TITAN Mux

MULTI-FUNCTION SOFTWARE STREAM PROCESSING

TITAN Mux is a scalable stream processing solution for broadcast, cable, satellite, digital terrestrial television and IPTV applications.

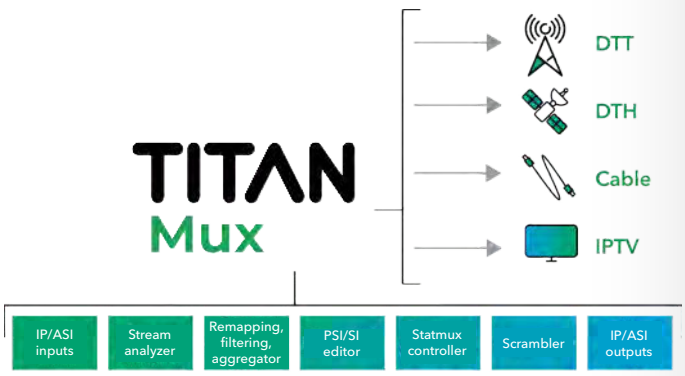
It can be easily incorporated into any existing headend for supporting digital turnaround services.

The TITAN Mux scalable design reduces deployment time, enables adding new services on the fly and support any video, audio and data service.

TITAN Mux can be controlled by PILOT Manager and can be easily integrated to any NMS using REST API. TITAN Mux is a true hardware and OS agnostic solution running on any server, any form factor, bare-metal OS as well as any cloud environment.

It includes support for IP input/output and legacy ASI links using PCIe ASI cards.

TITAN Mux eliminates operational headaches and ensures high scalability, flexibility and availability.



Manage PSI/SI tables

- Pass-through
- Internal Carouseling: Generates table body and passes through incoming descriptors
- Multicast Carouseling: Buffers incoming table, may restamp some fields and streams at configurable pace.
- Extract/block/pass/edit any tables and descriptors

Remultiplexing capabilities

- PID and service filtering/tracking/remapping/ pass-through and duplication
- PID and service merging into any program
- PCR/DTS/PTS adjustment
- Rate control on a PID/service basis for a guaranteed QoS
- Advanced overflow prevention
- Service generation from incoming components or data streams
- Smart service/content replacement

Input Processing

- MPEG2-TS inputs: CBR or VBR up to 200
- IP I/O's (1GbE or 10 GbE), ASI I/O's (optional PCI-E card)
- IP/TS/service/PID level monitoring
- Instantaneous bit-rate monitoring
- ETSI TR 101 290 instantaneous analysis
- Failover Active or Passive modes
- Automatic or manual switching
- Redundancy on TS loss or on any ETR 101-290 P1 criteria.

Value-Added Benefits

Bandwidth Optimization
Less than 0,5% NULL Packets through advanced statistical multiplexing features

Single Frequency Network (SFN) Support
Software MIP insertion for DVB-T/T2 standards

Top-level Service
Guarantee high level of service continuity and redundancy options

Multiple Interfaces Compliance
DVB Simulcrypt: EIS / ECM-G / EMM-G Data
PSI/SI injection: PSIG, PSIP, PMCP A76

Flexible Deployment
Runs on Bare-metal, Cloud environment and Container

Secure Transmission
Multiple encryption standards and scrambling algorithms:

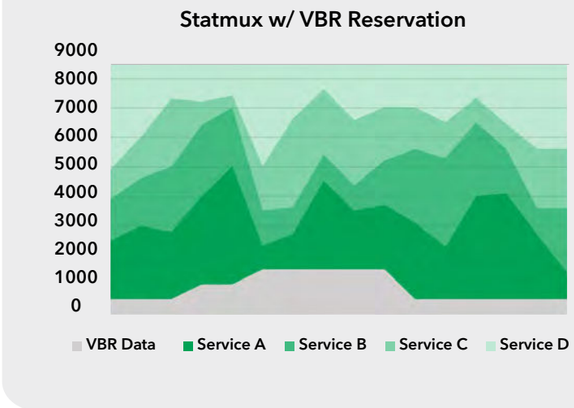
DVB-CSA 1/2/3 | ATIS IDSA | SPAR | AES 128 | BISS-1 | BISS-E | BISS-CA

STATISTICAL MULTIPLEXING A.K.A STATMUX

Enhance video quality allocating dynamically bit budgets to video streams at every frame, depending on picture complexity analysis.

A statmux pool can have a mix of any resolution (from sub-SD to UHD), any codec (MPEG2/H264/HEVC) and any encoding latency. It can be associated to the following features :

- Dynamic Statmux Pool: the bitrate of video streams will take all the available bandwidth in the MPTS, dynamically adjusted according to the bitrate of generated SI tables, audio streams,…
- VBR Reservation: Also called dynamic shaping. Titan MUX adapts the bandwidth reservation dynamically to ensure that all the external VBR data are evacuated within a specific delay (external SI (EIT), EMMs,…)
- Remote/local statmux with TITAN Live encoders, and designed to run in the public cloud.



FEATURE-RICH FOR LINEAR HEADEND

INPUTS

- TS over ASI, 188 or 204 bytes
- TS over IP up to 10 GbE (UDP, RTP / FEC)
- SMPTE 2022-7
- SRT (caller, listener, rdv)
- Monitoring: IP / TS / Service / PID level
- ETSI TR 101-290 criteria
- Redundancy auto/manual (active/passive)

TITAN Mux

OUTPUTS

- TS over ASI , 188 or 204 bytes
- TS over IP up to 10 GbE(UDP, RTP / FEC)
- SMPTE 2022-7
- SRT (caller, listener, rdv)
- Monitoring: IP / TS /Service / PID level
- Redundancy (active /passive)
- Mirroring

PSI/SI

- Conformances: ISO / DVB / ATSC / ISDB
- 3 modes: Disabled, Pass-through, Carouseling
- Internal or multicast Carouseling
- PSI / SI/ PSIP acquisition, generation, modification
- PSIG and PSIP interfaces (Triveni and A76)
- Table persistency in case of input loss signal
- Repetition period management
- Adding / Removing descriptors

REMUX

- TS / Service /component processing
- Service pass-through & remapping
- Service generation
- Component pass-through, remapping, filtering
- Service replacement
- Emergency Alert System (EAS)
- Regionalization use case support
- Meta-encoding
- Statistical multiplexing pool
- Static: fixed bitrate
- Dynamic: MPTS full bandwidth
- VBR Res for bandwidth usage optimization
- Advanced overflow prevention

SCRAMBLING

- DVB Simulcrypt compliant
- EIS, ECM-G, EMM-G interfaces
- DVB-CSA 1/2/3
- ATIS IDSA
- SPAR (Pandora)
- AES 128 (ECB & CBC)
- BISS-1, BISS-E, BISS-CA
- Nagra, Conax , NDS, Cisco, Irdeto, Verimatrix, Viacess certification and integration
- CAS Redundancy: Muxes synchronization for minimal glitch

Multiplexing Engine

For more information, visit our website at www.ateme.com

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