



NASA Intentions for Commercial LEO

“Buona notte” Kelly at 180 days onboard the ISS



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Commercial – Definition (*Google*)

adjective

1. concerned with or engaged in commerce. "a commercial agreement"

synonyms: trade, trading, business, private enterprise, mercantile, merchant, sales, merchandising

"the vessels were originally built for commercial purposes"

2. making or intended to make a profit. "commercial products"

synonyms: profit-oriented, money-oriented, commercialized, materialistic, mercenary
"public opinion was inward-looking and brashly commercial"

noun

1. a television or radio advertisement. "*they looked like a family from a breakfast cereal commercial*"

Synonyms: advertisement, promotion, display

2. a travelling sales representative. *British*



NASA Vision for LEO

Sustained economic activity in LEO

enabled by human spaceflight,

driven by private and public investments

creating value and benefitting Earth

through commercial supply

and private and public demand



NASA Vision for LEO

In other words, private industry is the driver for the development and sustainment of the supply, and is able to leverage the economy beyond the needs and constraints of NASA

From a NASA or government perspective, the government would purchase services or capabilities to meet its demand for research or other human space flight objectives.

However, it is expected that the majority of demand will be private sector driven. At NASA fixed budget levels the majority of NASA focus will be beyond low Earth orbit even for research



Post-ISS Models – ends of the spectrum



Government LEO Platform



Private LEO Platform

Government driven capabilities and services

Risk is carried solely by the government

Ability to leverage non-government demand limited to policy

Partnership relationships based on no-exchange of funds governed by policy

Sustainability risk relatively low given government investment and demand

Market driven capabilities and services

Risk is spread across customer demand (government and private) and private supply

Ability to leverage government and private investment, and demand market

Contractual relationships based on negotiated arraignment for exchange of funds or services

Sustainability risk is high without government support



Goals and Near Term Activities

Vision: Sustained economic activity in LEO enabled by human spaceflight, driven by private and public investments creating value and benefitting Earth through commercial supply and public and private demand

Goals

1) LEO commercialization enabled by leveraging ISS

User-friendly ISS process improvements, responsive to private sector needs

Demonstrate & communicate value of utilizing LEO for research

Utilize more commercial acquisition strategies

2) The policy and regulatory environment promotes commercialization of LEO

Establish interagency working group to address policy and regulatory issues

Address barriers such as IP retention, liability, regulatory environment

3) A robust, self-sustaining supply of commercial services accommodates public and private demands

Utilize NextSTEPS BAA activities for long duration Deep Space Habitation capabilities and follow-on to enable commercial LEO activities

Transition from NASA-driven to private-driven services and capabilities once available

4.0 Broad sectors of the economy using LEO for commercial purposes

Work with CASIS and OGA's to expand and sustain the demand for LEO research



Key to the development of the demand

- **The ISS National Lab and CASIS is critical to the development of the demand for research in LEO throughout the government and with private industry**
- **CASIS is making great strides in advancing research onboard ISS beyond NASA**
 - Other government agencies such as NIH
 - Private industry across multiple fields, material science, pharmaceuticals, other
 - CASIS is and is expected to utilize their share of ISS resources (50%)
- **Private industry, through the work of CASIS, is also beginning to make their own investments in LEO research**
- **Other government agencies with experience in economic development (DOC) need to assist in helping to develop low Earth orbit demand for research from the private sector**

