# Dossier: EDGE CASE RESEARCH INC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,249,903.00

**Award Date:** 2024-07-11

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Edge Case Research Inc. (ECR) is a software company specializing in safety-critical autonomy validation and verification. Their primary business is developing and deploying software solutions for testing, verification, and certification of autonomous systems, particularly for applications in defense, aerospace, and robotics. ECR's core mission is to enable the safe and reliable deployment of autonomous systems by providing tools and methodologies that rigorously identify and mitigate potential safety hazards and edge cases. They aim to solve the significant challenge of ensuring autonomous systems behave predictably and safely in complex and unpredictable real-world environments. Their unique value proposition lies in their patented safety assurance technologies that significantly reduce the time and cost associated with validating and certifying autonomous systems, while providing high levels of confidence in their safety performance.

**Technology Focus:**

* Humble.ai:\*\* A platform that uses formal methods, advanced search algorithms, and simulation to systematically identify edge cases and vulnerabilities in autonomous systems. It can analyze autonomous systems' code, behavior, and interaction with its environment, allowing developers to find problems before deployment.
* Safety Case Builder:\*\* A tool designed to generate and manage safety cases for autonomous systems. It provides a structured framework for documenting safety requirements, hazards, and mitigation strategies, ensuring compliance with regulatory standards and industry best practices.

**Recent Developments & Traction:**

* 2021/2022, DoD SBIR Awards:\*\* Multiple SBIR Phase I and II awards from the Department of Defense to further develop and refine its technology for specific defense applications, including autonomous navigation and obstacle avoidance.
* Partnerships with major Aerospace & Defense Primes:\*\* Demonstrated through press releases and internal sources, Edge Case Research has cultivated partnerships with established primes for deploying its software for testing and verifying their autonomous aerial vehicle and robotic systems.
* Expanded Capabilities:\*\* Edge Case Research expanded its capabilities to be able to handle the verification and validation of autonomous driving systems within the automotive sector, according to various industry announcements.

**Leadership & Team:**

* Michael Wagner (CEO):\*\* Previously a Principal Scientist and Manager at Carnegie Mellon University's Robotics Institute, with extensive experience in autonomous systems and software engineering.
* The leadership team includes individuals with backgrounds in robotics, formal verification, and safety-critical systems from leading academic institutions and defense contractors.

**Competitive Landscape:**

* adastra.one (Formerly Foretellix):\*\* Similar focus on scenario-based testing and validation of autonomous systems, particularly for automotive and ADAS systems. ECR differentiates itself through its strength in applying formal methods and its deeper penetration in the defense and aerospace sectors.
* Applied Intuition:\*\* Focuses on simulation and synthetic data generation for autonomous system development and testing. ECR differentiates itself with its unique strength in formal verification and edge case analysis to increase safety assurance.

**Sources:**

1. [https://www.edgecaseresearch.com/](https://www.edgecaseresearch.com/)

2. [https://www.crunchbase.com/organization/edge-case-research](https://www.crunchbase.com/organization/edge-case-research)

3. [https://www.globenewswire.com/news-release/2022/05/03/2435112/0/en/Edge-Case-Research-Selected-for-AFWERX-STO-22-1-to-Demonstrate-the-Application-of-Humble-AI-to-USAF-Robotic-Platforms.html](https://www.globenewswire.com/news-release/2022/05/03/2435112/0/en/Edge-Case-Research-Selected-for-AFWERX-STO-22-1-to-Demonstrate-the-Application-of-Humble-AI-to-USAF-Robotic-Platforms.html)

4. [https://www.youtube.com/watch?v=U183jV81f7E](https://www.youtube.com/watch?v=U183jV81f7E)