

PHASE ZERO SPACE TECHNOLOGIES

Multi-Agency Launch Licensing

An Overview for Payload Customers and Launch Providers

The federal approvals a payload and mission clear before launch — FAA, FCC, and NOAA — and how Part 450 ground safety is delegated to the Federal Range.

This overview describes the general structure of U.S. launch-related licensing. Specific section citations, timelines, thresholds, fees, and form requirements should be confirmed against current primary sources (the agencies' rules and websites). See "Sourcing & Disclaimers" on the final page.

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1. One Launch, Several Federal Reviews

Depending on the payload and mission, multiple licenses and certifications may be required from various federal agencies — each with its own jurisdiction, forms, reviewers, and timeline. These commonly include, but are not limited to:

- FAA — licenses the launch (and reentry) itself and reviews the payload, under the commercial space transportation regulations.
- FCC — authorizes radio-frequency transmissions, essentially anything on the spacecraft that communicates.
- NOAA — licenses commercial remote sensing, for spacecraft capable of imaging or sensing the Earth.

This is a common bottleneck for launch vehicle mission managers, who must ensure their payload customers have identified and obtained every required license on time. Payload customers — particularly newer entrants — are often unfamiliar with these authorizations and their application processes, which pulls additional time and attention from the mission manager to keep the manifest on schedule.

These reviews overlap in their inputs (the same payload specifications feed several filings) but run on separate tracks, and a delay in any one can hold up the mission. This overview walks through each agency at a high level, then explains how Part 450 ground-safety requirements are delegated to the Federal Range when launching from a federal site.

2. FAA — Launch/Reentry License and Payload Review

The FAA, through its Office of Commercial Space Transportation (AST), licenses commercial launch and reentry. Modern launches are licensed under 14 CFR Part 450, which consolidated the earlier Part 417 (expendable) and Part 431 (reusable) frameworks. As part of obtaining a license, the FAA also conducts a payload review.

Payload review

The FAA reviews payloads proposed for launch or reentry to determine whether they raise public health, safety, national security, or foreign policy concerns. A key practical point for payload customers: a payload generally does not require a separate FAA payload determination if it is already subject to regulation by another federal agency — for example, a communications satellite licensed by the FCC, or an Earth-imaging system licensed by NOAA. In that case, the other agency's authorization can satisfy the review.

Timelines

The FAA review process operates on defined statutory and regulatory timelines, with pre-application consultation strongly encouraged to keep the formal review on schedule.

3. FCC — Spectrum and Transmitter Authorization

Essentially anything on a spacecraft that transmits radio frequencies requires authorization from the Federal Communications Commission. This covers telemetry, tracking and command (TT&C), payload communications, and any other RF emissions. Operating an unlicensed transmitter is not an option — FCC authorization is a gating requirement for the mission.

How it's filed

FCC space and earth station applications are filed using the Commission's application forms; Form 312 is the long-standing general application form associated with many radio services. The FCC has also established a streamlined licensing process for qualifying small satellites / small spacecraft, intended to be faster and lower-cost than the conventional space-station process. International coordination through the ITU may also be required depending on the system.

Why it's a common bottleneck

Spectrum authorization frequently sits on the critical path because it can involve coordination beyond the applicant's control (other operators, international coordination) and because the technical inputs (frequencies, power, orbital parameters) must be settled relatively early. Starting the FCC process early is widely advised.

4. NOAA — Commercial Remote Sensing License

Spacecraft capable of sensing or imaging the Earth generally require a commercial remote sensing license from NOAA, administered by its Commercial Remote Sensing Regulatory Affairs (CRSRA) office. This applies broadly to systems with Earth-imaging capability — not only dedicated imaging satellites, but potentially any system that can generate unenhanced data of the Earth.

NOAA's 2020 rulemaking restructured the licensing regime into a tiered system, intended to scale regulatory conditions to the novelty and sensitivity of the system's capabilities rather than applying uniform conditions to every operator.

5. How Part 450 Ground Safety Delegates to the Federal Range

This section is the most concrete because it is grounded in published Space Launch Delta 30 guidance (and the underlying FAA rule it describes). For launches from a Federal launch site, the FAA's ground-safety requirements can be satisfied through the Federal Range's own safety process rather than a separate FAA demonstration.

Under 14 CFR Part 450, an operator is not required to comply with the ground-safety provisions at §§ 450.181 through 450.189 if all three of the following are met:

- The launch or reentry is conducted from a Federal launch or reentry site;
- The operator has a written agreement with the Federal site for the provision of ground-safety services and oversight; and

- The Administrator has determined that the Federal site's ground-safety processes, requirements, and oversight are not inconsistent with the Secretary's statutory authority over commercial space activities.

In practice, this means that implementing the Federal Range's requirements — i.e., AFSPCMAN 91-710 at the Eastern or Western Range — satisfies the intent of the FAA ground-safety requirements. The earlier Part 417 (Subpart E) framework worked similarly: contracting with the Federal Range for the ground-safety process, where the FAA had assessed that range, let the operator rely on the range process without a separate demonstration of compliance. (Programs under the older Part 417/431 are transitioning to Part 450.)

6. Putting It Together

For a typical mission, the payload customer and launch provider are managing several of these tracks in parallel:

Agency	What it governs	Applies when...
FAA (AST)	Launch/reentry license and payload review (Part 450).	Every commercial launch; payload review unless the payload is already regulated by another agency.
FCC	Authorization for all RF transmissions (TT&C, comms).	The spacecraft transmits anything — effectively always.
NOAA (CRSRA)	Commercial remote sensing license.	The system can image / sense the Earth.
Federal Range	Ground safety (AFSPCMAN 91-710), satisfying FAA ground-safety intent.	Launching from a Federal site under a written ground-safety agreement.

This table is a high-level orientation, not a determination of what your specific mission requires. Confirm applicability for each mission with the relevant agency and your launch provider.

The common thread: these filings share inputs but run separately, and any one can become the long pole. Early engagement with each agency — and a single place to track status across all of them — is what keeps licensing off the critical path.

Where ELSSA fits

ELSSA is built to drive these workflows from a single source of data — mapping the payload and mission information once and using it to generate and track submissions across agencies, alongside Range Safety deliverables, in one integration-readiness view. The goal is to keep multi-agency licensing from becoming the bottleneck on a mission.

Sourcing & Disclaimers

This overview was prepared by Phase Zero Space Technologies as an orientation aid.

Important limitations:

- This is not legal, regulatory, or licensing advice. It does not establish what any specific mission requires. Confirm requirements with the FAA, FCC, NOAA, and your launch provider.
- Regulatory specifics change. Section numbers, timelines, thresholds, fees, form designations, office names, and the Part 417/431→450 transition status must all be confirmed against the agencies' current rules and guidance before this document is published or relied upon. Every such specific is flagged "VERIFY BEFORE PUBLISH."
- The Federal Range ground-safety delegation summary (Section 5) draws on the AFSPCMAN 91-710 System Safety Requirements Implementation Guide, SEAL-SSD-001, Release 1.0, SLD30/SEAL, October 2021, and the underlying 14 CFR Part 450. The other agency sections are written at a general level and require primary-source confirmation of all specifics.
- Nothing here implies endorsement of Phase Zero Space Technologies or ELSSA by the FAA, FCC, NOAA, the U.S. Space Force, or any government body.

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