

NASA calls off OSAM-1 satellite maintenance technology operation

Description

NASA has terminated a costly project aiming to showcase satellite servicing technologies. The project had been bogged down by considerable delays and budget overruns.

The On-Orbit Servicing, Assembly, and Manufacturing (OSAM) 1 project involved efforts to refuel the Landsat 7 spacecraft and conduct the in-orbit assembly of a Ka-band satellite antenna. However, on March 1, NASA announced its cancellation, citing continuous technical difficulties, escalating costs, scheduling issues, and a shift in broader community's focus away from refueling unprepared spacecraft.

Following formal notifications to Congress, NASA plans to initiate an orderly shutdown. This process involves transferring hardware and exploring potential partnerships or alternative hardware applications. The agency has assured a thorough review to lessen the adverse impacts on the workforce at the Goddard Space Flight Center, where OSAM-1 was being spearheaded. Approximately 450 NASA staff and contractors have been engaged in the development of OSAM-1.

Originally conceived as Restore-L about ten years ago, the project's goal was to launch as soon as 2020 to refuel Landsat 7. In 2020, the mission was renamed OSAM-1 and expanded to include in-space assembly and manufacturing activities.

However, the mission encountered severe cost blowouts and delays. Originally estimated to cost between \$626 million and \$753 million, the mission's total cost had ballooned to \$2.05 billion with the projected launch being delayed until December 2026. NASA's Office of Inspector General, in an October 2023 report, suggested further overruns were likely.

The report identified Maxar's performance as a core problem. Maxar was responsible for providing both the spacecraft bus and the robotics payload, under contracts worth nearly \$316 million. Significant underestimations led to setbacks in delivery; the OSAM-1 bus was delivered in September 2023, two and a half years behind schedule.

While Maxar did manage to deliver one of SPIDER's three robotic arms to NASA, the rest of the arms are expected to be delivered later this year. Despite the project's discontinuation, Maxar stated its commitment to support NASA in potential partnerships or alternative hardware uses.

Intriguingly, lack of funds wasn't an issue for OSAM-1. Congressional funding regularly exceeded NASA's requests. However, the cancellation of OSAM-1 has illustrated the difficulty in developing a spacecraft designed for refueling unprepared spacecraft, a task described as "really hard."

OSAM-1's termination comes as numerous companies are commercially pursuing satellite servicing technologies. Efforts include developing satellites with refueling ports to simplify the process. Despite the project's challenges, the experience gained in satellite servicing and the development of robotic technologies through OSAM-1 carries value for potential future applications.



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Vocabulary List:

1. **Terminated** // (verb): To bring to an end to cease.
2. **Aiming** // (noun): Intention or objective.
3. **Bogged down** // (phrasal verb): To become stuck in mud or a difficult situation.
4. **Overruns** // (noun): Excess in cost or time.
5. **Assembly** // (noun): The action of gathering together or uniting.
6. **Escalating** // (verb): Increasing rapidly in intensity or extent.

Vocabulary quizzes

Multiple Choice (Select the Correct answer for each question.)

1. What is the result or consequence typically a negative one of an action or event?

Option: Positive Outcome

Option: Neutral Effect



Option: Negative Repercussion

Option: Promising Future

2. Which term refers to the act of conforming to rules or regulations?

Option: Resistance

Option: Defiance

Option: Compliance

Option: Rebellion

3. Which word describes something that is not sensible or realistic?

Option: Feasible

Option: Logical

Option: Improbable

Option: Impractical

4. What term describes someone who is highly proficient and adept in a particular skill?

Option: Untrained

Option: Inept

Option: Skilful

Option: Clumsy

5. What word means to give new and improved form structure or appearance to something?

Option: Deteriorate

Option: Decline

Option: Revamp

Option: Destabilize

6. Which term refers to the action of gathering people together for a common purpose?

Option: Dispersal

Option: Scatter

Option: Assembly

Option: Isolation

7. What word means innovative and pioneering leading the way for others to follow?

Option: Conventional

Option: Typical

Option: Substandard

Option: Groundbreaking

8. Which term describes a sentimental longing or wistful affection for the past?

Option: Futuristic

Option: Forward-Thinking

Option: Nostalgic



Option: Current

9. In the context of technology what does the term 'console' generally refer to?

Option: Retrograde

Option: Future

Option: Console

Option: Mobile

10. What term is used to describe a situation where people or things are in a state of constant agitation or turnover?

Option: Stability

Option: Calmness

Option: Churns

Option: Stillness

Gap-Fill (Fill in the blanks with the correct word from the vocabulary list.)

11. The manager provided _____ to the team that the project would be completed on time and within budget.

12. Despite facing challenges he decided to _____ and work diligently towards his goals.

13. She was _____ to achieve a new personal best in the upcoming marathon race.

14. The construction project experienced cost _____ due to unexpected delays and additional work required.

15. The conflict between the two countries was _____ rapidly causing concerns about potential military action.

16. The company focused on developing _____ solutions to address complex problems in the industry.

17. The data had been _____ to support a false conclusion leading to incorrect decision-making.

18. The professor placed great _____ on the importance of critical thinking skills for



academic success.

19. The instructions provided by the supervisor were _____ causing confusion among the team members.

20. Due to repeated violations of company policies the employee was _____ from his position.

Matching Sentences (Match each definition to the correct word from the vocabulary list.)

21. The dark wizard's army of minions obeyed his every command even in death.
22. The powerful sorcerer was known for his mastery of dark magic and ability to raise the dead; he was a feared .
23. The software update included several new features and performance to improve user experience.
24. The evil queen's loyal carried out her every wicked demand without question.
25. The company decided to its marketing strategy to attract a younger demographic.
26. After numerous warnings the organization was left with no choice but to the underperforming employee.
27. The contract's clauses were intentionally leaving room for interpretation and potential disputes.
28. The startup's approach to solving common problems quickly gained attention in the industry.
29. The annual tech conference attracted thousands of eager tech looking to learn and connect.
30. In the fast-paced business world the market constantly with new trends and emerging competitors.

Answer

Multiple Choice: 1. Negative Repercussion 2. Compliance 3. Impractical 4. Skilful 5. Revamp 6. Assembly 7. Groundbreaking 8. Nostalgic 9. Console 10. Churns

Gap-Fill: 11. Assurance 12. Persevere 13. Aiming 14. Overruns 15. Escalating 16. Innovative 17. Manipulated 18. Emphasis 19. Ambiguous 20. Terminated

Matching sentence: 1. Undead 2. Necromancer 3. Enhancements 4. Minions 5. Revamp 6. Terminated 7. Ambiguous



8. Innovative 9. Enthusiasts 10. Churns

CATEGORY

1. Sci/Tech - LEVEL4

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