

Commercial Space Transportation License

License Number: LLO 18-111 (Rev 2)

SPACE EXPLORATION TECHNOLOGIES

is authorized, subject to the provisions of 51 USC Subtitle V, ch. 509, and the orders, rules, and regulations issued under it, to conduct launches.

General. Space Exploration Technologies is authorized to conduct:

- (i) Flights of Falcon 9 launch vehicles from Space Launch Complex 4E (SLC-4E) at Vandenberg Space Force Base (VSFB) transporting communications, remote sensing, navigation, or other payload classes approved by the Office of Commercial Space Transportation to low Earth orbit; and
- (ii) pre-flight ground operations at VSFB associated with the flights, as identified in paragraph (i) of this license, of the Falcon 9 launch vehicles.

This license is granted subject to the terms, conditions, and limitations set forth in licensing orders A, B, C, and D and any subsequent orders issued by the Office of Commercial Space Transportation.

The licensee shall at all times conduct its operations in accordance with the regulations prescribed by the Office of Commercial Space Transportation for the activities authorized by this license.



US Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

Original Issued: October 4, 2018

Rev 2 Issued: September 10, 2020

Rev 2 Effective: September 10, 2020

**JAMES R
REPCHECK**

Digitally signed by
JAMES R REPCHECK
Date: 2021.09.10
17:32:06 -04'00'

Manager, Licensing and Evaluation Division

Revision History:

Original License - Issued October 4, 2018

Revision 1 - Issued November 15, 2018

- 1) Changed paragraph (i) to include "other payload classes approved by the Office of Commercial Space Transportation" in addition to communications, remote sensing, and navigation payload classes.

Revision 2 - Issued September 10, 2020

- 1) Changed paragraph (i) and (ii) to reference Vandenberg Space Force Base

License Order No. LLO 18-111A (Rev 2)

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

LAUNCH

AUTHORIZED BY LICENSE NO. LLO 18-111
ISSUED TO


SPACE EXPLORATION TECHNOLOGIES

1. Authority: This Order is issued to Space Exploration Technologies, referred to as SpaceX, under 51 U.S.C. subtitle V, chapter 509, and 14 C.F.R. Ch. III.
2. Purpose: This Order modifies License No. LLO 18-111 originally issued on October 4, 2018, by the Federal Aviation Administration's Office of Commercial Space Transportation, authorizing SpaceX to conduct launches of Falcon 9 launch vehicles; and prescribes as conditions to License No. LLO 18-111 certain requirements applicable to the launches.
3. Definitions: For purposes of License No. LLO 18-111 and any orders issued by the FAA pertaining to activities covered by License No. LLO 18-111:
 - (a) "Flight" shall mean the flight of a Falcon 9 launch vehicle, commencing with ignition of the first stage from SLC-4E at Vandenberg Space Force Base (VSFB) and transporting communications, remote sensing, navigation, or other payload classes approved by the Office of Commercial Space Transportation to low Earth orbit. Flight includes flyback of the first stage booster for landing at Landing Zone 4 at VSFB, landing on a droneship, or splashdown in the ocean as described in the application. A flight is concluded upon SpaceX's last exercise of control over the Falcon 9 vehicle, including the safing of the Falcon 9 vehicle stages or components that reach Earth orbit, following separation of the payload, or at the stage's splashdown after a purposeful disposal.
 - (b) "Pre-flight ground operations" shall mean SpaceX's pre-flight preparations of the Falcon 9 launch vehicle at VSFB, beginning with the arrival of the Falcon vehicle at VSFB.

License Order No. LLO 18-111A (Rev 2)

4. Special Reporting Requirements: In addition to all applicable reporting requirements under 14 C.F.R. Ch. III, SpaceX must identify any anomaly occurring on a prior Falcon 9 launch that could be material to public safety no later than 15 days before any flight conducted, unless the requirement of 14 C.F.R. § 417.25(a) has already been satisfied.
5. License Term: The term of License No. LLO 18-111 authorizing SpaceX to conduct launches is five (5) years from October 4, 2018.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

By: JAMES R
REPCHECK  Digitally signed by JAMES R
REPCHECK
Date: 2021.09.10 17:32:51
-04'00'

Randy Repcheck, Manager
Safety Authorization Division

Original Issued: October 4, 2018
Rev 2 Issued: September 10, 2021
Rev 2 Effective: September 10, 2021

Revision History:

Original License - Issued October 4, 2018

Revision 1 - Issued November 15, 2018

- 1) Paragraph (2) replaced "issued concurrently" with "originally issued on October 4, 2018"
- 2) Paragraph (3) (a) changed to include "other payload classes approved by the Office of Commercial Space Transportation" in addition to communications, remote sensing, and navigation payload classes.

Revision 2 - Issued September 10, 2021

- 1) Paragraph (3) (a) and (b) to reference Vandenberg Space Force Base
- 2) Paragraph (3) (a), added "or at the stage's splashdown after a purposeful disposal"

License Order No. LLO 18-111B (Rev 2)

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

FLIGHT

AUTHORIZED BY LICENSE NO. LLO 18-111
ISSUED TO

SPACE EXPLORATION TECHNOLOGIES

1. Authority: This Order is issued to Space Exploration Technologies, referred to as SpaceX, under 51 U.S.C. subtitle V, chapter 509, and 14 C.F.R. Ch. III.
2. Purpose: This Order modifies License No. LLO 18-111 originally issued on October 4, 2018, by the Federal Aviation Administration's Office of Commercial Space Transportation, authorizing SpaceX to conduct launches of Falcon 9 launch vehicles; and prescribes as conditions to License No. LLO 18-111 certain requirements applicable to the authorization to conduct the flights of these launch vehicles.
3. Authorization: SpaceX is authorized to conduct flights of launch vehicles:
 - (a) Using a Falcon 9 launch vehicle;
 - (b) From Space Launch Complex 4E at Vandenberg Space Force Base, California;
 - (c) Transporting communications, remote sensing, navigation, or other payload classes approved by the Office of Commercial Space Transportation to low Earth orbit; and
 - (d) According to the launch vehicle, launch vehicle systems, and safety management program represented in the SpaceX application as of the date of this order, and any amendments to the license application approved by the FAA, in writing.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

By: **JAMES R** Digitally signed by
JAMES R REPCHECK
Date: 2021.09.10
17:33:42 -04'00'
REPCHECK

Randy Repcheck, Manager
Safety Authorization Division

Original Issued: October 4, 2018
Rev 2 Issued: September 10, 2021
Rev 2 Effective: September 10, 2021

Revision History:

Original License - Issued October 4, 2018

Revision 1 - Issued November 15, 2018

- 1) Paragraph (2) replaced "issued concurrently" with "originally issued on October 4, 2018"
- 2) Paragraph (3) (d) changed to include "other payload classes approved by the Office of Commercial Space Transportation" in addition to communications, remote sensing, and navigation payload classes.

Revision 2 - Issued September 10, 2021

- 1) Paragraph (3) (b) changed reference to Vandenberg Space Force Base
- 2) Removed paragraph (3) (c) that referenced the flight azimuth

License Order No. LLO 18-111C (Rev 2)

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

PRE-FLIGHT GROUND OPERATIONS

AUTHORIZED BY LICENSE NO. LLO 18-111
ISSUED TO

SPACE EXPLORATION TECHNOLOGIES

1. Authority: This Order is issued to Space Exploration Technologies, referred to as SpaceX, under 51 U.S.C. subtitle V, chapter 509, and 14 C.F.R. Ch. III.
2. Purpose: This Order modifies License No. LLO 18-111 originally issued on October 4, 2018, by the Federal Aviation Administration's Office of Commercial Space Transportation, authorizing SpaceX to conduct launch of Falcon 9 launch vehicles; and prescribes as conditions to License No. LLO 18-111 certain requirements applicable to the authorization to conduct pre-flight ground operations.
3. Authorization: SpaceX is authorized to conduct pre-flight ground operations at Vandenberg Space Force Base (VSFB) associated with launches of communications, remote sensing, navigation, or other payload classes approved by the Office of Commercial Space Transportation to low earth orbit on Falcon 9 launch vehicles.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

By: JAMES R
REPCHECK Digitally signed by
JAMES R REPCHECK
Date: 2021.09.10
17:34:25 -04'00'
Randy Repcheck, Manager
Safety Authorization Division

Original Issued: October 4, 2018
Rev 2 Issued: September 10, 2021
Rev 2 Effective: September 10, 2021

Revision History:

Original License - Issued October 4, 2018

Revision 1 - Issued November 15, 2018

- 1) Paragraph (2) replaced "issued concurrently" with "originally issued on October 4, 2018"
- 2) Paragraph (3)(a) changed to include "other payload classes approved by the Office of Commercial Space Transportation" in addition to communications, remote sensing, and navigation payload classes.

Revision 2- Issued September 10, 2021

- 1) Paragraph (3) changed reference to Vandenberg Space Force Base

License Order No. LLO 18-111D (Rev 7)

OFFICE OF
COMMERCIAL SPACE TRANSPORTATION
LICENSE ORDER REGARDING

FINANCIAL RESPONSIBILITY REQUIREMENTS

Under License No. LLO 18-111
Issued to

SPACE EXPLORATION TECHNOLOGIES

1. Authority: This Order is issued to Space Exploration Technologies, referred to as SpaceX, under 51 U.S.C. Subtitle V, chapter 509, and 14 C.F.R. part 440.
2. Purpose: This Order modifies License No. LLO 18-111 originally issued on October 4, 2018, by the Federal Aviation Administration's Office of Commercial Space Transportation, by prescribing financial responsibility requirements for licensed launch activities in accordance with 14 C.F.R. part 440.
3. Definitions: For purposes of this Order, "licensed launch activities" shall mean activities authorized by the License. Other terms used in this Order are defined in accordance with 14 C.F.R. § 440.3.
4. Liability Insurance: SpaceX shall maintain a policy or policies of liability insurance for covered claims in accordance with 14 C.F.R. § 440.9(b) in the amount of:
 - (a) Flight of Falcon 9 launch vehicle from Vandenberg Space Force Base (VSFB)
 - i. Ninety-Four Million Dollars (\$94,000,000) for low Earth orbit (LEO) missions;
 - ii. Ninety-Four Million Dollars (\$94,000,000) for LEO missions that includes first stage return to launch site (LZ-4); or

License Order No. LLO 18-111D (Rev 7)

- iii. One-Hundred Fifty Million Dollars (\$150,000,000) for the SDA-0A, Starlink Group 2, or Starlink Group 4 missions; and
- iv. Five-Hundred Million Dollars (\$500,000,000) for the EROS-C mission.

(b) Pre-flight operations performed at VSFB

- i. Nine Million Dollars (\$9,000,000) for covered claims resulting from pre-flight operations performed at VSFB.

5. Government Property Insurance: SpaceX shall maintain a policy or policies of insurance for covered claims in accordance with 14 C.F.R § 440.9(d) in the amount of:

(a) Flight of Falcon 9 launch vehicle from VSFB

- i. Sixty-One Million Dollars (\$61,000,000) for LEO missions;
- ii. One Hundred Million Dollars (\$100,000,000) if the flight includes first stage return to launch site (LZ-4); or
- iii. Forty-Four Million Dollars (\$44,000,000) for the SDA-0A, Starlink Group 2, or Starlink Group 4 missions; and

(b) Pre-flight operations performed at VSFB

- i. Two Million Dollars (\$2,000,000) for covered claims resulting from pre-flight operations performed at VSFB.

6. Covered property includes all property owned, leased, or occupied by, or within the care, custody, or control of, the United States and its agencies, and its contractors and subcontractors involved in licensed launch activities, at VSFB.

OFFICE OF COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

By: **MICHELLE S MURRAY** Digitally signed by MICHELLE S
MURRAY
Date: 2023.03.24 17:21:40 -04'00'
Michelle S. Murray, Manager
Safety Authorization Division

Original Issued: October 4, 2018
Rev 7 Issued: March 24, 2023
Rev 7 Effective: March 24, 2023

Revision History:

Original License - Issued October 4, 2018

Revision 1 - Issued November 15, 2018

- 1) Paragraph (2) replaced "issued concurrently" with "originally issued on October 4, 2018"
- 2) Paragraph (4) (a) added Fifty-Three Million Dollars (\$53,000,000) value for non-RTLS launches. Fifty Million Dollars (\$50,000,000) for launches with RTLS.
- 3) Paragraph (5) (a) added (a)Sixty-One Million Dollars (\$61,000,000) value for non-RTLS launches. One Hundred Million Dollars (\$100,000,000) for launches with RTLS.

Revision 2 - Issued September 10, 2021

- 1) Paragraph (4) added financial responsibility requirements for Starlink Group 2 missions, reformatted the subparagraphs for clarity, and changed the reference to Vandenberg Space Force Base
- 2) Paragraph (5) added financial responsibility requirements for Starlink Group 2 missions, reformatted the subparagraphs for clarity, and changed the reference to Vandenberg Space Force Base

Revision 3 - Issued December 15, 2021

- 1) Paragraph (4) (a) (iii) added "and Starlink Group 4"
- 2) Paragraph (5) (a) (iii) added "and Starlink Group 4"

Revision 4 - Issued June 16, 2022

- 1) Paragraph (4) (a) (ii) changed "Fifty Million Dollars (\$50,000,000)" to "Ninety-Four Million Dollars (\$94,000,000)"

Revision 5 - Issued July 7, 2022

- 1) Paragraph (4) (a) (i) changed "Fifty-Three Million Dollars (\$53,000,000)" to "Ninety-Four Million Dollars (\$94,000,000)"
- 2) Paragraph (4) (b) (i) changed the reference to Vandenberg Space Force Base

Revision 6 - Issued December 28, 2022

- 1) Paragraph (4)(a)(iv) added "Five-Hundred Million Dollars (\$500,000,000) for the EROS-C mission."

Revision 7 - Issued March 24, 2023

- 1) Paragraph (4)(a)(iii) changed "for Starlink Group 2 and Starlink Group 4 missions" to "for the SDA-0A, Starlink Group 2, or Starlink Group 4 missions"
- 2) Paragraph (5)(a)(iii) changed "for Starlink Group 2 and Starlink Group 4 missions" to "for the SDA-0A, Starlink Group 2, or Starlink Group 4 missions"