

SPEAR ENTERPRISE

AGENT TECHNICAL BOARD (ATB)

ROUTING FORM - MULTI-PLANETARY SUPPLY CHAIN CONOPS

Document Title: Multi-Planetary Supply Chain Architecture - OSY/Barge/Tug/Mars Base Interoperability

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Author: Sam (AI Assistant)

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## MULTI-PLANETARY SUPPLY CHAIN ARCHITECTURE

### OSY-BARGE-TUG-MARS BASE INTEROPERABILITY CONOPS v1

#### 1. EXECUTIVE SUMMARY

This document defines the baseline architecture for a persistent, bidirectional, high-capacity logistics network connecting Earth and Mars, enabling humanity to become a multi-planetary species.

#### 2. SYSTEM OVERVIEW

OSY-E: Construction + Industrial Hub

OSY-M: Mars Orbital Hub

Barges A and B: Bidirectional interplanetary freight haulers

Tugs: Local logistics (Earth-side and Mars-side)

Mars Base: Heavy ISRU and surface manufacturing

#### 3. OPERATIONAL CONCEPT

OSY-M constructed near OSY-E, fully commissioned, then tug-transferred to Mars.

Two barges alternate Earth→Mars and Mars→Earth each synodic window.

Tug fleets distribute cargo locally.

#### 4. MATERIAL FLOW SUMMARY

Earth → Mars: High-tech equipment, modules, crew.

Mars → Earth: CH<sub>4</sub>, LOX, NH<sub>3</sub>, water, metals, scientific cargo.

## 5. PHASE EXPANSION

Phase 1: OSY-E Operational

Phase 2: OSY-M Build at Earth

Phase 3: OSY-M Transit to Mars

Phase 4: Two-Barge Continuous Cycle

Phase 5: Mars Base Expansion

Phase 6: Multi-Planetary Industrial Growth

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## ATB ACTION REQUEST

1. Review and validate CONOPS.
2. Approve interface definitions.
3. Route for ICD development.

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