Televes®

QUARTERLY NEWSLETTER

INFO

No. 69 DECEMBER 2023

Promoting sustainability. Televes leads in the use of clean energy

In a world where sustainability has become an inescapable priority, Televes and the companies that make up Televes Corporation have emerged as leaders in adopting clean energy—specifically solar energy—as a powerful tool to carry our operations to a more sustainable future. With a firm commitment to innovation and environmental responsibility, we have achieved significant advances in **integrating solar energy at our operating centers**.

Televes' vision goes beyond adopting solar energy as a source of consumption; we are determined to lead the change toward a cleaner, more sustainable world. Currently, the corporation has multiple solar energy installations at our main operating centers, which amount to a **total capacity of 730 kilowatts**.

The Televes headquarters is a testament to this commitment. Four solar energy installations, with a capacity of 100 kilowatts each, dot the rooftops of our buildings. Two of these installations were recently installed in the R&D center. They generate a real, measurable impact on energy consumption, supplying up to 30% of the center's energy, with an annual average of around 10%.

And we're not stopping there. Our logistics centers and raw materials warehouse have another two solar installations, with capacities of 100 and 30 kilowatts, respectively. These installations have achieved more impressive results, with peaks of up to **90-100% of the buildings' energy needs**, and averaging around 40% annually.

Other companies in the Televes Corporation are joining this trend. Gamelsa, TRedess, and the compliance assessment lab Ladetel have also taken significant steps in this direction. They have implemented solar installations with capacities of 100, 50, and 50 kilowatts, respectively, leading the way with solar power systems that at their peak can cover up to 75-85% of the total energy required, demonstrating that **sustainability is a goal that can be successfully achieved**.

There's no more responsible way of raising environmental awareness than by leading with our actions. Our leading position in the industry means we must **set an example with specific, measurable actions**. The Corporation is determined to continue investing in innovative technologies that promote efficiency and sustainability throughout all of our operations. Each step we take in this direction helps to reduce our carbon footprint and to position ourselves as an example to be followed in terms of adopting responsible business practices ■

Our corporate facilities are seeing significant achievements in solar energy consumption, with peaks at some centers of up to 90-100% of energy needs being covered, with an average around 40% annually.

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Javier Ruano
Managing Director Televes USA

What would you say Televes USA's focus is right now?

We're currently prioritizing two issues. On the one hand, reinforcing professional solutions for infrastructures through distributors, operators, and broadcasters for RF distribution, optical fiber, and signal measurement devices. On the other, providing support to distributors and points of sale for antenna products and accessories.

How have the subsidiary and the American market evolved since you joined the team?

We have very little in common with the subsidiary that started out by providing technical support for SAT/QAM transmodulation for the DISH Network. Today, we've managed to develop a wide range of products specific to the North American OTA market.

The online market is exploding. What's the subsidiary's plan to facilitate digital purchases?

We've launched a very intuitive version of our website and we've been working for years with the e-commerce side of strategic distributors such as Lowe's and Menard's. The next step will be launching our very own e-commerce platform, which will offer our premium TV antennas and a curated selection of OTA accessories. Our goal is to capitalize on the deployment and expansion of NextGenTV/ATSC3.0 and users' return to DTT when canceling pay television subscriptions (cord cutting).

Professionally trained in the Televes R&D department, Javier Ruano joined the subsidiary in 2010 to strengthen the brand's image in the U.S. He tells us what the subsidiary is working on.

What do you feel are the company's key values that best fit the American market?

Having a product of proven quality with support that's very accessible to the customer opens up opportunities for partnerships with larger, structured companies. The way we design and manufacture our products means we have more agility to react to the demands of our partners. Customers greatly value our know-how, both at the head office and on the ground in the U.S.

Tell us how you see Televes USA in the medium and long term.

We're hoping to leverage the image of a mature brand in the professional market to take advantage of our recurring business and our presence in the antenna and accessories market, where our e-commerce platform will be the major catalyst. Additionally, the US subsidiary is well-positioned to be a leader in monitoring and measurement solutions for ATSC 3.0 network operators and SFN solutions. Our push to have a greater presence in organizations such as ATSC, SBE, and NAB will reinforce our role ■

Televes Corporation®

DR. PETER DOSTERSCHILL AND THE LEGACY OF INTELLECTUAL PROPERTY PROTECTION AT TELEVES

Dr. Peter Dosterschill, an expert in intellectual property with a brilliant professional career, passed away on September 20. We are especially mourning his loss at Televes, where he advised us for over 30 years on intellectual property matters.

Dr. Dosterschill's extensive experience included a Doctorate in Engineering from the University of Munich, his titles of European patent attorney, Spanish industrial property agent, and German patent agent, and his work at institutions such as the Max Planck Institute, the University of Santiago de Compostela, Siemens AG, and Bosch Siemens appliances, as well as his numerous speeches and publications.

Dr. Dosterschill played an essential role in protecting Televes' innovations. Before his arrival, we had trouble protecting our innovations due to the lack of experience in Spain in the field of intellectual property. This led to problems preserving our exclusive use of some valuable technology.

Dr. Dosterschill helped us create an intellectual property department and to make strategic decisions about registering patents. This work involved the entire organization, from R&D to Marketing.

As a result of Dr. Dosterschill's work, Televes has generated numerous patents and has won all legal proceedings related to intellectual property violations.

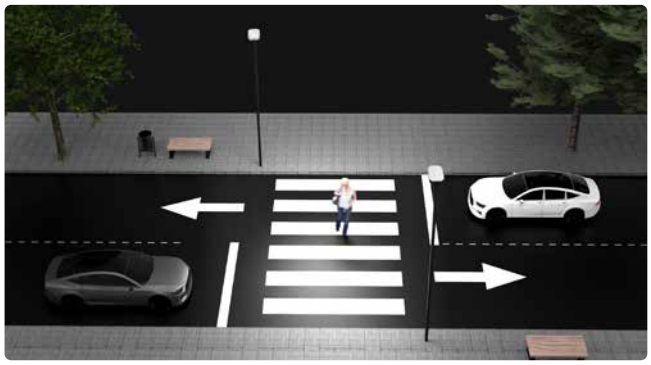
His worked has helped protect Televes' innovative nature. His loss has been hard for us, but also for the field of intellectual property in Spain and Europe.

Rest in peace, Dr. Peter Dosterschill ■

ⓘ You can read the full version on our website.

CIES Crosswalk light for crosswalks and low-traffic areas

Smart lighting to protect citizen safety



People's safety is a priority when developing cities. This includes everything from preventing accidents in **crosswalks** to protecting against attacks or thefts in **low-traffic areas** at night. In response to this challenge, we've developed the **smart lighting solution CIES Crosswalk**, which automatically regulates the level of light to optimize visibility in crosswalks and low-traffic areas. This new, optimized lighting solution increases traffic safety and reinforces the citizen's feeling of protection, while also providing energy savings.

The solution consists of **CIES Crosswalk lights, with specific optics and color temperatures** for crosswalks (or paths) and highly sensitive **motion sensors**. Thanks to the sensors, the lights **automatically regulate their level of brightness** depending on whether or not pedestrians are present. The lights operate at 30% of their power while the area is empty, and they increase to 100% when they detect pedestrians. Thus, they **optimize savings and limit light pollution** by operating at maximum power only when necessary.

Unlike other road safety lights, CIES Crosswalk offers **optics for both sides** of the crosswalk, allowing cities to make use of existing lampposts. The **motion sensors communicate with one another**, simultaneously illuminating a crosswalk, or progressively lighting a path. The sensors have **multiple programmable parameters**, such as response time, lighting percentage, or the time they stay on, to adapt the solution to the specific needs of each scenario.

Like the rest of the CIES range, **CIES Crosswalk is an environmentally friendly light**. It is made with a high-tech, corrosion-proof polymer and using manufacturing processes that minimize its carbon footprint, thereby offering a **durable, environmentally friendly** solution. Additionally, it complies with the strict requirements of the prestigious Canary Islands Institute of Astrophysics (IAC), meaning it is suitable for installing in areas with **special protections for the night sky**.

CIES Crosswalk is a **smart, durable, customizable, and environmentally friendly option**, ideal for improving citizen safety in an efficient, green manner ■

More information at:
cies.televes.com

IDEA

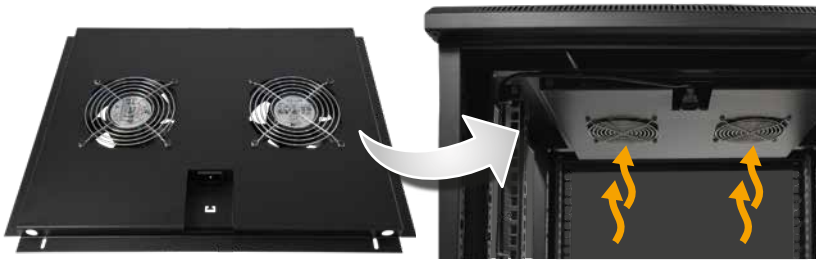
Use network cables in different colors to easily identify services

In any telecom infrastructure that consists of a network of copper pair cables, it's common for different services to exist side-by-side. Depending on the nature of the installation, the most common are: **Internet, VoIP, CCTV, and IPTV**. These services may have their own dedicated cable or be combined in the same cable, through independent VLANs. Thus, each installation is different, and it can get complicated to recognize the different services at the switching point (router, switch, rack, network terminal boxes, etc.), i.e., where service distribution begins.

A good practice for installers and integrators is to **link colors to services, and use cables in those colors to identify them visually**. It's a very simple idea, but one that saves a lot of time.

The typical colors used to complement white are: gray, blue, red, and green, which means you can visually identify a total of up to five different services (or sets of services). That's why these colors can be found in our range of Cat 6 U/UTP network cables, which are also available in different lengths ■

Do I need to install fans in my rack?



Yes, whenever a rack is used to house active equipment that uses electricity, **a forced ventilation system must be installed.** This allows the heat generated by electrical components to be dissipated, with an appropriate range of temperatures maintained. A rack without ventilation would act like a closed box, with the heat generated by the equipment accumulating inside and causing the internal temperature to rise.

Many racks include passive ventilation as part of their structure. This consists of a series of holes or slots in the solid covers found on the top and bottom of the rack's frame. These openings allow air to circulate through the structure and out of the rack, by the process known as natural convection.

However, in any situation where **active equipment** is operating with electricity, this passive form of ventilation may not be sufficient, so adding **one or more fans** to your system is highly recommended ■

TELEVES FACILITIES

NEW TERMINAL AT THE ABU DHABI AIRPORT
(UNITED ARAB EMIRATES)

With a capacity of 45 million people and 11,000 passengers per hour, the new terminal offers a **fluid biometric travel** experience, from check-in to take off.

Televes supplied the airport with an IPTV solution that integrates and distributes the different management programs across all viewing points, with informational or commercial content, weather information, radio, and much more.

The Televes package of solutions includes an **IPTV headend to receive digital services** that allow streaming through the network, a **middleware server to offer interactive television**, a **VoD server** that allows audiovisual content to be designed through the deployed TVs, as well as **set-top boxes that receive and process the IPTV channels** on the different screens.

This solution is flexible and scalable to keep pace with the airport's growth, like the emergency alert system, which can be shown on the TVs with a customized message for each event ■

AMETIC Encuentro de la Economía Digital y las Telecomunicaciones

AMETIC #SANTANDER37
(SANTANDER, SPAIN)
AUGUST 30 - SEPTEMBER 1

Our general director of strategy gave a speech offering Televes' perspective on cities' sustainability challenges, and how a connected building can meet the demands of digitalization processes.

CEDIA EXPO
(DENVER, COLORADO, USA)
SEPTEMBER 5-7

Our subsidiary in the U.S. participated with a large stand to present our advanced solutions for building connectivity, with a special emphasis on OTA solutions with our intelligent antennas.

SONEPAR MOVE 2023
(BERLIN, GERMANY)
SEPTEMBER 20-21

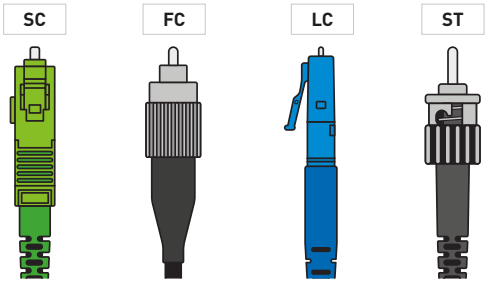
Our subsidiary Televes Deutschland had the opportunity to exchange opinions as a #businesspartner with all the members of the Sonepar team. The event was well executed and had a fun format to strengthen ties and make progress together ■

The importance of the color code in optical fiber

How to identify the types of connectors and adapters and understand their compatibilities

Choosing the type of fiber, connectors, and adapters is a decision that every fiber installer must make for each type of installation. If there is existing optical equipment, its specifications and connectors will determine that decision, as the technologies and connections must be compatible.

The connection is usually the most confusing part, as **optical connectors do not necessarily have to be the same to be compatible**. To understand this, we need to know that an optical connector consists of **two properties: the mechanical part of the connector, and the polish type of the internal fiber** that it includes. At the mechanical level, two connectors are compatible if and only if both connectors are of the same type (SC, FC, LC, ST).



On the other hand, in terms of polish type, connectors can be compatible without being the same. In fact, an APC polish type requires an APC polish (both at an angle), but PC and UPC can be mixed (both flat polish types).

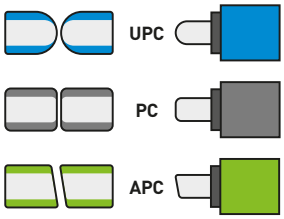
Polish compatibilities

Contact
APC + APC

Contact
PC + UPC, UPC + UPC, PC + PC

Contact
APC + UPC, APC + PC

While the type of mechanical connection can be recognized visually due to the shape and size of the connector, the polish type is impossible to distinguish by sight alone. Therefore, the industry uses **a color code that identifies the different polish types** (blue, gray, and green).



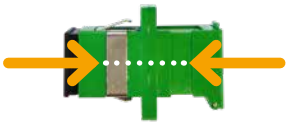
THE COLOR CODE FOR ADAPTERS

Fiber adapters consist of two female ends, which allow two male fiber connectors to be connected. There are different types of adapters depending on the mechanical connection they offer (SC, FC, LC, ST), which may be different on each end. Thus, there are adapters that join two connectors that are mechanically the same, but there are also adapters that join two connectors of different types.

Adapter for two of the same connectors: **SC with SC**

Adapter for two different connectors: **FC with SC**

The polish type does not apply to these female adapters, since they only join two male connectors mechanically. Therefore, it is the connectors that determine the polish type, and it is essential that they be compatible.



A female adapter does not have a polish type, as it depends on the connectors that are attached to it.

Although the polish type is a property that does not apply to female adapters, **you may see adapters that are the color of the different polish types** (blue, gray, and green). The purpose of the color is to ensure that the installer uses them consistently with the installation's polish type, so that it can be identified easily. Thus, if the adapters are green, you'll know that the connections have an APC polish. **However, this is only a usage recommendation**, as the adapter will work properly with any polish type, regardless of its color (provided the connectors have compatible polish types) ■

Don't miss it!

Offer interactive TV to your guests without replacing your traditional TV headend

Sometimes we hear from hotels that want to implement a new interactive TV service, but they don't want to replace their traditional TV headends.

In the latest update to the **Arantia TV service, a new feature has been added that can transmit RF channels** to a hotel's rooms using this type of headend. This provides a very beneficial solution in these scenarios, by making it possible to **implement a Arantia TV service over the existing infrastructure with no need for a new cable network or extensive and costly installation work**.

This interactive TV service can be implemented:

- Over an existing COAXDATA NETWORK.
- Over an existing TRADITIONAL COAXIAL NETWORK + WI-FI NETWORK.
- Over an existing TRADITIONAL COAXIAL NETWORK + existing STRUCTURED CABLE INFRASTRUCTURE.

This new feature also offers other benefits, such as **simple configuration using the Arantia TV management tool**, which allows addition of RF channels from DVB-T/T2 and DVB-C sources to the list of channels on approved Samsung Tizen and/or LG televisions, jointly with other sources of IP channels ■

ⓘ You can read the full version on our website.

Televes INFO is also available in: German, French, Italian, Polish, Portuguese, and Spanish.

SmartKom

Filters, mixes, amplifies and balances
at the touch of a button

READJUST AUTOSCAN

Intelligent mast amplifier that combine the functions
of a TV installation, by filtering, mixing, amplifying and balancing the DTT signal
with just pressing a button.

DESIGNED FOR TV DISTRIBUTION IN FAMILY HOUSES

- All in one
- Automatic adjusment
- High channel selectivity
- Rejection of 4G/5G signals
- Configuration with ASuite