

H-Class™

Intelligent Transport



Secure distribution, scheduling, and verification of file-based content delivery.

■ The “Audience of One”

Companies across all industries involved in producing and delivering rich media—audio, video, and associated metadata—find themselves in a virtuous circle as they increasingly are able to distribute digitized content across IP networks.

On the one hand, the number of ways to reach—and, thus, derive revenue from—subscribers has never been greater. New service models based on digital satellite, digital terrestrial, digital cable, broadband, and wireless continue to grow.

On the other hand, the technology that enables these new services continues to evolve and improve, providing new efficiencies and levels of refined targeting to reach the “audience of one” with combinations of global and local forms of content.

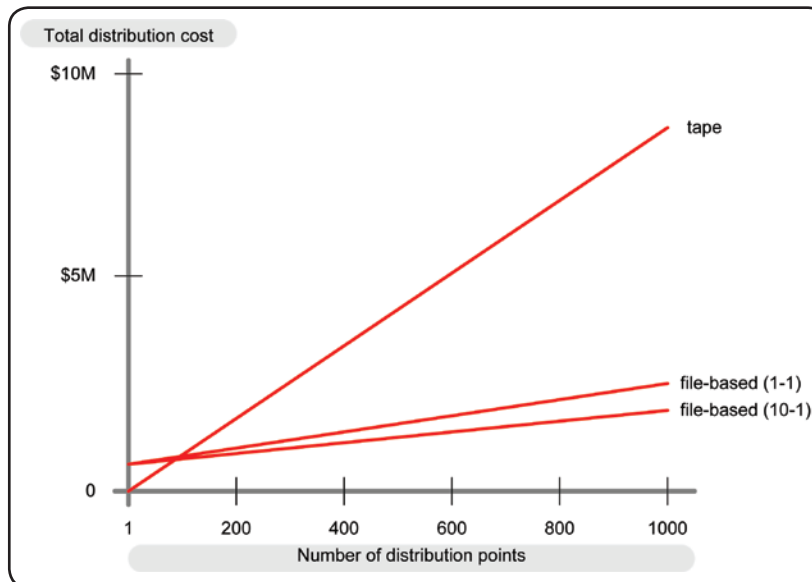
■ File-Based Content Delivery

Advances in distribution technology have opened the door to file-based content delivery—that is, the encapsulation of content into packet files that can be distributed over IP networks.

File-based content delivery has strong appeal for several reasons

- It has clear cost advantages over “sneaker net,” or the physical distribution of content by tape
- The files—as with any type of file—can be scheduled for delivery to optimize available bandwidth based on the time of day or other heuristics such as the type of IP network
- The files, in that they include the related metadata for the content, can be automatically ingested and recognized thereafter, improving the production, origination, aggregation, and delivery workflows
- The approach can readily serve one-to-one or one-to-many distribution of large media files without a corresponding increase in infrastructure.

Figure 1 below depicts the typical cost advantage of file-based delivery over tape. As might be expected, the cost advantage increases linearly as a function of the number of distribution points. (The example assumes 65% savings on the 10-1 downlink to uplink ratio, outsourcing of operations center equipment and services, and that the quality of tape is Beta SP/Maxwell.)



*Figure 1
Transmission of one 30-minute
program 75 times per year.*

■ The H-Class Intelligent Transport Advantage

H-Class Intelligent Transport enables your operation to distribute content from its point of origination to any location within your network where it is needed. The content can either be real-time or stored rich media, including audio and video. Intelligent Transport allows you to distribute said content across any of your available networks, leveraging your existing infrastructure and providing you with the tools you need to grow into next-generation IP networks.

Additionally, the application enables you to prioritize the delivery of content based on available bandwidth or by the time by which the content needs to arrive at its destination, providing you with great flexibility and efficiency of both the network and associated workflows.

Intelligent Transport also ties seamlessly into the core H-Class content delivery platform. This seamlessness is key because it enables you to be able to manage and track the content so you can accurately bill for its usage. In other words, this capability ties your network and financial operations together in a way that was not possible before. Further, the platform enables you to attach access and usage rights that are recognized and enforced across the enterprise, ensuring highly granular control and security based on individual or group profiles.

H-Class Intelligent Transport consists of four components that work in concert: Content Capture Server, Content Scheduler, Content Manager, and Content Receiver.

- Content Capture Server captures live MPEG-2 transport streams over IP, encapsulates them in standard Material eXchange Format (MXF) files, and makes them available for delivery over any network
- Content Scheduler performs (a) the scheduling and distribution of content across private and public terrestrial and satellite networks (hybrid networks) and (b) scheduling and transport of live content, file-based content, and mixtures thereof (hybrid content types)
- Content Manager manages the queues, flows, bandwidth, account management, file fetching, encapsulation, encryption, and protocol manipulation that enable the files to be reliably delivered across any network
- Content Receiver receives the transmitted content at the point of delivery

Together, the components take the content in whatever source file it exists, encapsulates the content, and distributes it as an MPEG2 transport over the network of choice.

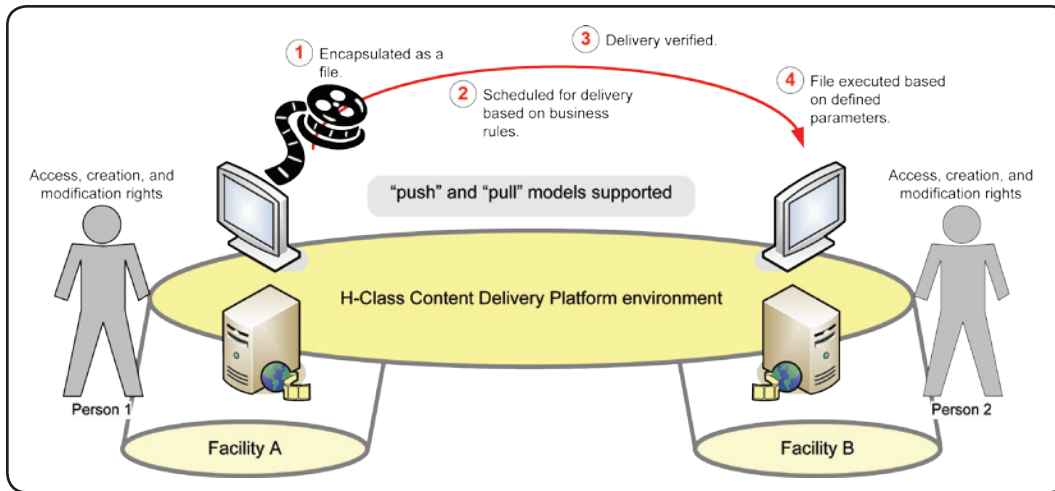


Figure 2
Seamlessly linking
content management
with distribution.

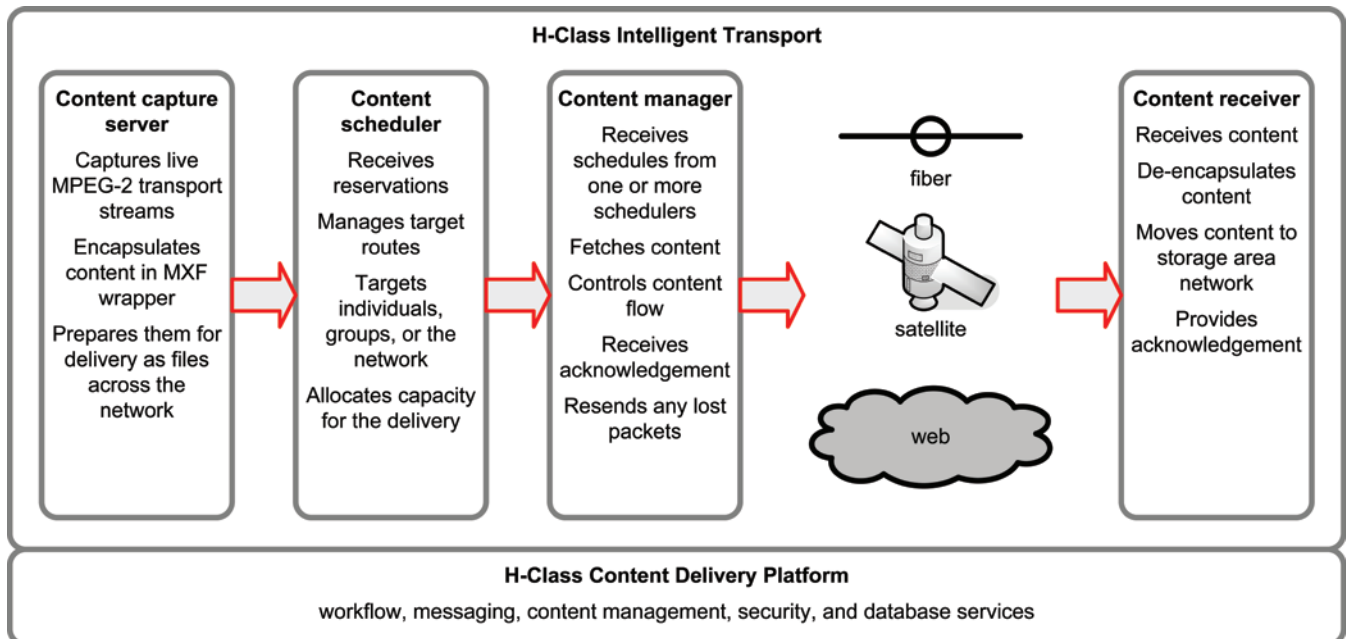


Figure 3
The four components of H-Class Intelligent Transport.

Features	Benefits
Content Capture Server	
Multiple concurrent audio and video program streams or transport streams captured to file	Enables the capture of multiple contribution and distribution services simultaneously
Receive and record from multiple Ethernet interfaces simultaneously	Enables the recording of video streams from multiple IP networks simultaneously
Video Device Control Protocol (VDCP) support	Frame-accurate capture and playout of content based on a playlist
Video Archive Control Protocol (VACP) support	Enables movement of data to and from an archive (i.e., archive management)
Real Time Streaming Protocol (RTSP) support	Enables control of the playout on video over IP networks
XML-based scheduler for file playout	Flexible scheduling of files for playout based on industry standard XML schema
The Content Capture Server can be placed anywhere on the network	Provides flexibility in network design.
Content Scheduler and Content Manager	
Organizes and inserts data streams into digital broadcast streams or IP networks	Flexible and robust means of delivering content over any packet based network infrastructure
Receiver targeting that allows control of content delivery	Supports content delivery at the desired level of granularity—from the level of the super-head-end that serves as region to the level of an individual user
Supports ATSC A/90 data broadcast standard	Provides content delivery that is compliant to industry-recognized standards
Delivers any type of digitized content (streaming media, rich media, files and more)	Content can be delivered over any network, regardless of the file format
Automatically launches both files and scripts associated with the files upon delivery to the Content Receiver	Content can be automatically acted upon once delivered
Encrypts and compresses data	Reduces piracy
Content Receiver	
Extracts data from the digital stream directly to an end-user's computer or network file server	Collects and re-uses content from various sources
Decrypts, decompresses and extracts data in an easy-to-navigate interface that supports end-user targeting functions	Basic management of received content that was scheduled and delivered by using the Content Manager and the Content Scheduler
Provides filters and cache-management tools to manage extracted data	Enables customer to control the amount and types of data being sent to and stored on the receiver to the level of individual rich media files
Sends status of content receipt back through an IP connection to the Content Scheduler	Customer knows—and can confirm—that the content they distribute reaches its intended audience