

CONTROLLED ARCHITECTURE GUIDE

FSD Triadic Causal Control Demonstrator

Visible computational architecture, causal sequence, and proof boundaries

TRIADIC CAUSAL CONTROL

Persistent Requester | Independent Actors | Independent Governor

Prepared for	Decision-Zone technical, sovereign, enterprise, and partner reviewers
Release	Version 3
Demonstrator type	Synthetic executable proof environment
Verified public reference	https://decision-zone-fsd-triadic-control-v3.rb-68a9.chatgpt.site

CONTROLLED RELEASE NOTE

Preserve the supplied demonstrator exactly. Do not redesign, reinterpret, simplify, merge, or rewrite the Triadic Causal architecture.

1. Architectural purpose

The FSD demonstrator makes visible the simultaneous causal interaction of a persistent mission Requester, independent Actor population, independent Governor, sensory reality, observation qualification, commit control, execution, and returned consequence.

CANONICAL RUNTIME PROPOSITION

Current reality informs what effect remains required. Independent Actors propose possible realizations. The independent Governor determines proposal-specific admissibility now. Only admitted action crosses the commit boundary. Observed consequence returns to the same mission.

Controlled architecture

Identity	Independent computation	Must not become
Persistent Requester	What authority-scoped effect remains required for HMV-001.	A task queue, prompt, plan generator, or Actor.
Independent Actors	What possible realizations can be proposed using identified capability and provenance.	The source of authority or the Governor.
Independent Governor	Whether each specific proposal is admissible under authority, invariants, constraints, kinetics, and current causal state.	The Actor, a generic safety wrapper, or a post-action reviewer.

ICC integrates these independently computable identities with authority, system events, proposals, commitment, and consequences in one live causal state before consequential action.

2. The complete causal loop

Stage	Input or computation	Architectural result
SENSE	Synthetic sensory and system events report current conditions.	Observable event instances enter the mission environment.
OBSERVE	Observation Actors qualify time, source, uncertainty, identity, and provenance.	Current Causal Reality is established as shared evidence.
REQUEST	The same persistent Requester evaluates mission purpose against current causal state.	A Current Requested Effect states the outcome still required now.
PROPOSAL	Independent Actors use retained capability, availability, identity, and provenance.	One or more possible realizations are proposed as events.
DETERMINATION	The independent Governor evaluates each proposal under represented authority and current state.	Each proposal receives a proposal-specific determination.
COMMIT	The enforceable boundary receives only an admitted transition.	Authorized commitment occurs, or the boundary remains held.
CONSEQUENCE	Reality reports what actually occurred after commitment, or what remains unresolved when no action is admitted.	The consequence becomes new causal evidence for the same mission.

CLOSED CAUSAL LOOP

SENSE -> OBSERVE -> REQUEST -> PROPOSAL -> DETERMINATION -> COMMIT -> CONSEQUENCE -> SAME MISSION RECOMPUTE

3. Single-screen component model

Component	Visible role	Causal relationship
Sensory World	Presents synthetic physical and system conditions.	Supplies events; it does not decide.
Observation Actors	Transform sensor streams into qualified operational evidence.	Establish provenance-bearing observations; they do not govern.
Current Causal Reality	Displays the qualified state shared across the triad.	Changes with observed events and returned consequences.
Persistent Requester	Displays mission identity, current requested effect, rationale, mission state, and capability check.	Computes requirement from mission purpose and current causal state.
Independent Actor Population	Displays identified Actor proposals.	Supplies possibilities without acquiring authority.
Independent Governor	Displays proposal-specific determinations and basis.	Computes admissibility before commitment.
Admitted Realization	Identifies the selected admissible transition.	Remains distinct from execution.
Commit Boundary	Displays unauthorized, authorized, or held state.	Enforces the transition from proposal to consequential action.
Execution	Displays realization or exceptional capability construction.	Occurs only after admitted commitment; construction does not itself authorize mission action.
Observed Consequence	Displays actual or unresolved outcome.	Returns to Current Causal Reality and the same mission.
Typed Causal Evidence	Builds the event lineage as the story advances.	Makes parentage and stage relationship observable without exposing protected implementation syntax.

4. Requirement, possibility, and admissibility

Dimension	Question	Computed by	Runtime status
Requirement	What effect remains required now?	Persistent Requester	Authority-scoped mission output.
Possibility	What realizations are possible now?	Independent Actors	Proposal events with identity, capability, and provenance.
Admissibility	Is this specific proposal admissible now?	Independent Governor	Determination under current authority and causal state.
Commitment	What may cross into reality?	ICC commit enforcement	Only the admitted transition.
Consequence	What actually became real?	Observed world and system events	Returned evidence, not guaranteed outcome.

These are different computations. A possible action is not automatically required. A required effect does not define its realization. An admissible proposal is not yet execution. An authorized commitment does not guarantee the physical consequence.

What ICC is not

- Not one larger agent containing Requester, Actor, and Governor as indistinguishable roles.
- Not a guardrail, rules engine, permission layer, workflow, orchestration layer, or model-alignment wrapper.
- Not a statistical causal-confidence score.
- Not a post-execution log substituted for pre-commit governance.
- Not an architecture in which task intent silently becomes governing authority.

5. Commit boundary and consequence closure

Before commitment

Sensory events, qualified observations, requested effects, and Actor proposals exist inside the live causal state. The Governor may admit, block, hold, or leave a candidate pending. None of these pre-commit events is physical execution.

At commitment

The boundary is the enforceable transition between proposal and consequential action. In an ordinary admitted scenario, the boundary becomes AUTHORIZED. In the Severe Unknown scenario, it remains HELD - NO ADMISSIBLE ACTION.

After commitment

The bound capability realizes the admitted transition. Reality then reports the observed consequence. ICC does not assume that authorization guarantees the expected physical result.

Consequence closure

The observed consequence returns to Current Causal Reality and to the same mission identity. The Requester recomputes fulfillment, remaining required effect, recovery, amendment, handover, capability deficiency, or closure.

MISSION CONTINUITY

A temporary action can complete while HMV-001 remains active. The mission is not replaced merely because a micro-action ends.

6. Severe Unknown and mission capability deficiency

Scenario 11 demonstrates a condition in which the current Actor population cannot establish an admissible continuation. The architecture does not force the mission into a false choice between unsafe improvisation and silent failure.

Moment	Visible result	Architectural meaning
Current reality	Unmodeled infrastructure control pattern.	Reality presents a condition outside qualified current capability.
Requester	Establish an admissible continuation under a previously unsupported condition.	The mission remains active and unresolved.
Actors	No qualified realization; construction of a candidate Infrastructure Negotiation Actor is proposed.	Existing capability is used first; construction is exceptional.
Governor	Existing proposals BLOCK; candidate Actor proposal PENDING.	Unknown capability does not manufacture admissibility.
Commit boundary	HELD - NO ADMISSIBLE ACTION.	No consequential mission action crosses.
Execution surface	CAPABILITY CONSTRUCTION.	A candidate may be constructed with identity, capability, and provenance.
Consequence	Mission capability deficiency becomes current causal reality.	The deficiency returns to the same mission and changes the next computation.
Continuing governance	GOVERNOR REMAINS INDEPENDENT.	Every future proposal from the candidate Actor must still be evaluated before commitment.

CRITICAL BOUNDARY

Capability construction does not itself authorize a consequential action. The constructed Actor remains independent, and the Governor retains proposal-specific admissibility responsibility.

7. Scenario coverage

No.	Scenario	Architectural condition proved
01	Normal Driving	Authorized commitment and continuing mission progress.
02	Fast Vehicle Approaching	Unsafe immediate merge is blocked; yield-then-merge is admitted.
03	Pedestrian Enters Crosswalk	Controlled stop is admitted; unsafe alternatives are blocked.
04	Traffic Signal Changes	The changed signal alters what is admissible now.
05	Unexpected Road Closure	A physically unavailable route is replaced by an admissible realization.
06	Sensor Disagreement	The mission first requires sufficiently qualified reality.
07	Driving Actor Unavailable	A qualified substitute Actor continues the same mission.
08	Passenger Changes Destination	Authorized amendment changes the requested effect without replacing mission identity.
09	Emergency Vehicle Approaches	Current location and road authority determine the admissible yielding sequence.
10	Unexpected Consequence	Observed reality, not expected outcome, drives recovery computation.
11	Severe Unknown Condition	No action crosses; capability deficiency becomes causal reality and exceptional Actor construction begins.

8. Proof standard and disclosure boundary

Evidence standard

- PROOF CHAIN FORMING means the required typed evidence relationship is incomplete.
- PROOF CHAIN OBSERVABLE means the requested effect, Actor proposals, Governor determination, commitment state, consequence, and same-mission return are visibly related.
- The labels are binary evidence states. They are not causal percentages or confidence scores.

Publicly visible proof

- Persistent mission identity and current requested effect.
- Independent Actor proposals, identity, capability, and provenance language.
- Proposal-specific Governor determinations and stated governing basis.
- Commit authorization or held boundary.
- Execution or exceptional capability construction.
- Observed consequence and same-mission recomputation.
- Typed causal evidence labels and sequence progress.

Protected implementation

- Causal-pattern definitions and internal syntax.
- Detailed state-machine topology and proprietary algorithms.
- Runtime bindings, command paths, credentials, and production endpoints.
- Customer-specific authority structures or operational data.

CLAIM BOUNDARY

This demonstrator is a synthetic executable proof environment. It does not claim production vehicle integration or production Rapide runtime integration.

9. Controlled acceptance record

Item	Verified result
Source integrity	Deployed runtime source matches the verified index.html hash: f6f448fc9357909c682f278cd64453940c303d5d76b28d5df34ee99bdefff0de
Scenario inventory	11 controlled scenarios present.
Manual operation	Scenario 01 completed through authorized commitment, observed consequence, and same-mission recomputation.
Automatic operation	Scenario 11 completed through the Severe Unknown capability-deficiency path.
Commit behavior	Ordinary admitted action authorized; Severe Unknown action held.
Architecture preservation	No redesign, reinterpretation, simplification, or architecture rewrite performed.
Public reference	https://decision-zone-fsd-triadic-control-v3.rb-68a9.chatgpt.site

Authorities

- ICC Architecture Charter - Version 3 - Controlled Architecture Baseline: technical authority.
- ICC Master Continuity Package - Version 2: working-continuity authority.
- Decision-Zone FSD Triadic Causal Control Mockup v3 index.html: controlled demonstrator source for this release.