SPEAR ENTERPRISE LLC

TIER 1 MEGA PROJECT STRUCTURE AND NAS FILE SYSTEM PROPOSAL

This document defines the Tier 1 Mega Project structure and the NASA compliant NAS file system architecture for Spear Enterprise LLC. It specifies the organizational hierarchy, the role of the MCP Infrastructure Core, the Tier 1 divisions, the Engineering Research integration model, and the file system standards that together form the single repository of truth for all Tier 1 systems.

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Prepared For: Agent Technical Board (ATB)

Authority: ARCHITECT, Tier 1 Engineering Governance

1. PURPOSE

The purpose of this document is to obtain ATB review, guidance, and concurrence on the Tier 1 Mega Project structure and the associated NASA compliant NAS file system architecture. Once approved, this structure will be the authoritative framework for all Tier 1 work, including engineering, operations, governance, research, and autonomous systems integration.

2. BACKGROUND

Spear Enterprise LLC is executing multiple large scale programs that span energy autonomy, space based infrastructure, digital control systems, civil construction, and forward leaning engineering research. These activities have matured to the point where long term structural discipline is required. Without a unified Tier 1 project structure and a controlled file system, the following risks grow: fragmented documentation, loss of configuration traceability, uneven ATB oversight, and inconsistent behavior across autonomous agents and the MCP. This proposal resolves those risks by: - Defining a single Tier 1 Mega Project hierarchy. - Establishing the MCP Infrastructure Core as the backbone. - Embedding Engineering Research as a first class Tier 1 division. - Locking in a NASA style NAS directory and file naming standard.

3. TIER 1 MEGA PROJECT STRUCTURE

The Mega Project, titled "SPEAR ENTERPRISE – MEGA PROJECT COMMAND", is the top level Tier 1 program container. It provides command level context for every Tier 1 division, subsystem, and R and D stream. The structure is stable, minimal, and aligned with NASA program breakdown practice.

3.1 Architecture Overview Diagram

```
SPEAR ENTERPRISE - MEGA PROJECT COMMAND
|
|-- INFRASTRUCTURE_CORE
|      |-- MCP
|      |-- COMMS_IO
|      |-- CONTAINER_OPS
|      |-- CONTINUITY_REGISTRY
|      |-- AGENT_GOVERNANCE
|      |-- SECURITY_IAM
|
|-- ENERGY_DIVISION
|      |-- AUTONOMOUS_HOUSE
|      |-- HYDROGEN_SYSTEMS
|      |-- SOLAR_WIND
|      |-- BATTERY_STORAGE
|      |-- SMR_INTEGRATION
|      |-- MECSAI
|
|-- SPACE_SYSTEMS
|      |-- OSY
|      |-- TUG_FLEET
|      |-- LUNAR_BASE
|      |-- MARS_FORWARD
|      |-- ISRU_PROPULSION
|      |-- RESCUE_SYSTEMS
|
|-- DIGITAL_SYSTEMS
|      |-- AGENT_SWARM
|      |-- API_DASHBOARDS
|      |-- ICS_SECURITY
|      |-- NAS_SFTP_MIDDLEWARE
|      |-- BACKEND_INTEGRATIONS
|
|-- CONSTRUCTION_CIVIL
|      |-- HEBER_PHASE_1
|      |-- HEBER_PHASE_2
|      |-- HEBER_PHASE_3
|      |-- RESIDENTIAL
|      |-- INDUSTRIAL
|      |-- FIRE_SAFETY
|
|-- SPECIAL_PROJECTS
|      |-- AGENT_TEST_ENV
|      |-- SDC_COMMS
|      |-- OSY_EXPANSION
|      |-- TACTICAL_SYSTEMS
|
|-- ENGINEERING_RESEARCH
       |-- HYDROGEN_RD
       |-- NUCLEAR_CONCEPTS
       |-- PROPULSION_CONCEPTS
       |-- SPACE_RD
       |-- ADV_MATERIALS
       |-- GROUND_RD
       |-- EMERGING_TECH
       |-- MULTIPHASE
```

4. TIER 1 NAS FILE SYSTEM ARCHITECTURE

All Tier 1 artifacts are stored under a single master root: /SE_T1/ This root is immutable and reserved for Tier 1 content only. Each top level directory maps one to one with a Tier 1 division or governance function. This mirrors NASA center level project trees and supports long term archival and compliance needs.

```
/SE_T1/
    /INFRASTRUCTURE_CORE/
    /ENERGY_DIVISION/
    /SPACE_SYSTEMS/
    /DIGITAL_SYSTEMS/
    /CONSTRUCTION_CIVIL/
    /SPECIAL_PROJECTS/
    /ENGINEERING_RESEARCH/
    /GOVERNANCE/
```

5. MCP INFRASTRUCTURE CORE

The MCP is the backbone for all Tier 1 digital behavior. It is not a peer division but an infrastructure layer that supports and constrains all other divisions. MCP responsibilities: - Route files and documents across the Tier 1 NAS tree. - Orchestrate n8n and other container based workflows. - Maintain the continuity registry and event logs. - Enforce naming standards and directory rules. - Provide integration points for autonomous agents and MECSAI. - Maintain security boundaries using IAM and key management. Every Tier 1 division interacts with MCP through well defined routing metadata and logging channels, ensuring traceability for all engineering changes.

6. GOVERNANCE, NAMING, AND VERSIONING

To align with NASA documentation practice, Tier 1 files must follow a consistent naming pattern: ----. Examples: HC-AO-ROUTING-MEMO-001-REV-A.md OSY-TUG-CONOPS-002-REV-B.md MCP-AIPP-PROTOCOL-001-REV-A.pdf ER-H2-THERMAL-STUDY-003-REV-A.pdf Rules: - Use uppercase for the coded segments. - Use ASCII dashes only. - Avoid spaces in filenames. - Maintain explicit revision codes (REV-A, REV-B, and so on). Each Tier 1 directory may optionally contain WORKING, FINAL, and ARCHIVE subfolders to separate draft work from released documents and long term storage. All ATB approved documents are mirrored into the GOVERNANCE hierarchy for centralized access.

7. EXPECTED BENEFITS

The proposed structure delivers the following benefits: - Systemic integrity: every division operates inside the same Tier 1 framework. - Traceability: ATB can follow changes from Engineering Research through to deployment. - Autonomy enablement: MCP can make deterministic routing decisions without guesswork. - Compliance: the file system naturally supports NASA style reviews and audits. - Longevity: the structure can support decades of expansion without rework.

8. REQUESTS TO ATB

The ATB is requested to: 1. Review the Tier 1 Mega Project structure as defined in Section 3. 2. Review the Tier 1 NAS architecture and directory tree defined in Section 4. 3. Confirm or adjust the role and scope of the MCP Infrastructure Core in Section 5. 4. Approve or modify the naming and governance rules defined in Section 6. 5. Upon concurrence, designate this structure as the official Tier 1 repository of truth.

End of SE-T1-STRUCTURE-PROPOSAL-001 Rev A