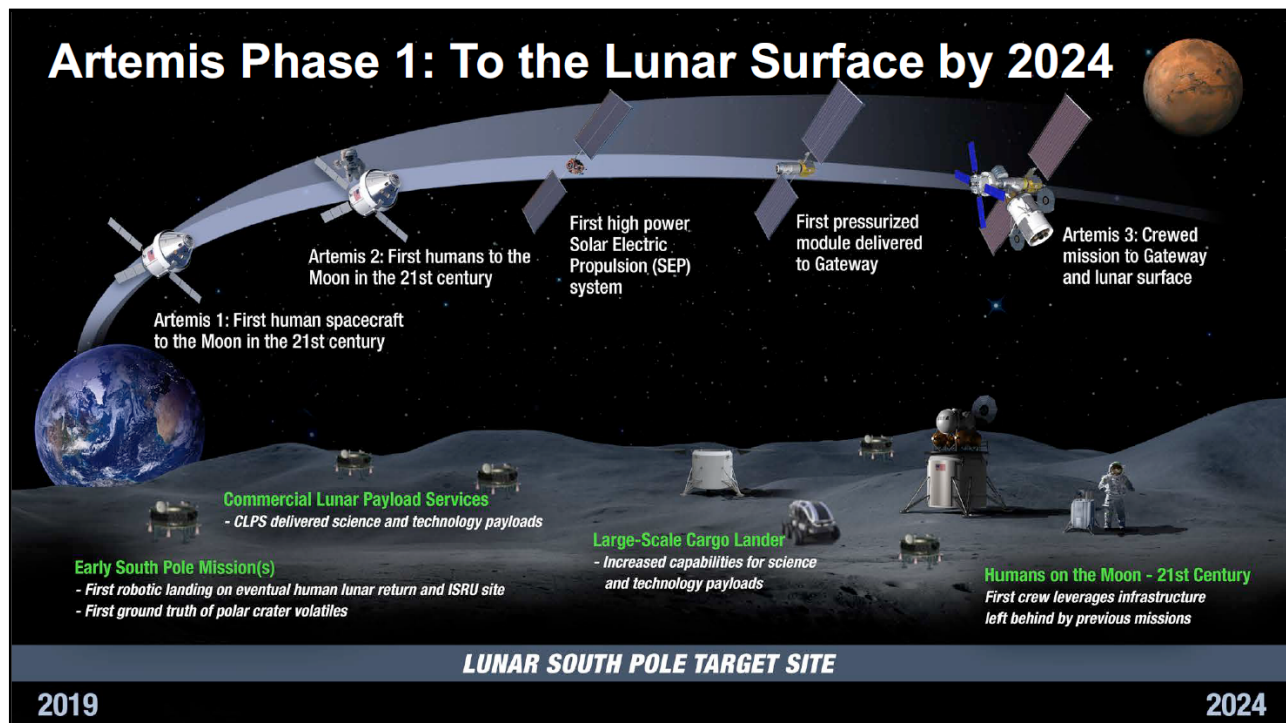




What do we know	What we don't know
Destination Moon then Mars	Fully Defined Mission Plan
2024 is Arrival Date	Exact Roles for International and Commercial Partners
Leveraging International Space Station program, partnerships, structures, and lessons learned.	Final Configuration of Gateway spacecraft
Will use International and Commercial partners	How regulatory changes will affect the Moon mission
Space Policies and export control regulations evolving to promote U.S. commercial sector	



## Gateway is Essential for 2024 Landing

- Initial Gateway focuses on the minimum systems required to support a 2024 human lunar landing while also supporting Phase 2
- Provides command center and aggregation point for 2024 human landing
- Establishes strategic presence around the Moon – US in the leadership role
- Creates resilience and robustness in the lunar architecture
- Provides building block for the future, expanded capabilities on and around the Moon

Gateway Phase One

Lunar Transport System (Ascent, Descent, Transfer)

Orion/European Service Module

## Space Policy Directive-1



“Lead an innovative and sustainable program of exploration with commercial and international partners to enable human expansion across the solar system and to bring back to Earth new knowledge and opportunities.

Beginning with missions beyond low-Earth orbit, **the United States will lead the return of humans to the Moon for long-term exploration and utilization**, followed by human missions to Mars and other destinations.”



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## Space Policy Directive - 2



**Sec. 6. Review of Export Licensing Regulations.** The Executive Secretary of the National Space Council, in coordination with the members of the National Space Council, shall:

(a) initiate a review of export licensing regulations affecting commercial space flight activity;



## Export Control Challenges



### International Partners

#### Mission Planning in Dynamic Stage

Moving from conceptual ideas or objectives into a stage where Export Controlled information might be shared

### Roles for Commercial Partners

#### Dynamic Regulatory Environment

Need for Early Discussions with International Partners may require licenses

FSM(L)

Rapid pace of design, development and production reveals the importance of proper jurisdiction and classification determinations.



## Slide 8

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**FSM(1** Would it be beneficial to add a comment about the rapid pace of design, development and production to meet Administration's goals?

Fuller, Sean M. (JSC-OA111), 6/27/2019

## Keys to Compliance in a Dynamic Environment

**Communication and cooperation between compliance and program staff**

**Common understanding of scheduled deliverables to foreign partners...get authorizations in place (don't forget there may be daily interactions with foreign partners)**

**Documented jurisdiction and classification of spacecraft components**

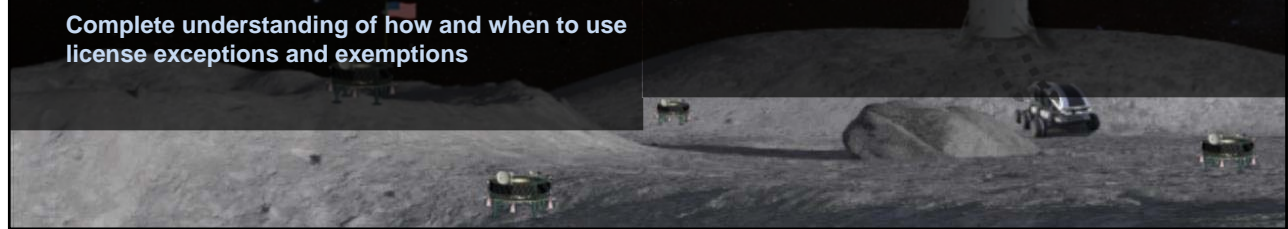
**Complete understanding of how and when to use license exceptions and exemptions**

**Written procedures for sharing export controlled information with foreign partners**

**Well developed lines of communications with contractor export compliance staff**

**Close relationships with regulators to facilitate licenses, advisory opinions, answer questions**

**Monitor changes in export control regulations to ensure your project remains in compliance**



## Science by 2024

### Polar Landers and Rovers

- First direct measurement of polar volatiles, improving our understanding of their lateral and vertical distribution, as well as their physical state and chemical composition
- Information on the geology of the South-Pole Aitken basin, the largest impact in the solar system

### Non-Polar Landers and Rovers

- Ability to explore scientifically valuable terrains not explored by Apollo.  
Examples include:
  - Land at a lunar swirl and make the first surface magnetic measurement
  - Visit young volcanic features such as Ina to understand volcanic evolution
- PI-led instruments - Discovery-class science such as geophysical network and visiting lunar volcanic region

### Artemis 1 – Cube Satellite Program

- Over a dozen satellites will be launch as part of Artemis 1 mission

### Orbital Data

- Cubesats delivered by CLPS providers, or comm/relay spacecraft could acquire new scientifically valuable datasets
- Global mineral mapping (including resource identification), global elemental maps, improved volatile mapping

### In-Situ Resource Initial Research

- What is the composition and ability to use lunar ice for sustainment and fuel

