



IncaNetworks
Intelligent Video Delivery



**Affordable
Reliable
Easy to Use**

FOR PAY TV OPERATORS, EDUCATION & LEARNING, AND HOTEL & HOSPITALITY



Inca Networks Intelligent Video Delivery™



Solutions with **Inca Networks**: Unique Visibility into Every Step of the Video Processing Chain



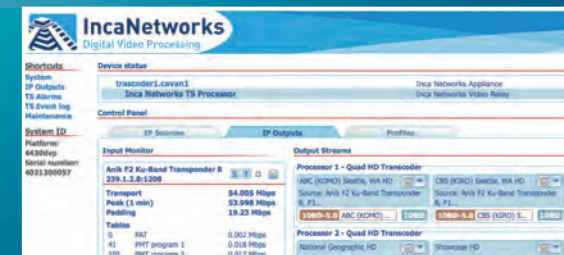
INTELLIGENT VIDEO ARCHITECTURE

Deliver next-generation multiscreen services that meet your unique needs.



INTELLIGENT VIDEO STREAMING

Offer what subscribers want, when and where they want it.



INTELLIGENT VIDEO MONITORING

Get a complete picture of your mission-critical linear and OTT services.

Intelligence and Visibility in Every Inca Product

Inca's Intelligent Video Delivery™ is an affordable, reliable, and easy-to-use solution that delivers the best viewing experience – unique visibility into every step of the video processing chain – in every Inca product.

Video is an important part of a triple-play strategy, but let's be honest, it's not a high margin business. Finding ways to affordably deliver video and meet customer expectations is critical to profitability.

Customers want a quality video experience with great channel selection but they're also expecting a reliable service. And operators have to provide that service with fewer resources. Staff is spread across a wide range of products and responsibilities so you need powerful tools that help control costs. Tools that are more affordable, more reliable, and easier to use, and not only perform the task they're designed for but also make it easier for staff to do their job every day.

Traditionally, many operators have no monitoring or visibility into their video network. They wait for customers to call about an issue and then take action. This can be an expensive approach that results in longer outages and unhappy customers.

Operators who do have monitoring typically have a bolt-on monitoring product. While it can tell you if there's a problem with the stream, it doesn't necessarily tell you where or why because it's not intelligent enough to know what's going on in the complete signal path.

What is Intelligent Video Delivery?

Inca's Intelligent Video Delivery is an affordable, reliable, and feature-rich software architecture built into every Inca product characterized by its intelligence and deep visibility into each step of the processing chain.

Every time video enters or exits an Inca product, you see video thumbnails of all signals, stream downloads, payload analysis, and alarms. And in a single-click you can download sample videos for offline analysis. All the information you need is right there at your fingertips, in real-time, in a graphically-rich, web-based interface that's powerful yet very user-friendly.

"Because infrastructure costs in the cable TV space can be very daunting, we have designed our hardware in such a way that we can offer it an affordable price."

Because infrastructure costs in the cable TV space can be very daunting, we have designed our hardware in such a way that we can offer it an affordable price.

We've moved to a modular architecture because it became clear to us that our customers needed more flexibility and scalability in their video equipment. With a modular hardware approach, you can pay as you grow and expand with market opportunities and specific feature sets, rather than having to buy larger systems all at once.

From a software perspective, we have added intelligence to and streamlined the configuration and operation of the system. Our aim is to minimize the number of minutes that anyone has to spend to activate the services or respond to any issues that might arise in the network – minimizing the impact on the customer.

Respecting your time, making it easier for you to do your job, and building visibility and intelligence – that should be the heart of your video delivery architecture.

WISI and Inca for End-to-End Video Delivery

The WISI and Inca product families encompass all the tools necessary to make commercial and local content available on any screen and any network.



RECEIVE

Receive content from off-air, ASI or IP sources and convert and process it to multiple MPTS or SPTS IP streams. High density, excellent stability and performance ensures stable operation in the most demanding environments.



MULTIPLEX

Process high bitrates with the advanced processing capability of the Tangram and Chameleon solutions. Any source to any source with multiplexing of several Gigabits of video data traffic. An easy-to-use graphical user interface allows for time saving as well as advanced processing and multiplexing.



TRANSCODE

Optimize your video content to meet your network capacity and provide the best viewing experience. Offer exceptional linear and multiscreen video service for TVs, consumer tablets, smartphones, and other devices that connect over traditional cable, IPTV, and wireless networks. Inca's next-generation transcoders offer a comprehensive, highly scalable real-time solution that streamlines the delivery of IP video.



PACKAGE

Support large-scale multiscreen deployments and bring mobile entertainment to your subscribers with Inca's just-in-time adaptive bit rate packaging and live streaming origin server. Content is dynamically wrapped to suit the mobile or tablet device requesting the video stream. Inca's built-in origin server capability ensures seamless delivery.



MONITOR

Give your team the best video intelligence and monitoring available. Provide a web-based, mosaic view of every service at every stage in the signal flow. Proactively identify problem streams and keep the entire team informed by providing a single view of the status of the entire video delivery network no matter where you are located. Extend that visibility to non-Inca equipment via Intelligent Video Probes.

Inca Products

Feature-Rich Linear and
ABR IP Transcoder

Inca Modular Series 4400



As media is consumed through an increasing variety of services — cable TV, IPTV, OTT— operators need an efficient solution to deliver video to multiple devices while containing costs.

The latest evolution of Inca's market-leading solutions, the Inca 4400 Modular Series, delivers superior video quality and the flexibility to optimize video for broadcast and multi-screen distribution — and scales easily to accommodate future formats.

All-in-One OTT
Solution

Inca Multiscreen Launch Platform



The Multiscreen Launch Platform is an affordable and efficient 1 RU OTT deployment solution that includes a high-density ABR transcoder, live-streaming packager and origin server. This carrier-grade solution transcodes up to 12 HD or 24 SD sources to multi-bitrate profiles and serves up to 500 HLS clients at 4Mbps each.

Playlists are configured automatically for HLS delivery to ABR-capable set-top boxes, TVs, smartphones and tablets. This is an ideal solution for headend multiscreen deployments, satellite distribution replacement and hospitality applications.

Visual IP Video
Monitoring

Inca All Seeing Eye 5420



The Inca All Seeing Eye 5420 (ASE) provides sophisticated visual video monitoring and an overview mosaic of IP video streams, giving operators the ability to check the performance of an entire headend. Powered by Inca's VidiOS management and troubleshooting tool, the Inca All Seeing Eye supports HD and SD MPEG-2, MPEG-4 AVC, and HEVC streams.

Team members can interactively oversee the network using any web browser to view mosaics of video thumbnails and easily see how each program is performing.

Inca Modular Series 4400

The Modular Platform for Intelligent Video Delivery

The Inca 4400 Modular Series features flexibility with modular processing modules and high-capacity network interfaces. With the 4400 series you can optimize the format, resolution and bitrate of large numbers of live satellite, IP and off-air digital sources for delivery to set-top-boxes or multi-screen devices.

Options include modular platforms with up to three bays that can transcode, transrate or downscale up to 36 HD or 90 SD programs to MPEG-4, in just one rack unit of space, with integrated grooming and monitoring of all streams.

With the ability to offer both live linear and adaptive bit rate (ABR) multiscreen transcoding from the same chassis, the Inca 4400 Modular Series provides a roadmap to the future of multiscreen video from MPEG2 and MPEG4 AVC (h.264) to HEVC (h.265), allowing you to scale your infrastructure as your business grows, reducing capital and operating expenses.

Modular Series 4410

- ✓ Up to 12 HD or 30 SD for linear transcoding
- ✓ Up to 24 profiles for ABR transcoding

Modular Series 4420

- ✓ Up to 24 HD or 60 SD for linear transcoding
- ✓ Up to 48 profiles for ABR transcoding

Modular Series 4430

- ✓ Up to 36 HD or 90 SD for linear transcoding
- ✓ Up to 72 profiles for ABR transcoding

Profit from using a modular platform
add capacity and next-generation
technologies as you grow



Features

- ✓ Transcode between MPEG-2, MPEG-4 and HEVC in HD and SD
- ✓ Multiple 1 RU chassis options for IP input and output
- ✓ Transcode, transrate or downscale up to 36 HD or 90 SD programs
- ✓ Maximize uptime with automatic service failover and redundancy options
- ✓ Award-winning VidiOS™ stream analysis and troubleshooting tool
- ✓ Centralized Video Management with the All Seeing Eye

Applications & Benefits

Product Configurations

Affordably meet IP video processing needs with product configurations for requirements of all sizes, and input options for IP

IP Over DSL

Enable efficient HD and SD IP video distribution over DSL and cable networks by transcoding high bit rate MPEG-2 or MPEG-4 AVC sources to optimized MPEG-4 AVC or HEVC

ABR Delivery

Create multiple frame-aligned video streams for adaptive bit rate delivery to multi-screen devices

VidiOS™

Enjoy powerful VidiOS™ management and troubleshooting tools with inbound and outbound video thumbnails, stream capture and download, extensive statistical analysis, and stream logging

Monitoring

Enable full headend visibility with included probe capability and integration with the Inca All Seeing Eye monitoring system

Seamless Compatibility

Ensure seamless compatibility with existing systems, with easy-to-use VidiOS™ controls for specifying output stream parameters

Powerful Optimization*

Optimize high bit rate single- and multi-program streams from satellite receivers, existing ASI equipment and IP sources for your IP video network, using robust VidiOS™ tools for demultiplexing, program extraction and remapping

*CHAMELEON or TANGRAM equipment used for feeding IP streams from any input source.

Inca Multiscreen Launch Platform



All-In-One Carrier-Grade Transcoder, Live Stream Packager and Origin Server for Internet Video Services

The Inca Multiscreen Launch Platform is a carrier-grade transcoder, live streaming packager and origin server for high value Internet video services.

This all-in-one carrier-grade product can transcode, segment and package up to 12 HD or 24 SD sources into HLS and stream to set-top boxes, TVs, smartphones, and tablets. It is an ideal OTT solution for hospitality applications, satellite distribution replacement, and headend IPTV multi-screen deployments.

Features include adaptive bitrate transcoding, OTT live streaming, and powerful VidiOS™ analysis tools.

Headend IPTV Multiscreen Deployment

- ✓ Easily deploy this over-the-top solution to subscribers or use as a proof of concept within an internal lab environment.

Satellite Distribution Replacement

- ✓ Allows broadcasters to define a new cost-efficient way to distribute content previously only available through expensive satellite feeds, or share sources with cable headend operators.

Hospitality Applications

- ✓ A perfect solution for contained networks such as hospitals, hotels, cruise ships, dormitories or MDUs.

Easily and affordably transcode and stream live HLS content



Features

- ✓ 1 RU ABR transcoder with integrated packager and origin server
- ✓ Transcode 12 HD or 24 SD sources to multi-bitrate profiles and automatically package for HLS delivery
- ✓ Apple HLS - HTTP Live Streaming
- ✓ Serve up to 500 HLS clients at 4 Mbps each
- ✓ DVB subtitle burn-in and multi-audio support

Applications & Benefits

Origin Server

Serve up to 500 HLS clients using the Inca Multiscreen Launch Platform as an origin server to feed a content delivery network

VidiOS™

Enjoy powerful VidiOS™ analysis of inbound streams, with video thumbnails, stream capture and download, and extensive statistical analysis

OTT Streaming

Stream over-the-top to set-top boxes, TVs, smartphones and tablets using HLS

Live Content Anywhere

Stream live content directly to multi-screen subscribers in a campus or smaller network setting

Automatic Playlist Configuration

Playlist URLs are automatically configured through VidiOS™ management and troubleshooting tools

Stream Off-Air Sources

Combine with WISI's CHAMELEON or TANGRAM modules to efficiently receive and transcode off-air sources and deliver them to multiscreen devices



Output Streams View

Inca All Seeing Eye 5420



Sophisticated Visual Monitoring

Designed to provide a real-time, end-to-end monitoring solution, the Inca All Seeing Eye 5420 identifies and isolates issues integral to Intelligent Video Delivery. By proactively monitoring the network across the organization, providers can improve the quality of service and the video experience while controlling operational costs. Operators can now easily display their entire program lineup for their call center and other staff to monitor as they go about their day, while management can access the same information using a web browser on their desktop or mobile device. So, no matter where you're located and what level of detail you require, you can access the intelligence needed to manage your network.

The Inca All Seeing Eye 5420 provides sophisticated visual monitoring and an overview mosaic of the IP Video streams in your headend.

Inca All Seeing Eye probe functionality is included in every Inca product, and the Inca Modular Series 4400 with probe licensing is available for monitoring streams generated by other vendors' equipment. Powered by Inca's VidiOS™ architecture, the Inca All Seeing Eye supports HD and SD MPEG-2, MPEG-4 AVC and HEVC streams. Team members can interactively oversee the network using any web browser to view mosaics of video thumbnails and easily see how each program is performing.

After-Hours Peace of Mind

- ✓ Ensure prompt service response with remote visibility into stream details during late night service calls

Download Samples

- ✓ Expedite communication with content providers with click-of-a-button full frame and stream sample downloads

Customize Visibility

- ✓ Customize troubleshooting testpoints with the ability to place probes within any point in a video network.

Affordably monitor all the channels in your network



Features

- ✓ Confidence monitoring of all video streams in your headend
- ✓ Mosaic view of video thumbnails
- ✓ Real-time colour-coding to highlight impairments
- ✓ Email alarm notifications
- ✓ Monitor locally and remotely using any web browser
- ✓ Detailed transport stream statistics including PIDs and bitrates

Applications & Benefits

Easy Monitoring

Easily monitor all services with video thumbnail mosaics on readily-available flat-panel TVs or wall mounted displays in the call center and engineering areas; or monitor on-the-go with a laptop or tablet

Stream Sample Downloads

Expedite communication with content providers with click-of-a-button full frame and stream sample downloads

Video Thumbnails

Enjoy powerful VidiOS™ troubleshooting tools with inbound and outbound video thumbnails, detailed stream statistics, including PID and payload details, warnings and errors

Efficient Troubleshooting

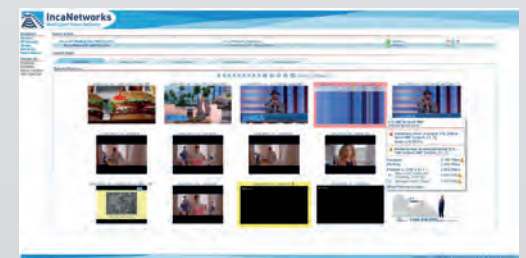
Efficiently troubleshoot streams by tracing impairments through the network with easy click-through to remote system management interfaces

VidiOS™

Leverage the intelligent VidiOS™ probe capability included in every Inca video processing product to add stream monitoring to your network and affordably monitor other video streams using Inca's Modular Series 4400 with probe licensing

Remote Visibility

Ensure prompt service response with remote visibility into stream details during late night service calls



Thumbnail Mosaic

Inca Solutions

Turn your video
vision into reality

INTELLIGENT VIDEO ARCHITECTURE

Implement a profitable triple-play strategy with Inca's flexible, reliable and easy-to-use solution. Our modular, scalable architecture gets you up and running in minutes and lets you grow and expand incrementally.

More streams, higher quality,
and less bandwidth

INTELLIGENT VIDEO STREAMING

Experience real-time, broadcast-quality video processing across multiple viewing devices with more streams, higher quality, and less bandwidth. Part of a fully-integrated and unified solution, the Inca Intelligent Streaming System receives, grooms and transcodes media from a variety of analog and digital sources for all your streaming video needs.

Deep visibility for proactive
troubleshooting

INTELLIGENT VIDEO MONITORING

Enjoy carrier-grade control and vision into all video flows with a single view of the status of the entire video delivery network. All the information you need to troubleshoot, respond to critical events, and improve decision-making is at your fingertips in real-time – via a user-friendly, web-based interface.

Benefits & Features

- ✓ Feature-rich software architecture provides deep visibility into each step of the processing chain
- ✓ Powerful modular platform lets you scale affordably and seamlessly as your business grows
- ✓ Streamlined configuration and operation for increased efficiency
- ✓ Beautiful high-quality output that subscribers love
- ✓ Easy-to-use web-based user interfaces across all platforms

Benefits & Features

- ✓ Live-hardware transcode MPEG-2, MPEG-4 and HEVC sources for linear and multiscreen adaptive bitrate applications
- ✓ Monitor and analyze every stream in the headend with VidiOS™, an advanced processing and monitoring engine
- ✓ Adaptive bitrate packager and origin server for multiscreen applications

Benefits & Features

- ✓ Sophisticated visual monitoring and overview mosaic of all IP video streams in your headend
- ✓ Single, centralized management interface for all your Inca equipment
- ✓ Deep visibility and efficient troubleshooting with video thumbnails, extensive payload analysis, alarm rollup, and offline video analysis
- ✓ Views for the management desk, the customer service team, and the headend engineer
- ✓ VidiOS™ stream probing built into every Inca video processing product, plus the ability to monitor streams generated by other equipment.

WISI Markets

Give customers the freedom they desire

Video can take education to the next level

Offer free-to-guest TV, video on demand, and OTT to hotel guests



PAY TV OPERATORS

With the emergence of on-demand and multiscreen video, pay TV operators face a new challenge. Content which was once created just for television now needs to be formatted for viewing on any device, anytime, anywhere.

While supplying intelligent video is a significant undertaking, it's also a major opportunity. With Inca's Intelligent Video Delivery solutions, operators reach subscribers in new and innovative ways.

Leverage your existing headend infrastructure and extend it for multiscreen opportunities. Inca provides industry-leading multiscreen transcoding performance, reduces required infrastructure, and streamlines video delivery management.



EDUCATION & LEARNING

Students want to be engaged with multimedia that extends beyond the textbook. Teachers want to capture the imagination of their students by delivering engaging TV and video to the classroom.

With Inca's Intelligent Video Delivery solutions, educators reach students in new and innovative ways. Air broadcast material and reference timely examples on any device, anytime, anywhere. Inca provides industry-leading encoding and transcoding performance, reduces required infrastructure, and streamlines video delivery management.



HOTEL & HOSPITALITY

Video is crucial to the hotel experience today. Hotel guests bring their own content and streaming services with them on tablets and laptops. They want to capitalize on everything a hotel property has to offer – moving beyond the in-room flat screen to resort-wide access.

With Inca's Intelligent Video Delivery solutions, hotels reach guests in new and innovative ways. Ensure your guests have a much more satisfying viewing experience. Inca provides an industry-leading seamless video experience, reduces required infrastructure, and streamlines video delivery management.

Inca Reference Case

"The key to launching competitive multiscreen services was figuring out an efficient way to deliver live IPTV services. Through a single, integrated architecture, Inca's solutions deliver a richer multimedia experience to subscribers, while lowering our operating costs."

– Kyle South, General Manager at West Alabama TV Cable

West Alabama TV Cable: GOT IPTV?

Taking Back Control

West Alabama TV Cable (WATVC), a cable company serving West Alabama, is one of the most advanced independent cable networks in the USA. It is one of the first companies to offer enhanced HDTV service in the area and one of the first operators in the USA to deploy a hybrid IP/QAM TV service.

With Inca's advanced Intelligent Video Delivery™ Solutions, WATVC launched IPTV capabilities on its traditional CATV network—delivering superior video quality and additional services to their subscribers while lowering its operating costs.

WATVC was put in the difficult predicament of finding an alternative content transport option after their previous provider discontinued satellite delivery operations, leaving them without a financially viable third-party option.

"We had a three week window to bring the reception and transcoding in-house before our existing service went dark. Our digital platform was MPEG-4 and we couldn't afford to go back to MPEG-2, so the Inca solution allowed us to easily transition to self-reliant MPEG-4 transcoding," says Kyle South, General Manager at West Alabama TV Cable.

Challenge

- ✓ Content provider ceased operations
- ✓ Needed to find a way to deliver IP video content to customers
- ✓ Wanted to upgrade from MPEG-2 to MPEG-4

Becoming Self Reliant

After multiple years using various third-party transport services, some that were discontinued on short notice, WATVC chose to move all their content reception and transcoding in-house. This allowed the operator to protect their business, reduce costs, improve quality of service and take full advantage of their advanced IP/QAM hybrid network.

“The transition from third-party transport to in-house operations was achieved without any material disruptions to subscribers.”

“The transition from third-party transport to in-house operations was achieved without any material disruptions to subscribers,” says Kyle.

WATVC is using Inca’s 4430 Modular Transcoders to process and monitor satellite and off-air streams and transcode them to MPEG-4, delivering superior video quality to their subscribers.

According to Kyle, Inca’s solution is performing better than the platform that was previously implemented.

“We have been able to increase our HD capacity by 25%,” says Kyle.

Inca equipment also interacts seamlessly with WATVC’s other headend and field gear. Powerful Entone set top boxes containing embedded cable modems provide both QAM video and full two-way IP services to the home. Feature rich Minerva IPTV middleware allows the operator to offer advanced program guide, navigation and interactivity features previously available only on IPTV networks.

Seeing it all

One of the key benefits that WATVC has seen with Inca is the improved visibility of all video streams that comes from the Inca VidiOS™ tools included in every Inca platform. VidiOS provides both active stream tools and integrated status monitoring and reporting to manage the head end more efficiently.

Inca’s All Seeing Eye (ASE) leverages this VidiOS™ intelligence to create end-to-end, real-time monitoring of all the IP video streams in the headend. The All Seeing Eye provides the ability to visually and interactively oversee their network using any web browser, and to quickly troubleshoot any issues.

“With the All Seeing Eye, the entire team has the visibility to oversee the network, analyze the inputs, identify problems, and restructure streams.”

Smooth Customer Support

The Inca team lead the design and deployment for WATVC.

“Inca’s platform and outstanding customer support allowed this process to happen smoothly, more economically, and with better performance than what we were operating before,” says Kyle.

He adds, “In fact, Inca helped us to convert our SD licences to HD in a couple of days, giving us more capacity immediately. Inca’s customer service has really been amazing.”

Products Used

- ✓ **Inca’s Modular Transcoder 4430**
- ✓ **Inca’s All Seeing Eye 5420**

Solution

- ✓ **West Alabama TV Cable process and deliver their own content with Inca Modular Transcoders**
- ✓ **Inca All Seeing Eye and VidiOS™ probes provide deep visibility into entire system from a single, centralized management interface**

Results at a Glance

- ✓ **Increased efficiency with hassle-free configuration and streamlined day-to-day operations**
- ✓ **Improved customer service with deep monitoring capability of Inca’s All Seeing Eye and VidiOS™ probes**
- ✓ **Cost-effective solution gives West Alabama TV Cable control over their future growth**

**Any Video from
Any Source to
Any Device**



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