# spectar+

INDUSTRY'S MOST COMPREHENSIVE PLATFORM FOR MULTI-SCREEN OTT, IPTV AND HYBRID DVB SERVICES

# PLATFORM
# TECHNICAL SPECIFICATION

## December 2022

# ABOUT US

More Screens is a privately held company whose offices are located across several EU countries. The company has been operating since 2011. Through a network of employees and partners, located all around the EU, More Screens specialises in IPTV/OTT Multi-Screen platform product development and related services.

We provide technology product, planning and technical services, as well as strategic planning for use of technology and consulting in strategic system design.

More Screens is made up of professionals who have extensive background working with service providers, telecom operators and broadcasters. Our goal is to provide you with **the most innovative and cost effective Multi-Screen IPTV/OTT service delivery platform for your business needs.**

Among our customers: Digitalb, Telecom Italia, Deutsche Telekom (Makedonski Telekom, Crnogorski Telekom, Hrvatski Telekom), Turk Telekom, Telekom Srbije, Telekom Slovenije, Eronet, BH Telecom , RTS, Moviemix, Gley, Media Broadcast Satellite, Zmones Cinema…

**COMPETITIVE ADVANTAGE**

• A true End to End IPTV/OTT system with over 90% of ecosystem components built and engineered in house.

• Proven , mature and tested product deployed by known operators (in all scenarios) and used by millions of users.

• Supports IPTV/OTT/HYBRID DVB B2C and B2B HOTEL TV and BUSINESS TV on the same platform

• State of the Art  service user interface providing attractive and user friendly service

• Can be integrated with almost any external 3rd party or legacy ecosystem component such as BSS/OSS, Headend, Monitoring system, CDN..

• Local and online 24/7 support team facilitating fast response to any inconvenience or customer's requirement.

Thank you,

Predrag Mandlbaum
CEO, More Screens

MORE SCREENS

# SOFTWARE

- Spectar+ Service Delivery Platform

- Analytics

- CDN

- DRM & CAS

- Customer care

- Hotel & Business TV

- Device Management System

- Monitoring & System Alarming

- Diagnostic & KPI

# SPECTAR+ BRINGS YOU ONE STEP AHEAD OF YOUR

## CENTRALISED APPROACH

With the Spectar+, we are proud to offer an entirely new Multi-Screen Video Service Delivery Platform that enables centralised service and ecosystem components management, distribution and monetisation of Linear TV and VOD assets on multiple platforms and devices, over Public or Managed network.

## CARRIER-GRADE RELIABILITY

Spectar+ is feature-rich and easy to use. It provides operators with the ability to setup, offer and deliver any kind of Video over IP service more quickly with less effort than competing solutions. Spectar+ provides true carrier-grade reliability and scale, which operators need to deliver the service to potentially millions of service subscribers.

## OPENESS

The flexible architecture of this technologically leading platform offers entirely new capabilities. Spectar+ runs as a virtual platform and **is deployable entirely independent from any specific underlying application or hardware**. Discover and use the modules and API's to build requirements-based services delivered online through the public or a managed network. The platform facilitates management activities through a user-friendly web browser interface.

Spectar+ implements a Service Oriented Architecture and thus consists of various Web services that provide for Application Layer (Front-End Client Apps). This technologically leading architecture offers any and all options on scalability, availability, security, and integration ability.

# SOFTWARE

- Spectar+ Service Delivery Platform

- Analytics

- CDN

- DRM & CAS

- Customer care

- Hotel & Business TV

- Device Management System

- Monitoring & System Alarming

- Diagnostic & KPI

# SPECTAR+ BRINGS YOU ONE STEP AHEAD OF YOUR

## CENTRALISED APPROACH

With the Spectar+, we are proud to offer an entirely new Multi-Screen Video Service Delivery Platform that enables centralised service and ecosystem components management, distribution and monetisation of Linear TV and VOD assets on multiple platforms and devices, over Public or Managed network.

## CARRIER-GRADE RELIABILITY

Spectar+ is feature-rich and easy to use. It provides operators with the ability to setup, offer and deliver any kind of Video over IP service more quickly with less effort than competing solutions. Spectar+ provides true carrier-grade reliability and scale, which operators need to deliver the service to potentially millions of service subscribers.

## OPENESS

The flexible architecture of this technologically leading platform offers entirely new capabilities. Spectar+ runs as a virtual platform and **is deployable entirely independent from any specific underlying application or hardware**. Discover and use the modules and API's to build requirements-based services delivered online through the public or a managed network. The platform facilitates management activities through a user-friendly web browser interface.

Spectar+ implements a Service Oriented Architecture and thus consists of various Web services that provide for Application Layer (Front-End Client Apps). This technologically leading architecture offers any and all options on scalability, availability, security, and integration ability.

MORE SCREENS

# spectar+

# FEATURE-RICH AND EASY TO DEPLOY

Service and content providers increasingly demand **usability, compatibility, performance, and scalability** when deploying Video over IP services on multiple platforms and devices.

Spectar+ meets these demands through its integrated revolutionary management tools and features.

We have successfully created a powerful and highly effective Multi-Screen video service delivery framework which includes a versatile set of platform components, features and client apps.

| OPERATOR'S DASHBOARD | | | |
|---|---|---|---|
| LINEAR TV | VIDEO / AUDIO ON DEMAND | RADIO | EPG |
| CATCH-UP TV | METADATA & FILE ASSETS | CONTENT CATALOGING | APPS & WIDGETS |
| GEO-LOCK & BLACKOUT SERVICES | CONTENT DISTRIBUTION RIGHTS | SUBSCRIBERS | OFFERS |
| MONITORING | CONTENT DELIVERY NETWORK | ANALYTICS | CUSTOMER CARE |
| VOD INGEST | LIVE TRANSCODING | DEVICES | OTA |
| BRANDING | PUSH MESSAGING | PAYMENTS | PLATFORM OPERATORS |
| **CONTENT INGEST, PROCESSING AND PACKAGING** | | | |
| MT-VOD TRANSCODER | MT-LIVE TRANSCODER | MS-ORIGIN | MULTI DRM |
| **DISTRIBUTION PLATFORMS AND DEVICES** | | | |
| PC / MAC | ANDROID MOBILE / TABLET | iOS MOBILE / TABLET | APPLE TV |
| LG WEBOS | SAMSUNG TIZEN | ANDROID TV / STB | AMAZON FIRE TV |

* For more information about supported Distribution platforms and devices, please refer to page 33

**MORE SCREENS**

# DESIGNED FOR HIGH AVAILABILITY

Spectar+ runs on a hybrid cloud solution designed to support usage peaks and geo-redundancy. It's architecture combines different virtualisation technologies and models.

Using this approach we created high-availability hosting cloud that provides performance and scalability. Spectar+ application stack is divided into several blocks and each block is isolated inside virtualisation container.

A following image shows Spectar's 4-Tier stack.
In production environments, minimum 3 clustered containers for each Tier are needed.

**Availability encompasses reliability, recovery, our key benefits:**

• Cache servers

• DNS geographical load balancing

• DNS automatic failover

**Redundant server structure**

• Application servers

• Application automatic workload balancing
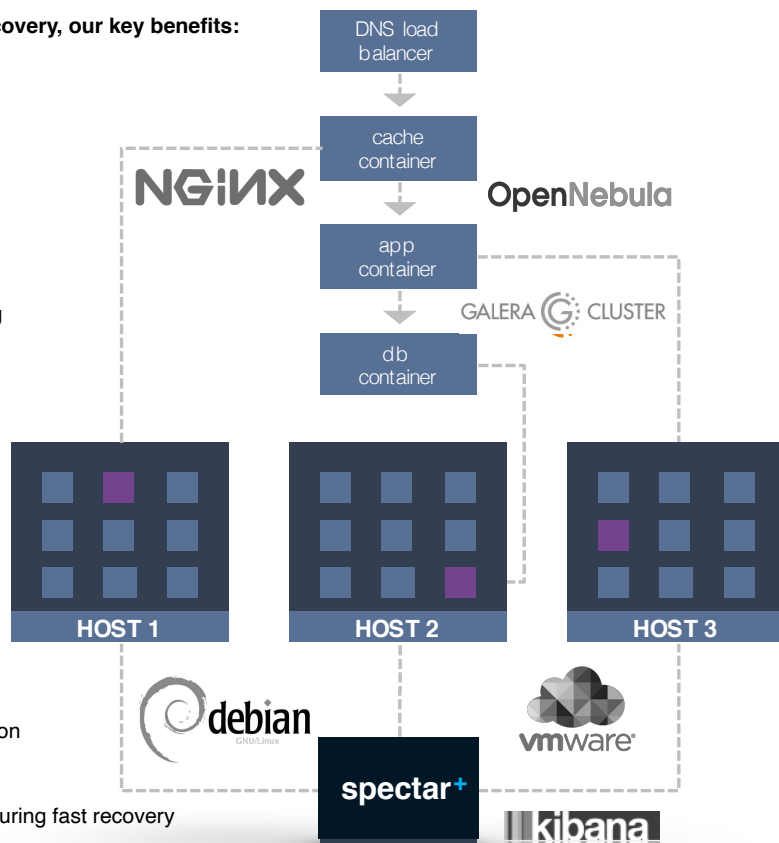
• Automatic failover

• High Availability

• Redundancy

**Database servers**

• High Availability in multi-master mode

• Synchronous multi-master replication

• Redundancy

**Management server**

• Centralized monitoring of complete solution

• Configuration/deployment management

• Periodic platform disk-based backups insuring fast recovery

**Spectar+ platform can be deployed in full geo-redundant solution.**

DNS load balancer → cache container → app container → db container

NGINX   OpenNebula   GALERA CLUSTER

HOST 1   HOST 2   HOST 3

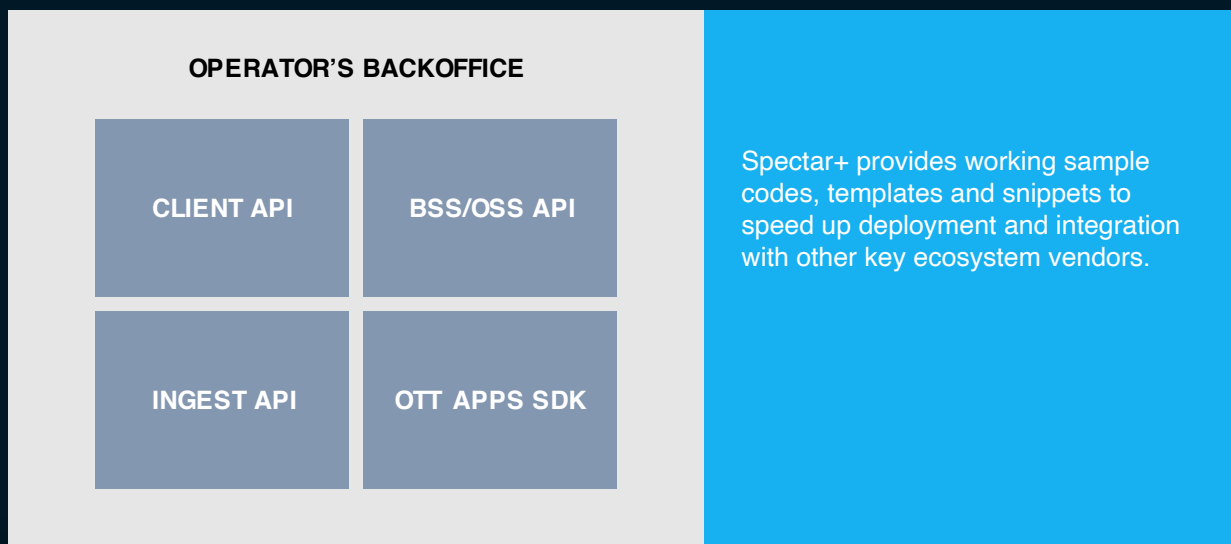debian GNU/Linux   vmware   spectar+   kibana

# INTEGRATES WITH EXISTING LEGACY OR ANY OTHER THIRD PARTY SYSTEM

Spectar+ provides a set of API (Application Programming Interface) together with an SDK (Software Development Kit) and all related documentation. The goal of this API is to provide direct, high-level access to the data contained in the Spectar+.

Client programs can use the API to authenticate, get services and post changes. Output from the API is available in a wide range of formats, including JSON, XML, YAML and PHP's native serialisation format.

Spectar+ API's allows for easy integration with existing CRM / OSS / BSS systems, Recommendation systems, nPVR, CDN, STB's or any other connected device.

**OPERATOR'S BACKOFFICE**

| CLIENT API | BSS/OSS API |
|---|---|
| INGEST API | OTT APPS SDK |

Spectar+ provides working sample codes, templates and snippets to speed up deployment and integration with other key ecosystem vendors.

# COMES UP WITH ANALYTICS AND MONITORING TOOLS

Get quick and detailed insight that helps better understand user behaviours, reactions and attitudes to your platform services.

• Powerful web-based analytics & reporting tool

• Customizable and user defined criteria's

• Number of views, channel views

• Watching time by video and channel asset – start/stop time

• Top videos, channels, shows

• Total number of platform customers

• Filter by location, region, time range, channel

• Visitor - Player interaction analytics

• Number of account/client connections, concurrency, type of connected devices

• Detailed information report of IPTV/OTT TV service usage (daily, weekly, monthly, yearly)

• Real time dashboard reports of service activity (TV channel usage, service unavailability, etc.)

• Report generator with integration possibility

• Reporting data of customer care complaints

• Centralized log management (system, application, client log) with definable severity levels

Usability and stability reporting. **Other metrics can be deployed on request.** (.*.)
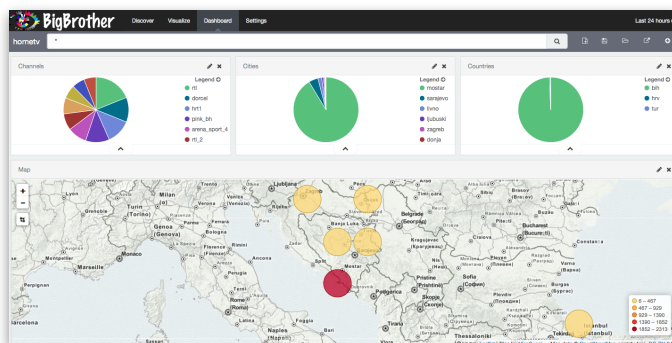
# INTEGRATED CONTENT DELIVERY NETWORK MANAGEMENT

The principle of a CDN (Content Delivery Network)  relies on the distribution of cost-effective caching  servers in the network  capable of serving popular content from a location closer to the end-users.

The popularity of content is computed in each regional point of presence (POP), based on the number of times it is requested in a given timeframe. When a threshold is reached, the content is kept in the POP and streamed from there to the end-users who request it.

This allows operator to keep only the traffic for non-popular content in the backbone network, thus greatly optimising network usage by reducing the costs related to the deployment of the equipment and ensuring a great Quality of service and User experience.
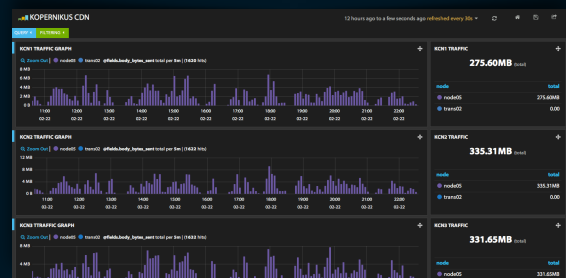


MS-CDN®, our new CDN management tool can centrally manage origin and edge servers, streams caching and routing, to ensure scalability and quality of your service.

More Screen's CDN solution's key benefits are:

• flexible configuration suited to meet many scenarios

• multiple models of setup

• multi-tier support

• node specific task/process assignment (i.e. for live, catchup, VOD, combinations…)

• client's geo location awareness when choosing the best delivery route

• geo-redundancy for a node or for geo location

• secure-token mechanism support (adds another level of content protection, now on CDN)

• deployment on standard servers

CDN analytics collection and presentation together with other analytics elements collected from the Spectar+ platform and devices itself

# KEEPS YOUR CONTENT SECURE BY ADOPTING MULTIPLE DRM & CAS SCHEMES

Digital rights management (DRM) is a systematic approach to copyright protection for digital media. The purpose of DRM is to prevent unauthorised redistribution of digital media and restrict the ways consumers can copy content they've purchased.

Typically DRM is implemented by embedding code that prevents copying, specifies a time period in which the content can be accessed or limits the number of devices the media can be installed on.

**WE ARE CERTIFIED  LICENSING AND IMPLEMENTATION SERVICES  PROVIDER FOR THE MOST USED DRM TECHNOLOGIES TODAY.**

FairPlay

CWIP
CERTIFIED WIDEVINE
IMPLEMENTATION PARTNER

**Microsoft**
PlayReady®

verimatrix
DRIVING TRUST

CryptoGuard
– Protect your content –

# IMPROVES CUSTOMER RETENTION WITH INTEGRATED CUSTOMER CARE MODULE

With **Customer care module** help desk and support teams can easily manage consumer requests and offer prompt support to the service subscribers.

Its advanced features ( universal search, real-time statistics, device  health & diagnostics , network conditions, service availability, available subscription packages,  etc. ) allow your contact center team to perform a wide variety of activities on a single platform without involving technical or commercial departments.
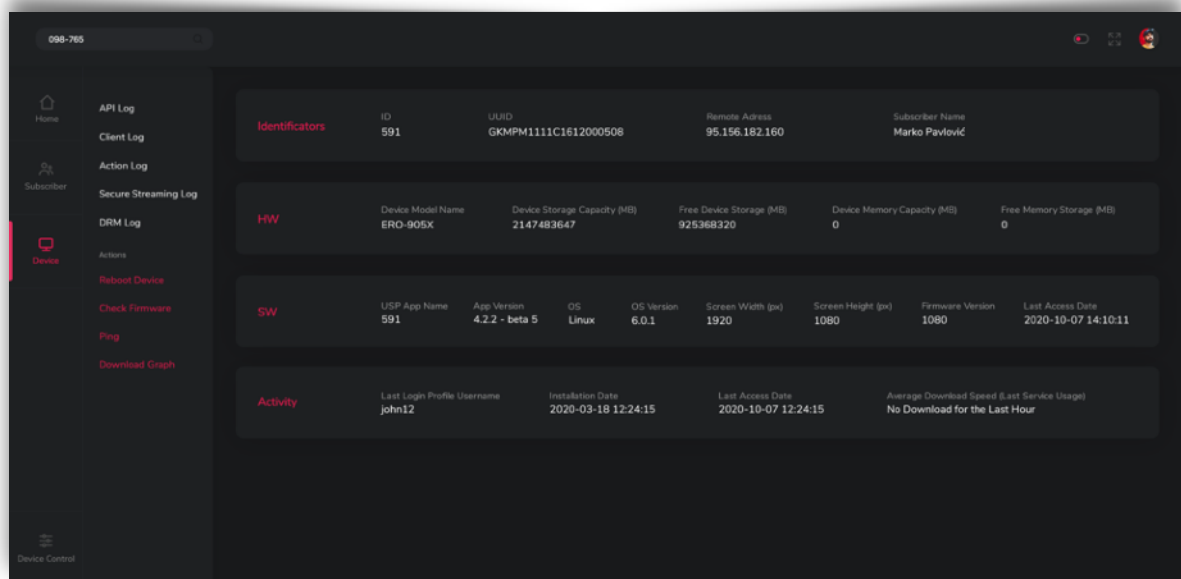
# SUPPORTS ANY BUSINESS MODEL

Spectar+ supports all popular models of platform monetisations out-of-the-box!

Monetise your platform on Subscription (SVOD), Transactional (TVOD) or Pay per View (PPV) as well as Video Ad-Supported (AVOD) model, or a combination of all.

Apart from these, Spectar+ integrates to your own Billing system or payment gateway and supports multiple currencies, as well as features like Coupon Codes, access to the service with or without subscription, etc, allowing you to have complete control over the way you want to monetise your platform.

Its powerful **Subscription management module** allows you to Group your subscribers, Create product bundles, Channel packages, Assign type and allowed number of devices and sessions for each subscriber and combine these to create a unique experience for every wish of the customer.

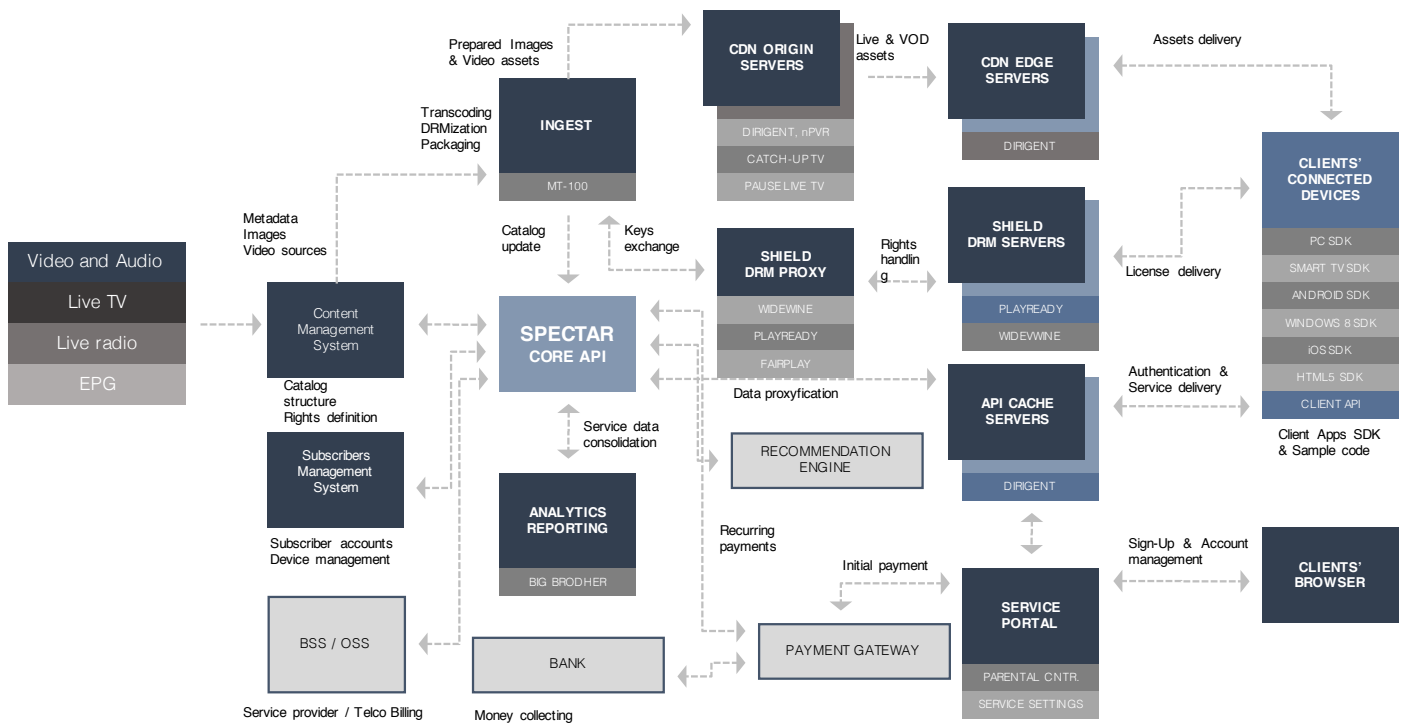# NOT ONLY B2C, HOTEL AND BUSINESS TV B2B IS ALSO AVAILABLE

Thanks to Hotel TV mode which is offered as an add-on to existing Spectar+ installation, operators are now able to offer new TV services to Hotels, Arenas, Hospitals, Bars, Restaurants and Shops.

Hotel TV is new television service designed for the hotel and hospitality sector, capable of being integrated with hotels' management applications. This solution makes it possible to present personalised content to guests and implement digital marketing strategies during their stay.

Among its many benefits, Hotel TV makes it possible to programme a reception with welcome messages, adapt languages and content, and buy products and services directly via the television in the room.  Hotel TV works on both Android STB and Samsung Hospitality TV devices, LG and Philips hospitality devices support is planned for the 2023.
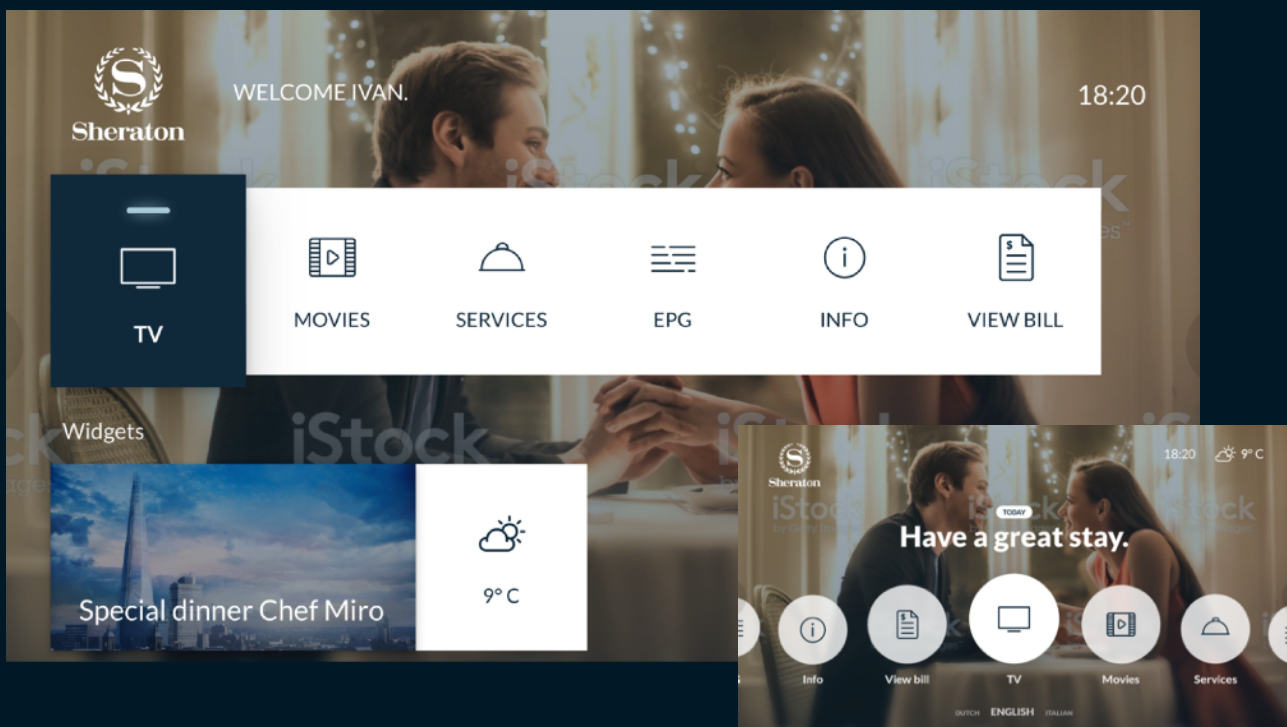
# SPECTAR+ REFERENCE ARCHITECTURE

**Video and Audio**
**Live TV**
**Live radio**
**EPG**

Metadata
Images
Video sources

**Content Management System**

Catalog structure
Rights definition

**Subscribers Management System**

Subscriber accounts
Device management

**BSS / OSS**

Service provider / Telco Billing

Prepared Images & Video assets

Transcoding
DRMization
Packaging

**INGEST**

MT-100

Catalog update

Keys exchange

**SPECTAR CORE API**

Service data consolidation

**ANALYTICS REPORTING**

BIG BRODHER

**BANK**

Money collecting

**CDN ORIGIN SERVERS**

DIRIGENT, nPVR
CATCH-UP TV
PAUSE LIVE TV

Live & VOD assets

**SHIELD DRM PROXY**

WIDEWINE
PLAYREADY
FAIRPLAY

Data proxyfication

**RECOMMENDATION ENGINE**

Recurring payments

Initial payment

**PAYMENT GATEWAY**

**CDN EDGE SERVERS**

DIRIGENT

Rights handling

**SHIELD DRM SERVERS**

PLAYREADY
WIDEVWINE

License delivery

**API CACHE SERVERS**

DIRIGENT

Authentication & Service delivery

**SERVICE PORTAL**

PARENTAL CNTR.
SERVICE SETTINGS

Assets delivery

**CLIENTS' CONNECTED DEVICES**

PC SDK
SMART TV SDK
ANDROID SDK
WINDOWS 8 SDK
iOS SDK
HTML5 SDK
CLIENT API

Client Apps SDK & Sample code

Sign-Up & Account management

**CLIENTS' BROWSER**

MORE SCREENS

# MULTIPLE DEPLOYMENT & PRICING OPTIONS

Spectar+ offers several deployment and pricing options, including both On-premises and Cloud-based software-as-a service (SaaS) provided by us or accredited partners, as well as a combination of the two with hybrid solutions.

Whichever be your preference; deployment options provide the freedom to choose exactly the right option for the project. In any of the deployment options, Spectar+ delivers a proven, scalable, flexible Video Service Delivery platform. Followed by the dedicated support, with the possibility for 24/7 emergency contact and guaranteed response times.

## Pricing

Services plans pricing vary, depending on the scope of your project and the choice of deployment. Every project is unique, so we work with you to precisely detail what your project requires, and go over your licensing and support options.

Please feel invited to find out how we can help. If you have any questions about services, we remain at your disposition for an informal chat.

# OPERATOR'S DASHBOARD

## ASSETS MANAGEMENT

### VIDEO ON DEMAND

- Manual or automatic Ingest from Local or Remote VOD servers, watch folders

- Metadata import, export, editing

- Tags & Keywords management

- Automated publishing (availability and expiration)

- Censorship and rating management

- Credits management

- Thumbnails and posters management

- Subtitles & Audio language management

- Editions management (e.g. Trailer, SD / HD version, etc.)

- Licensing (DRM) management (.*)

- Geolock management

- Parental control Management

- Support the MRSS metadata specification: Direct importing of the metadata from content file or remote/uploaded MRSS files

- Easy and intuitive management

- Pricing (per view, subscription)

- Playback

- Asset Localization

- Advanced search and filtering options

- Automatic transcoding of ingested content into different streaming formats defined by the system operator (.*)

- The module provides some "batch actions" where an entire set of VODs can be changed. For example, you can delete, publish or un-publish selected VODs.

- Multi-language subtitles

- Multiple audio streams

### AUDIO ON DEMAND

- Manual or automatic Ingest from Local or Remote AOD servers, watch folders

- Metadata import, export, editing

- Tags & Keywords management

- Automated publishing (availability and expiration)

- Credits management

- Censorship and rating management

- Thumbnails and posters management

- Licensing (DRM) management (.*)

- Geolock management

- Playback

- Asset Localization

- Pricing (per view, subscription)

- Parental control Management

- Advanced search and filtering options

- Automatic transcoding of ingested content into different streaming formats defined by the system operator (.*)

Spectar+ platform supports content ingest according to the CableLabs® Content 3.0 Specification / ADI. The CableLabs specification for packaging metadata and assets (movie, preview (trailer), box cover, poster, thumbnail, barker...) is issued to public and is considered to be a standard document of reference which has undergone rigorous member and vendor review in the industry, and as such is deemed to be suitable for use in production environments.

## LINEAR TV & RADIO CHANNELS

- Metadata import, export, editing
- Tags & Keywords management
- User ratings management
- Linear TV and Radio channel expansion
- Channel localization
- Posters / Channel logo management
- Automated EPG Ingest
- Licensing (DRM) management
- Catch-Up TV / nPVR restrictions (.*)
- High Efficiency Video Coding (HEVC) video compression standard
- Geo-distribution restrictions
- Adaptive streaming
- Concurrent (parallel) streaming controller per device and/or user (subscriber)
- Blackout restrictions (.*)
- Blackout for certain period of time (changing live stream with some predefined image)
- API based control (real time blackout activation/deactivation).
- Promo feature per channel and package
- Pricing

## EPG INGEST & EDITING

- EPG automatic or manual import from different EPG sources using XMLTV formats or dedicated web services
- EPG editing
- EPG update / source monitoring & alerting
- EPG system integration

**EPG is able to show and filter following info about channel:**

- channel name,
- channel type,
- channel number,
- nPVR/Catch-up TV icon and info about the shows,
- content name,
- content (show) start and end time,
- description,
- reminder icon (if reminder is set),
- nPVR/Catch-up TV icon (if show is enabled for nPVR and/or Catch-up),
- parental control rating,
- cast, credits, genre

Spectar+ platform manages live broadcasting channels in the same manner as VOD/AOD content with respect to metadata and delivery options. All channel information is managed according to the CableLabs® Content 3.0 Specification.

Additionally, for live broadcasting channels, EPG information can be ingested and bound to the channel in an automated process using standard XML format XMLTV and if required it may be extended to support other formats and systems to ingest from. After ingest, the EPG information can be managed manually in the system and is used as basis to perform many additional functions like "Stop and Watch", "Start Over TV", nPVR, Catch-up TV, etc. Spectar+ is streaming server agnostic. It means that almost any broadcast "source" can be formatted and packaged for a right platform / device.

For example: HLS streams with H.264 baseline for mobile devices or Hi-res HLS streams for STB.

EPG source is coming from 3rd party provider, supported format is XMLTV, if needed other ingest sources can be integrated. EPG is exported towards client applications (STB, Android devices, iOS devices, SMART TVs and STBs). All EPG fields are definable so there are no practical limitations regards to number of channels, maximum field length, or number of days

## CATCH-UP TV   (TIME SHIFTED TV)

- Manage Catch-Up TV servers
- Create Catch-Up TV assets based on provided EPG or time schedule
- Edit and Update Catch-Up TV assets operational and descriptive metadata
- Manage start/end broadcast time for each asset
- Monitoring & Alerting capabilities
- Automatic or manual publish of recordings / Catch-Up to VOD (.*)
- Advanced search and filtering options (search assets by TV/radio channel, Broadcast date/time, Title, Availability, etc...)
- Capacity management (The user shall be noted when capacity is used up),
- Catch-up TV blackout
- Manually configured
- Information from EPG.
- Custom features (Transfer to another TV channel when the time comes)
- 

## nPYR  ( RECORDINGS)

- (NPVR), or remote storage digital video recorder (RS-DVR) is a network-based digital video recorder (DVR) stored at the provider's central location rather than at the consumer's private home.
- Spectar+ features allow to:
- Schedule recording general recordings can be scheduled/descheduled on OTT devices for NetPVR,
- Schedule EPG based recording - schedule with default settings directly or with additional step when changing the default settings,
- Schedule immediate recording within Live TV, EPG,
- Schedule and perform multiple recordings at the same time,
- Schedule serial recording within Live TV, EPG,
- De-schedule recording within Live TV, EPG,
- Access list of recordings via menu,
- Automatic delete recording,
- Delete single recordings,

Catch-Up TV module is used to control external recording component «Screens Capture» which is used for Catch-Up TV, Start Over and Pause Live TV services. «ScreensCap», provided by More Screens captures up to the live point and then continues capturing in real-time the fragments that become available from the Linear TV channels / streams. This allows for close to real-time publishing of Catch-Up content in all available broadcast formats: as soon as the show broadcasts the Catch-Up version is live as well. Operator can set Catch-Up TV duration for each linear channel (e.g. 48h, 72h, etc...), as well as store selected Catch-Up TV assets as a VOD items (Live to VOD).

Catch-Up/replay number of channels and Catch-up max days of recorded content is unlimited (in dependency with physical storage). The module provides some "batch actions" where an entire set of Catch-Up TV assets can be changed. For example, you can delete, publish or un-publish selected assets.

# CMS AND CATALOG MANAGEMENT AUTOMATION

Catalog management ensures that the relevant assets are available to subscribers in an organised way. It involves categorising, listing, and organising the asset content descriptions which are hosted on the Spectar+. Catalog management is a strategic process to provide quality assets lists with appropriate descriptions that are aligned to match the required keywords.

Catalogs can consist of anything like Linear TV, Radio, VOD, AOD, Catch-Up TV, EPG etc., listed in an easy to navigate listings with different layout options.

**Automate catalog listings in bulk with just a few clicks**

Each Multi-screen platform today has its own set of templates, product formats and naming conventions. Editorial and marketing teams need to adhere to these guidelines individually, often leading to errors, delays in catalog uploads and longer time to market.
Our Catalog management module helps automate this process & creates 'ready to upload' catalogs that can be pushed directly into platform feeds.
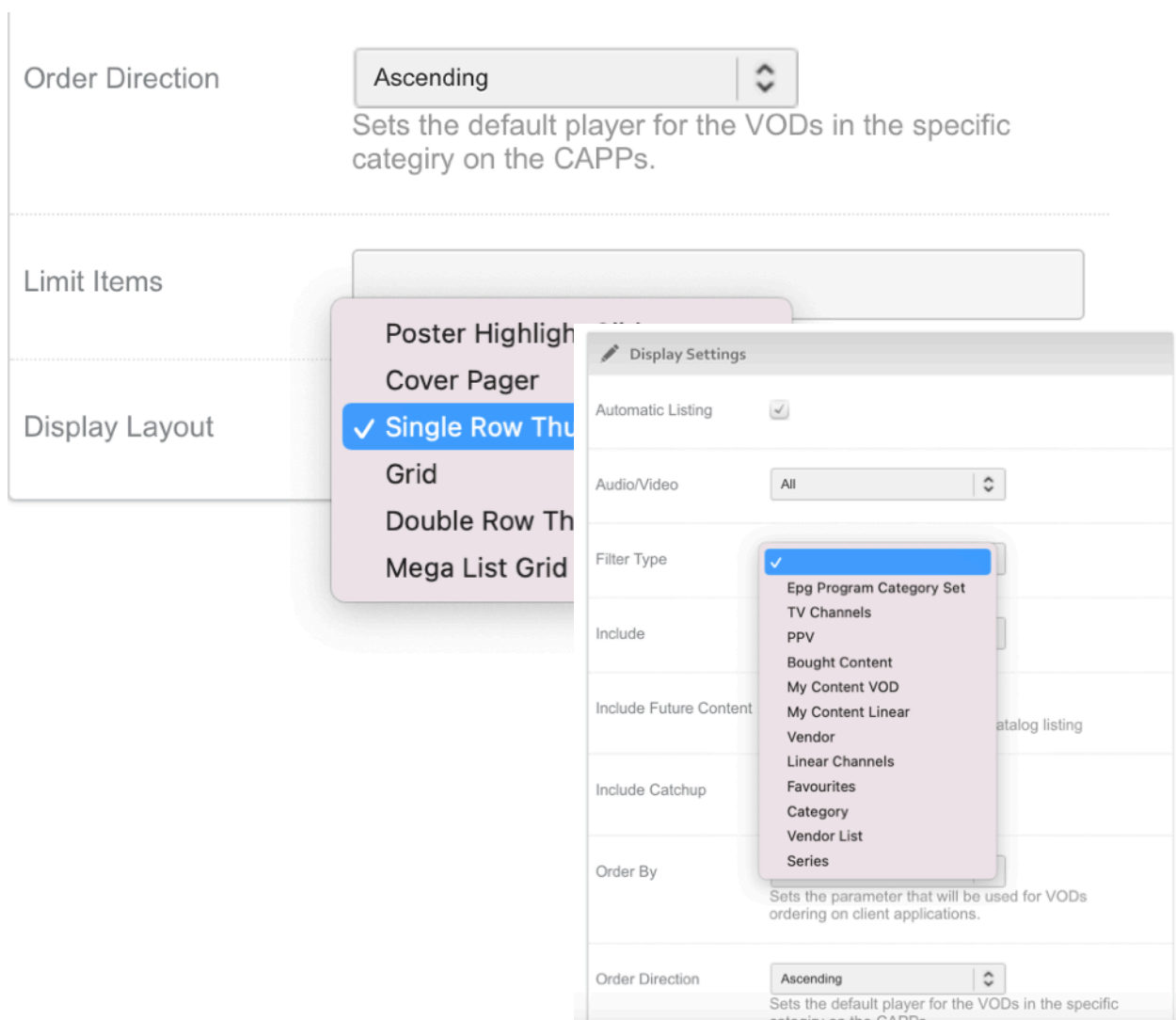
# OPERATOR'S DASHBOARD

## BUSINESS OPERATIONS

«Business Operations» component features several modules for facilitating subscriber provisioning and wholesale of services through retailers.

### SUBSCRIBERS PROVISIONING & MANAGEMENT

- Add new subscriber with single or multiple sub profiles
- Edit-Update existing subscriber
- Deactivate – Delete subscriber
- Manage contacts and general information
- Individual subscriber restrictions (egg. Allowed number of user devices, Allowed number of Sub-profiles, Allowed number of parallel sessions)
- Manage purchase pin (for Pay Per View offerings)
- Manage type of subscriber (egg. Trial, Promotional, Regular...)
- Manage subscriber referral
- Add – Update type of subscription, packages and expiration
- Send personalized email notification
- Display Subscriber transactions
- Display and manage subscriber profiles (hierarchical account structure)
- Display and manage subscriber devices
- Advanced searching and filtering options (search subscriber per type of subscription, type of device, contact information, referral, expiration date, etc...)
- Subscribers provisioning and management module provides administration of subscriber accounts and service activation. The module provides some "massive actions" where an entire set of Subscribers can be changed. For example, you can «batch» delete selected subscribers.

### PRODUCTS & PRICING

- Create and manage service offerings by packaging Linear TV channel lineups and VOD / AOD assets
- Manage SVOD (Subscription VOD) offerings
- Manage TVOD (Transactional VOD) / Pay-per-view (PPV)
- Manage Apps offerings on the STB device
- Group service offerings into bundles

### MULTI-TENANCY / RESELLERS

- Add, Update, View and Delete tenants
- Manage secure API token (for provisioning and billing integration)
- Manage and customise target devices branding and notifications

Multi-tenancy module is an additional module that enhances Spectar+ platform services by enabling resellers or virtual operators accounts structure. The system enables for selling services through network of service distributors/agent, which can provision their end-users themselves through the API interface, which is part of the module. The module architecture allows resellers to use their own billing system and branded Target device apps.

Thus, they become in fact virtual OTT providers based on one, central Spectar+ platform; with possibility to manage the service and integrate with own online payment processors (e.g., PayPal accounts).

# OPERATOR'S DASHBOARD

## SYSTEM CONTROL ROOM

«Business Operations» component features several modules for configuring and managing the Platform in general.

### GENERAL PLATFORM SETTINGS

- Instance Set-Up
- Set default platform language
- Configure email notifications
- Configure terms & conditions
- Configure platform logo
- Configure platform favicon
- Configure UI branding
- Configure social networks apps
- Pre-test (beta testing) available

### CLIENT APPS & TARGET DEVICES

- View and manage installed apps
- Manage branding options
- Localize apps (translation and language management)
- Set default player, distribution formats and protocol for each Client app
- Search and Filter apps per version, OS, device, subscriber, target device ...

### PLATFORM ADMINS

- Manage operator accounts
- Manage roles and permissions
- Audit (view all operators activities)

### SERVICES CONFIGURATION

- VoD / AoD / set Delivery protocol, set CDN
- Linear Channels / set Delivery protocols, set CDN
- Catch-Up TV / set Catch-Up TV recording time
- CMS / set default Content on client apps, default Unavailable content (message or vod)
- Subscribers / set default Currency, allow Self registration, set default Subscription Type and package for new subscribers
- Parental control / set Rating scheme, set default Rating for new subscribers(+18,+12 ..), set Parental control mode (pin or hide contents), enable Anonymous parental control, set default Rating for VOD, Allow turning off Parental control
- Client API / Enable - Disable Client API
- Watch folder / create Watch folders, set auto publish, set streaming formats
- EPG / set refresh time
- Secure streaming / set Token IP restrictions
- Statistics / set Google Analytics profile and related services
- User self-care and web portal / set Self devices management and restrictions, set Visible packages to users with customer branding
- Geolock / default content type / message, default Geolock Zone, set and manage new Geolock Zones, set and manage new IP addresses and Countries
- Push notifications / Enable-disable client notifications, set up iOS certificate file, set up Android API key, set up Windows RT security identifier, set default Notification period in minutes, set Expiration offset period in minutes, set Max retry count.

# OPERATOR'S DASHBOARD

## DEVICE MANAGEMENT SYSTEM

Device Management System support adding, updating, viewing and deleting the target devices that subscribers use to receive the service.

OTA (Over the Air Updates) is used for remote management and firmware updates of your STB devices. It consists of several modules able to manage STB firmware and apps distribution, schedule automatic updates, group STBs for different firmware releases and so on. Its multi tenancy capability provides you with a powerful tool to run virtual STB networks for different business needs.

- Add, Update, View and Delete target devices

- Display application version, installation date and last access date

- Display general info about the Target device: MAC address, Unique identifier, Operational System, Type of device (Smartphone, Smart TV, STB, etc..), Device model (egg. Huawei, Samsung, Nokia, iPhone...), Screen resolution, Available memory, Available storage, Operating system, Language, Time zone, Availability of Hardware video decoding.

- Connect device to subscriber account

- Advanced searching and filtering options

- Target devices

- Group devices

- Manage apps and firmware versions

- Schedule automatic updates

- Monitor status of updates
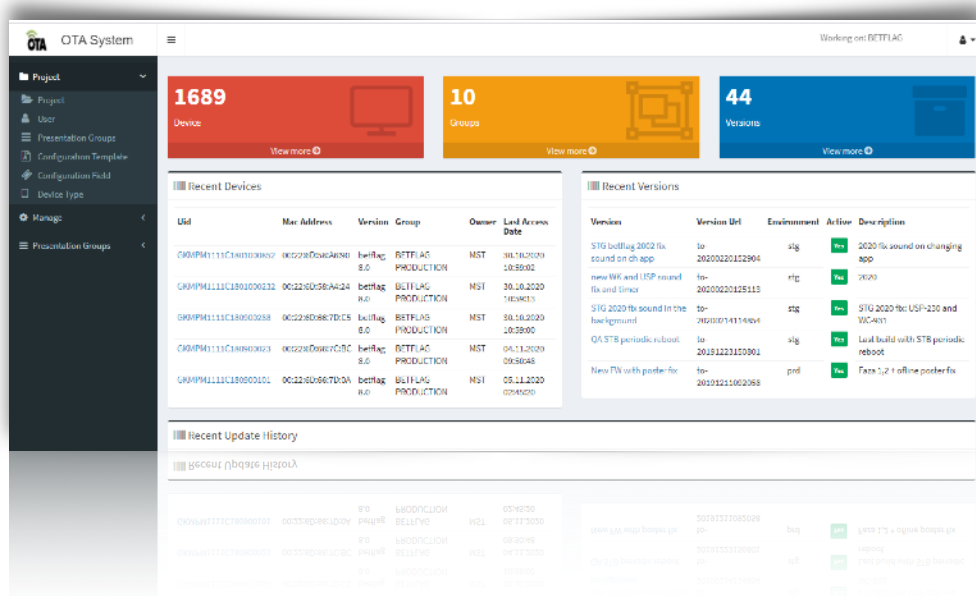
# OPERATOR'S DASHBOARD

## MONITORING AND SYSTEM ALARMING

We have selected Zabbix, a proven Open-source solution for monitoring servers, service and network platforms which are components in our solution.

Zabbix role is to aggregate all alarms and performance counters from all platforms and provide them as consolidated data to Operator's Umbrella monitoring platform.

We are happy to offer, if needed, complete customization of Zabbix platform to collect and aggregate all required data and send it to umbrella NMS platform. or commercial departments.

# OPERATOR'S DASHBOARD

## SECURITY POLICY

SECURITY POLICY These policies apply to platform administrative access, self-care service, client applications, web frontend, code, network, storage and web services.

**List of policies:**

• SSL (Secure Sockets Layer) between a server and a client

• Secure streaming tokens

• Secure streaming with obfuscated URL to media files

• AES-128 Content Encryption and protection

• Obfuscated code

# OPERATOR'S DASHBOARD

## DIAGNOSTIC AND KPI

A good understanding of the Quality of Service (QoS) is important for the service providers to be able to evaluate their OTT service. All client apps have possibility to collect diagnostic data and KPI data.

Spectar+ Client diagnostics component captures and collects system-related, subjective and user-oriented metrics from the Clients/Devices with following collection methods:

- Global configuration of client diagnostic data collection (diagnostic data collection from every client) with the set of configurable collected client diagnostic counters
- On demand snapshot from an individual client (diagnostic data collection from a selected client)

**General diagnostics data**

Following information is available for each Client/Device:

- Installed application name
- Installed application version
- UUID/MAC address
- Type of Application
- Device Model
- Subscriber
- Hardware video decoding option
- Screen Width (px) / Height (px)
- Last used login profile
- Installation date
- Last access date
- Push notification token
- Screen DPI X/Y
- Device Storage capacity

- Device Free Storage capacity
- Device Memory capacity
- Device Memory Free
- Running operational system (OS)
- Running OS version
- Time zone
- Time zone
- Last used login profile
- Installation date
- Last access date
- Push notification token

# CLIENT APPS
# &
# DEVICES

# WE ARE
# MARKET LEADER IN
# MULTISCREEN OPTIONS

Spectar+ enables delivery of video services to multiple devices, including PC/MAC, Set-top boxes, Smart phones, Tablets and Connected devices and offers "ready to customize" Client app's that allow service providers to deploy rapidly and efficiently.

All client apps use standardized API for communication with the platform so 3rd party apps can be easily integrated.

Client apps currently available on following platforms/devices:

- Set Top Box devices based on Android AOSP or Android TV
- WebTV Portal supported on most used browsers
- Smartphone (Android, iOS)
- Tablet (Android, iOS)
- AndroidTV
- FireTV
- Smart TV (Samsung Tizen)
- Smart TV (LG WebOS)
- Smart TV (HiSense VIDAA OS)
- HTML5 APP for 3rd part device integrations
- AppleTV
- RokuTV

**•RDK –  Currently under development. On the Roadmap for 2023**

# DOZENS OF AVAILABLE FEATURES

A full video presentation of the User interface can be seen on
**https://morescreens.com/#solutions**

Watch TV

Catch-UP TV

Pause Live TV

Record / nPVR

Start Over TV

Current program details

Next playing

Add to My watch list

Set parental Control

## VIDEO / AUDIO ON DEMAND

Display 7 days EPG FW/BW

Filter programs by genre

Display program details

Search for programs

Set reminder

Share on Twitter / FB

## USER ACCOUNT

## MY CONTENT

Favorite TV channels, Catch-up TV assets, VOD's

Continue watching

View reminders

## LIVE TV & RADIO ZAPPER

Watch

Browse categories

Search

Rate

Filter by Credits, Genre, Tags

Set reminder

## EPG BROWSER

User Sign-In

Account details

View active devices

Enable / disable devices
Set Sub-accounts

Choose your language

Preferred subtitles / audio

Set Push notifications

Use Wifi / Mobile networks

MORE SCREENS

# INTELLIGENT UNIVERSAL SEARCH

Search is the  key feature of modern Multi-screen platforms. Scalability and the capability to handle large volumes of data in near real-time is a must. Today, autocomplete in search fields, search suggestions, location search, and faceted navigation are de facto standards in usability. This is where Intelligent search module comes in.

**Incorporating a finely-tuned search function can dramatically improve user experience.**
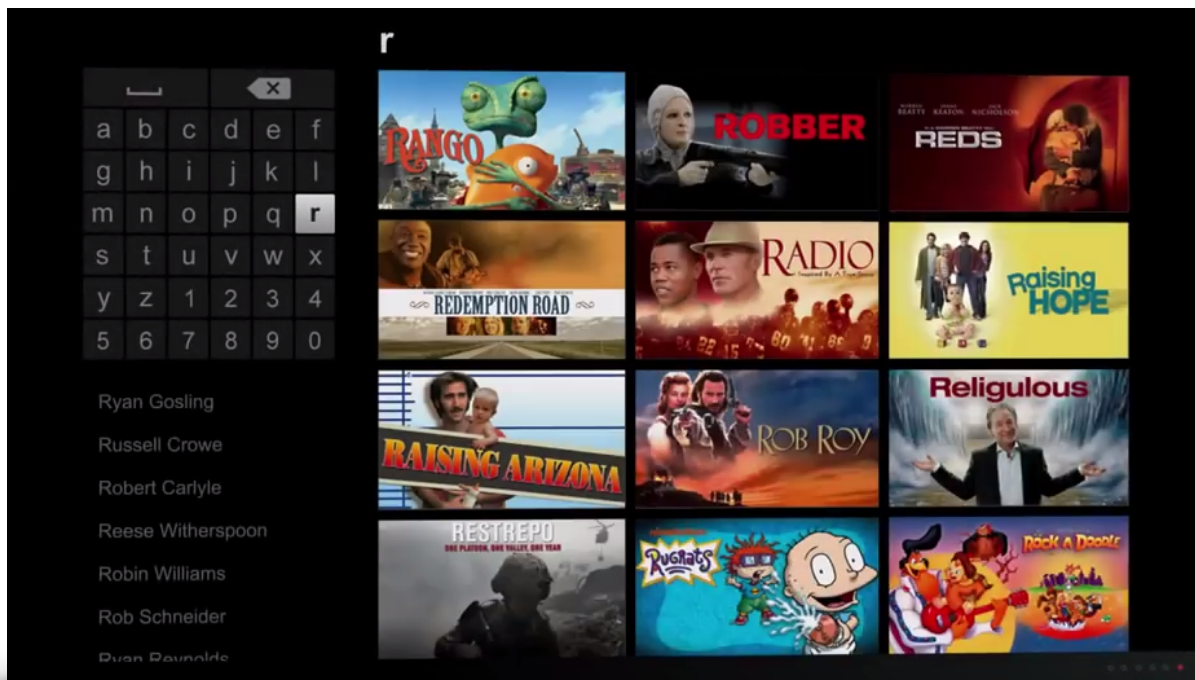
# PUSH MESSAGING TO ANY DEVICE

The power of push messages / notifications is vast and only limited by your creativity.

Spectar's **"PUSH" module** allows you to send  breaking news, events, deals and content promotions instantly to your subscribers. PUSH module supports delivery of messages on Mobile, PC, Smart TV and STB devices.  You can easily set-up and schedule several types of messages according to predefined templates and rules.

**Here's what we would consider to be the top benefits of push messaging:**

### Increased subscriber engagement

Push messaging gives you a way to reach subscribers quickly and easily, allowing them to take action and engage with your service.

### Drive service usage

Consistent push messaging will help drive activity within your  service app and keep subscribers engaged in your app experience.

### Relevant messaging

Push module allows you to segment your subscribers by gender, type of subscriber, geographical location, type of device.  so you can send the right message at the right time to subscribers who are interested.  Relevant messaging leads to increased loyalty, engagement and action.

# THIRD PARTY WIDGETS

Any kind of Android App or HTML 5 application can be pre-installed on the STB device .
Apps and widgets such as YouTube, Weather, iTunes, Media center, Ted Talks…

**Example of wether widget**
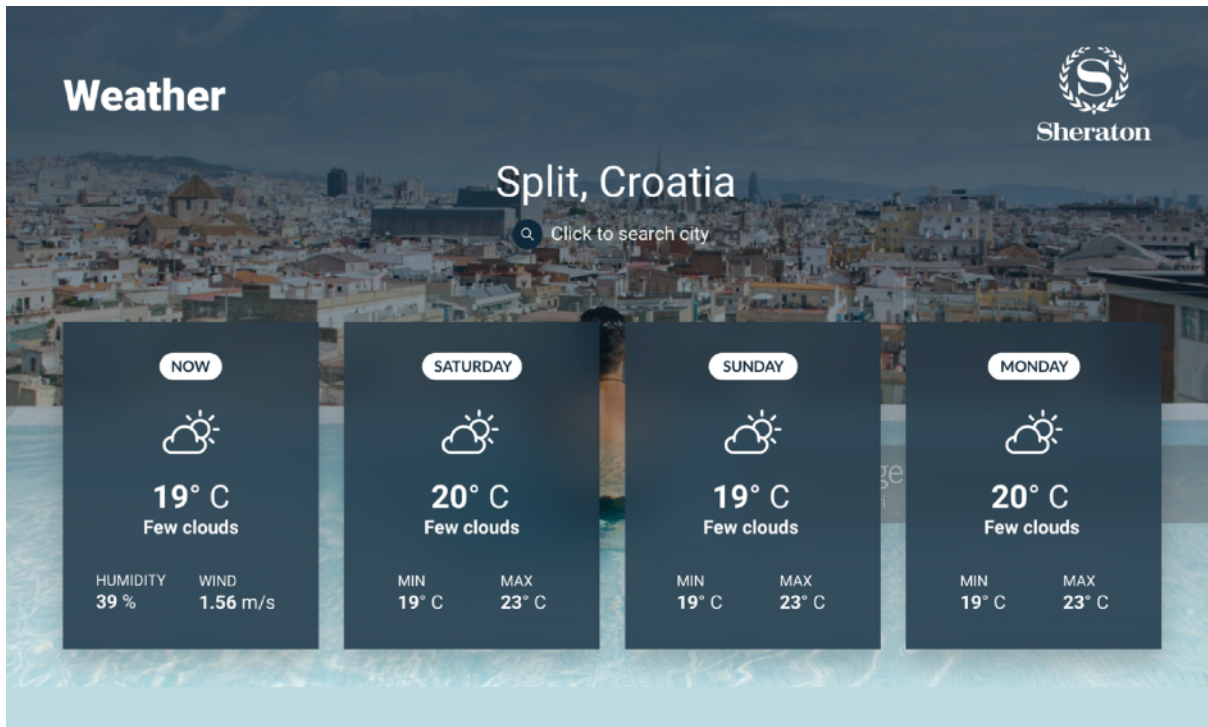


**Live match results widget in overlay mode during the Live broadcast.**
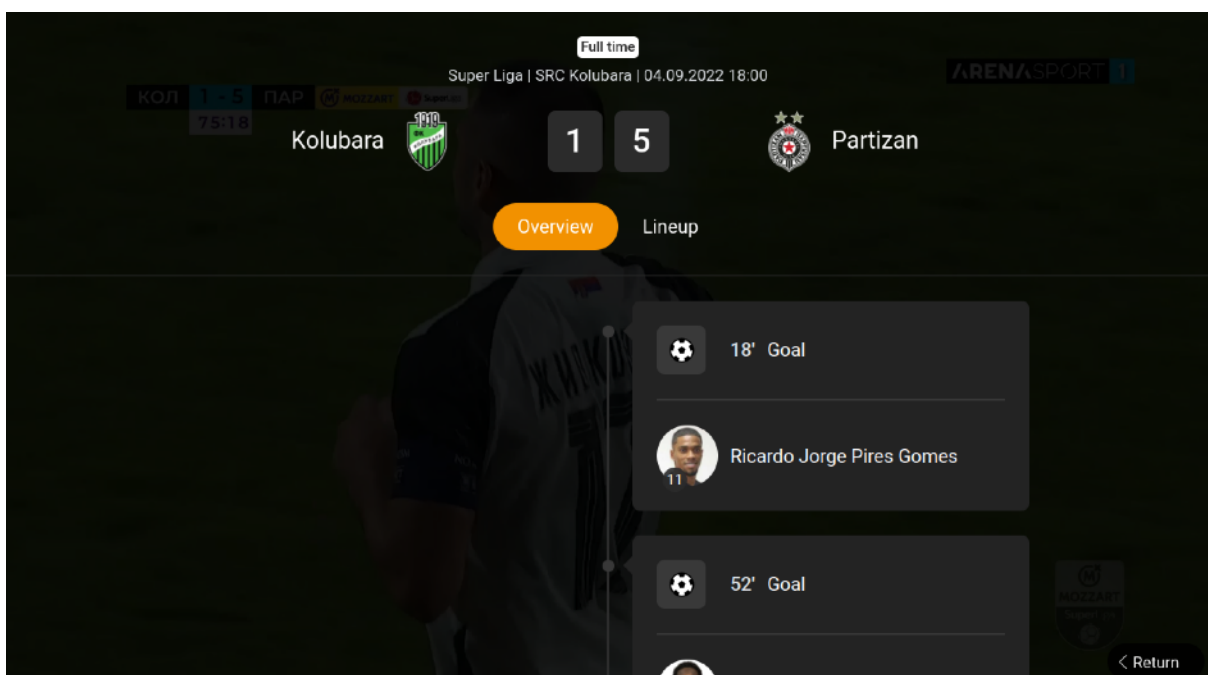
# LINEAR TV, CATCH-UP TV AND RADIO ZAPPER

# INTUITIVE MENU NAVIGATION & EPG VIEWER

15:36
Friday, 08.07.2020

2:04 PM E

✳

🔍 Search

📺 **Live TV**

♡ My Content

🎞 Video on Demand

📅 Electronic Program Guide

👤 User Settings

DOW JONES
INDUSTRIAL AVERAG

▼ -278.53
20,701.22

BREAKING NEWS
SOURCES: COMEY SAYS TRUMP ASKED HIM TO END FLYNN PROBE
Rep James Comer | Told Reporters Trump May Have Been Joking With Comey

CNN
11:04 AM

---

## Transporter 3

15:36
Friday, 08.07.2020

`2008`  `98 min`  `Comedy`  `Action`

Frank Martin puts the driving gloves on to deliver Valentina, the kidnapped daughter of a Ukrainian government official, from Marseilles to Odessa on the Black Sea. En route, he has to contend with thugs who want to intercept Valentina's safe delivery and not let his personal feelings get in the way of his dangerous objective.

**Today**
08.07.2020

**Saturday**
09.07.2020

**Sunday**
10.07.2020

**Monday**
11.07.2020

**Tuesday**
12.07.2020

**Wednesday**
13.07.2020

**Thursday**
14.07.2020

| 2 | FOX HD | 12:30 **Transporter 3** | 14:35 Scorpion | 15:35 Life in Pieces | 16:05 Black lis |
| 3 | FOXlife HD | 11:40 Making a Model with Yolanda Hadid | 15:00 Rules of Engagement | 15:45 Will and Grace | |
| 4 | 24KITCHEN | 11:40 Meddit... 12:55 Jamie and Jimmy's Friday Night Feast | 15:25 Rick Stein's Long Weekends | 15:55 Love for Food | |
| 5 | HBO HD | 11:55 Alita: Battle Angel | 14:50 Hollywood on Set | 15:30 X-Men: Dark Phoenix | |
| 6 | CNN | 11:00 Fareed Zakaria GPS | 14:10 CNN Newsroom with Max... 14:10 First Move with Julia Chatterley | | 16:10 The Expre |
| 7 | aMC | 11:25 Sydney White | 13:25 The Good Shepard | 14:00 Urban Legends | 15:15 The 8 Mile |

FOXHD

Silent Hill (2006)                                                                                    20:30 - 21:55
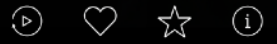
42  FOXHD

FOXHD

Silent Hill (2006)                                                                                    20:30 - 21:55

42  FOXHD

Aquaman (2018)
20.01.2020 | 20:30 - 21:55

Street Genius
20.01.2020 | 19:30 - 20:55

Silent Hill (2006)
20.01.2020 | 20:55 - 22:25

American Pickers
20.01.2020 | 22:55 - 23:55

Black Panther (2018)
21.01.2020 | 00:00 - 01:45

Silent Hil
21.01.2

Watch       More info

MORE SCREENS

# VIDEO ON DEMAD BROWSER

## Bloodshot

Movie | Action | Sci-fi | 2020 | 112 min | 13+

15:36
Friday, 07.08.2020

Ray Garrison, an elite soldier who was killed in battle, is brought back to life by an advanced technology that gives him the ability of super human strength and fast healing.

### Most popular content



BLACK AND BLUE

THE INFORMER

EXTRACTION

Us

SONIC THE HEDGEHOG

ZOMBI CHILD

### Continue watching

---

< HBO OD ONDEMAND
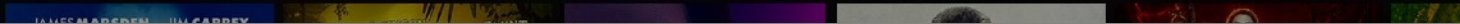
15:36
Friday, 08.07.2020

## Oblivion

Movie | Sci-fi | Action | 2013 | 90 min | 13 +

One of the few remaining drone repairmen assigned to Earth, discovers a crashed spacecraft with contents that bring into question everything he believed about the war.

### Most popular

TOM CRUISE
OBLIVION

READY PLAYER ONE

GLASS

DANIEL DAY-LEWIS
LINCOLN

GANGSTER SQUAD

DEE HO

### Top picks

JAMES MARSDEN JIM CARREY

MORE SCREENS

# MODERN AND INTUITIVE DESIGN



15:36
Čctvrtak, 09.01.2020

Recommended Movies

## Once Upon a Time... In Hollywood

▦ Film    Komedija    2019    16+    134 min

A faded television actor and his stunt double strive to achieve
fame and success in the final years of Hollywood's Golden Age
in 1969 Los Angeles.

Play    ▶

Catalogues

## Oblivion

▦ Movie    Sci-fi    Action    2013    90 min    13 +

A veteran assigned to extract Earth's remaining resources begins
to question what he knows about his mission and himself.

Director:  Joseph Kosinski

Cast: Tom Cruise, Morgan Freeman, Andrea Riseborough

Gledaj    ▶

Remove from my list    ♥

Similar content

# EXTENSIVE SUPPORT FOR DETAILED METADATA PRESENTATION

## Recommended content

### The Witcher

TV Series | 2 Seasons | Fantasy | 2019 | 13+ | FHD

Geralt of Rivia, a solitary monster hunter, struggles to find his place in a world where people often prove more wicked than beasts.

Play ▶

15:36
Friday, 07.08.2020

Catalogues

### The Witcher

TV Series | 2 Seasons | Fantasy | 2019 | 13+ | FHD

Geralt of Rivia, a solitary monster hunter, struggles to find his place in a world where people often prove more wicked than beasts.

Creator: Lauren Schmidt

Cast: Henry Cavill, Freya Allan, Anya Chalotra, Jodhi May, Björn Hlynur Haraldsson

Play S01E01 ▶

Episodes

Add to my list ♡

Similar content

15:36
Friday, 07.08.2020

MORE SCREENS

# SERIES & EPISODES BROWSER



## The Witcher

📽 TV Series | 2 Seasons | Fantasy | 2019 | 13+ | FHD

**Season 1** — 8 episodes

Season 2

15:36
Friday, 07.08.2020

### The End's Beginning
S01E01
Hostile townsfolk and a cunning mage greet Geralt in the town of Blaviken. Ciri finds her royal world upended when Nilfgaard sets its sights on Cintra.

### Four Marks
S01E02
Bullied and neglected, Yennefer accidentally finds a means of escape. Geralt's hunt for a so-called devil goes to hell. Ciri seeks safety in numbers.

### Betrayer Moon
S01E03
Geralt takes on another Witcher's unfinished business in a kingdom stalked by a ferocious beast. At a brutal cost, Yennefer forges a magical new future.

### Of Banquets, Bastards and Burials



Oblivion                                    1:07:55

MORE SCREENS

# INTERACTIVE USER SETTINGS & MESSAGING



**The Undoing - New mini-series started Sunday, October 25th**

Starring both actress Nicole Kidman and actor Hugh Grant, The Undoing is expected to be the next big hit. The series is written by Big Little Lies' David E Kelley and directed by Bird Box and The Night Manager's Susanne Bier. First episode premiered on Sunday, October 25th.

Play S01E01    Close

Oblivion                                              1:07:55

15:36
Friday, 08.07.2020

| | | |
|---|---|---|
| User Profile | Device ID | 922424 |
| Subscription | Version | 4.2.3-1283-g7989899a |
| **Device** | OS Version | Tizen 5.5 |
| Settings | Firmware Version | R820XXU1CTI4 |
| Contact | USP Version | Unknown |

Select

# INTERACTIVE USER SETTINGS & MESSAGING

The Undoing - New mini-series started
Sunday, October 25th

Starring both actress Nicole Kidman and actor Hugh Grant, The Undoing
is expected to be the next big hit. The series is written by Big Little Lies'
David E Kelley and directed by Bird Box and The Night Manager's
Susanne Bier. First episode premiered on Sunday, October 25th.

**Play S01E01**       Close

Oblivion                                                          1:07:55

15:36
Friday, 08.07.2020

| | |
|---|---|
| User Profile | Device ID | 922424 |
| Subscription | Version | 4.2.3-1283-g7989899a |
| **Device** | OS Version | Tizen 5.5 |
| Settings | Firmware Version | R820XXU1CTI4 |
| Contact | USP Version | Unknown |

Select

# RECOMMENDED HARDWARE

- STB
- Headend / IRD
- Headend / Transcoding
- CDN Origin
- CDN Edge
- Catchup TV Storage
- Spectar+ Platform servers

# USP MIDDLEWARE & STB DEVICES

**USP (UNIVERSAL STB PLATFORM) middleware by More Screens** comes with built-in Launcher app, Device Set-up Wizard, OTA System Updater, Media player and powerful set of API's.

Since STB Middleware is based on newest WebKit release, it supports latest HTML5 technologies and provides a new platform for magnificent UIs, Hardware accelerated graphics and video as well as easy portability across different models of STB devices.

Media player is optimised for both IPTV Multicast and OTT Unicast video distribution.

## STB MANUFACTURERS WE WORK WITH:

KAON    BEACON    VS

arcadyan    GIEC    INNOPIA

## RECOMMENDED STB CONFIGURATIONS:

### Hybrid Android TV/AOSP

A highly flexible UHD/4K, Android TV/AOSP based hybrid STB with multi format DVB front-end (DVB-C/S2/T2) & IP/OTT supporting various CA and DRMs.

Specification
SoC : AMLogic S905X2/X4 or Y series
OS : Android Pie Type : DVB-C/S2/T2
CAS : Verimatrix/CryptoGuard
DRM : Widevine L1 / Microsoft PlayReady 2.5
Memory : 2GB DDR3 Storage : 8GB eMMC
Integrated Native DVB-Stack / USP Middleware
Size : 120mm x 120mm x 25mm or 100mm x 100mm x 27mm

### IP/OTT Android TV/AOSP

A highly flexible UHD/4K, Android TV/AOSP based IP/OTT set-top box supporting various DRMs with trendy and stylish GUI/Launcher

Based on ARM A53 / A55 SoC for the Android TV Universal Remote Control friendly, supports IR and BLE options

802.11ac Wi-Fi connectivity ensures high quality TV delivery without network cables.

Voice search enables you to find entertainment or get information quickly.

# HEADEND

More Screens has independent systems integration services department with multivendor experience.

Based on the industry standard policy, mandatory and optional, we propose the system structure like shown on the next image.

If the whole system is build that way:

• **system is modular**

• **system is scalable**

• **system can be distributed over few sites, which can ensure the geographical redundancy for some critical components**

• **system can serve multiple types of customers, both IPTV and OTT**

The whole system relies on IP network beneath. Our assumption is that the network will be prepared accordingly by the operator  The detailed networking requirements shall be discussed.

One of the most important steps before implementation is to discuss the exact numbers and structure. This includes multiple sites installation with all details. Also a very important information which is needed to correctly dimension the receiving part of the system is to know number of satellites, satellite transponders, channel list on the reception side, number of terrestrial channels that must be inserted in the system, number of channels that will be received over IP etc.
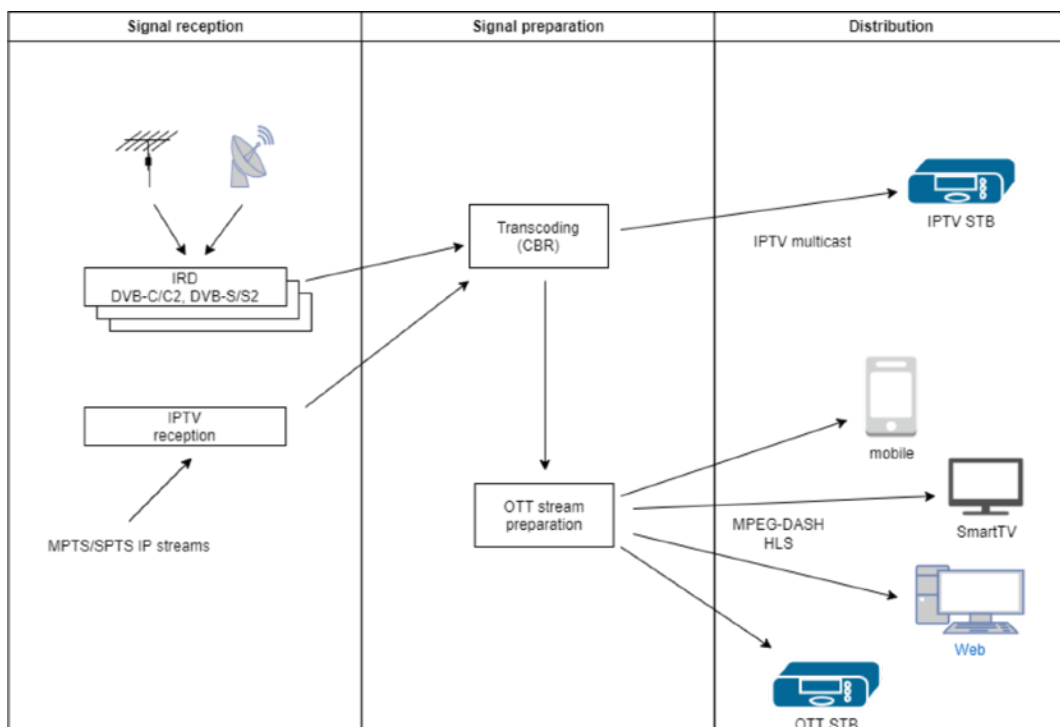
## IRD

On the receiving part we plan to install IRDs (DVB receivers) for DVB-S/S2 and DVB-T/T2 signals. These signals will be converted to IP and the output from IRDs will be fed to signal preparation phase. IRDs used here will be able to descramble incoming signals using modular CI based descrambling mechanisms.

The same will be done with signals received over IP. Both MPEG SPTS and MPTS received over IP network will be supported.

We have experience and references with following vendors:

- Appear TV®

- Harmonic ®

- Teracue ®

- Wisi®

## LINEAR AND FILE BASED TRANSCODING

After signal reception phase the clear IP signals will come to the preparation phase.

As one of the required delivery mechanisms is IPTV distribution (multicast), all the signals coming to preparation phase will be transcoded to constant bitrate (CBR).

On the other side, the same signals need to be prepared for OTT based delivery. All the transcoding to multiple profiles and packaging is done in this phase.

In addition to that, enabling non-linear interactive services on linear channels like PLTV and CatchupTV are prepared in this phase.

Streams encryption (DRM), both for IPTV and OTT are also done in preparation phase.

So, there will be several outputs coming from preparation phase, i.e. streams prepared for IPTV multicast delivery, OTT delivery over DASH and/or HLS etc.

We have experience and references with following vendors:

- **Appear TV ®**      •**MT-Live ®** product family which is manufactured by More Screens.

- **Harmonic ®**       Designed from the ground up to integrate Video transcoding, CDN origin and DRM packaging in a 3-in-1 modular approach.

- **Piko TV®**         Exceptional high density transcoding, up to **396 sd** or **132 hd** channels in single 2ru appliance. Out of the box implementation of time shift, catchup-tv and start over tv services.

- **Ateme ®**

After the streams have been prepared they are delivered to Operator's customers. IPTV multicast delivery will be used for customers connected to private Operator's network. The configuration of the network will be discussed with Operator's networking team. On the receiving side IPTV STBs will be used.

OTT distribution goes over public internet. This branch is meant to serve mobile customers, but also customers using OTT STBs, SmartTVs etc. These customers can reside on internal network also if needed.

# MT-live

# CONTENT INGEST, PROCESSING AND PACKAGING



MORE SCREENS

# HIGH-DENSITY VIDEO PROCESSING PLATFORM

**MT**-**LIVE**  IS DESIGNED FOR SERVICE PROVIDERS WHO NEED RAPIDLY DEPLOY MEDIUM AND LARGE  VIDEO HEADENDS WHILE CONTROLLING OPERATIONAL AND CAPITAL COSTS ALONG WITH MAXIMISING POWER EFFICIENCY.

DESIGNED FROM THE GROUND UP TO INTEGRATE VIDEO TRANSCODING, CDN ORIGIN AND DRM PACKAGING IN A 3-IN-1 MODULAR APPROACH.

EXCEPTIONAL HIGH DENSITY TRANSCODING, UP TO **396 SD \*\***  OR **132 HD \*\*** CHANNELS IN SINGLE 2RU APPLIANCE.

OUT OF THE BOX IMPLEMENTATION OF TIME SHIFT, CATCHUP-TV AND START OVER TV SERVICES .

COMPLETELY REDUNDANT SOLUTION WITHIN ITSELF, POSSIBILITY OF N+1 OR N+N SCENARIOS, HOT SWAPPABLE COMPONENTS FOR ZERO DOWN TIME MAINTENANCE.

**MT**-**LIVE** is a hardware based Video processing platform designed to address latency and poor scalability of Cloud transcoding infrastructure. Working with Intel Quick Sync Video technology, More Screens has created the optimal solution that addresses the issue of energy efficiency, scalability and cost, and results in a better user experience.**MT**-**LIVE** integrates switching, load balancing and processing in a 3-in-1 modular approach.

**MT**-**LIVE** supports multi-screen and multi-format transcoding and trans-rating of live H.264 SD/HD and MPEG-2 SD/HD transport streams, DRM encryption  and packaging. Thereby the user can set parameters like resolution, bitrate, bitrate type (CBR/VBR) or GOP structure (Group of Picture). Also the up- or down-scaling from HD to SD formats is supported.

**\*\* BEST CASE SCENARIO**

# 3 IN 1 SINGLE 2RU APPLIANCE

## PRODUCT HIGHLIGHTS

- Video recording capability in multiple formats

- DRM packaging

- Adaptable time shifted streams based on all transcoded streams

- Out of the box implementation of Recording, CatchupTV and Start Over TV services

- Option of integration with second tier storage for archiving or as 2nd tier storage

- Integrated CDN support without the need for additional Origin servers

- Designed from the ground up to integrate switching, load balancing and processing in a 3-in-1 modular approach

- Transcoding designed for IPTV / OTT, multiple outputs, multiple resolutions, subtitles, bitrates and formats

- Ideal for IPTV, Cable, Cloud and OTT service providers to introduce new applications used for mobile and fixed video services

- Exceptional high density transcoding, up to 396 SD or 132 HD channels  in single 2RU appliance

- Industry leading power efficiency  delivers significant OPEX savings

- Completely redundant solution within itself, possibility of N+1 or N+N scenarios, hot swappable components for zero down time maintenance

# MT-live

## Switching infrastructure

2 hot swap switches: Active-Active or Active-Standby;
High uplink capacity up to 2x 10 GbE SFP+ (front or rear) and 8 x 1 GbE ports RJ-45  or 1x 40GbE QSFP+ Uplinks

## Software

**Load Balancing:** Improves application responsiveness by distributing application workloads evenly across servers; Supports SSL Offload, Compression and HTTP Multiplexing, thus reducing latency, accelerating page loads and lowering bandwidth cost;
Supports virtualization management and for high availability environments;
VLB Basic and Advanced;

**OS, Hypervisors and Middleware Support:**
Various options available as part of integration services

**CDN Support:**
Advanced caching capabilities for CDN origination services

**Video Player Support:**
Integrated advanced HTML 5 Video player for both Web and Mobile browsers

**DRM Support:**
Microsoft Playready, Apple Fairplay, Google Widewine, AES 128, Verimatrix

## Compliance / Regulatory

Designed to meet the following environmental, safety and EMC requirements: EN 300 019; Telcordia GR-63; Telcordia SR-3580 level 3; Telcordia GR-1089; EN 300 386; EN / CSA 60950-1; FCC PART 15

# MT-live

## Video&Audio Formats Processing

AVC / H.264 (Baseline, Main, High)
HEVC / H.265
MPEG-2 (4:2:0, 4:2:2)
VC-1 (Simple, Main Advanced)
AAC
AC-3 (Dolby Digital)
MPEG-1 Layer 2
MP3
PCM
WMA
Profile range from 1920x1080p to 240x180p
Resolution conversion
Frame rate reduction
GOP alignment

## Stream formats

IP: UDP,  RTP, RTSP MPEG-TS, HLS,  RTMP,  ASF, MPEG-DASH
FILE: Transport Stream File, MP4, AVI, FLV

## Hardware Platform

Ruggedized Modular Platform design:

2U height, 21 inches deep;
Up to 9 hot-swappable subsystems;
Up to 2 hot-swappable load balancers (optional);
Single or redundant hot-swappable switches;
Single or redundant management ports;
Hot swap, redundant fans;
Front to back cooling;
Dual redundant 1100W AC or DC Hot Swap Power Supplies; 80 PLUS® Silver or better efficiency
Up to 480 GB total of storage per processor (2 x M.2 SSD)

## Processor

Up to 18 Intel® E3-1578Lv5 GT4e  processors, each with up to 8GB of Dual Channel DDR4
memory (Excluding Load Balancer subsystem)

## Management

1-Click Web GUI platform management; Integrated BMC (iBMC) with advanced options; Support
for SNMP and IPMI 2.0; dedicated system manager; and remote management for diagnostics and
provisioning

# CDN

CDN Hardware sizing is provided in the budgetary proposal.

# CATCH-UP TV STORAGE

Catch-Up TV storage sizing is provided in the budgetary proposal.

# SPECTAR+ PLATFORM SERVERS

Spectar+ Platform hardware sizing is provided in the budgetary proposal.

# TRAINING

# TRAINING

After the system installation and configuration, proper education of the operator's technical staff is important step. This will enable you to know both the details about system configuration and solving problems.

Training is organised On-line and consists of several learning modules. Total duration of the training is Three days ( 4 hours per day).

## DAY 1

Spectar+ platform architecture

Ingest & Transcoding

Platform & Monitoring services

Diagnostics & KPI

## DAY 2

Multi-Screen Client apps features

Device management system

Customer care & troubleshooting

Analytics

## DAY 3

Operator's dashboard – MAM (Linear TV, Radio, VoD) , CMS

Operator's dashboard – EPG Ingest & management

Operator's dashboard – Catch-up TV management

Operator's dashboard –  Packages & Offers

Operator's dashboard –  Subscribers provisioning

# HIGHLIGHTED REFERENCES

## DIGITALB
## MULTI - SCREEN OTT

DigitAlb is a leading Albanian media, digital satellite and terrestrial TV platform.

DigitAlb OTT is broadcasting over 120 Linear TV channels , including VoD and Catch-Up TV services on Samsung Tizen, LG WebOS, Android TV, Android AOSP STB, PC, Vidaa, Fire TV ,Tablet and Smart phone devices.

More Screens provided DigitAlb with a fully managed End-to-End OTT service including: Back-office, Multi-screen Apps, Digital Rights Management and Content Delivery Network.
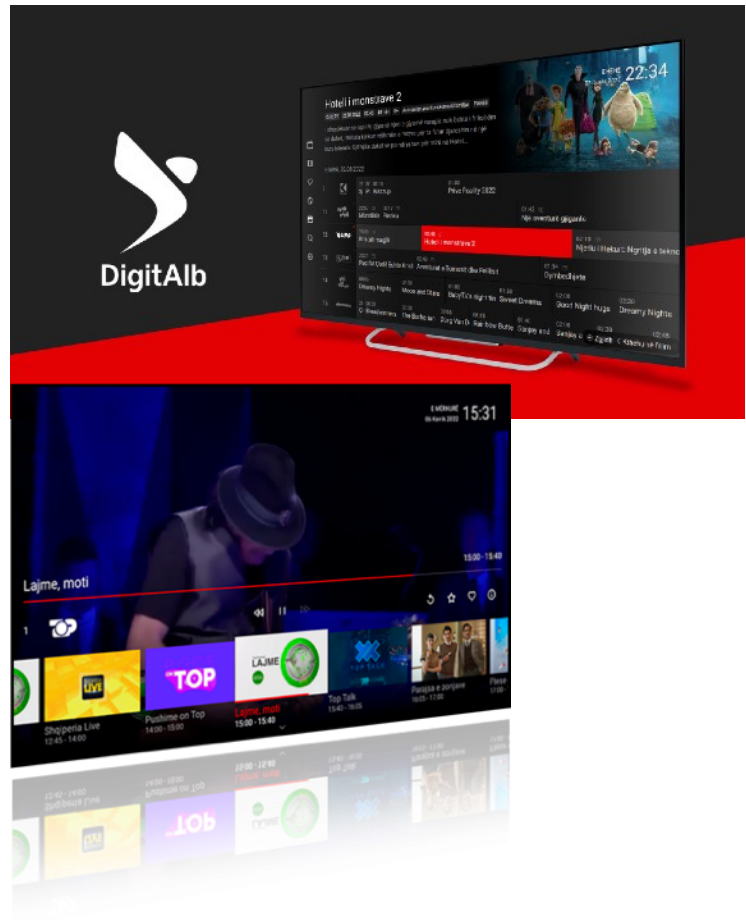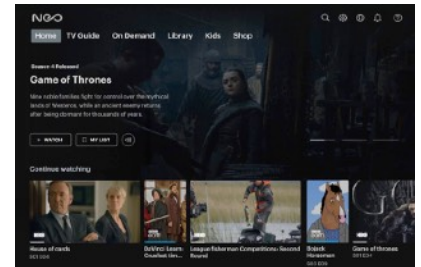
| | |
|---|---|
| YEAR | **2022** |
| NUMBER OF SUBSCRIBERS | |
| NUMBER CHANNELS | **130** |
| NUMBER OF AOD/VOD | **+5 000** |
| CLIENT APPS & DEVICES | Android / iOS Mobile, Android  TV, Samsung Tizen, LG WebOS,, ANDROID AOSP STB, Hisense Vidaa, Fire TV |
| WEB | **https://www.digitalb.al/** |
| PRODUCTS USED | SPECTAR+ OPERATOR DASHBOARD<br>MS Cloud<br>MS CDN<br>MS DRM<br>USP MIDDLEWARE |

# NEO
# MULTI - SCREEN IPTV / OTT

NEO is the next generation user-centric and content-driven home entertainment platform. Operated by voice commands, it integrates an open, secure, state-of-the-art smart home solution, supporting pay-TV services, gaming and e-commerce.

Thank's to Spectar's openess, we were able to integrate all requested system components such as Edgeware Stream Builder, Voice recognition, Oblo Smart living, Xroadmedia Ncanto …

Telecom Slovenije is deploying the Specar+ multi-tenant, multi-device platform across its or third party fibre infrastructure to reach a base of telecom service providers across the Globe.

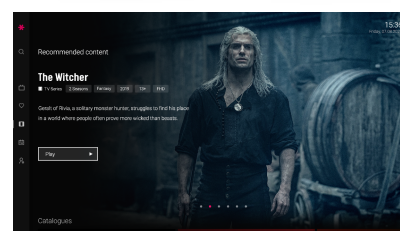| | |
|---|---|
| YEAR | **2018** |
| NUMBER OF SUBSCRIBERS | **+ 240 000** |
| NUMBER CHANNELS | **210** |
| NUMBER OF AOD/VOD | **+10 000** |
| CLIENT APPS & DEVICES | Android / iOS Mobile, Android TV, Samsung Tizen, LG WebOS, PC, ANDROID AOSP STB by ARKADYAN & Baecon |
| WEB | www.neo.io/en |
| PRODUCTS USED | SPECTAR+ OPERATOR DASHBOARD XROADMEDIA RECOMMENDATION SYSTEM VERIMATRIX DRM HARMONIC EDGEWARE OBLO SMART HOME |

## SUPERNOVA
## HYBRID DVB-C AND MULTI - SCREEN OTT

Supernova is a brand created by the acquisition of cable operators Kopernikus Technology, Radijus Vektor and AVcom that has been a new feature of the Telekom Srbija group.

More Screens is providing a complete end-to-end solution for Supernova, acting as prime integrator for components that include its own Spectar+ Back-office, Cloud infrastructure, VOD Ingest and Live transcoders, CDN, Multi-DRM, Analytics, Client apps for all leading Mobile and Smart TV platforms, as well as STB middleware.

In terms of set-top-box platform, the latest high-end Android AOSP HYBRID DVB-C/IP box from More Screens and Beacon  has been sourced to guarantee a great user experience in terms of responsiveness, zapping time and overall performance.



| | |
|---|---|
| YEAR | **2016** |
| NUMBER OF SUBSCRIBERS | **+ 250.000** |
| NUMBER CHANNELS | **320** |
| NUMBER OF AOD/VOD | **+10 000** |
| CLIENT APPS & DEVICES | Android / iOS Mobile, Android  TV, Samsung Tizen, LG WebOS, PC,  MS ANDROID AOSP HYBRID DVB-C/IP STB |
| WEB | https://mojasupernova.rs/ |
| PRODUCTS USED | SPECTAR+ OPERATOR DASHBOARD MS DRM, CRYPTOGUARD MS CDN MT LIVE MT VOD MS HELP-DESK USP MIDDLEWARE |

## RTS PLANETA
## MULTI - SCREEN OTT

With over 1.5 million subscribers, RTS Planeta is one of the market-leading OTT platform in the CEE region. More Screens is providing a complete end-to-end solution for RTS, acting as prime integrator for components that include its own Spectar+ Back-office, Cloud infrastructure, VOD Ingest and Live transcoders, Global CDN, Multi-DRM, Analytics and Client apps for all leading Mobile and Smart TV platforms. A key element of that is Spectar+ Back-office, which allows different editorial and technical teams to manage the content assets and reconfigure the user experience to match their own specific needs.

RTS Planeta offers both Subscription based and Free to view models.
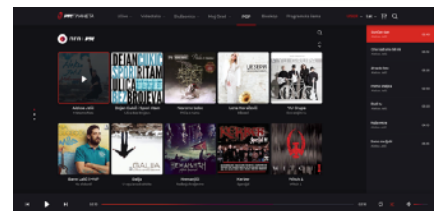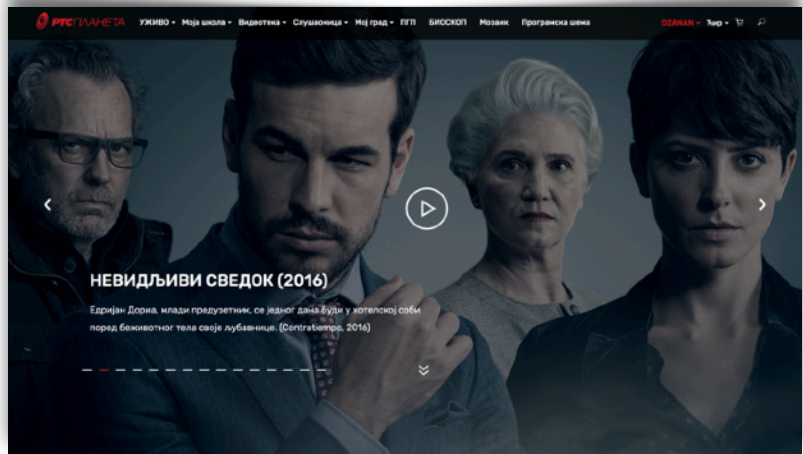


| | |
|---|---|
| YEAR | **2017** |
| NUMBER OF SUBSCRIBERS | **+ 1.500.000** |
| NUMER OF USER DEVICES | **+ 3.700.000** |
| NUMBER CHANNELS | **+ 50 000** |
| NUMBER OF AOD/VOD | Android / iOS Mobile, Android TV, Apple TV, Samsung Tizen, LG WebOS, Roku, Amazon Fire TV, PC |
| CLIENT APPS & DEVICES | |
| WEB | www.rtsplaneta.rs |
| PRODUCTS USED | SPECTAR+ OPERATOR DASHBOARD CORVUS ONLINE PAYMENTS GATEWAY MS DRM MS CDN MT LIVE MT VOD USP MIDDLEWARE |

## MAX TV
## MULTI - SCREEN OTT

MaxTV GO service enables Magenta 1 users to watch the best interactive television MaxTV on any device, wherever they are.  More Screens has provided a complete end-to-end solution for MAXTV GO, acting as prime integrator for components that include its own Spectar+ Back-office, Cloud infrastructure, VOD Ingest and Live transcoders, Global CDN, Multi-DRM, Analytics and Client apps for all leading Mobile and Smart TV platforms.

Starting 2019, MAXTV GO is also available on Android TV set top boxes provided by the KAON which have been successfully integrated.
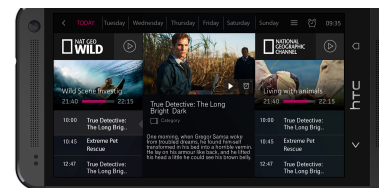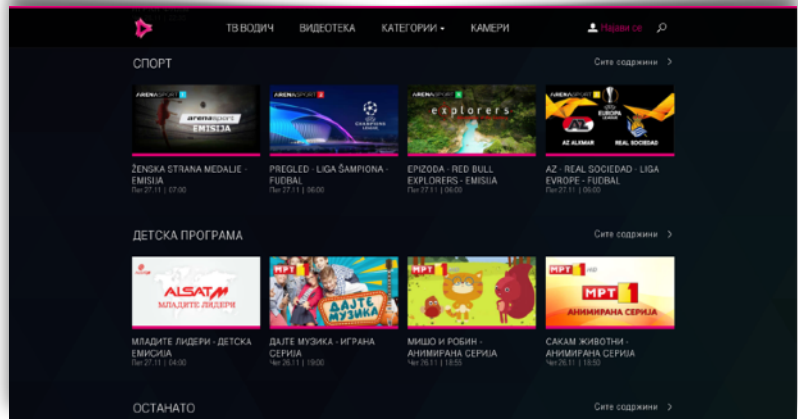
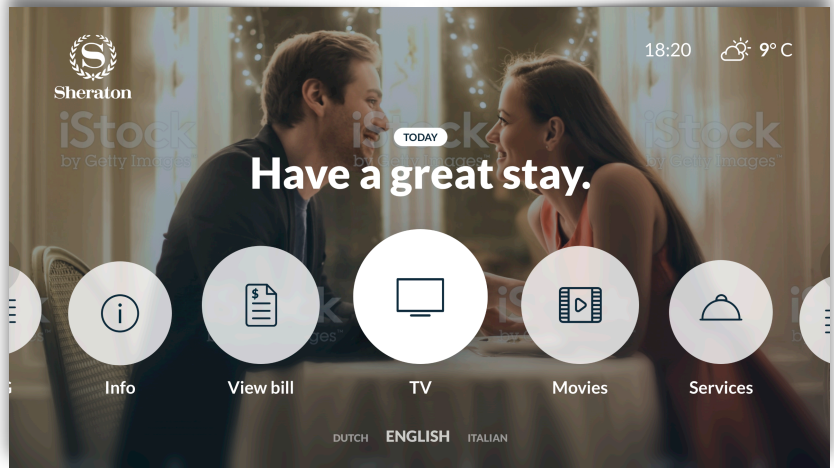| | |
|---|---|
| YEAR | **2016** |
| NUMBER OF SUBSCRIBERS | **+ 100 000** |
| NUMBER CHANNELS | **90** |
| NUMBER OF AOD/VOD | **+ 1000** |
| CLIENT APPS & DEVICES | Android / iOS Mobile, Android  TV, Samsung Tizen, LG WebOS, PC, ANDROID TV STB by KAON |
| WEB | https://maxtvgo.mk/ |
| PRODUCTS USED | SPECTAR+ OPERATOR DASHBOARD<br>MS DRM<br>MS CDN<br>MT LIVE<br>HARMONIC<br>MT VOD<br>USP MIDDLEWARE |

## HOTEL TV
## MULTI TENANT PLATFORM

Hotel TV is new television service designed for the hotel sector, capable of being integrated with hotels' management applications. This new solution makes it possible to present personalised content to guests and implement digital marketing strategies during their stay.

Among its many benefits, Guest TV makes it possible to programme a reception with welcome messages, adapt languages and content, and buy products and services directly via the television in the room.

Hrvatski Telekom is deploying the Specar+ multi-tenant, multi-device platform across its fibre infrastructure to reach a base of Hotels and Resorts across the





| | |
|---|---|
| YEAR | **2019** |
| NUMBER OF ROOMS | **+ 5000** |
| NUMBER CHANNELS | **90** |
| NUMBER OF AOD/VOD | **+1 000** |
| CLIENT APPS & DEVICES | Samsung Hospitality Tizen, ANDROID AOSP STB by MORE SCREENS |
| WEB | **https://www.hrvatskitelekom.hr/poslovni/televizija/hotel-tv** |
| PRODUCTS USED | SPECTAR+ OPERATOR DASHBOARD SPACTAR+ HOTEL TV MS DRM VERIMATRIX MS CDN MT LIVE MT VOD |

MORE SCREENS

# THANK YOU