# Dossier: ATOMOS NUCLEAR AND SPACE CORPORATION

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,229,163.00

**Award Date:** 2024-08-28

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Atomos Nuclear and Space Corporation (Atomos Space) is a US-based company developing in-space infrastructure and transportation capabilities designed to dramatically reduce the cost and complexity of space logistics. Their primary business revolves around building and operating orbital transfer vehicles (OTVs) powered by advanced nuclear thermal propulsion (NTP). Atomos aims to solve the limitations of traditional chemical propulsion, which are slow, expensive, and restrict mission capabilities, especially for missions to GEO, cislunar space, and beyond. Their unique value proposition lies in offering faster transit times, greater payload capacity, and increased operational flexibility, enabling new possibilities for satellite deployment, in-space servicing, resource utilization, and deep-space exploration.

**Technology Focus:**

* Development of nuclear thermal propulsion (NTP) powered Orbital Transfer Vehicles (OTVs) called "Halliday" and "Quentin." Halliday is smaller and designed to demonstrate and flight test NTP capabilities. Quentin is a larger OTV for commercial and government use.
* In-space refueling capabilities, potentially allowing for significantly extended mission lifetimes and operational ranges for OTVs and other spacecraft. Atomos is exploring refueling using multiple potential fuel sources including xenon, argon, and potentially chemical propellants in the future.

**Recent Developments & Traction:**

* October 2023:\*\* Atomos was selected for the US Space Force's Orbital Services Program (OSP On-Ramp 4), a competitive program that aims to develop and test technologies related to in-space mobility and logistics. The specific award amount was not publicly disclosed.
* September 2023:\*\* Atomos successfully completed a System Requirements Review (SRR) for their Quentin OTV under a Defense Innovation Unit (DIU) Other Transaction Agreement (OTA).
* 2022:\*\* Atomos secured a $1.8 million Phase II Small Business Innovation Research (SBIR) grant from the US Air Force to develop a Nuclear Thermal Propulsion (NTP) Space Transportation Vehicle.

**Leadership & Team:**

* Vanessa Clark (Co-Founder & CEO):\*\* Background in aerospace engineering and significant experience in the space industry, including previous roles at Boeing and NASA.
* William "Bill" Callister (Co-Founder & CTO):\*\* Nuclear engineer with expertise in reactor design and nuclear propulsion systems. Previously held research positions focused on advanced propulsion technologies.

**Competitive Landscape:**

* Spaceflight Inc.:\*\* A provider of launch services and orbital transfer vehicles. While not focused on nuclear propulsion, they offer alternative solutions for in-space transportation using chemical propulsion systems.
* Momentus Space:\*\* Develops and operates orbital transfer vehicles. Momentus faced early setbacks, but is still pursuing chemical and water-based electric propulsion solutions for similar mission profiles. Atomos differentiates itself through its planned nuclear thermal propulsion system, promising superior performance in terms of speed and payload capacity.

**Sources:**

1. [https://atomosspace.com/](https://atomosspace.com/)

2. [https://www.diu.mil/](https://www.diu.mil/)

3. [https://www.spacenews.com](https://www.spacenews.com)

4. [https://www.airforce-magazine.com/](https://www.airforce-magazine.com/)