

Evaluation Measures

Evaluation Measure	Traceability				Criteria
	Space Act	VSE 2004	GES 2007	OSTP 2009	
Exploration Preparation	✓	✓	✓	✓	Capable systems and ops for robust exploration beyond LEO
Technology Innovation	✓	✓	✓	✓	Enable new modes of exploration and leadership in innovation
Science Knowledge	✓	✓	✓	✓	Aligned with goals of scientific community
Expanding Human Civilization		✓	✓		Sustained human presence off planet, and protection of Earth
Public Engagement			✓	✓	Motivate and inspire; Societal benefits, regular new accomplishments
Economic Expansion	✓	✓	✓	✓	Growing profitable industrial base and commercial engagement
Global Partnership	✓	✓	✓	✓	Leverage & expand Intl partnerships

Evaluation Measures(2)

Evaluation Measure	Traceability				Criteria
	Space Act	VSE 2005	GES 2007	OSTP 2009	
Schedule & Programmatic Risk				✓	Robustness capability on schedule of initial deployment
Mission Profile Safety Challenges				✓	Challenges to achieving crew and overall mission safety
Workforce Impacts	✓			✓	Critical skills and workforce impact
Programmatic Sustainability	✓	✓		✓	Keeping program support, governmental coordination, contractual implications
Life Cycle Cost		✓		✓	Affordability Target – Operational costs

For each measure, a scale of -2, -1, 0, 1, 2 was created with associated rubrics

Summary Evaluation Criteria

Exploration Preparation

<i>Promotes and enables exploration beyond LEO</i>	
R	Exploration is limited to LEO; No significant activity beyond ISS & SSP
Y	Supports ISS with the development of capability for beyond LEO
N	Limited beyond LEO exploration
G	Provides exploration beyond LEO with ability to grow and evolve
B	Develops Operational Robustness to explore destinations Beyond LEO

Technology Innovation

<i>Enables technology maturation, new modes of exploration and leadership in innovation</i>	
R	Uses current or very near term technologies
Y	Uses near term technology with modest investment in maturation and transfer
N	Technology maturation required to support exploration
G	Provides opportunity for technology innovation
B	Provides significant enabling technology innovation

Science Knowledge

<i>Addresses critical research areas consistent with Decadal survey priorities</i>	
R	No plan for science research
Y	Science research opportunity but inconsistent with priorities
N	Limited opportunity for science research w/o implementation
G	Addresses some priorities of the scientific community
B	Significantly addresses many critical priorities

Expanding Human Civilization

<i>Leads to a presence off planet and Enables sustained human presence and /or bases</i>	
R	Does not enable human presence
Y	Enables a visit beyond LEO
N	Leads to a presence off planet & supports research for crew effects
G	Addresses crew – oriented effects to enables sustained human presence off planet
B	Enables sustaining human presence off planet utilizing ISRU or enhances protection of the Earth

Economic Expansion

<i>Growing , profitable IB; Commercial Engagement & US development and production capabilities increase</i>	
R	Diminishes IB. No opportunity for commercial participation
Y	Weakens IB. Limited opportunity for commercial goods & services
N	Sustains US industrial base with some new opportunities
G	Stimulates investment in new and existing capabilities
B	Commercial systems form integral part of the architecture

Global Partnership

<i>Leverages and expands international partnerships</i>	
R	Discourages further IP Involvement
Y	Disrupts existing IP
N	Sustains existing IP
G	Leverages and strengthens IP (including critical path)
B	Expands IP to potential new partners

R = Significantly less than current program
B = Significantly exceeds current program

Y = Less than current program N = Meets program of record G = Exceeds current program

Summary Evaluation Criteria (cont)

Public Engagement

Motivate and Inspire current and future generations; Societal benefits i.e. economy, energy, environment	
R	Fails to capture /stimulate public interest at all
Y	Gains public interest, but, only focuses on LEO Exploration goals
N	Gains public interest and focuses on Beyond LEO Exploration
G	Significant public interest; motivates STEM increase and benefits society
B	Galvanizes broad public interest in science, technology & exploration

Schedule & Programmatic Risk

Likelihood of delivering robust exploration capability on schedule	
R	Provides no exploration beyond LEO before 2030's
Y	Provides some exploration beyond LEO early 2020's
N	Delivers capability on a schedule consistent with the POR
G	Delivers robust capability with schedule margin (low risk)
B	Delivers robust capability with significant schedule margin

Mission Profile Safety Challenges

Probability of Loss of Crew (LOC) or Loss of Mission (LOM)	
R	Beyond Lunar landing, beyond NEO fly by or complex LEO ops
Y	NEO/LaGrange fly by or Lunar landing
N	LEO mission (ascent entry rendezvous and docking)
G	LEO orbit ascent and entry mission
B	Suborbital mission

Workforce Impacts – Critical Skills

Impact on nations' critical skills	
R	Significant loss of critical skills & experience
Y	Some loss of critical skills and experience at NASA and IB
N	Maintains selected critical skills and expertise
G	Attracts and retains highly capable technical workforce and critical expertise
B	Enables strategic realignment of the workforce to ensure availability of critical skills

Programmatic Sustainability

Likelihood of keeping the program sold, i.e., by meeting interim visible milestones	
R	Significant advocacy needed for out year funding
Y	Out year funding profile requires advocacy
N	Sufficient public and congressional support
G	Plus broad support from Industry & external agencies, i.e., DoD
B	Plus broad support from IP

Life Cycle Cost

Affordability through 202; balanced approach given other national needs	
R	Significantly exceeds the President's budget
Y	Minimally exceeds the President's budget
N	Meets the President's budget
G	Under the President's budget
B	Significantly under the PB

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