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Assignment 10 Article Review

This article touches upon modern rocket technology, emphasizing fears surrounding NASA's flight software. Author Christian Davenport points out how the Aerospace Safety Advisory Panel has brought up "great concern about the end-to-end integrated test capability...for flight software." There are multiple, separate labs running tests on specific subsets of the software, yet no integrated test appears to be scheduled. This modular form of testing may help locate subset-specific bugs, but the true effectiveness of the software is unknown unless there is end-to-end testing. Davenport also describes how similar testing was used for the Starliner program—testing that missed two bugs capable of causing a mission failure.

The matter is further complicated by the White House's acceleration of NASA's timeline, forcing engineers to develop the software as quickly as possible. Though not directly discussed by Davenport, this acceleration will likely increase the margin of error by reducing the time available for debugging and streamlining code.

Overall, it is quite clear that modular testing works when trying to clean subsets of code, but integrated testing is necessary to ensure the software works holistically. To maximize testing, there must be efficient management of time and a reasonable timeline must be given.

Works Cited

- Davenport, Christian. "NASA's New Rocket Would Be the Most Powerful Ever. But It's the Software That Has Some Officials Worried." *The Washington Post*, WP Company, 1 Nov. 2020, www.washingtonpost.com/technology/2020/10/31/nasa-sls-moon-rocket/.
- Hambleton, Kathryn. "Around the Moon with NASA's First Launch of SLS with Orion." *NASA*, NASA, 7 Mar. 2018, www.nasa.gov/feature/around-the-moon-with-nasa-s-first-launch-of-sls-with-orion.
- Hambleton, Kathryn. "First Flight With Crew Important Step on Long-Term Return to Moon." *NASA*, NASA, 27 Aug. 2018, www.nasa.gov/feature/nasa-s-first-flight-with-crew-important-step-on-long-term-return-to-the-moon-missions-to.
- Mohon, Lee. "Space Launch System (SLS) Overview." *NASA*, NASA, 16 Mar. 2015, www.nasa.gov/exploration/systems/sls/overview.html.
- Pruitt, Sarah. "What Went Wrong on Apollo 13?" *History.com*, A&E Television Networks, 2 Apr. 2020, www.history.com/news/apollo-13-what-went-wrong.
- Warner, Cheryl. "NASA's Lunar Outpost Will Extend Human Presence in Deep Space." *NASA*, NASA, 13 Feb. 2018, www.nasa.gov/feature/nasa-s-lunar-outpost-will-extend-human-presence-in-deep-space.