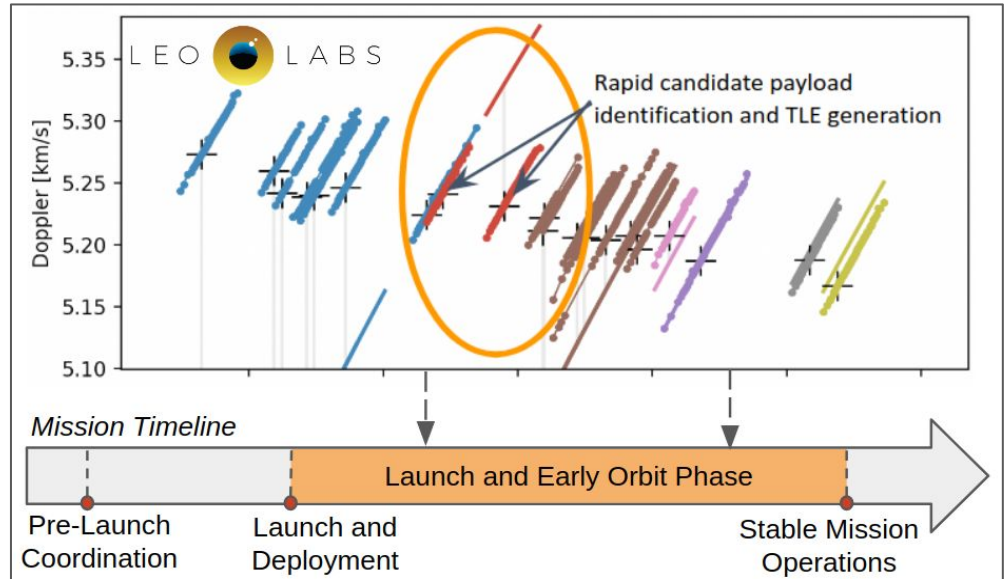


# LeoLabs Launch and Early Orbit

## Rapid Payload Tracking and Identification Support for Early Mission Operations

For satellite operators, launches often represent the most difficult and stressful phase of their missions. Multiple vital objectives must be accomplished in a brief period of time, including successfully locating their satellites and establishing initial communications. Certain types of missions, including rideshares with dozens of payloads belonging to multiple owner-operators, can further amplify these challenges. Additionally, even after payloads are identified and cataloged, cross-tagging and misassociations can occur leading to further confusion. As a result, operators have needed to dedicate key personnel to these resource-intensive efforts for days or weeks, putting critical projects on hold during these all-hands-on-deck processes.

These are the challenges that LeoLabs addresses with its new *Launch and Early Orbit* service, a first-of-its-kind capability in the space industry to provide commercial radar tracking support for newly launched payloads during the crucial first hours and days of mission operations. The service provides rapid assistance for payload location and identification so operators can establish communications with their satellites and transition to routine mission operations as quickly as possible.



Using the LeoLabs global network of phased-array radar systems, along with a suite of in-house tools and algorithms specifically designed to support fast asset tracking and data processing, we generate orbit data products and send them directly to satellite operators often within just hours of launch. This eliminates the need to rely on objects being added to the public catalog prior to receiving the first TLEs, which can often take several days or weeks for complex missions.

LeoLabs Launch and Early Orbit is available today to satellite operators worldwide, supporting launches of any size or complexity including large rideshare missions. The service includes:

**Pre-launch coordination** - LeoLabs coordinates with satellite operators, and launch providers (if required) to obtain launch nominals and predicted orbit insertion parameters for all payloads to schedule our radars for tracking.

**Payload Tracking** - LeoLabs radars are operated in "search" mode to track all deployed objects for approximately the first 72 hours following launch. High accuracy measurements are collected from each radar pass, including range, doppler, radar cross section (RCS), and distribution data. Payloads are identified typically within the first 1-2 radar passes, depending on orbit geometry. Subsequent radar passes can further improve accuracy of initial results.

**Orbit Products** - LeoLabs processes the tracking data through our algorithms for payload association and initial orbit determination to produce fitted TLEs or state vectors for operator satellites, delivered for every radar pass typically within 90 minutes of each pass.

**Identification Support** - LeoLabs works directly with operators to confirm which payloads on rideshare missions are theirs, and delivers orbit products for those objects. If there is any ambiguity, we can also provide orbit products and distribution analyses for surrounding payloads to aid in troubleshooting activities.

For more information on LeoLabs Launch and Early Orbit, contact us at [sales@leolabs.space](mailto:sales@leolabs.space).