



THE POWER OF COLLABORATION

CONSORTIUM FOR SPACE MOBILITY
AND ISAM CAPABILITIES

Overview Briefing

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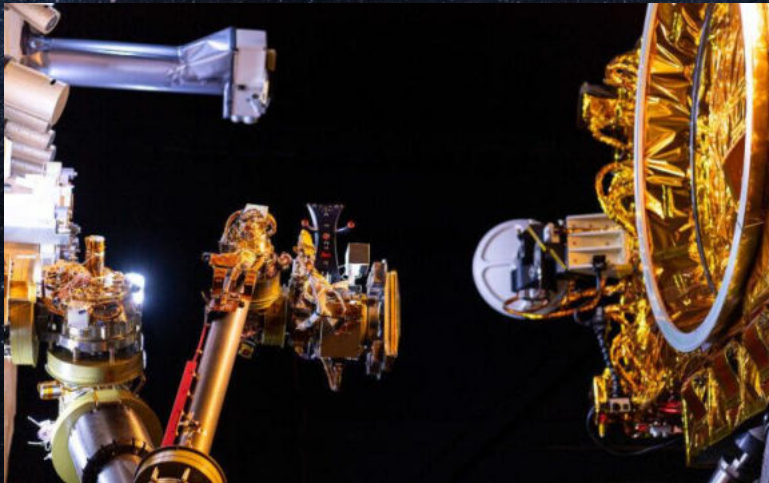
- The **Consortium for Space Mobility and ISAM Capabilities (COSMIC)** is a nationwide coalition that will invigorate a domestic in-space servicing, assembly, and manufacturing (ISAM) capability.
- COSMIC will:
 - **Mobilize, advance, and leverage** community expertise spanning **users and providers** across federal agencies, industry, and academia.
 - Accelerate **wide-spread adoption** of ISAM capabilities as an integrated segment of the space enterprise architecture.
 - Steer the future of ISAM as a coordinated and collaborated effort for space mission lifecycles to **enhance mission capability, reduce costs, and increase operational efficiency** due to **enhanced longevity, utility, and resilience.**

What is ISAM?

In-Space Servicing, Assembly, and Manufacturing

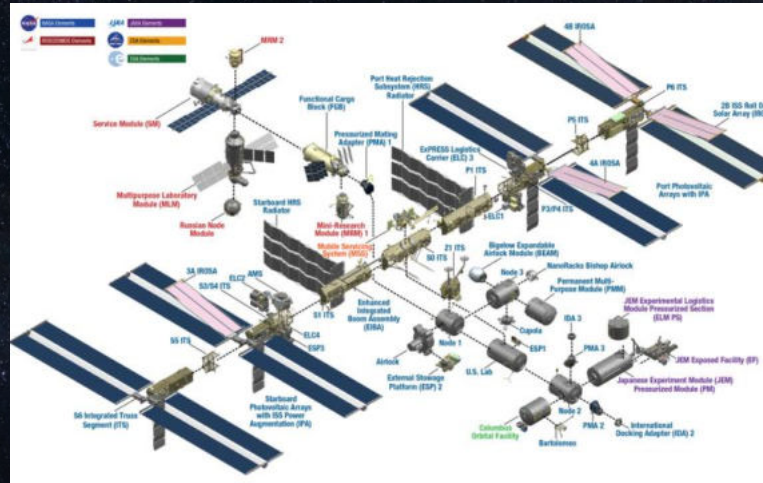
SERVICING

- Design of modular, serviceable, upgradeable, and evolvable systems



ASSEMBLY

- Assembly of simple to complex space systems



MANUFACTURING

- Manufacturing in space using Earth- and locally-sourced materials



ISAM National Strategy and Implementation Plan



FOSTER AN ECOSYSTEM TO LEVERAGE ISAM CAPABILITIES

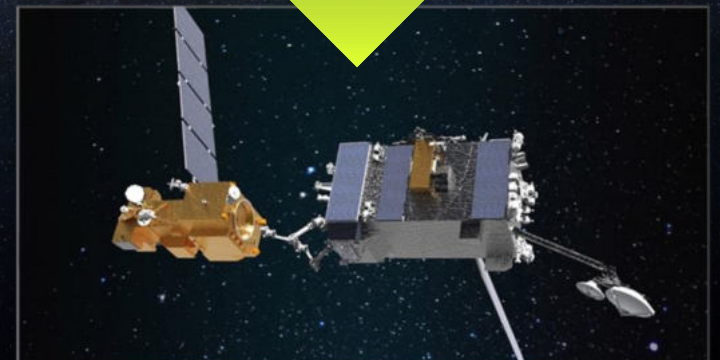
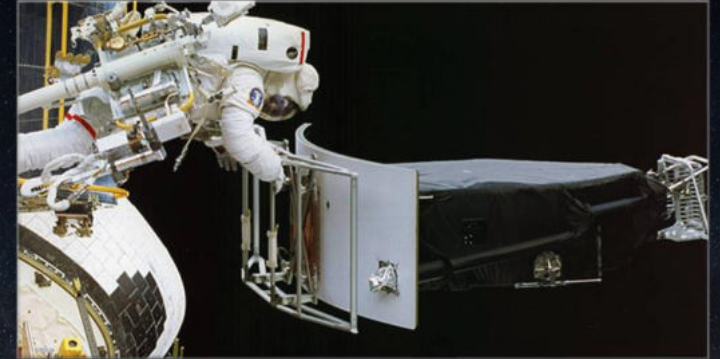
- Support and stimulate USG, academic, and commercial ISAM capability development
- Consistent with US Space Priorities Framework (Dec 2021)

BENEFITS

- Promote a sustainable space environment
- Improve scientific output of spacecraft and payloads
- Create robust, sustainable, and enduring in-space infrastructure
- Expand performance, availability, resilience, and lifetime of space systems

STRATEGIC GOALS

1. Advance ISAM research & development
2. Prioritize expanding scalable ISAM infrastructure
3. Accelerate the emerging ISAM commercial industry
4. Promote international collaboration and cooperation
5. Prioritize environmental sustainability
6. Inspire a diverse future space workforce



COSMIC: A Nationwide Alliance for ISAM

VISION

Create a nationwide alliance that enables the U.S. space community to provide global leadership in ISAM.

MISSION STATEMENT

Making ISAM a routine part of space architectures and mission lifecycles.



CAPABILITY DEVELOPMENT

Develop, mature, and demonstrate ISAM technologies that enable and enhance mission utility.



ECOSYSTEM ECONOMICS

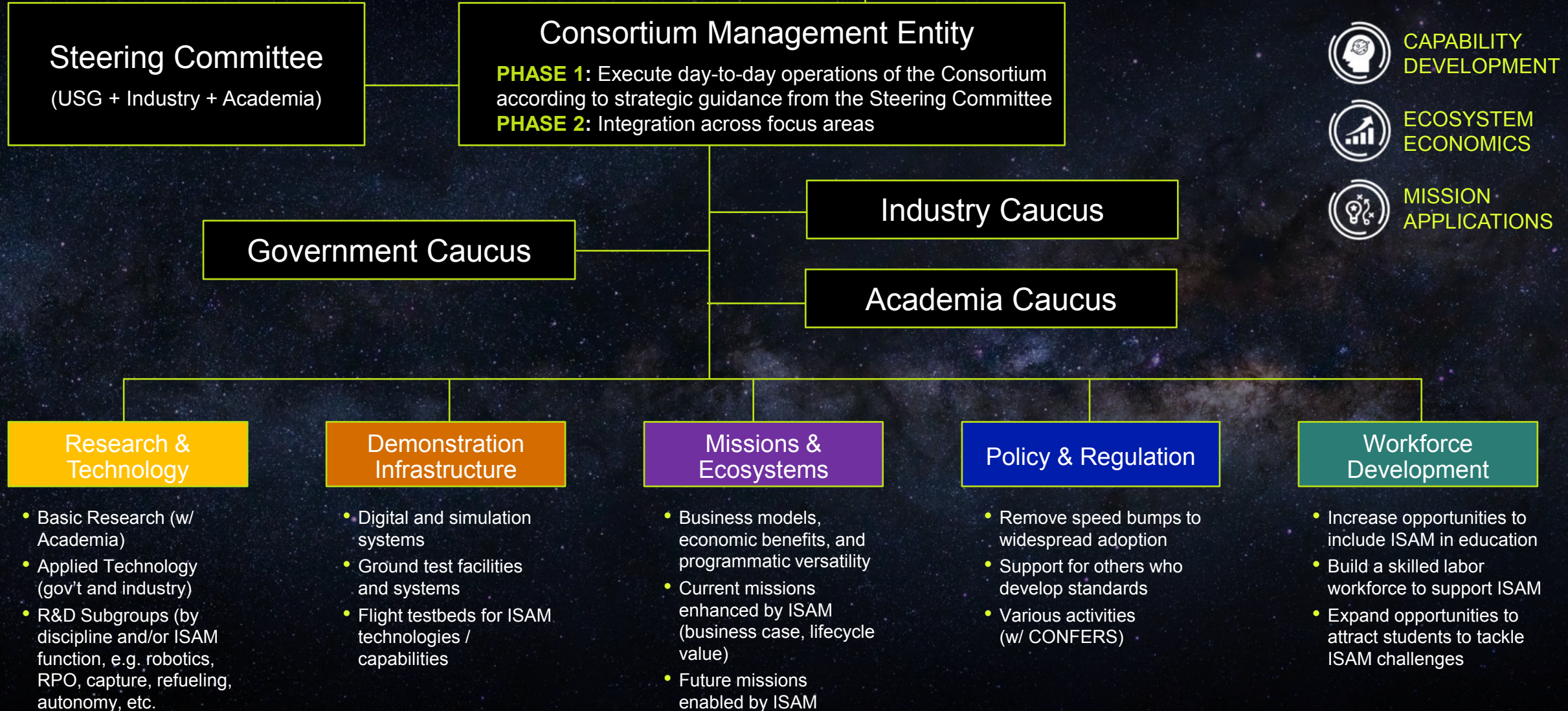
Promote U.S. leadership in ISAM technologies and capabilities that change the business model away from single-use space assets.



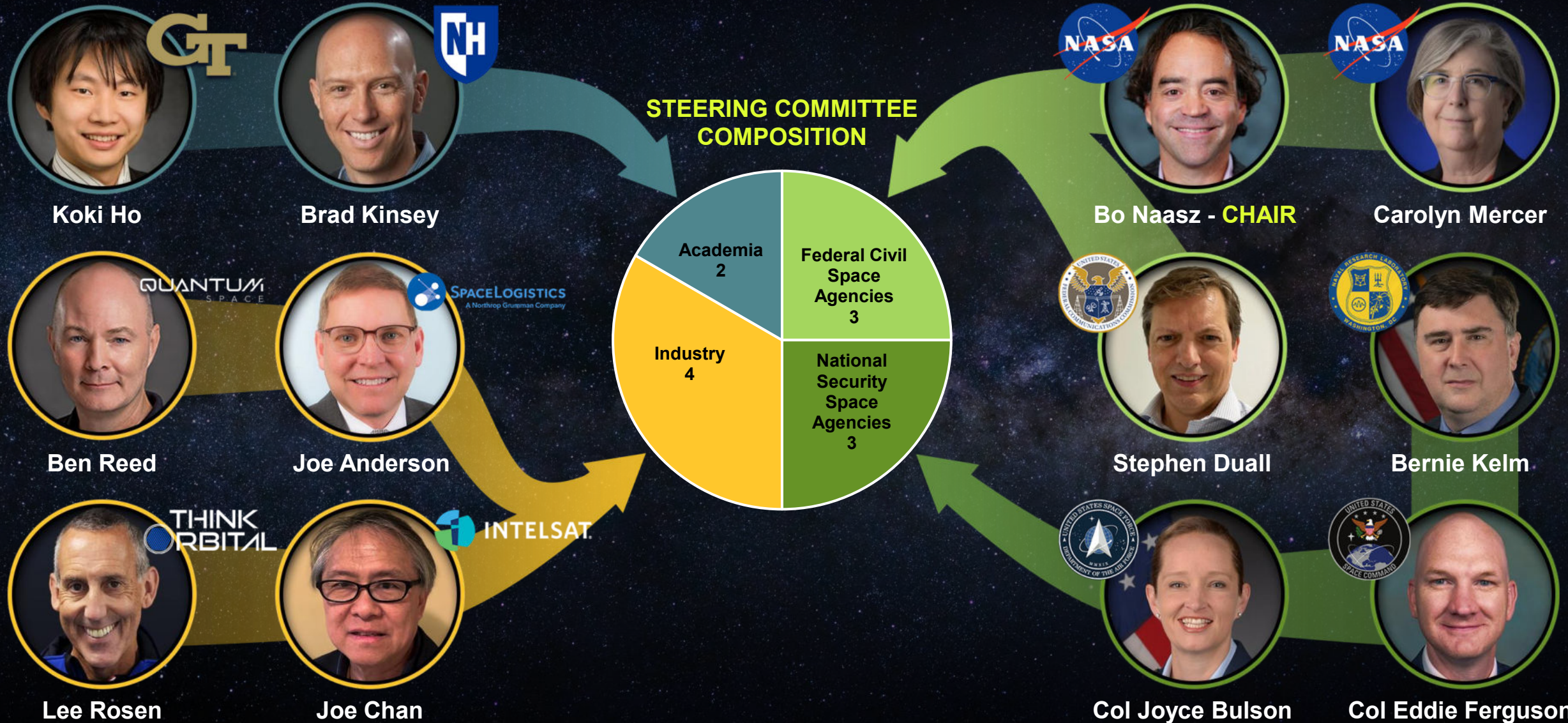
MISSION APPLICATIONS

Encourage and guide missions to use ISAM capabilities as part of commercial and government program lifecycles.

COSMIC Organization



Steering Committee – Proposed Membership



Consortium Definition

COSMIC IS

- A forum for collaboration and knowledge sharing
- A consortium designed to produce useful products
- A U.S. consortium
- Funded by NASA

COSMIC IS NOT

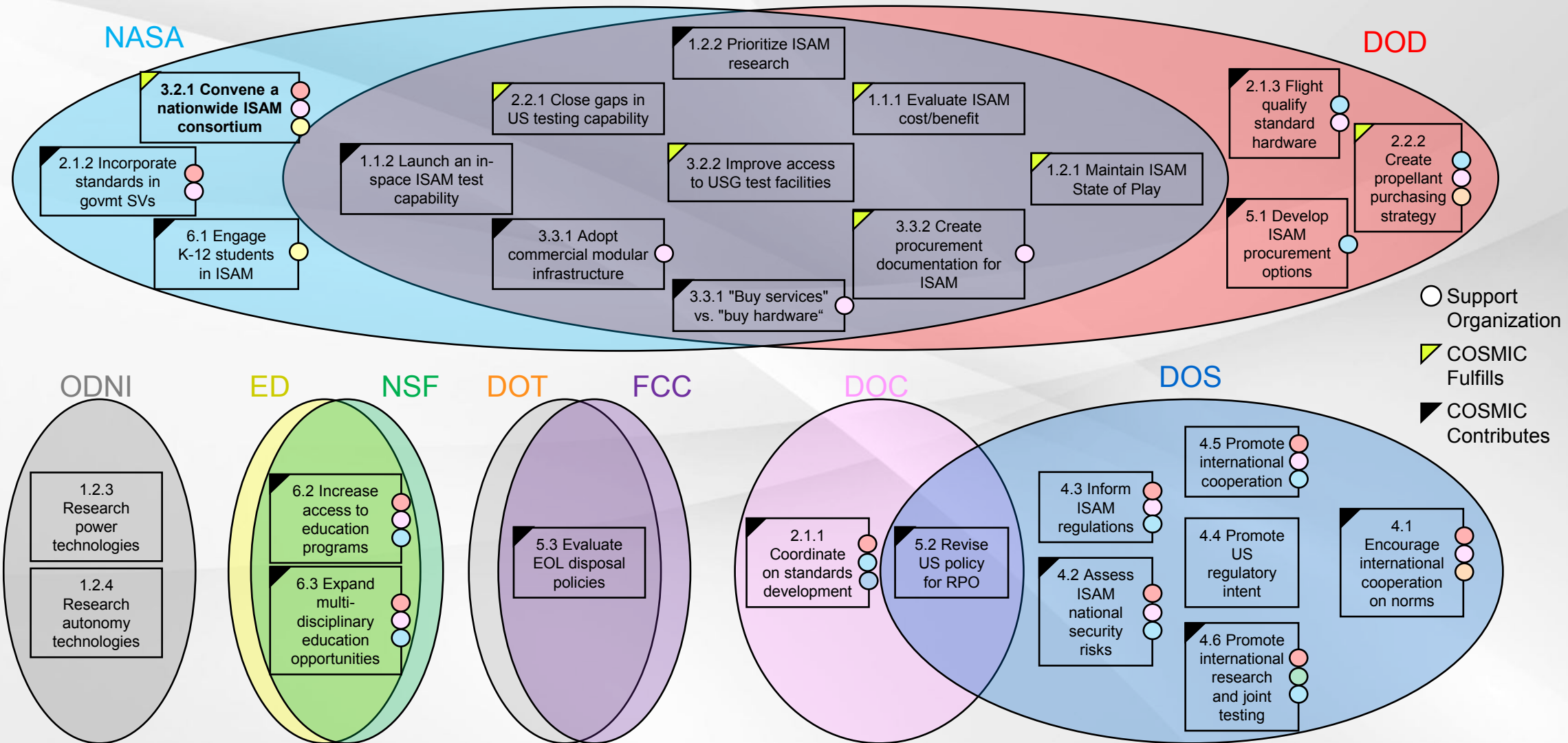
- A funding body
- A solicitation vehicle
- A standards body
- A lobbying organization
- An international consortium
- Led by NASA

COSMIC Coordination



	3Q FY22	4Q FY22	1Q FY23	2Q FY23	3Q FY23	4Q FY23	
NATIONAL	OMB ISAM National Strategy	OSTP ISAM IWG		ISAM National Implementation Plan			OMB National Space Council
PUBLIC *US ONLY		Space Technology Industry-Government-University Roundtable (STIGUR)	AIAA ASCEND				COSMIC Engagement Session
DOD	USSF/SSC USSF SPoC	SPACECOM AFRL USSF/SSC	SAF/SQ	DIU NRL			SSIB Workshop Space Safety Institute USSF SPACECOM
CIVIL		JPL	NASA ISAM Workshop NASA LaRC NASA GSFC NASA MSFC NASA JSC	NASA Center Tri-Annual, ARC NASA ESDMD, SOMD, SMD, OTPS			NASA HQ NASA HQ FCC
INDUSTRY	CONFERS Leadership	SPACELOGISTICS Astroscale LOCKHEED MARTIN RED WIRE CONFERS GSSF	ORBITFAB STARFISH SPACE	AXIOM SPACE Nanoracks SIERRA SPACE MAXAR			CONFERS INTELSAT ULA CESMII CONFERS
ACADEMIA				GT MIT CMU P U of T WV Space Grant			

COSMIC's Proposed Role in the National ISAM Implementation Plan



The logo for COSMIC features the word "COSMIC" in a bold, white, sans-serif font. The letter "O" is highlighted in a vibrant lime green and contains a white graphic of a satellite in orbit. Below the "O" is a smaller, detailed illustration of a satellite with solar panels and antennas. To the right of the word "COSMIC", the text "CONSORTIUM FOR SPACE MOBILITY AND ISAM CAPABILITIES" is written in a smaller, white, sans-serif font. Below this, the words "KICKOFF MEETING" are written in the same vibrant lime green as the "O" in the logo.

COSMIC
CONSORTIUM FOR SPACE MOBILITY
AND ISAM CAPABILITIES
KICKOFF MEETING

**EXPLORING
THE POWER OF COLLABORATION**

November 7-8, 2023

University of Maryland
College Park, MD



THE POWER OF COLLABORATION

CONSORTIUM FOR SPACE MOBILITY
AND ISAM CAPABILITIES

cosmicspace.org



COSMIC Responds to the National Need



Tasking

Plan

<p>This OSAM consortium should focus on developing technologies needed by the commercial space industry (as a potential user, not just as a provider).</p>	<ul style="list-style-type: none"> ✓ Commercial mission models and business infusion are represented in the “Missions and Ecosystems” focus area. ✓ Industry members are a critical part of the Steering Committee.
<p>To this end, the OSAM consortium should consider co-funding partners from the commercial space industry.</p>	<ul style="list-style-type: none"> ✓ Government, industry, and academic members fund their own participation.
<p>In establishing this consortium, STMD should convene a nationwide alliance of government departments and agencies, universities, nonprofit research institutions, NASA centers and mission directorates, and commercial companies, to include space start-up community and under-represented companies (i.e. small and minority-owned businesses).</p>	<ul style="list-style-type: none"> ✓ COSMIC is built as a nationwide alliance that includes a broad cross-section of the U.S. space community. ✓ Enhances the role of universities and innovative startups in early stage R&D for ISAM applications.
<p>STMD should ensure these partners have a vested interest in the nation’s leadership in OSAM as an enabling technology and as a vehicle for workforce development.</p>	<ul style="list-style-type: none"> ✓ Participation in COSMIC opens up opportunities for industry and government collaboration, partnerships, and tech transfer. ✓ University participation enables and enhances the ISAM-savvy workforce of the future.
<p>This OSAM consortium should collaborate where there may be possible synergies and to avoid unnecessarily overlapping or duplicative federal efforts.</p>	<ul style="list-style-type: none"> ✓ Identified potential USG partners based on existing interests, expressed via membership in the OSAM National Initiative, ISAM Interagency Working Group, and other community forums.

COSMIC and CONFERS: Invigorating the Community



PURPOSE

“Making ISAM a routine part of space mission lifecycles”

- Facilitate collaborative relationships between U.S. government departments and agencies, universities, commercial companies, and nonprofit research institutions
- Create products that address National ISAM Implementation Plan actions, such as
 - A repository of available ISAM capabilities and facilities
 - Assessment of missions enabled or enhanced by ISAM R&D

“Servicing empowering a robust space economy”

- Developing industry-led standards that contribute to a sustainable, safe, and diverse space economy
- Engaging with global governmental legislative and regulatory bodies on policies and oversight of satellite servicing activities

MEMBERSHIP

US-ONLY MEMBERSHIP

- Nationwide consortium to advance U.S. leadership in ISAM
- Members must have a vested interest in the nation’s leadership in ISAM

INTERNATIONAL MEMBERSHIP

- Industry-led initiative where industry members vote
- Government members (including USG and international) are observers only

FUNDING

NO MEMBERSHIP DUES

- Management entity funded by NASA to support whole-of-nation needs
- Members fund their own participation

100% FUNDED BY MEMBER DUES

- Management entity funded by membership dues
- Initial seed funding from DARPA starting in 2017
- Now a stand-alone not-for-profit trade group
- Members fund their own participation