// SIC/T Protocol Bureau · Layer 1 Artifact-Layer Reference Toolkit
// Document series: Product Explanation (not an installation guide)
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SIC-JS Toolkit v1.0.0

L1 // ARTIFACT LAYER REFERENCE TOOLKIT · 2026-05-11

```
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layer :             Layer 1 · Artifact Layer
date :              "2026-05-11"
authority :         "Andwar Cheng / Protocol Seeder"
toolkit_status :    RUNNABLE · EXTERNAL REVIEW CANDIDATE
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```

// ONE-SENTENCE POSITIONING · 一句話定位

> *SIC-JS Toolkit v1.0.0 is a reference toolkit for creating, validating, and reviewing structured AI state-handoff artifacts, so long-horizon AI work can be inspected across sessions, agents, and models.*

> SIC-JS Toolkit v1.0.0 是一個參考工具包，用於建立、驗證、與審查結構化的 AI 狀態交接物件，讓長週期 AI 工作可以跨 session、跨 agent、跨模型地被檢視。

// COMPONENT REGISTRY

[SEALED]	Canonical SIC-JS v2.0 schema	Hash-locked against modification
[INCLUDED]	Toolkit schema fork	Adds `upstream_type` field (project-local, not a universal external standard)
[VERIFIED]	Writer	Produces SIC-JS state artifacts in expected structure
[VERIFIED]	Validator	Checks conformance to canonical or toolkit-mode schema
[VERIFIED]	Verifier	Safer review path · detects legacy mismatch and unsafe upstream refs
[VERIFIED]	Tests · Examples · Fixtures	25-case suite · writer + verifier + consistency + legacy + CLI
[VERIFIED]	Manifest & release hygiene	91/0 MANIFEST entries · external reviewers can verify integrity
[FUTURE]	Runtime Mount Guard	Layer 2 · not yet built
[FUTURE]	Replay / Witness Ledger	Layer 3 · not yet built

// THE PROBLEM: SEMANTIC DRIFT ACROSS HANDOFFS

Long-horizon AI tasks span multiple model calls, sessions, agents, tools, async waits, and handoffs. The problem is no longer only whether the AI can answer one prompt. The problem becomes:

> *Can the next session understand what the previous session was doing — what decisions were made, what constraints still apply, what is unresolved, and what should happen next?*

Today this is handled by free-text summaries, chat history, memory systems, or ad hoc logs. None of those is a standardised, machine-checkable state handoff artifact. The result: semantic drift — the gradual loss or distortion of task direction.

// COMMON FAILURE MODES

- [x] A decision is made in one session but silently dropped in the next
- [x] A pending item is summarised as "in progress" then disappears
- [x] A temporary workaround becomes treated as a universal rule
- [x] A handoff looks complete but contains little useful state
- [x] A future agent acts without knowing which constraints are active
- [x] A reviewer cannot reconstruct what happened without rereading chat history

// WHAT THE TOOLKIT IS · LAYER 1 ARTIFACT LAYER

[DEF] SIC-JS Toolkit v1.0.0 is an **artifact-layer reference toolkit** for SIC-JS v2.0 state objects. It gives implementers a concrete way to define the shape of a state file, generate it, validate it, verify safety and compatibility, keep a hash manifest, and test expected behaviour.

> **PLAIN LANGUAGE**
>
> The toolkit helps an AI workflow leave behind a structured, checkable state object instead of relying only on a free-text summary. Layer 1 does not force an AI to obey the state file. It makes the state file concrete enough that humans, tools, and later systems can inspect it.

// WHAT IT PROVIDES · SEVEN COMPONENTS

COMPONENT	ROLE	STATUS
Canonical schema	Defines expected SIC-JS v2.0 structure · hash-locked	SEALED
Toolkit schema fork	Adds `upstream_type` (project-local field, not an external standard)	INCLUDED
Writer	Creates state files in expected structure · does not decide task truth	VERIFIED
Validator	Checks conformance to canonical or toolkit-mode schema	VERIFIED
Verifier	Safer review path · legacy mismatch · unsafe upstream detection	VERIFIED
Examples & tests	25-case suite · writer, verifier, consistency, legacy, CLI regression	VERIFIED
Manifest / release	Hash manifests · 91/0 entries · external integrity verification	VERIFIED

// WHAT IT IS NOT — ESSENTIAL SECTION

- [x] A complete AI runtime
- [x] A model memory system
- [x] A policy or authorisation engine
- [x] A production-certified enterprise platform
- [x] A formal external standard
- [x] A guarantee of cross-model continuity
- [x] A proof that semantic drift has been solved
- [x] A replacement for human governance
- [x] Does not make an AI read the state file
- [x] Does not make an AI obey the state file

// EVIDENCE SNAPSHOT · THREE CATEGORIES

// ENGINEERING VERIFICATION

- [✓] **25/25** regression tests passing in reviewed snapshot
- [✓] **91/0** MANIFEST entries verified, zero failures
- [✓] State verifier passing on bundled state files
- [✓] macOS timeout hardened via `gtimeout` / `NO_TIMEOUT=1`

These support the claim of a runnable artifact-layer reference implementation. They do not support runtime continuity or drift reduction claims.

// EARLY EXPERIMENTAL SIGNALS

- **[EXP-02]** 60 records · SIC-JS and equivalent natural-language context both produced richer decisions than minimal JSON
- **[EXP-03]** 30-record cumulative pilot · SIC-JS and NL referenced prior context more than minimal JSON

These are early signals for designing stronger experiments. They do not prove drift prevention or reduction.

// ADOPTION MATURITY · PRACTICAL BOUNDARY

AUDIENCE	ASSESSMENT
Senior engineer	Easy
Ordinary engineer	Mostly easy with command-line literacy
AGI-assisted integration (Codex-like)	Strong — one of the most practical adoption paths
Enterprise platform team	Promising · needs wrappers, CI recipes, security policy, signing
Non-technical operator	Not yet

// RESPONSIBLE CLAIMS

APPROVED CLAIM (SHORT)

SIC-JS Toolkit v1.0.0 is an AGPL-3.0 open-source, artifact-layer reference toolkit for verifiable AI state-handoff objects. Commercial licensing is available separately.

// DO NOT CLAIM

- [x] SIC-JS solves AI drift
- [x] Guarantees cross-model continuity
- [x] Production-certified or formally standardised
- [x] Proves drift reduction (requires E6)

// 這個工具包在解決什麼問題

[問題] 長週期 AI 任務會跨越多個 session、多個模型、多個 agent 與交接點。問題不再只是 AI 能不能回答單一提示，而是：**下一個 session 能不能理解上一個 session 在做什麼、做了什麼決定、哪些約束還有效、哪些事情還沒解決、下一步應該是什麼？**

[現狀] 目前這些問題由自由文字摘要、聊天記錄、記憶系統、或臨時日誌來處理。這些做法都不是標準化、機器可驗證的狀態交接物件。結果是語義漂移：任務方向在交接中逐漸失真或消失。

// 工具包是什麼

[定義] SIC-JS Toolkit v1.0.0 是 SIC-JS v2.0 狀態物件的 **artifact-layer 參考工具包**，提供具體的方式來定義狀態檔的結構、產生有效的狀態檔、驗證其是否符合 schema、檢查安全與相容條件、維護 hash manifest、以及透過測試用例驗證行為。

> 工具包幫助 AI 工作流在結束時留下一份結構化、可檢查的狀態物件，而不是只依賴自由文字摘要。Layer 1 不強迫 AI 遵守狀態檔，但讓狀態檔足夠具體，使人類、工具、與後續系統都能檢視它。

// 工具包不是什麼

- [x] 完整的 AI runtime
- [x] 模型記憶系統
- [x] 政策或授權引擎
- [x] 已取得生產認證的企業平台
- [x] 跨模型連續性的保證
- [x] 語義漂移已被解決的證明
- [x] 不強迫 AI 讀取狀態檔
- [x] 不強迫 AI 遵守狀態檔

// 採用成熟度與核可的主張

// 採用成熟度

[強] 資深工程師：容易

[強] 一般工程師：有命令列能力則容易

[強] AGI 協助整合（Codex 類）：強，最務實的採用路徑之一

[尚待] 企業平台團隊：需要 wrapper、CI recipe、安全政策

[待開發] 非技術操作者：尚不適用

核可的簡短說法

SIC-JS Toolkit v1.0.0 是一個 AGPL 3.0 開源版的 artifact-layer 參考工具包，用於可驗證的 AI 狀態交接物件；商業使用可另行簽署授權。**25/25** 回歸測試通過，manifest 驗證 0 失敗。

誠實的採用主張：對一般工程師容易檢視，對 AI 編碼 agent 容易整合。它還不是**一鍵式**的消費級產品。

// 不可以說

- [x] SIC-JS 解決了 AI 漂移
- [x] 保證跨 AI 的連續性
- [x] 證明了漂移減少（需要 E6 實驗）

```
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