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Dear Readers of Dijital Yaşam Magazine,

Hayrettin ÖZAYDIN
TUYAD PRESIDENT

IBC, one of the world's leading meeting points for broadcasting technologies, is much more than a trade show where new technologies are introduced. For our industry, it is also an important platform where the foundations of new collaborations, investments, and global partnerships are laid.

At TUYAD, we consider it an important responsibility to use our special IBC issue to present Türkiye's potential in satellite, television, Pay-TV, IPTV, OTT, receiver systems, and electronics to international industry representatives. In terms of television broadcasting, Türkiye is not merely a consumer of technology. It has a large user base, a strong electronics industry, an advanced technical service infrastructure, decades of experience in satellite broadcasting, and significant entrepreneurial potential.

The fact that there are approximately 40 million television points in Türkiye today clearly demonstrates the scale of the country's market for broadcasting and television technologies. At the same time, television and video content continue to maintain a strong position in our daily lives. Although viewing times vary from country to country, the screen continues to play a central role in media consumption. Taken together, these indicators make Türkiye an important, high-potential market for international broadcasters, technology manufacturers, Pay-TV platforms, OTT services, and investors.

Türkiye Can Become a Strategic Hub for International Investors

We believe that one of Türkiye's most significant opportunities in the coming period lies in establishing stronger and more sustainable partnerships between our domestic companies and international organizations. When the market knowledge, technical infrastructure, and local expertise of Turkish companies are combined with the technology, capital, and global market access of international companies, the result can be far greater economic and technological value.

For this reason, we should view IBC not merely as a trade show where products are exhibited or purchased, but as a strategic business development platform where long-term partnerships can be established. It is of great importance for Turkish companies participating in IBC to increase their engagement with international companies, develop joint projects, facilitate technology transfer, create new investment models, and take steps toward making Türkiye a regional hub for broadcasting technologies.

Türkiye's geographical location also provides a major advantage in achieving this goal. Situated at the crossroads of Europe, Asia, the Middle East, and North Africa, our country has the potential to become a regional hub for the broadcasting technology and electronics industries.

In Broadcasting, Law and Trust Are as Important as Technology

As our industry grows, another issue that requires particular attention is safeguarding legal and trustworthy broadcasting practices. At TUYAD, we have always supported legal broadcasting and the protection of intellectual property rights and broadcasters' commercial rights.

The unauthorized sharing or use of encrypted broadcasts, Pay-TV platforms, and paid content not only harms broadcasters' commercial rights but also creates serious unfair competition for companies that operate legally, ethically, and in compliance with industry rules. For this reason, I would once again like to state unequivocally that we oppose unauthorized password and access sharing, the unauthorized use of Pay-TV broadcasting rights, piracy, and all forms of infringement of commercial rights.

As technology advances, the methods used to commit such infringements are also evolving. In addition to traditional satellite broadcasting, unauthorized internet streaming and the unauthorized use of digital platforms are among the major challenges our industry must address. At TUYAD, our goal is not only to contribute to technological development but also to promote the proper, secure, ethical, and lawful use of technology.

The television landscape of the future is no longer limited to satellite receivers or television sets. Satellite broadcasting, IPTV, OTT, Pay-TV, IP Box solutions, smart TVs, cloud technologies, and artificial intelligence are increasingly becoming interconnected components of the same digital ecosystem. This transformation presents significant opportunities for companies operating in Türkiye.

Today, a receiver device or technology solution manufactured or developed in Türkiye can serve not only the domestic market but also regional and global markets when supported by the right technology, strategy, and business model. To achieve this, our industry needs greater collaboration, stronger R&D capabilities, increased technology investment, and more international partnerships.

We Must Showcase Türkiye's Strength More Prominently at IBC

IBC is a major global event that brings broadcasting and technology companies from countries around the world together on a single platform. Türkiye must become more visible on this platform not merely as a visitor, but as a strong country that manufactures products, develops technology, invests, exports, and establishes international partnerships.

At TUYAD, we attach great importance to helping our members expand into international markets, establish new business connections, and communicate Türkiye's strengths in broadcasting technologies more effectively to the world. We have a large market, a highly capable workforce, significant manufacturing capacity, and advanced technological infrastructure. With the right investments and international partnerships, we can transform this potential into substantially greater added value.

We believe in the future of Türkiye's television broadcasting and electronics industries. Our large domestic market, with approximately 40 million television points, combined with our strong broadcasting culture, technical infrastructure, and strategic geographical position, can make Türkiye an important hub for international investors.

To achieve this, however, our industry must focus on common goals: more production, more technology, more investment, more exports, and more international collaboration. I hope that IBC 2026 will serve as a starting point for new partnerships, investments, and export opportunities for Turkish companies.

At TUYAD, we will continue our efforts with determination to support the development of our industry, protect legal broadcasting, prevent unfair competition, and strengthen Türkiye's position within the international broadcasting technology ecosystem.

I wish all our members, industry representatives, and Turkish companies participating in IBC a successful exhibition, and I sincerely hope that the new partnerships established there will create lasting value for Türkiye's broadcasting industry and economy.

Sincerely,
Hayrettin Özaydın
Chairman of the Board, TUYAD

The Freest and Fastest Way to Access Digital Content

"Watch Now" Freedom That Removes the Membership Barrier

İlker Kızıltoprak
DSMART

At the heart of our next-generation broadcasting strategy is the "Free User" model, designed to expand our platform's reach and make our content accessible in every home, on every device, and across every screen. With this model, we are moving beyond the conventional membership and registration procedures traditionally associated with digital broadcasting.

"Watch Now" Freedom That Removes the Membership Barrier

At the heart of our next-generation broadcasting strategy is the "Free User" model, designed to expand the platform's reach and bring our content into every home, onto every device, and across every screen. With this model, we are moving beyond the conventional membership and registration procedures traditionally associated with digital broadcasting.

Users can now simply download the app without filling out any forms and instantly access Live TV channels, including flagship channels such as **Kanal D** and **TV 2,** as well as regularly updated popular TV series and Turkish movies. **Spor Smart**, meanwhile, remains exclusively available as part of the **Mega** package, continuing to offer premium content for sports fans.

Democratizing content while delivering a sustainable model

This strategic move not only democratizes access to content but also introduces a sustainable model powered by **DAI (Dynamic Ad Insertion)** technology. While our free-access model provides viewers with a seamless wealth of content, it also creates an innovative advertising environment for the industry.

A Seamless, Modern Interface on Every Screen

The renewed D-Smart GO is available with its brand-new interface on the web, iOS and Android smartphones and tablets, as well as Samsung and LG smart TVs, selected Vestel models, and the entire Android TV ecosystem, including Arçelik, Beko, Grundig, Sony, Philips, Xiaomi, and more. **Our modernized, user-friendly design** enables viewers to find and access the content they are looking for as quickly and effortlessly as possible.

Following the completion of our infrastructure migration, we will also introduce the "Record Season" feature for TV series, making it even easier for viewers to keep up with their favorite shows.

"We Are Democratizing Access to Content"

Commenting on the platform's transformation and future vision, D-Smart Business Development Director İlker Kızıltoprak highlighted the significance of this innovation for the industry:

"At D-Smart GO, our priority is to bring high-quality content to viewers by eliminating technological and operational barriers. The 'free access' model enabled by our new infrastructure offers users a flexible experience with no commitment required. Our goal is **to position technology not as a limitation, but as a bridge that delivers content to users in the fastest and most effective way possible."**

The New Destination for Digital Entertainment

D-Smart GO continues to position itself at the heart of digital entertainment, both through the rich world of content available to existing package subscribers and through its new free-access model. While our existing subscribers and Pay TV users continue to enjoy premium content with exclusive benefits, we invite everyone **to discover this next-generation viewing experience**—with no membership required.

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A New Era Has Begun in Internet, Phone, and TV Subscriptions in Türkiye

Mücahit Şahin
DIGITURK

In recent years, numerous news reports have emerged about electronic signatures being duplicated, including the e-signatures of senior executives, as well as fraud being committed using other people's bank accounts or identity information. These incidents have periodically made headlines, reigniting discussions around digital security.

This has once again brought information and transaction security—one of the most important priorities of Türkiye's digitalization journey over the past 20 years, which gained further momentum with the establishment of the Presidential Digital Transformation Office—to the forefront of the national agenda.

One of the first major steps in the digital transformation of the electronic communications sector, particularly in mobile phone subscriptions—one of the key endpoints where information and transaction security must be ensured—was the elimination of paper-based subscription processes. Thanks to regulatory changes, lengthy contracts requiring handwritten signatures, which had been used for years, were replaced by digital processes. This not only enhanced transaction security but also enabled operators to significantly reduce paper, courier, and storage costs.

Following this transformation, the Information and Communication Technologies Authority (BTK) introduced regulations governing secure digital subscription processes in the sector, commonly referred to as the "Identity Verification Regulation." Based on the internationally recognized Know Your Customer (KYC) approach, the regulation introduced a range of verification methods, including facial recognition, identity card verification, PIN codes, NFC technology, and e-Government integration.

Among these methods, one of the most widely used has been identity verification through e-Government (e-Devlet). Individuals wishing to obtain a phone or internet subscription or apply for an electronic signature could quickly complete their transactions by providing approval through their e-Government accounts, accessed using their online banking credentials.

In recent years, however, incidents involving mobile lines being registered in another person's name, electronic signatures being obtained fraudulently, or various financial transactions being carried out through digital channels have become increasingly visible in the public sphere. These developments have created information and transaction security risks across many industries, particularly the electronic communications sector.
At this point, it became clear that additional measures were needed to further strengthen information and transaction security.

Analyses revealed that, in many cases, there was insufficient assurance that the individual carrying out a transaction was genuinely the person they claimed to be. In other words, the weakest link in the security chain was not the technology itself, but the human factor within identity verification processes.

In response to these developments, BTK reassessed the existing identity verification methods and introduced a new regulatory framework incorporating significantly stricter requirements. Under the new framework, the verification methods that may be used when establishing subscriptions are now subject to specific security standards.

Under the new regulation, individuals without a new-generation chip-enabled identity card—or whose cards are not functioning properly—will no longer be able to obtain a new subscription or port their mobile number. In other words, as of July, those without a chip-enabled ID card or passport will no longer be able to sign up for these services.

In addition, a “liveness check” requirement has been introduced for all existing subscribers. For certain types of subscriptions, subscribers will need to periodically verify that they are still alive and that they themselves continue to use the subscription. The aim is to enable faster detection of mobile lines being used in the names of deceased individuals, subscriptions opened with fraudulent identities, or accounts taken over by third parties.

It is clear that the new rules will directly affect not only operators and service providers, but all of us. In the near future, we will encounter stronger identity verification measures when obtaining a new mobile line, starting an internet subscription, purchasing television services, or accessing certain digital services. Simply submitting a photo of an identity card or providing basic confirmation will no longer be sufficient for many transactions. Methods such as using new-generation NFC-enabled identity cards, verifying identity through e-Government (e-Devlet), or confirming identity via video call will become increasingly common.

At first glance, these processes may appear to make transactions slightly more time-consuming, but their primary purpose is to prevent citizens’ identities from being misused by malicious actors. The goal is to significantly reduce cases of fraud and victimization resulting from mobile lines being opened, electronic signatures being obtained, or financial transactions being carried out in someone else’s name.

In short, while digital transactions will become more closely controlled, the protection of our personal data and digital identities will also become significantly stronger.

Türkiye's Meeting Point for Broadcasting and Media Technologies: BROADCASTEX 2026

Serkan Pul
Expotime

BROADCASTEX 2026 is being planned not only as an exhibition for the Turkish market but also as a regional business platform that will bring together industry professionals from Europe, the Balkans, the Middle East, North Africa, the Caucasus and Central Asia in Istanbul.

Istanbul's strategic geographical position, strong transport infrastructure and convenient access to surrounding markets form the foundation of the exhibition's growth strategy. The event is already attracting considerable visitor interest from Türkiye and international markets.

The exhibition aims to bring together television channels, radio broadcasters, digital media platforms, production companies, public institutions, municipalities, universities, content creators, photography and video professionals, and systems integrators.

Beyond Exhibition: Business and Knowledge Exchange

BROADCASTEX 2026 will go beyond the traditional trade fair format by offering a business-oriented platform where companies can connect with new customers, distributors, dealers and solution partners. Conferences held throughout the four-day event will address current industry developments, digital transformation, next-generation broadcasting technologies, content production, satellite communications and the future of the media industry.

During the practical workshop programme, industry professionals will share their expertise with exhibitors and visitors on subjects including professional camera operation, imaging technologies, filming techniques, production processes and next-generation broadcasting solutions.

While exhibitors will have the opportunity to present their products and solutions directly to their target audiences, visitors will be able to explore new technologies, experience products first-hand and meet face-to-face with leading industry representatives.

Serkan Pul: "We Aim to Make BROADCASTEX One of the Region's Most Important Broadcasting and Media Technology Events"

Serkan Pul, Co-Founder of Expotime Fuarcılık, shared his perspective on the objectives and industry vision behind BROADCASTEX 2026.

How did the idea of organising BROADCASTEX emerge?

For many years, Türkiye had lacked a comprehensive specialized trade fair that brought together all stakeholders in the broadcasting and media technology industries under one roof. Through our discussions with industry companies, we recognised a strong need for such an event.

We launched BROADCASTEX to meet this need and to establish a powerful platform focused on trade, professional networking and new business opportunities.

Despite this being the exhibition's inaugural year, what kind of response have you received from the industry?
Although this is the first year of our event, we have received a very strong level of interest from both Türkiye and international markets.

The participation of important institutions and brands such as TÜRKSAT, KULE A.Ş. and NIKON & DJI – KARACASULU is extremely valuable to us.

In addition, many prominent companies from the broadcasting, media, professional imaging, production, satellite and systems integration industries have confirmed their participation. This clearly demonstrates that the industry genuinely needs an event of this kind.

How do you evaluate TUYAD's support?
TÜYAD is one of the leading industry organisations representing the satellite and broadcasting technology sectors. Its support plays an important role in helping us reach relevant companies and industry professionals.

We believe that our cooperation with TUYAD will strengthen BROADCASTEX's position within the industry and make a significant contribution to the exhibition's long-term development.

What are the long-term objectives of BROADCASTEX?
We do not see BROADCASTEX as an event intended solely for Türkiye. Istanbul is located at the crossroads of Europe, the Balkans, the Middle East, North Africa, the Caucasus and Central Asia.

Our objective is to bring together broadcasters, technology manufacturers, distributors, systems integrators and investors from across this region in Istanbul. In the coming years, we aim to establish BROADCASTEX as one of the region's most important meeting points for broadcasting and media technologies.

What kind of exhibition experience can visitors expect?
We want our visitors to experience much more than an exhibition where they simply walk around the stands. Our goal is to create a comprehensive event where they can experience new technologies, meet industry professionals and closely follow the latest developments.

For this reason, conferences, technical presentations, practical workshops and brand events will be organised throughout the exhibition. Visitors will gain valuable insights into the future of the industry while also having the opportunity to experience new products and solutions first-hand.

Our aim is to transform BROADCASTEX into a strong and sustainable industry platform for both commercial connections and knowledge exchange.

Istanbul: The Industry's New Meeting Point
BROADCASTEX 2026 invites international manufacturers, technology providers, distributors, broadcasting organisations and media professionals to meet in Istanbul.

For companies seeking access to Türkiye's growing broadcasting and media technology market, opportunities to establish regional business connections and the potential to develop new commercial partnerships, BROADCASTEX 2026 is preparing to become an important international meeting point.

Digital Luxury in the Hospitality Experience: Full TV Otel

Ahmet Özturgut
Metesis

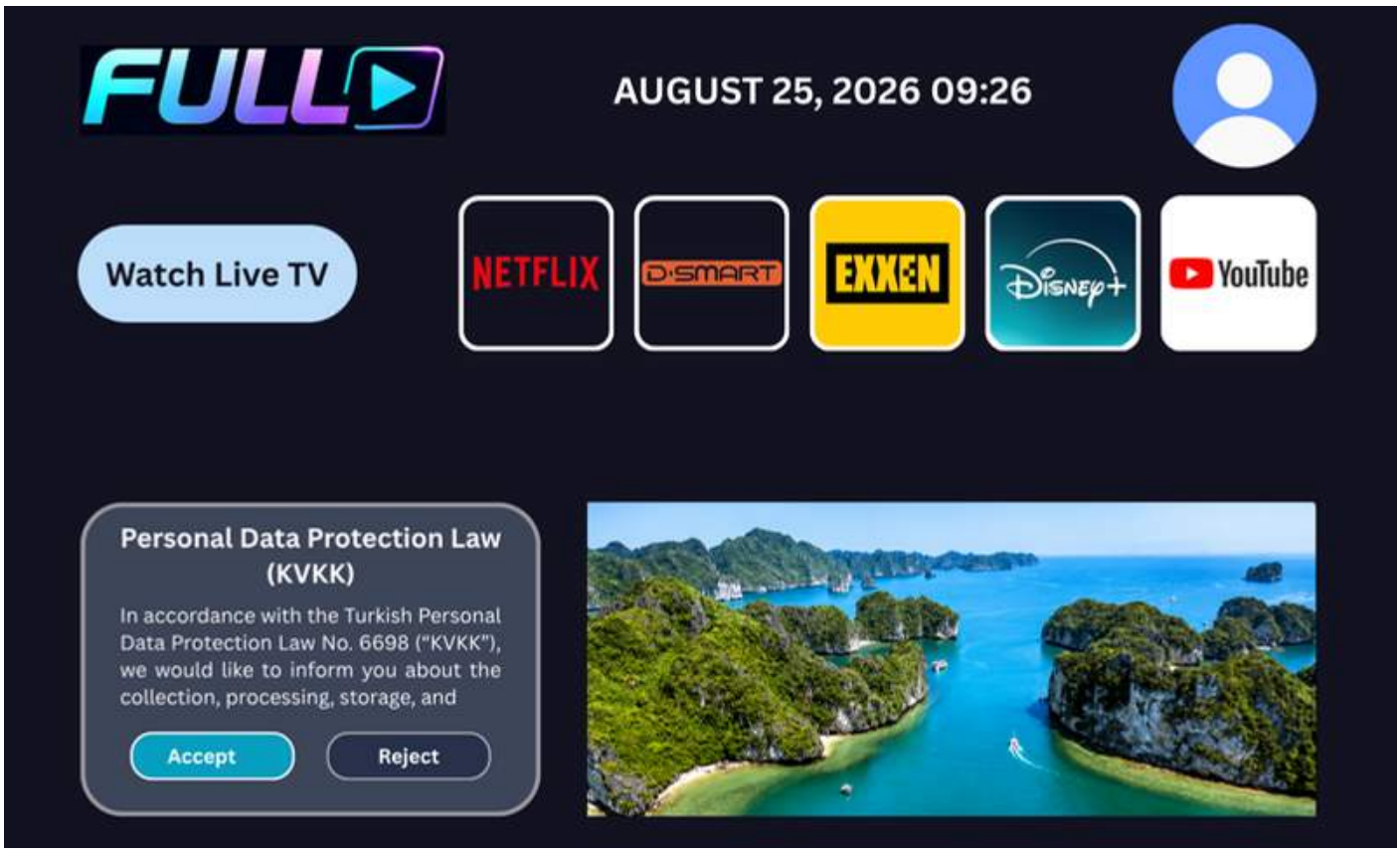
A modern travel experience is no longer just about a comfortable bed or good service. Today's guests expect their digital habits to seamlessly follow them into their room and want to enjoy the convenience of technology at every moment. FullTV Hotel transforms traditional hotel televisions from ordinary devices into dynamic entertainment and service hubs that become the heart of the guest room.

It all begins the moment guests enter their room. More than just a channel list, the system brings the room to life with a personalized welcome. Powered by Full TV's robust infrastructure, it delivers a seamless, high-definition viewing experience while giving guests effortless access to thousands of content options with a single action. Its thoughtful design philosophy eliminates complexity, turning TV interaction into an entirely intuitive experience.

The interface, designed with modern elegance in mind, makes the system easy to navigate for guests of all ages from the moment they pick up the remote. Fast, effortless, and visually refined, it is more than just software—it becomes a premium detail that complements the room's interior. Whether searching for a movie or exploring hotel services, every interaction feels equally smooth and seamless.

What truly sets Full TV Otel apart is its ability to transform communication between guests and the hotel into a seamless digital connection. Without leaving their room, guests can request housekeeping directly through the TV, browse the latest room service menus and place orders, or instantly discover information about the hotel's activities and amenities. This digital convenience not only streamlines hotel operations but also puts a personalized concierge experience right at the guest's fingertips.

Ultimately, Full TV Otel blends advanced technology with refined aesthetics to transform hotel rooms into "smart living spaces." By serving as both a powerful operational solution for hotel management and an enjoyable part of the guest experience, Full TV Otel raises the standard of hospitality to an entirely new level.



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The Ground Segment's Silent Revolution: Strong Support for Legal Broadcasting from TUYAD

TUYAD remains firmly committed to protecting intellectual property and commercial rights in the broadcasting industry, combating illegal broadcasting, and strengthening fair competition.

As the broadcasting industry undergoes rapid transformation with digitalization, protecting content and broadcasting rights has become more important than ever. At TUYAD, we clearly state our opposition to all forms of **password sharing, illegal broadcasting, piracy and unauthorized content distribution, platform activities conducted without an RTÜK license or other required legal authorizations, and unfair competition.**

Pay-TV operators, digital broadcasting platforms, and broadcasters make significant investments in content rights, technological infrastructure, licensing, and human resources. Therefore, protecting intellectual property, commercial rights, and broadcasting rights is critical not only for broadcasters but also for the sustainability of the industry as a whole.

Failure to adequately protect legal broadcasting and broadcasters' rights leads to a contraction of the industry, reduced investment, increased unregistered and unauthorized activities, and deeper unfair competition. Requiring organizations that comply with their legal obligations to compete with entities operating without being subject to any licensing or authorization process also has a negative impact on a healthy and sustainable market structure.

The fight against illegal broadcasting should not be viewed solely as a means of protecting broadcasters' revenues. It also means **protecting investment, employment, technological development, content production, and the future of the industry.**

The imbalance between organizations that fulfill their legal obligations, pay licensing fees, acquire content rights, invest in infrastructure, and create employment, and entities that broadcast without being subject to any licensing or authorization process **directly increases unfair competition.**

Failure to adequately protect legal broadcasting and broadcasters' rights can have serious consequences, including:

- Economic contraction of the industry,
- A decline in new investment,
- Negative impacts on content quality and diversity,
- An increase in unregistered and unauthorized activities,
- Losses in public revenues,
- A slowdown in technology and infrastructure investment,
- A reduction in employment opportunities,
- A decline in the competitiveness of legally operating organizations.

For this reason, the fight against illegal broadcasting should not be regarded merely as a matter of protecting the commercial rights of certain companies or platforms. It should be addressed as a shared issue concerning the future of the broadcasting industry as a whole.

At TUYAD, we attach great importance to ensuring that all organizations operating in the broadcasting industry are able to compete under equal and fair conditions. We believe that strong cooperation among relevant public authorities, regulatory bodies, broadcasters, platforms, and technology providers will play a vital role in combating illegal broadcasting.

At TUYAD, we stand for and support legal broadcasting. The development of our industry within a healthy, sustainable, and fair competitive environment is essential to ensuring the continuity of investment, employment, and technological innovation.

In this regard, we will continue our efforts with determination to protect broadcasters' rights and contribute to building a stronger broadcasting industry.

Protecting legal broadcasting is the foundation of a strong and sustainable broadcasting industry.

The Ground Segment's Silent Revolution: How Are Satellite Ground Stations Being Redesigned for the LEO Era?

Cem Odaman
Profen

Most news coverage of the satellite industry focuses on the space segment: How many satellites have been launched? When will a particular constellation be completed? How much capacity does each frequency band offer? Yet one of the most critical—and least discussed—aspects of this transformation is taking place in the ground segment. The paradigm shift driven by Low Earth Orbit (LEO) satellites is fundamentally redefining ground station design and network management.

From GEO to LEO: Why Is the Ground Segment Changing?

In traditional geostationary systems, ground station design is a more predictable engineering challenge compared with LEO systems. Positioned at an altitude of approximately 35,786 km, GEO satellites move synchronously with the Earth and therefore appear to remain fixed in a specific orbital slot when viewed from the ground. As a result, antennas in most applications are aligned with the relevant satellite position and do not require the continuous, high-speed angular tracking needed for LEO systems. However, GEO satellites are not completely stationary. Station-keeping maneuvers, orbital oscillations, and inclination—which may increase particularly toward the end of a satellite's operational life—can create a need for limited angular tracking or auto-tracking in certain scenarios. A relatively small number of high-capacity gateways, high EIRP requirements, and a comparatively predictable RF environment are among the key characteristics of this model.

With LEO, the picture changes completely. A satellite moving rapidly at an altitude of 500–1,200 km remains visible from a single location for only around 5–15 minutes. Maintaining uninterrupted data transmission within this short window requires the coordinated operation of numerous ground stations, rapid tracking mechanisms, and highly precise Doppler compensation. Mega-constellations such as Starlink, OneWeb, and Amazon Leo address part of this challenge within the space segment; however, the complexity of the ground segment does not decrease—on the contrary, it increases.

Four Key Engineering Challenges

1. Antenna Tracking and Handover Management: Because LEO satellites move across the sky at high angular velocities, each pass follows a different azimuth-elevation profile. Ground stations must accurately track satellites by performing real-time orbital calculations based on TLE (Two-Line Element) data. In commercial LEO gateway architectures, multiple antennas operate together at the same site to ensure uninterrupted service continuity, with automated "handover" mechanisms used between antennas during satellite passes.

2. RF Spectrum Management: LEO communications systems make extensive use of Ku- and Ka-band frequencies, particularly for broadband services, while S-band and other frequency bands may also be used for different missions. The growing number of satellite constellations and increasing spectrum-sharing requirements have made interference management a critical issue. Consequently, real-time spectrum monitoring, RF environment analysis, and dynamic frequency coordination have become fundamental components of modern LEO ground station infrastructure.

3. Software-Defined Ground Segment: Ground segment infrastructure is evolving from traditional hardware-based modems toward software-based, flexible, and multi-operator architectures. Through soft-modem approaches, the same physical infrastructure can adapt via software to the waveform and service requirements of different satellite operators. For teleport operators, this means reduced dependence on dedicated hardware, faster service deployment, and greater capital efficiency.

4. Network Management Systems and Automation: Managing dozens of satellite passes every day is not sustainable with human operators alone. Modern NMS (Network Management System) platforms integrate orbital prediction, resource scheduling, fault detection, and alert mechanisms within a unified environment. With anomaly detection and predictive maintenance algorithms, abnormal signal behavior can be identified before it develops into an operational issue.

The ground segment of the future will not be limited to managing LEO systems; it will evolve into multi-orbit architectures that orchestrate GEO, MEO, and LEO networks together. Dynamically routing traffic across different orbits based on latency, capacity, application type, and service continuity is becoming one of the core functions of next-generation network management platforms.

Türkiye's Position: New Opportunities in the Multi-Orbit Satellite Ecosystem

As LEO systems become increasingly widespread, the role of the ground segment is undergoing a fundamental transformation. In traditional GEO architectures, ground stations are largely designed around fixed orbital geometry. LEO systems, by contrast, require real-time connectivity with dozens or even hundreds of satellites in continuous motion. This shift is transforming the ground segment from a relatively passive antenna-and-modem infrastructure into a highly complex system requiring dynamic tracking, automated handover management, real-time resource allocation, spectrum coordination, and software-defined network management.

This transformation does not mean that existing GEO infrastructure can simply be adapted to LEO through basic equipment upgrades. A LEO-compatible ground segment requires high-precision tracking antennas, low-latency modem and baseband systems, automation software capable of managing multiple satellite passes, network orchestration layers, flexible waveform support, cybersecurity mechanisms, and high-capacity terrestrial backbone connectivity. In gateway operations in particular, antennas must do more than simply track satellites: they must also manage handovers seamlessly, optimize spectrum utilization, and adapt to the technical standards of different satellite operators.

With its geostrategic location, advanced telecommunications infrastructure, strategic role along major energy and transportation corridors, and accumulated expertise in satellite communications, Türkiye has significant potential to become a major hub for next-generation LEO/MEO ground segment architectures. Its advantageous geographic reach across Europe, the Middle East, North Africa, the Caucasus, and Central Asia gives Türkiye a strategic position not only as an end-user market but also as a hub for teleport operations, data downlink services, gateways, regulatory coordination, and operational management.

For Türkiye, the primary opportunity lies not only in bringing LEO services to market, but also in establishing the ground infrastructure required to support these services on a regional scale. A well-designed ground segment architecture could position Türkiye as a regional connectivity and operations hub for multiple LEO, MEO, and GEO operators. In this context, multi-orbit support, operator-neutral infrastructure design, software-defined modem architectures, API-based network management, and integration with terrestrial data centers will be among the key factors determining Türkiye's competitive advantage.

Terrestrial Infrastructure Is Not Just a Broadcasting Platform, but a Strategic Communications Asset

Burhan Kandemir
PTT Kule A.Ş.

Terrestrial broadcasting is often viewed simply as a "broadcasting platform." In reality, however, terrestrial infrastructure is not merely a method of content distribution; it is a strategic infrastructure and a fundamental component of national communications security.

Today, the shutdown of analog transmitters is sometimes interpreted as signaling the end of terrestrial broadcasting. However, phasing out analog systems does not mean abandoning terrestrial infrastructure. On the contrary, it demonstrates the need to replace an inefficient and fragmented structure with a more modern, centralized, and energy-efficient architecture.

Analog transmitters have become unsustainable due to their high energy consumption, inefficient use of spectrum, and operating costs. Nevertheless, terrestrial infrastructure retains its strategic importance because it provides an independent distribution network that does not rely on satellites, can reach large audiences without internet access, and offers a reliable communications channel during disasters and emergencies. Therefore, the issue is not the shutdown of analog systems, but rather the modernization of the infrastructure.

Globally, terrestrial broadcasting is not being abandoned—it is being transformed. Many countries, particularly across Europe, are investing in DVB-T2 and DAB+ technologies, strengthening the transition from analog to digital broadcasting, centralized transmitter systems, and energy-efficient broadcasting architectures.

In Türkiye, the shutdown of analog transmitters has occasionally created the perception that terrestrial broadcasting is being abandoned. However, the absence of a robust terrestrial backbone could create a strategic vulnerability. For this reason, Türkiye needs to enable multiple television broadcasts through a unified transmitter architecture using DVB-T2, transform radio broadcasting into a digital, data-enabled service through DAB+, and establish a centralized broadcasting ecosystem that reduces both energy consumption and carbon emissions.

Modern digital systems require fewer transmitters, consume less energy, and involve lower maintenance costs. This not only reduces costs for broadcasters but also contributes to nationwide energy savings and sustainable development objectives.

Terrestrial infrastructure is not merely an option; it is a strategic asset for communications independence and public safety. When modernized, it can continue to serve as one of the country's most powerful distribution backbones. DVB-T2 and DAB+ technologies form the foundation of this transformation.

In this transformation, Kule A.Ş. is playing an important role in modernization through its broadcasting operations from Çamlıca Tower. Currently, DVB-T2 digital television broadcasts are being delivered across two multiplexes carrying 17 television channels, while DAB+ digital radio broadcasts are being provided across two multiplexes carrying 25 radio channels. This represents the practical implementation of a centralized, energy-efficient, multi-channel broadcasting architecture.

In the coming period, the digital terrestrial broadcasting infrastructure is planned to be expanded across major cities. DVB-T2 infrastructure work has largely been completed in Adana, Ankara, Antalya, Bursa, Gaziantep, İzmir, Konya, Malatya, and Trabzon, with these cities expected to gain access to digital terrestrial broadcasting in the near future.
In conclusion, the objective is not to phase out terrestrial broadcasting, but to transform it, strengthen it, and redefine its strategic value.

Is the age of Mobile Reflective Antennas Gone?

No, even today with all the options that exist for Companies and People, the tried-and-true parabolic VSAT is still a strong contender. Since its inception in early 1980, the receive only parabolic dish-based system has been providing information to users' world- wide.

Beginning in 1984/1985, the advent of the bidirectional parabolic antenna has introduced a huge advancement to the communication world, with its flexibility and usefulness. It was during this time that founders of C-COM Satellite Systems Inc. began to form as an idea.

In 2003 when C-COM released their first mobile (On the Pause) antenna system, which was coupled with the Hughes Modem and its DirectWay Internet service. Back then this Internet service was slow, but you could connect to the Internet where no terrestrial connection existed.

As more people learned of the availability of Internet in remote areas, the number of applications for that connectivity just kept growing. Applications that people had not thought about were now possible in those remote areas.

C-COM began to manufacture a great variety of systems, both in terms of size and in terms of Service Providers (the companies that provide the Internet Connection). All these systems were using Geostationary Satellites (GEO), so satellites were placed directly over the equator in the Clark Belt where they can synchronize with a specific point on the earth, as the earth rotates.

Given the height of the satellite over the earth, the area that could acquire the signal were very large, covering whole Continents, even multiple Continents at times. This made the service possible for On the Pause Satellite Terminals to move and cover very large regions. Only one account needed to be established to guarantee service in a very large area.

As the demand for more Bandwidth (the volume of data you receive on your computer) and the Speed of that Bandwidth grew, Satellite Operators looked for clever ways to handle the demand. First, it was a higher frequency, instead of Ku-Band, Ka-Band was created. This provided both the Bandwidth and the Speed being demanded by the customers.

The operators of the Satellites found themselves being asked for even more Speed and Bandwidth, so a new solution needed to be found. The idea of a moving group of Satellites, provide answers to both requests. We now see operators deploying both Low Earth Orbit (LEO) and Medium Earth Orbit (MEO) satellites. These orbits are much closer to the Earth than the GEO satellites, so the coverage area of each satellite is much smaller (but the Bandwidth and Speed is unaffected by the neighboring satellites).

FLY-101-LEO-MEO Tracker

Moving a parabolic antenna is certainly possible and done quite often today, but as this is performed using mechanical means, the issue of maintenance becomes an issue. To address this concern, companies like C-COM have begun to create Electronically Steerable (ESA) Phased Array Antennas, which do not use mechanical means to point the antenna.

To design an ESA Phased Array antenna, one must purchase the Integrated Circuits to convert the RF Signal to a usable signal for the Modem. Over the years the IC's available have all had shortcomings. This is why C-COM has decided to design and manufacturer their own Beam Forming Integrated Circuits (BFIC).

C-COM is now building ESA Phased Array Antennas, for use on the Ka-Band, for GEO, MEO and LEO satellites.

iNetVu® iNmotion Ka-band ESA LEO Antenna

The sale of Mobile Reflective Antennas continues, as so many industries rely on the consistent operation of these systems in the most demanding conditions and locations on earth. It will take the ESA Phased Array a few iterations to create the same level of confidence and reliability that the users have come to expect from the parabolic On the Pause, VSAT systems.

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THE NEW CENTER OF THE GLOBAL POWER STRUGGLE: CHIPS...

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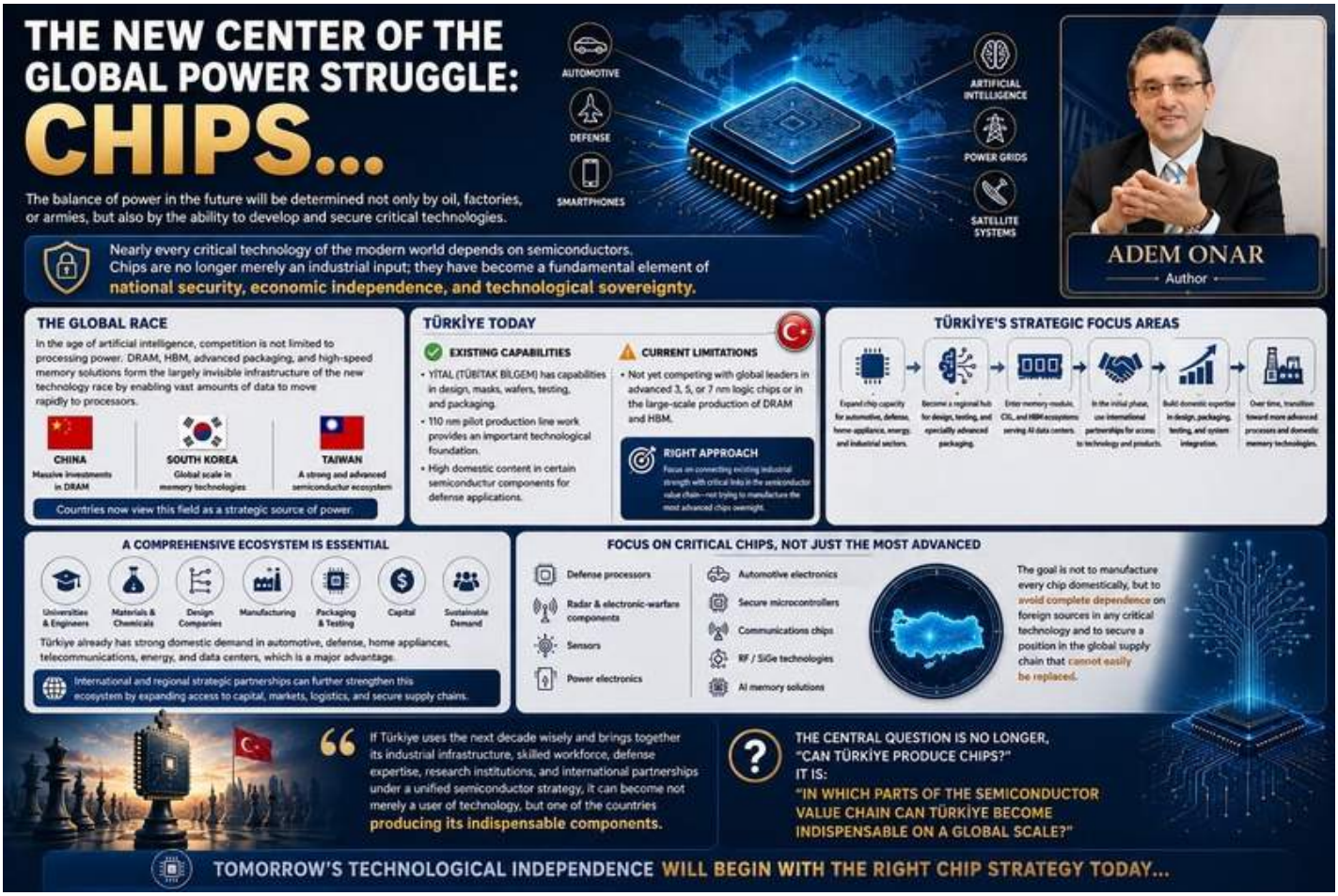
The center of gravity in the global struggle for power is shifting rapidly.

Once shaped largely by oil, energy routes, and military capacity, global competition is now increasingly centered on microchips. Nearly every critical technology of the modern world—from automobiles and fighter jets to smartphones, power grids, artificial intelligence, and satellite systems—depends on semiconductors. Chips are therefore no longer merely an industrial input; they have become a fundamental element of national security, economic independence, and technological sovereignty.



In the age of artificial intelligence, competition is not limited to processing power. DRAM, HBM, advanced packaging, and high-speed memory solutions form the largely invisible infrastructure of the new technology race by enabling vast amounts of data to move rapidly to processors. China's investments in DRAM, South Korea's scale in memory technologies, and Taiwan's semiconductor ecosystem clearly show that countries now view this field as a strategic source of power.

Türkiye is not starting this race from scratch, but it is not yet operating on the same scale as the world's semiconductor giants. YİTAL, operating under TÜBİTAK BİLGEM, has capabilities in integrated-circuit design, masks, wafers, testing, and packaging, while work toward a 110 nm pilot production line points to an important technological foundation. High domestic-content rates achieved in certain semiconductor components for defense applications are another tangible sign of existing capability.

At the same time, Türkiye is not currently in a position to compete with global leaders in advanced 3, 5, or 7 nm logic chips or in the large-scale production of DRAM and HBM. Its strategy should therefore be not to attempt to manufacture the most advanced chips overnight, but to connect its existing industrial strength with critical links in the semiconductor value chain.

Chip capacity for the automotive, defense, home-appliance, energy, and industrial sectors should be expanded. Türkiye should aim to become a regional hub for design, testing, and especially advanced packaging, while entering the memory-module, CXL, and HBM ecosystems serving AI data centers. In the initial phase, international partnerships can provide access to technology and products while Türkiye builds domestic expertise in design, packaging, testing, and system integration. Over time, this foundation can support a transition toward more advanced processes and domestic memory technologies.

A semiconductor industry is not simply a matter of building a factory. It requires a comprehensive, long-term ecosystem spanning universities and engineers, materials and chemical infrastructure, design companies, manufacturing, packaging and testing, capital, and sustainable demand. Türkiye already has strong domestic demand in automotive, defense, home appliances, telecommunications, energy, and data centers, which is a major advantage. International and regional strategic partnerships can further strengthen this ecosystem by expanding access to capital, markets, logistics, and secure supply chains.

For Türkiye, the real opportunity lies in "critical chips" before "the most advanced chips." Defense processors, radar and electronic-warfare components, sensors, power electronics, automotive electronics, secure microcontrollers, communications chips, RF/SiGe technologies, and AI memory solutions could become priority areas for a strategic leap. The goal is not to manufacture every chip domestically, but to avoid complete dependence on foreign sources in any critical technology and to secure a position in the global supply chain that cannot easily be replaced.

Ultimately, the balance of power in the future will be determined not only by oil, factories, or armies, but also by the ability to develop and secure critical technologies. If Türkiye uses the next decade wisely and brings together its industrial infrastructure, skilled workforce, defense expertise, research institutions, and international partnerships under a unified semiconductor strategy, it can become not merely a user of technology, but one of the countries producing its indispensable components.

The central question is no longer, "Can Türkiye produce chips?" It is: "In which parts of the semiconductor value chain can Türkiye become indispensable on a global scale?"

Tomorrow's technological independence will begin with the right chip strategy today.

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