

## VideolPath 3.5

### Management System

# Making media management easy

**Organizations that work with professional quality content (video/audio) want to manage the way this content is transported and processed (e.g. encoded) without having to worry about the intricacies of network management and monitoring of traditional and IP networks.**

Nevision's VideolPath is designed precisely to make it easy to manage traditional and IP-based media networks; enabling users to achieve their objectives (such as setting up a connection with a remote location) in a quick and simple way.

VideolPath is software that allows:

- The creation of connections (provisioning of services) on a wide area, metro or in-campus networks
- The recording (inventory) of all network resources detected by the system
- The monitoring of network resources and correlation with on-going services

VideolPath 3.5 provides features designed to make it possible for service providers to let their broadcast customers manage their network requirements. This includes support for multi-tenancing with associated security, which enables service providers to offer walled access to multiple broadcasters.

## Applications

- Scheduling of services in contribution networks
- Managing occasional use live sports and event feeds
- Operation and maintenance of wide-area, metro or in-campus broadcast networks
- Distributed routing of content for broadcast production

## Key features

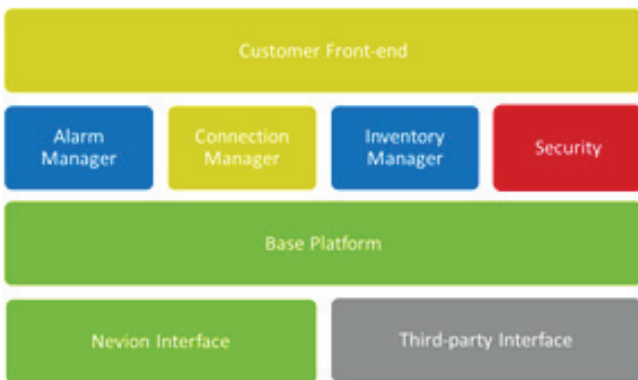
VideolPath greatly simplifies the inventory, provisioning and monitoring of media networks, resulting in:

- Faster time-to-set-up for those needing new connections (self-provisioning via a web-interface), allowing a rapid response to evolving needs
- Faster time-to-resolution of problems (in many cases before they actually occur)
- Reduced OPEX through automation of processes
- Increased revenue through more efficient use of network resources

## System overview

VideolPath provides service provisioning, connection management, monitoring, inventory, fault management and configuration management functions. VideolPath supports both Nevision and a variety of third-party devices. New third-party devices are integrated on a per project basis using a software development kit maintained by Nevision.

The system is based on a common software platform that includes modules to support various functionalities (see diagram below) to make the management of media networks as easy as possible. These modules may be licensed separately and combined to form a deployment for a specific purpose.



## Customer Front-End

The VideolPath Customer Front-End provides the end-user with the interface to monitor video connections, provision new connections and modify existing connections. VideolPath supports a role-based security

Model, whereby different customers may be setup with access rights that match their required use of the system.



The Customer Front-End interface is typically used by broadcast users who work with planning of services for productions or contribution. The interface is also well suited for service providers that are providing occasional use contribution services to broadcast customers.

## Connection Manager

The VideolPath Connection Manager allows users to provision services without having to consider detailed configuration settings in each network element, making the setting up and tearing down of connections much easier.

The system is also capable of performing network provisioning, and decide the optimal media transport path through the network infrastructure (topology) from source to destination(s). The path-finding algorithm is technology agnostic and allows the system to support path-finding at different layers in the network stack. The system supports path-finding at the baseband, Ethernet or MPLS layers.

## Alarm Manager

The VideolPath Alarm Manager provides monitoring functionality for services and network elements. Network element alarms are automatically correlated to services. Status information is typically retrieved from network elements using regular polling and notification mechanisms (e.g. SNMP traps). Details concerning how status information is retrieved for a specific device is captured in the driver for the device type.

Service	Alarm Name	Alarm Desc	Node Name	Alarm Name	Alarm Desc	Service Type	Status	Resolved	Last Changed
OK	Clear 1 Loss of...	Clear 1 Loss of...	FE21-01-0000	FE21-1-0-0000	FE21-1-0-0000	FE21-1-0-0000	New	2013-05-15 10:00:00	2013-05-15 10:00:00
Warning	Heart Channel 1...	Heart Channel 1...	FE21-01-0000	FE21-01-0000	FE21-01-0000	FE21-01-0000	New	2013-05-15 10:00:00	2013-05-15 10:00:00
Warning	No data received...	No data received...	FE21-01-0000	FE21-01-0000	FE21-01-0000	FE21-01-0000	New	2013-05-15 10:00:00	2013-05-15 10:00:00
Warning	Heart Channel 0...	Heart Channel 0...	FE21-01-0000	FE21-1-0-0000	FE21-1-0-0000	FE21-1-0-0000	New	2013-05-15 10:00:00	2013-05-15 10:00:00
Warning	Loss of HD Sin...	Loss of HD Sin...	FE21-01-0000	FE21-1-0-0000	FE21-1-0-0000	FE21-1-0-0000	New	2013-05-15 10:00:00	2013-05-15 10:00:00
Warning	Stream Loss 1-0...	Stream Loss 1-0...	FE21-01-0000	FE21-01-0000	FE21-01-0000	FE21-01-0000	New	2013-05-15 10:00:00	2013-05-15 10:00:00
OK	Clear 2 Loss of...	Clear 2 Loss of...	FE21-01-0000	FE21-1-0-0000	FE21-1-0-0000	FE21-1-0-0000	New	2013-05-15 10:00:00	2013-05-15 10:00:00
Warning	Clear 1 Loss of...	Clear 1 Loss of...	FE21-01-0000	FE21-1-0-0000	FE21-1-0-0000	FE21-1-0-0000	New	2013-05-15 10:00:00	2013-05-15 10:00:00
Warning	Heart Channel 1...	Heart Channel 1...	FE21-01-0000	FE21-01-0000	FE21-01-0000	FE21-01-0000	New	2013-05-15 10:00:00	2013-05-15 10:00:00
Warning	Heart Channel 2...	Heart Channel 2...	FE21-01-0000	FE21-01-0000	FE21-01-0000	FE21-01-0000	New	2013-05-15 10:00:00	2013-05-15 10:00:00

## Inventory Manager

The VideolPath Inventory Manager holds a model of the networks resources, enabling users browse or search for particular network elements. The Inventory Manager detects available nodes and endpoints automatically.

VideolPath centralizes and simplifies upgrades, making it possible to plan, schedule and upgrade multiple network elements at one time, for coordinated roll-out of new firmware releases in the network.

## Security

The VideolPath security model is based on associating users with roles, which define what the user can and cannot do in the system. The system allows any number of users to be defined and the user interface maintains a user session. VideolPath supports secure logging via HTTPS, which encrypts all data exchanged between the server and the client.

The security may be used to support multi-tenancing with associated security, which enables service providers to offer walled access to multiple broadcasters on the same system installation.

## User interfaces

VideolPath provides a web-based GUI. The GUI consists of a number of apps with clearly defined purposes. The security settings determine which of the apps to be made available to individual users of the system.



**Timeline** - Calendar based scheduling of services



**Connect** - Broadcast oriented end user control



**Maps** - View alarm status and connect endpoints



**Profile** - Manage service profiles



**Ports** - Manage service endpoints (source and destinations)



**Dashboard** - View physical status of equipment services



**Events** - Manage current alarms and view history



**Inventory** - Perform equipment maintenance services



**Security** - Manage user logins and security roles



## System architecture

The VideolPath system is based on a three-tier architecture with client, application and database layers. The client applications are running from a Web browser and communicate with the VideolPath server over HTTP(S).

The VideolPath server includes a security layer, API for communication with the clients, and core platform responsible for server-side processing and communication with the network elements within the video over IP network.

VideolPath has been built from ground up on a distributed database and distributed processing model. The system is based on multiple hardware servers to provide high-redundancy. There is no loss of functionality or performance if one of the servers in a cluster should go down.

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## Key functionality

- Service monitoring: Monitoring of services and network resources including alarm management.
- Connection management: Dynamically configure endpoints for permanent or occasional use type of service.
- Network provisioning: Calculate and provision optimal network paths between endpoints.
- Customer front-end: End-user portal for booking of media services.
- Security: Advanced access control to support different user roles and multi-tenancy.
- Inventory management: Gather information about network resources and perform maintenance operations.

## Ordering options

VideolPath-CM	VideolPath connection manager license for Nevia devices/cards. License fee per device/card.
VideolPath-3PP	VideolPath license for support of third-party device type.
VideolPath-SRV	VideolPath hardware server running VMWare vSphere hypervisor.
VideolPath-M&S	VideolPath maintenance and support agreement.
VideolPath-BASE	VideolPath virtual machine (VMWare compatible) including operating system and application software. License fee per hardware server.
VideolPath-AM	VideolPath alarm manager license for Nevia devices/cards. License fee per device/card.
VideolPath-CFE	VideolPath customer front-end license. License fee per end-user.

## CONTACT INFORMATION

### The Americas

ussales@nevia.com +1 (805) 247-8560

### Asia Pacific

asiasales@nevia.com +65 6872 9361

### Europe and Africa

sales@nevia.com +47 33 48 99 99 / +47 22 88 97 50

### Middle East

middle-east@nevia.com +971 (0)4 3901018

### UK

uksales@nevia.com +44 118 9735831

**nevia.com**