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VIJAYA BESTOWS VICTORY

HOW WE DO IT • DESIGN DOCUMENT • MAY 2026

From Farm to Consumer, Every Step on Record

How VVF builds traceability for medical cannabis on Community Digital Infrastructure: a network of independent circles, vouched for by the institutions that already license them.

The idea in brief

A product can be trusted when every party that touched it has put its part on record, and when someone independent has vouched for each party.

VVF does not build one large platform that everybody must join. It connects the groups that already exist, the farms, processors, laboratories, manufacturers and doctors, each keeping its own records and rules, through a shared architecture called Community Digital Infrastructure (CDI).

- **Each group is a Circle** with its own identity on the network.
- **Each claim is backed by a Trust Provider:** the authority that licensed the farm, accredited the lab or registered the doctor.
- **Each batch carries one record** that every step adds to and nobody can quietly rewrite.
- **AI reads the record; people make the decisions.**

1. Why Community Digital Infrastructure

CDI is shared digital infrastructure that lets communities organise economic activity. It is infrastructure, not an application.

Its reference architecture, NEST Networks, was designed for exactly this kind of problem: many small, independent parties who must coordinate without handing control to a central owner. Three of its principles shape VVF's design.

Nested Networks

Communities stay autonomous and connect through shared protocols. A district's growers do not join "VVF's system". They run their own circle, which connects to others.

Cloud to Ground

Intelligence can be global; trust is local. Analysis happens across the whole network, but each record is made where the work happens, by the people who did it.

Trust by choice

No single authority vouches for everything. Each circle is vouched for by the institution that is competent to do so.

2. The network: circles, not a platform

In NEST, any group that works under shared rules is a Circle, and every Circle has a globally unique CircleID.

CIRCLE	WHO IS IN IT	WHAT IT GOVERNS
Farm Circle	Licensed cultivators in a district	Cultivation practice, harvest batches
Processing Circle	Extraction and processing units	Handling and extraction records
Lab Circle	Testing laboratories	Test methods and reports
Manufacturer Circle	Licensed makers of formulations	Formulation, packaging, labelling
Practitioner Circle	Doctors of Ayurveda and Western medicine	Prescribing and observation
Patient community	People who use the products	Their own data and consent

Circles nest. A district Farm Circle belongs to a state circle, which belongs to the national network. A manufacturer can deal with farm circles in several states through the same protocol.

3. Who vouches for what

A record is only as good as the party that stands behind it. NEST separates identity from trust: each claim is attested by a Trust Provider, identified by its own Trust Provider ID.

CLAIM	TRUST PROVIDER
This farm may cultivate	The state authority that issued the cultivation licence
This unit may manufacture	The drug-licensing authority that issued the manufacturing licence
This test report is valid	The body that accredited the laboratory
This person may prescribe	The medical council that holds the practitioner’s registration
This party is a network member in good standing	VVF, under rules set by its members

VVF checks these attestations when a member joins and when they fall due for renewal. It does not replace any regulator.

4. The five steps, on record

Each batch has one record. Every step adds evidence to it, and each handoff is confirmed by both the party giving and the party receiving.

STEP	WHAT GOES ON RECORD	VOUCHED FOR BY	WHAT THE NEXT PARTY SEES
1. Farm	Licence, plot, strain, sowing and harvest dates, harvest weight	Cultivation licence	A verified batch with a known origin
2. Processing	Batch received, method, input and output weights	Processing licence	What was done to the batch and what came out
3. Lab	Sample taken, test report for potency and purity	Lab accreditation	Pass or fail, with the report attached
4. Manufacturer	Formulation, product batch number, label and pack	Manufacturing licence	Which source batches are in this product
5. Doctor and consumer	Prescription reference and dispensing, with consent	Medical registration	The product's full history, by scanning the pack

The record is anchored on a blockchain ledger, which makes it tamper-evident: a later change to any step would be visible to all. The documents themselves stay with the circle that made them.

5. The three layers underneath

The network runs on the CDI three-layer architecture. Different people use different workbenches, and all of them work on the same record.

Experience layer

Where people do their work: a workbench for each role (grower, processor, lab analyst, manufacturer, doctor), a scan-to-verify page for consumers, and an AI assistant.

Core services layer

The shared building blocks every circle uses:

- **Identity:** members, CircleIDs and Trust Provider attestations.
- **Workflow:** the handoffs between steps.
- **Documents and evidence:** licences, batch sheets, test reports.
- **Consent:** who may see what.
- **Audit:** who recorded or changed what, and when.

- **Integrations:** the ledger, laboratory systems and regulators' registers where available.

Intelligence layer

Turns the network's activity into knowledge it can use: the memory of every batch, analytics across circles, and learning loops that feed back into cultivation and formulation.

6. AI, with humans in command

AI makes the record usable. It does not make the decisions.

AI DOES	A PERSON DECIDES
Reads uploaded licences, batch sheets and lab reports into structured records	The member confirms the record is right
Flags gaps, mismatched weights and expired licences	A VVF reviewer accepts, queries or rejects
Finds patterns across strain, method and test results	Growers and manufacturers choose what to change
Summarises a product's history for the doctor	The doctor prescribes

7. Consent and privacy

Patients are members of the network, and their data is theirs.

- A product's history is open to whoever holds the pack. A patient's history is not.
- Prescribing and outcome data are shared only with the patient's consent, and consent can be withdrawn.
- Research uses data with identities removed.
- Each circle keeps its own commercial records; the network sees only what traceability requires.

8. How it grows

Infrastructure grows one community at a time.

1. **Start with one chain.** One farm circle, one lab, one manufacturer and a small group of doctors, tracing real batches end to end.
2. **Learn from use.** Find where the record is hard to keep, and simplify it.
3. **Fix the standard.** Publish the batch record and handoff protocol so others can adopt them.

4. **Connect the next circle.** Add districts, then states, each running its own circle on the same protocol.

9. Where we are

This is a design document. It describes how VVF intends to build traceability, not a system that is live today.

Members who join now help define the batch record, the handoff protocol and the rules of each circle. Manufacturers and physicians can apply through the form on our website.

Apply at thevvf.org.

Further reading

Community Digital Infrastructure and NEST Networks are set out in “Community Digital Infrastructure: Building the Local Layer of the Internet” by Anup Pai, co-founder of VVF. Ownership and governance of the VVF network are covered in the [VVF whitepaper](#).

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