



CEGAELECTRIC



Developed from the distribution, to cover the needs of the energy industry sector in distribution, transmission and generation.

By **CEGADRONE**
Group Juan de Frutos García

CEGA ⚡ ELECTRIC

Herramienta vía gis para el mantenimiento de activos técnicos de distribución con rpas.



THE APP

I+D+I DIGITALIZACIÓN.

GIS map viewer and data integration for UAS inspections with the same customer structure for SMARTGRIDS management.

SMARTGRIDS Information & management / Predictive maintenance.

Georeference from the assets to be inspected.

Total control and georeferencing DATA obtained from the UAS, integrated with same client's assets data structure.

Data capture with UAS sensor (RGB/Thermographic).

Capture and georeferenced RGB / IR data with real-time asset defectology reports, on web service platforms and cloud-based maps, immediate warnings of critical inspection failures in real time.

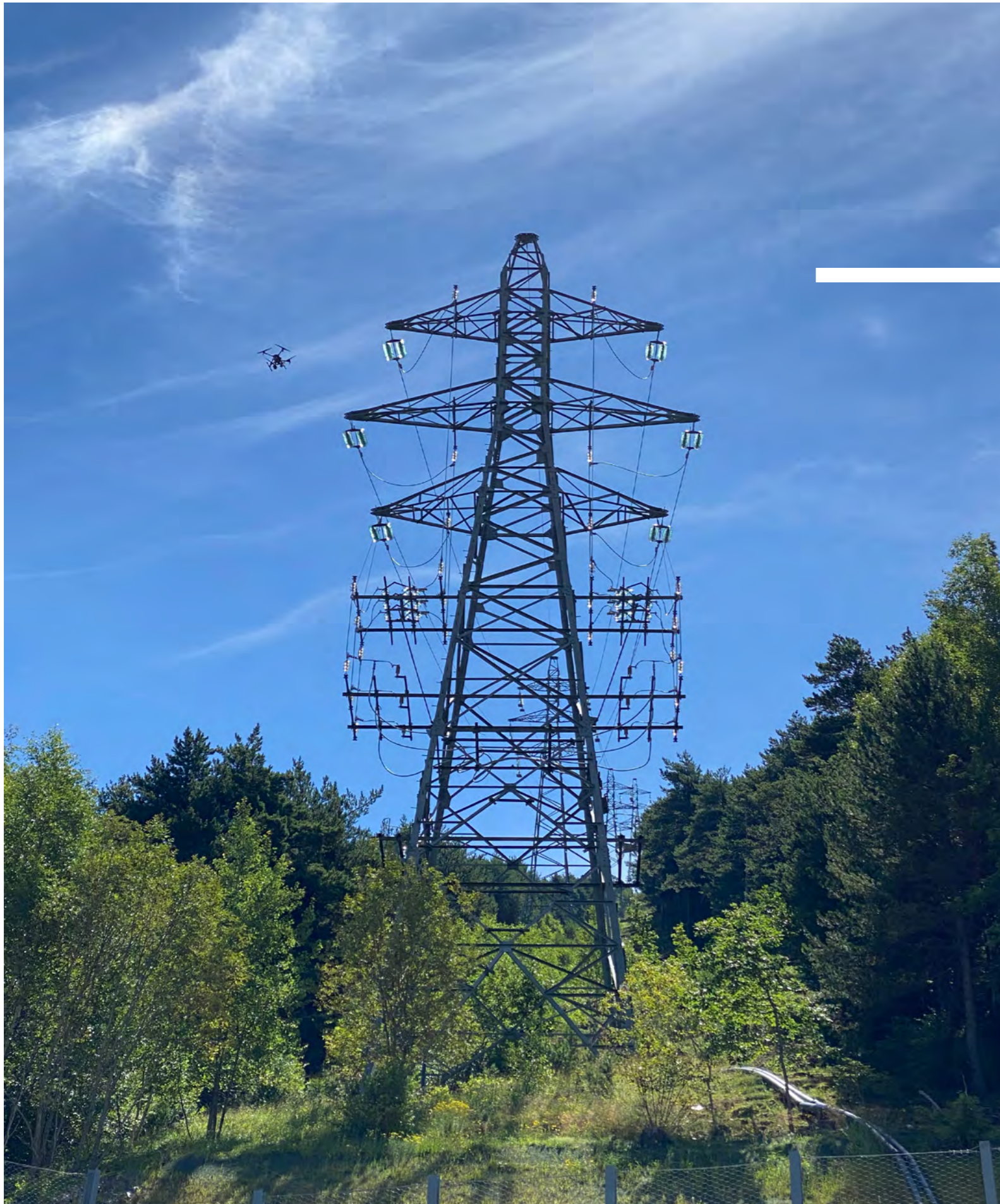
Real-time UAS inspections online map viewer.

Cloud-based Responsive online mapping platform to manage the progress and status of UAS inspection assets, in real time, by the customer's maintenance department.

AGENDA 2030



The development and interaction of technologies applied by CEGADRONE, CEGAELECTRIC & ELECTRICGREEN, meet the standards of the Sustainable Development Agenda 2030.



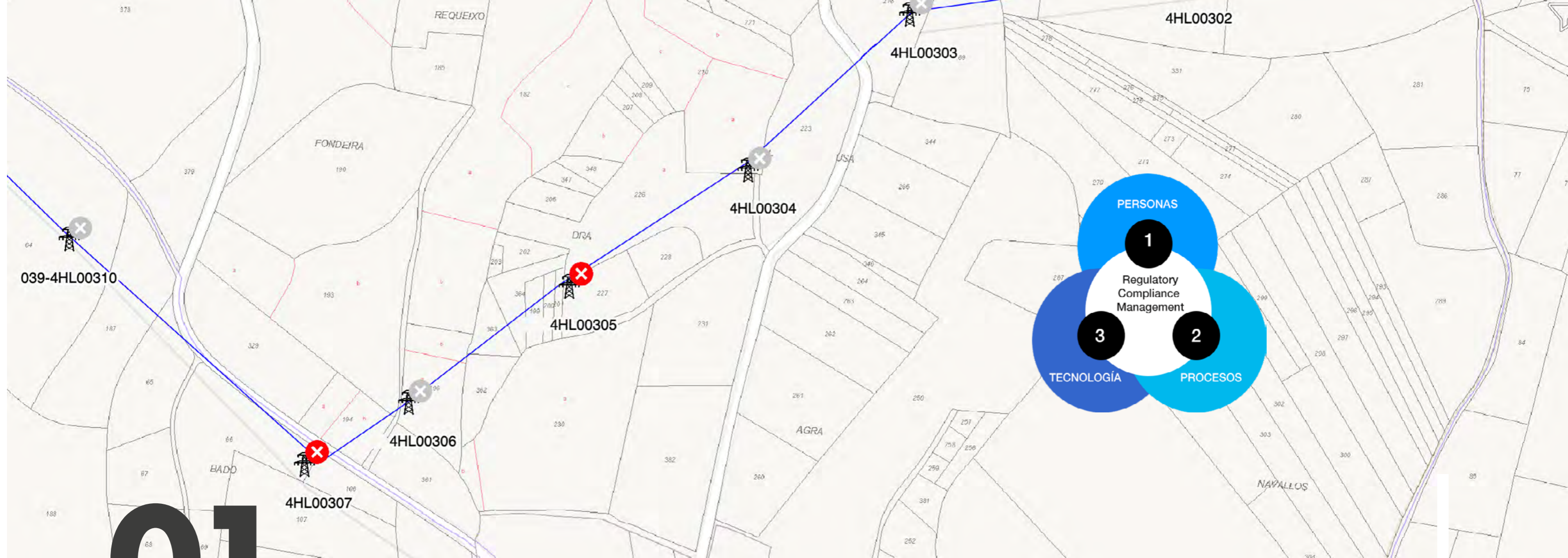
The integral solution.

CEGAELECTRIC, allows to the transmission, distribution and generation companies to evolve from the traditional maintenance model, to a predictive maintenance **SMARTGRIDS** management, based on the real, traceable and tangible condition of the assets and its global risk, ensuring the optimal maintenance of each one of them, associated to a **GRID** systems.

The capture of georeferenced RGB / IR data, generate reports of defectology and vegetation in real time, on a GIS platform via Web, cloud-based, with immediate warnings of critical failures and vegetation risk among lines, trees, vegetation and other obstacles.

The **ELECTRICGREEN** functionality is an efficient and affordable tool for the management of vegetation around the Power Lines: taking images, developed for the management of assets in distribution and transmission of energy.

- Identification by type of risk, controlling not only the growth capacity and invasion within the easement area, but also the control of the clearing operations, carried out, or to be carried out.
- Risk detection of species and trees, in or near this easement area, all within the robust system, within **CEGAELECTRIC'S APP**.
- Its operational and visual simplicity does not generate additional structural costs in asset management.



01.

CEGAELECTRIC, the most complete solution on the market for **SMARTGRID** digitization and asset management.

CEGAELECTRIC, is the response to the challenge of maintaining and renewing assets within distribution, transmission and generation, as key sectors within the energy transition and the 2030 agenda, all of them, with complex regulatory frameworks, such as the process of updating and digitization of assets and **SMARTGRID**.

It offers to the companies, the management of the data and the control of the state of their infrastructures and other elements, turning them into useful, traceable and tangible knowledge. **CEGAELECTRIC'S** mission is to focus its efforts and resources on critical or damaged assets and to know its status and the associated risk at all times.

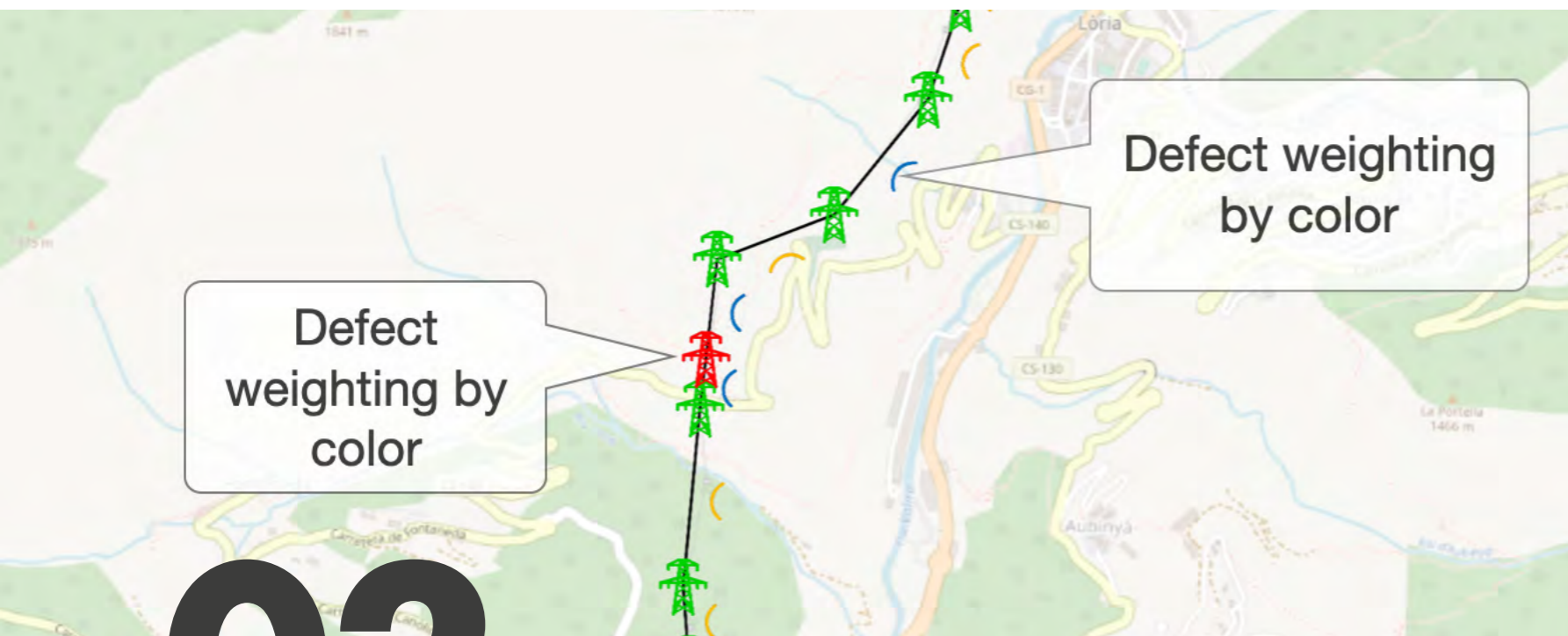
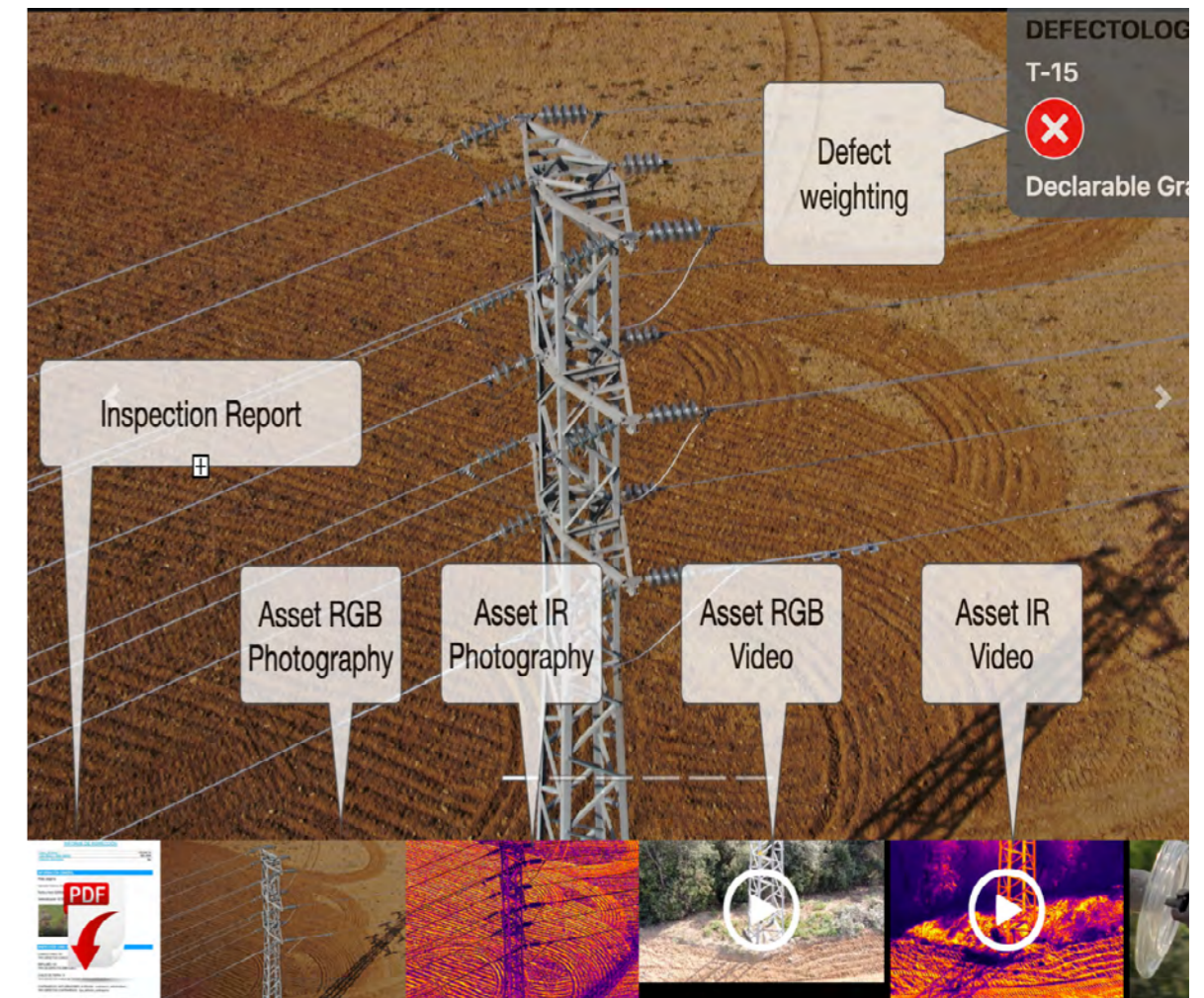
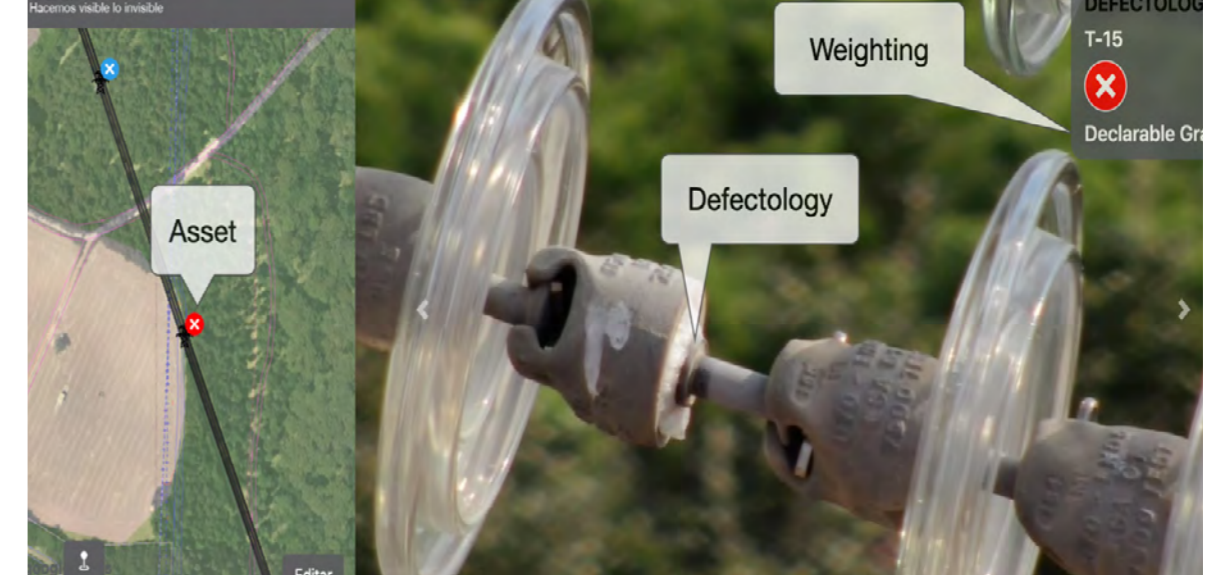
Web : <https://cegaelectric.es>

Bidirectional Interface, Operator/Manager.



Regulatory Compliance Management.

CEGADRONE, we are professionals in Management and Regulatory Compliance, intervening in the implementation of technology, processes and people, identifying, rules, codes and standards applicable to our operating environment.



02.

Primary Vision: CEGAELECTRIC, A colours game.

The visual data control simplifies the workload and saves increases in structure costs. Colour coding is a learned, simple and understandable game. The assets change its colour depending on the severity of the failure by asset, span or GRID element.

The only one: 100% of the assets covered.

IR/RGB/IA/UAS/GIS/PDF/HD

Substations/Towers/PowerLines/transformers/Air Switches SF6/

Vegetation Span/Birdlife Protection/Signalization.

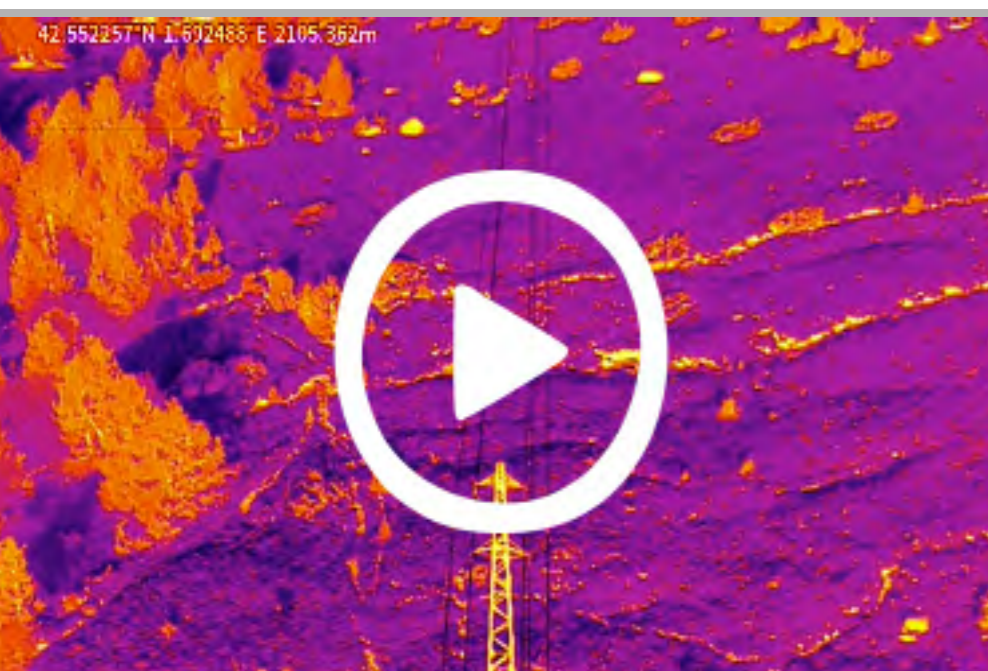
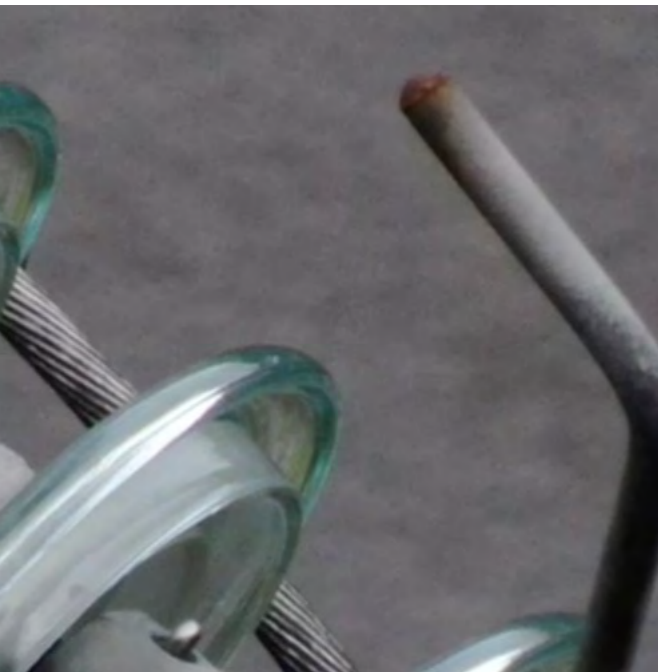
Technical Assets. Management+Digitization.

03.

It allows to know the current state of each of the **SMARTGRID** assets and to estimate the future condition, traceability by image, risk, weighting and failure probability, or the possibility of replacing the asset. On the basis of this analysis, the reports and the traceability of the assets, the manager will decide on the maintenance needs or possible renewal, based on the remuneration and technical requirements, to ensure the optimum maintenance of each asset on an individual level, including, where appropriate, the conditions of the associated assets.

The results of this management in the assets and vegetation, result in a global planning of the activity in the short, medium and long term, including the three-year investment plans. (works, renovation projects and disconnections or discharges).

Digitization and the conversion of data into an intelligent and useful element, is a need for future investment and maintenance. Our passion is the application of knowledge in the details.





04.

The Latest Technology: UAS Applications.

We have adapted to the new legal and technological framework to satisfy the technical needs in management and preventive maintenance, **SMARTGRIDS** digitization , carrying out exhaustive UAS inspections, in distribution, transmission, substations and technical elements of distribution, always adjusting to the needs of each operator.

- Exhaustive inspections in transmission and distribution electrical infrastructures.
- UAS Inspection in substations and other technical distribution elements.
- Access to assets in difficult terrain.
- Legal support and expertise appraisal for natural disasters and or fires.
- Direct support for vegetation management in the energy sector.
- NACE II Inspection (corrosión).
- Consultancy services for corrosion and the state of the coatings.

We are a partner of Optimiza.

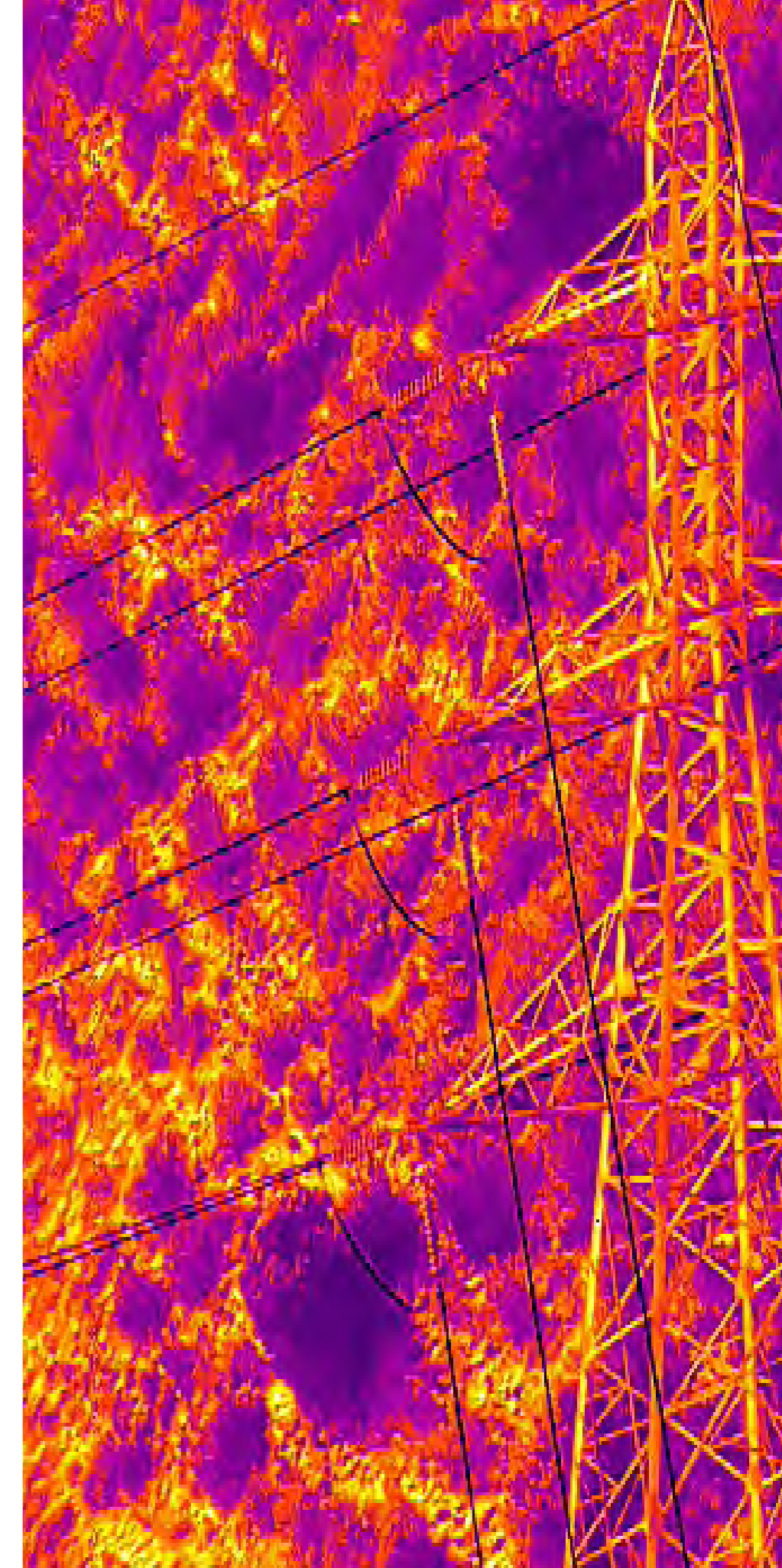
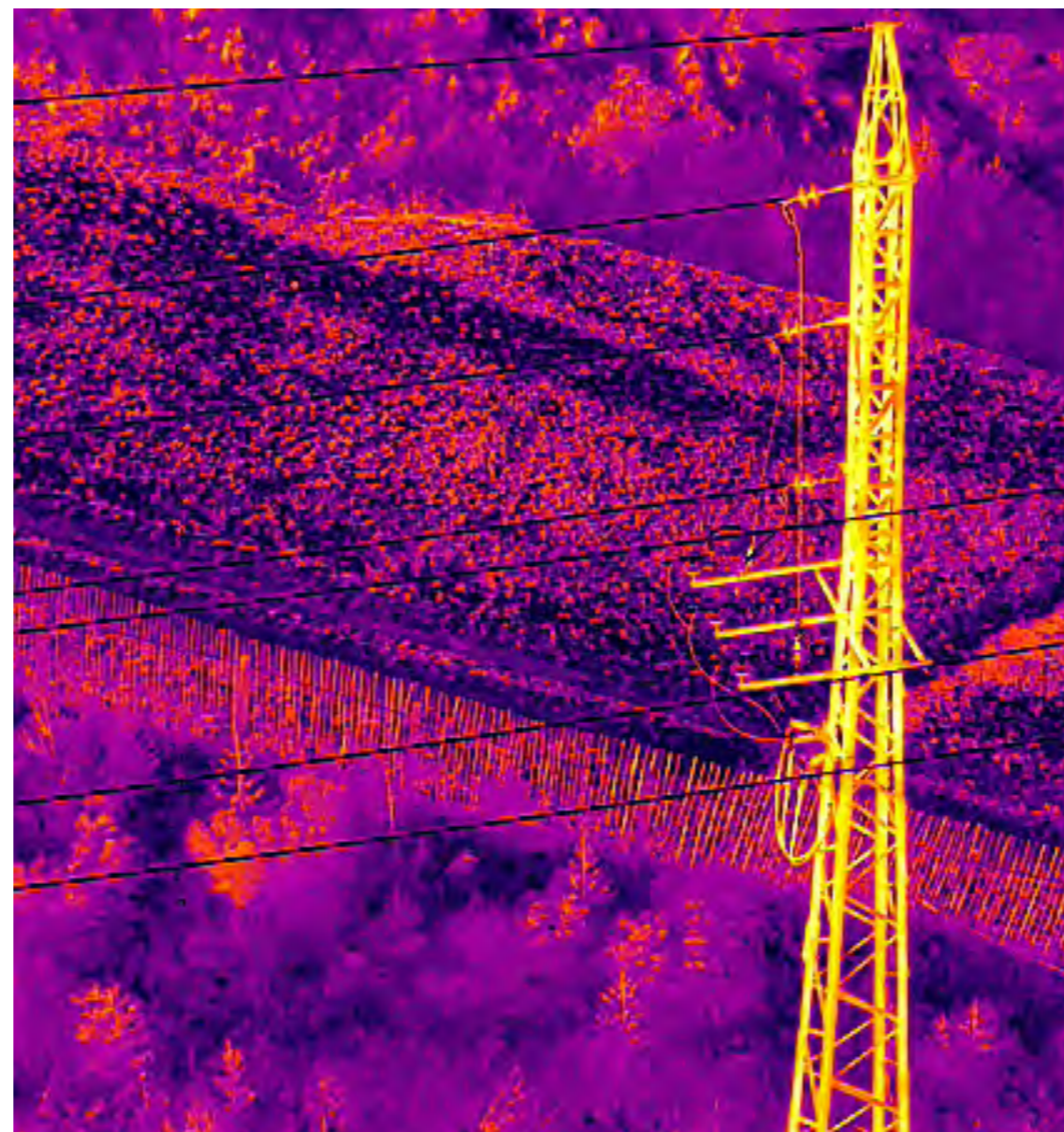
05.

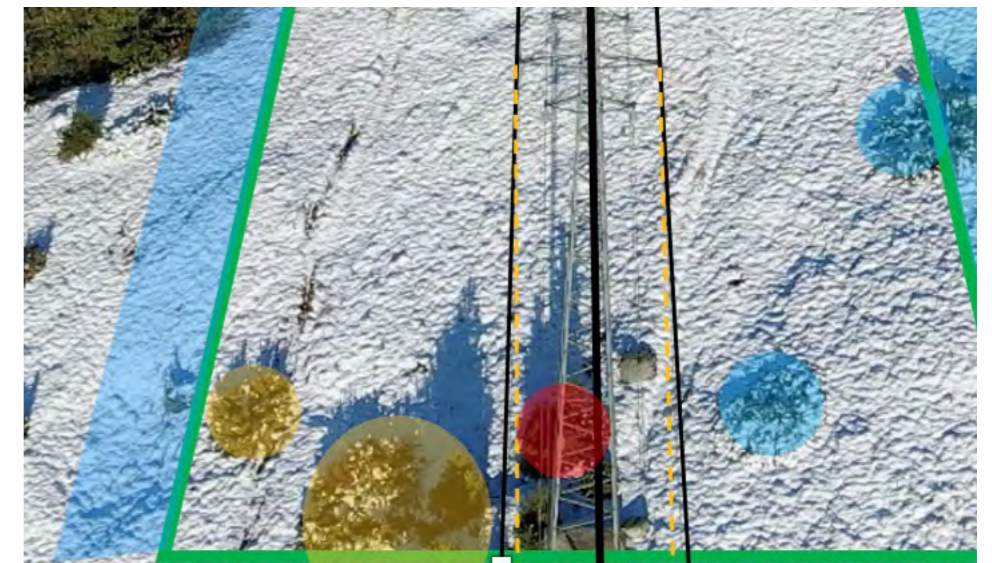
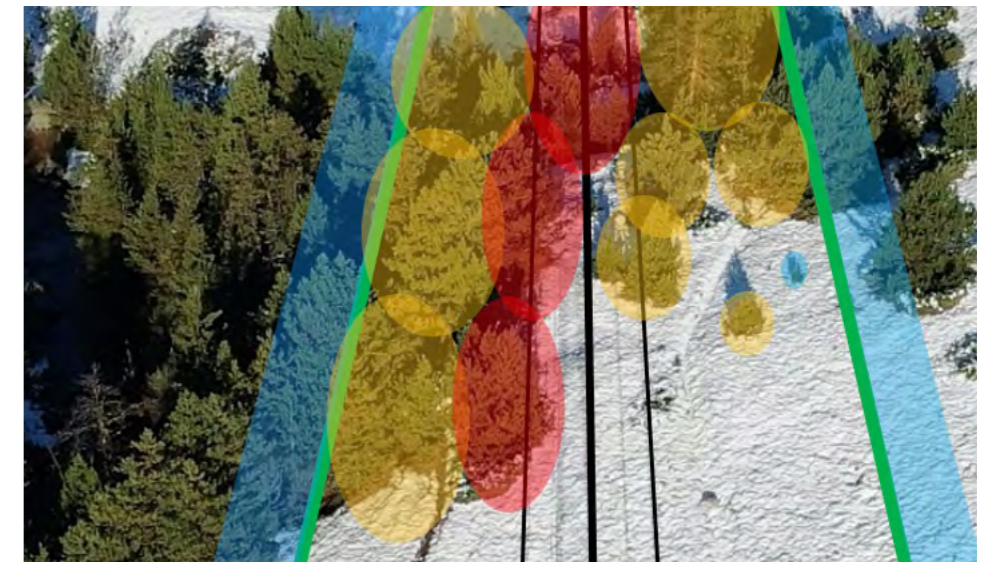
CEGAELECTRIC / IR High resolution.

Assets and Spans Included: Thermography applied to distribution and transmission.

The application of the inspection of the electrical distribution and transmission Power Lines, will help to detect possible failures in these systems, in advance, thus reducing the probability of failure of the SMARTGRIDS in the future. Video and photography and inclusion of them in the reports, in which the different aspects related to the thermographic inspection of the electrical distribution Power Lines and Installations are reviewed.

- Increase of the contact resistance leads to an increase of the power dissipated in the contact, which translates, in normal conditions, into an increase of its temperature giving rise to a "hot spot".
- Failures in cooling systems. Heat generated, for example in power transformers.
- Leakage currents in insulation systems. Reduced insulation resistance due to dirt or contaminants can lead to the appearance of leakage and arcing currents, which cause the equipment to heat up and therefore to deteriorate.





06.

IA + Spans: Economic & efficiency.

An unbeatable price for risk management in vegetation detection. Recognition by image, without the use of the high costs of the LIDAR technology.

An efficient resource with geolocalisation and risk weighting of plant elements, birds and signposting in easement areas, clearing control and legal traceability against fires.

Generation of AI reports, with weighting within the risk areas.



ELECTRICGREEN, the affordable future.

07.

Automatic report generation, downloaded in PDF format. Also functions to send the report to third parties.

IR

Additional information

Urgent notification

Detailed Report
More than 80 defect points collected, within 18 categories, per asset.

The Report: Comprehensive and Unique.

Unique in its category.

Only CEGADRONE overs 100% of the inspection per asset, reports adapted to customer needs. The level of definition complies with the standards of the most demanding companies in the Electrical industry area.

- DEFEITOS NOS ELEMENTOS MECÂNICOS ❌
- PONTOS QUENTES ❌
- DISTÂNCIAS INFERIORES AS ACEITÁVEIS ❌
- SECÇÕES INSUFICIENTES.(DIFERENCIAL) ❌
- PONTES E LIGAÇÕES EM MAU ESTADO/INADEQUADOS ⚠️
- LIGAÇÃO NO CONDUTOR COM TRACÇÃO MECÂNICA ⚠️
- DISTÂNCIA MÁXIMA PONTES/LIGAÇÕES INSUFICIENTES ❌
- DEFEITOS NOS PONTES DE ALTA Y BAIXA TENSÃO ⚠️
- CONDUTORES DE BT ESTRAGADOS ⚠️

ELEMENTOS DE MANOBRA E PROTEÇÕES

- ELEMENTO DE MANOBRA EN MAU ESTADO ⚠️
- ELEMENTO DE MANOBRA SEM RECOBRIMENTO O COM ISOLADO EN MAU ESTADO ❌
- ELEMENTO DE MANOBRA SEM TOMADA À TERRA ❌
- AUTO VÁLVULA EN MAU ESTADO OU DETERIORADA ❌
- DISTÂNCIA CABO À TERRA INSUFICIENTE EM SUSPENSÃO ❌

CABOS ISOLADOS E CONDUTORES RECOBERTOS (SUB-AÉREO)

- CABOS ISOLADOS/CONDUTORES RECOBERTO EM MAU ESTADO



Defect weighting by color

08.

Tecnología UAS : CEGAELECTRIC, The Qualified Inspection, is The Intelligent Inspection.

The power lines cover large distances within different orographies, presenting unique maintenance challenges, due to the geographical dispersion and height of the infrastructures.

Traditionally inspected by helicopter, it can be inspected and contribute to the digitisation of SMARTGRIDS, more easily and efficiently, using the latest UAS technology, combined with CEGAELECTRIC & **ELECTRICGREEN**.

The DJI Matrice 300RTK is the perfect partner, the latest industrial UAS platform with the highest performance and reliability, for this type of inspection.

Appropriate technology and qualified personnel.

PEGS: Proven Experience, Guaranteed Success!

dji ENTERPRISE



Ver en google

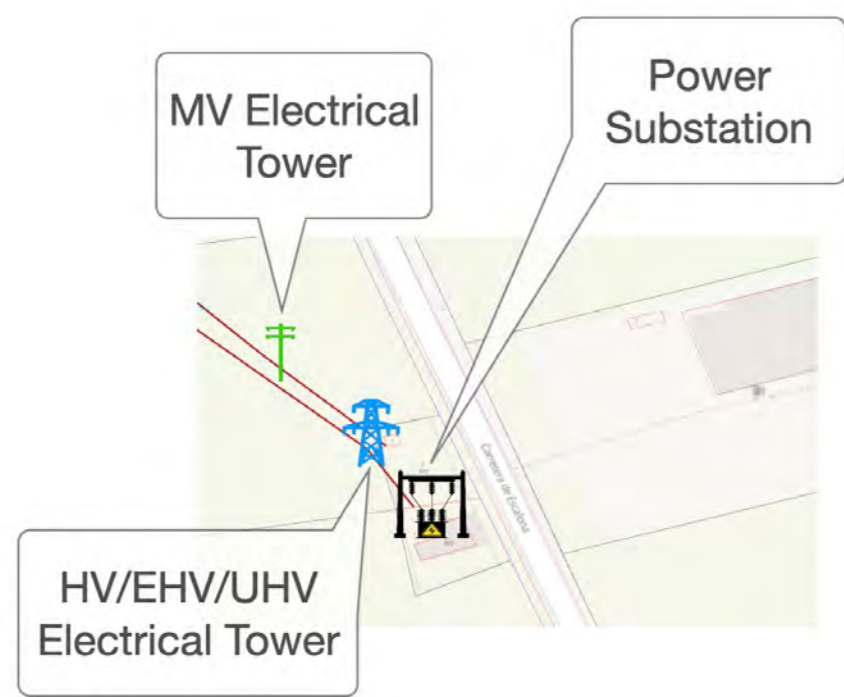
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Número de suport: M006

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09.



CEGAELECTRIC , The Tipping Point: Transmission and Distribution Power Line management system by asset via web App.

THE SMARTGRID, traceable information, accessible DATA.

Video, Photography, Report and the ability to export data, all included, as a result, the image, the traceability of assets and SMARTGRIDS management.

Analysis for an agile management in the Corrective and Preventive maintenance.



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