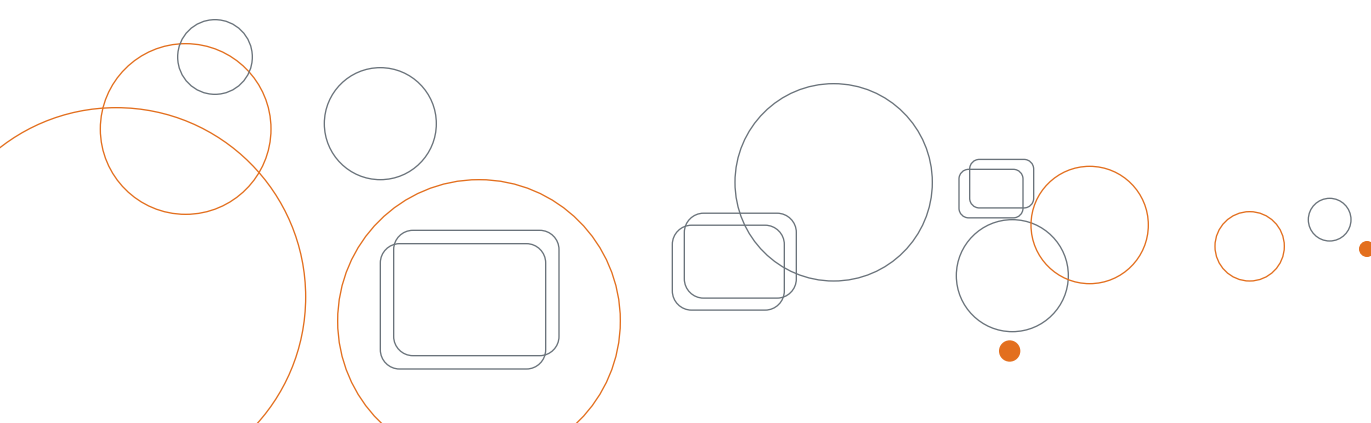


FIG 5. MediaFLO technology is committed to supporting the ecosystem of broadcast industry vendors and wireless service providers worldwide.

The standardization of MediaFLO technology is being driven by the FLO Forum, a united global consortium of companies vested in the common goal of defining and standardizing FLO technology. The efforts of the FLO Forum help market participants gain access to and ultimately contribute to the business value proposition of MediaFLO technology.

Building and enabling a healthy mobile media ecosystem helps in the formation of MediaFLO Service Operators (MFSOs) across the globe, which provides the ecosystem with multiple opportunities to innovate and succeed in the mobile TV marketplace.



MEDIAFLO SYSTEM BENEFITS

The MediaFLO system has been uniquely designed to operate in an efficient manner that is specifically tailored to the mobile environment. Due to its effectiveness, the MediaFLO system allows for the delivery of a complete mobile media experience without forcing a tradeoff between capacity and viewing quality. Some of the unique benefits derived from utilizing MediaFLO technology are outlined below.

GREATER CAPACITY FOR CONTENT IN MULTIPLE FREQUENCIES

At 9.9 db C/N:

17-19 channels in 5 MHz

21-23 channels in 6 MHz

25-28 channels in 7 MHz

28-32 channels in 8 MHz

Support for bands other than UHF

Efficiency: 0.47 - 1.86 bps/Hz - 1 bps/Hz is typical

HIGH-QUALITY VIDEO AND AUDIO

Full motion QVGA video experience at up to 25-30 fps (based on AVC/H.264)

Stereo-quality sound

FAST CHANNEL SWITCH TIME

Approximately 2 seconds with no splash screen or buffering

EXTENDED BATTERY LIFE

Roughly 4 hours with 850 milliamp battery

LEAN INFRASTRUCTURE

Lower cost deployment and increased capacity within the same frequency of spectrum

Designed for the mobile environment

Free from the constraints of legacy technology



www.mediaflo.com mediaflo@qualcomm.com

Qualcomm Incorporated 5775 Morehouse Drive, San Diego, CA 92121 U.S.A.

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