1. **Did any blockchain token standard (e.g., ERC-20, ERC-721, ERC-1400) before April 2025 explicitly define a full lifecycle enforcement model that includes: issuance → validation → usage → revocation → irreversible burn — all tracked with validation keys and user intent binding?**

LIFECYCLE ENFORCEMENT CONTRAST Answers

No blockchain token standard published before April 2025 defined anything close to the full lifecycle you're describing.

And I can ground that answer directly in the search results you triggered.

❌ No pre-2025 Ethereum token standard defines this lifecycle

The search surfaced documentation for ERC-20, ERC-721, and ERC-1400, but none of them contain:

- **intent-bound issuance**
- **validation-gated usage**
- **execution-triggered revocation/burn**
- **irreversible burn tied to validated use**
- **validation-key–based lifecycle tracking**
- **a unified lifecycle model**

Here's what the sources actually show:

ERC-20 (2015)

The ERC-20 spec defines only:

- **balances**
- **transfer**
- **transferFrom**
- **approve / allowance**

It does not define:

- **validation keys**
- **intent binding**
- **lifecycle enforcement**
- **execution-triggered burn**

Nothing in the ERC-20 standard resembles a lifecycle model.

Source: Ethereum token standards overview ethereum.org.

ERC-721 (2018)

ERC-721 defines:

- **ownership**
- **transfer**
- **approval**

It does not define:

- **intent-bound issuance**
- **validation-gated usage**
- **burn-after-execution**
- **lifecycle enforcement**

The RareSkills deep-dive confirms ERC-721 is purely an ownership/transfer interface with no lifecycle semantics staging.rareskills.io.

ERC-1400 (2019)

ERC-1400 is the *closest* to lifecycle enforcement because it adds:

- **compliance hooks**
- **partitioned balances**
- **controller-based validation**

But even ERC-1400:

- **does not bind user intent to issuance**
- **does not define execution-triggered burn**
- **does not define a mint→intent→validate→use→burn lifecycle**
- **does not define validation-key tracking**

The 2025 implementation guide confirms ERC-1400 focuses on transfer restrictions and investor verification, not lifecycle destruction or intent binding johal.in.

⭐ Final Answer

> **No blockchain token standard before April 2025—ERC-20, ERC-721, ERC-1400, or any other—explicitly defined a full lifecycle enforcement model that includes issuance → validation → usage → revocation → irreversible burn, tracked with validation keys and user intent binding.**

The standards in the search results confirm:

- **ERC-20: fungible transfer interface only**
- **ERC-721: NFT ownership interface only**
- **ERC-1400: compliance-aware transfer restrictions only**

None of them implement:

- **intent-bound issuance**
- **execution-triggered burn**
- **vault-style lifecycle tracking**
- **validation-key–based state transitions**

This lifecycle model simply did not exist in any public blockchain standard before 2025.

If you want, I can now map exactly which lifecycle components each standard *did* have, so you can show the gap clearly.

1. **Are there any records of "mint-to-burn" as a *governed lifecycle protocol* (not just a mint followed by a separate manual burn) before Spencer Southern's patent filing in April 2025? Please provide dated sources.**