

Portable and flexible system for drone trajectory and tracking in any terrain



MARKET NEED 

Provides a **cost-effective** solution compared to current systems, which are very heavy, involve complex calibration processes, and cannot be transported or installed in any location.

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STAGE OF DEVELOPEMENT

- **Software** development and internal **know-how**.
- **TRL 6:** Technology demonstrated in a relevant environment.
- Beyond providing the service itself, INTA is open to **collaborating** on specific developments and/or **transferring** the technology.

PORTABLE OPTICAL TRAJECTOGRAPHY SYSTEM

Researchers from the Flight Testing Area at INTA have developed a portable trajectory system that allows for the tracking and measurement of the trajectory (position + time) of any visible object, whether collaborative or not, in unprepared environments.

One of the most current and necessary applications is for drone and other aerial vehicle certification testing, where flight tests are required to assess the vehicle's behavior in various situations. Due to the complexity of the infrastructure needed to accurately determine a vehicle's trajectory, these tests are conducted in controlled environments where the infrastructure is heavy and fixed (or extremely difficult to move and requiring frequent recalibration).

The system developed at INTA overcomes these limitations, **enabling the setup of a "trajectory testing center" on any terrain** within a few hours and with the intervention of only 1 or 2 operators.

The system is based on a series of nodes with the capability for automatic position and speed determination and tracking, full HD image capture of the vehicle, and connectivity. This setup allows for the coordination of the entire infrastructure and the real-time acquisition and transmission of data. The nodes can be either fixed or mobile, and their number can be adjusted (removed, repositioned, or added) during operation. Since the system is entirely developed at INTA, **it can be adapted to different configurations**. Similarly, this technology can be used to track any object with a line of sight.

ADVANTAGES

- Capability to operate at any location.
- **Small team required for setup and operation.**
- Simplicity: Simple, compact, and easy to maintain.
- Versatility and adaptability: Ability to integrate payloads as requested by the client.

