



**IN ORBIT SERVICING, ASSEMBLY & MANUFACTURING (ISAM):
HOW INDUSTRIES EVOLVE IN RESPONSE TO RADICALLY ALTERED CONSTRAINTS
LATEST UPDATE: JUNE 2025**

RESEARCH OBJECTIVE: WE AIM TO INVESTIGATE HOW REMOVING GRAVITY CONSTRAINTS RESHAPES INDUSTRY ASSUMPTIONS BY FOCUSING ON IN-SPACE MANUFACTURING VENTURES AND COMPARING THEM WITH EARTH-BASED COUNTERFACTUALS¹. OUR GOAL IS TO MAP THE EMERGENCE OF NEW IN-SPACE ECOSYSTEMS, HIGHLIGHT MICROGRAVITY'S TECHNICAL ADVANTAGES, AND EXAMINE THE OPERATIONAL AND REGULATORY CHALLENGES THAT ARISE IN THIS EXTREME ENVIRONMENT. THIS INCLUDES UNDERSTANDING HOW ORBITAL INNOVATIONS TRANSFORM TERRESTRIAL SUPPLY CHAINS, PARTICULARLY WHEN ESTABLISHED PLAYERS RECONFIGURE THEIR RESOURCES AND STRATEGIES IN RESPONSE TO MICROGRAVITY-ENABLED MANUFACTURING. WE ARE INTERESTED IN THE ROLE OF GOVERNANCE MODELS, NETWORK EFFECTS, AND STRATEGIC DECISIONS BY ORGANIZATIONS AND POLICYMAKERS AS THEY NAVIGATE THIS SHIFT, OFFERING INSIGHTS INTO THE INTERPLAY OF DISRUPTION AND ECOSYSTEM EVOLUTION WHEN A CORE BOUNDARY CONDITION IS ALTERED. ULTIMATELY, WE SEEK TO INFORM THE DESIGN, VIABILITY, AND GOVERNANCE OF IN-SPACE MANUFACTURING STRATEGIES THAT MAY REVOLUTIONIZE INDUSTRIAL STRUCTURES AND OPEN NEW PATHS FOR INNOVATION.

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¹ Like IRIDIUM Technology