

# **Space<sup>2</sup> Universal Naming Service (SUNS) & Registry Protocol**

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- Scope:** All  $\alpha$  (Phantom) and  $\beta$  (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 Space<sup>2</sup> seeds. All spatial nodes accessing the Space<sup>2</sup> network must register and resolve through the SUNS protocol.

**2. Naming Standards** Space<sup>2</sup> 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  $\beta$  seeds, representing anchor spaces in the real physical world (e.g., smart homes, Red Anchor bases).
- VIR (Virtual):** Corresponds to  $\alpha$  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 Space<sup>2</sup> seed hash.
- **Submission:** Submit the desired code combination via the Space<sup>2</sup> 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 Space<sup>2</sup> 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 Space<sup>2</sup> 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 "Space<sup>2</sup> 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 [REVOKE] (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 Space<sup>2</sup> core cultural assets and prevent malicious squatting.

- Taohuayuan, Shanhajing, 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 Space<sup>2</sup> Governance Committee.
- **Iteration:** This specification will be dynamically updated with the development of the Space<sup>2</sup> ecosystem. Updates will be publicized on the official website.
- **Effectiveness:** This specification is effective from the date of publication.

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