Use Case 3: Monitor Launch Activities
Scope: Launch Simulator
Level: Flight Controller Goal, Astronaut Goal
Primary Actor: Flight Controller, Astronaut
Secondary Actor: Engineer/Technician
Related Use Cases: *Use Case 2: The Flight Controller shall Initiate Launch*
Stakeholders & Interrests:

- Flight Controller: Wants to
  - Monitor launch data to
    - Continue the launch
    - Abort the launch
- Astronaut: Wants to
  - Monitor launch data to
    - Continue the launch
    - Abort the launch
- Engineer/Technician: Wants to monitor launch data of there responsibility for launch integrity assessment: to advise the Flight Controller
- Administrator: wants a successful launch
- Politician: wants a successful launch for policy assessment: to determine program funding/continuation
- Politician: wants tecnical success for local and national pride

Pre-Conditions: The Launch Intiation Activities are complete. See *Use Case 2: Flight Controller shall Initiate Launch*
Post-Conditions: The launch vehicle separation from payload/capsule–the launch is complete

Main Success Scenario:

Flight Controller/Astronaut	**System**
	1. Starts the Flight Time Clock
	2. Periodically returns the Flight Time Clock to the Actors through the duration of the launch
	3. Periodically monitors/returns launch data to the Actors through the duration of the launch
4. Monitors launch data	
	5. Final Stage Separation from the payload/capsule, transitions out of launch (launch is complete)
	6. Alerts of transition

Alternative Flows:

3a. Throughout the launch, the Flight Controller has the ability to abort the launch. System reflects the abort status.

3b. Throughout the launch, the (commanding) astronaut has the ability to abort the launch. System reflects the abort status.

3c. Throughout the launch, the System alerts the primary actors and the responsible secondary actors of any anomalous Launch Data. If the System assess any of the anomalous launch data poses a threat to the launch and/or lives of the mission crew, the System advises the primary actors to abort the launch. Primary Actors have final authority on launch abort.

5a. If the final stage fails to separate from the payload/capsule, then the System alerts the issue, the System does not transition out of launch. The lauch is aborted (which can be initiated via either of the primary actors). The System reflects the abort status.

Special Requirements:

- Both primary actors have the ability to abort the Launch. The System cannot abort the launch.
- The abort can be in response to launch anomalies/issues reported by the System, or at the order of the Flight Controller or the (Commanding) Astronaut.

Technology & Variations List

3a. Stage separations during launch are part of the Launch Data

5a. Final stage separation is part of the Lauch Data: once the final stage separates from the capsule/payload, the transition out of Launch occurs

Open Issues

- What if the Flight Time Clock fails (stops working, reports erronious time, etc...)?
- Coming back to the Fully Automated System question when was discussed (and continues to be discussed) in previous Use Cases. For the time being, this System is not fully automated. In the case of a fully automated System, one of the open issues is manual override in the event of an abort.