



“Cloud Transformation of Space”

Satellite and Cloud Conference
25 January 2022

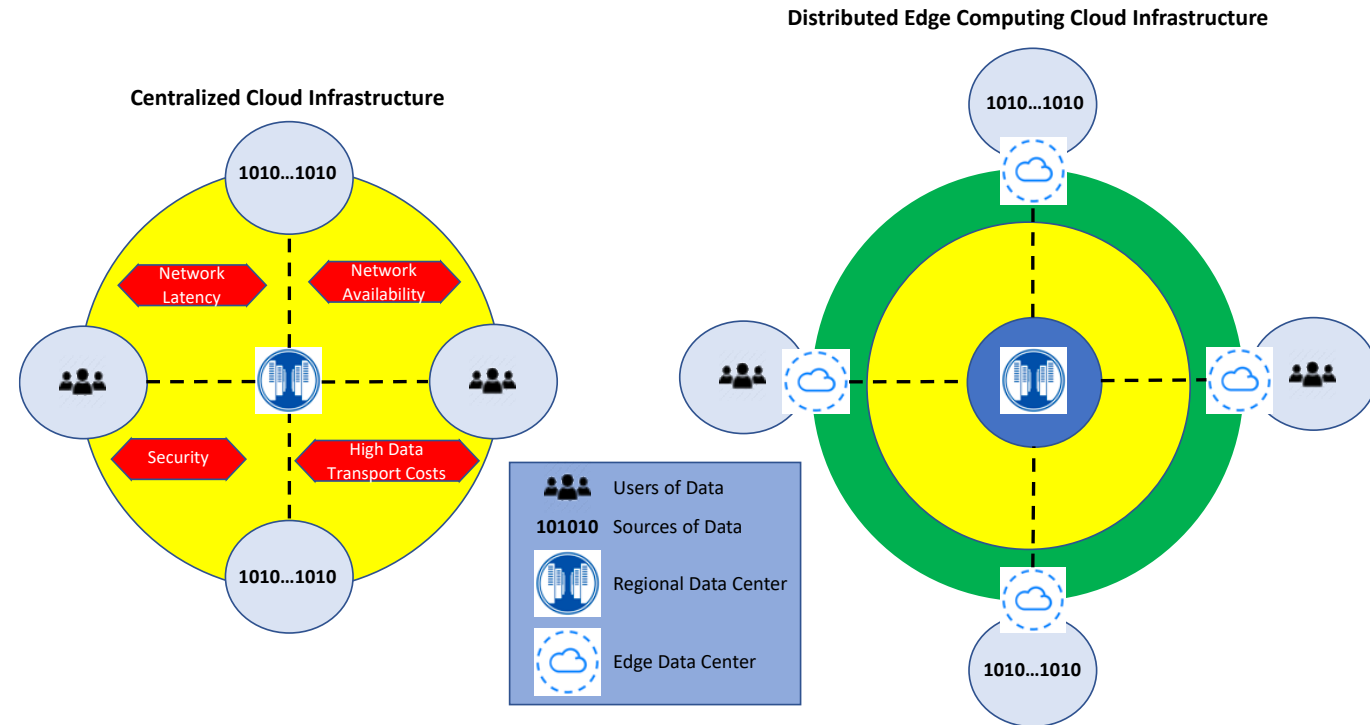
c21 - virtual: "Connected World Series" 2022/23



LEOcloud

Dennis R. Gatens
CEO, Co-Founder

- Gartner: By 2022 about 75% of all data will need analysis and action at the edge
- Emerging commercial space market opportunity is greater than \$1T
 - Satcom, Applications, Infrastructure
- By 2028, Edge Computing is expected to be an \$800B market opportunity
 - Driven by demand for cloud edge computing services as close as possible to the sources and users of data
- Key demand drivers for edge computing are AI and analytics which drive research, and commercial and mission-critical success



“Ranging from business models looking to commercialize crew and cargo missions to near-earth orbits, to emerging Earth Observation-based Data Analytics opportunities the “__ As-A-Service” business models have arrived for within the Space and Satellite Markets.”

Source: NSR- The Global Space Economy, March 2021

- End users across market segments are driving the demand for space-sourced data
- The benefits of microgravity is driving the demand for data-driven R&D in space
 - Today: ISS National Research Lab
 - Future: Commercial Space Stations
- To realize the benefits of space-sourced data users require facilities, communications, cloud infrastructure and services
 - Infrastructure and services in space will evolve to resemble today's terrestrial infrastructure
- A commercial ecosystem of infrastructure and services will be essential for advancing the commercialization of space for R&D, commercial services and government use

End Users

- Government
- Defense
- Public Sector
- Finance
- Pharma
- Energy Grid
- Oil and Gas
- Maritime
- Film Production
- Space Situational Awareness
 - Orbital Debris
 - Space Traffic Management
 - Space Weather

J.P. Morgan has tested the world's first bank-led tokenized value transfer in space...

<https://www.jpmorgan.com/insights/technology/blockchain-in-space>

New Film Studio Will Be Built in Space by 2024

<https://variety.com/2022/film/news/film-studio-space-1235157521/>



On-Orbit Manufacturing

- For use On-Orbit
- For use On-Ground



On-Orbit Research

- Applied Research
- Medical Research
- Fundamental Research



Edge Computing, Data Storage and Blockchain



Entertainment from/in Space

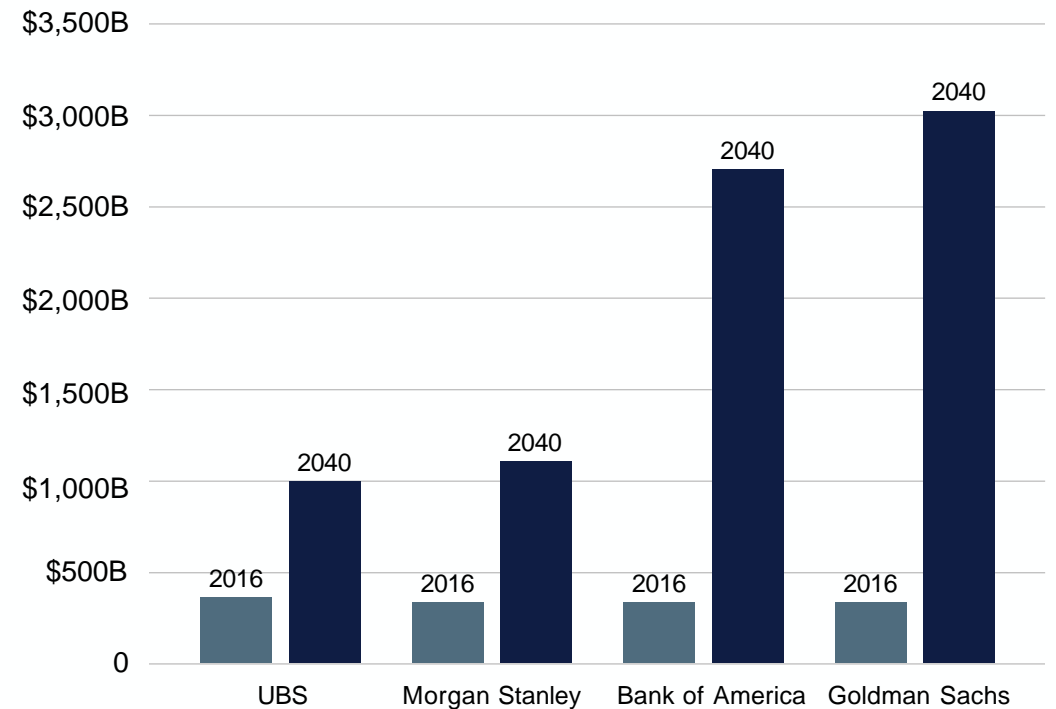


Satellite Deployment and Servicing



Communications

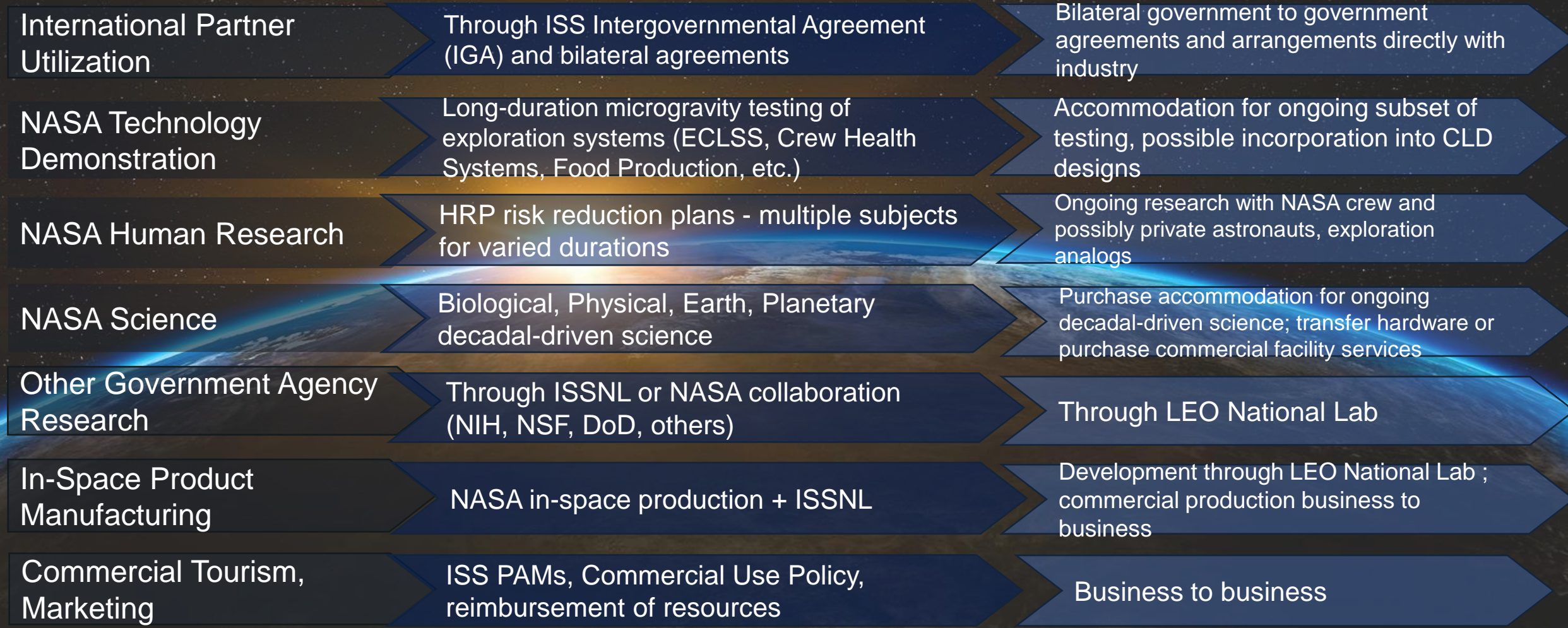
Space Economy Market Size Projections



Users

International Space Station

Commercial Space Stations



| | 2012 | 2021 | 2030 Goals |
|---|-------|----------|------------|
| Projects | 0 | 334 | 835 |
| Payloads | 0 | 538 | >1,250 |
| NASA + External Funding | \$15M | \$394M | \$985M |
| Start-Up Capital Raised (Post Flight, Cumulative) | 0 | > \$1.1B | \$3B |

159
**ACADEMIC, NONPROFIT, & NON-NASA
GOVERNMENT AGENCY PROJECTS**
Emory, MIT, MJFF, ORNL, et al

175
INDUSTRY PROJECTS
*AstraZeneca, Delta Faucet, Goodyear,
Merck, Novartis, et al*



We are the Infrastructure as a Service (IaaS) provider at the Space Edge and in Space to enable public cloud services as close as possible to the sources and users of data

- LEOcloud's space IaaS will enable public cloud service providers to offer their customers a hybrid cloud service in space
- LEOcloud IaaS will provide the cloud computing resources for operations and researchers in space, that will enable frictionless collaboration with their colleagues and cloud services on Earth
 - Enable public cloud regions in space
- Provide integrated end-to-end service management
- Provide services on LEOcloud's satellite constellation, on commercial space stations and in the lunar region

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Space Edge

- Co-location of cloud services at satellite Ground Stations

Space Edge LEO

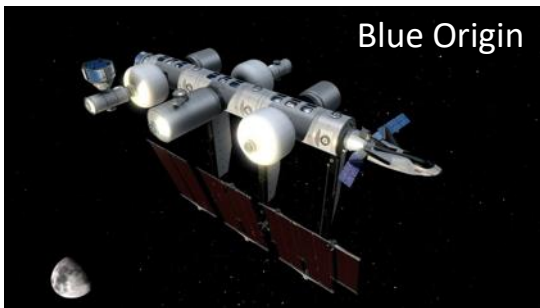
- Constellation of satellite-hosted cloud services data centers in LEO

Commercial Space Stations

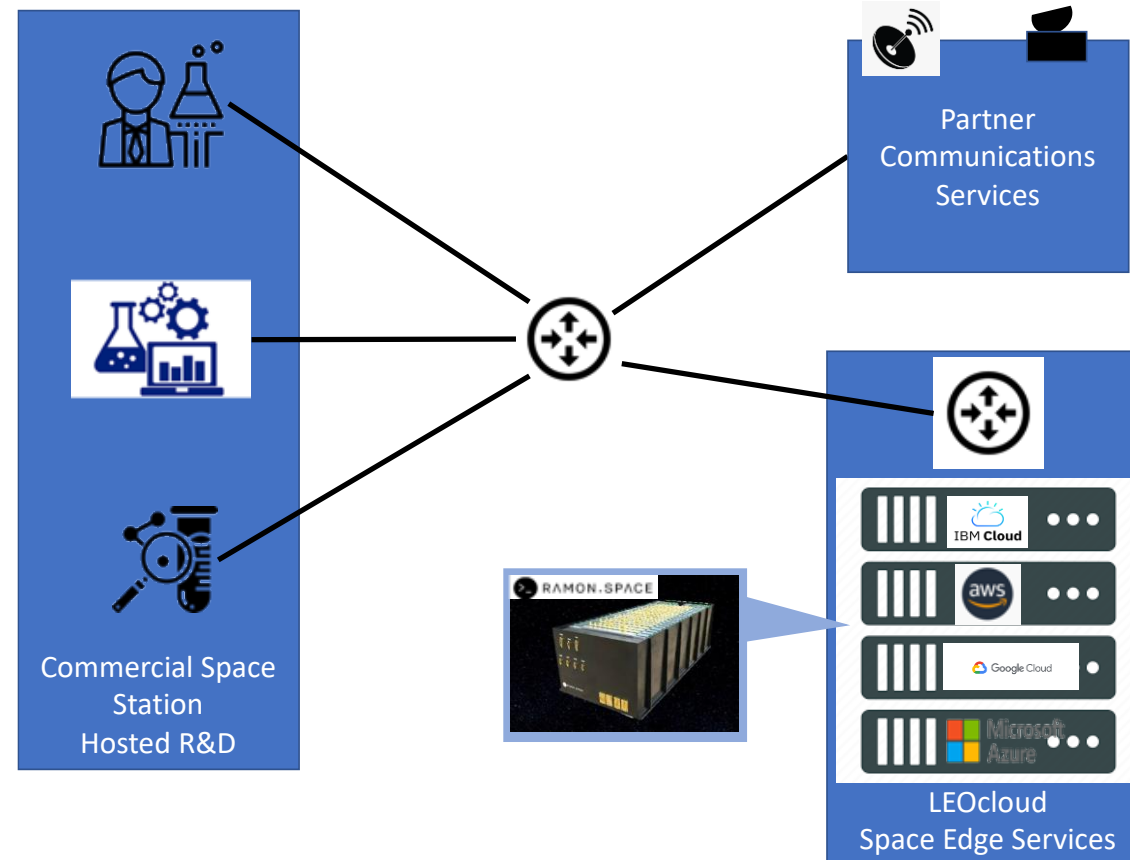
- Space Edge cloud services hosted on commercial space stations

Lunar Region

- Space Edge cloud services in Lunar orbit and on the Moon



- Researchers on CSS will require support of their cloud service provider so their terrestrial virtual private clouds can be extended to the CSS
 - Seamless collaboration with their colleagues on Earth



Big Picture ...

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