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 preflight 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; and

(5) Policy on software reuse.