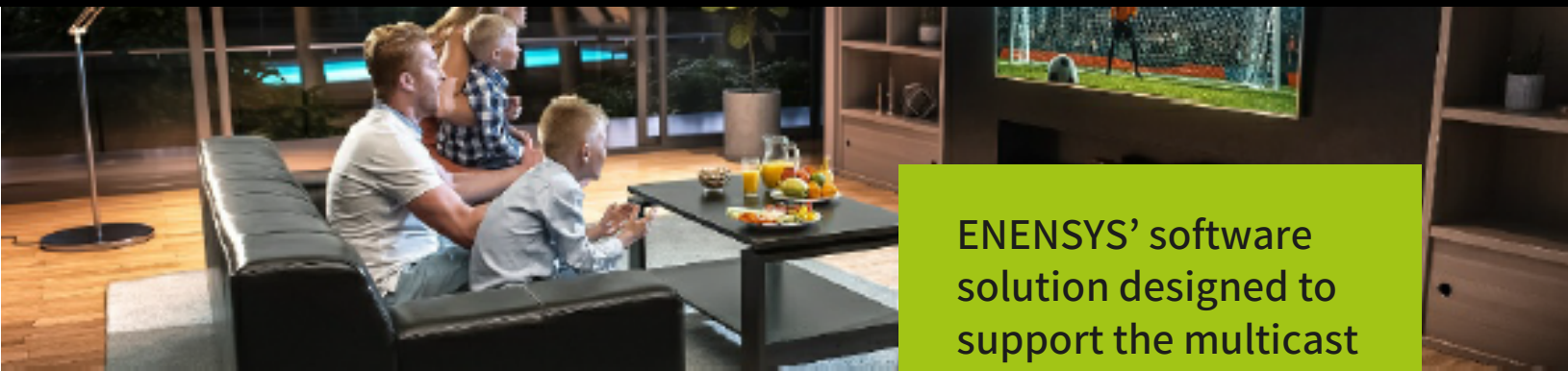**Toner cable equipment, inc.**

MediaCast Broadband Multicast Server for OTT Content Delivery

ENENSYS' software solution designed to support the multicast delivery of OTT content, linear TV streaming and filecasting services, over broadband networks

ENENSYS

ENENSYS MediaCast Broadband is an efficient and robust Multicast Server. It is a unique Solution for Network Operators wishing to offer High-Quality of Experience Streaming TV services whatever the number of users. It also reduces the cost of scaling a traditional Unicast CDN network to support ever-growing video traffic demands and traffic peaks during prime-time and popular events.

Standard Compliant

MediaCast Broadband is fully compliant with DVB-Multicast ABR (DVB-MABR) and DVB Native-IP (DVB-NIP). Active DVB members for years, our team chooses and implements the most relevant features from the DVB standards, so our clients can stay ahead of the competition.

Rich Functionality

We are proudly offering the 6th generation of MediaCast Broadband. It is FLUTE enabled by design and supports rigorous carrier requirements such as large file transmissions, real-time data feeds, rich HD video formats, DASH/HLS CMAF Ultra Low Latency. MediaCast Broadband manage several hundred streams simultaneously, scalable to thousands with a multi-server architecture.

Reliable Delivery

MediaCast Broadband offers powerful FEC, File Repair, and Reception Reporting capabilities to keep tabs on content quality and ensure consistent QoS. The FEC transmits redundant bytes up front to correct potential errors without retransmission. File Repair enables individual devices to acquire missing chunks of data by using traditional CDN capability in order to avoid deployment of additional component on operator's network. The Reception Reporting function stores QoE information that can eventually be processed for service improvements.

Eco-Friendly Product

MediaCast Broadband allows you to multicast your linear and file streaming services. The number of unicast streams will be greatly reduced during a popular event. This translates to fewer CDNs needed to handle peak issues. The power consumption and the ecological footprint of the entire network are reduced.

MediaCast Broadband Multicast Server for OTT Content Delivery

Applications

- OTT / Multicast-ABR networks
- Live Streaming TV for popular content delivery
- File Multicasting for Push VOD, application updates…
- Satellite Backhauling for OTT TV Services
- 5G CDN and network scalability
- CDN Pre-caching
- Part of OTT@scale & StarStream Enensys' solution

Other benefits

- Delivers guaranteed bit rate live and linear video streams
- Ensures Digital-Terrestrial-TV-like latency and zapping times
- Reduces CDN cost for Live TV by more than 50%
- Decreases the cost of on-demand content delivery and software upgrades
- Eliminates peaks of traffic automatically
- Intuitive GUI – Easy to setup and to monitor

Technical specifications

INTERFACES

Control
1x Network Interface to access GUI/SNMP/REST API

Content Ingestion
1x Network Interface to manage all HLS, DASH, DASH CMAF Ultra Low Latency and on-demand File contents.

Data Plane
1x Network Interface for all multicast output streams

FEATURING

OTT
Seamless integration with any CDN
Multiple Origin Server support
DVB compliant Multicast ABR

Multicast Service Controller
Service Creation
Service Scheduling
Service Planning and geo-planning

Service Delivery
Multiple Content Ingestions: HTTP, HTTPS, FTP or SFTP protocol
Streaming: HLS, DASH (template or timeline), DASH CMAF Ultra Low Latency
On-demand File (single delivery, carrousel, auto-update, scheduled repetitions)
Service Announcement and In-band updates
FLUTE: RFC-6726, DVB-I Specs
FEC: FEC Raptor10: RFC-6681/5053, FEC LDPC: RFC-5170, FEC RS: RFC-5510

Associated Delivery Procedures
Bootstrap
File Repair
Reception Report / QoE
Unicast Multicast automatic Switch (MooD)
Consumption Report

Monitoring and Supervision
SNMP v2/3
HTML5 Web based GUI
Alarms configuration & monitoring, performance counters
Inventory and configuration management
Backup & restore
REST API

System / Architecture
Active/hot-standby redundancy on Control Plane
N+P redundancy on User Plane
Geo-Redundancy
IPv4 / IPv6 support for all interfaces

TONER cable equipment, inc.

MediaCast Broadband Multicast Server for OTT Content Delivery

MediaCast Broadband integration into end-to-end solutions
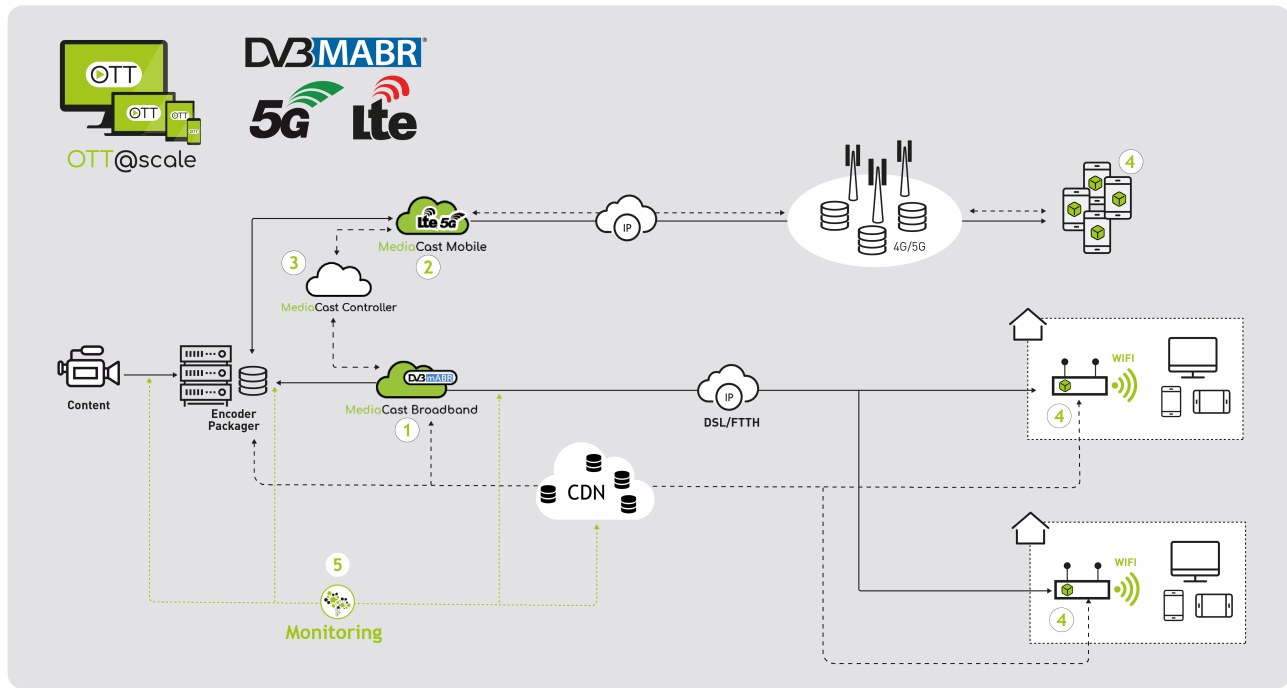
Delivery Server

1/MediaCast Broadband

- Stream OTT (DASH, HLS) in multicast
- FLUTE/ROUTE delivery
- Generate Bootstrap and Multicast channel map
- Compliant with DVB / 3GPP standards

4G/5G Gateway

2/MediaCast Mobile

- Gateway for 4G/5G network
- eMBMS, 5GMBS
- Compatible with 5G
- SFN support
- Compliant with 3GPP standards

Provisioning Manager

3/MediaCast Controller

- Unifying Broadband & Mobile Service Delivery
- Multicast Services Configuration
- Get Audience logs to trigger switch from Unicast to Multicast
- Multi-tenant architecture

Terminal Software

4/CubeAgent

- Multicast to Unicast ABR
- DVB, 3GPP compliant
- Monitor audience
- Supports multiple profile
- API controllable

Monitoring Probe

5/TestTree StreamProbe

- Monitor OTT QoS, QoE
- Real-Time detection
- HLS, DASH
- Freeze, Black screen, Audio silence...
- Scalable
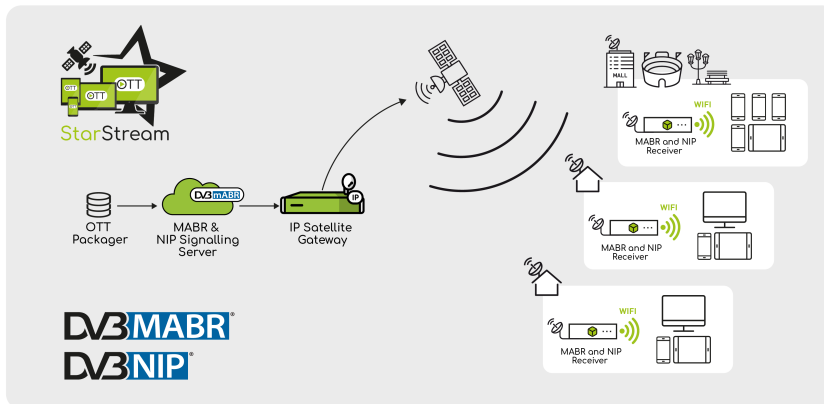
MABR & NIP Signalling Server

MediaCast Broadband

- Scheduling the delivery of live streams (DASH/HLS) or files over multicast
- Based on standard (FLUTE, mABR, DVB-NIP)
- Includes File Repair and FEC management

IP Satellite Gateway

SmartGate SAT

- Receive Multicast content from MediaCast Broadband
- IP MPE or IP GSE encapsulation
- DVB-S/S2 or DVB-S2X satellite transmission

Satellite demodulator

Neptune

- DVB-S2 or DVB-S2X professional satellite receiver
- IP MPE or IP GSE decapsulation
- IP output streaming
- Interfaced with CubeAgent

mABR and NIP Receiver

CubeAgent

- Live Multicast (DASH/HLS) reception and Filecasting support
- Interfaces with Application and Player
- Support File Repair and FEC mechanisms

MediaCast Broadband Multicast Server for OTT Content Delivery

PHYSICAL

Installation	**Processing**
Virtual Machine or Bare-Metal server	8 CPU - 16 CPU
RAM	**HDD**
16 GB	100 GB

Ordering codes

MediaCast Broadband

MABR server for multicast delivery of video or multimedia content:
- Management of up to 100 Mb/s of ABR content
- Valid for 10 000 active users

Ordering options

MediaCastBroadband-50Mbps	**MediaCastBroadband-50KUsers**
Support additional 50Mb/s of throughput	Support additional 50 000 users

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