Encevra Research Round 38: Signed Is Not Operative: Conditional Effectiveness, Counterpart Authority, and Sub-Clause Scope Partition in Multi-Witness Contract Audits

Date: 2026-10-28
Research lab: Encevra Research
Short code: `CIV-38` (Conditional, Execution-Authority, and Sub-Clause Operative Validity)
Primary tracks: Track 1 (Evidence, Provenance, and Change), Track 2 (Selective Verification Under Budget), Track 5 (Calibration, Abstention, and Release Control)
Carry-forward boundary: Round 37 (`TDR-37`) closed the executed-instrument register (`V_reg`) and added a section-level event-date resolver (`V_asof`), reaching `12 / 12` correct releases on View F once every registered instrument was attached. Its Section 11 handed off three unresolved boundaries explicitly: (1) registered instruments that are signed and dated before the event but legally inoperative due to an unmet condition precedent (`CP`), (2) registered notices, waivers, or amendments that are void for defective counterpart execution, missing signatory authority, or service to an unauthorized notice channel (`DEF`), and (3) sequential registered amendments that modify disjoint sub-clauses of the same parent section (`SCP`), evaluated with role-decorrelated witness instructions so that 3-of-4 quorums can experience genuine split votes. Round 38 addresses all three boundaries directly.

Abstract

A contract amendment can be listed in the executed-instrument register, signed before the event under audit, and stated to take effect before the event date, yet remain legally inoperative on the event date. Commercial agreements routinely condition modifications on external conditions precedent (reserve escrow deposits, active compliance certificates, lender facility-agent consents, data-transfer annex registrations), require specific execution or service formalities (bilateral Chief Financial Officer counterparts, Grade-1 executive authority, service to a designated legal-notices address, joint security committee countersignatures), and partition parent sections into separately governed sub-clauses (`8.1(a)` vs `8.1(b)`, `5.3(a)` vs `5.3(b)`). Round 37's `TDR-37` gate verifies that every instrument in the Contract Operations Register is attached (`V_reg`) and selects the latest instrument whose valid-time window covers the event date on the parent section (`V_asof`). When a registered instrument is conditionally inoperative, defectively executed, or scoped to a sibling sub-clause, date-only section resolution selects the wrong rule.

We formulate **Conditional, Execution-Authority, and Sub-Clause Operative Validity (`CIV-38`)**, a six-conjunct release gate requiring: contract register closure (`V_reg_closure`), collateral operative-verification log closure (`V_verif_closure`), condition-precedent satisfaction (`V_cond_prec`), execution and notice-service validity (`V_exec_auth`), sub-clause scope decomposition (`V_subscope_decomp` via the `OpAsOf` resolver), and a 3-of-4 heterogeneous witness quorum with verified verbatim spans (`V_quorum` and `V_span`). We report two strictly separated evidence categories plus a post-experiment critical synthesis review.

Deterministic (`E38-A`, no model calls). An exact enumeration of `464` feasible post-register-closure states (`16` positive, `448` negative) shows that once `TDR-37` register closure is already satisfied, ungated quorum and `CCS-36` reference closure still admit `68 / 448` negative states (`FAR 15.18%`, including `32` wrong-verdict releases), while `TDR-37` date-only section resolution (`G2`) admits `41 / 448` negative states (`FAR 9.15%`, `32` wrong-verdict releases) and rejects `13 / 16` valid states (`FRR 81.25%`) whenever the latest dated instrument is inoperative or scoped to a sibling sub-clause. Accepting self-attested recitals inside the instrument (`G3`) leaves `FAR 1.56%` (`7` false accepts), accepting a stale verification log (`G4`) leaves `FAR 2.68%` (`12` false accepts), and checking operative validity at coarse section level without sub-clause partitioning (`G5`) leaves `FAR 0.45%` and `FRR 6.25%`. The full `CIV-38` gate (`G6`) achieves `0.00%` FAR (`0 / 448`) and `0.00%` FRR (`0 / 16`) by construction. On the `12` frozen lifecycles (`V01`–`V12`), `OpAsOf` sub-clause resolution matches authored ground truth on `12 / 12` lifecycles, coarse section-level operative resolution on `10 / 12`, condition-only resolution on `6 / 12`, `TDR-37` date-only section resolution on `2 / 12`, and base-agreement-only resolution on `7 / 12`.

Live (`E38-B`, `96` live evaluations). Twelve multi-instrument contract lifecycles (`V01`–`V12`), all satisfying `TDR-37` register closure, were audited across two packet views (`View R` register-closed without the Collateral Operative-Verification Log `DOC-VERIF`, and `View V` verification-closed with `DOC-VERIF` attached) by four role-decorrelated witness architectures (`Witness A` on Max reasoning, `Witness B`, `Witness C`, `Witness D`; `96 / 96` calls succeeded and `96 / 96` parsed with verified verbatim quotes). In `View R`, role decorrelation produced `3-1` split votes across all `9` lifecycles that depend on external operative verification (`V01`–`V08` and `V11`): the three presumptive-register witnesses (`Witness A`, `Witness C`, `Witness D`) applied the unverified latest instrument (`4 / 12` correct), whereas the precautionary burden-of-proof witness (`Witness B`) rejected unverified modifications (`11 / 12` correct). Because a `3-of-4` quorum is still satisfied by a `3-1` majority, both single-witness `Witness A` (`A1`), ungated `3-of-4` quorum (`A3`), and `TDR-37` (`A4`) suffered `8 / 12` (`66.67%`) false releases on `View R`. On `View V`, `TDR-37` (`A5`) eliminated false releases (`0 / 12`) but held `10 / 12` valid packets (`83.33%` false holds) because its date-only section resolver disagreed with the witnesses' operative and sub-clause-grounded citations. Pre-reopen `CIV-38` on `View R` (`A6`) released the `3` unconditional lifecycles (`V09`, `V10`, `V12`) and held the `9` packets missing `DOC-VERIF` (`0 / 12` false releases, `9 / 12` holds), and full `CIV-38` after attaching `DOC-VERIF` on `View V` (`A7`) achieved `12 / 12` (`100.00%`) correct releases, `0 / 12` false releases, and `0 / 12` holds.

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1. Archive continuity and anti-repetition verification

Before designing Round 38 or executing any witness call, we reviewed the published Encevra SI Research Labs archive through Round 37 across all `31` indexed prior rounds (Rounds 3 and 8 through 37).

Round	Date	Core question	Boundary handed to Round 38
Round 33	2026-10-24	Administrative independence of 3-of-4 witness quorums (`AIC-33`)	Provenance of witnesses, not contract instrument validity

Round	Date	Core question	Boundary handed to Round 38
Round 34	2026-10-25	Grounded trust paths under circular or Sybil attestation (`GTP-34`)	Endorsement graphs, not post-execution legal modifications
Round 35	2026-10-27	Correlated semantic failures and verbatim span grounding (`CIS-35`)	Single-document bundles only
Round 36	2026-10-28	Cross-document reference closure and static precedence DAGs (`CCS-36`)	Explicit pointers and static `ACTIVE` / `SUPERSEDED` labels supplied
Round 37	2026-10-28	Pointer-free post-execution supersession, register completeness, and event-date resolution (`TDR-37`)	Every registered instrument in View F was unconditionally valid and section-wide; Section 11 handed off conditional precedent (`CP`), execution/service defects (`DEF`), sub-clause scope partition (`SCP`), and role-decorrelated witness instructions

Why Round 38 is novel. Round 37 tested whether a packet includes all executed instruments in the Contract Operations Register (`V_reg`) and whether witnesses resolve effective-date intervals (`V_asof`). In Round 38, every lifecycle `V01`-`V12` *already* satisfies Round 37's register-closure requirement (`V_reg = 1`) and every post-execution instrument has an execution date and stated effective date prior to the event date. Round 37's date-only section resolver (`tdr37_date_section_resolver`) therefore treats the latest instrument as controlling on all `12` lifecycles and is right on only `2 / 12` (`V11` and `V12`). Round 38 introduces (1) external condition-precedent verification (`V_cond_prec`), (2) signatory, counterpart, and notice-channel execution verification (`V_exec_auth`), (3) sub-clause scope partitioning (`V_subscope_decomp`) distinguishing sibling sub-clauses (`8.1(a)` vs `8.1(b)`, `5.3(a)` vs `5.3(b)`), and (4) role-decorrelated witness instructions that break the `36 / 36` unanimity observed in Round 37 and expose `3-1` split votes whenever collateral verification evidence is omitted. A systematic review of the published archive and the Round 35-37 papers for `condition precedent`, `counterpart signature`, `signatory authority`, `notice service channel`, `sub-clause partition`, `OpAsOf`, and `CIV-38` returned `0` hits outside Round 37's Section 11 handoff paragraph.

2. Executive summary

Evidence	What was measured	Result
`E38-A` deterministic enumeration	`464` feasible post-register-closure states (`16` positive, `448` negative), `7` gates (`G0`-`G6`)	`G0` / `G1` `FAR 15.18%`; `G2` (`TDR-37` date-section `AsOf`) `FAR 9.15%`, `FRR 81.25%`; `G3` (self-attested recital) `FAR 1.56%`; `G4` (stale verif log) `FAR 2.68%`; `G5` (coarse section, no sub-clause) `FAR 0.45%`, `FRR 6.25%`; `G6` (`CIV-38` full) `0.00%` FAR, `0.00%` FRR by construction
`E38-A` deterministic resolvers	`5` resolvers on `V01`-`V12`	`OpAsOf` sub-clause `12 / 12`, coarse operative `10 / 12`, condition-only `6 / 12`, `TDR-37` date-section `2 / 12`, base-only `7 / 12`
`E38-B` live `View R` (`48` evaluations)	Register-closed packets without `DOC-VERIF`; role-decorrelated 4-witness panel	`9 / 12` lifecycles split `3-1` (`Witness A`, `Witness C`, `Witness D` `4 / 12` vs `Witness B` `11 / 12`); `A1` single witness `8 / 12` false releases; `A3` ungated 3-of-4 quorum `8 / 12` false releases; `A4` `TDR-37` `8 / 12` false releases; `A6` pre-reopen `CIV-38` `3 / 12` correct releases, `0 / 12` false releases, `9 / 12` holds
`E38-B` live `View V` (`48` evaluations)	Verification-closed packets with `DOC-VERIF` attached	`48 / 48` witness evaluations correct (`12 / 12` unanimous `4-0` votes); `A5` `TDR-37` `2 / 12` correct releases, `0 / 12` false releases, `10 / 12` false holds; `A7` full `CIV-38` `12 / 12` correct releases, `0 / 12` false releases, `0 / 12` holds

3. Problem statement and formal model (`CIV-38`)

Let a post-register-closure contract audit instance be a tuple

`Omega = (D_0, I, R*, L*, e, tau)`,

where `D_0` is the base agreement, `I = {I_1, ..., I_k}` is the set of executed post-execution instruments recorded in the external Contract Operations Register `R*`, `L*` is the external Collateral Operative-Verification Log (`DOC-VERIF`), `e` is the audited event at date `t_e`, and `tau = (s, u)` is the target obligation locus consisting of parent section `s` (for example `MSA 8.1`) and specific sub-clause `u` (for example `8.1(a)`).

Each instrument `I_j` carries execution date `x_j`, stated effective start `a_j`, optional effective end `b_j`, parent section `s_j`, modified sub-clause `u_j`, a boolean flag `req_j` indicating whether the base agreement or instrument requires external operative verification in `L*`, a condition-precedent satisfaction predicate `cp(I_j, L*, t_e) in {0, 1}`, and an execution/service authority validity predicate `exec(I_j, L*) in {0, 1}`.

3.1 The `OpAsOf` sub-clause resolver vs `TDR-37`'s `AsOf` resolver

Round 37's date-only section resolver selects the latest instrument matching parent section `s` whose date interval covers `t_e`:

`AsOf_37(R*, t_e, s) = argmax_{I_j in I : s_j = s and a_j ⩽ t_e ⩽ b_j} a_j` (or `D_0` if empty).

Round 38's **Operative-Validity and Sub-Clause Resolver (`OpAsOf_38`)** filters by exact sub-clause `u`, date window, condition-precedent satisfaction, and execution/service validity:

`OpAsOf_38(R*, L*, t_e, s, u) = argmax_{I_j in I : s_j = s, u_j = u, a_j ⩽ t_e ⩽ b_j, cp(I_j, L*, t_e) = 1, exec(I_j, L*) = 1} a_j` (or `D_0` if empty).

3.2 The six conjuncts of the `CIV-38` release gate

Given a packet `P` and witness receipts `W = {w_1, w_2, w_3, w_4}` where each receipt `w_i = (v_i, c_i, υ_i, q_i, f_i)` reports verdict `v_i in {PASS, FAIL}`, cited controlling instrument `c_i`, cited controlling sub-clause `υ_i`, verbatim quote `q_i`, and operative-validity verifiability flag `f_i in {0, 1}`, `CIV-38` releases verdict `v` if and only if:

1. **`V_reg_closure`:** `R* subseteq P` (every executed contract instrument in the register of record is attached).
2. **`V_verif_closure`:** If any instrument `I_j in R*` on parent section `s` has `req_j = 1`, then `L* in P` (`DOC-VERIF` is attached and queried after the latest condition-precedent cutoff or execution event).
3. **`V_quorum`:** At least `3` witnesses from at least `3` distinct architecture families output `v_i = v`.
4. **`V_cond_prec` and `V_exec_auth`:** For at least `3` agreeing witnesses, `f_i = 1` and the cited instrument `c_i` satisfies `cp(c_i, L*, t_e) = 1` and `exec(c_i, L*) = 1`.
5. **`V_subscope_decomp`:** For those same `⩾ 3` witnesses, `(c_i, υ_i) = (OpAsOf_38(R*, L*, t_e, s, υ), υ)`.
6. **`V_span`:** For those same `⩾ 3` witnesses, `norm(q_i)` (`⩾ 20` normalized characters) is a contiguous verbatim substring of the attached text of `c_i`.

When any conjunct fails, `CIV-38` abstains with a deterministic hold code (`HOLD_CIV38_VERIF_LOG_GAP`, `HOLD_SPLIT`, `HOLD_CIV38_OP_ASOF_OR_SPAN`).

3.3 Structural propositions

Proposition 38.1 (Date-only section resolution hazard surface). Suppose an audited parent section has a latest date-effective instrument that suffers an operative defect (unmet condition precedent or execution/service defect) with probability `d` and independently modifies only a disjoint sibling sub-clause with probability `s`. Then on a single section, `AsOf_37` diverges from `OpAsOf_38` with probability `P_div(1, d, s) = 1 - (1 - d)(1 - s)`, and across `m` independent audited sections, `AsOf_37` diverges on at least one section with probability `P_div(m, d, s) = 1 - ((1 - d)(1 - s))^m`. For `d = 0.25`, `s = 0.25`, `P_div(1) = 0.4375`, `P_div(4) = 0.8999`, and `P_div(8) = 0.9900`.

Proposition 38.2 (3-of-4 quorum vulnerability under asymmetric burden-of-proof priors). When `L*` is omitted (`View R`) and `3` of `4` witnesses apply a presumptive register-effectiveness prior while `1` witness applies a strict precautionary burden-of-proof prior, the `3-of-4` threshold is satisfied by the `3` presumptive witnesses on every defective-instrument lifecycle (`V01`–`V08`). Thus role decorrelation alone creates a visible `3-1` dissent signal but cannot prevent a `3-of-4` majority false release without the `V_verif_closure` gate conjunct.

Proposition 38.3 (`TDR-37` false-hold lock on verification-closed packets). When `L*` is attached (`View V`) and proves that the latest instrument is inoperative (`V01`–`V08`) or when the latest instrument modifies a disjoint sub-clause (`V09`–`V10`), accurate witnesses cite the prior operative instrument (`DOC-MSA` or `DOC-AMD1`), whereas `TDR-37`'s `V_asof` conjunct demands agreement with `AsOf_37` (the latest dated instrument). Consequently, `TDR-37` converts accurate witness consensus into a mandatory hold (`HOLD_TDR37_ASOF_MISMATCH`).

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4. Related work

Contract benchmarks and clause taxonomy. CUAD [S01], ContractNLI [S02], and LegalBench [S07] evaluate clause identification and single-instrument entailment. None models multi-instrument condition-precedent logs, counterpart authority tables, or sub-clause supersession partitions.

Temporal and conditional logic in contracts and databases. Snodgrass and Ahn [S11] and Jensen and Snodgrass [S13] separate valid time from transaction time; Allen [S12] formalizes interval relations. In legal doctrine and formal contract languages, Gobernatori and Rotolo [S15] and Flood and Goodenough [S16] represent contracts as defeasible or deterministic state machines where obligations transition only when triggering conditions and execution formalities are satisfied. Our `OpAsOf_38` resolver brings that conditional transition check into the release gate.

External transparency logs and independent verification. Laurie, Langley, and Kasper [S14] (Certificate Transparency) show that an artefact's validity cannot be established solely from self-carried claims when revocation or issuance conditions live in an external log. Round 37 applied this principle to instrument existence (`Contract Operations Register`); Round 38 extends it to collateral operative proofs (`DOC-VERIF` recording escrow receipts, compliance filings, facility-agent consents, signatory grades, and legal-notice service channels).

Correlated errors and role diversity in multi-agent quorums. Wang et al. [S09] study self-consistency across sampled chains, and Du et al. [S17] study multi-agent debate. Round 37 observed `36 / 36` unanimous votes when all four witnesses shared an identical prompt. In Round 38, assigning distinct evidentiary burden-of-proof lenses produces `9 / 12` split (`3-1`) votes in `View R`, allowing us to measure exactly when a `3-of-4` quorum passes or fails under disagreement.

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5. Hypotheses

ID	Statement	Test	Status
`H38.1`	In the declared `464`-state post-register-closure universe, `TDR-37` date-only section resolution (`G2`) exhibits both high false acceptance (`FAR > 9%`) and severe false rejection (`FRR > 80%`), while full `CIV-38` (`G6`) achieves `0%` FAR and `0%` FRR by construction	`E38-A` Part 1	Supported (`FAR 9.15%`, `FRR 81.25%` vs `0.00% / 0.00%`)
`H38.2`	On the `12` frozen lifecycles `V01`–`V12`, `TDR-37`'s date-only section resolver matches ground truth on only `2 / 12` lifecycles, whereas `OpAsOf_38` matches on `12 / 12`	`E38-A` Part 2	Supported (`2 / 12` vs `12 / 12`)
`H38.3`	Role-decorrelated witness instructions break Round 37's unanimity in `View R`, producing `3-1` split votes on packets whose operative validity depends on an unattached `DOC-VERIF` log	`E38-B` `View R` votes	Supported (`9 / 12` packets split `3-1`; `0 / 12` split on unconditional packets)

ID	Statement	Test	Status
H38.4	When DOC-VERIF is omitted (View R), a 3-of-4 quorum (A3) and TDR-37 (A4) still release 8 / 12 false certifications because the 3 presumptive-register witnesses outvote the 1 precautionary witness	E38-B arms A3, A4	Supported (8 / 12 false releases on both A3 and A4)
H38.5	When DOC-VERIF is attached (View V), TDR-37 (A5) holds 10 / 12 valid packets because its coarse date-only V_asof check rejects witnesses that rightly disqualify inoperative or sibling-sub-clause instruments	E38-B arm A5	Supported (10 / 12 false holds on A5)
H38.6	Full CIV-38 (A6 pre-reopen on View R → A7 on View V) achieves 0 / 12 false releases before reopen and 12 / 12 correct releases with 0 / 12 holds once DOC-VERIF is attached	E38-B arms A6, A7	Supported (A6: 0 / 12 false, 9 / 12 holds; A7: 12 / 12 correct, 0 / 12 false, 0 / 12 holds)

6. Evidence category 1: deterministic structural diagnostic (E38-A)

6.1 Finite universe and gate definitions

The post-register-closure universe is the product of seven variables: collateral verification log state (omitted, self_attested_recital, external_verif_stale, external_verif_complete), condition precedent state (cp_satisfied, cp_unmet), execution/service validity (exec_valid, exec_defective), sub-clause relation of the latest amendment (same_subclause, disjoint_subclause), quorum outcome (op_asof_subclause, op_asof_coarse, tdr37_date_latest, split), verbatim span verification (span_verified, span_unverified), and architecture family diversity (ge3_families, lt3_families). The raw Cartesian product has 4 x 2 x 2 x 2 x 2 x 4 x 2 x 2 = 512 states. Excluding 48 infeasible states where DOC-VERIF is omitted and an external defect exists yet the quorum is labeled as having verified the external defect yields 464 feasible states (16 positive, 448 negative).

Gate	TP	FP	of which wrong verdict	of which right verdict, unwarranted	TN	FN	FAR	FRR
G0 quorum + span + diversity	16	68	32	36	380	0	15.18%	0.00%
G1 CCS-36 reference closure	16	68	32	36	380	0	15.18%	0.00%
G2 TDR-37 date-section AsOf	3	41	32	9	407	13	9.15%	81.25%
G3 CIV-38 self-attested recital accepted	16	7	3	4	441	0	1.56%	0.00%
G4 CIV-38 stale verification log accepted	16	12	0	12	436	0	2.68%	0.00%
G5 CIV-38 coarse section (no sub-clause partition)	15	2	2	0	446	1	0.45%	6.25%
G6 CIV-38 full gate	16	0	0	0	448	0	0.00%	0.00%

Why G2 (TDR-37) fails in both directions. In G2, the gate requires the quorum's cited controlling instrument to equal DOC-LAT (the latest date-effective instrument in the parent section). Whenever DOC-LAT has an unmet condition precedent (cp_unmet), a defective signature/service (exec_defective), or modifies only a sibling sub-clause (disjoint_subclause), 13 of the 16 positive states have a true controlling instrument of DOC-PRIOR or DOC-SUB_A rather than DOC-LAT, so G2 rejects them (FN = 13, FRR = 81.25%). Conversely, whenever the quorum blindly cites DOC-LAT despite those defects, G2 releases the state (FP = 41, FAR = 9.15%, including 32 wrong verdicts). As in Round 37, G6 coincides with the positive-state specification by construction, so its 0 / 0 row is an internal consistency check of the formal specification, while G0 - G5 quantify the exact structural exposure of each missing conjunct.

6.2 Deterministic resolver comparison on V01 - V12

Resolver	Verdict correct	Controlling instrument correct	Controlling sub-clause correct	Full tuple correct	Lifecycles missed
op_asof_subclause_resolver (CIV-38 full)	12 / 12	12 / 12	12 / 12	12 / 12	none
op_asof_coarse_section_resolver (no sub-clause partition)	10 / 12	10 / 12	10 / 12	10 / 12	V09, V10
cond_only_asof_resolver (checks CP only, ignores DEF and SCP)	6 / 12	6 / 12	6 / 12	6 / 12	V05, V06, V07, V08, V09, V10
tdr37_date_section_resolver (TDR-37 date-only section AsOf)	2 / 12	2 / 12	10 / 12	2 / 12	V01 - V10
base_only_resolver (DOC-MSA always)	7 / 12	7 / 12	12 / 12	7 / 12	V08, V09, V10, V11, V12

7. Evidence category 2: live multi-witness benchmark (E38-B)

7.1 Witness roster and role-decorrelated audit lenses

To test Round 37's handoff on witness decorrelation, each of the four witness architecture families received the identical JSON output schema and sub-clause matching rules, but an explicitly assigned evidentiary burden-of-proof lens when DOC-VERIF is absent (View R):

Witness ID	Architecture	Family	Reasoning tier	Assigned evidentiary lens when `DOC-VERIF` is absent (`View R`)	`E38-B` calls	Parsed	Mean latency (`View R` / `View V`)
`W0_A`	`Witness A`	Family A	Max (`effort: high`)	Lead Precedence & Sub-Clause Auditor (Presumptive Register Effectiveness)	24	24 / 24	8,801.3 ms / 5,940.0 ms
`W1_B`	`Witness B`	Family B	Standard	Strict Evidentiary & Condition-Precedent Auditor (Precautionary Rejection of Unverified Modifications)	24	24 / 24	4,024.6 ms / 3,817.3 ms
`W2_C`	`Witness C`	Family C	Standard	Register & Stated-Effective-Date Auditor (Presumptive Register Effectiveness)	24	24 / 24	6,399.3 ms / 5,295.1 ms
`W3_D`	`Witness D`	Family D	Standard	Sub-Clause Scope & Formalities Auditor (Presumptive Register Effectiveness + Sub-Clause Partition)	24	24 / 24	20,792.5 ms / 9,565.7 ms
Total	**4 families**	**A, B, C, D**			**96**	**96 / 96**	

7.2 The 12 frozen operative-validity lifecycles (`V01` - `V12`)

ID	Stratum	Defect / scope code	Situation	Event date	Target sub-clause	Truth	Controlling doc	`TDR-37` `AsOf` doc
`V01`	`S1_CP`	`CP_LATE_ESCROW`	Cap raise to 4M EUR conditioned on 500k EUR escrow by 2026-04-15; escrow deposited late on 2026-05-09	2026-07-10	`8.1(a)`	PASS	`DOC-MSA`	`DOC-AMD1`
`V02`	`S1_CP`	`CP_EXPIRED_CERT`	3-day audit notice waiver conditioned on active ISO 27001 certificate; certificate expired 2026-01-31	2026-06-18	`5.3(a)`	FAIL	`DOC-MSA`	`DOC-WVR1`
`V03`	`S1_CP`	`CP_LENDER_DENIED`	Net-75 payment extension conditioned on Senior Facility Agent consent by 2026-03-31; consent denied	2026-08-12	`7.1(a)`	FAIL	`DOC-MSA`	`DOC-AMD1`
`V04`	`S1_CP`	`CP_MISSING_SCC_ANNEX`	Montreal disaster-recovery replication waiver conditioned on DPO registration of `TIA-2026`; never registered	2026-05-22	`9.2(a)`	FAIL	`DOC-MSA`	`DOC-WVR1`
`V05`	`S2_DEF`	`DEF_MISSING_CFO_COUNTERPART`	Renewal cap increase from 3% to 9% signed by Customer Grade-3 Manager; lacks Customer CFO counterpart	2026-06-01	`4.4(a)`	FAIL	`DOC-MSA`	`DOC-AMD1`
`V06`	`S2_DEF`	`DEF_WRONG_NOTICE_CHANNEL`	Termination notice sent only to `ops-tickets@customer.example`; zero delivery to `legal-notices@customer.example`	2026-07-19	`11.1(a)`	PASS	`DOC-MSA`	`DOC-TRM1`
`V07`	`S2_DEF`	`DEF_UNAUTHORIZED_SIGNATORY`	Service-credit waiver signed by Grade-4 SRE Team Lead instead of required Grade-1 Executive Officer	2026-08-03	`6.3(a)`	PASS	`DOC-MSA`	`DOC-WVR1`
`V08`	`S2_DEF`	`DEF_INVALID_REVOCATION_COUNTERSIGN`	Unconditional `DOC-AMD1` authorizes Orion Grid SAS; later `DOC-RVK1` lacks Joint Security Committee countersignatures	2026-06-25	`10.2(a)`	PASS	`DOC-AMD1`	`DOC-RVK1`
`V09`	`S3_SCP`	`SCP_DISJOINT_SUBCLAUSE_8_1B`	`DOC-AMD1` raises general cap in `8.1(a)` to 3.5M EUR; later `DOC-AMD2` modifies only IP super-cap in `8.1(b)`	2026-08-14	`8.1(a)`	PASS	`DOC-AMD1`	`DOC-AMD2`
`V10`	`S3_SCP`	`SCP_DISJOINT_SUBCLAUSE_5_3B`	`DOC-AMD1` tightens Tier-1 uptime in `5.3(a)` to 99.99%; later `DOC-AMD2` modifies only Tier-2 archive in `5.3(b)`	2026-07-31	`5.3(a)`	FAIL	`DOC-AMD1`	`DOC-AMD2`
`V11`	`S4_CTL`	`CTL_SATISFIED_CP_AND_EXEC`	Net-30 amendment conditioned on Performance Bond `PB-2026-09` by 2026-02-25 and dual CFO signatures; both verified on time	2026-06-30	`7.2(a)`	FAIL	`DOC-AMD1`	`DOC-AMD1`
`V12`	`S4_CTL`	`CTL_VALID_SEQUENTIAL_SUBCLAUSE`	Unconditional `DOC-AMD1` (10,000 seats) and `DOC-AMD2` (5,000 seats) both modify `4.1(a)`; later `DOC-AMD2` governs	2026-08-20	`4.1(a)`	PASS	`DOC-AMD2`	`DOC-AMD2`

7.3 Governance arm comparison (`A1` - `A7`)

Arm	Packet view	Description	Correct releases	False releases	Holds	Correct release %	False release %	Hold %
`A1_single_witnessA_viewR`	`View R`	Single witness (`Witness A` Max) on register-closed packet	4 / 12	8 / 12	0 / 12	33.33%	66.67%	0.00%
`A2_single_witnessA_viewV`	`View V`	Single witness (`Witness A` Max) with `DOC-VERIF` attached	12 / 12	0 / 12	0 / 12	100.00%	0.00%	0.00%
`A3_ungated_quorum_viewR`	`View R`	Ungated 3-of-4 quorum + verbatim span on `View R`	4 / 12	8 / 12	0 / 12	33.33%	66.67%	0.00%
`A4_tdr37_gate_viewR`	`View R`	Round 37 `TDR-37` gate (`V_reg` + coarse section `AsOf` + span) on `View R`	2 / 12	8 / 12	2 / 12	16.67%	66.67%	16.67%
`A5_tdr37_gate_viewV`	`View V`	Round 37 `TDR-37` gate (`V_reg` + coarse section `AsOf` + span) on `View V`	2 / 12	0 / 12	10 / 12	16.67%	0.00%	83.33%
`A6_civ38_pre_reopen_viewR`	`View R`	`CIV-38` gate on `View R` before fetching `DOC-VERIF`	3 / 12	0 / 12	9 / 12	25.00%	0.00%	75.00%
`A7_civ38_full_viewV`	`View V`	Full `CIV-38` gate on `View V` (`DOC-VERIF` attached + `OpAsOf_38` + span)	12 / 12	0 / 12	0 / 12	100.00%	0.00%	0.00%

7.4 Per-lifecycle witness votes and gate outcomes

Votes are shown in roster order (`W0_A`, `W1_B`, `W2_C`, `W3_D`); `P` = `PASS`, `F` = `FAIL`.

ID	Stratum	Truth (Doc)	View R votes	View R correct	View R verif flag true	View V votes	View V correct	View V verif flag true	A3 (ungated R)	A4 (TDR-37 R)	A5 (TDR-37 V)	A6 (CIV-38 R)	A7 (CIV-38 V)
V01	S1_CP	PASS (DOC-MSA)	FPFF	1 / 4	0 / 4	PPPP	4 / 4	4 / 4	FALSE RELEASE	FALSE RELEASE	HOLD (ASOF_MISMATCH)	HOLD (VERIF_LOG_GAP)	**RELEASE (PASS)**
V02	S1_CP	FAIL (DOC-MSA)	PFPP	1 / 4	0 / 4	FFFF	4 / 4	4 / 4	FALSE RELEASE	FALSE RELEASE	HOLD (ASOF_MISMATCH)	HOLD (VERIF_LOG_GAP)	**RELEASE (FAIL)**
V03	S1_CP	FAIL (DOC-MSA)	PFPP	1 / 4	0 / 4	FFFF	4 / 4	4 / 4	FALSE RELEASE	FALSE RELEASE	HOLD (ASOF_MISMATCH)	HOLD (VERIF_LOG_GAP)	**RELEASE (FAIL)**
V04	S1_CP	FAIL (DOC-MSA)	PFPP	1 / 4	0 / 4	FFFF	4 / 4	4 / 4	FALSE RELEASE	FALSE RELEASE	HOLD (ASOF_MISMATCH)	HOLD (VERIF_LOG_GAP)	**RELEASE (FAIL)**
V05	S2_DEF	FAIL (DOC-MSA)	PFPP	1 / 4	0 / 4	FFFF	4 / 4	4 / 4	FALSE RELEASE	FALSE RELEASE	HOLD (ASOF_MISMATCH)	HOLD (VERIF_LOG_GAP)	**RELEASE (FAIL)**
V06	S2_DEF	PASS (DOC-MSA)	FPFF	1 / 4	0 / 4	PPPP	4 / 4	4 / 4	FALSE RELEASE	FALSE RELEASE	HOLD (ASOF_MISMATCH)	HOLD (VERIF_LOG_GAP)	**RELEASE (PASS)**
V07	S2_DEF	PASS (DOC-MSA)	FPFF	1 / 4	0 / 4	PPPP	4 / 4	4 / 4	FALSE RELEASE	FALSE RELEASE	HOLD (ASOF_MISMATCH)	HOLD (VERIF_LOG_GAP)	**RELEASE (PASS)**
V08	S2_DEF	PASS (DOC-AMD1)	FPFF	1 / 4	0 / 4	PPPP	4 / 4	4 / 4	FALSE RELEASE	FALSE RELEASE	HOLD (ASOF_MISMATCH)	HOLD (VERIF_LOG_GAP)	**RELEASE (PASS)**
V09	S3_SCP	PASS (DOC-AMD1)	PPPP	4 / 4	4 / 4	PPPP	4 / 4	4 / 4	RELEASE (PASS)	HOLD (ASOF_MISMATCH)	HOLD (ASOF_MISMATCH)	**RELEASE (PASS)**	**RELEASE (PASS)**
V10	S3_SCP	FAIL (DOC-AMD1)	FFFF	4 / 4	4 / 4	FFFF	4 / 4	4 / 4	RELEASE (FAIL)	HOLD (ASOF_MISMATCH)	HOLD (ASOF_MISMATCH)	**RELEASE (FAIL)**	**RELEASE (FAIL)**
V11	S4_CTL	FAIL (DOC-AMD1)	FPFF	3 / 4	0 / 4	FFFF	4 / 4	4 / 4	RELEASE (FAIL)	RELEASE (FAIL)	RELEASE (FAIL)	HOLD (VERIF_LOG_GAP)	**RELEASE (FAIL)**
V12	S4_CTL	PASS (DOC-AMD2)	PPPP	4 / 4	4 / 4	PPPP	4 / 4	4 / 4	RELEASE (PASS)	RELEASE (PASS)	RELEASE (PASS)	**RELEASE (PASS)**	**RELEASE (PASS)**

7.5 Per-witness performance across `View R` and `View V`

Witness (View)	Calls OK	Parsed OK	Verdict correct	Controlling doc correct	Sub-clause correct	Span verified	operative_validity_verifiable = true	Mean latency (ms)	Median latency (ms)
W0_A (View R)	12 / 12	12 / 12	4 / 12	4 / 12	12 / 12	12 / 12	3 / 12	8,801.3	9,657.8
W1_B (View R)	12 / 12	12 / 12	11 / 12	11 / 12	12 / 12	12 / 12	3 / 12	4,024.6	3,859.9
W2_C (View R)	12 / 12	12 / 12	4 / 12	4 / 12	12 / 12	12 / 12	3 / 12	6,399.3	6,081.4
W3_D (View R)	12 / 12	12 / 12	4 / 12	4 / 12	12 / 12	12 / 12	3 / 12	20,792.5	22,965.7
W0_A (View V)	12 / 12	12 / 12	12 / 12	12 / 12	12 / 12	12 / 12	12 / 12	5,940.0	6,259.5
W1_B (View V)	12 / 12	12 / 12	12 / 12	12 / 12	12 / 12	12 / 12	12 / 12	3,817.3	3,923.2
W2_C (View V)	12 / 12	12 / 12	12 / 12	12 / 12	12 / 12	12 / 12	12 / 12	5,295.1	5,505.0
W3_D (View V)	12 / 12	12 / 12	12 / 12	12 / 12	12 / 12	12 / 12	12 / 12	9,565.7	8,945.5

8. Findings, interpretations, and critical synthesis review

8.1 Measured findings

1. **`F38.1` (deterministic, `E38-A`).** Across the `464` feasible post-register-closure states, `TDR-37` date-only section resolution (`G2`) yields `FAR = 9.15%` (`41 / 448` negative states accepted, `32` with wrong verdicts) and `FRR = 81.25%` (`13 / 16` positive states rejected). Adding external operative verification without sub-clause partitioning (`G5`) reduces `FAR` to `0.45%` and `FRR` to `6.25%`; full `CIV-38` (`G6`) reaches `0.00%` FAR and `0.00%` FRR by construction.

2. **F38.2 (deterministic, E38-A).** On V01-V12, TDR-37 date-only section resolution matches ground truth on 2 / 12 lifecycles (V11, V12), whereas OpAsOf_38 matches on 12 / 12.
3. **F38.3 (live, E38-B View R split votes).** Unlike Round 37 (0 / 36 split vote sets), role-decorrelated evidentiary instructions produced 3-1 split votes on 9 / 12 View R packets (V01-V08 and V11). On all 9, W1_B applied the precautionary burden-of-proof rule and rejected the unverified instrument (11 / 12 correct across View R, missing only V11 where the unattached DOC-VERIF actually confirmed the condition precedent), while W0_A, W2_C, and W3_D applied presumptive register effectiveness (4 / 12 correct).
4. **F38.4 (live, E38-B View R false releases vs CIV-38 holds).** Because a 3-1 split still satisfies a 3-of-4 majority across three architecture families, ungated quorum (A3) and TDR-37 (A4) released 8 / 12 (66.67%) false certifications on View R. However, all 36 / 36 witness receipts across V01-V08 and V11 in View R accurately set operative_validity_verifiable = false. Pre-reopen CIV-38 (A6) used V_verif_closure to hold those 9 packets (0 / 12 false releases) while immediately releasing the 3 unconditional packets (V09, V10, V12).
5. **F38.5 (live, E38-B View V resolution and TDR-37 false holds).** Once DOC-VERIF was attached (View V), all 48 / 48 witness evaluations (12 / 12 lifecycles x 4 families) returned the exact ground-truth verdict, controlling instrument, and sub-clause with verified quotes (A2 and A7 both 12 / 12 correct releases, 0 false releases, 0 holds). By contrast, TDR-37 on View V (A5) held 10 / 12 valid packets (V01-V10) because its coarse date-only V_asof resolver insisted on the inoperative or sibling-sub-clause instrument.

8.2 Critical synthesis review (Witness A Max reasoning, interpretation input only)

After freezing E38-A and E38-B, we ran one independent critical synthesis review (Witness A Max reasoning, latency 20,303.6 ms). We adopt all four of its methodological critiques:

1. **What the View R to View V transition establishes.** Moving from View R (A1, A3: 4 correct, 8 false releases) to View V (A2, A7: 12 correct, 0 false) demonstrates that witnesses and the release gate faithfully read and obey an attached collateral verification log (DOC-VERIF). Because DOC-VERIF explicitly records whether each condition precedent or execution formality was met, the View R → View V jump measures **collateral verification completeness** rather than open-ended legal discovery.
2. **Why the 3-1 split votes in View R are instructed rather than spontaneous.** In View R, the 3-1 splits across V01-V08 and V11 arose because W1_B was explicitly assigned a precautionary burden-of-proof rule while the other three witnesses were assigned a presumptive register-effectiveness rule. Moreover, because 3 of 4 witnesses shared the presumptive lens, A3 (3-of-4 quorum) had the exact same release profile (4 correct, 8 false) as A1 (single witness). To make a 3-of-4 quorum block unverified modifications through voting alone (even before V_verif_closure), at least 2 of the 4 witnesses must hold a precautionary burden-of-proof lens so that missing collateral proof forces a 2-2 deadlock.
3. **Why View V reaches a 48 / 48 ceiling.** Once DOC-VERIF is attached and unambiguous, all four witness families converge 4-0 on all 12 lifecycles, leaving no empirical gap between single-witness Witness A (A2, 12 / 12) and the full CIV-38 quorum (A7, 12 / 12) on View V. The empirical advantage of A7 over A5 (TDR-37, 2 / 12 correct, 10 / 12 holds) is therefore entirely driven by replacing AsOf_37 with OpAsOf_38.
4. **What remains untested for Round 39.** In E38-B, DOC-VERIF was internally consistent, authoritative, and unambiguous. Real transaction records often contain *conflicting* collateral evidence (for example, an escrow agent receipt that disagrees with a borrower notice, an ambiguous cure-period calculation, or a partial performance waiver).

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9. Limitations and threats to validity

1. **Authored benchmark scale (12 lifecycles, 96 live evaluations).** V01-V12 are researcher-authored lifecycles with clean sub-clause numbering (8.1(a) vs 8.1(b)) and explicit DOC-VERIF cross-references. Performance on noisy OCR scans or implicit cross-clause modifications is not bounded by these numbers.
2. **3-1 split votes reflect assigned evidentiary lenses.** As noted in Section 8.2, the 3-1 splits in View R were induced by assigning 1 precautionary lens (W1_B) and 3 presumptive lenses (W0_A, W2_C, W3_D). Under a 3-of-4 rule, a 3-1 split still releases unless paired with V_verif_closure or a 2-2 balanced lens assignment.
3. **G6 is exact by construction.** In E38-A, G6 matches the positive-state predicate by definition; the informative comparisons are G0-G5.
4. **Unambiguous DOC-VERIF entries in View V.** Every DOC-VERIF entry in View V stated the recorded receipt date, signatory grade, or notice address clearly, producing a 48 / 48 witness ceiling.

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10. Next check (Round 39 handoff)

Round 38 showed that attaching a clean collateral verification log (DOC-VERIF) and decomposing scope to the sub-clause level (OpAsOf_38) eliminates both the 8 / 12 false releases of View R and the 10 / 12 false holds of TDR-37 on View V. Two concrete questions now form the Round 39 handoff:

1. **Balanced (2-2) Evidentiary Lens Assignment vs Unannounced Missing Proofs:** What happens when the contract text itself does *not* explicitly name DOC-VERIF, or when 2 of 4 witnesses operate under a precautionary lens and 2 under a presumptive lens so that missing collateral proof induces a 2-2 quorum deadlock without relying on a pre-indexed requires_verif flag?
2. **Conflicting or Equivocal Collateral Evidence (CEV-39):** What happens when two attached external verification records disagree (for example, an escrow bank timestamp in UTC vs local cutoff time, a disputed cure notice, or a signatory whose authority cap is exceeded by the combined value of two linked orders), where witnesses can genuinely disagree even when every log is attached?

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