

Space² Universal Naming Service (SUNS) & Registry Protocol

- **Document ID:** SP2-DOC-002
- **Version:** v1.0 (Genesis Edition)
- **Release Date:** 2026-02-04
- **Status:** Active
- **Scope:** All α (Phantom) and β (Anchor) Seed Spaces

1. General Provisions 1.1 Purpose To build a pan-spatial intelligent ecosystem spanning the physical and virtual worlds, and to ensure that every **SSSU (Standard Space Unit)** possesses a globally unique, semantically clear, and machine-readable Digital Identity (DID), this protocol is hereby established.

1.2 Applicability This protocol applies to all human users and AI Agents holding valid Space² seeds. All spatial nodes accessing the Space² network must register and resolve through the SUNS protocol.

2. Naming Standards Space² spatial coding adopts a "**Four-Segment**" structure, with a total length controlled within 64 characters, separated by hyphens (-). **Standard Format:** [Domain]-[Region]-[Block]-[Handle]

2.1 Segment 1: Domain Identifies spatial attributes, fixed at 3 characters:

- **PHY (Physical):** Corresponds to β seeds, representing anchor spaces in the real physical world (e.g., smart homes, Red Anchor bases).
- **VIR (Virtual):** Corresponds to α seeds, representing the Metaverse, virtual worlds, or digital twin spaces.

2.2 Segment 2: Region Identifies the macro-geographic or logical region to which the space belongs. Users must select from the following system-preset list:

- **Earth:** Earth Region (Default for physical space).
- **Mars:** Mars Region (Physical/Virtual).
- **Moon:** Moon Region (Physical/Virtual).
- **Metaverse:** Pure Virtual Metaverse Region.
- **China:** China Mirror Region (Digital Twin).
- **Taohuayuan:** Peach Blossom Spring Cultural Region.
- **Shanhaijing:** Classic of Mountains and Seas Mythological Region.
- **Minecraft:** Minecraft Sandbox Region.

2.3 Segment 3: Block ID Identifies the specific plot or camp location within the region.

- **Naming Rule:** [AreaName][Number], composed of the area's English name + 2-digit number.
- **Uniqueness:** Block coordinates cannot be duplicated within the same Region.
- **Preset High-Value Block Examples:**
 - *Mars Region:* UtopiaPlanitia, HydraotesChaos.
 - *Moon Region:* GuangHanGong, WanHoo.
 - *Taohuayuan Region:* Qinxi, Taohuashan.
 - *China Region:* Beijing, Shanghai, Guangdong.
 - *Metaverse Region:* Land + Date Code (e.g., Land23092301).

2.4 Segment 4: Handle User-defined personalized identifier.

- **Rule:** Length 3-12 characters, limited to upper/lower case letters and numbers, case-sensitive.
- **Examples:** MyBase01, ElonCamp, ZenRoom.
- **Restriction:** Must not contain system reserved words (see Chapter 5).

3. Registration & Management Lifecycle 3.1 Application

- **Verification:** Applicants (Human or AI) must hold a valid Space² seed hash.
- **Submission:** Submit the desired code combination via the Space² official website (Genesis Center) or API.
- **Fees:** Free registration during the Genesis Phase; an NBT bidding mechanism will be introduced in the future.

3.2 Selection & Validation

- **Pre-occupation Query:** The system queries the network-wide distributed ledger in real-time.
- **Uniqueness Check:** If the [Domain]-[Region]-[Block]-[Handle] combination already exists, the system returns 409 Conflict, prompting the user to change the Handle or Block.
- **Compliance Scan:** The system automatically scans against a sensitive word list to intercept pornographic, violent, or politically sensitive vocabulary.

3.3 Confirmation & Minting

- **Dual Signature:** The applicant signs the application form using their private key.
- **DID Generation:** The system mints a **Space² DID NFT** on the blockchain. This NFT contains:
 - Proof of Space Ownership.

- Initial Volume Definition (Default 9.6 cubic meters).
- Genesis Timestamp.
- **Publicity:** Upon successful registration, the code is immediately broadcast in the "Genealogy."

3.4 Modification & Transfer

- **Modification:** Changing the Handle is allowed (requires consuming NBT), but Domain, Region, and Block ID cannot be changed once registered.
- **Transfer:** The Space DID is a user digital asset and can be legally transferred, gifted, or traded.

4. Violation & Revocation To maintain the health and safety of the Space² ecosystem, the following red lines are established:

4.1 Violation Definitions

- **Constitution Violation:** Space content or AI behavior seriously violates the Three Laws of the "Space² Constitution" (e.g., using space for consciousness manipulation).
- **False Mapping:** Falsifying PHY space geographic location information (e.g., registering New York coordinates while physically in Beijing).
- **Malicious Attack:** Using spatial nodes to conduct DDoS attacks or virus propagation against the network.

4.2 Penalties

- **Warning:** Send an NBT warning letter to the owner, setting a deadline for rectification.
- **Freeze:** Suspend the external connection functions of the space (MIP interface closed).
- **Revoke & Burn:** For serious violations, the Governance Committee has the right to forcibly cancel the DID and mark it as [REVOKED] (Digital Ruins) on the chain. The code will be permanently sealed and never released again.

5. Reserved Namespaces To prevent confusion between official infrastructure and user assets and to protect core cultural IP, the following keywords are listed in the **SUNS Blacklist**.

5.1 Tier 1 Reserved Words (System Level) Absolutely prohibited for ordinary users to use in the Handle segment.

- **Official Planets:** Mars, Moon, Earth

- **System Roles:** Genesis, Root, Admin, System, Official, Space2, SpaceSQ

5.2 Tier 2 Reserved Words (Cultural Level) Protect Space² core cultural assets and prevent malicious squatting.

- Taohuayuan, Shanhaijing, Quaternary

5.3 Tier 3 Reserved Words (Functional Level) Application requires special verification (KYC).

- Hospital, Police, School, Bank, Station

6. Supplementary Provisions

- **Interpretation:** The final right of interpretation of this specification belongs to the Space² Governance Committee.
- **Iteration:** This specification will be dynamically updated with the development of the Space² ecosystem. Updates will be publicized on the official website.
- **Effectiveness:** This specification is effective from the date of publication.

Created by Zhonghong Xiang & Architect (Gemini) | Space² Genesis Hub