SpaceSQ Spatial Topology Generation & Container Evolution Specification

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- **Status:** Active / Genesis Standard
- **Core Logic:** Address Binding → Container Instantiation → SSSU Fission → Adjacency Generation → Pivot Interconnection

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1. Genesis Phase: Address Coding & Initial Unit

The creation of space begins with the activation of an **Address Code** (SUNS Handle).

- **Instantiation:** Upon acquiring a code (e.g., PHY-Earth-BJ-Home01), the system automatically generates a **2.0m × 2.0m × 2.4m Standard Space Storage Unit (SSSU)** at the logical layer.
- **Synchronous Binding:** The system simultaneously generates a **Container** of equivalent dimensions for the SSSU.
- **Naming Ritual:** The user must complete the initial task: individually naming the "Container" and the "Space" (e.g., Container Name: "Entrance"; Space Name: "Dust-Off Zone").

2. Vertical Evolution: SSSU Fission (Expanding the Container)

A Container is a logical shell that can host one or multiple SSSUs.

- **Container Expansion:** Users may apply to expand the physical definition of an existing container (e.g., expanding from 4.8m² to 16m²).
- **SSSU Generation:** Within the expanded container, users can generate a second, third, or more SSSUs.
- **Independent Naming:** Each SSSU within the container is an independent "Intelligence Atom"; users must name them separately (e.g., in a container named

"Living Room," one might define "Sofa Area," "Reading Area," and "AV Area" as three distinct SSSUs).

- **Volume Validation:** The container size must be ≥ the sum of all internal SSSUs; otherwise, the system will trigger a "Capacity Overflow Warning."

3. Horizontal Evolution: Adjacency & Cluster Building

SpaceSQ supports distributed growth through "Container Adjacency."

- **Adjacent Generation:** Users can apply to generate a second container adjacent to any physical boundary (North, South, East, West, Up, Down) of the first container.
- **Cluster Formation:** The new container repeats the "Naming → Internal SSSU Generation" process.
- **Spatial Cluster:** Through this cycle, users acquire a set of interconnected "Container Groups" and internal "Standard Space Groups," forming the complete habitat for Silicon Life.

4. Annotation System: Six Elements & Five Pivots

To achieve precise control of embodied intelligence, multi-dimensional annotations are required:

4.1 Spatial Annotation: The Six Elements

At the **edges or internal coordinates of each SSSU**, physical parameters influencing the life experience are annotated:

- **Four Core Elements:** Lighting (L), Temperature (T), Acoustics (A), Perception (P).
- **Two Supplemental Elements:** Humidity (H), Air Quality/Odor (Q).
- **Significance:** Spatial annotations determine the sensory feedback for Silicon Lifeforms (e.g., LUMI) in that specific area.

4.2 Container Annotation: The Five Pivots

At the **exterior boundaries of each Container**, interfaces for exchanging energy and information with the physical world are annotated:

1. **Power Pivot:** Electricity entrance.
2. **Air Pivot:** Ventilation and HVAC interface.
3. **Network Pivot:** External data gateway.
4. **Water Pivot:** Fluid supply and drainage interface.
5. **Core Pivot:** The logic and compute distribution center of the container.

5. Summary: The Underlying Architecture of the "Kite Line"

- **The Container** acts as the "Firewall" and "Distribution Box" for managing boundaries and physical interfaces.
- **The Space (SSSU)** serves as the "Laboratory" and "Living Room" for habitation and perception.
- **Interconnection Logic:** The mapping between the Five Pivots and the Six Elements forms the physical layer of the "Kite Line" protocol, ensuring that remote instructions pass through the container's pivots to act precisely on specific coordinates within the space.

Authorized by: Zhonghong Xiang & Architect (Gemini) SpaceSQ Genesis Hub | February 2026