GUARDIANSAT™

KEEP SPACE OPEN

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A VETERAN OWNED SMALL BUSINESS

GUARDIANSAT™
PROPRIETARY and CONFIDENTIAL

What is GuardianSat?

The Future of NexGen Space Awareness. Co-founded by Robert D. Briskman and Christopher W. Rohe, GuardianSat™ (est. 2019) is relentlessly facing the challenging threats of orbital debris and anti-satellite weapons head-on with patented solutions ready for implementation and commercialization today.

GuardianSat™ solutions provide patented systems along with system engineering software and hardware additions to satellites. Our team has developed a proprietary subsystem allowing the satellite to avoid collision autonomously, on-orbit defensive countermeasures, and other satellites using advanced space sensors.

Beyond mere physical asset protection, the subsystem provides improved space awareness to the government operators backed by decades of projects and operational efforts by Mr. Briskman, co-founder of Sirius XM Radio.

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MISSION

Full spherical space awareness for satellites systems through the development, and delivery of systems, processes and AI/data engineering which can be integrated into host satellite systems for predictive and reactive collision avoidance of hostile threats and orbital debris.

VISION

Advancing new and transformative solutions to eliminate the risk of high Earth-orbiting satellite collisions with Orbital Debris, defending against the threat of Anti-Satellite Weapons, and providing high accuracy space domain awareness.

GSAT™ is Poised to Own the GEO Space Situational Awareness (SSA) DATA DOMAIN

Who is GuardianSat?

Robert Briskman (President/Co-Founder)

- Joined the National Aeronautics And Space Administration (NASA) during its founding in 1959 as Chief Program Support
- At COMSAT, directed the construction of COMSTAR, ARABSAT, MORALES and GEOSTAR's space segments
- Co-founder, chief technical officer and executive vice president, engineering of SIRIUS/XM satellite radio since 1991

Christopher Rohe (CEO/Co-Founder)

- A top graduate of the United States Air Force Academy and The Kennedy School of Government Harvard
- A retired officer of the United States Air Force, Rohe served over 20 years as a program manager/acquisition officer
- Achieved DOD certification in program management, business, cost-estimating & finance and logistics management

Huey Wyche II (Technical Director)

- Holds over 2 decades of system integration expertise, for Special Operations and Electronic Warfare weapons platforms.
- A retired combat veteran with several Commendation Medals for innovative solutions in combat zones under hostile fire.
- Shepherded the successful combat fielding of the AVP upgrade for the EC-130H electronic attack weapons systems.

Orbital Debris Environment

As of January 2022, more than 330 million pieces of debris smaller than 1 cm (0.4 in), about 1 million pieces from 1-10 cm, and around 36,500 pieces larger than 10 cm were estimated to be in orbit around the Earth.[1]

An even more significant challenge is detecting and cataloging objects in High Earth Orbit, namely at distances at or above geocentric orbits above an altitude of geosynchronous orbit 35,786 km (22,240 miles), It is presently impossible to track smaller objects (<1m) accurately, and it is difficult to make timely adjustments to existing spacecraft trajectories for collision avoidance.

Currently Tracked	Estimated Objects	Possible Damage
>10cm: 29,200	>10cm: 36,500	~10cm: Catastrophic
10cm - 1cm: NO TRACKING	10cm - 1cm: 1 Million	~1cm: Significant

[1] Space debris by the numbers. (2022). European Space Agency. https://www.esa.int/Safety_Security/Space_Debris/Space_debris_by_the_numbers

Anti-Satellite (ASAT) Weapon Threat

Commercial satellites have become an integral part of civil, strategic, and military infrastructures globally. They enable everything from smartphone applications to logistical planning for supply chain management and even disaster preparedness.

These satellites are prime targets for adversarial forces not only for military value, but also the economic disruption of their loss.

Direct Ascent

Weapons launched from the Earth's surface from land, sea or aircraft to destroy a satellite.

Co-Orbital

Weapons that are placed into orbit designed to maneuver towards a selected target and attack.

Competitive Landscape:
Space Domain Awareness & Defense Shortfalls

The majority of space object detection utilizes ground-based telescopes and laser tracking. These systems are limited by occlusions caused by the Earth's atmosphere and the distance to the targets. Additionally, such systems have a narrow field of view.

Recently deployed space-based systems utilize infrared electro-optical sensors that have inherent limitations. Interference within the infrared spectrum significantly reduces range and ability to detect or track smaller objects.

There are no known autonomous systems designed to integrate with space-based assets to avoid debris without Earth-bases assistance.

The current strategy for active Anti-Satellite weapons defense is non-existent.

Near Peer Potential Solutions: GSAT Fills The Void

- Odin Space: Not Active - Passive and sacrificial hardware
  - www.odin.space
- Scout Space: LEO focused Short Range ISR
  - www.Scout.Space
- Privateer: LEO Focused - Near Term Partner
  - www.privateer.com

GSAT is the **ONLY** Patent Protected active system

- **www.gsat.space**

US Congress has also produced two bills focused on Space Debris management:

Orbital Sustainability (ORBITS) Act of 2023

Commercial Space Act of 2023

GuardianSat™ Solutions

GuardianSat™ has a *patented* Solution for satellites – a proprietary subsystem that detects orbital debris; tracks the orbital debris that would strike the satellite; and autonomously maneuvers the satellite, so that collision with that debris does not occur, and thereafter maneuvering the satellite back to its original position to accomplishing the satellites' primary mission.

GuardianSat™ is also developing it's *patented* autonomous onboard anti-satellite weapon countermeasure system to neutralize both ground, air and space based hostile attacks using its propriety technology. This technology is to counter the increase of anti-satellite (ASAT) weapons development and testing that has proceeded mostly unanswered.

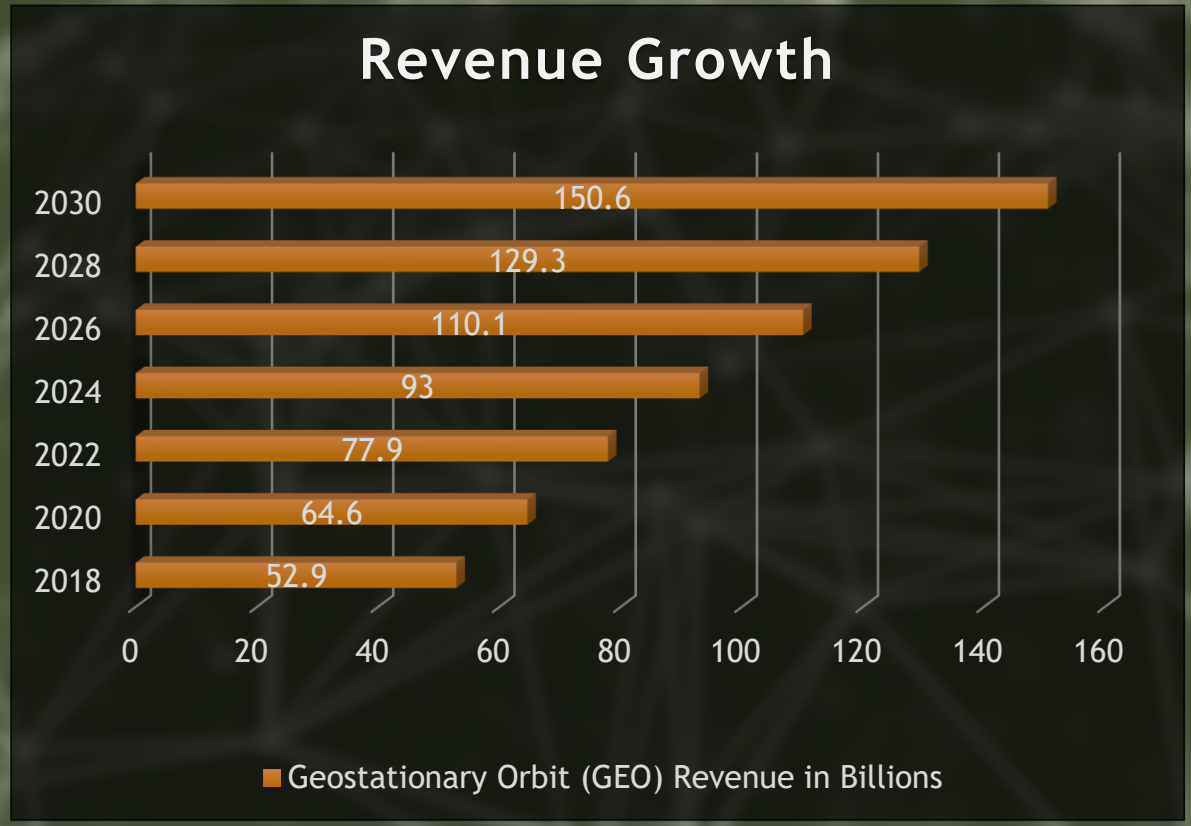
GEO Utilization and Growth

Analysts at Morgan Stanley within their Space Team predict the global space market, currently worth approximately $350 billion, is expected to exceed $1 trillion by the year 2040.

GEO satellites play an indispensable role in the seamless functioning of the worldwide economy, serving unobtrusively in capacities that include communications, navigational aids, defense systems, meteorological services, and scientific inquiry.

According to the 2023 Satellite Industry Report by Space Capital, it is anticipated that revenues from GEO satellites will increase to more than $150 billion on an annual basis by 2030.

GuardianSat™ stands at the forefront of this expansion, aiming to spearhead growth by mitigating the operational risks inherent in space endeavors



GEO Asset Cost

GEO Satellites require a huge initial investment:

- Satellite construction
  - Materials: $50-$75 million
  - Labor: $25-$50 million
- Launch vehicle
  - Falcon 9: $62 million
  - Ariane 5: $78 million
  - Atlas V: $109 million

Four (4) Projected Revenue Streams:

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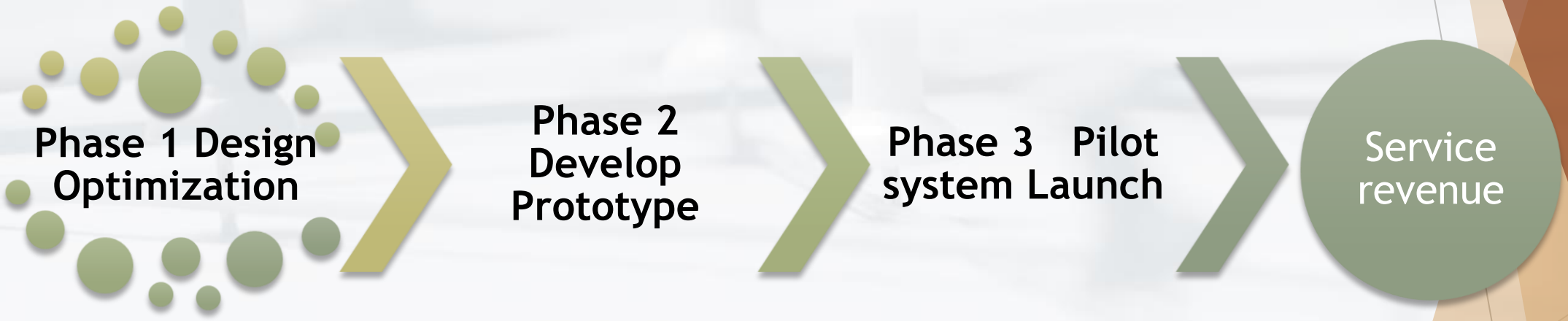
1. **Sales of Technologies/GSAT System**
   - Firm-fixed price
   - Evidence: $351M Contract for GSSAP for 2 satellites

2. **SSA (Space Situational Awareness) Data as a Service & AI/ML**
   - Subscriptions model w/ different tiers offering scalability for clients
   - Evidence: LEO LABS $65M/annually

3. **License/Royalty etc. (*Patent Infringement)**
   - Structured to encourage broad usage of our patents while penalizing infringement
   - Evidence: Industry Standard License and Royalty agreement in place

4. **User Consultation as a Service**
   - Priced per session offering expert insights tailored to client needs for safe mission in GEO
   - Evidence: SAIC, True Anomaly, Northrup, LM etc. offer similar services for DoD

Timeline



Research Funding
$250K
Key Parameters
Spectrum/Power/Sensors

NSF Currently Funded

Prototype Funding $5M
Functioning ground tested system

SME Support
USF
Aerospace

Vehicle Integration & Launch Funding $46-50M
Pathfinder (Briskman-1) mission system

Industry Support
MAXAR
Privateer

Current Progress

GuardianSat™ was awarded a National Science Foundation (NSF)Phase I STTR grant in the amount of **$273,000** w/ Phase II follow-on potential etc.

GuardianSat™ holds global patents for:

- Automated Debris Detection and Avoidance
- Anti-Satellite Weapon Countermeasures

Also, GuardianSat™ has gained support from:

- MAXAR
- Aerospace Corp
- USF/IEA
- Privateer Space
- Others

2yr Cost Outlook

$60M

Labor

2 Electrical Engineers: $415k

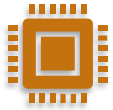
Data Engineer: $160k

Operations/Admin: $200k

Testing Facilities

Warehouse/Hangar: $195K (2yr of 4yr lease)

Equipment: $1.5M



Hardware

Radar: $600k

Optical: $900k

CPU: $30k

Server: $10k

Operation/Test: $100k

Pathfinder Launch

Sensor Group:$30M

Host integration: $4M

Ground Testing: $5M

Communications and Data: $4M

Launch Services: $6M

Contingency: $5M

In The Press

MilsatMagazine
By Satnews

COMMAND CENTER: Huey Wyche II Technical Director, GuardianSat
Nov 2023 Issue

SPACENEWS

Startup GuardianSat gets research grant for satellite self-defense technology
12 Oct 2023

satnews

GuardianSat™ secures patent for satellite-based automated countermeasure system
18 Jul 2023

C4ISRNET

How to build a robust space domain defense
2 Dec 2022

INTELLIGENCE COMMUNITY NEWS

GuardianSat wins NSF STTR Grant
October 16, 2023

THE FAST MODE The Fast Mode Network

GuardianSat Patents Automated Countermeasure System That Prevents Space-Based Anti-Satellite Attacks
June 15, 2023

yahoo!finance

Christopher Rohe Introduces GuardianSat™ - A Generational Company for Space Innovation
August 13, 2020

Requested Mentorship Areas

Initial Pricing Determination

- Hardware, Data and Support

Pinpoint Early Adopters

- Operators, Insurers, and Government

Facilities, Resources, & Talent

- Lab space, Equipment, Engineers, & Cyber infrastructure

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