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4Front™ MPEG-4 IPTV Middleware Video Services Portal for Set-Top Boxes and PCs



- **Manage and deliver commercial television services using interactive MPEG-4 content**
- **Electronic Program Guide (EPG) portal for live content services**
- **Video On Demand (VOD) portal where users can browse and rent media**
- **Subscriber management system with conditional access to services**

4Front™ is a complete service management platform that allows Network Operators to integrate Envivio MPEG-4 technology into a commercial television broadcast business. The 4Front middleware creates the client GUI and fills it with metadata and business rules defined by the Network Operator. 4Front enables the Network Operator to provide the complete solution for digital television beyond just content and set-top boxes.

Features

- Customizable Electronic Program Guide (EPG)
- Customizable Video-On-Demand (VOD) portal
- Subscriber management system allows operators to provision new services to broadband subscribers
- Service management platform allows operators to define, configure, and maintain localized services
- Conditional access controls allow unique services to be defined to unique subscribers
- Business rules and pricing can be applied to all services

Benefits

- Provides more advanced services than digital cable or satellite television
- Customizable pricing and billing
- Template architecture enables localization and customization
- Integrated with 4Manager™ MPEG-4 management and control system, 4Front can be remotely monitored to ensure 24/7 reliability
- Integrated with the iPlay™ voice, video, and data triple play

Applications

- Residential digital TV
- TelcoTV
- Hospitality video
- Business TV

Architecture

4Front is a scalable middleware server with customizable client portals constructed using interactive MPEG-4 system objects (BIFS). This architecture has many advantages and is the future of IP delivered television services.

- GUIs can be broadcast and updated like any other MPEG-4 content.
- MPEG-4 has the performance advantages of embedded GUIs.

- Centralized metadata is broadcast and cached on the client.
- GUI can operate on any MPEG-4 BIFS player; Envivio has players for Windows and Linux operating systems.
- Client GUI is constructed from customizable templates.
- New services can be constructed and deployed using Envivio 4Mation™ MPEG-4 authoring environment.

Client Portal Services

Live Television EPG: 4Front enables the subscriber to access channels in their subscription package. The client GUI allows fast channel changes and access to metadata via the on-screen Info Bar or the Electronic Program Guide.

Video on Demand (VOD): Users can browse a library of media assets available on the video server. The user can securely rent and watch these assets at any time. The user is charged for the rental based on business rules defined by the Network Operator. Videos are available to the user for a specified rental period.

Trick Play: VOD movies can be paused, fast forwarded, and rewind at multiple speeds just like a traditional DVD player. This playback control allows users to enjoy movies in their own time.

Intelligent Search: Users can search the VOD library or the program guide schedule for content that matches key word searches.

Customizable Templates

The client GUI is based on MPEG-4 templates created with Envivio 4Mation authoring tool. Templates are then populated with live XML data delivered from the service management platform. Network operators can easily customize these MPEG-4 templates to create branded services. They can also create and integrate new MPEG-4 applications specific to their network service offering.



Service Management

Asset Management: Network operators can configure live and stored assets for inclusion in the service offering. VOD assets can be imported with support for the CableLabs Content Specification. These are then displayed in the client VOD portal filed under asset type and genre. Live channels are associated with program schedule metadata to create an interactive electronic program guide. Network operators can group channels together into subscription packages.

Subscriber Management and Conditional Access: Add users to the system and assign them access to services. Individual clients will receive unique access to services based on their subscriptions. 4Front understands who is watching and makes services available based on the user.

Business Rules and Pricing: Define the rules for delivery and consumption of content. The network operator can specify the cost of subscriptions to channels, and the price and rental period for VOD transactions.

Transaction Reporting and Billing: All subscriptions and transactions are allocated to the subscribers billing record. Reports can be generated from within the system or integrated with external billing systems such as the HighDeal billing and invoicing system.



4Front Components

