LIGAVAR

The Deontic Architecture

Synopsis of a reference architecture that keeps the duty owed to a person attached to the records that describe them, and to everything derived from those records

Document	Synopsis of The Deontic Architecture and Ligavar
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0.1	19 October 2026	First release draft

Where the duty to a person is lost

Personal information is well protected while it sits in storage and while it crosses a network. It is poorly protected while a system computes on it, and it is almost unprotected once the computation has produced something new. A credit score, a risk flag, an eligibility result, an embedding and a model trained on a person's records are each a fact about that person that was never collected from them. Privacy law attaches to information that was collected. The derived fact carries none of the obligations that bound its sources, and the dispute rights in the instruments the architecture was reviewed against reach the recorded fact and stop there. A person can have the address on file corrected and still have no way to contest the score that was built on the old one.

The Deontic Architecture places the loss at four seams. At the first, from collection to use, the basis on which data was collected stops constraining what is inferred from it. At the second, from use to transformation, the inference is produced with no record linking it to the duties on its sources. At the third, from transformation to re-use, the derived artifact is shared or sold onward without its lineage. The fourth runs across the other three: a dispute right lets a person fix the record and never reaches the model built on it.

What the architecture requires

The duty owed to a person is a property of the data, not of the state the data happens to occupy. The architecture binds that duty to the data so that it survives storage, transmission, computation, derivation and disclosure. It governs any authoritative record holding personal private information about identifiable persons, whether a public body or a private organisation holds it. A provincial registry,

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a health record, a motor-vehicle credential and a credit bureau file are the same kind of object, a record about persons that is fed by furnishers and consumed by relying parties, and the same duties apply to each. It governs all algorithmic derivation on those records, from a deterministic scoring rule to a frontier model, so that an argument about what counts as artificial intelligence cannot take a system out of scope.

Two positions are held throughout. The person a record describes is its raw material and the relying party is its customer, so the duty to the integrity and contestability of the record exists whatever the commercial or administrative relationship. And the two hardest properties, honest harm-flagging at the moment of use and resistance to capture, are written down as requirements so that the specification states where its own frontier lies.

Five constructs and the properties they realise

The architecture adds five constructs to protections that already exist and replaces none of them. Within each data state it adopts the established standards by reference: ISO/IEC 27001 and NIST SP 800-53 at rest, TLS 1.3 in transit, trusted execution environments and attestation in use, ISO/IEC 18013-5 and W3C Verifiable Credentials for selective disclosure. It specifies new requirements only at the seams. Six properties follow from the seams: a continuous duty model, provenance and lineage, contestability of the derived, collective authority as a primitive, honest harm-flagging, and anti-capture by construction.

Construct	What it does	Property realised
Subject Duty Envelope	Binds permitted purposes, legal basis, authority, retention, contestation locus and security classification to each datum. Anything derived from the datum inherits a composed envelope.	Continuous duty; collective authority
Derivation Ledger	Records how each derived artifact was produced and from which sources, so that no inference exists without a line back to the duties on its inputs.	Provenance and lineage
Use-Moment Gate	Evaluates the envelope when data is used. On uncertainty it refuses and discloses the refusal and its reason. It never proceeds silently and never blocks silently.	Honest harm-flagging
Contestation Locus	Extends the dispute right from the record to the derivation. Correcting a source flags every downstream derivation for re-derivation.	Contestability of the derived
Governance Mesh	Splits authority over privileged actions, so that no single party can silently change a purpose, disable contestation or exfiltrate data. Privileged actions publish to a transparency log.	Anti-capture by construction

Collective authority

Where a record concerns First Nations, Inuit or Métis individuals, communities or lands, the envelope carries collective authority as a first-class field and the gate evaluates it at the moment of use. Individual consent does not satisfy a collective-authority term: a use that a person has agreed to and that the community's authority forbids is refused. The architecture draws on the OCAP and CARE principles and on UNDRIP, and writes them as requirements the system tests.

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OCAP is a registered trademark of the First Nations Information Governance Centre. The architecture draws on the principles the mark designates. No claim of conformance with OCAP, or of endorsement by the Centre or by any Nation, is made for the architecture or for any product.

Capture, and what the design does not claim

The specification does not claim to remove lawful authority to change a record's purposes. It instruments that authority. Every purpose change, whether by ministerial direction or by delegation, is an express, recorded and attributed act, and a statement of what the change newly permits is produced before it executes. Delegated changes also require two independent authorizers.

The limits are stated in the specification and repeated here. The duty travels only as far as conforming environments reach. Data can be gated cryptographically to decrypt only inside a conforming gate, but a determined recipient outside the boundary who obtains plaintext can still misuse it. The architecture raises the cost of that misuse and leaves evidence of it. It does not make misuse impossible, and for that reason it is proposed as a procurement and interoperability requirement and not as a technical guarantee. The harm check at the gate is bounded by the capability of the model that performs it, so the gate degrades into refusal with disclosure when detection is uncertain. That is mitigation, and the specification says so. Who holds the shares of authority over privileged actions, and how an Indigenous data-governance authority is constituted in practice, are questions of institutional design that the specification identifies and leaves open. Full enforcement at every use moment is costly, and the specification tiers it by sensitivity.

Conformance

Conformance is staged because the constructs differ in maturity. Level 1, Custodial, requires envelopes present and enforced at access, a ledger recording derivations, and contestation of records. It is achievable with current technology. Level 2, Continuous, adds the gate running in a trusted execution environment, duty composition into derived artifacts, and contestation that reaches derivations, and it depends on confidential computing maturing. Level 3, Anti-capture, adds the Governance Mesh with distributed authority, and it depends on institutional design as much as on technology. A purchaser can require Level 1 today and commit to the trajectory.

Conformance is verified against the conformance tests and is never self-declared. The only permitted form of statement is this: *[System] was assessed on [date] against the [Custodial, Continuous or Anti-capture] conformance level of The Deontic Architecture, Publication Rev [x], by DSarchitek Inc. The result is published at [location].* No system has yet been assessed against any level.

The specification and Ligavar

The Deontic Architecture is the specification, at Publication Rev 1.0. It comprises seven documents: the project charter, the scope and standards foundation, the reference architecture spine, a model procurement clause, an ontology, taxonomy and crosswalk to the federal instrument set, a review of comparative leading practice, and model business requirements. The procurement clause and the business requirements are written to be lifted into a request for proposals or a requirements baseline, each requirement paired with the test that shows it has been met. The specification is proprietary and available under licence.

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Ligavar is the name of the implementation, of the sovereign infrastructure it is designed to run on, and of the conformance regime. It is built Canada first, with an abstraction layer that makes the core portable to other orders of government and other countries. Ligavar is in design.

Where adoption costs least

Classification answers who may see a record and under what safeguards. The envelope answers purpose, authority and contestation. A system that must carry a security classification already needs a metadata scheme for it, and the envelope rides the same scheme, so the two are assigned in one act at design time. Added to a system after it is built, the same envelope is a rebuild. A buyer who wants the duty to follow its data should put the requirement into the baseline of the system it has not yet built.

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