must identify all safety critical pre-flight operations in the launch schedule required by §417.17(b)(1). Safety critical preflight operations must include those defined in this section.

(b) **Countdown.** A launch operator must implement its countdown plan, of §417.111(l), for each launch. A launch operator must disseminate a countdown plan to all personnel responsible for the countdown and flight of a launch vehicle, and each person must follow that plan.

(c) **Collision avoidance.** A launch operator must coordinate with United States Strategic Command to obtain a collision avoidance analysis, also referred to as a conjunction on launch assessment, as required by §417.231. A launch operator must implement flight commit criteria as required by §417.113(b) to ensure that each launch meets all the criteria of §417.107(e).

(d) **Meteorological data.** A launch operator must conduct operations and coordinate with weather organizations, as needed, to obtain accurate meteorological data to support the flight safety analysis required by subpart C of this part and to ensure compliance with the flight commit criteria required by §417.113.

(e) **Local notification.** A launch operator must implement its local agreements and public coordination plan of §417.111(i).

(f) **Hazard area surveillance.** A launch operator must implement its hazard area surveillance and clearance plan, of §417.111(j), to meet the public safety criteria of §417.107(b) for each launch.

(g) **Flight safety system preflight tests.** A launch operator must conduct pre-flight tests of any flight safety system as required by section E417.41 of appendix E of this part.

(h) **Launch vehicle tracking data verification.** For each launch, a launch operator must implement written procedures for verifying the accuracy of any launch vehicle tracking data provided. For a launch vehicle flown with a flight safety system, any source of tracking data must satisfy the requirements of §417.307(b).

(i) **Unguided suborbital rocket preflight operations.** For the launch of an unguided suborbital rocket, in addition to meeting the other requirements of this section, a launch operator must perform the preflight wind weighting and other preflight safety operations required by §§417.125, 417.233, and appendix C of this part.

§ 417.123 Computing systems and software.

(a) A launch operator must document a system safety process that identifies the hazards and assesses the risks to public health and safety and the safety of property related to computing systems and software.

(b) A launch operator must identify all safety-critical functions associated with its computing systems and software. Safety-critical computing system and software functions must include the following:

1. Software used to control or monitor safety-critical systems.

2. Software that transmits safety-critical data, including time-critical data and data about hazardous conditions.

3. Software used for fault detection in safety-critical computer hardware or software.

4. Software that responds to the detection of a safety-critical fault.

5. Software used in a flight safety system.

6. Processor-interrupt software associated with previously designated safety-critical computer system functions.

7. Software that computes safety-critical data.

8. Software that accesses safety-critical data.

9. Software used for wind weighting.

(c) A launch operator must conduct computing system and software hazard analyses for the integrated system.

(d) A launch operator must develop and implement computing system and software validation and verification plans.

(e) A launch operator must develop and implement software development plans, including descriptions of the following:

1. Coding standards used;

2. Configuration control;

3. Programmable logic controllers;

4. Policy on use of any commercial-off-the-shelf software;

5. Policy on software reuse.