Noovo Sat-OTT

Media Access Point

NOOVO CONFIDENTIAL 2023 V2.0

Noovo Team

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Modification List

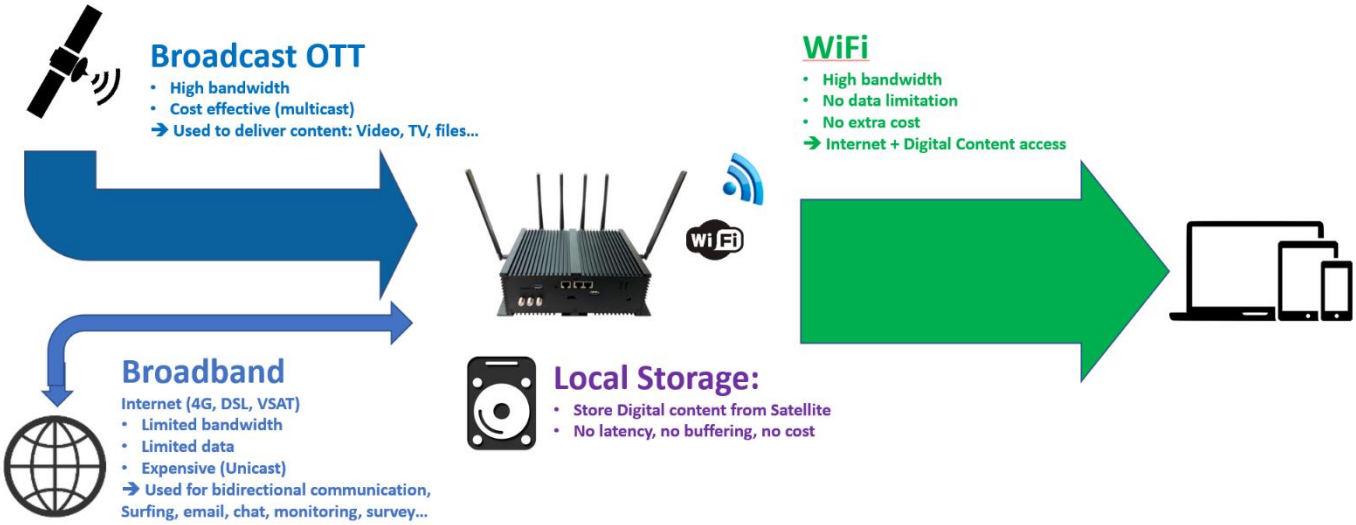
Date	Content	Version	Author
31/03/2023	First release	V1.0	Martin-Garrin
11/04/2023	Improve EMS description, Add Smart-STB and Smart-Mifi	V2.0	Martin-Garrin

Content

I. Sat-OTT

Sat-OTT technology represents a ground-breaking development in the delivery of digital content. By harnessing the power of satellite broadcast and broadband IP technology, this innovative end-to-end solution enables content to be delivered anywhere, and at a low operating cost. Additionally, Sat-OTT is designed to be compatible with all types of screens, making it a highly versatile and accessible solution for users.

It's important to note that Sat-OTT is not intended to provide internet access or replace internet services. Instead, it serves as a complementary solution that helps deliver digital content in areas where internet access is limited or unavailable. By unloading heavy video content from the internet, Sat-OTT provides a hybrid solution that enhances the user experience and makes it easier to access digital content in any location.



II. Benefits

We have developed a cutting-edge technology offering the following advantages:

- Global Coverage: We can reach any location thanks to the Satellite coverage.
- Internet Independence: Our system can work with or without an Internet connection, providing reliable and consistent service.
- Infrastructure Independence: Our solution requires only a power source, which can be solar-powered, making it easy and cost-effective to deploy.
- Fast and Easy Deployment: With just a satellite dish and our gateway, our solution can be deployed quickly and with minimal hassle.
- Scalability: Satellite bandwidth can be adjusted according to demand, allowing for optimal performance and efficiency.
- High Bandwidth: Our solution offers high bandwidth WiFi, supporting multiple users simultaneously.
- No Data Costs: WiFi has no data costs, making our solution an affordable option for streaming video, audio, and other content.
- Multi-Screen Capability: Our solution supports all smart devices, including phones, tablets, computers, and TVs.
- Multi-Content Delivery: Our system can deliver any type of content, including Live TV, radio, Live events, video, eLearning with activities, ebooks, Web pages, APK..
- Multi-User Capability: Our solution can handle tens and hundreds of users streaming video simultaneously.
- Multi-Application Capability: Our system can be used for both home and public entertainment, education, and other applications.

In summary, our technology offers a versatile, cost-effective, and reliable solution for streaming content across the globe, with the benefits of both Satellite Broadcast and Internet data format.

III. Target application

Our solution is designed to cater to various applications in different settings, making it versatile and adaptable to a wide range of scenarios. Our solution can be used for entertainment, education, information, training, digital signage, military, and more. Access to the content can be free for education and information or monetized through advertisements, transactions, or subscriptions.

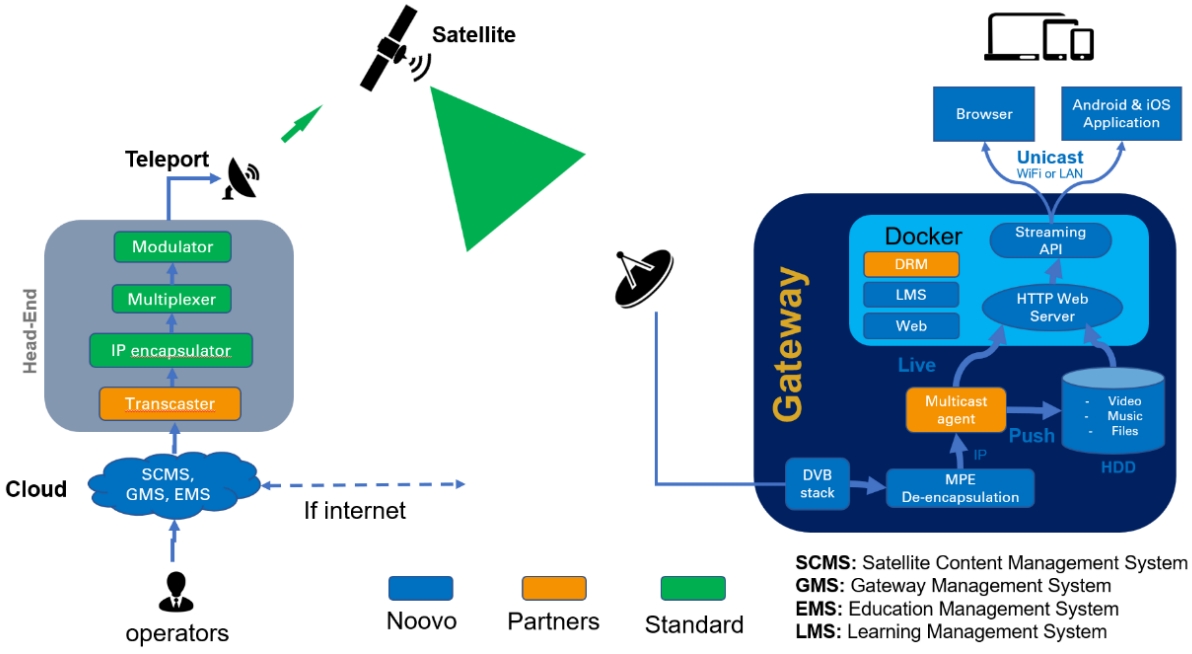
1. **Education:** Our solution is ideal for educational settings such as schools, universities, and home-schooling. It enables governments and NGO to deliver high-quality educational content to students in a personalized and engaging way without any internet dependency.
2. **Civic Education:** Our solution can be used to educate communities on various topics such as health and farming. It enables governments and NGO to deliver informative and educational content to a wide range of audiences who are usually unreachable due to internet lack.
3. **Transportation:** Our solution can be used in various transportation settings such as airports, train stations, bus stations, planes, trains, buses, and even boats. It enables operators to deliver high quality entertainment to passengers while waiting for transportation or during their journeys.
4. **Hospitality:** Our solution can be used in hotels, restaurants, and bars, allowing operators to deliver high-quality entertainment and informative content to customers on their own screens.
5. **Public Places:** Our solution can be used in hospitals, shopping malls, community centers, townships to provide patients, visitors, residents with informative and entertaining content or digital signage.
6. **Remote Places:** Our solution can be used in remote areas such as villages, parks, and military camps to provide residents and soldiers with access to information, education, and entertainment.
7. **Corporations:** Our solution can be used for remote offices, oil platforms, mines, cargo, cruising, fishing ships and more to provide employees with access to training and entertainment content.
8. **Homes:** Our solution is perfectly suited for use in homes, offering households access to DTH (Direct-to-Home) and DTT (Digital Terrestrial Television). With our platform, households can enjoy an enhanced user experience, with a wide range of Multi-Contents delivered to multiple users on their own screens. Through our solution, households can access Linear content such as live TV, radio, and Live events, as well as Non-Linear content like VOD (Video on Demand), catch-up TV, and music. They can also access a variety of other digital files such as ebooks, PDFs, HTML files, and JPEGs.
9. **Contribution:** Our solution can be used for content delivery to the edge network for telecom, ISP, and terrestrial broadcasters, allowing them to deliver content to their end-users seamlessly.

Investing in a satellite-based over-the-top (OTT) platform can be a lucrative venture for customers, provided they have the ability to strategically target different applications in their desired territories. This can greatly enhance their return on investment.

IV. End to End solution.

When entering the Sat-OTT market, simply having hardware gateways is insufficient. At Noovo, we work closely with Transcaster Partners to offer our customers an End-to-End turnkey solution. This includes cloud management of content, gateways, eLearning, as well as satellite transcaster, delivery to the gateways for reception, de-encapsulation, storage, and streaming to smart device browsers and applications.

With Noovo's all-in-one approach, customers only need to interface with One company. This creates a more efficient and seamless process for customers.



V. Cloud Management System

1. Content Management System (CMS)

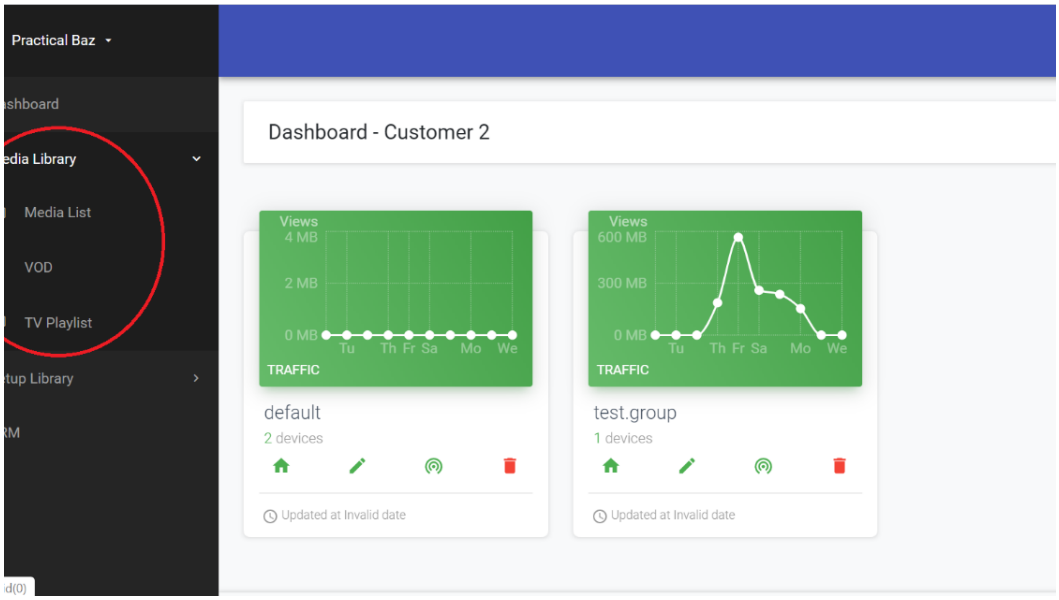
Noovo's Cloud Content Management System (CMS) is a one-of-a-kind solution that provides multiple paths to deliver content. While traditional CMSs rely solely on internet streaming to deliver video content to smart devices, Noovo CMS goes beyond that by offering the ability to stream content via the internet as well as via Sat-OTT. This makes it possible to deliver high-quality video content to users in areas with limited or unreliable internet connectivity.

The Content Management System (CMS) can deliver content using three methods:

1. Direct to smart devices using internet (like a standard internet OTT CMS)
2. Synchronize with gateways using internet (4G, ethernet, VSAT)
3. Broadcast to gateway by using multicast (offline)

The CMS support the following features:

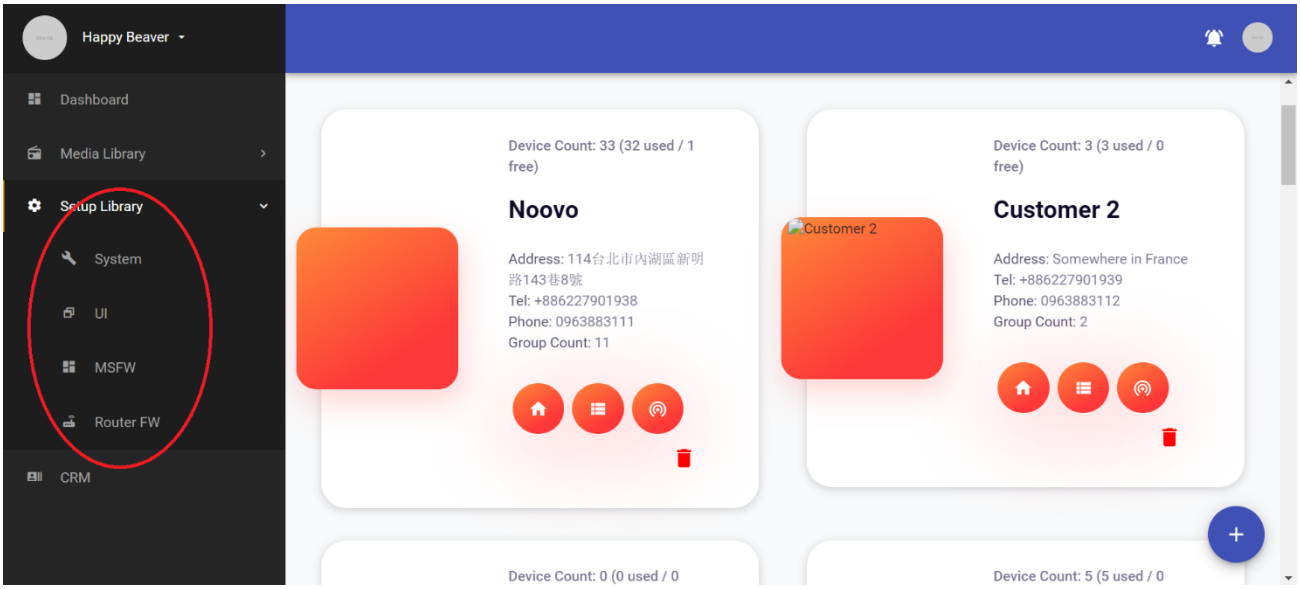
- Ingest content (any files)
- Edit metadata.
- Manage Media List
- Content delivery
- Content and User statistics from gateways or application
- Monetization: Advertisements, transaction, subscription
- And more



2. Gateway Management System (GMS)

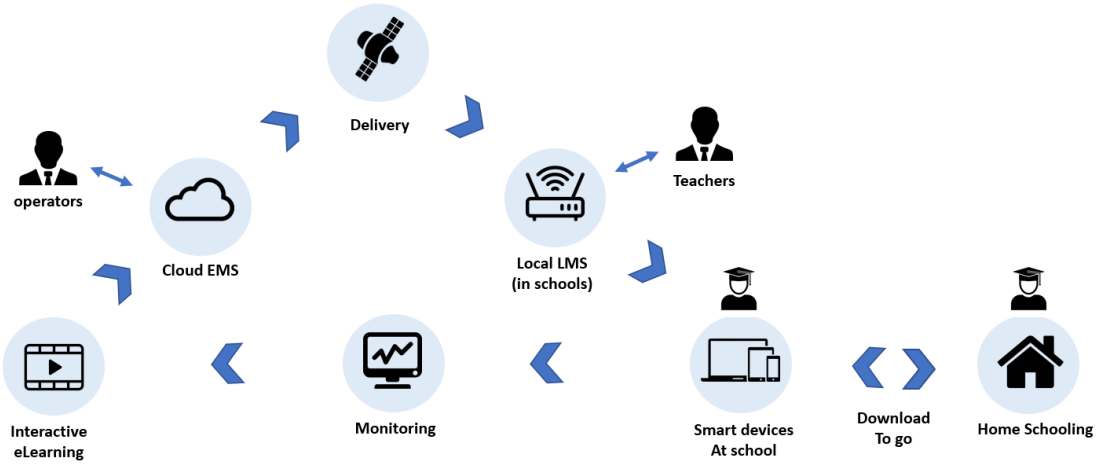
Noovo has developed a unique Gateway Management System (GMS) to manage the gateways remotely through two methods:

- **Internet Gateway Management:** This allows the gateways to be managed remotely over the internet. The GMS can perform tasks such as software updates, configuration changes, monitoring and troubleshooting.
- **Broadcast Gateway Management:** This enables the GMS to manage the gateways through the broadcast signal. This is particularly useful in cases where there is no internet connectivity available. The GMS can use the broadcast signal to perform tasks such as updating software, sending configuration changes, update Docker image (DRM, Web sites, LMS..) and will use application on smart phone to collect QOS and statistics.



3. Education Management System (EMS)

Noovo has developed a solution to address the problem faced by students from emerging markets who are unable to access remote eLearning due to limited internet access. Our comprehensive turnkey solution enables governments and NGOs to create engaging and interactive educational content using our cloud-based Educational Management System (EMS). The content can be delivered anywhere, even in remote areas, via satellite, ensuring that all students have access to quality education.

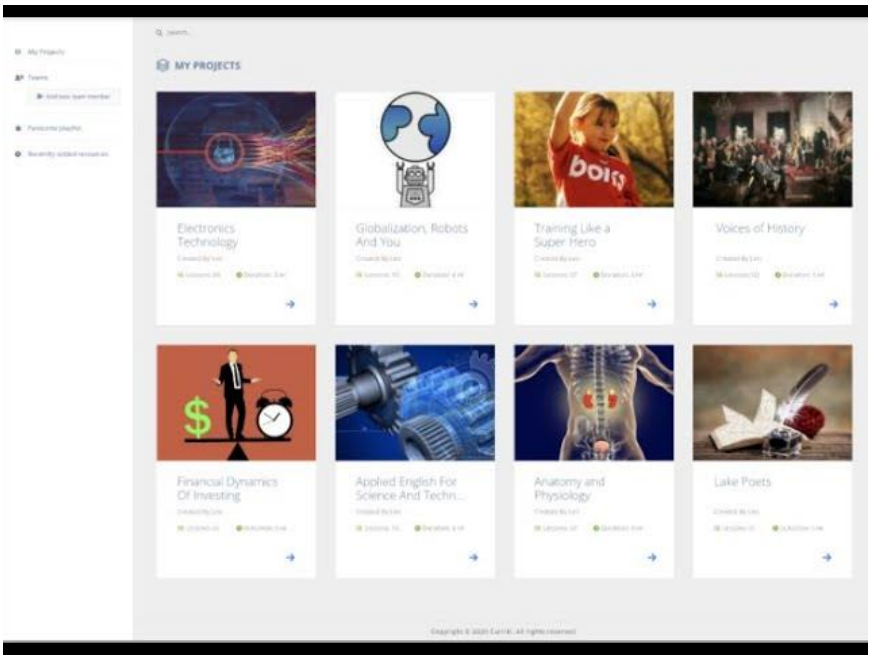


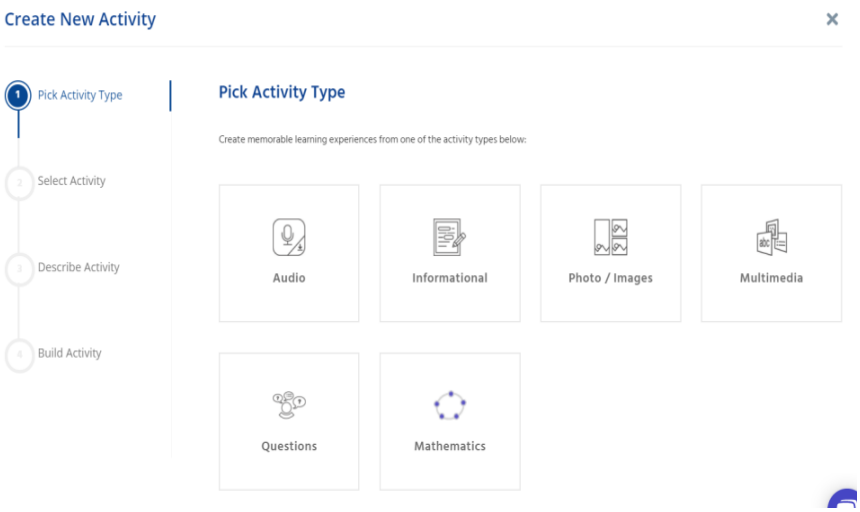
The Cloud Education Management System (EMS) revolutionizes traditional education by transforming static PDF content into dynamic and immersive learning experiences for students. Our platform enables educators to effortlessly create, convert, manage, deliver, and measure the progress of each student's learning journey, no matter where they are located. Additionally, our intuitive tools allow for the creation of custom eLearning content, complete with over 30 interactive activities such as quizzes, right/wrong exercises, card games, slides, and links that enable students practice what they have learned.

In addition to the cloud-based EMS, we have also ported a Local Learning Management System (LMS) that can be set up in schools gateways and compatible with the interactive content created on our Cloud EMS. With this system, students can log in and access lessons, practice activities, and other learning materials, all while their progress is closely monitored and supervised by teachers.

Teachers can track student progress and identify areas that require additional attention using our Learning Management System, which runs within the gateway. This feature empowers educators to provide more personalized instruction and support to each student, promoting better learning outcomes.

At a national level, governments and NGOs will monitor the success of their eLearning programs and identify areas for improvement. We believe that digital education should be fun and interactive, and our platform is designed to create engaging learning experiences that encourage students to love learning. We believe that by leveraging the power of technology and innovation, we can help bridge the educational gap and provide equal opportunities for students all around the world.





VI. MAP products family

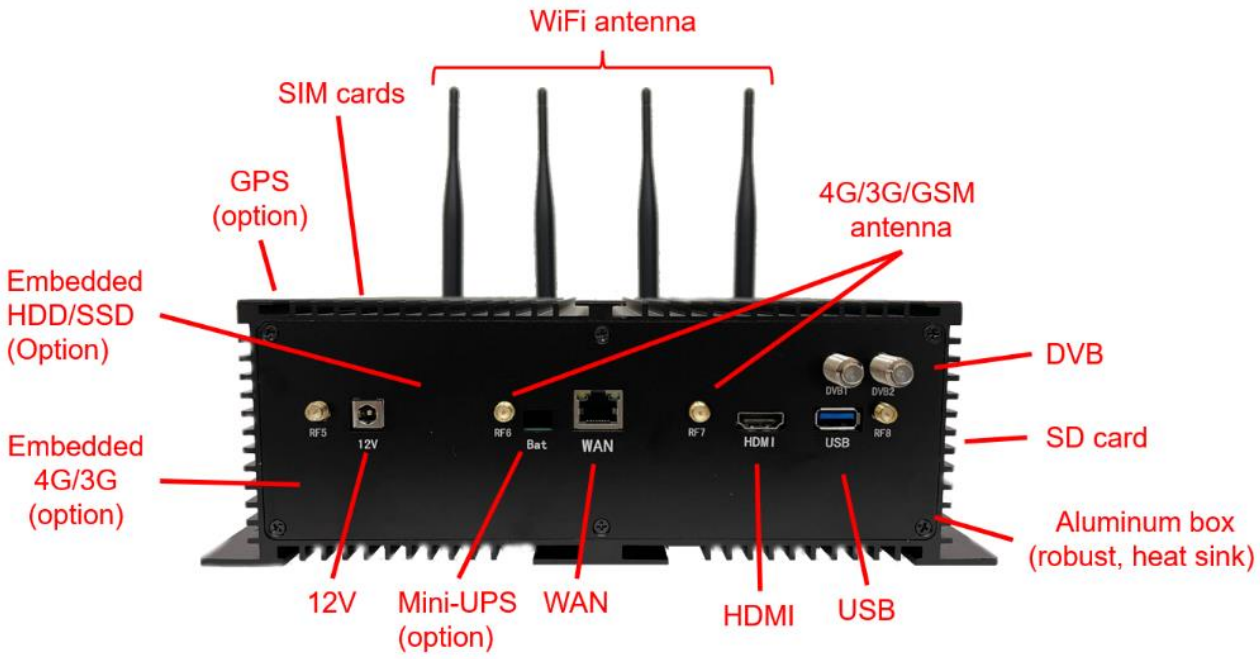
1. Public Gateways

The MAP Public Gateway family has been specifically designed to support Sat-OTT services in public places, allowing for the simultaneous streaming of video to multiple users. These industrial-grade gateways are built to withstand harsh environments typically found in emerging markets, such as power instability, extreme temperatures, humidity, and dust. Additionally, all modules are embedded within a sturdy aluminum enclosure, providing protection against potential damage and theft. These industrial-grade gateways are designed to be flexible and adaptable to different scenarios, providing reliable and high-performance connectivity to end-users in challenging environments and such, in All-In-One product.

The features of these gateways include:

- **Broadcast reception:** The gateways are designed to support various types of broadcast reception, including none, satellite, terrestrial, stationary or mobility, with up to 5 tuners. This ensures that the gateways can be used in different regions and markets, providing reliable connectivity to end-users.
- **High processing power and memory:** The gateways are equipped with high processing power and memories, enabling them to handle large amounts of content reception, IP routing, and streaming to lot of viewers simultaneously. This ensures that users can enjoy a seamless and uninterrupted experience when accessing digital content.
- **High-performance WiFi:** The gateways are equipped with high-performance WiFi, supporting up to 200 simultaneous users. This ensures that multiple users can connect to the gateway at the same time, providing video streaming to communities and groups of users. Relying on low-cost WiFi used for internet access in emerging market can be risky for the quality of your service, especially when it comes to video streaming. To ensure the best user experience, a high and stable WiFi bandwidth is necessary.

- **Embedded storage:** The gateways are equipped with embedded storage, offering up to 16TB using either 2.5” HDD or SSD. We can therefore store thousands of video and files to stream locally.
- **Embedded 4G/5G module:** The gateways can be equipped with an embedded 4G/5G module, enabling them to access the internet and providing users with a wider range of connectivity options. Gateway can also be connected to local internet (ADSL, Fiber) or satellite internet (VSAT).
- **Transportation version:** The gateways are available in a Transportation version as well, which includes diversity tuners, a specialized automotive power board, and GPS capabilities. The "Automotive power board" serves to safeguard the gateway against surge voltages that may result from alternator and start cracking. It also keeps track of the temperature, vehicle battery voltage, and ACC signal to ensure that the service is running correctly and does not drain the vehicle's battery power. With the addition of GPS capabilities, the gateways can be used to track vehicle fleets from our cloud GMS, while the diversity tuners improve reception during mobility (DVB-T2), making them suitable for transportation such as buses. This enables users on-the-go to remain connected at all times.
- **Mini UPS back-up batteries:** The gateways are equipped with mini UPS back-up batteries, which provide power in the event of an unstable power source. This feature is particularly useful in emerging markets, where power supply can be unreliable.
- **HDMI** serves a variety of purposes, including:
  - Digital signage for public screens, where the gateway can automatically play videos and advertisements based on the playlist received from the satellite.
  - Use with TV screens, where local operators such as teachers can use their phones to select videos to be played on the TV screen in front of a class.



By offering a range of features and options, Noovo's family of public gateways provides a reliable and flexible solution for connectivity in emerging markets, enabling users to access digital content and stay connected to the world.

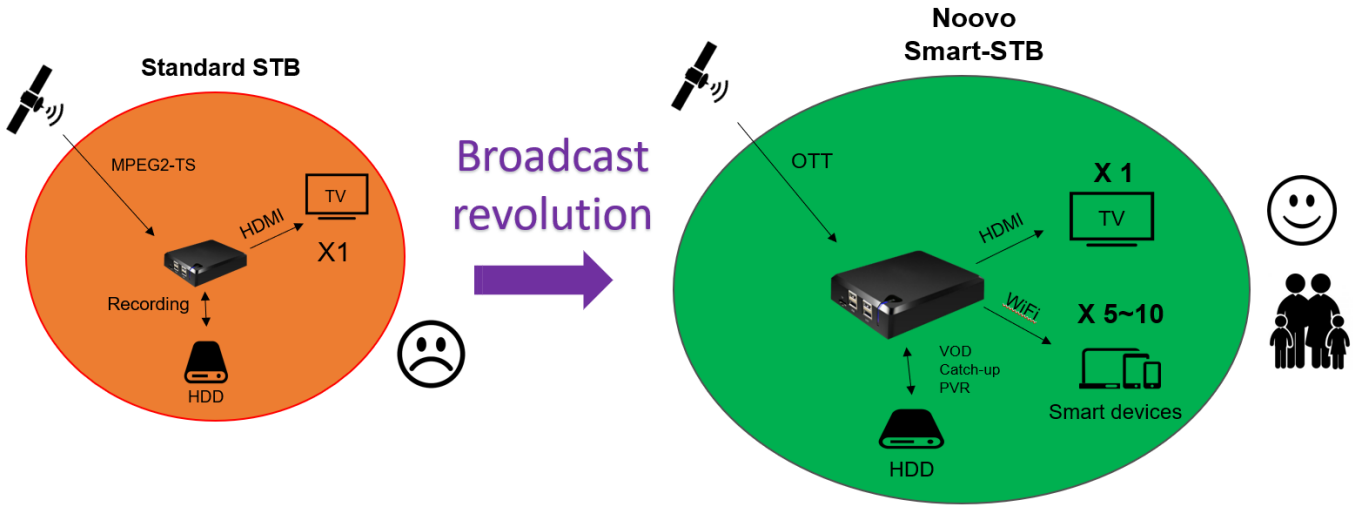
MAP Family	MAP200	MAP100	MAP50	MAP20
Box	Aluminum	Aluminum	Aluminum	Aluminum
SOC	RK3399 2*A72 + 4*A53	RK3399 2*A72 + 4*A53	RK3568 4*A55	RK3568 4*A55
RAM	4GB LPDDR4	4GB LPDDR4	2GB LPDDR4	2GB LPDDR4
Flash	64GB eMMC	64GB eMMC	32GB eMMC	32GB eMMC
Digital Display	HDMI 4K	HDMI 4K	HDMI 4K + Analog Video	HDMI 4K + Analog Video
Media Storage	2.5” HDD / SSD	2.5” HDD / SSD	2.5” HDD / SSD	2.5” HDD / SSD
Broadcast up to 5 tuners	DVB-S/S2/S2X or DVB-T/T2, ISDB-T	DVB-S/S2/S2X or DVB-T/T2, ISDB-T	DVB-S/S2/S2X or DVB-T/T2, ISDB-T	DVB-S/S2/S2X or DVB-T/T2, ISDB-T
Broadband	1 * Giga LAN	1 * Giga LAN	2 * Giga LAN	2 * Giga LAN
LTE (option)	4G/5G module	4G/5G module	4G/5G module	4G/5G module
WiFi	WiFi 6T6R 11n, ac 2.4G & 5G dual band 2.5Gbs MU-MIMO beamforming	WiFi 4T4R 11n, ac 2.4G & 5G dual band 1.7Gbs MU-MIMO Beamforming	WiFi 2T2R 11n, ax 2.4G & 5G dual band 1.2Mbs	WiFi 2T2R 11n, ax 2.4G & 5G dual band 866Mbs
Others	USB, SD card, IR	USB, SD card, IR	USB, SD card, IR	USB, SD card, IR
Options	GPS, RTC, Mini-UPS	GPS, RTC, Mini-UPS	GPS, RTC, Mini-UPS	GPS, RTC, Mini-UPS
Transportation	Automotive power board, diversity, GPS	Automotive power board, diversity, GPS	Automotive power board, diversity, GPS	Automotive power board, diversity, GPS
Operating System	Linux + Docker	Linux + Docker	Linux + Docker	Linux + Docker
Video streaming	**200 Mbs**	**100 Mbs**	**50 Mbs**	**20 Mbs**
Status	**Ready**	**Ready**	**soon**	**soon**

Noovo’s road map also include MAP500 streaming video via local network.

2. Home Smart-STB

Unlike standard market STBs that only offer one TV channel on one screen, the Smart-STB allows for multiple contents to be accessed at home, including Live TV, Video On Demand (VOD), and Catch-Up TV. This means that families can enjoy different programs on different screens at the same time, without incurring any data costs or relying on an internet connection.

Figure: Smart-STB benefits versus standard STB



By leveraging Satellite OTT technology, the Smart-STB improves the user experience for both DTH (Satellite home subscribers) and DTT (terrestrial Home subscribers) markets. No longer do families need to be forced to watch the same content, as each member of the household can choose their own entertainment at their leisure, enjoying none-linear content whenever they want.

Comparison table:

	Standard STB	**Noovo Smart-STB**
Type of content supported:	Live TV, Radio, PVR	Live TV, Radio, PVR, Catch-up TV, VOD, Audio, ebook, APK, Web and more
Number of contents to watch	1	5 to 10
Screens supported	TV	TV, computers, tablet, Smart Phones
Number of users	1	5 to 10
Statistics	No	Yes

The Smart-STB can receive the multicast directly from the broadcast through the tuners or via ethernet when connected to VSAT modem.

	Smart-STB	Smart-MiFi
SOC	RK3566 4*A55	RK3566 4*A55
DDR	2GB LPDDR4	2GB LPDDR4
eMMC	16GB eMMC	16GB eMMC
Media	1 * SATA connector	1 * SATA connector
WIFI	2T2R 11n 300Mbs	2T2R 11n 300Mbs
Broadcast (option)	Up to 2 tuners	Up to 2 tuners
LAN	1 * 10/100Mbs LAN	1 * 10/100Mbs LAN
Internet (option)		1 * 4G/5G module
USB	1 * USB2.0	1 * USB2.0
Display	1 * HDMI + 1* AV	1 * HDMI + 1* AV
RTC (option)	RTC + Back-up battery	RTC + Back-up battery
Others	SD card, LED, buttons, IR	SD card, LED, buttons, IR
Power	5V/2A	5V/2A
Housing	Plastic	Plastic
Operating System	Linux or Android	Linux or Android
Video streaming	20Mbs	20Mbs
Status	soon	Soon

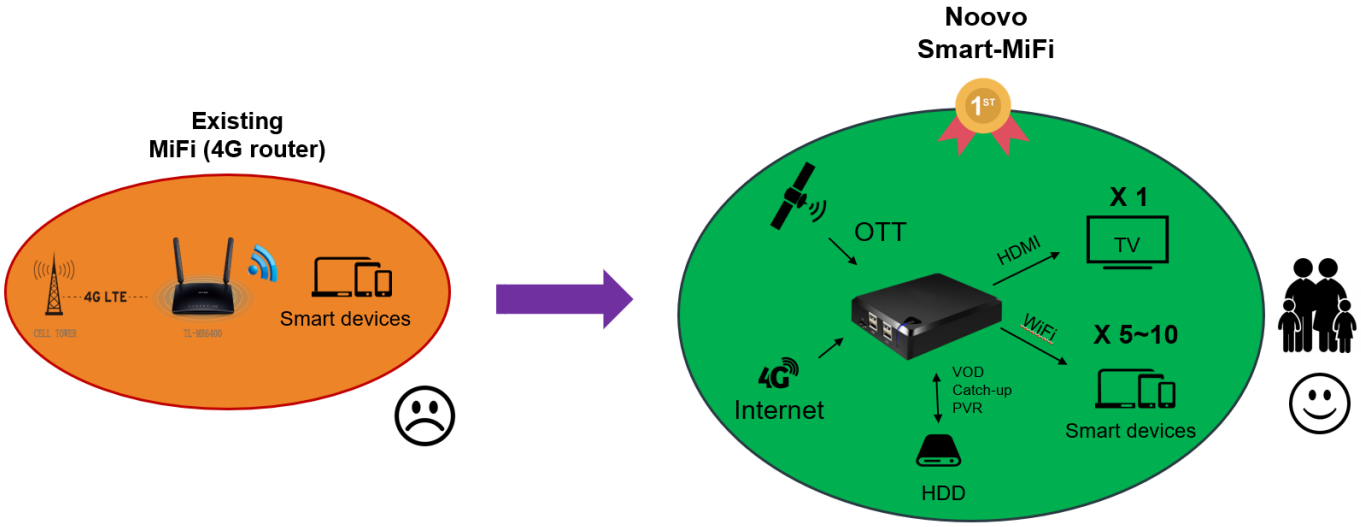
Noovo's Smart-STB not only enhances the home entertainment experience for users but also provides valuable insights for TV broadcasters. Through its provisional patent to use the Phone application, Noovo collect statistics from the STB and report them to the cloud CMS, allowing TV broadcasters to analyze entertainment consumption at home. This data enables broadcasters to better understand user preferences and make informed decisions about their programming, ultimately improving the subscriber experience.

The Smart-STB is specifically designed to help FTA TV broadcasters and Pay TV broadcasters remain competitive against Internet OTT providers. By providing users with a personalized, flexible, and enjoyable entertainment experience, broadcasters can enhance subscriber loyalty and improve their overall business performance. With Noovo's Smart-STB, broadcasters have access to the data and technology they need to reman relevant and competitive in an ever-evolving market.

3. Home Smart-MiFi

Noovo is addressing a major challenge faced by telecom operators in emerging markets with the development of its Smart-MiFi. Many telecom operators in rural areas provide home internet access through 4G with LTE routers, known as MiFi. However, the 4G backhaul infrastructure often cannot support the peak demand for video content during evening hours, making it difficult for telecom operators to monetize entertainment as an additional service, as they would in developed countries that use ADSL or fiber.

Figure: Smart-MiFi benefits versus standard MiFi for Telco



The standard 4G router (MiFi) currently in use offers internet access at home via WiFi. However, the Smart-MiFi takes this a step further by using 4G for internet access and Satellite OTT technology to offer Live TV and Video content without any data costs for the end user. This innovative approach allows telecom operators to monetize content to their home subscribers without overloading their backhaul infrastructure. With the Smart-MiFi, telecom operators in emerging markets can now offer a more comprehensive and enjoyable entertainment experience to their home subscribers, enhancing customer loyalty and driving additional revenue streams. This innovative solution enables telecom operators to provide the same level of service as those in developed countries, despite the limitations of their infrastructure. Overall, the Smart-MiFi is a game-changing solution that addresses a critical need in the market and opens up new opportunities for telecom operators in emerging markets.

Comparison table:

	Standard MiFi	**Noovo Smart-MiFi**
Internet	4G	4G
Entertainment	None	Live TV, Radio, Catch-up TV, VOD, Music, ebook, APK, Web and more
Number of contents to watch	None	10
Screens supported	computers, tablet, Smart Phones	TV, computers, tablet, Smart Phones
Number of users	10	10

In conclusion, Noovo's Smart-MiFi provides a viable solution for telecom operators in emerging markets to monetize entertainment without overloading their backhaul infrastructure.

4. The Software

Noovo's gateways operating system is based on a stable Linux Debian to provide optimal performance.

Other features of the gateways include:

• **Reception management:** The MAP gateways support multiple tuners to receive PIDs from different multiplex or transponders. The MPE is de-encapsulated, and multicast IP is redirected to the Transcaster agent software to turn it into unicast.

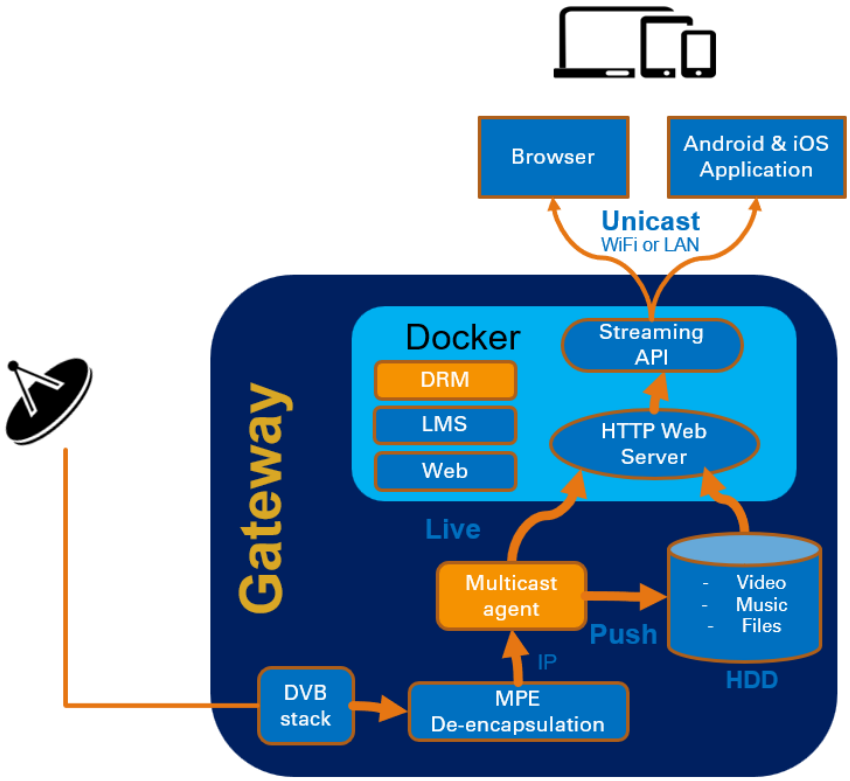
• **Content management:**

- Live: URLs, manifests, and chunks are created for live TV, Live events, radio, and VOD
- File Pre-Cache are stored on the media storage (HDD or SSD) to be watched later.

• **Streaming:** The HTTP server can stream IP content to browsers or to our application (Android, iOS). API can be open to interface with others application players.

• **Docker Micro-Services:** Our software is designed to support image containers for easy porting and broadcast update of new applications such as:

- DRM for content protection
- LMS for eLearning
- Websites for browsers
- Captive portals for new users
- And more.



Content protection

In order to support premium content, Noovo is working with market leading partners to port content protection already certified by studios. DRM is a recommended protection as it has been validated widely by studio for internet OTT and will protect the content from End to end (from cloud to smart devices application).

We can support two scenarios:

1) **Online:**
   If the application on the user's device can access internet via the phone or via the gateway, then the application can request the DRM license key from the DRM partner server like with internet OTT (standard DRM).

2) **Offline:**
   The primary objective of Sat-OTT is to operate independently of the internet. In line with this objective, we have collaborated with DRM partners to develop two solutions:
   1. The first solution involves the application collecting the DRM license key when the phone is online and keeping it valid for a longer period to cover offline scenarios.
   2. The second solution involves porting a License Key server onto the gateway so that the key can be delivered and updated via broadcast. The key can then be streamed from the gateway to the application on the user's phone when they are offline.

For non-critical content such as local educational materials and license-free content, Noovo can offer a low-cost encryption solution utilizing AES for light protection. If you would like more information on this solution, please do not hesitate to contact us.

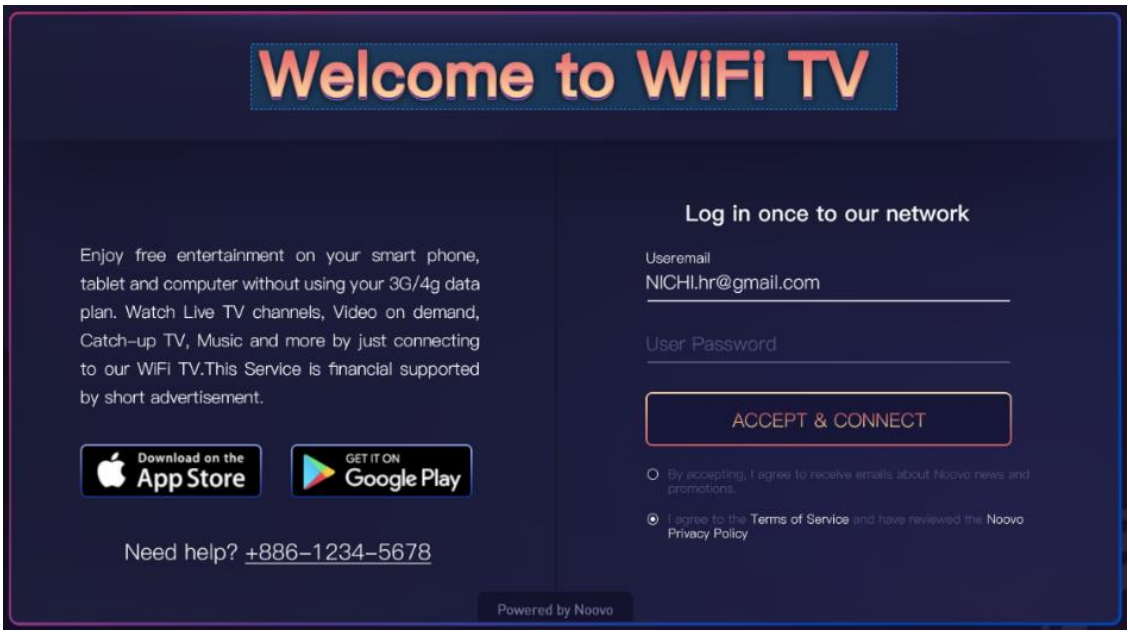
VII. User interfaces

Noovo offers a comprehensive turnkey solution for end-users to easily navigate and consume content from our gateways. Our solution includes a user-friendly captive portal and web pages, as well as Android and iOS applications. In addition, we provide a learning management system for education and training purposes.
Our turnkey solutions are available for quick proof of concept and can be easily customized to meet the specific needs of our customers' target applications. To ensure seamless integration with existing systems, we also offer APIs, enabling customers who already have an internet OTT application to interface with our Sat-OTT gateway. At Noovo, we strive to provide our customers with a flexible, user-friendly, and reliable solution that meets their unique needs and requirements.

1. Captive portal

The captive portal feature on our gateway is essential for creating a seamless user experience. When a new user connects their smart device to our WiFi network, the gateway will automatically open their browser and redirect them to our customizable web portal. This portal serves as a hub for introducing users to the available services, displaying terms and agreements, and prompting login if a subscription is required. Additionally, the portal can be used to encourage users to download our mobile application for added convenience either from the store (online) or as a local APK (offline). As the first point of contact with our services, the captive portal plays a crucial role in establishing a positive user experience and driving engagement with our offerings.

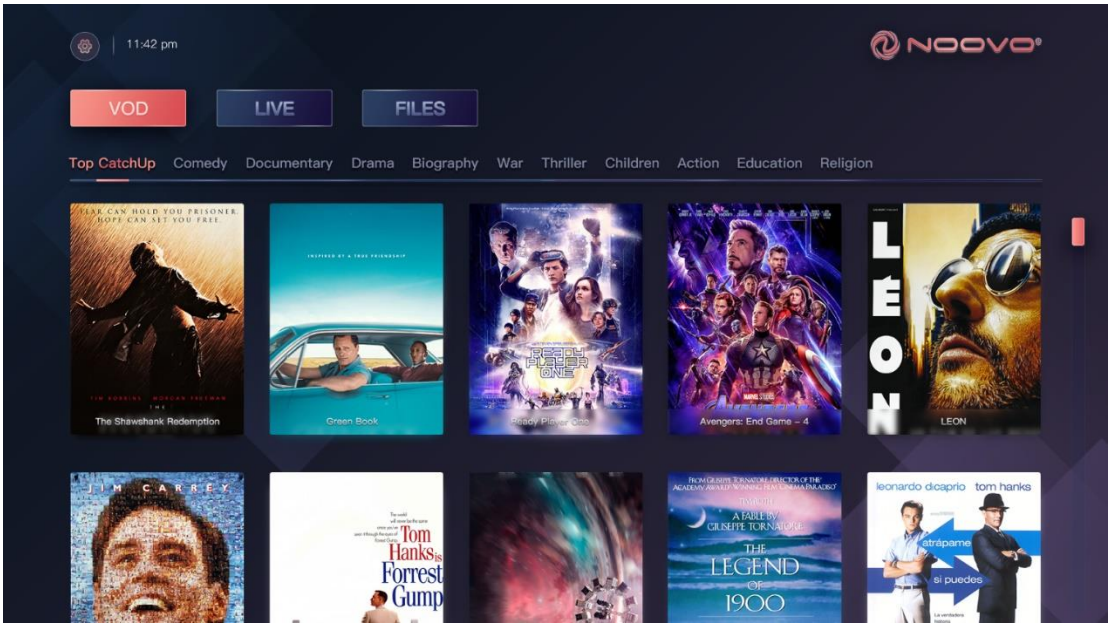
Example of Captive portal web page:



2. Web site

Noovo has developed a user-friendly local web site that allows users to navigate through the extensive catalog of services that include Live TV, VOD, and files. Users can play the content on their browser without having to install any additional application. This is made possible because all of our content is internet-compatible and is designed to work with various streaming formats such as HLS, MPEG-Dash, H264, progressive, AAC audio, ABR, etc.

The web site is available in a Docker container which can be easily updated through satellite push. Customers also have the option to develop their own HTML pages to match their desired User Interface. This flexible solution allows us to provide a tailored experience to each of our clients based on their specific needs and preferences.

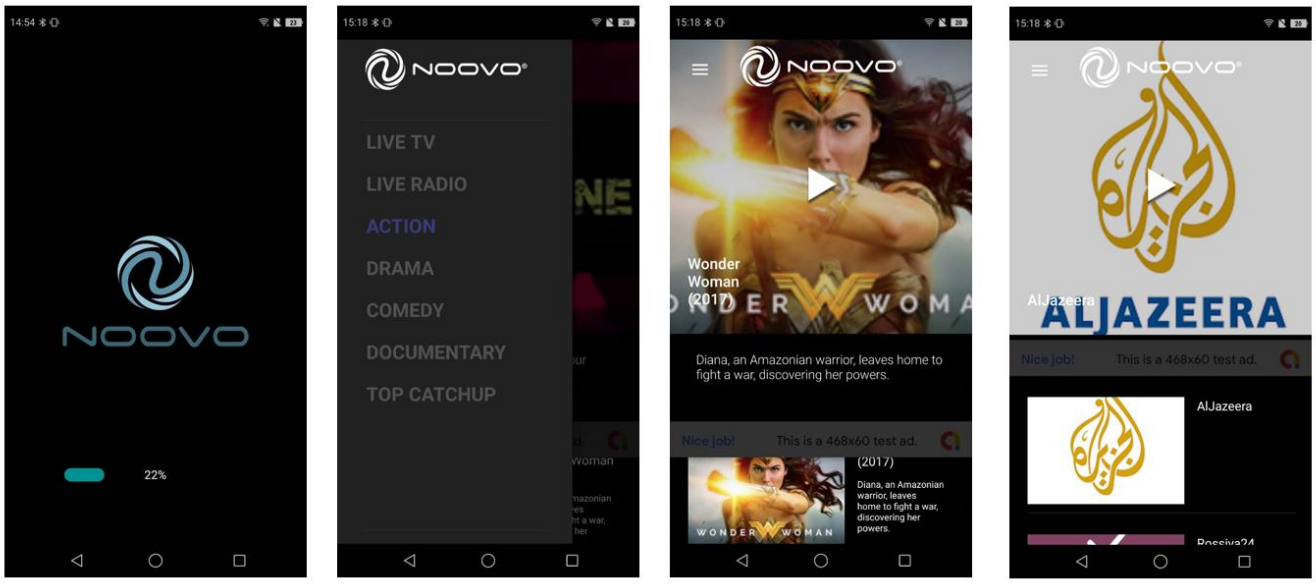


3. Android & iOS application

Noovo has developed an intuitive Android and iOS application for users to easily navigate through our Sat-OTT content, including live TV and VOD, and play or download content to watch later. If the gateway is connected to an existing network or Wi-Fi router, the application will automatically find the Sat-OTT service through UPNP, bonjour, or DLNA services. Our hybrid application is customizable with customer logos, background images, categories, and other features.

Our application automatically switches between two sources of content:

1. **Sat-OTT:** Our application prioritizes Sat-OTT content, which does not use data from telecom operators and is streamed locally via Wi-Fi to the user's phone. All metadata, such as icons, thumbnails, titles, and summaries, are collected directly from our gateway, allowing the application to function offline without an internet connection.
2. **Internet OTT:** If the application cannot find the satellite services, such as when the user's phone is not within the Gateway Wi-Fi coverage, the application will prompt the user to switch to 4G video streaming to access the same content over the internet, incurring data costs. This transition ensures that users can always access their desired content, regardless of their location or connection type.



loading categories Video Live TV

Monetization is an important aspect of our Sat-OTT service. Noovo application can fetch online advertisements using the internet connection of the gateway while streaming videos locally or display local advertisements delivered via broadcast. This allows our customers to monetize their service and generate revenue. In addition to advertisement, premium content can also be monetized through different business models such as transaction (Voucher) or subscription. Our platform is designed to be flexible and can be customized to fit different operator business models. This allows our customers to generate revenue not only from advertisement but also from premium content.

Download to go: To make the most of data-free content, it is essential to provide users with the option to download digital content for later viewing, as the wifi coverage is limited to the gateway location. This feature would be particularly useful in transportation hubs where travelers can download videos while waiting for their transportation (plane, train, bus, taxi, boat) and watch them during their journey. Moreover, users can download videos from the Media Access Point located in public places and enjoy them later with their families at home. The Noovo application will displays a map showing the nearest "VOD Kiosk" location and provides directions, making it easier for users to find and use this service.

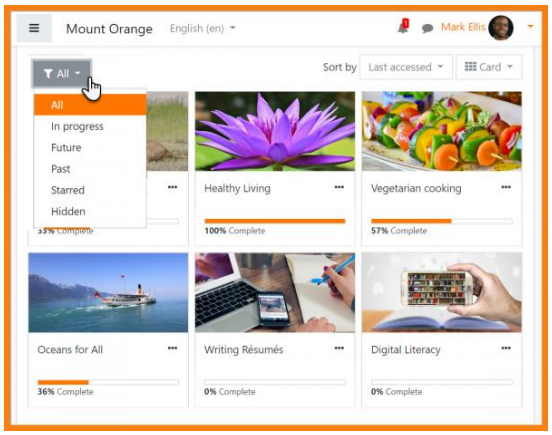
4. Learning Management System (LMS)

Using a Learning Management System (LMS) in education has several important benefits.

- Firstly, an LMS provides a centralized platform for instructors to manage and organize course materials, assignments, and assessments. This helps to ensure consistency in course delivery and provides a single location for students to access all course content.
- Secondly, an LMS can facilitate communication and collaboration between students and instructors. Discussion boards, chat rooms, and video conferencing tools can be integrated into the system, allowing students to engage in meaningful dialogue with their peers and teachers.
- Thirdly, an LMS can provide personalized learning experiences for students. With the ability to track student progress and performance, instructors can tailor their teaching to the needs of individual learners. This can help to improve student engagement and retention.
- Lastly, an LMS can help to streamline administrative tasks and reduce the workload of instructors. For example, automated grading and feedback tools can save time and improve the efficiency of the grading process.

Overall, using a learning management system can lead to improved learning outcomes, increased student engagement, and greater efficiency in course delivery and administration.

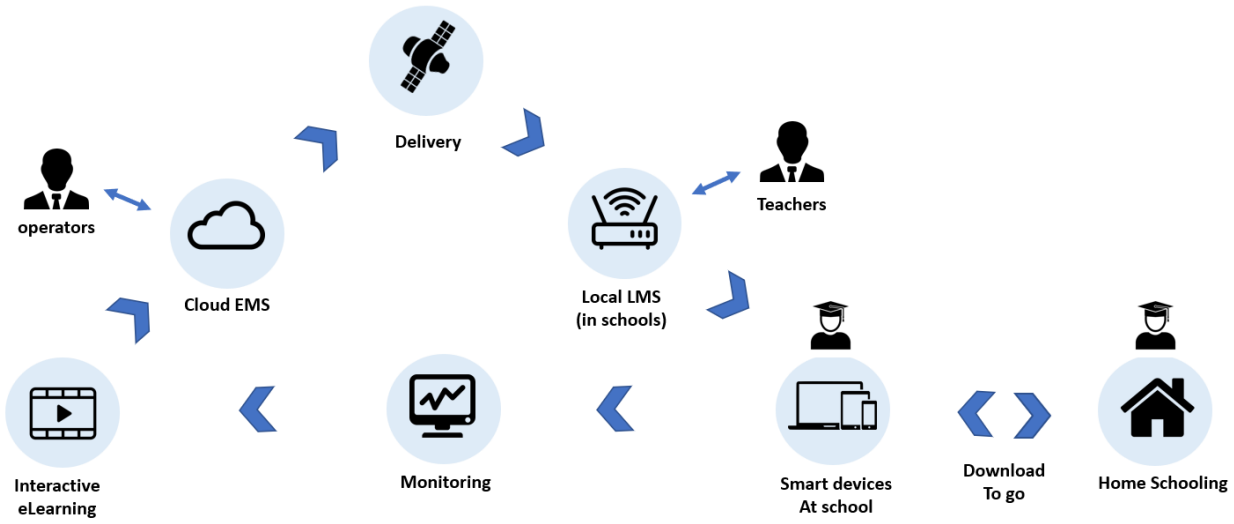
Noovo recognizes the importance of a robust and efficient Learning Management System (LMS) in achieving excellence in education. That's why we have incorporated Moodle, the most popular LMS in the market, into our gateways installed in the school. We have customized Moodle to make it work with our Sat-OTT delivery system and content, activities created via our Cloud Education Management System (EMS). With Moodle, we offer an effective platform that provides a wide range of features to create and manage educational content, students assignment, monitor student progress, and engage learners in meaningful discussions and activities. This integration allows for a seamless experience for educators and students, making it easy to deliver high-quality education regardless of their location or internet connectivity. Whether it's for K-12 or higher education, our solution ensures that students can access their lessons and activities at any time, from anywhere, on any device.



5. Education application

In addition to the Learning Management System (LMS) available on the school gateway, Noovo is working on an application that can be installed on students' smart devices. This application will enable students to download lessons and assigned activities for homework and home-schooling, extending the benefits of eLearning from schools to homes. The application will also synchronize with the LMS once the student is back at school, allowing teachers to monitor the progress of their students even when they are away from the classroom.

This unique application will prove especially helpful in catching up on lost education time during the COVID-19 pandemic and can be a potential solution for future lockdowns. By providing students with the ability to access their learning materials at home without internet, Noovo is offering a convenient and efficient way to continue their education even in challenging times.



With Noovo's innovative application, students can easily access and complete their assignments, allowing them to stay on track with their studies regardless of where they are. This solution offers a flexible and adaptive approach to education, helping students to continue learning and progress towards their academic goals.

VIII. Contacts

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