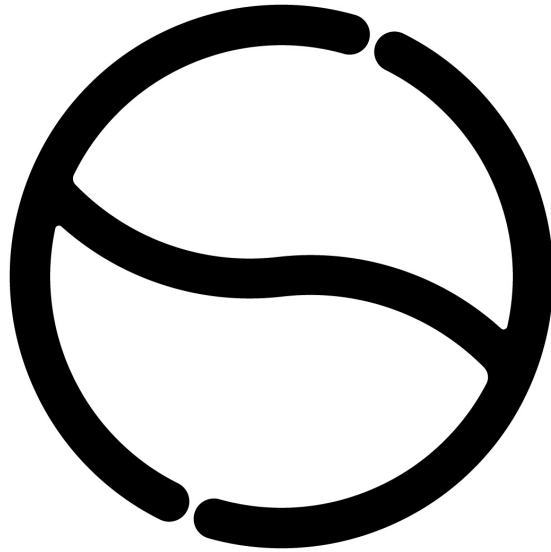




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The CCEF3 Protocol

A record of what you've learned that travels with you. This protocol specifies a system where proof of knowledge accumulates over time instead of being re-proven at every door.

Learning Trust Protocol

Educational Records & Verification Protocol: Working Specification
A Working Specification for a Portable Record of Learning

Status: Draft for review

Audience: Working group deciding scope, principles, and direction

Purpose: To establish the intended shape of the protocol before implementation choices are made

Preface

This document specifies the intended properties of a protocol for managing educational data. It is deliberately not a roadmap, a product plan, or a technical implementation. Those come later, and they come from the working group, not from this paper.

The protocol governs how records of engagement with educational material, referred to throughout as objects, are captured, stored, and made available for verification. It does not concern itself with the content of objects, how they are taught, or how they are learned. It concerns itself only with the record that engagement occurred.

The protocol is meant to function as a layer running alongside the existing education system: a way for people to keep learning as they already do, in classrooms, online courses, apprenticeships, self-study, wherever, while accumulating a portable, verifiable record of what they have done. What is being paralleled here is not education itself, but the credentialing and verification apparatus built around it. People do not need to be forced into a new way to learn. They need a way to prove what they have learned that does not require starting from zero with every new employer, institution, or opportunity.

The design follows from a small number of principles. The principles came first; the mechanisms are downstream of them. Where mechanisms and principles conflict, principles win and mechanisms should be redesigned.

1. Premise

1.1 The credentialing problem

Proof of knowledge is currently expensive to produce and expensive to verify. A person who has spent years acquiring real capability, through formal study, informal practice, on-the-job learning, or self-directed effort, must still, at every new interaction, re-establish that capability from scratch: a new résumé, a new interview, a new test, a new probationary period. The record of what they already know and have done is scattered, unportable, or trapped inside institutions that have little incentive to make it legible to anyone else.

This friction is not neutral. It is a tax on movement, between jobs, between institutions, between opportunities, and it falls hardest on people whose learning did not happen inside a recognized credentialing pipeline. It also acts as a drag on economic activity generally: capable people are matched to opportunities more slowly, and less well, than their actual capability would allow, because the cost of verifying that capability is too high to pay every time.

Two responses dominate the conversation about credentialing. One proposes reform of the existing system, portfolio-based admissions, competency frameworks, credit transfer agreements. The other proposes replacement, alternative universities, bootcamps, and certificate programs that compete directly with degrees. Reform tends to be slow and institution-bound. Replacement tends to just become another gate, with its own gatekeepers. Neither addresses what people actually need, which is a record of their own that travels with them regardless of where the learning happened.

1.2 The parallel approach

This protocol proposes a third route: not a new way to learn, and not a new institution to be credentialed by, but a record-keeping layer that sits alongside however people already learn, and lets that record accumulate into something verifiable over time.

To be precise about what is being paralleled: it is the current education system's function as gatekeeper and record-keeper, not education itself. People go on studying, practicing, and working exactly as they do now. What changes is that engagement with educational objects, a course completed, a project delivered, an assessment passed, an apprenticeship logged, leaves a durable trace that the person controls and can present as evidence, instead of a trace that lives only inside one institution's records and disappears the moment that relationship ends.

Over time, as this record accumulates, it becomes something a little larger than a transcript: a form of standing that a person carries with them, built from time invested and events recorded rather than from a credential issued once and never revisited. This is not a claim that such a record should replace money or markets. It is a narrower claim: that demonstrated knowledge and capability are themselves a form of value, currently under-recognized and poorly portable, and that a system for

recording and verifying that value on the participant's own terms is worth building, one interaction, and one working group decision, at a time.

1.3 What this protocol is not

- It is not a curriculum. It does not teach, assess quality, or decide what counts as worth learning.
- It is not a school, university, or accreditation body. It confers no degrees, ranks no institutions, and issues no diplomas.
- It is not a content platform. It does not host, store, or distribute educational material.
- It is not a replacement for teachers, mentors, or institutions. It coexists with all of them.
- It is not a community. Communities of learners and evaluators may form around it; the protocol itself is impersonal.

2. Foundational Principles

These principles constrain all downstream design. If a proposed mechanism violates one of them, the mechanism is wrong, not the principle.

2.1 Learning is effortful, and that is fine

The protocol does not promise to make learning easy, fast, or frictionless. Effort, difficulty, and struggle are part of how capability is actually built, and a protocol that tried to record the appearance of learning without the substance of it would produce a record worth nothing. The protocol levels the conditions under which people can prove what they have learned; it does not pretend to make the learning itself effortless.

2.2 Learner self-determination

Participation is voluntary, and the choice of what to learn, how to learn it, and which objects to engage with belongs entirely to the participant. The protocol does not recommend curricula, does not steer participants toward particular subjects or institutions, and does not evaluate whether a participant's choices are wise. It records that engagement happened; what the participant chooses to engage with is their own responsibility.

2.3 Equity of access

The single equity commitment is access to the record-keeping layer itself. Anyone engaging with educational objects, inside a formal institution or entirely outside one, can have that engagement recorded, without gatekeeping by wealth, geography, prior credentials, or institutional affiliation. The playing field for having a record is level; what any individual builds on that record over time will differ, and that is acceptable.

This commitment is harder than it sounds. The protocol must be designed for people learning outside recognized pipelines, the self-taught, the informally apprenticed, the returning student, not only for people already inside institutions with existing credentialing relationships. Where the design serves the already-credentialed better than everyone else, the design is wrong.

2.4 The protocol does not decide

The protocol does not grade, does not rank objects or participants, does not issue scores of overall competence, and does not adjudicate whether a given piece of learning was good enough. It records that an event happened and leaves interpretation, what it is worth, what it proves, whether it is sufficient, to whoever is evaluating the record. Everything beyond the bare record, meaning, evaluation, standards, trust, is constructed by participants and by the institutions or employers who choose to rely on it.

This is not negligence; it is the central design move. Any interpretive layer the protocol adds, a score, a ranking, a certified-competent flag, becomes a target for gaming and a surface for capture. By deciding nothing about what the record means, the protocol presents no such surface.

3. Core Mechanisms

Four mechanisms operationalize the principles. Each is described first by its function, then by what it deliberately does not do.

3.1 Bounded, recorded learning interactions

Function

Engagement with an object, a lesson, a course module, a practice session, an assessment, a mentoring session, is recorded as a discrete, time-bounded interaction. Interactions are capped in duration per session; the design of any daily or periodic aggregation is left to the working group.

An interaction must involve genuine engagement with the object, not merely its retrieval. The protocol does not define genuine engagement precisely, because precise definitions become gaming targets. Engagement is recorded as attested by the participant and, where applicable, by the counterparty present in the interaction, an instructor, an assessor, a study partner.

Why this works

Bounding sessions and requiring attested engagement blocks credential-by-volume gaming and bot- or agent-driven inflation of the record. A thousand shallow clicks through material cannot be converted into standing the way a thousand real hours of engagement can.

What this mechanism does not do

- It does not verify engagement centrally.
- It does not define what counts as valuable learning.
- It does not solve the problem of people whose lives make sustained engagement difficult. Communities and institutions built on top of the protocol may build their own accommodations; the protocol itself does not decide who qualifies for one.

3.2 Individual binding

Function

A learning record is bound to the individual who produced it. It cannot be delegated, transferred, sold, or aggregated into an institution's record. There is no mechanism for one person's completed coursework to be credited to another, and no shares or tokens of accumulated standing that change hands.

Why this works

It closes off diploma-mill dynamics and credential fraud by transfer. It also means an institution cannot claim a learner's record as its own asset; the record belongs to the person who did the learning, wherever they take it next.

What this mechanism does not do

- It does not prevent participants from studying together, collaborating on projects, or being taught by the same instructor.
- It only prevents the record itself from being formally transferred between people.

3.3 The immutable trail: a record of delta only

Function

Each participant accrues a trail: a record of learning interactions and events. Two things about the trail are load-bearing and should not be revised without returning to first principles.

First, the trail is immutable in the ordinary sense: entries cannot be selectively deleted, edited, or hidden by the participant once written. A participant may abandon their trail and begin again from zero, with the reset itself visible to anyone evaluating the record afterward, but they cannot quietly rewrite history.

Second, and this is the more consequential commitment: the trail records only the delta, the fact and shape of what happened, and never the underlying educational content itself. The protocol stores that an interaction with a given object occurred, its duration, its attested participants, and whatever outcome was recorded (completed, assessed, reviewed, and so on). It does not store the course material, the assignment text, the essay submitted, the video watched, or any other substantive content. Custody, storage, and stewardship of the actual educational material, the objects themselves, remains entirely the responsibility of the participants and the institutions or platforms they use. The protocol is a record of engagement, not a repository of content.

Why this matters

Keeping the protocol content-blind keeps it small, keeps it out of the business of hosting or licensing educational material, and avoids entangling it in the intellectual property, privacy, and moderation questions that come with storing actual content. It also means the trail can be verified and carried by the participant without dragging an entire library of material along with it.

What this mechanism does not do

- It does not judge the content of what was learned.
- It does not prevent fabrication of delta entries, the cost of fabrication is borne by the participant when a counterparty evaluates the trail, per Section 3.4.
- It does not provide a way for third parties to write entries into a participant's trail on their behalf.

3.4 On-demand trust

Function

Trust in a participant's record is not provided by the protocol. When an employer, institution, or collaborator needs to evaluate someone's demonstrated capability, the participant presents their trail, and the evaluator decides for themselves how much weight to give it and by what method to check it.

The burden of making the record legible rests with the participant; the standard of proof is set by whoever is evaluating it. The protocol facilitates neither side and judges neither.

Why this works

It scales the depth of verification to the stakes of the decision. A casual collaboration needs little; a hiring decision for a safety-critical role needs more. It also removes the need for a central verifying authority that could become a chokepoint, a rent-collector, or a target for capture, the same single point of failure that makes today's degree-verification services slow and expensive.

What this mechanism does not do

- It does not provide tools for evaluating trails, those will emerge in the surrounding ecosystem.
- It does not protect an evaluator who does a poor job of checking a record from being fooled by a sophisticated fabrication.

4. What the Protocol Deliberately Omits

This section is as important as the previous one. The omissions are not gaps to be filled later. They are constitutive.

- Educational content itself. The protocol never stores the objects, only the record that engagement with them occurred.
- Grades, scores, or competence rankings. What a record is worth is for the evaluator to decide.
- Accreditation or degree conferral. The protocol issues nothing; its sole purpose is to record.
- Curriculum or content recommendations. The protocol has no opinion on what is worth learning.
- Content moderation of educational material, since it never holds that material in the first place.
- Dispute resolution between learners, institutions, or evaluators.
- Default learning tools or platforms. Tooling for actually delivering education is ecosystem work, not protocol work.

5. Threat Model

The protocol's design anticipates specific failure modes. The working group should understand each, because each represents a pressure point where the protocol may be asked to compromise its principles.

5.1 Capture by the already-credentialed

The default failure mode of any alternative credentialing system: people already comfortable inside the existing pipeline, well-resourced students, established institutions, adopt it first and shape its norms around themselves, leaving it formally open but substantively serving the already-credentialed.

The protocol's defense: bounded interactions, individual binding, and the refusal to weight institutional prestige into the record itself; a completed object from an unaccredited self-study path and one from a recognized university are recorded identically. Residual risk: evaluators may still culturally prefer familiar institutional names when reading trails. The protocol cannot police that preference, only refuse to encode it structurally.

5.2 Co-option by the legacy education system

When the protocol becomes useful, universities and credentialing bodies will not resist it; they will adopt its aesthetics, their own "verified transcript" products, their own portable-record initiatives, folded back into the existing gatekeeping structure.

The protocol's defense: there is little of substance to absorb. It does not hold content, does not confer credentials, and does not compete for enrollment. What can be imitated is the appearance, not the underlying commitment to recording delta without judgment. The working group should expect imitations and should not treat their existence as a threat requiring a response.

5.3 Credential creep

Communities and employers relying on the protocol's trails will develop their own criteria for what a "good" trail looks like, and some of these will harden into informal new gates, the same dynamic the protocol was built to route around. The protocol cannot prevent this in the ecosystem built on top of it. It can only refuse to participate in it at the protocol level: no protocol-issued scores, no protocol-endorsed thresholds, no built-in notion of a qualifying record, ever.

5.4 Pressure to add content judgment

Every dispute over a low-quality object, a misleading course, or a fabricated interaction will generate calls for the protocol to step in, to flag, verify, or rate content or claims. The answer is always no. The protocol records the delta; it does not evaluate the substance behind it, because it never has access to that substance in the first place. Holding this line will require the working group to repeatedly explain that the protocol's refusal to judge content is what keeps it usable by people learning outside any recognized institution's supervision.

5.5 Sophisticated fabrication against naive evaluators

A fabricated trail, claimed interactions that did not meaningfully occur, will fool an evaluator who does not check carefully. The protocol does not protect against this; it shifts the cost of verification to whoever relies on the record. Mitigation lives in the ecosystem: better verification tooling, attestation norms between counterparties, and evaluator education, not in the protocol itself.

5.6 Residual centralization in the substrate

Whatever system holds the immutable trail is the protocol's actual hard core, regardless of how decentralized the surrounding rhetoric is. Its implementation determines the real centralization risk, who can alter it, who can deny someone access to their own record, who could be pressured to censor a trail. The working group should treat this as the one design question that cannot be outsourced or deferred.

6. Open Questions for the Working Group

The following are deliberately left open. They require collective decision, not authorial fiat.

- What exactly counts as a recordable delta versus content that must stay off the trail? The line between "an assessment was passed" (delta) and "the assessment questions and the participant's answers" (content) needs precise, defensible definition.
- What is the periodic budget, if any, on recorded interactions beyond the per-session cap?
- How is the substrate that holds the trail implemented, and who bears the centralization risk described in Section 5.6?
- How is individual binding established without requiring a heavyweight identity system that itself becomes a gate?
- What is the first useful object type and first useful evaluator relationship to bootstrap the system at small scale, before network effects exist?
- How does a participant's trail interact with existing institutional transcripts and degrees during the period where both systems operate side by side?
- Should reports of an adverse incident be recordable as a first-person delta on the reporter's own trail (naming a counterparty, without writing to or altering the counterparty's trail)? If so, what minimal fields does such a delta need (date, counterparty, associated interaction), and should the named counterparty have a symmetric right to file their own first-person account of the same interaction? This mechanism would be structurally distinct from third-party annotation, which remains excluded under Section 3.3, but it introduces a new delta type and a new question of how non-individual counterparties (institutions) accumulate a queryable record at all.

7. Framing for Decision

The working group is being asked to decide what this protocol actually is. The principles in Section 2 and the mechanisms in Sections 3 and 4 form a coherent design: each piece supports the others, and removing any of them weakens the rest, in particular, the commitment to recording delta rather than content is not a storage optimization; it is what keeps the protocol out of the business of judging, hosting, or licensing educational material at all. The open questions in Section 6 are the real design space.

Three closing observations are worth holding while deciding.

First: the discipline of this design is in what it refuses to do, and especially in what it refuses to store. A protocol that only ever holds a shape, a delta, has almost nothing for anyone to seize, subpoena, moderate, or monetize on the content side. The smaller the footprint, the smaller the surface for capture.

Second: the protocol does not replace learning, teaching, or institutions. People will go on learning largely as they already do. What changes is that the record of it becomes theirs to carry, rather than something they must re-earn from scratch at every new door they knock on.

Third: framed at its widest, this is a bet that demonstrated knowledge can become a more directly recognized and portable form of value than it currently is, not a replacement for existing economic systems, but a quieter complement to them, worth building carefully rather than loudly.

End of working specification.

Comments, objections, and proposed revisions should be brought to the working group.