## Satellite & The Cloud

Presented by: Cliff Beek



# Protect Critical Data & Infrastructure in Space

#### What is the Threat

Space Assets represent critical components for economic, social and security systems

Vulnerable to snooping, disruption, including jammed communications, data interception, data hijacking and outright takeovers The Mission

Protect against menacing bad actors

- Customer Autonomy
- Key Differentiators
- The Future





## The In-Orbit Cyber Security Challenge



**Determining "Friend or No"** 

- Zero Trust Environment for
  - inter-satellite communications
- Traditional Authentication originates on ground

- **Increasing Access Points**
- Creating More Targets
- Threat of forced "de-orbit"
- The Future of Ransomware



## What is GalacticSat Ring?



• A GEO platform for transmitting data globally and provide interconnection with LEO constellations on a secure basis rather than on the ground or through terrestrial networks

#### How Does It Work?

- Involves a system consisting of three interconnected micro-GEOs satellites that securely communicate to LEO satellites
- Patented 'Ring' architecture enables secure communication between users, GEOs and LEOs

#### Satellites will be used to delegate highly sensitive information

- GEOs used for data and secure voice transmission
- LEOs used for **data storage**

#### **Specifications & Structure**

- Three (3) micro-GEO satellites provide access configured in a bi-directional architecture
- Interconnected micro-GEO to micro- GEO enables secure point-to-point between satellite terminals globally





#### NOTE:

LEO Satellite

LEO Satellites will ONLY be able to communicate with GEO satellites, ensuring the security of user information

 GEO to LEO are designed for either proven radio frequency (RF) or optica laser communications technologies **Ground Station** 



### Customer Autonomy



#### **Customer Control**

#### Customer Access to Data

#### No Access to Customer Data

The customer has **complete control** over security of their data, including ownership and possession of all keys that encrypt and/or wrap data.

The customer will have complete access to data from any location, even if that location is not connected to land-based network.

- Data can be encrypted and uploaded from one location and then downloaded and decrypted at another location with neither location connected to land a network.
- All required cryptographic keys will be synchronized between upload/download locations.

GalacticSat Ring will not have any direct or indirect access to customer's data at any time.

- Customer will have the option to encrypt data before handing it to GSR for storage.
- GSR cannot see data at any point during transmission or storage in LEO satellites.



## Why Is It Needed?

Current data storage and transmission offerings are ground based and use crossborder **terrestrial networks** 

Susceptible to...

Security Breaches

#### The Future

- Value of data increasing and intensifying need for absolute security
- Continued migration (from physical to cloud)
- New technological solutions require prompt additional security requirements

#### Users

#### Government

- Military
- Embassies & Foreign Affairs
- Surveillance
- Intelligence & Security Services

#### **Private Institutions**

- Oil & Gas
- Health
- Fintech, Banking & Credit Card Companies
- Satellite Service Providers

#### Applications

- Globally accessible, highly secure storage
- Earth observations
- Edge computing
- Secure digital wallet



#### Security Premiums

- Strict regulatory requirements to ensure data security
- Reputational damage from security breaches
- Fines for security breaches (e.g., significant fines levied on British Airways)



#### For more information or questions contact me at

cliff@galacticsat.com