DVB-H/DVB-SH Encapsulator (IPE-10)

Mobile TV Broadcast Head-End

Content Contribution
IP Network

IPE-Manager

Allocates resources
to Datacast Operator

Configures
Sessions

Broadcaster

Mobile Operator
Content Provider

Network Operator   Datacast Operator

IPE-10

IPE-10

Transmitter

iSplicer, Modulator

Transmitter

iSplicer, Modulator
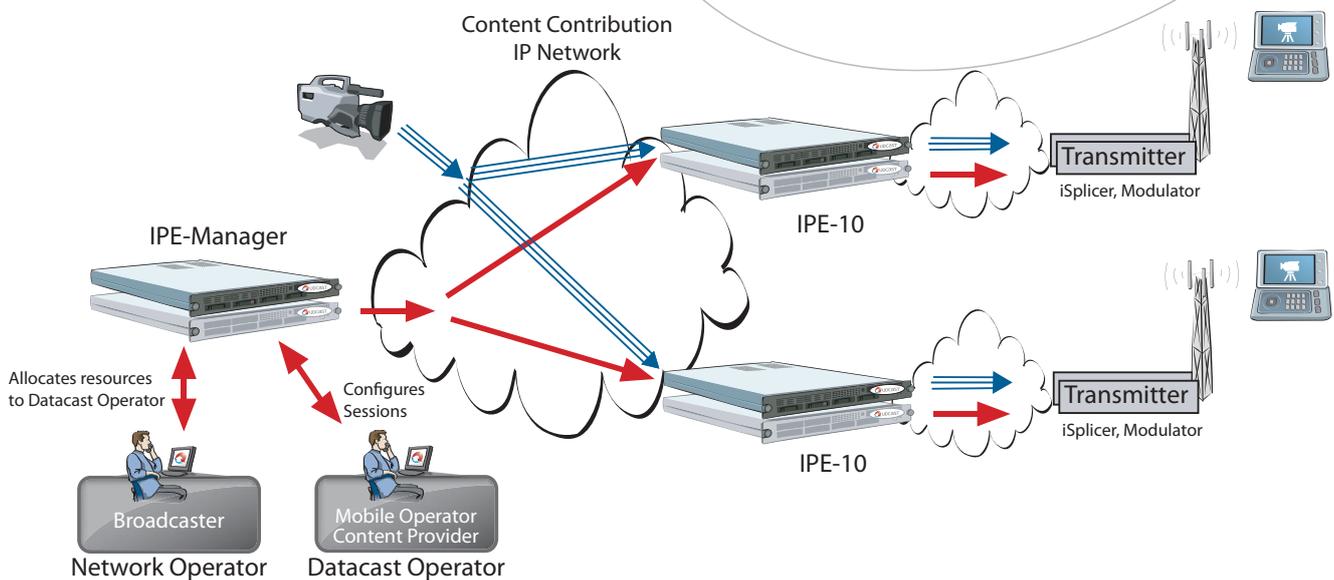
▌ DESCRIPTION

UDcast's IPE-10, the first fully DVB-H and DVB-SH compliant IP Encapsulator is a critical network infrastructure element needed for the delivery of digital TV to mobile devices.

In order to cost-effectively and reliably deliver content such as live television to a large number of mobile devices, service providers must address the issues of scalability and mobility. At the same time, device power consumption, as well as mobile and indoor reception are a concern. UDcast's IPE addresses these issues in a shared infrastructure environment.

The IPE is fully compliant with the DVB-H and DVB-SH standard implementing all the required functionality, as well as valuable optional features, ensuring the reliable delivery of digital content. In particular UDcast's IPE includes time slicing technology maximizing battery life and reducing the impact of the power intensive delivery of TV to mobile devices. It involves sending data in bursts, enabling the handset to shut down the receiver between bursts thereby minimizing power consumption and preserving battery life. Furthermore radio impairments, characteristic of mobile environments, are mitigated by the IPE's forward error correction mechanisms.

The IPE is the first to deliver sophisticated head-end functionality, including IPE management, quality of service enforcement, statistical channels multiplexing and support for handover from cell to cell.

DVB-H/ DVB-SH IP Encapsulator

FEATURES & BENEFITS

> **Full DVB-H compliance**
  - Fully compliant with the DVB-H standard bringing full interoperability
  - Includes all DVB-H optional features ensuring full functionality

> **Full DVB-SH compliance (option)**
  - Fully compliant with the DVB-SH implementation with all options
  - SH Insertion Protocol (SHIP) generation for transmitters
  - DVB-SH iFEC interbursts Forward Error Correction

> **Unique time-slicing technology**
  - Full stream management with buffering and bursting
  - Mobile terminal power savings
  - Customizable time slice duration for optimized bandwidth allocation
  - Increased number of services with statistically multiplexed feeds

> **Standard DVB-H and DVB-SH IP Forward Error Correction**
  - Radio impairments mitigation
  - Reliable content delivery

> **Full head-end functionality**
  - Network management
  - Security management with encryption and dynamic IPsec rekeying
  - Cell to cell handover support
  - Integrated MIP (Megaframe Initialisation Packet) insertion (option)
  - Integrated SHIP (SH Initialisation Packet) insertion (option)

> **Adapted QoS**
  - Dynamic bandwidth allocation with 3 levels of QoS
  - Policy enforcement points: Bandwidth enforcement on a per service or session basis according to the configuration of the service
  - Prioritization of IPsec sessions carrying rekeying information (keystream)

> **Monitoring and testing**
  - Replay of recorded MPEG2 transport stream
  - IP, PSI/SI, MPEG2 statistics graphical visualisation

Product Companion: IPE-Manager

Network management system to manage an installed base of IPEs (group management) with full control over:

> Bandwidth allocation
> Encryption management
> Seamless handover

DVB-H/DVB-SH IP Encapsulator

SPECIFICATIONS

IP features
  - QoS enforcement using HFSC policy
  - IPv4/IPv6 encryption
  - Multicast IPsec
  - IPv4/IPv6 MPE FEC encapsulation
  - SI/PSI table generation
  - Time slice enforcement on the ASI interface
  - Any source & source specific multicast
  - Loss free handover between different cells
  - Downstream DVB network jitter compensation
  - Support of FEC signalling
  - Statistical video multiplexing support
  - Content protection DVB OSF/18crypt, OMA BCAST DRM/Smartcard support
  - Integrated MIP or SHIP insertion (option)

Administration features
  - Secured web-based management
  - Setup wizard with auto-configuration
  - Alarm management
  - Central management from IPE-Manager

Hardware specifications
  - Casing: 19" x 1U x 705 mm
  - Weight: 16.7 kg
  - Power supply: Redundant dual supply, 110/240 VAC
  - Optional: High availability cluster redundancy
  - Redundant hot-swappable hard-drives

Network interfaces
  - Ethernet 2x 10/100 base-T NIC input, output (TS-over-IP), management
  - DVB-ASI output
  - I/O connectors: standard connectors for display, PS/2 keyboard, 2 serial slots

Implemented standards
  - ETSI TR 101 891   -   ETSI TR 101 191
  - ISO 13818-1   -   ETSI TR 102 377
  - ETSI EN 301 192   -   ETSI EN 302 583
  - ETSI EN 300 468   -   ETSI TS 102 585
  - ETSI EN 302 304

UDCAST
IP • BROADCAST • WIRELESS