

Triad™ NPS Network Provisioning Solution



Document revision 1.2

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Triad™ NPS – The Challenges of Centralized Content

BSS/OSS Issues Large Telcos Face

Large telephone companies and service bureaus supporting delivery of IPTV video services must provide centralized signal processing and system management to provide economy of scale. Centralized signal processing also simplifies the daily maintenance and operations of their many smaller and remote sites. Such centralized operations or “Super Headends” typically consist of the following equipment:

- Satellite Communications and Fiber Optic Networks
- MPEG4 Encoding/Decoding/Multiplexing of IPTV signals
- Middleware and Conditional Access, centrally located
- Bulk purchasing of set-top boxes and “cable channels” (i.e., ESPN, TBS, HBO, etc)
- Centralized BSS/OSS for IPTV service management and reporting

Smaller IPTV Systems Have Special Needs

The smaller sites receiving the centralized services typically serve towns with populations of 10,000 or less and have special needs that must be satisfied such as:

- Competitive pricing of services
- Different channel line-ups
- Video on Demand
- Carriage of off-air TV and local emergency alert systems (EAS)
- Local origination of public service affairs, government and public community activities
- Local installation and service
- Distribution and management of customer premise equipment (CPE) such as set-top boxes, FTTH network interface devices, etc.
- Management and control of DSL and FTTH networks and gateways delivering IPTV signals
- Local Ad-Insertion on “cable channels”

Introduction to Triad NPS

Triad NPS-100 is an application designed to support video provisioning for centralized content providers. Each processor can service up to 100 remote headends and support up to 1,000,000 subscribers. The data for each headend is constrained to a separate instance of the Triad database (i.e., an ORG) to ensure that access is limited and secured to each service provider’s own subscriber base. Each Triad ORG acts as the SMS for a telco office or site. The ORG provides a means for provisioning subscribers, recording subscriber name, account number, service address, set tops, and enabling the selection of packages. One ORG is required for each head end facility.

The centralized Triad NPS system can be licensed to provision any of ETI’s supported IPTV interfaces. Triad’s provisioning interfaces provide full support for all features and

functions available for each technology, (e.g., device management, VOD support, auto-discovery). Each Triad ORG may also provide access for a billing system to drive subscriber data to the Triad database via the Triad Host API. This process facilitates automated provisioning directly from the billing system. ETI has pre-integrated interfaces with the major billing systems commonly used in the industry.

BSS/OSS Solutions for a Complex Environment

With 15 years experience in providing Subscriber Management Systems (SMS) to telcos and municipalities, ETI offers the NPS version of Triad to address the needs of the large enterprise telephone companies and their affiliates. This paper addresses the NPS platform and its capabilities in detail. The NPS platform provides the following:

- A single centralized subscriber management system for all sites to use
- Automatic flow through provisioning of subscriber set-top boxes
- Pre-existing interfaces with over 30 billing systems commonly used in the telephone industry
- Inventory Management System to manage CPE equipment such as Set-Top and NID's
- Centralized reporting of subscriber activities
- Privacy of data

All of these features properly equip each telephone office site so that a full range of competitive services can be provided to their subscribers.

The NPS and provisioning software elements are installed and operating in major systems serving thousands of telephone offices and millions of subscribers. Contact ETI for more information. ETI will tailor a system to meet the needs of your organization.

IPTV Video Provisioning

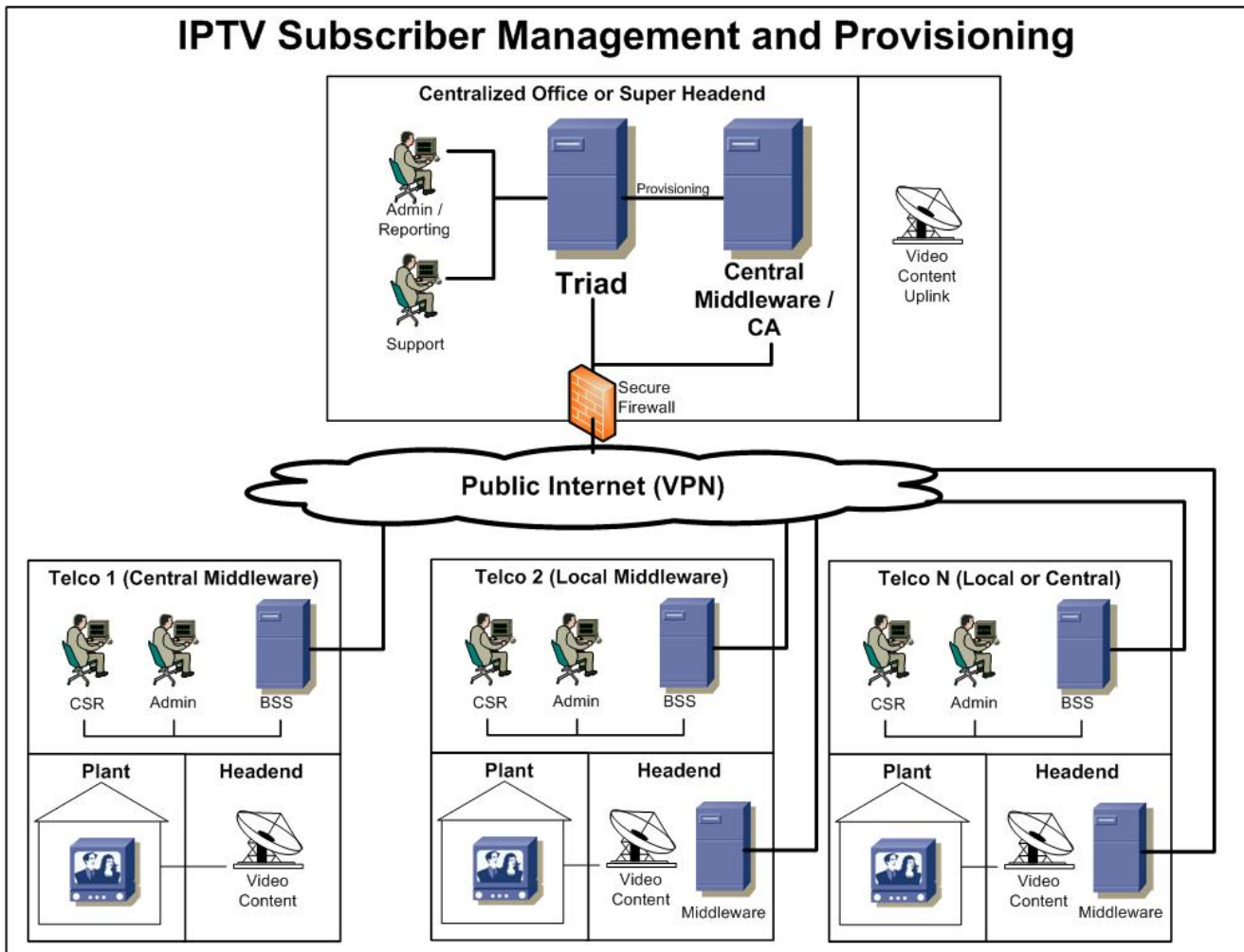
Triad is capable of provisioning many different IPTV Middleware systems. No matter which IPTV solution is chosen, subscriber management is identical in all cases. One method is to use the Triad GUI directly for manual entry. The Triad GUI provides support for subscriber account maintenance, service address entry / homes passed database, set top management (where supported), and service assignment. The Triad GUI will also provide PPV schedule management and OPPV if supported by the video solution.

A preferred method of managing subscriber data in Triad is by interfacing directly to the host billing system. Triad is currently supported as a turnkey, triple-play provisioning solution by numerous telephone and utility billing systems. The Triad standard API is very powerful, yet simple to implement. A full implementation enables fully automated flow-through provisioning by eliminating the need for a Service Representative to enter data directly into Triad or the downstream/middleware and conditional access (CA) systems. A fully integrated host billing system will automatically send data to Triad, which in-turn automatically updates the middleware to trigger provisioning.

Real-Time Automated Flow-Through Provisioning

Whether working directly in Triad’s user friendly Windows™ based GUI, or through Triad’s widely supported Host API, the Triad product line simplifies the provisioning process by enabling real-time automated flow-through provisioning. Additional Triad systems can be located at each site to automate provisioning of site-specific technologies such as DSL or FTTH. Simply put, as CSRs activate, disconnect, or modify subscriber accounts Triad automatically updates the service authorizations and equipment assignments in the video solution. Automated provisioning benefits the service provider in two key areas: eliminating manual provisioning steps to **decrease operating expenses** and speeding up the service activation process to **increase customer satisfaction**.

Another benefit of the flow-through provisioning model is the assurance that subscribers are receiving only the services for which they are being billed, and conversely, knowing that disconnected subscribers are *not* receiving services. The Triad provisioning model all but eliminates the need for lengthy audits by providing a download feature that refreshes each subscriber with the current service authorizations. This ensures an unprecedented level of synchronization between the host billing system and the actual services delivered to the subscriber.



Centralization Modules

Meeting the unique requirements of a centralized service provider requires specialized data extractions, numerous reports and new functions. To streamline access to this critical data in and reduce the effort required for reporting and management tasks, Triad can be equipped with the optional Centralization Module. The Centralized Reporting Module provides a single centralized data repository to simplify the creation and management of reports that you need to run routinely. The Centralized Management Module provides a single point for the management of shared data elements (e.g., PPV Schedules, Services and channels) common to a group of ORGs.

Centralized Reporting Module

A major component of the Centralization Module is the Centralized Reporting Module. This module periodically performs an automated data mining operation to collect data from each Triad ORG. The data collected is stored in a centralized database designed to provide views of the data across all ORGs for reporting purposes. ETI provides a fully documented schema of the Centralized Reporting Module database.

The data contained in the Centralized Module is capable of providing counts for the number of subscribers, number of devices, and number of subscribers with each service.

Centralized Management Module

ETI provide a method for centralizing the management of PPV schedule data, services and service mappings that are common to a group of ORGs. The PPV schedule is imported into a single ORG once per month, and is automatically propagated to all ORGs that share the same schedule. Services and Service Mappings that are common to a group of ORGs can also be configured centrally and automatically propagated to a sub-set of ORGs. These functions drastically reduce the management of common items to all individual ORGs, saving time and human resources.

Expanded Technology Support with an On-Site Triad System

Another notable advantage over custom solutions is that Triad can be expanded to provision substantially more than just IPTV video services and equipment. Triad provides out-of-the-box provisioning interfaces for video (RF and IP), data (broadband remote access servers, cable modems, and DSL), voice services (GR303, SIP, class 5 and soft switches), and FTTP. Triad supports a modular interface design, which allows service providers to select a custom set of interfaces to support the technologies required to deliver services to their subscribers. Triad can be used to satisfy nearly all the service provisioning requirements for a provider now and in the future.

Through the addition of one or more ETI processors and ETI's VideoDirect™ solution at each remote site the following can be provided to further fill the needs of each responsible telephone company office:

- Automatic activation or provisioning of DSL/FTTH devices and or network elements and gateways
- Order Entry, Rating and Work Order software to further manage triple play services and CPE in the household environment
- Insertion and advertiser billing software for local TV advertising on “Cable TV” channels
- Storage, playback and scheduling of local origination programming for community affairs

