

# Global Stratospheric UAV Payloads Technology and Market Forecast to 2025

https://marketpublishers.com/r/G3724649447EN.html

Date: May 2017

Pages: 147

Price: US\$ 2,995.00 (Single User License)

ID: G3724649447EN

# **Abstracts**

This insightful forecast details the huge markets that will develop around payloads flying in Unmanned Aerial Vehicles that remain on station above the Jet Stream for months or even years at a time. With that endurance or persistence, such payloads will have satellite-like capabilities but without satellite-like costs or orbital limitations. They're sometimes called 'pseudosats' for that reason.

Our lead analyst is a very experienced military and commercial jet pilot who also has several US aviation patents. That expertise shows in this report's detailed explanations of both established solar aircraft and emerging stratospheric airship technologies.

Written with two scenarios covering both today's restricted airspace and tomorrow's easier access to the airspace over the most lucrative commercial markets, this forecast allows readers to watch current events and see how the markets will react to either future. It truly covers all the bases.

#### WHO IS THIS REPORT FOR?

If you have anything do with Stratopheric UAV's and Payloads, this report is a must, particularly if you are one of the following:

Business Leaders & Business Developers

The Insurance Industry

**UAV Manufacturers** 



## Payload Manufacturers

**Payload Operators** 

Civil Government Leaders & Planners

#### **MULTIPLE SCENARIOS**

To provide a truly comprehensive coverage and analysis, this report examines three different scenarios:

Scenario I: Resistance to Change

Scenario II: Limited Access to Developed Airspace

**Market Factors** 

Stratospheric Payloads Market Drivers & Inhibitors:

**Drivers** 

Counter-Insurgency & Counter-IED

Multiple-Use Systems

**Unique Capabilities** 

Altitude

Reduced Capability Costs

Cost Effectiveness

One Technology Brings all Communication Capabilities

**Next Lucrative Aviation Market** 



Personal Communication Shortfalls

Mobile Television Shortfalls

#### **Inhibitors**

Airspace Restrictions - US & Europe

FAA Misleading US Congress and Public.

**Commercial Competition** 

Invested Infrastructure

Radio Frequency Interference & Regulations

**Opportunity Alert** 

**Technical Challenges** 

**US Defense Department Culture** 

**US & European Export Restrictions** 



# **Contents**

#### 1. INTRODUCTION

- 1.1. Scope of This Report
- 1.2. Language Disclaimer
- 1.3. Methodology
  - 1.3.1. Forecast Value
  - 1.3.2. Terms & Context
  - 1.3.3. Redundancy
- 1.4. Forecast Scenarios
  - 1.4.1. Scenario I Resistance to Change
  - 1.4.2. Scenario II Limited Access to Developed Airspace
- 1.5. Who Needs this Forecast?
  - 1.5.1. Business Leaders & Business Developers
  - 1.5.2. The Insurance Industry
  - 1.5.3. UAV Manufacturers
  - 1.5.4. Payload Manufacturers
  - 1.5.5. Payload Operators
  - 1.5.6. Civil Government Leaders & Planners
- 1.6. Value Beyond Forecasts
  - 1.6.1. Wide Disagreement among UAV Market Forecasts
  - 1.6.2. Market Forecast's Added Value
- 1.7. About the Lead Analyst
  - 1.7.1. Value of Knowing the Lead Analyst

#### 2. EXECUTIVE SUMMARY

- 2.1. What are Stratospheric Payloads?
- 2.2. What are Unmanned Aerial Vehicles?
- 2.3. Aircraft Types
- 2.4. Persistence
  - 2.4.1.1. Stratospheric or "Near Space" Operations
- 2.5. Repeating Military Spending Declines
- 2.6. Major Findings
  - 2.6.1. Defense Payloads Markets are Essentially Closed
  - 2.6.2. Closed Airspace Does Not Prevent Commercial Market Creation
  - 2.6.3. Political Pressure Could Partially or Completely Open Developed Airspace
  - 2.6.4. Emerging Stratospheric UAV Payloads will both Disrupt and Open Markets



- 2.6.5. Persistent UAV Technology is Flying Now
- 2.6.6. Conventional UAVs are Severely Handicapped
- 2.7. Major Conclusions
  - 2.7.1. UAV Payload Profit Centers
  - 2.7.2. Airspace Restrictions Push Developers Overseas
  - 2.7.3. Easy UAV Access to Developed Airspace Would Slow Global Development
  - 2.7.4. One Communication Technology will Dominate All Others
  - 2.7.5. Space Systems will Lose Market Share
  - 2.7.6. Stratospheric Payloads will Also See Strong Government Sales
- 2.8. Important Global Market Tables and Graphs
  - 2.8.1. Commercial
  - 2.8.2. Persistent Military Intelligence, Surveillance and Reconnaissance

## 3. CURRENT CATEGORIES & TECHNOLOGIES

- 3.1. UAV Categories
- 3.2. US Air Force UAV Categories
- 3.3. NATO UAV Categories
- 3.4. UAV Altitude-Based Categories & Types
  - 3.4.1. Altitude Matters
  - 3.4.2. Stratospheric UAVs
  - 3.4.3. Aircraft vs. Airships
    - 3.4.3.1. Fixed-Wing
    - 3.4.3.2. Lighter-Than-Air
  - 3.4.4. Jet Stream UAVs

#### 4. CURRENT MARKETS AND USES

- 4.1. Highest Flying UAVs
  - 4.1.1. Military
  - 4.1.2. Scientific
- 4.2. Free-Flying Balloon Radio Relay
  - 4.2.1. Space Data Corporation
  - 4.2.2. Google's Project Loon

#### 5. UAV PAYLOADS OVERVIEW

- 5.1. Optical Payloads and Coverage Overview
  - 5.1.1. Effect of Look-Down Angle on Sensor Performance



- 5.1.2. Sensor Coverage Graphic Overview
- 5.1.3. Stratospheric UAV Sensor Coverage
- 5.1.4. Jet Stream UAV Sensor Coverage
- 5.2. Radio Payloads and Coverage Overview
  - 5.2.1. Effect of Look-Up Angle on Radio Coverage
  - 5.2.2. Radio Coverage Graphic Overviews
    - 5.2.2.1. Stratospheric UAV Radio Coverage
    - 5.2.2.2. Jet Stream UAV Radio Coverage

#### 6. STRATOSPHERIC PAYLOADS DRIVERS & INHIBITORS

- 6.1. Drivers
  - 6.1.1. Counter-Insurgency & Counter-IED
  - 6.1.2. Multiple-Use Systems
  - 6.1.3. Unique Capabilities
  - 6.1.4. Altitude
  - 6.1.5. Reduced Capability Costs
  - 6.1.6. Cost Effectiveness
  - 6.1.7. One Technology Brings all Communication Capabilities
  - 6.1.8. Next Lucrative Aviation Market
  - 6.1.9. Opportunity Alert
  - 6.1.10. Personal Communication Shortfalls
  - 6.1.11. Mobile Television Shortfalls
- 6.2. Inhibitors
  - 6.2.1. Airspace Restrictions US & Europe
  - 6.2.2. FAA Misleading US Congress and Public.
  - 6.2.3. Commercial Competition
  - 6.2.4. Invested Infrastructure
  - 6.2.5. Radio Frequency Interference & Regulations
  - 6.2.6. Opportunity Alert
  - 6.2.7. Technical Challenges
  - 6.2.8. US Defense Department Culture
  - 6.2.9. US & European Export Restrictions
- 6.3. Persistent UAV X-Prize?

#### 7. FUTURE CAPABILITIES AND USES

- 7.1. National Security
  - 7.1.1. Military & Counter-Insurgency



- 7.1.2. Opportunity Alert
- 7.1.3. Virtual Team Member Operating Concept
- 7.1.4. Opportunity Alert
- 7.1.5. Border Security
- 7.1.6. Border Security Operating Concept
- 7.2. Commercial Applications
  - 7.2.1. Imagery
  - 7.2.2. Imagery Operating Concept
  - 7.2.3. Communications Relay (Internet, Cell Phone, etc.)
  - 7.2.4. Communications Operating Concept
  - 7.2.5. Opportunity Alert
  - 7.2.6. Direct Broadcast Entertainment
  - 7.2.7. Direct Broadcast Entertainment Operating Concept
  - 7.2.8. Scientific
  - 7.2.9. Science Operating Concept

#### 8. FORECASTS BY MARKET BY CAPABILITY

- 8.1. Scenario I Stratospheric UAV Payloads Markets
- 8.2. Scenario II Stratospheric UAV Payloads Markets
- 8.3. Scenario I vs Scenario II Stratospheric UAV Payloads Market
- 8.4. Military Market
  - 8.4.1. Scenario I Military Stratospheric UAV Payloads Market
  - 8.4.2. Scenario II Military Stratospheric UAV Payloads Market
  - 8.4.3. Scenario I vs. Scenario II Military Stratospheric UAV Payloads Market Forecast
- 8.5. Commercial Market
  - 8.5.1. Scenario I Commercial Stratospheric UAV Payloads Market
  - 8.5.2. Scenario II Commercial Stratospheric UAV Payloads Market
- 8.5.3. Scenario I vs. Scenario II Commercial Stratospheric UAV Payloads Market Forecast
- 8.6. Scientific Market
- 8.6.1. Scenario I vs. Scenario II Scientific Stratospheric UAV Payloads Market Forecast

# 9. FORECASTS BY TECHNOLOGY BY CAPABILITY

- 9.1. Scenario I Stratospheric UAV Payloads Market by Technology
- 9.2. Scenario II Stratospheric UAV Payloads Markets by Technology
- 9.3. Imagery and Sensing



- 9.3.1. Scenario I Imagery and Sensing Technology Stratospheric UAV Payloads Market
- 9.3.2. Scenario II Imagery and Sensing Technology Stratospheric UAV Payloads Market
- 9.3.3. Scenario I vs. Scenario II Stratospheric UAV Payloads Imagery and Sensing Technology Markets
- 9.4. Persistent Communication
- 9.4.1. Scenario I Persistent Communication Technology Stratospheric UAV Payloads Market
- 9.4.2. Scenario I vs. Scenario II Persistent Internet Technology Stratospheric UAV Payloads Market
- 9.5. Direct Broadcast TV & Radio
- 9.5.1. Scenario I Direct Broadcast TV & Radio Technology Stratospheric UAV Payloads Market
- 9.5.2. Scenario II Direct Broadcast TV & Radio Technology Stratospheric UAV Payloads Market
- 9.5.3. Scenario I vs. Scenario II Direct Broadcast TV & Radio Technology Stratospheric UAV Payloads Market

#### 10. FORECAST BY AIRCRAFT VS. AIRSHIPS

- 10.1. Scenario I Stratospheric UAV Payloads Market by Aircraft vs. Airships
- 10.2. Scenario II Stratospheric UAV Payloads Market by Aircraft vs. Airships
- 10.3. Scenario I vs Scenario II Stratospheric UAV Payloads Market Appendices

Glossary and Abbreviations



# **List Of Figures**

#### **LIST OF FIGURES**

- Figure 1 Collected Global UAV Market Forecasts
- Figure 2 Comparison Between US UAV Spending and Commercial Potential
- Figure 3 Global Hawk
- Figure 4 Lockheed TR-1
- Figure 5 US Defense Spending Declines 1945 2011
- Figure 6 DoD Acquisition Plus R&D spending by [\$Million] 2009-2015
- Figure 7 AeroVironment's Global Observer
- Figure 8 Solar-Electric Aircraft Flight Envelope
- Figure 9 Netflix Internet Movie Provider Creates Television Series
- Figure 10 Notional Stratospheric UAV Airship
- Figure 11 Impoverished Indian Cell Customer
- Figure 12 Mobile Skype-calls Over Wireless Internet Advertisement
- Figure 13 Scenario I vs. Scenario II Commercial Stratospheric UAV Payloads Market
- Forecast 2017 2025 by [\$Million]
- Figure 14 Scenario I vs. Scenario II Military Stratospheric UAV Payloads Market
- Forecast 2017 2025 by [\$Million]
- Figure 15 Sample Airship Profiles at Low Reynolds Numbers
- Figure 16 HiSentinel prototype Stratospheric Airship UAV
- Figure 17 Stratospheric UAV Airship Design
- Figure 18 Global Observer: Stratospheric UAV Design
- Figure 19 Heron TP: Jet Stream UAV
- Figure 20 Wildfire Image from Global Hawk
- Figure 21 NASA Global Hawk
- Figure 22 Space Data Corporation Balloon with Controller
- Figure 23 Space Data Corporation Altitude Control Valve Assembly
- Figure 24 Effect of Optical Look-Down Angles
- Figure 25 Typical Sensor Coverage Areas (Radar, Laser & Optical)
- Figure 26 Typical Stratospheric Payload Coverage Area (Radar, Laser & Optical)
- Figure 27 Typical Jet Stream Payload Coverage Area (Radar, Laser & Optical) 59
- Figure 28 Best-Case Radio Coverage Diameters
- Figure 29 Actual Kabul Radio Coverage Analysis
- Figure 30 Stratospheric UAV Radio Coverage Diameters
- Figure 31 Jet Stream UAV Radio Coverage Diameters
- Figure 32 Afghanistan IED Toll 2001-2010
- Figure 33 Cell Phone Coverage in Colorado, USA



- Figure 34 Internet Protocol Television Advertisement
- Figure 35 Popular Mechanics 4G Service Evaluation
- Figure 36 Popular Mechanics Magazine Cover on Flying Safety
- Figure 37 Silicon Valley Consumer without Broadband
- Figure 38 Aerospace America Magazine on DARPA
- Figure 39 Ambush Article
- Figure 40 Virtual Team Member & Communication Relay Operating Concept
- Figure 41 Imagery Operations Operating Concept
- Figure 42 Communication Relay (with Laser Power) Operating Concept
- Figure 43 Direct Broadcast Entertainment Operating Concept
- Figure 44 Scenario I Stratospheric UAV Payloads Market Forecast 2017 2025 by [\$Million]
- Figure 45 Scenario II Stratospheric UAV Payloads Market Forecast 2017 2025 by [\$Million]
- Figure 46: Scenario I vs Scenario II Stratospheric UAV Payloads Market 2017 2025 by [\$Million]
- Figure 47 Scenario I Military Stratospheric UAV Payloads Market Forecast by Type 2017 2025 by [\$Million]
- Figure 48 Scenario II Military Stratospheric UAV Payloads Market Forecast by Type 2017 2025 by [\$Million]
- Figure 49 Scenario I vs. Scenario II Military Stratospheric UAV Payloads Market Forecast by Capability 2017 2025 by [\$Million]
- Figure 50 Scenario I Commercial Stratospheric UAV Payloads Market Forecast by Type 2017 2025 by [\$Million]
- Figure 51 Scenario II Commercial Stratospheric UAV Payloads Market Forecast by Type 2017 2025 by [\$Million]
- Figure 52 Scenario II Commercial Stratospheric UAV Payloads Market Forecast by Capability 2017 2025 by [\$Million]
- Figure 53 Scenario I Scientific Stratospheric UAV Payloads Market Forecast by Type 2017 2025 by [\$?]
- Figure 54 Scenario II Scientific Stratospheric UAV Payloads Market Forecast by
- Type 2017 2025 by [\$Million]
- Figure 55 Scenario II Scientific Stratospheric UAV Payloads Market Forecast by
- Capability 2017 2025 by [\$K]
- Figure 56 Scenario I Stratospheric UAV Payloads Market Forecast by Technology by [\$Million] 2017 2025
- Figure 57: Scenario II Stratospheric UAV Payloads Market Forecast by Technology by [\$Million] 2017 2025
- Figure 58 Scenario I Imagery and Sensing Technology Stratospheric UAV Payloads



Market Forecast by Type - 2017 - 2025 by [\$Million]

Figure 59 - Scenario II - Imagery and Sensing Technology Stratospheric UAV Payloads Market Forecast by Type - 2017 - 2025 by [\$Million]

Figure 60 - Scenario I vs. Scenario II - Stratospheric UAV Payloads Imagery and

Sensing Technology Market Forecast by Technology - 2017 - 2025 by [\$Million]

Figure 61 - Scenario I - Persistent Communication Technology Stratospheric UAV

Payloads Market Forecast by Type - 2017 - 2025 by [\$Million]

Figure 62 - Scenario II - Persistent Communication Technology Stratospheric UAV

Payloads Market Forecast by Type - 2017 - 2025 by [\$Million]

Figure 63 - Scenario I vs. Scenario II - Stratospheric UAV Payloads Persistent Internet

Technology Market Forecast by Technology - 2017 - 2025 by [\$Million]

Figure 64 - Scenario I - Direct Broadcast TV & Radio Technology Stratospheric UAV

Payloads Market Forecast by Type - 2017 - 2025 by [\$Million]

Figure 65 - Scenario II - Direct Broadcast TV & Radio Technology Stratospheric UAV

Payloads Market Forecast by Type - 2017 - 2025 by [\$Million]

Figure 66 - Scenario I vs. Scenario II - Stratospheric UAV Payloads Direct Broadcast TV

& Radio Technology Market Forecast by Technology - 2017 - 2025 by [\$Million]

Figure 67 - Scenario I - Stratospheric UAV Payloads Market Forecast by Aircraft vs.

Airships - 2017 - 2025 by [\$Million]

Figure 68 - Scenario II - Stratospheric UAV Payloads Market Forecast by Aircraft vs.

Airships - 2017 - 2025 by [\$Million]

Figure 69 - Scenario I vs. Scenario II - Stratospheric UAV Payloads Direct Broadcast TV

& Radio Technology Market Forecast by Technology - 2017 - 2025 by [\$Million]



# **List Of Tables**

#### LIST OF TABLES

TABLE 1 - U-2 TECHNICAL DATA

TABLE 2 - GLOBAL HAWK TECHNICAL DATA

TABLE 3 - DOD UAS PROCUREMENT PLUS R&D BUDGETS BY [\$MILLION] - 2009-2015

TABLE 4 - JOINT UAV GROUP CLASSIFICATION (JCOE CONOPS)

TABLE 5 - NATO UAV CATEGORIES

TABLE 6 - SCENARIO I - STRATOSPHERIC UAV PAYLOADS MARKET FORECAST - 2017 - 2025 BY [\$MILLION]

TABLE 7 - SCENARIO II - STRATOSPHERIC UAV PAYLOADS MARKET FORECAST - 2017 - 2025 BY [\$MILLION]

TABLE 8: SCENARIO I VS SCENARIO II - STRATOSPHERIC UAV PAYLOADS MARKET - 2017 - 2025 BY [\$MILLION]

TABLE 9 - SCENARIO I - MILITARY STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY TYPE - 2017 - 2025 BY [\$MILLION]

TABLE 10 - SCENARIO II - MILITARY STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY TYPE - 2017 - 2025 BY [\$MILLION]

TABLE 11 - SCENARIO I VS. SCENARIO II - MILITARY STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY CAPABILITY - 2017 - 2025 BY [\$MILLION]

TABLE 12 - SCENARIO I - COMMERCIAL STRATOSPHERIC UAV PAYLOADS

MARKET FORECAST BY TYPE - 2017 - 2025 BY [\$MILLION]

TABLE 13 - SCENARIO II - COMMERCIAL STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY TYPE - 2017 - 2025 BY [\$MILLION]

TABLE 14 - SCENARIO I VS. SCENARIO II - COMMERCIAL STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY CAPABILITY - 2017 - 2025 BY [\$MILLION]

TABLE 15 - SCENARIO I - SCIENTIFIC STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY TYPE - 2017 - 2025 BY [\$?]

TABLE 16 - SCENARIO II - SCIENTIFIC STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY TYPE - 2017 - 2025 BY [\$MILLION]

TABLE 17 - SCENARIO I VS. SCENARIO II - SCIENTIFIC STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY CAPABILITY - 2017 - 2025 BY [\$K]

TABLE 18 - SCENARIO I - STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY TECHNOLOGY BY [\$MILLION] - 2017 - 2025

TABLE 19: SCENARIO II - STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY TECHNOLOGY BY [\$MILLION] - 2017 - 2025

TABLE 20 - SCENARIO I - IMAGERY AND SENSING TECHNOLOGY



STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY TYPE - 2017 - 2025 BY [\$MILLION]

TABLE 21 - SCENARIO II - IMAGERY AND SENSING TECHNOLOGY STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY TYPE - 2017 - 2025 BY [\$MILLION]

TABLE 22 - SCENARIO I VS. SCENARIO II - STRATOSPHERIC UAV PAYLOADS IMAGERY AND SENSING TECHNOLOGY MARKET FORECAST BY TECHNOLOGY - 2017 - 2025 BY [\$MILLION]

TABLE 23 - SCENARIO I - PERSISTENT COMMUNICATION TECHNOLOGY STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY TYPE - 2017 - 2025 BY [\$MILLION]

TABLE 24 - SCENARIO II - PERSISTENT COMMUNICATION TECHNOLOGY STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY TYPE - 2017 - 2025 BY [\$MILLION]

TABLE 25 - SCENARIO I VS. SCENARIO II - STRATOSPHERIC UAV PAYLOADS PERSISTENT INTERNET TECHNOLOGY MARKET FORECAST BY TECHNOLOGY - 2017 - 2025 BY [\$MILLION]

TABLE 26 - SCENARIO I - DIRECT BROADCAST TV & RADIO TECHNOLOGY STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY TYPE - 2017 - 2025 BY [\$MILLION]

TABLE 27 - SCENARIO II - DIRECT BROADCAST TV & RADIO TECHNOLOGY STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY TYPE - 2017 - 2025 BY [\$MILLION]

TABLE 28 - SCENARIO I VS. SCENARIO II - STRATOSPHERIC UAV PAYLOADS DIRECT BROADCAST TV & RADIO TECHNOLOGY MARKET FORECAST BY TECHNOLOGY - 2017 - 2025 BY [\$MILLION]

TABLE 29 - SCENARIO I - STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY AIRCRAFT VS. AIRSHIPS - 2017 - 2025 BY [\$MILLION]

TABLE 30 - SCENARIO II - STRATOSPHERIC UAV PAYLOADS MARKET FORECAST BY AIRCRAFT VS. AIRSHIPS - 2017 - 2025 BY [\$MILLION] TABLE 31 - SCENARIO I VS. SCENARIO II - STRATOSPHERIC UAV PAYLOADS DIRECT BROADCAST TV & RADIO TECHNOLOGY MARKET FORECAST BY TECHNOLOGY - 2017 - 2025 BY [\$MILLION]



#### I would like to order

Product name: Global Stratospheric UAV Payloads Technology and Market Forecast to 2025

Product link: <a href="https://marketpublishers.com/r/G3724649447EN.html">https://marketpublishers.com/r/G3724649447EN.html</a>

Price: US\$ 2,995.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer

Service:

info@marketpublishers.com

# **Payment**

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <a href="https://marketpublishers.com/r/G3724649447EN.html">https://marketpublishers.com/r/G3724649447EN.html</a>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:	
Last name:	
Email:	
Company:	
Address:	
City:	
Zip code:	
Country:	
Tel:	
Fax:	
Your message:	
	**All fields are required
	Custumer signature

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <a href="https://marketpublishers.com/docs/terms.html">https://marketpublishers.com/docs/terms.html</a>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970