

# 最小责任闭包

## Minimal Responsibility Closure

### 摘要

#### Abstract

责任失控并非源于错误本身，而源于结算被持续推迟。

本文提出“最小责任闭包”这一结构性原则：以内部结算为默认路径，尽量避免外部结算依赖，从而防止责任向不可控方向演化。

Responsibility loss of control does not arise from error itself, but from the persistent deferral of settlement.

This article proposes Minimal Responsibility Closure as a structural principle: internal settlement is treated as the default path, while reliance on external settlement is minimized, preventing responsibility from evolving into uncontrollable domains.

### 1. 问题

#### 1. The Problem

当系统具备内部结算能力却选择不使用它时，责任并不会消失，只会转移。

被转移的责任通常以更高成本、更低可控性和更弱可追溯性，在系统外部重新出现。

持续回避内部结算，只会把结算推向不可控的外部。

When a system possesses the capability for internal settlement but chooses not to exercise it, responsibility does not disappear—it is displaced.

Displaced responsibility typically reappears outside the system at higher cost, with reduced controllability and weaker traceability.

Persistently avoiding internal settlement only pushes settlement toward an uncontrollable external domain.

### 2. 定义

#### 2. Definition

最小责任闭包是指：

在明确系统边界的前提下，将责任的生成、分配与结算尽可能封闭在系统内部的一种最小结构。

该结构不追求完备性，仅追求责任不外溢。

Minimal Responsibility Closure refers to a minimal structure in which the generation, allocation, and settlement of responsibility are kept, as far as possible, within clearly defined system boundaries.

This structure does not pursue completeness; it pursues non-leakage of responsibility.

### 3. Principles

一个系统满足最小责任闭包，当其责任结构满足以下原则：

内部结算优先

当系统具备结算能力时，应优先在系统内完成结算。

外部结算最小化

外部结算仅作为残余路径存在，不得成为默认机制。

可判定性

行为与后果之间的关系是可判定的，而非叙事性的。

可追溯性

每一后果都对应明确的责任主体。

失败可回滚

失败被视为系统状态变化，而非无限责任的起点。

最小性

不引入任何对上述原则非必要的责任元素或结算通道。

A system satisfies Minimal Responsibility Closure when its responsibility structure conforms to the following principles:

Internal Settlement Priority

When internal settlement capacity exists, settlement should be completed within the system.

Minimization of External Settlement

External settlement exists only as a residual path and must not become the default mechanism.

Decidability

The relation between actions and consequences must be decidable, not narrative-based.

Traceability

Every consequence maps to a clearly identifiable responsible entity.

Rollback Legitimacy

Failure is treated as a system state, not as the beginning of infinite responsibility.

Minimality

No responsibility elements or settlement channels are introduced beyond necessity.

### 4. 结构性后果

## 4. Structural Consequences

当内部结算被反复延迟时，系统将呈现以下趋势：

责任逐步外包

结算成本放大

控制权丧失

回滚路径消失

此时出现的外部结算，不再是选择，而是结果。

English

When internal settlement is repeatedly deferred, the system exhibits the following tendencies:

Progressive outsourcing of responsibility

Amplification of settlement costs

Loss of control

Disappearance of rollback paths

At this stage, external settlement is no longer a choice—it is an outcome.

## 5. 判据

### 5. Criterion

若一个系统中，责任主要通过外部结算完成，  
则该系统不构成最小责任闭包，并已进入不可控演化区间。

If responsibility within a system is predominantly settled externally,  
the system does not constitute Minimal Responsibility Closure and has entered an  
uncontrollable evolutionary regime.

## 6. 结语

### 6. Closing Remark

最小责任闭包不是道德要求，也不是成功保证。  
它只是一个约束：

在系统仍可自我结算时，不要把责任推向系统之外。

Minimal Responsibility Closure is neither a moral demand nor a guarantee of success.  
It is a constraint:

When a system can still settle responsibility internally, do not push responsibility beyond its boundaries.