Overview

Turn-key Solutions / Managed Services

- Assistance in operator’s business development
- Planning, installation and maintenance
- Quality assurance
- Employee training
- Easy to install and use hardware
- Sourcing of equipment and subscriber devices

Conditional Access & Encryption

- Multi level encryption
- Certified by Farncombe
- No known hacks to the day
- Quick response to future hacks by simply switching on additional security layers
- Simulcrypt compliant hardware

Satellite & Cable Broadcasting

- Support for millions of subscribers
- Fulfills requirements of all major studios
- Over a decade of expertise in all kind of networks from small to big
- With Satelio, a platform for German satellite TV in Africa, we operate our own solutions.
Overview

Over-The-Top & IP TV

- Solutions for new challenges already in place
- Live Streams
- Video-On-Demand over IP
- Catchup-TV
- Android & iOS apps
- PC Clients

Hospitality & Hotel Chains

- Easy to use reception mode
- Master account for managing thousands of hotels uniformly
- High level Android box for a full smart TV experience for your guests
- Easy integration into your PMS system

Content Delivery & Cloud Storage

- Easy integration with the CDN of your choice
- Support in acquisition of content rights
- Cost-effective Cloud Streamer for worldwide distribution of your content
- Push VoD/Advert via DVB
- Media encoders for easy generation and storage of Catchup-TV
Turn-key Solutions

Panaccess is the right partner for turn-key solution projects. We support operators with the full spectrum of services, digital TV projects require. Panaccess is a partner who consults, manages and delivers a complete project of digital TV operation. We have seen so many head-ends and networks around the globe and have therefore a broad and deep experience.

Range of services:

- Assistance in operator’s business development
- Content acquisition and contribution
- Head-end planning, installation and maintenance
  - Receivers, encoders, multiplexers, modulators
- Sourcing of equipment and subscriber devices
- Quality assurance
- Employee training

Plug & Play Hardware

All our hardware is plug & play. You can easily install it with little prior knowledge. Its configuration will be downloaded from our central server and a continuous backup will ensure your data integrity at all times. Faulty hardware simply needs to be exchanged and will automatically get the same configuration the replaced hardware has had without any further steps needed.

If you choose our powerful cluster system with redundant hardware design, you can reduce your downtime in case of a defect basically to zero. The redundant hardware will take over the operation automatically in case of a failure of the main hardware, which then can easily be investigated and/or replaced.
Conditional Access & Encryption

Our core business is to make sure that your assets are protected in the best possible way. Not only now, but also in the future. We already use highly sophisticated techniques build upon the most secure algorithms currently known. We are also constantly improving the security features to stay ahead of any potential attacker. When you buy and use our product, we already have at least 2 additional layers of security ready to be activated any time you have suspicions about a hack of your system.

However, we are proud to say that up to today this was not even necessary.

Our techniques include but are not limited to: Key-laddering, Seeding, White-boxing, Dynamic Obfuscation, Encrypted ram, Secure chips, Unique secret keys, Multilayer security.

Please note, even though we mainly focus on the encryption and conditional access for television services, our expertise does not stop there. We also can provide solutions for most other problems that are based in the conditional access realm. Our flexibility and openness to challenges of all kind make us a reliable partner for your specific problems.

Managed Services

If you don´t have the technical ability or a skilled team to operate your television broadcast service, Panaccess may take over this part for you!

We will manage your broadcast operation or contribution system we have built for you.

Starting from hosting the CableView subscriber management and billing system, over cost effective contributing of your content with Panatrix, encoding, multiplexing and uplinking by our teleport capabilities, we take over your broadcast and contribution operation and manage it reliable, effectively and successfully.

In case you have ordered Panaccess certified STB, we may support you in maintaining these end-user devices over your existing broadcast system with e.g. new firmware and channel lists.

If desired, we can take over your complete technical operation and support of the installed equipment.
Conditional access in a hostile environment

Conditional access for broadcast TV services requires the highest grade of content protection. Without return channel the content access is not traceable in any way. In most cases failure to secure the content leads to a decrease of the operator’s revenue. Highest security standards and complex key structures need to be implemented and paired with high-class security chipsets. This is one of the key skills of Panaccess’ experts. For more than 12 years we have been building an extensive experience in broadcast security concepts.

We take the responsibility for a sustained operator revenue.

Countermeasures & Forward security

Today’s and tomorrow’s threats are always part of our awareness. We do not react on piracy, we act in advance! A set of available countermeasures and stand-by technologies always grant continuous operation. Control words generated by scramblers in the head-end that protect the broadcast content are secured along the whole signal chain. Unique keys branded into secure chipsets together with watermarking technology effectively prevent control word sharing on all scales.

Copy protection is a must for a conditional access system. Panaccess supports URI (user rule information) flags in its ECM/EMM structure in order to effectively provide a CA based and head-end controlled copy protection mechanism. Behaviour of personal video recorders will be fully controlled by the head-end.

Set top boxes and CI+ devices are available and fully support this.

Certified for highest quality content

Due to our Farncombe certification you will be allowed to provide your customers with content from all major studios. We also get re-audited on a regular basis to make sure, this certification will also in the future meet the complex demands of those studios.
Flexible & Scalable solutions

Our sophisticated security concepts are nicely bundled into modern and compact head-end components that deliver the right solution for any kind of network size. The operator can easily scale and expand the service offer and subscriber base.

Having those different environments in mind, our products have been designed with far-sightedness. The ubiquitous approach and the plug & play hardware components, make handling any head-end and network size similarly easy.

A broad line-up of classical and modern conditional access features are the cornerstones of our solution. New functionalities are integrated on a daily basis. Not only do we implement operator specific demands, we also closely follow digital TV market trends and movements, often being the first to offer a solution.
Conditional Access for TV 2.0

Catchup-TV, Video-On-Demand, Internet TV. The TV world is changing and needs a new form of delivery & content protection. Every evolution has chances and risks. Panaccess has solutions that minimize the risks involved with TV 2.0. Content for linear TV services or Video-On-Demand services, independent of the form of distribution (IP multicast, HTTP live streaming, etc.), it is being protected by a sophisticated conditional access concept.

Fingerprinting of content warrants a consistent trace back to the operator and to the subscriber’s last legal access. The digital watermark is not visible, not removable and secured by cryptography. This is the key tool for operators to acquire content and to protect their own revenues.

New cryptographic tools like white-boxing can protect your content even on client devices partly controlled by your customer.

Client support

With Apple’s iOS and Google’s Android we already support the vast majority of mobile devices of your customers. We also offer a PC client with limited DRM protection for low profile content, where reach is more important than top security.

All our client solutions can be re-branded to present your company’s identity to the user.

Additionally we offer solutions for Over-The-Top content like Video-On-Demand and Catchup TV for normal Set-Top-Boxes that provide a network interface for a return channel. Let your customers browse, buy and watch your content. Our solutions contain a full set of hardware that seamlessly integrates with the rest of the system to provide such services to your customers.

Our steadily growing number of Set-Top-Box partners will provide you with the full range of available box hardware. From cost-effective economical solutions to high-end full featured ones, supporting DVB-C, DVB-S, DVB-S2, DVB-T, IP or a hybrid combination of these standards.
Easy OTT Configuration

Using our user-friendly front-end, it is easy to configure an already existing source for streaming live content to your target devices. You can also define different streaming profiles for adaptive streaming that automatically adjust the quality of the stream to your customer’s available connection speed.

Using the already existing EPG information you can easily set up Catchup-TV by simply defining how many days the content should be kept. The TV signal will then be automatically sliced using the EPG information and a configurable buffer before and after each event.

For Video-On-Demand you simply upload your content to us in nearly any possible format. Our hardware will automatically recode it into the final format and you can configure its properties like name, description, poster, categories, prices and which of your VOD libraries it belongs to in CableView.
Managed Services

Teleport Service

Panaccess is also offering classic teleport services. We can uplink your television, radio and data service to your satellite capacity and if you don't have your own satellite capacity we can organize and lease satellite capacity for you.

Our uplink service can be a standard “turnaround” service, this means you feed your television, radio and data service to our teleport and we will uplink it for you.

Further options are “Channel Contribution” and “Playout Service” followed by uplinking it to your satellite capacity.

Channel Contribution

Panaccess will pick up your television, radio and data service at your facilities and feed it to the Panaccess teleport for uplink. You only need to provide us with either SDI or MPEG-TS compliant signal and we will take care of the rest.

Playout Service

Our simple to use playout system will create your television channel with minimum effort. You just need to upload your video files via internet to our playout file server located at the teleport. Afterwards you get web based access to the scheduling system hosting your files and you can set the programming of your TV channel. The output of the playout server will be encoded and uplinked to your satellite capacity or contributed to any other broadcast operator.
Signal Monitoring

The signal monitoring device analyses DVB signals of different modulations. It automatically creates an overview of all of the existing DVB transport streams, networks, frequencies and the respective signal quality. It automatically builds your entire DVB network that is conveniently displayed in CableView. This facilitates the use of features such as EPG management, channel-list download to subscriber devices, etc. In case of an error, the signal monitoring system triggers an alarm which contains information about the type and the severity level of the error.

Specifications:

- DVB transport stream monitoring device
- Plug & Play hardware
- Available for the following modulation types: QPSK, QAM, OFDM
- Permanent frequency scan
- Adjustable frequency scan: start frequency, end frequency, scan steps, symbol rates and constellation type
- Full automatic overview of all DVB transport stream information: service name, service ID, transport stream ID, service provider name, scrambled CA IDs, network ID, original network ID, network name, signal-to-noise ratio, bit error rate
Conditional Access for Hospitality

This solution has been specifically designed for the needs of hospitality. Each guest house, clinic or hotel needs to offer value-added TV services in existing infrastructures. Whether limited budgets or green field deployment of state-of-the-art TV services, Panaccess is the key component for successful access control.

Hospitality operators are able to offer linear TV services and Video-On-Demand to their guests while retaining full control over the guest’s demand and preventing any sort of piracy. The large and long-lasting experience in conditional access industry, serving big DVB operators, delivers strong encryption.
Content in any network infrastructure can be secured and controlled with one single chassis (HeadControl) in the head-end. Whatever the type of cabling (coaxial, twisted pair or even wireless), or the type of transport (DVB-C/T or IP-based), the HeadControl controls both one-way (broadcast) and two-way transport networks. Existing TV sets can be used by adding a common interface module. More functionality will be available with a set top box.

Customised interfaces can be set up for the different groups of personnel. A receptionist handles the payment and controls the guest subscription accordingly. A technician or caretaker maintains and manages the respective smartcards/devices of the rooms. A manager has full control and observes all actions, also those executed in the past. Easy and effortless management of the overall system without interaction of experts is warranted.

**Easy account replication**

The content provider configures the content bundles and prices and pushes them to any number of hotel accounts. Exceptions for special cases are still possible.
CAS Server

The HeadControl is the standard chassis for digital TV head-ends and runs Panaccess’ DVB/IP CAS software. Installation, operation and maintenance are very easy and do not need any intervention of experts. Every head-end becomes a secure and state-of-the-art digital TV platform with high-end digital rights management and access restriction.

The HeadControl is available in two variants: Basic and Advanced

Headcontrol -Basic CAS

- Preconfigured high-end conditional access system
- Plug & play hardware
- Supports DVB-C, DVB-S, DVB-T, MMDS, IP, etc. transmission networks.
- Up to 250,000 subscribers
- No backup necessary, central configuration
- Easy hardware replacement in case of malfunction
- Monitoring of complete head-end (SMS/Email alarm)
- Controlled by CableView or network based interface
- Industry-design, 19” 2x rack units
- Redundant hardware
- Two-line operation per head-end possible
- Pay per channel, IPTV client provisioning
- On screen messages
- Power supply Input: 110-220 VAC, 47-63Hz, power consumption: 50W
- Dimensions: 282 (L) x 485 (W) x 88 (H) weight: 7 Kg

Professional Cas additionally supports:

- One-way or two-way security or both
- Any client device: Set-Top-Box, Over-The-Top, PC client, mobile device
- Up to 2 million subscribers
- Pay per channel, pay per view, pay per time
- Impulse pay per view, scratch cards, Video-On-Demand, Catchup-TV
Push VoD+ and VAS

Panaccess Push VoD+ system enables you to complement your live pay-TV services with Video-On-Demand and other value-added-services (VAS), even if your customers boxes have no internet. This is achieved by ‘pushing’ the content in an endless loop to the boxes via the already present DVB-Signal. The box is silently downloading the content in the background and presents it, when available.

The Panaccess Push VoD+ system supports a series of content delivery options and enables you to split the content over several loops with different bandwidths. This way you can play out popular content more quickly while still sending lots of not so important content in the slower low priority loop.

Next to Video-On-Demand the Panaccess Push VoD+ system also lets you push advertisement or EPG pictures directly to the boxes or your customer. It can then be shown in pre-defined places in the menu or directly on the screen.

The content is delivered with the same high level encryption as the live TV signal with DVB-CSA at its core.

Playout Server

Our simple to use playout server will create your television channel with minimum effort. You just need to upload your video files over the public internet to our playout file server located at the teleport. Afterwards you get web based access to the linked scheduling system hosting your files and you can schedule the programming of your TV channel. The playout server supports one static logo of your channel.

Video files can be uploaded with following codecs.

Video codec support:
• MPEG-TS
• MP4
• VOB
• FLV
• MPG/MPEG
• JPG (still pictures)

Audio codec support:
• MP2 (MPEG-2)
• MP3 (MPEG 1 Layer 3)
• AAC
• OGG
CableView

CableView is the web interface that allows you to control most of our products. It offers a unified user interface and is the central component that enables the ease of use plug & play capabilities of our products.

CableView is available in an ever growing set of languages and can be easily integrated into existing tool chains via the potent application interface (API) that can be used to automate any task, that can be achieved by user interaction. The hierarchical user & rights management lets you create any number of user accounts for your staff, only showing them the exact features they need to operate, making the interface less confusing and leaving less room for errors.

Small operators get access to our hosted solution running in our datacenter with any purchase. With this you also will be part of the rolling releases always getting the newest features & improvements that are constantly developed. Bigger operators also have the option to buy their own local installation for enough performance to manage millions of subscribers and having lowest possible response times to their datacenter & tool chain. Instead of a rolling release they can determine themselves if and when they want the newest features.

• Intuitive user interface
• Hardware management/monitoring
• Smartcard/Box/License management
• DVB Network management
• EPG Management
• Pay-Per-View & VoD configuration
• Subscriber Management
• Hospitality/Reception mode
• Pricing/Runtime management
• Coupons & Discounts
• Billing (Prepaid/Postpaid)
• Multi Tax support
• Integrated with Ingenico (payment services)
• Subscriber self-registration &
• E-Commerce
• E-Mail notifications
• Hierarchical user/rights management
• Ticket system
• Multi theme support (Rebranding)
• Tasks tracking/ History
• Statistics
• WSDL (SOAP) / JSON API
Smartcard

The smartcard chip of Panaccess is based on a crypto-controller of NXP. A set of cryptographic features makes this platform very flexible and secure. More than 15 years of experience delivers sustained innovation. In case of compromise already included standby algorithms can be activated.

- ECM/EMM envelope encryption
- Sophisticated key change mechanisms
- Key ageing preventing replay attacks
- Standby algorithms included
- Configurable multi layer key hierarchy
- Multiple sectors, cryptographically independent

Cardless

Panaccess offers also a CA kernel that is running on a secure chipset. Depending on device's chipset every level of security can be reached: from basic kernel for cost efficient devices up to a sophisticated kernel protected by advanced algorithms on a secure chipset. All CA kernel flavours include standby algorithms that can be activated in case of compromise.

This way you can have the temper security of a smartcard directly integrated into your box, eliminating the attacks potentially possible on the communication between the smartcard and the box hardware.

- Chipset pairing with leading vendors available
- Forced individual keys
- Electronic counter measures
- Parallel operation with smartcards
- Optional return channel

Security certified by

farncombe  HISILICON  ALi  FUJITSU  MStar semiconductor  ST
Cloud DVB Streamer

Panatrix

Next Level Content Contribution!

The Panatrix MPEG-TS Streamer takes any DVB-IP compatible single or multi program transport stream (SPTS/MPTS) source and smoothly streams it to any cloud service or through a connection with less or non QoS. Any number of Panatrix Streamers receives from the cloud or point-to-point and provides the original transport stream for further broadcast. This delivers a cutting-edge solution that makes it affordable for studios and producers to easily contribute their content to any broadcaster in the world. Most used use-case is the open internet.

The streaming is protected by state-of-the art conditional access technology.

Features:
- Streaming of DVB-IP SPTS/MPTS signals in real time or delayed
- Proprietary UDP protocol for real time transfer
- Proprietary jitter-free protocol that builds stream chunks for 100% cloud compatibility.
- Compatibility with all cloud/web service operators
- Upload with WebDAV, FTP, SFTP or any other available
- Real time encryption with sophisticated key change algorithms for maximum transport security
- Up to 50 Mbit/s per sender or receiver
- Streamer configurable as sender or receiver
- Up to 50 streams
SpoolNik is an effective EPG/SI spooler for DVB networks that seamlessly integrates with existing multiplexers and other Panaccess components such as HeadControl and CableView.

In CableView the operator easily manages the DVB network and EPG information of each service. Various EPG providers and data feeds (e.g. XMLTV) are supported and transparent for the user.

SpoolNik supports most common DVB Tables such as NIT, SDT, EIT, TDT, /TOT, BAT...
It can play out those information via single- or multicast IP, to be multiplexed into the transport streams.

Additionally you can use it to play out Over-The-Air update files to your customers’ Set-Top-Boxes

NIT generation
- Automatic insertion of delivery descriptor for DVB-S/S2/C/C2/T/T2
- Automatic service list generation
- LCN Support
- Option to insert raw descriptors at network and transport level
- DVB network management in CableView
- EPG data assignment in CableView
- Output SPTS/MPTS
- EPG Monitoring in CableView

EIT generation
- Dedicated configuration of play out parameters for each transport stream and cycle (Present/Follow, Schedule Other / Actual)
- Support for multiple language encodings
- Automatic intelligent stretching in case of bandwidth peaks & limitations
Certifications

Competence and Trust is the key!

We protect your content reliable and approved

The most important thing for an operator or broadcaster is to have the rights to distribute the right content in the network or platform. Many times the premium content is the key to the success for the operations and to get the distribution rights for premium content such as TV series, movies and sport events. This means that the operator/broadcaster needs to have a content security system that is approved by the content providers.

This is the reason why Panaccess invests so much time and resources to become approved by all the content providers. Below you can find a list of the providers that are currently approving Panaccess for re-encryption of their material.

Farncombe is an independent testing institute based in the UK and is used by most of the leading broadcasters and operators to make sure their operations are based on sound and safe practices.

Panaccess has continuously been cooperating with Farncombe for testing of the security level and to get an independent audit of the company and the products.

Panaccess has received the highest security rating from Farncombe which confirms that our system will not leak information and is well protected against piracy.
HBO is home to the most popular programs on television – from ground breaking series, films, documentaries and sports to the biggest blockbusters available anywhere. HBO is also one of the strictest partners when it comes to security and has a leading role when it comes to demanding high security levels.

Panaccess is approved by HBO for re-encryption of HBO material on all markets and all platforms.

MultiChoice is the biggest PayTV and Internet operators in Africa. The MultiChoice South Africa group includes the digital satellite Pay-Television business DStv, which has been in operation since 1995. MultiChoice is the most important content provider in sub-Saharan Africa with brands like Super sport, Mnet and GOtv.

Panaccess is one of the few CAS/DRM providers that are approved by MultiChoice to re-encrypt their material on any DVB or IP platform which gives Panaccess customers a unique opportunity to monetise on their networks.


Panaccess is approved by Warner since 2014 to re-encrypt any Warner material on any network around the world on operator request.
Ecosystem

Compatible Set Top Boxes

diaenius
@Smit
TechniSat
YINHE
WELLAV
九联科技
TechnoTrend
KATHREIN
Newland
SUNNY
WOOJEON&HANDAN
CreNova Multimedia

Integration of others possible.

Integrated head-end vendors

a2b
design for TV

ADTEC
digital

Appear TV

ASTRO

axing

BLANKOM

CISCO

Envivio

GSS

harmonic

Hilkom Digital

KATHREIN

MOTOROLA

Sumavision

TANDBERG télévision

TELELYNX

TELESTE

THOMSON
images & beyond

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