AIRSEAIR
RPAS
Remotely Piloted Aircraft Systems

REMOTELY PILOTED AIRCRAFT SYSTEMS

Who we are?

AIRSEAIR RPAS is a Canadian company with presence in Latin America. Its mission is to provide high quality and novel products and services to fully meet the needs of our customers and improve their efficiency.

AIRSEAIR RPAS has a multidisciplinary team with more tan 25 years experience working both in private and public sector. Airseair RPAS representatives are in Colombia, Peru, Ecuador, Chile, Argentina, Uruguay, Central América and Dominican Republic, and has established strategic alliances with important companies in the RPAS sector.

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REPRESENTATION IN THE REGION AND STRATEGIC ALLIANCES

skyguide

astra
PIONEERING UTM

ANAVIA
FLIGHT PERFORMANCE. UNMANNED.

LAFLAMME
AÉRO

SiteSee

ICAO

AIRSEAIR RPAS

New technologies RPAS which makes changes

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New technologies RPAS which makes changes

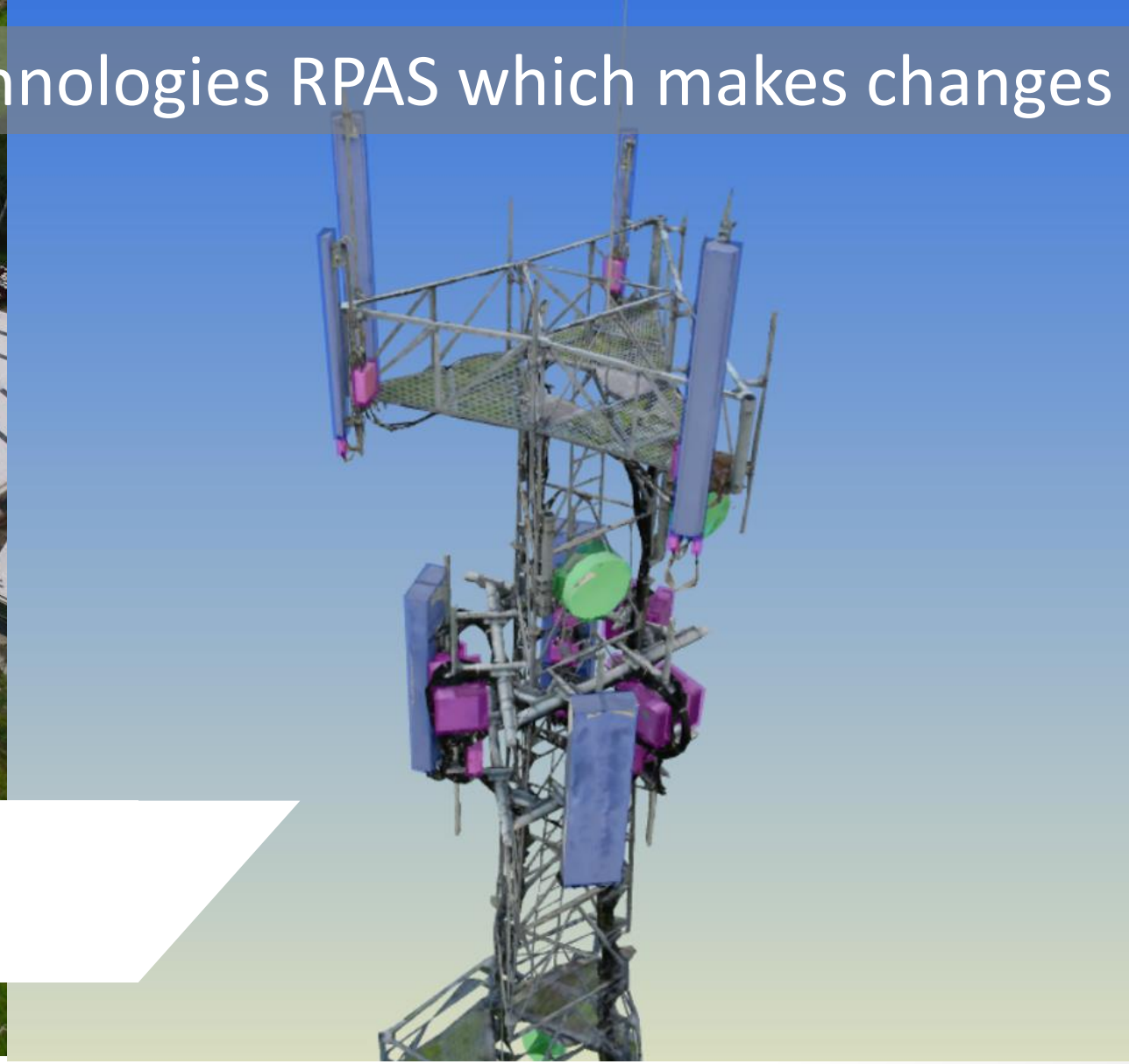
SiteSee

Sitesee is an Australian technology company that enables the cell tower industry to solve their auditing and asset management problems by using Sitesee AI powered 3D digital twin platform

Experience team of engineers, software developers, physicist and business process specialist made Sitesee to be recognised as a globally ambitious and innovative tech solution for the virtual management of infrastructure.

SiteSee

New technologies RPAS which makes changes



Hight resolution 3D models

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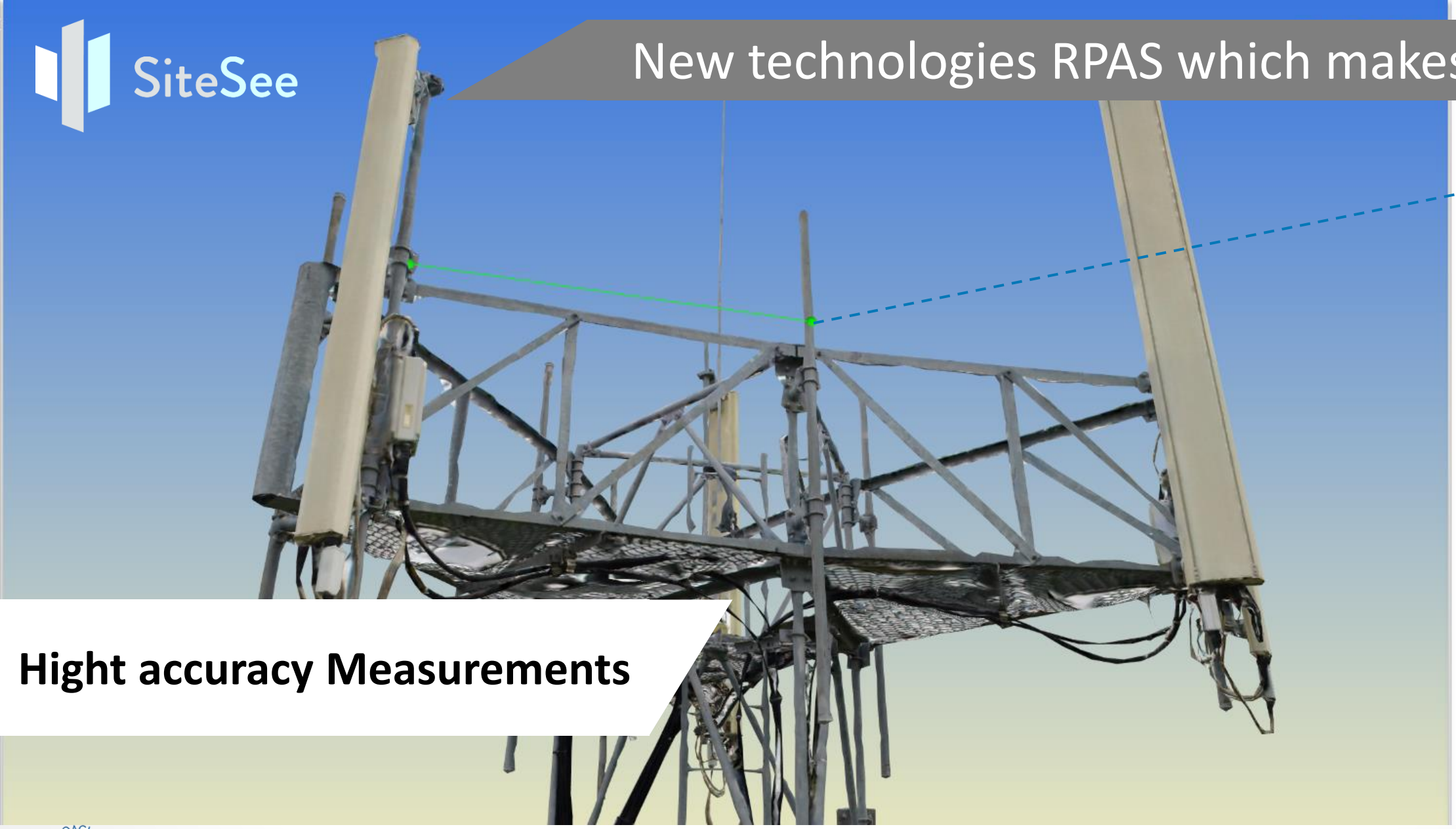
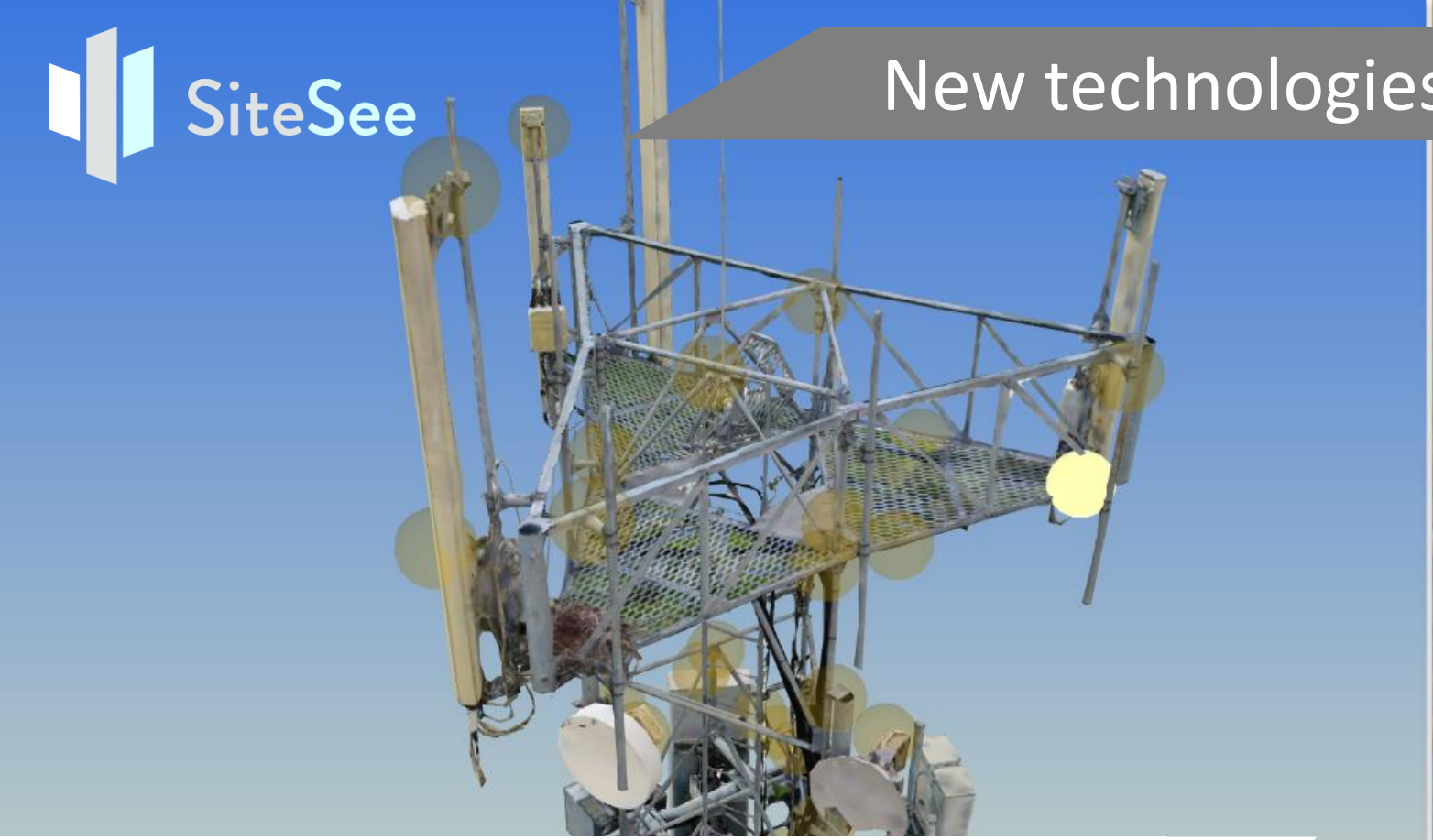
New technologies RPAS which makes changes



Hight accuracy Measurements

SiteSee

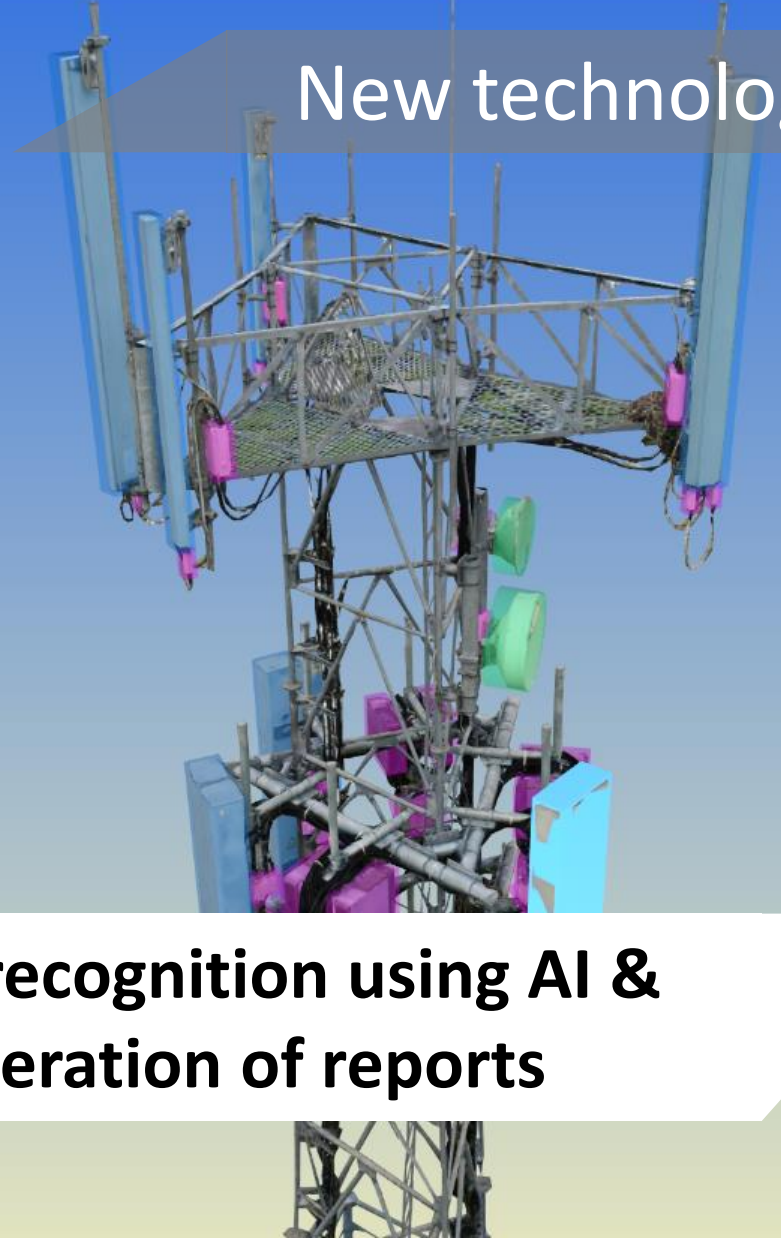
New technologies RPAS which makes changes

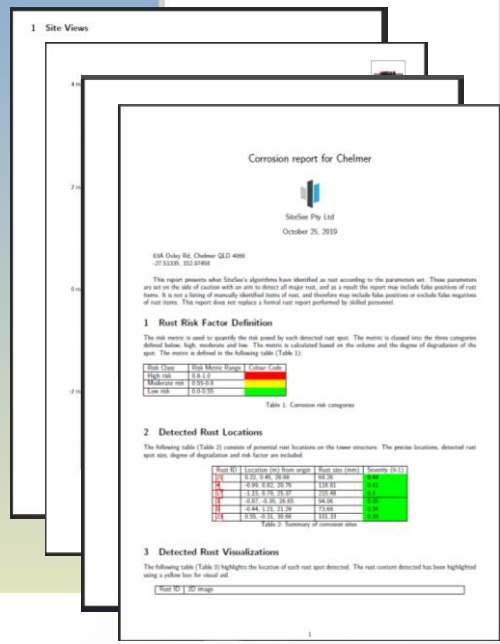


Automatic Rust detection

SiteSee

New technologies RPAS which makes changes





Automatic assets recognition using AI &
Automatic generation of reports

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New technologies RPAS which makes changes

REMARKS.

- Real time 3D enabled models enables full value and colocation opportunities to be extracted
- RPAS + AI increase revenue. An Audit of 62 towers for a large TowerCo showed there were 19% more panels and dishes on these towers than the records showed.
- This technology accelerates the deployment cycle.
- AI enabled algorithms identify tower assets with precision accuracy.
- Large portfolio audits completed in days, not months.
- Capital investment decisions and ROI can be accurately proposed and accessed

New technologies RPAS which makes changes

LAFLAMME AERO

LAFLAMME AERO specializes in the development and the manufacturing of tándem-rotor remotely piloted helicopter system. Located in the province of Quebec – Canada, the company offers unmanned aerial systems with unique capabilities for both military and commercial applications.

New technologies RPAS which makes changes

LAFLAMME AÉRO

Customized tándem- rotor remotely piloted helicopter, with a payload up to 150kg/180 kg and an endurance up to 10/12 hours.

LX300 has been designed in accordance to requirements of certified manned helicopter standards.

The LX300 is the best-suited RPAS to perform surveys in tough environments and harsh conditions, with the appropriate accessories for multi-mission spectrum: robust ground control station, anti-collision system, M-Bark system, flight simulator and others. .

RPAS (Remotely Piloted Aircraft System) customized to multiples applications such as agriculture, mining prospection, surveillance and reconnaissance, search and rescue, logistics, corridor mapping, which make the LX300 the best suite RPAS.

LX300 UAV

Airspeed

- Maximum airspeed 210 km/h.
- Best endurance airspeed 140 km/h

Endurance

- Endurance, 20kg payload 10/12 hours
- Service Ceiling 6000 ft / 12000 ft

Weights

- Max. takeoff weight 445kg(LX300-B) / 550kg(LX300-HF).
- Empty weight 280kg(LX300-B) / 350kg(LX300-HF).
- Payload weight (max.) 150kg(LX300-B) / 180kg(LX300-HF
- Fuel weigh (max) 160kg(LX300-B) / 190kg(LX300-HF

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New technologies RPAS which makes changes

REMARKS

- The market is requesting this type of RPAS (Aero taxis, agriculture, mining prospection, search and rescue,…).
- Recognized companies are developing these high payload and endurance RPAS.
- RPAS rules should be aligned with the state-of the-art of these high payload and endurance RPAS.
- Special flight operation certificates (SFOC).
- RPAS Certification.
- Operation and maintenance training.
- Certificate Homologation.

New technologies RPAS which makes changes

ANAVIA

FLIGHT PERFORMANCE. UNMANNED.

ANAVIA specializes in the development, production and marketing of vertical take-off and landing (VTOL) systems between 50 and 150 kilograms.

The company was established in 2019 as a business unit of the CONNOVA Group, a leading global developer and manufacturer of carbon lightweight construction solutions.

CONNOVA focuses on the aerospace and motorsport sectors. It is the creator of technologies and innovations that have proven successful in the high-tech industry for decades.

Founded in 1984, CONNOVA operates production sites in Switzerland and Germany, employs over 100 staff and enjoys a reputation as a groundbreaking Swiss company bearing the "Made in Switzerland" seal as an emblem of uncompromising quality.

New technologies RPAS which makes changes

ANAVIA

FLIGHT PERFORMANCE. UNMANNED.

The unmanned performance helicopter HT-100 from ANAVIA sets the standard for autonomous flying with a flight time of 240 minutes and payload of upto 60 kg.

Innovative carbon lightweight construction, decades of knowledge from aerospace and motorsport technology are in the DNA of every ANAVIA helicopter.

The HT-100. Unique in terms of security, performance and usability. A guarantee for successful flight missions.

HT-100

Airspeed

Max. airspeed 120 km/h

Wind at take-off /landing up to 25 kn (46 km/h)

Performance

up to 240 min.

up to 3,000 m (10,000 ft)

weight

Max. payload 60 kg (fuel and equipment)

Max. take-off weight approx. 100 kg

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Navaids certification- CNS DRONE

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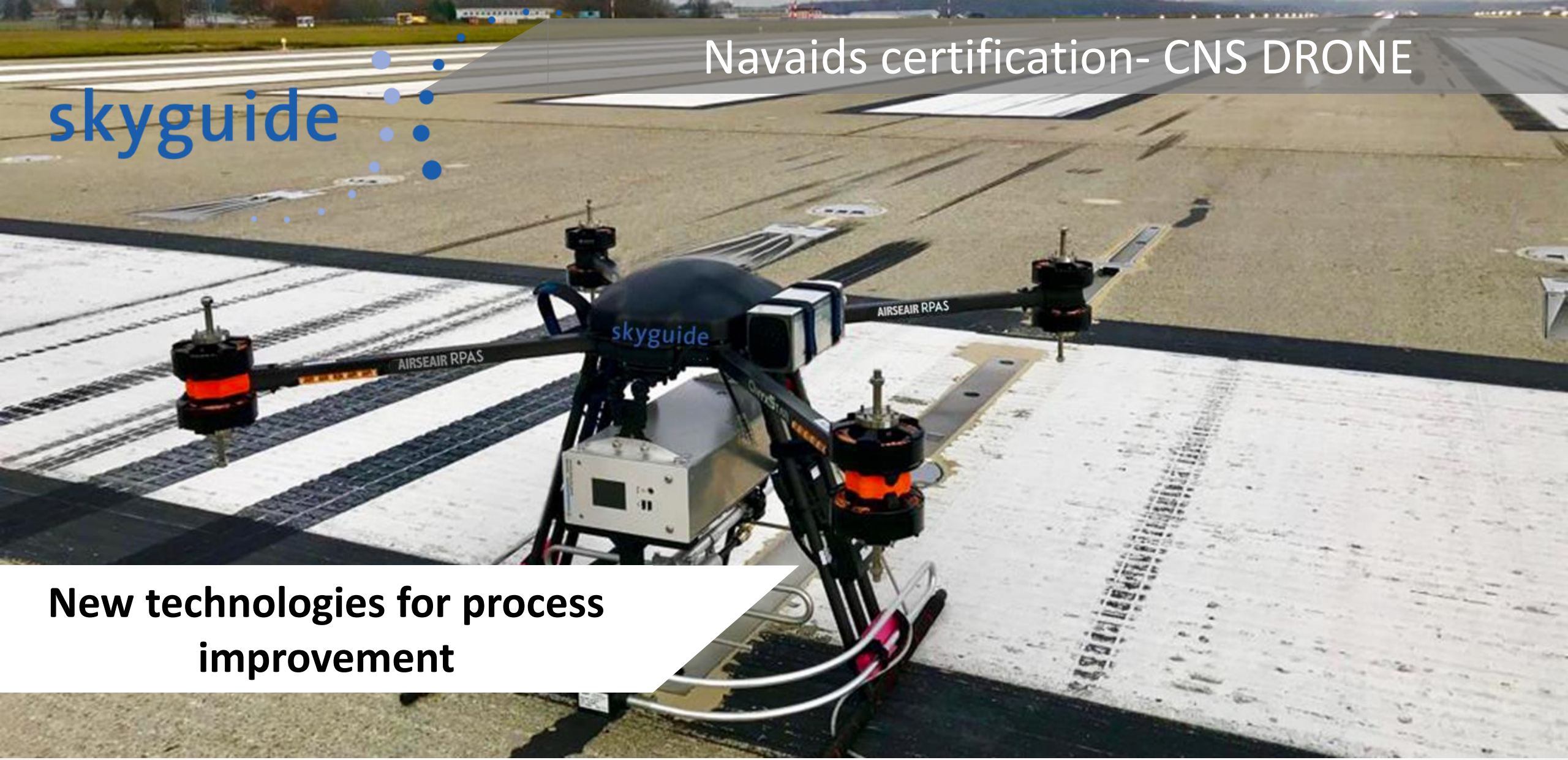

New technologies for process improvement

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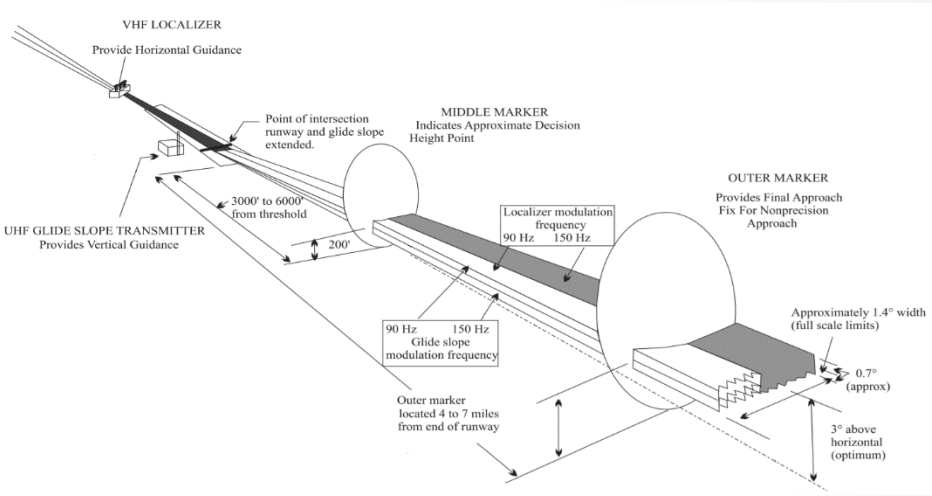
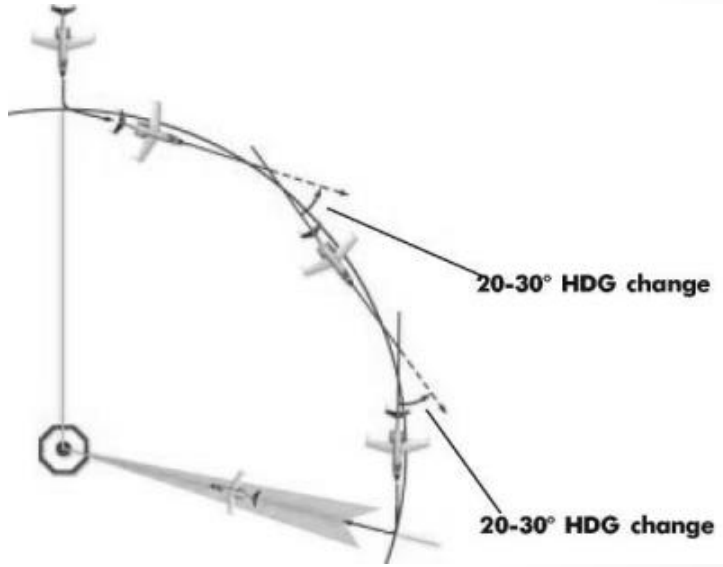
Calibration and certification flight

- Time in operation (Meteorology, short SLOTs, Traffic)
- Operating cost (average $5,000 USD/hr)
- Aircraft availability (Maintenance, demand, customs

http://www.armaviation.com/?page=12





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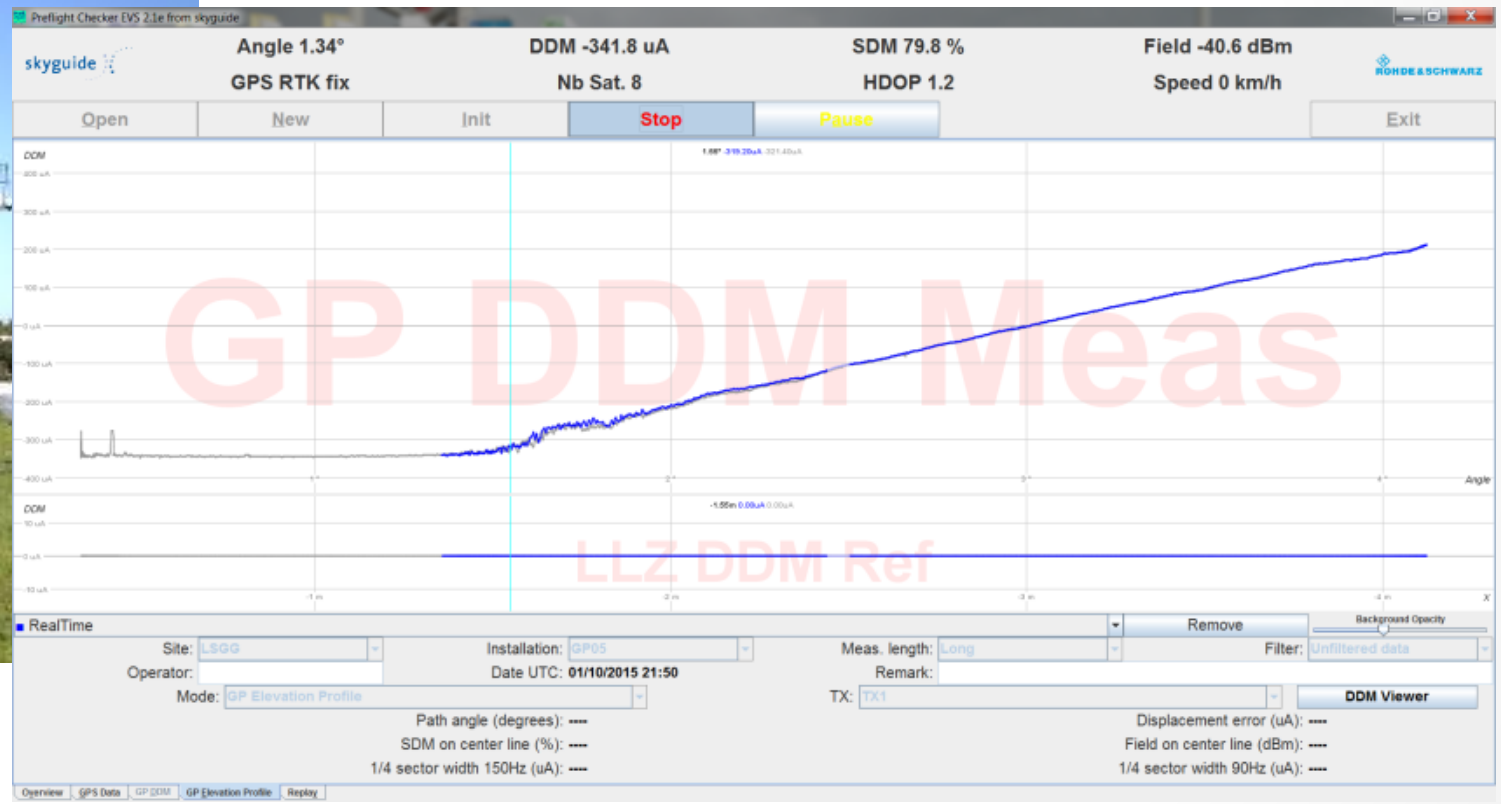
Terrestrial measurements do not correspond to the NAV signal

LOCALIZER
Good correlation

GLIDE PATH
Poor correlation (near field)

VOR
Poor correlation (near field)

Solution: "Ground measurements" from the air



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Effective support for maintenance, enlistment, calibration and certification of navaids

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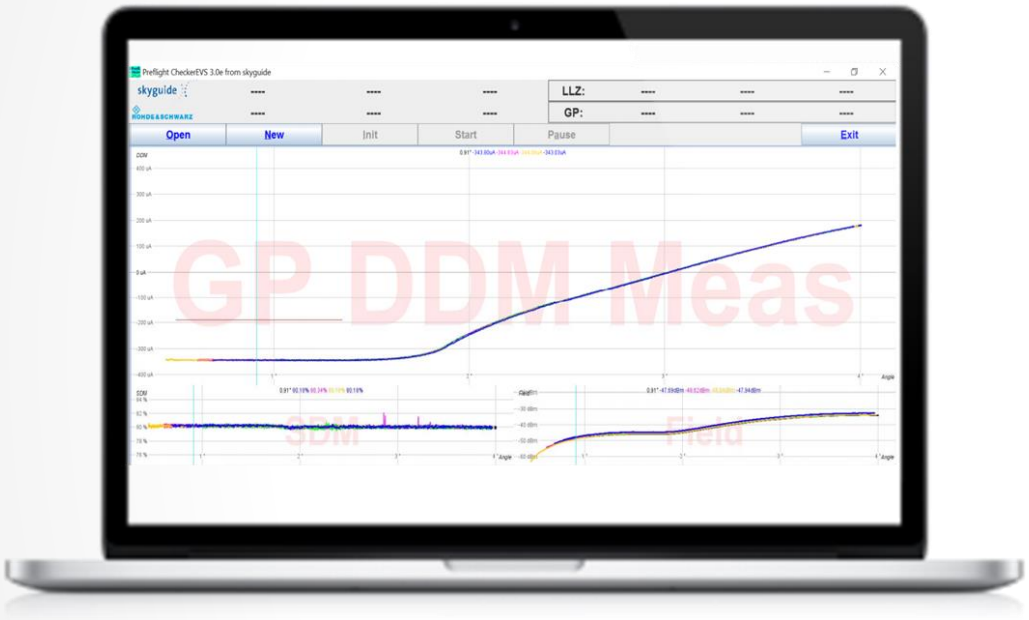
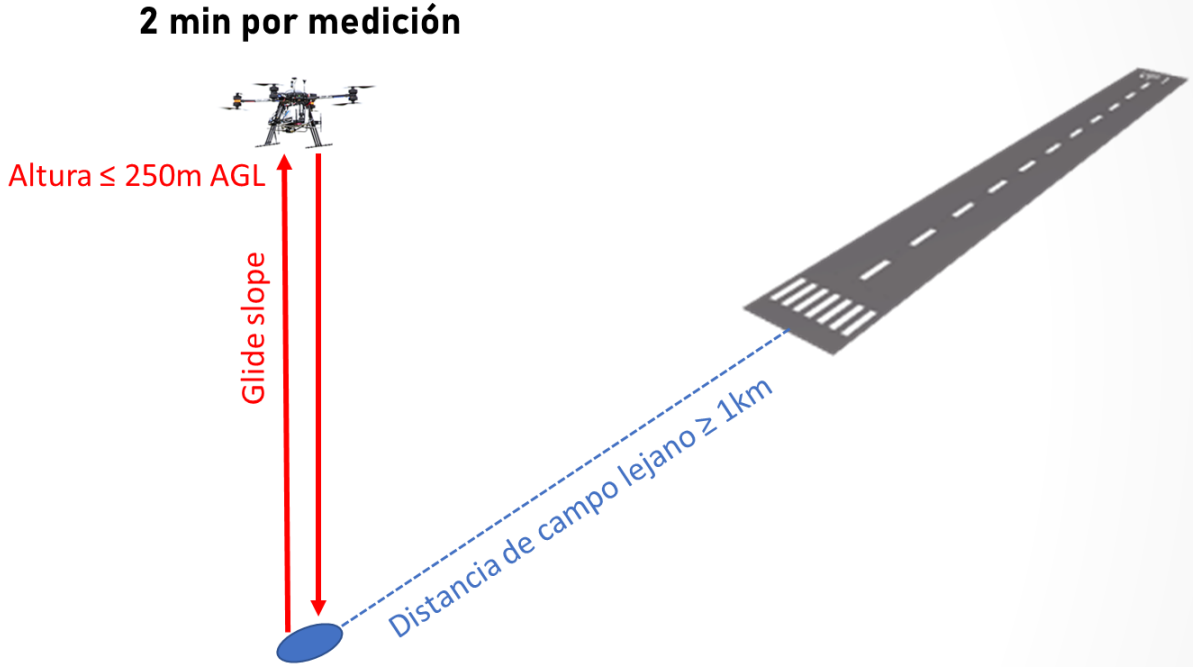
Measurement process and field engineers





Vertical Profile

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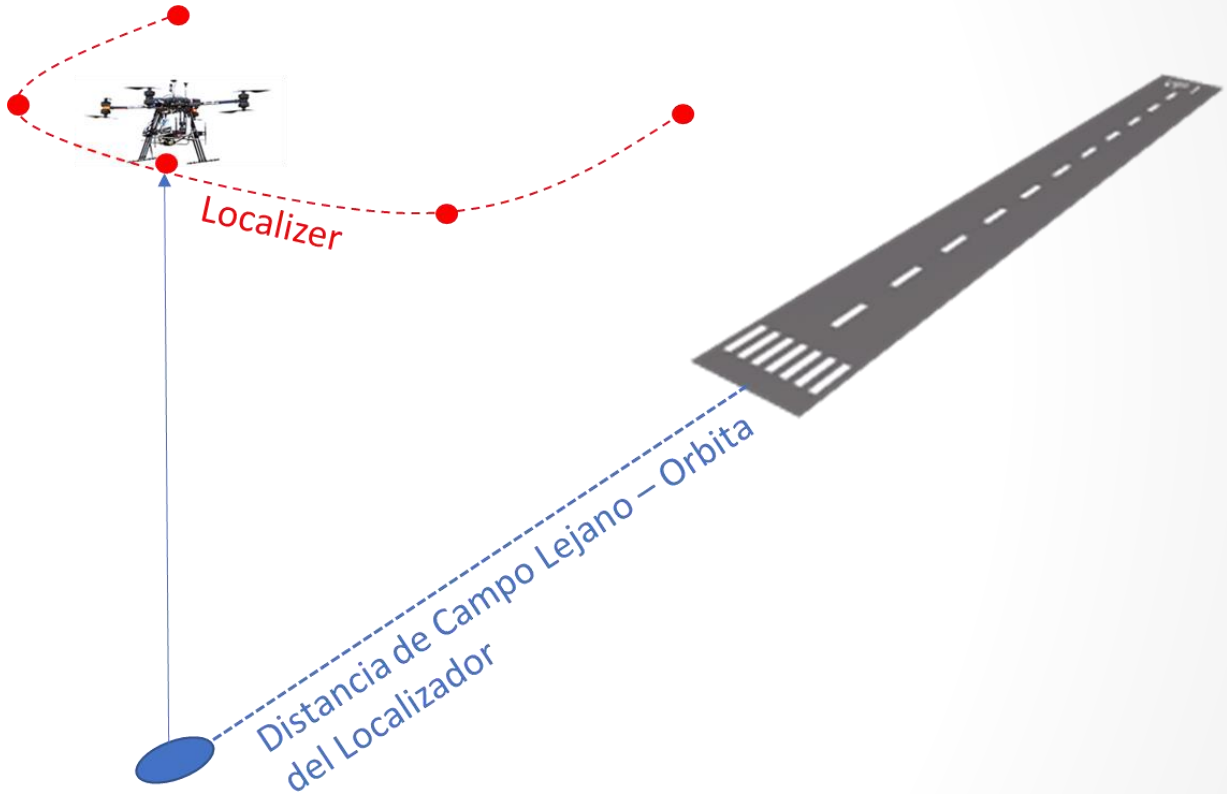
Measurement process and field engineers



LOC lateral orbit (optional)

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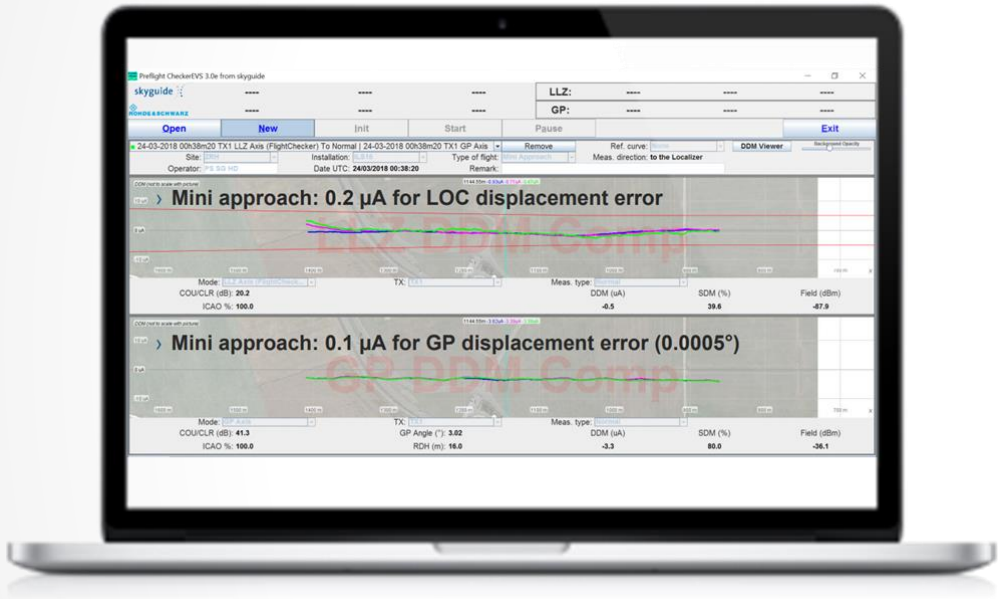
Measurement process and field engineers



7 min por medición

Hasta 250m de distancia vertical, para optima correlación

Mini approach

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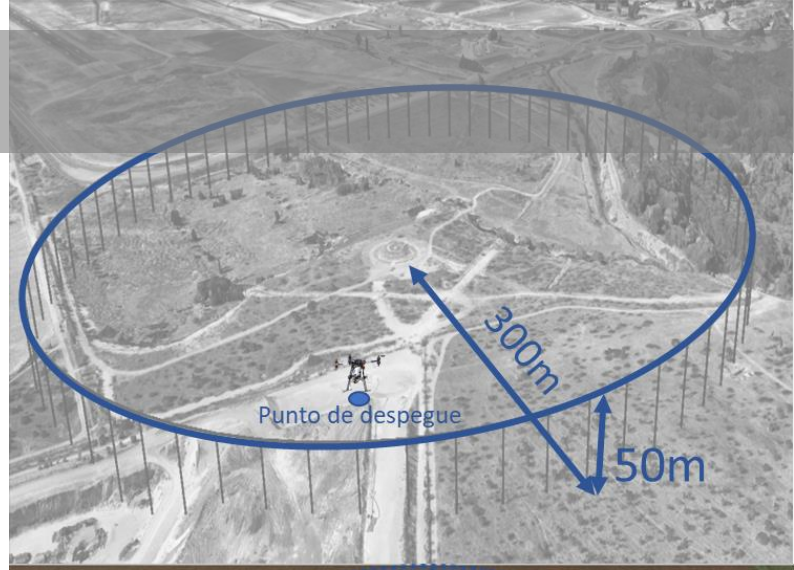
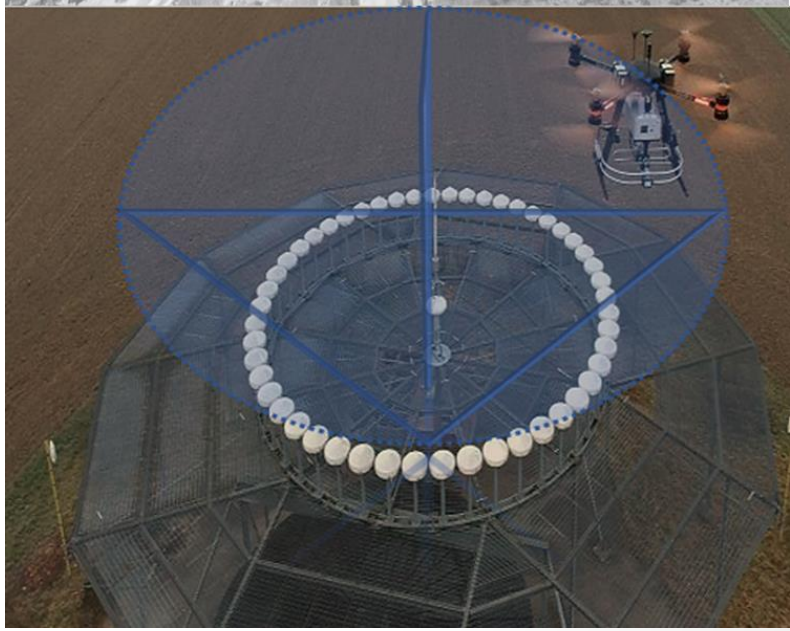
VOR Measurements

- ✓ Orbit measurements:
- ✓ Circular or orbital path around the VOR
- ✓ Azimuth error,
- ✓ FM deviations,
- ✓ RF level,
- ✓ Modulation depth 30 Hz and 9960 Hz vs azimuth angle
- ✓ Radial and bearing measurements:
- ✓ Along VOR radials (including overflight)
- ✓ Detailed analysis of the silence cone
- ✓ Azimuth error,
- ✓ FM deviations,
- ✓ RF level,
- ✓ Modulation depth 30 Hz and 9960 Hz vs distance to VOR





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Repetitiveness, maneuverability and standardization in measurements and routines of maintenance and calibration of navaids

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Flight automation and trajectory configuration

- ✓ The Skyguide RPAS system for CNS maintenance, calibration and recertification is equipped to navigate automatically, based on a pre-configured waypoint flight that precisely follows a programmed route.
- ✓ While it is always possible for the pilot to take manual control at any point in the operation, automation refers to all phases of flight, including take-off and landing.
- ✓ This makes the measurement process much easier and more accurate as repeatability is not affected by the human factor. Each specific navigation needs to be configured once, and then stored for loading and repeating at will

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Strengthening safety oversight capabilities

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Critical elements of a state safety oversight system

CE-5. Technical guidance, tools and provision of safety-critical information..

The provision of appropriate facilities, comprehensive and up-to-date technical guidance material and procedures, safety-critical information, **TOOLS AND EQUIPMENT**, and transportation means, as applicable, to the technical personnel to enable them **TO PERFORM THEIR SAFETY OVERSIGHT FUNCTIONS EFFECTIVELY AND IN ACCORDANCE WITH ESTABLISHED PROCEDURES** in a standardized manner. States shall provide technical guidance to the aviation industry on the implementation of relevant regulations..

CE-7. Surveillance obligations

3.7.2 **SURVEILLANCE ACTIVITIES** are carried out by a State **TO** proactively **VERIFY THAT** aviation licence, **CERTIFICATE**, authorization or approval holders **CONTINUE TO MEET THE ESTABLISHED REQUIREMENTS** and function at the level of competency and safety required by the State. These activities include the conduct of on-site inspections (announced and unannounced visits), the review of documents submitted by the service providers, meetings with concerned parties and analyses of available safety information.

3.7.3 States should establish and implement, in each area, a **SURVEILLANCE PROGRAMME WHICH SHOULD INCLUDE**, at a minimum, the elements below, which may be adapted if the State is using a risk-based method:

a) the types of surveillance activities (e.g. audits, **INSPECTIONS**, **TESTS**, safety events analyses);

b) the timeframe or **FREQUENCY OF THE ACTIVITIES**;

c) items to be covered or **SCOPE OF THE ACTIVITIES**; and

d) **RELATED METHODOLOGY/PROCEDURES, JOB AIDS AND GUIDANCE ON HOW THE ACTIVITY SHOULD BE CONDUCTED**, starting from the notification of the service provider, if applicable, to the closure of the deficiencies identified during the activities.

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Extension of Navaids certification periods complying with ICAO requirements

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Regulations

1.18.2 Remotely piloted aircraft systems (**RPAS**) or unmanned aerial vehicles (UAV) should be assessed to determine that they provide the payload capability, speed and range necessary **TO CONDUCT A FLIGHT INSPECTION FOR NAVIGATION AIDS AS RECOMMENDED HEREIN IN A COST-EFFECTIVE MANNER.**

1.15.2 … It is recommended that States have a documented procedure for determining and changing the test/inspection interval..

1.15.10 A typical basis for extending the interval between required measurements without degrading ILS integrity is correlation…
.

An additional requirement to extend flight inspection intervals is **THE INFLUENCE OF NEAR- AND FAR-FIELD ENVIRONMENTS ON THE SIGNALS**. These effects can be determined with a flight inspection aircraft.

An additional requirement to extend flight inspection intervals is the influence of near- and far-field environments on the signals.

b) good correlation between concurrent ground and airborne results;

c) A RECORD OF INDEPENDENT MONITOR TEST RESULTS;

SKYGUIDE FLIGHT INSPECTION SYSTEM to support Navaids maintenance, setup, calibration and certification provides SOLUTIONS AND IMPROVEMENTS AT ALL LEVELS

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Technical level: new methods and capabilities for ATSEP personnel

- **Possibilities** and facilities for preventive and corrective maintenance of navaids **not existing before**
- Professional development, **new skills in** the use and operation of **RPAS technologies**
- Use of the **latest developments in support** of the maintenance and setup of navaids, use and application of GNSS and new RPAS technologies
- **New** advances in **measurement techniques**. Technological development.

Supervision level: new support elements for the execution of navaids maintenance and testing

- Greater **efficiency and effectiveness** in maintenance and results.
- **Logistics simplification**. **Replacement of manned flights** on far field signal measurement.
- **Modernization of** navaids **maintenance methods**
- Improved maintenance practices
  - Time reduction
  - Better procedures

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Management level: greater use and effectiveness of available resources

- **Compliance and improvement of the required safety levels**. Compliance with ICAO recommendations and national standards for navaids certification.
- Reduction of operating costs and better NAV service indicators through the **optimal use of available human and technological resources**, e.g. greater availability and effectiveness in the use of the certification aircraft
- Reduction of carbon emissions (1,434 kg of CO2 per hour) and noise pollution derived from less flight hours for the maintenance, enlistment and certification of navaids.
- **Reduction of unavailability times of navaids**, airport and airspace closures due to maintenance and certification activities.

Regulatory, normative level: additional elements to support safety oversight

- **Reinforce safety oversight obligations** through an independent and highly reliable system that allows, in an agile and economical way:
  - measure and **verify at any time the status of the navigation service** provided by navaids
  - establish **correlation records** and parameters **of far-field** navaids **signals** (composite navigation signal, spatial modulation)

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High development standards, leading components widely recognized in the aeronautical sector

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R&S® EVSF1000 VHF / UHF Nav / Flight Analyzer

General

Two-channel signal level and modulation analysis for ILS, VOR, MB, COM

Frequency range 70 - 410 MHz

Installation in:

- Flight Inspection Aircraft
- Measuring vehicle
- UAS

ANGLE GP = 2.99° and displacement error = 2.0 µA for both:

☑ certification flight data in blue

☑ UAS data in pink

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Skyguide, a leader in applications for measurements of navaids signals in the field

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Competitive advantages using Skyguide's CNS inspection system

- Specialized software **tested by several ANSPs**
- Presence in Latin America for local support
- Support from a solid company worldwide
- Operational and technical expertise to solve problems
- **Rohde & Schwarz high reliability PIR**
- Great operational advantages in the work area
- Measurement of spatial modulation that is generated in the far field
- Easy transport

The RPAS CNS skyguide system is a product developed and tested by CNS field engineers for CNS field engineers.

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Skyguide's global leadership

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- Using statistics, skyguide demonstrated that by using RPAS to perform ILS measurements, correlating long-term measurements and observing the resulting trends, the number of laboratory aircraft flights can be reduced, while maintaining the highest possible calibration standards.
- Skyguide began making systematic comparisons between the results of ILS ground measurements and flight checks in 2002.
- Skyguide has been at the forefront of developing RPAS-based ILS measurements and has collected baseline data using RPAS since 2018.

The future of UTM is here

Astra UTM is the worlds most advanced UTM platform providing unparalleled functionality to ANSPs, Enterprise and Drone Operators.

On-Cloud / On-premise

Modular

Customizable

White label

256 bits encryption

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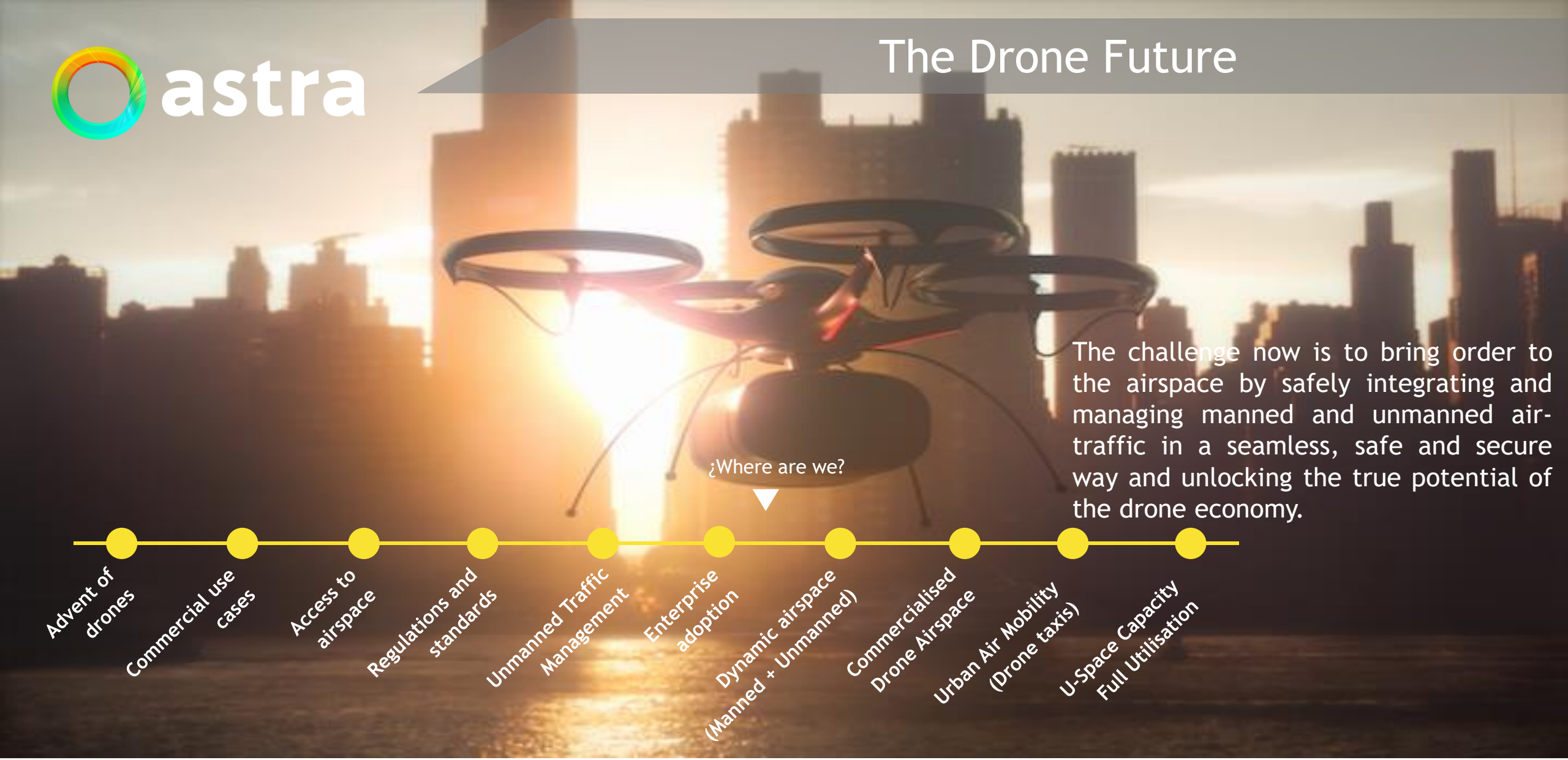
The Drone Future



The challenge now is to bring order to the airspace by safely integrating and managing manned and unmanned air-traffic in a seamless, safe and secure way and unlocking the true potential of the drone economy.

¿Where are we?

- Advent of drones
- Commercial use cases
- Access to airspace
- Regulations and standards
- Unmanned Traffic Management
- Enterprise adoption
- Dynamic airspace (Manned + Unmanned)
- Commercialised Drone Airspace
- Urban Air Mobility (Drone taxis)
- U-Space Capacity Full Utilisation

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Flight Information Management System

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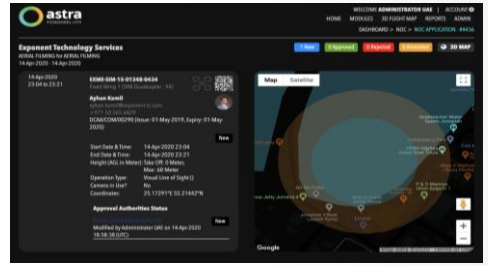
Tracking:
Transponders

Registry:
Pilot, Drone, Flight

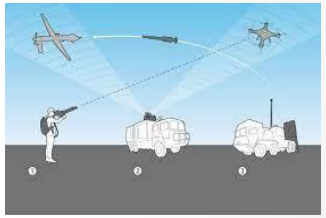
Flight plan request and approval
VLOS + BVLOS



UAS / UAM

Air traffic info:
UTM AND ATM
+Comms

Interface for Non-Cooperative



SORA compliant

JARUS Joint Authorities for Rulemaking on Unmanned Systems

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Flight Excellence

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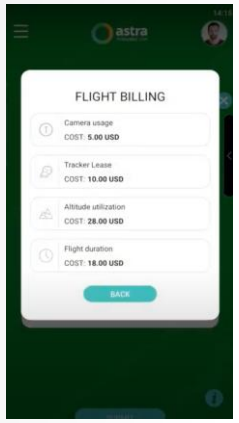
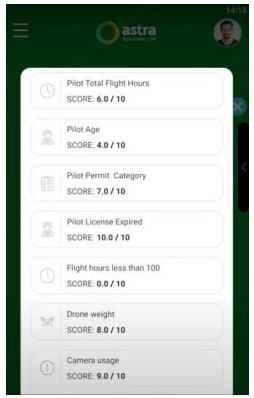


Air space Monetization

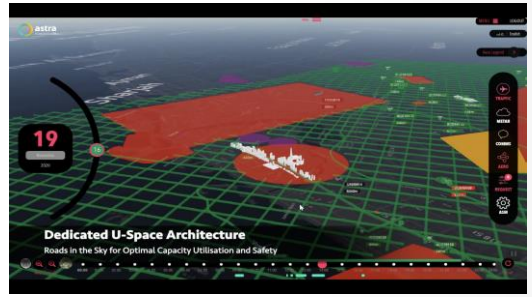
Risk score: Pilot, Drone, Flight



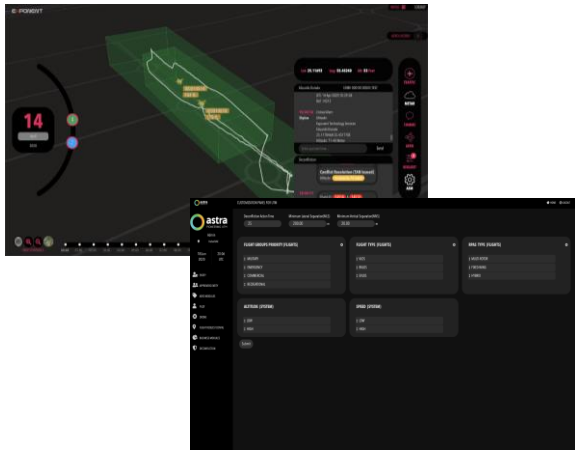
Perfil riesgo: Piloto, Dron, Vuelo, Misión

Four-dimensional:
Weather, Surface, obstacles, geo engine
+
Suggested trajectory

Artificial Intelligence:
Flight Analysis



Deconfliction:
Prioritizable and TAS



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Global Footprint & Customers

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Commercial Implementations

Dubai, UAE

New Zeland

Finland

Canada

Pilot Projects

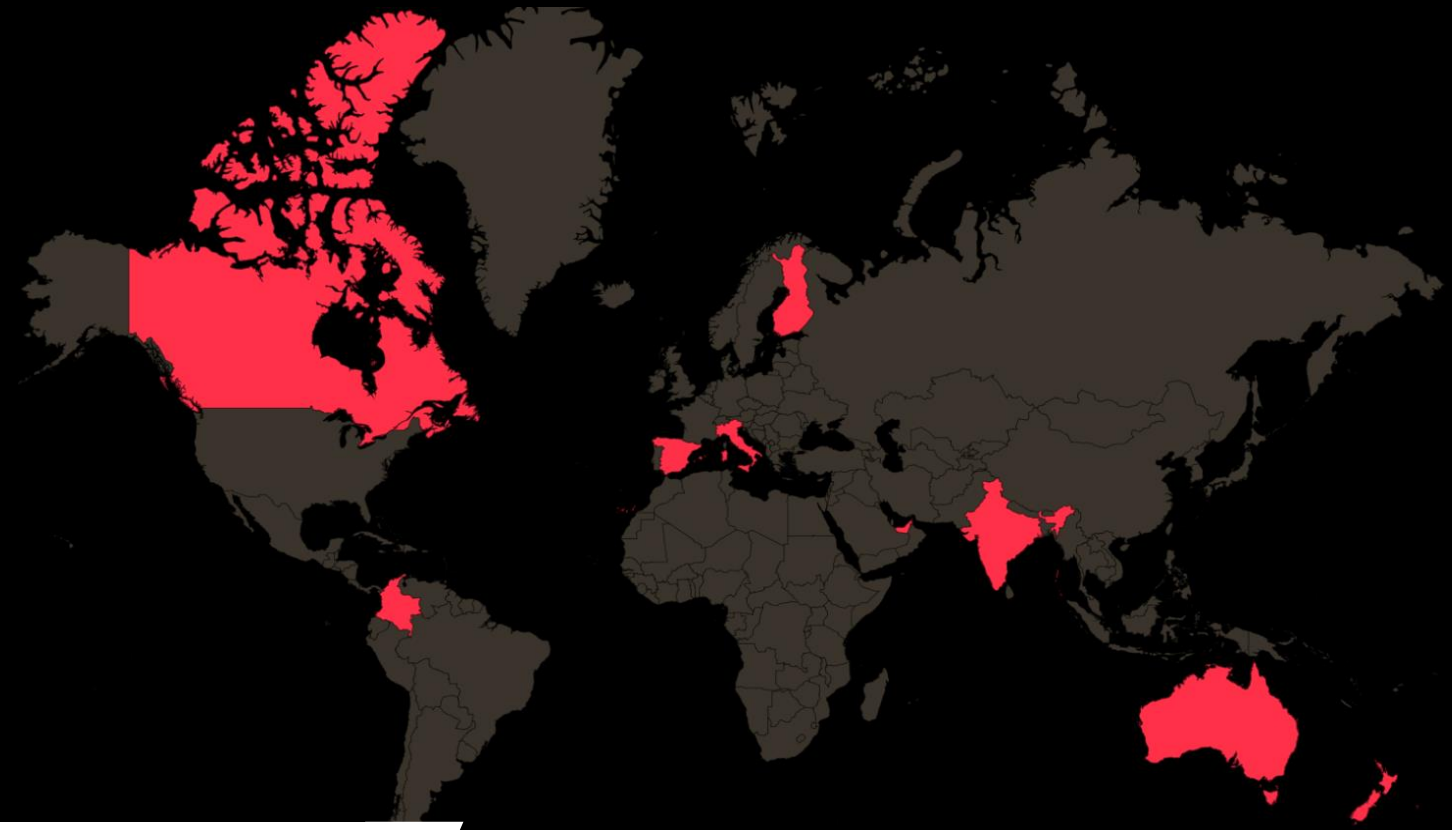
India

Italy

Australia

Colombia

Spain



هيئة دبي للطيران المدني
Dubai Civil Aviation Authority

नागर विमानन महानिदेशालय
DIRECTORATE GENERAL OF CIVIL AVIATION

भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

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making your world possible

Fintraffic

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AIRMARKET

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For more information

AIRSEAIR
RPAS
Remotely Piloted Aircraft Systems

John Cortes

Vice President, Sales & Operation LATAM

Mobile: +57 318 3380170

jcortes@airseairrpas.com

Thanks

www.airseairrpas.com

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