# Dossier: ORBITAL MICRO SYSTEMS, INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $240,000.00

**Award Date:** 2023-07-17

**Branch:** NAVY

## AI-Generated Intelligence Summary

**Company Overview:**

Orbital Micro Systems, Inc. (OMS) is a pioneering US-based company focused on developing and deploying microwave remote sensing technology for precise weather monitoring and forecasting. Their primary mission is to provide high-resolution, global weather data with unprecedented frequency, aiming to solve the limitations of existing satellite-based weather observation systems that lack temporal and spatial granularity. OMS addresses the critical need for improved weather intelligence for various sectors, including aviation, agriculture, maritime, and disaster preparedness. Their unique value proposition lies in miniaturizing microwave radiometers and deploying them on a constellation of small satellites (cubesats), enabling more frequent and localized weather data collection at a fraction of the cost of traditional, larger weather satellites.

**Technology Focus:**

* Miniaturized Microwave Radiometers:\*\* OMS designs and manufactures highly compact, low-power microwave radiometers specifically for small satellite platforms. These radiometers measure thermal microwave emissions from the Earth's atmosphere and surface, providing critical data on temperature, humidity, precipitation, and ice concentration.
* Global Environmental Monitoring System (GEMS):\*\* This is the name of their proposed constellation of small satellites that will provide high-resolution weather data. Although planned, full deployment is not yet realized.
* Data Processing and Analytics:\*\* OMS develops sophisticated algorithms and software to process raw microwave data from its satellites and generate actionable weather insights, including forecasts, nowcasts, and historical analyses.

**Recent Developments & Traction:**

* February 2021:\*\* Secured a contract from the U.S. Space Force to perform an on-orbit assessment of its International Space Station-deployed weather sensor called "HARRIER".
* December 2020:\*\* OMS received a NASA Small Business Innovation Research (SBIR) Phase II award for "A Global Precipitation Monitoring Solution for Future Spaceborne Microwave Radiometers."
* Ongoing Challenges:\*\* While there have been initial launches of demonstration satellites, OMS has faced challenges in deploying the full GEMS constellation due to funding and technical complexities. Publicly available information does not indicate recent successful funding rounds.

**Leadership & Team:**

* William J. Hossein:\*\* CEO. His background includes prior experience in telecommunications and technology management.

**Competitive Landscape:**

* Spire Global:\*\* Spire operates a constellation of nanosatellites providing weather and maritime intelligence data. OMS differentiates itself through its specific focus on miniaturized microwave radiometry and high-resolution weather data, offering potentially higher accuracy in certain weather parameters compared to other sensor technologies used by Spire.
* PlanetiQ:\*\* PlanetiQ focuses on radio occultation (RO) measurements for weather forecasting. OMS's direct microwave radiometry provides complementary data that offers different strengths, particularly in capturing cloud and precipitation characteristics.

**Sources:**

1. [https://spacenews.com/oms-to-provide-on-orbit-assessment-of-weather-sensor-to-space-force/](https://spacenews.com/oms-to-provide-on-orbit-assessment-of-weather-sensor-to-space-force/)

2. [https://www.microwavejournal.com/articles/34582-orbital-micro-systems-awarded-nasa-sbir-phase-ii-for-global-precipitation-monitoring](https://www.microwavejournal.com/articles/34582-orbital-micro-systems-awarded-nasa-sbir-phase-ii-for-global-precipitation-monitoring)

3. [https://www.omswx.com/](https://www.omswx.com/) (Company website)