

Use Case 2: Monitor Countdown**Scope:** Launch Simulator**Level:** Flight Controller Goal**Primary Actor:** Flight Controller**Secondary Actors:** Astronaut, Engineer/Technician**Related Use Cases:** *Use Case 1: The Flight Controller Shall Monitor Pre-Launch Activities***Stake Holders & Interests:**

- Flight Controller: wants to monitor the Countdown Time
- Flight Controller: wants to control the Countdown Time
 - Enter the Countdown Time
 - Start the Countdown Time
 - Hold the Countdown Time
 - Re-Enter the Countdown Time
- Engineer/Technician: wants to monitor the Countdown Time
- Astronaut: wants to monitor the Countdown Time

Pre-Conditions: The System is ready to accept Countdown Time Entry from the Flight Controller**Post-Conditions:** The Countdown Timer has reached zero (see *Use Case 1: The Flight Controller shall monitor Pre-Launch Activities*)**Flow of Events:**

| Flight Controller | System |
|-------------------------------|---|
| 1. Enters the Countdown Time | |
| | 2. Displays the Countdown Time in Countdown Timer |
| 3. Starts the Countdown Timer | |
| | 4. Countdown from entered time to zero |
| | 5. Displays the Current Countdown Time |
| | 6. Countdown Time Zero |

Alternative Flows:

- *.a At any time, the Flight Controller can abort the Countdown; System responds with stopping the Countdown and zeroing out the Countdown Timer
- 1a. The Flight Controller can re-enter another Countdown Time prior to starting the Countdown Timer: entering the Countdown Time as many times as desired

- 2a. If the Flight Controller enters a Countdown Time too low as pre-determined for adequate launch safety, then the System does not set the entered Countdown Time, alerting the Flight Controller of the error. The Flight Controller can choose to enter an appropriate Countdown Time
- 4a. If the Flight Controller chooses to hold the Countdown, then the System stops the Countdown: displaying the stopped Countdown time. Countdown Time resumes upon Flight Controller restart: resuming from the time stopped.

Special Requirements:

- There is only one point of decision for the Countdown Hold, Countdown Abort: The Flight Controller

Technology & Variations List:

- 4a. A typical Countdown Timer.
- 4b. The Countdown Timer is interchangeable.

Frequency of Occurrence: Almost Continuously: Based on the number of desired Launches and the number of desired Countdowns.

Open Issues:

- What is considered a “safe” Countdown Launch Time?
- Does a “safe” Countdown Launch Time depend on the type of launch and type of Delivery Vehicle (Rocket)?