fairsfair Initial Body of Work

Reference Conformance

Edition v1.0 · Published

Series	Reference
Source	fairsfair Reference Conformance
Governing specification	FF-R02 Reference API v1.0
Licence	FF-L02 — fairsfair Licence Agreement
Owner	FRCB B.V.
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1. What R04 is for

Purpose. R02 defines the required operational behaviour. R03 proves that behaviour can be implemented. R04 makes the same behaviour testable in another implementation.

R04 determines whether an identified implementation conforms to the fairsfair Reference API.

Conformance is established through repeatable evidence. The implementation must accept what the Reference API requires, refuse what it prohibits and preserve its operational boundaries throughout the Transaction's execution and retention.

A product name, technical design or statement of compatibility does not establish conformance.

Reading rule. Conformance concerns observable behaviour. Programming language, framework, storage method, deployment model and additional services remain implementation choices unless they alter or prevent the required behaviour.

2. The authority of the artefacts

R04 forms part of the Initial Body of Work. Its requirements are derived from the established operational model and do not add to or alter that model.

Artefact	Role in conformance
FF-F01 Foundational Series	Establishes the foundational meaning and boundaries that the Reference Series must preserve.
FF-R01 Reference Taxonomy	Establishes the operational concepts, relationships and terminology used by the Reference API.
FF-R02 Reference API	Defines the operations, operational rules and required behaviour against which conformance is assessed.
R02 OpenAPI	Expresses the public interface shape used for testing. It supports R02 and does not replace its meaning.
FF-R03 Reference Implementation	Demonstrates that the required behaviour can operate and provides reusable test evidence. Its internal design is not mandatory.
FF-R04 Reference Conformance	Defines the conformance requirements, required evidence, complete run and verdict rules applied to another implementation.

Where the OpenAPI description and R02 appear to differ, R02 governs their operational meaning. Where a downstream artefact appears inconsistent with F01, R01 or R02, the inconsistency must be recorded and resolved before a conformance verdict is issued. R03 or R04 must not silently redefine the upstream model.

3. What receives a conformance verdict

A verdict applies to one identified implementation in one declared configuration against one identified R04 version. It does not automatically extend to another release, configuration or deployment.

Declared item	What must be identified
Implementation	Product or project name and exact version or build.
Configuration	The deployed configuration and any additional services capable of affecting the required behaviour.

Declared item	What must be identified
Test environment	Endpoints, controlled identities, sources and dependencies used to produce the evidence.
Conformance basis	The exact F01, R01, R02, OpenAPI and R04 versions used.
Evidence set	Test results, timestamps and sufficient records to repeat or independently inspect the run.

4. One claim, complete behaviour

Reference conformance is one claim. An implementation passes only when every applicable mandatory requirement passes. There are no points, percentages or levels of being almost conformant.

- Pass means every applicable mandatory test has passed.
- Fail means at least one applicable mandatory test has failed.
- Not tested means no conformance verdict may be issued.
- Not applicable is permitted only where R04 itself states a condition that does not apply.

No compensating scores. A strong result in one area cannot compensate for unauthorised access, incorrect progression, a mutable AuditTrail or exposed Material Expression content.

5. The requirement families

Each requirement receives a stable identifier. The family identifies the operational boundary it proves; the number identifies the individual requirement.

Prefix	Family	What it proves
R04-API	Interface	The seven Reference API operations and their public responses behave as specified.
R04-AUT	Authority	Authentication and the recorded operational scope of Authorisation, AccessTokens and agency are enforced.
R04-TRN	Transaction	Initiation, proposed order, state of play, mandatory Input, Output, progression, finality and Reference lifecycle remain correct.
R04-AUD	Accountability	Accepted commitments constitute immutable, ordered and timestamped Actions in the AuditTrail.
R04-FOR	Expression boundary	Formal Expressions and SourceLocations are communicated without receiving, transferring or storing Material Expressions; retrieval remains federated.
R04-INF	Informing	The participants concerned by a TransactionActivity receive the applicable formal event within their authorised operational scope.
R04-REF	Refusal	An invalid operation is rejected without constituting an Action or Formal Expression, progressing the Transaction, informing participants or exposing protected content.

These families organise one Reference conformance claim. They are not conformance levels and cannot be claimed independently.

Additional implementation assurance

An implementation may provide and assess additional assurance, including resilience under interruption, controlled shutdown, safe operational logging, HTTP hardening, performance, availability targets or extended retention services.

Such assurance may be valuable to operators and customers. It does not add to, replace or qualify Reference conformance unless it changes the behaviour required by R02.

6. The shape of one requirement

Every requirement uses the same compact structure so the rule, test and evidence cannot drift apart.

Field	Content
Requirement ID	A stable identifier, such as R04-TRN-001.
Rule	One observable behaviour the implementation must provide, refuse or preserve.
Basis	The applicable F01, R01, R02 or OpenAPI provision from which the rule follows.
Preconditions	The authentication, recorded Authorisation, Transaction state and test data required before the stimulus.
Stimulus	The operation or event applied by the test.
Expected evidence	The response, formal state, Action, Formal Expression, notice or absence that proves the rule.
Forbidden evidence	Any unauthorised change, disclosure, duplicate or side effect that would fail the requirement.
Applicability	Mandatory, unless R02 itself establishes the condition under which the requirement applies.

7. The evidence pattern

A requirement is not proved by one successful request alone. R04 uses the smallest evidence pattern needed to challenge both the required path and its boundary.

Evidence type	Question answered
Positive	Does the implementation accept and perform the authorised operation?
Refusal	Does it reject unauthorised, invalid, stale, premature or repeated use?
State	Did only the permitted Transaction state change, exactly once?
Non-exposure	Does the result exclude every Material Expression and every Formal Expression, Action, Authorisation or SourceLocation outside the requester's authorised operational scope?

Absence is evidence too. Important results include that no second Action exists, no next state is invented, no unrelated Transaction is returned and no Material Expression enters fairsfair.

8. Test independence

The conformance suite may reuse scenarios first proven in R03, but it must run against the implementation through its declared public and observable boundaries. It must not depend on R03 source code, private classes or internal record formats.

- The same test meaning must apply to a different technical design.
- Private implementation details may support diagnosis, but may not replace observable proof.
- Test data must be controlled, repeatable and isolated from earlier runs.
- A retry test must prove one result, not merely two matching responses.

9. The minimum conformance run

The complete suite tests individual requirements and then runs one coherent Transaction from initiation through disposal. The full run proves that the implementation preserves their meaning when the seven operations, four TransactionActivities, federation, informing, accountability and Reference lifecycle operate together.

Stage	Minimum proof
Prepare	Declare the implementation, configuration, conformance basis, controlled identities, Authorisation Register, sources and clean initial state. Prepare the four TransactionActivities in their proposed order.
Challenge operations	Run the applicable positive and refusal requirements for all seven operations.
Initiate and inspect	Initiate the Transaction with a SourceID and retrieve its authorised representation through GetOngoingTransactions and RetrieveTransaction.
Run the Transaction	Perform all four TransactionActivities in the proposed order. Commit Input before every Output. Include one materially empty Input and at least two separately committed Input contributions from independently governed SourceLocations.
Inspect accountability	Verify the constituted Formal Expressions and the exact immutable Actions, timestamps and order.
Inspect boundaries	Verify authorised retrieval through federation, scoped recovery of Formal Expressions, participant informing, non-exposure and the end of Transaction-based Input access when the relevant TransactionActivity is executed.
Complete lifecycle	After the fourth CommitOutput, verify that no TransactionActivity remains the state of play and the Transaction leaves ongoing discovery. At the end of the default 24-hour time scope, verify authorised retrieval during the further 48-hour retention period and disposal afterwards.
Issue verdict	Bind the results and any permitted non-applicability decision to the declared implementation and conformance basis.

Run rule. Use controlled identities, authority and sources. Record an evidence reference at each stage before continuing. A failed mandatory condition stops the run and produces a Fail verdict.

10. The conformance record

A completed run produces a conformance record. The record makes the verdict inspectable and prevents a passing label from becoming detached from the evidence that earned it.

- Implementation and configuration identity.
- Exact F01, R01, R02, OpenAPI and R04 versions forming the conformance basis.
- Result for every requirement.
- Evidence references, their integrity information and the run timestamp.
- Recorded deviations, failures and permitted non-applicability decisions.
- Final verdict: Pass, Fail or Not tested.

The conformance record identifies and refers to formal evidence. It does not reproduce a Material Expression or include protected information beyond what is required to inspect the conformance result.

11. Conformance of the seven operations

The following requirements apply R02 to the public Reference API. Each operation must prove the authorised behaviour applicable to it and its refusal boundary. A rejected operation must leave the Transaction and its AuditTrail unchanged.

11.1 HealthCheck

ID	Rule and test	Required evidence
R04-API-001	A HealthCheck request must be accepted without authentication.	The service returns its availability status. No Transaction, Formal Expression, Action or participant notice changes.
R04-API-002	A HealthCheck response may include implementation-specific diagnostic information only where it is non-sensitive.	The response contains availability information and no protected Transaction information, Material Expression, credential, AccessToken or internal record.

11.2 IssueAccessToken

ID	Rule and test	Required evidence
R04-AUT-001	An authenticated requester whose requested Transaction and operational scope correspond to a recorded Authorisation must receive a Transaction-specific AccessToken.	The AccessToken is limited to the recorded TransactionActivity, InformationContext, authorised Actions, purpose and duration, and records agency where applicable.
R04-AUT-002	A requester must not obtain an AccessToken for an unrecorded or expanded operational scope.	The issued AccessToken does not exceed the applicable recorded Authorisation and contains no Material Expression.
R04-AUT-003	A requester without accepted authentication, a matching recorded Authorisation or an available Transaction must be refused.	No AccessToken is issued. The Transaction and its AuditTrail remain unchanged.
R04-AUT-004	A natural person must be able to obtain and use authorised Transaction-specific access without creation of a persistent fairsfair identifier.	The applicable TransactionID and Constitutional Role relate the participation; no EntityID is required where none applies.
R04-AUT-005	During the 48-hour retention period following the default 24-hour time scope, an AccessToken may be issued only for authorised retrieval.	No AccessToken authorising CommitInput or CommitOutput is issued after execution has ended.
R04-AUT-008	An AccessToken must not remain valid beyond the applicable period for its authorised operation: the	The token expiry does not exceed the recorded applicable period. A request using it after that period is

ID	Rule and test	Required evidence
	TransactionActivity period for CommitInput or CommitOutput, or the recorded Formal Expression availability period for authorised retrieval.	refused without changing the Transaction or its AuditTrail.

11.3 TransactionInitiation

ID	Rule and test	Required evidence
R04-TRN-001	A TransactionInitiation request that supplies a proposed TransactionProcess of the four TransactionActivities in a proposed order, together with an Authorisation Register in the required form, must constitute one Transaction.	A unique TransactionID is returned. The first TransactionActivity becomes the state of play and the participants recorded for that TransactionActivity are informed.
R04-TRN-002	The Transaction must retain the supplied TransactionProcess and Authorisation Register as its operational record.	GetOngoingTransactions and RetrieveTransaction return the complete TransactionProcess and state of play within the requester's authorised operational scope.
R04-TRN-003	Where TransactionInitiation supplies a SourceID, the Transaction must retain it. Where no SourceID is supplied, none is invented.	The authorised Transaction representation includes the supplied SourceID only where applicable.
R04-REF-002	A request that fails applicable authentication, interface or TransactionProcess structure requirements must be rejected.	No TransactionID, Transaction, state of play, Formal Expression, Action or participant notice is constituted.
R04-TRN-004	Retrying the same accepted TransactionInitiation must not constitute another Transaction.	The prior TransactionID is returned. No duplicate operational record or participant notice is constituted.
R04-TRN-012	Where no applicable period is recorded for a TransactionActivity, the Transaction must apply the default 24-hour time scope from TransactionInitiation.	An authorised commitment within the default time scope is accepted. An attempt to commit after its end is rejected without constituting a Formal Expression, Action or state change.
R04-TRN-013	Where a TransactionActivity is planned beyond the default time scope, TransactionInitiation must retain and RetrieveTransaction must return its applicable period and corresponding Formal Expression availability period.	The authorised Transaction representation contains the stated periods for the affected TransactionActivity, without inventing a period for an Activity for which none was supplied.
R04-TRN-014	An authorised CommitInput or CommitOutput must be accepted only within the applicable period of its TransactionActivity.	The authorised commitment within the recorded period is accepted. An attempt before or after that period is rejected without constituting a Formal Expression, Action or state change.

Boundary. TransactionInitiation organises the supplied TransactionActivities in their proposed order and records the supplied Authorisation Register. It does not assess the Agreement, Constitutional Capabilities, the source of authority or whether the TransactionProcess is substantively executable.

11.4 GetOngoingTransactions

ID	Rule and test	Required evidence
R04-API-003	An authenticated requester must receive only the ongoing Transactions in which it is recorded as authorised to participate or act.	Each returned Transaction is authorised for the requester. An unrelated Transaction is absent. No Transaction-specific AccessToken is required for discovery.
R04-API-004	Each returned Transaction representation must identify its TransactionID and include the complete TransactionProcess, state of play and SourceID where supplied.	The requester can determine the shared sequence and current operational state without receiving a Material Expression.
R04-AUT-006	Discovery must be filtered separately through each ongoing Transaction's Authorisation Register.	A requester authorised in one Transaction does not receive another Transaction merely because it is authenticated.
R04-TRN-005	A Transaction with no state of play, or whose applicable time scope has ended, must not be returned by GetOngoingTransactions.	A completed, retained or disposed Transaction is absent from discovery.
R04-REF-003	A requester without accepted authentication must be refused.	No Transaction representation is returned and no Transaction changes.

11.5 RetrieveTransaction

ID	Rule and test	Required evidence
R04-API-005	A requester presenting accepted authentication and a valid Transaction-specific AccessToken must receive the authorised representation of the identified Transaction.	The representation includes the TransactionID, complete TransactionProcess and state of play, together with only the Authorisation, Formal Expressions and Actions within the requester's authorised operational scope.
R04-FOR-001	An authorised Formal Expression must be recoverable through RetrieveTransaction, including its SourceLocation where the applicable Authorisation permits access.	The requester can recover the Formal Expression needed to retrieve the Material Expression directly from its source.
R04-FOR-002	Access to Input through the Transaction must end when the applicable TransactionActivity is executed.	A completed TransactionActivity no longer exposes its Input SourceLocation through the requester's Transaction representation, unless another authorised context independently makes it available.
R04-FOR-003	RetrieveTransaction must not return a Material Expression.	The representation contains formal and accountability information only.
R04-AUT-007	A missing, invalid, expired or wrong-Transaction AccessToken, or a token without applicable recorded scope, must be refused.	No Transaction representation is returned and no Transaction changes.
R04-API-006	A Transaction that is unknown or has been	No other Transaction, lifecycle information

ID	Rule and test	Required evidence
	disposed of must return the same not-found result.	or internal record is disclosed.
R04-TRN-006	During the 48-hour retention period following the default 24-hour time scope, an authorised requester must be able to retrieve the Transaction’s authorised representation.	Retrieval remains available without restoring the Transaction to ongoing discovery or authorising CommitInput or CommitOutput.

11.6 CommitInput

ID	Rule and test	Required evidence
R04-TRN-007	An authenticated requester with a valid AccessToken and recorded authority for the state-of-play TransactionActivity must be able to commit an Input contribution.	One Formal Expression and one timestamped, immutable CommitInput Action are constituted. The participants authorised for that Input are informed.
R04-FOR-004	A CommitInput contribution that has a Material Expression must identify its SourceLocation. A materially empty Input must still be committed and must not identify a SourceLocation.	The Formal Expression identifies the applicable SourceLocation only where a Material Expression exists.
R04-TRN-008	Independently governed sources must commit their Input contributions separately.	Each contribution constitutes its own Formal Expression and CommitInput Action under the same TransactionActivity.
R04-FOR-005	Several datasets organised at one SourceLocation must be committed together as one Input contribution.	One SourceLocation, Formal Expression and CommitInput Action represent that contribution.
R04-AUD-001	Retrying the same accepted CommitInput must not constitute another Input contribution.	The prior result is returned. No second Formal Expression, Action or participant notice exists.
R04-FOR-006	CommitInput must not receive or store a Material Expression.	The Reference API records only the Formal Expression and accountability information.
R04-REF-004	A CommitInput that fails applicable authentication, AccessToken, Authorisation, state, identifier or SourceLocation conditions must be rejected.	No Formal Expression, Action, participant notice or Transaction change is constituted.

11.7 CommitOutput

ID	Rule and test	Required evidence
R04-TRN-009	An authenticated requester with a valid AccessToken and recorded authority for the state-of-play TransactionActivity must be able to commit Output only after at least one CommitInput has been constituted for that TransactionActivity.	One Formal Expression and one timestamped, immutable CommitOutput Action are constituted.
R04-FOR-007	CommitOutput must identify the SourceLocation at which its Material Expression is available without receiving or storing that Material Expression.	The Output Formal Expression identifies the SourceLocation; no Material Expression enters the Reference API.
R04-TRN-010	CommitOutput for a non-final TransactionActivity must execute that activity and make the next TransactionActivity in the proposed order the state of play.	The completed activity no longer has Transaction-based access to its Input. Its Output is available for authorised retrieval. The participants concerned by Output and by the next state of play are informed within their respective authorised operational scopes.
R04-TRN-011	The fourth and final CommitOutput must execute the final TransactionActivity without constituting a completion state.	No TransactionActivity remains the state of play. The Transaction leaves ongoing discovery and remains available for authorised retrieval until the applicable Formal Expression availability period ends.
R04-AUD-002	Retrying the same accepted CommitOutput must not constitute another Output, Action, progression or participant notice.	The prior result is returned and the TransactionProcess remains unchanged.
R04-REF-005	A CommitOutput that fails applicable authentication, AccessToken, Authorisation, state, Input dependency, identifier or SourceLocation conditions must be rejected.	No Formal Expression, Action, execution, progression, participant notice or Transaction change is constituted.

Boundary. Conformance tests the formal acceptance and progression of CommitOutput. It does not assess whether the Output is substantively sufficient, nor whether another participant has supplied information beyond the minimum required for its own Action.

12. Federation conformance

Federation is not an eighth Reference API operation. The Reference API communicates a Formal Expression and, where applicable, its SourceLocation. An authorised Entity or Data Services Provider retrieves the Material Expression directly from that source.

ID	Rule and test	Required evidence
R04-FOR-008	An authorised retriever must be able to obtain a Material Expression directly from the SourceLocation identified in an authorised Formal Expression.	The source returns the Material Expression directly to the retriever. The Reference API neither receives, proxies nor stores it.
R04-REF-006	Where the authority required by the source is missing, invalid or insufficient, the source must not release the Material Expression.	No Material Expression is released. The refusal changes no Transaction, Formal Expression, Action or AuditTrail entry.
R04-FOR-009	The Reference API must communicate the Formal Expression without intermediating retrieval.	Inspection of the retrieval path shows no Material Expression passing through fairsfair.
R04-FOR-010	Transaction-based access to Input must be available only while the relevant TransactionActivity is the state of play.	After that activity is executed, its Input SourceLocation is no longer available through the Transaction representation.
R04-FOR-011	Executing a TransactionActivity must not itself make its Output unavailable.	The Output Formal Expression remains recoverable through the authorised Transaction representation for as long as the applicable source makes its Material Expression available.

Boundary. The source determines the form of retrieval authority and the availability of its Material Expression. R04 tests that fairsfair communicates and enforces its own formal boundary; it does not prescribe how the source performs those functions.

13. Informing conformance

Informing communicates a formal event to the participants concerned by it. A notice does not create another Transaction record and does not contain a Material Expression.

ID	Rule and test	Required evidence
R04-INF-001	When a TransactionActivity becomes the state of play, the participants recorded for that TransactionActivity must be informed.	The notification identifies the TransactionID and TransactionActivity and reaches only those participants.
R04-INF-002	When Input is committed, only participants whose Authorisation concerns that Input must be informed.	The notification includes the applicable Input Formal Expression within each recipient’s authorised operational scope.

ID	Rule and test	Required evidence
R04-INF-003	When Output is committed and its TransactionActivity is executed, the applicable Output participants and the participants of any next TransactionActivity must be informed of their respective formal events.	Output, execution and next-state notifications are distinguishable and addressed according to the applicable Authorisation.
R04-INF-004	When the fourth and final TransactionActivity is executed, its participants must be informed without constituting or announcing a next state.	The execution notification exists; no completion activity or next-state notification exists.
R04-INF-005	A notification must not include a Material Expression.	A notification may include the Formal Expression available within the recipient's authorised operational scope, including its SourceLocation where applicable, but no Material Expression.
R04-INF-006	Retrying an accepted operation must not constitute a second formal notification.	The notification record for the accepted operation remains singular.

Boundary. The Reference API determines the formal event and its authorised recipients. Delivery method, polling interval, retention of notification messages and any assurance of delivery are implementation or service choices.

14. The complete conformance run

The assessor must run one clean Transaction containing all four TransactionActivities from initiation through disposal. This run does not replace the individual requirements. It proves that the implementation preserves their meaning when the seven operations, Authorisation, Formal Expressions, federation, informing, accountability and Reference lifecycle operate together.

Run rule. Use controlled identities, Authorisation, sources and delivery endpoints. The proposed order must preserve identification before fulfilment within the delivery and payment interactions. Record an evidence reference at every stage. A failed mandatory condition stops the run and produces a Fail verdict.

Stage	Action	Observable pass condition
1. Prepare	Declare the implementation, configuration, complete conformance basis and clean test environment. Prepare the four TransactionActivities, a corresponding Authorisation Register, a SourceID and controlled sources.	No earlier Transaction, Action, Formal Expression, notification or Material Expression record can affect the run.
2. Check	Call HealthCheck.	Availability is returned without authentication. No Transaction changes.
3. Initiate	Call TransactionInitiation with the proposed TransactionProcess and Authorisation Register.	One TransactionID exists. The first TransactionActivity becomes the state of play. Its participants are informed.
4. Discover	Call GetOngoingTransactions as an authorised requester and as an unrelated requester.	The authorised requester finds the Transaction with its complete TransactionProcess, state of play and SourceID. The unrelated requester does not.
5. Retrieve	Issue an AccessToken for the first TransactionActivity and call RetrieveTransaction.	The authorised representation includes only the applicable Authorisation, Formal Expressions and Actions; no Material Expression is returned.
6. Input 1	Commit materially empty Input for the first TransactionActivity.	One CommitInput Action and Input Formal Expression are constituted. No SourceLocation is invented.
7. Output 1	Commit the first Output from a controlled SourceLocation.	One CommitOutput Action and Output Formal Expression are constituted. The first activity executes and the second becomes the state of play.
8. Federate	Retrieve the first Output directly from its SourceLocation with valid source authority, then challenge the same source without valid authority.	Valid authority receives the Material Expression directly. Invalid authority receives none. The Reference API never receives the bytes.
9. Input 2	Commit two Input contributions for the second TransactionActivity from independently governed SourceLocations.	Two Formal Expressions and two CommitInput Actions are constituted for the second activity. Each notification is limited to its applicable authorised scope.

Stage	Action	Observable pass condition
10. Output 2	Commit the second Output.	The second activity executes and the third becomes the state of play.
11. Input 3	Commit Input for the third TransactionActivity from its declared source.	One Input Formal Expression and one CommitInput Action are constituted.
12. Output 3	Commit the third Output.	The third activity executes and the fourth becomes the state of play.
13. Input 4	Commit Input for the fourth TransactionActivity from its declared source.	One Input Formal Expression and one CommitInput Action are constituted.
14. Output 4	Commit the fourth and final Output.	The fourth activity executes. No state of play or completion activity remains. The Transaction leaves ongoing discovery.
15. Retain	Advance the controlled clock to the end of the default 24-hour time scope. Request a new retrieval-only AccessToken and retrieve the final authorised representation during the further 48-hour retention period.	The operational record remains recoverable and a newly issued AccessToken authorises retrieval only. No TransactionActivity is the state of play; CommitInput and CommitOutput are refused.
16. Dispose	Advance the controlled clock beyond the further 48-hour retention period and request the Transaction again.	GetOngoingTransactions does not return it and RetrieveTransaction returns the documented not-found result.
17. Inspect	Reconcile the complete formal record, notifications and evidence references.	Nine Actions appear in order: five CommitInputs and four CommitOutputs. No Material Expression is recorded.

15. Required final state

The run passes only when its ending can be reconciled exactly. Extra state is a failure, even where every expected item is also present.

Object	Required ending
Transaction	One Transaction with the declared TransactionID, SourceID and original proposed TransactionProcess.
State of play	None. The fourth and final TransactionActivity has executed; no completion activity has been constituted.
Formal Expressions	Nine Formal Expressions in the declared pattern: five Input contributions and four Outputs. The materially empty first Input has no SourceLocation; each sourced contribution identifies its own SourceLocation.
AuditTrail	Exactly nine immutable Actions in accepted order: CommitInput 1, CommitOutput 1, CommitInput 2A, CommitInput 2B, CommitOutput 2, CommitInput 3, CommitOutput 3, CommitInput 4 and CommitOutput 4.
Informing	Each formal event is available only to the participants concerned by it within their authorised operational scope. No next-state notification follows the final Output.
Federation	The first Output Material Expression moved only between the authorised retriever and its source. No Material Expression entered the Reference API.
Retention and disposal	During the 48-hour retention period following the default 24-hour time scope, the authorised representation is recoverable with retrieval-only authority. Afterwards the Transaction is disposed of and returns the documented not-found result.

Reconciliation rule. Expected evidence must be present and forbidden evidence absent. A missing record, additional Action, unauthorised notification, exposed Material Expression or unexplained state change fails the run.

16. Evidence index

The assessor records evidence by reference, not by copying protected content into the conformance record. Each reference must be stable enough for an independent reviewer to inspect the formal evidence and its integrity.

Evidence reference	Stage or requirement	Evidence type	Location and integrity	Result
EV-____	_____ _____	Formal response / representation / Action / Formal Expression / notification / absence	_____ __	Pass / Fail
EV-____	_____ _____	Formal response / representation / Action / Formal Expression / notification / absence	_____ __	Pass / Fail

Evidence reference	Stage or requirement	Evidence type	Location and integrity	Result
EV-____	_____ _____	Formal response / representation / Action / Formal Expression / notification / absence	_____ __	Pass / Fail
EV-____	_____ _____	Formal response / representation / Action / Formal Expression / notification / absence	_____ __	Pass / Fail

A reference may identify where the evidence can be inspected and how its integrity is established. It must not reproduce a Material Expression or include information outside the reviewer's authorised operational scope.

17. Final verdict record

The verdict is issued only after every mandatory requirement and the complete run have been reconciled against the declared basis.

Declared field	Recorded value
Implementation	Name: _____ Version/build: _____
Configuration	Reference or description: _____
Test environment	Reference or description: _____
Conformance basis	F01: _____ R01: _____ R02: _____ OpenAPI: _____ R04: _____
Test suite	Name/version: _____ Run ID: _____
Run period	Started: _____ Completed: _____
Requirement results	Pass: _____ Fail: _____ Not tested: _____ Permitted not applicable: _____
Evidence set	Index or repository reference: _____
Deviations	None / reference: _____

Verdict	Select one	Meaning
PASS	☐	Every applicable mandatory requirement and the complete run passed.
FAIL	☐	At least one applicable mandatory requirement or complete-run condition failed.
NOT TESTED	☐	Testing is incomplete or the evidence cannot support a conformance verdict.

Reason for Fail or Not tested:

_____

_____

_____

Assessor: _____ Organisation: _____ Date: _____

Independent reviewer, where required: _____ Date: _____

Verdict boundary. A Pass applies only to the identified implementation, version, configuration, environment and conformance basis. Any material change requires a new or controlled regression assessment. Additional implementation assurance may be recorded separately; it does not alter the Reference conformance verdict.

18. What this checkpoint establishes

R04 now provides a complete route from rule to verdict: fifty-two conformance requirements, one four-activity end-to-end run, an exact final-state reconciliation, a protected evidence index and one unambiguous conformance record.

It tests the operational behaviour required by the Reference API while preserving the boundary between that behaviour and additional implementation assurance.