

ENTINET — The Decentralised, Mesh-Native, User-Owned Internet

Abstract

ENTINET is a fully decentralised, cryptographically verified alternative to the traditional internet.

Unlike the existing internet — dependent on centralised servers, DNS systems, telecom operators, and government-controlled backbone infrastructure — ENTINET is a self-assembling, radio-mesh global network powered by ENTIFY devices.

The ENTINET architecture combines:

- Mesh-native radio communication
- Location-aware consensus (Proofless Mesh Ledger)
- Decentralised storage hosted on ENTIFONE and ENTILAP devices
- Self-sovereign identity required for access
- NFC-based secure interface between devices
- High-resilience, censorship-proof, surveillance-proof communication channels

ENTINET is not a layer on top of the internet.

It is a replacement — independent, unstoppable, and collectively maintained by its users.

1. Motivation

The traditional internet suffers from:

- Centralised chokepoints
- Government control
- ISP gatekeeping
- Surveillance infrastructure
- DNS hijacking
- Corporate server failure
- DDoS vulnerabilities
- Single points of storage (cloud providers)
- Identity fraud

- Metadata tracking
- Censorship

ENTIFY already solves identity, cryptography, communication privacy, and asset verification.

ENTINET extends this philosophy to all digital connectivity.

ENTINET ensures:

- No servers
- No single point of failure
- No corporate gatekeepers
- No governments controlling access
- No metadata exposure
- No central backbone
- No cloud provider to trust
- No DNS to hijack
- No middlemen ever

2. ENTINET Architecture Overview

ENTINET is built on three core layers:

2.1 The Mesh Transport Layer

Every ENTIFONE and ENTINET-enabled laptop acts as:

- a radio node
- a router
- a repeater
- and a verifier

using long-range, low-power peer-to-peer communication.

The mesh uses multi-band architecture:

- sub-GHz low-band for long distance
- 2.4/5 GHz for high bandwidth

- ultrasonic audio fallback
- NFC for cryptographic handshake
- Bluetooth LE for proximity detection
- Laser/IR line-of-sight for extreme cases

Every device can communicate with neighbouring nodes without any tower, ISP, or internet.

2.2 The Proofless Mesh Ledger (PML)

Consensus is achieved not with blocks, mining, or stakes — but by radio-verified location and proximity.

Nodes confirm each other's existence and message propagation through cryptographic mesh interactions.

This gives:

- zero mining
- zero proof-of-work
- zero staking
- infinite scalability
- instant transaction propagation
- no fees
- no bottlenecks
- no chance of 51% attacks

2.3 The Decentralised Storage Layer (“ENTICLOUD”)

Every ENTIFONE includes 1–5 TB of encrypted storage.

Every ENTILAP (ENTIFY laptop) includes 5–20 TB.

Every ENTISTATION (home node) includes 10–100 TB.

Data is:

- encrypted per user
- split into fragments
- distributed redundantly across mesh nodes
- self-healing
- instantly retrievable

- physically location-independent

This creates a global decentralised cloud, unstoppable even if entire regions go offline.

3. ENTIFY Devices and Roles

3.1 ENTIFONE

The primary personal node of ENTINET.
Functions include:

- Mesh transceiver
- Identity vault
- 1–5 TB decentralised storage
- Peer-to-peer router
- ENTICARD interface
- Secure communication module
- Validation node

Every user becomes a node.
Every node strengthens the network.

3.2 ENTILAP (ENTIFY Laptop)

A high-storage, mesh-native laptop designed to interact with ENTIFONE and ENTICARD via NFC and radio mesh.

Functions include:

- Large storage node
- Compute node for mesh indexing
- Decentralised app hosting
- Local development environment for ENTINET-native software
- Industry-grade storage for businesses

3.3 ENTICARD

Acts as:

- identity root

- private key vault
- ultimate recovery device
- cold storage identity module
- emergency authentication token

The card interacts with ENTIFONE or ENTILAP through NFC to sign:

- identity activations
- asset authentication
- transaction approvals
- high-level system operations

4. ENTINET Services & Applications

ENTINET is not just an alternative internet — it is the foundation for industry-grade decentralised services.

Below are examples.

4.1 ENTIMAIL — Mesh-Native Private Email

- Fully encrypted
- Zero servers
- Zero metadata
- Operates entirely on the mesh
- Delivers instantly through nearby nodes
- Stores redundantly
- Impossible to trace

4.2 ENTIMESSAGE / ENTICALL

- Peer-to-peer messaging
- Zero metadata
- Self-routing through the mesh

- Identity-verified
- No numbers, SIM cards, or phone companies
- No international fees
- No interception possible

4.3 ENTINET for Finance

All financial data lives across decentralised storage:

- Asset certificates
- Gold-backed ENTOKEN ledger
- Transaction histories
- Insurance evidence
- Jury decisions
- DAO votes

Banks cannot censor access.

Governments cannot freeze accounts.

No cloud server can be hacked.

4.4 ENTICLOUD for Industry

Industries can operate entirely inside ENTINET without touching the conventional internet.

Examples:

Healthcare

- Decentralised medical records
- Identity-secured access
- Doctor–patient private communication
- Hospital mesh clusters

Real Estate

- Verified property records
- Mesh-verified valuations
- Tokenisation infrastructure

- Transfer records stored across ENTINET

Automotive

- Car identity on ENTINET
- All keys, ownership logs, repairs, insurance files stored decentralised
- Authentication via ENTIFONE tap

Media & Entertainment

- Artists can publish directly to users
- No central platform
- No censorship
- Micropayments in gold-backed ENTOKEN

Government & Public Sector

- Digital voting
- Public registries
- Land records
- Identity systems
- All decentralised and unfalsifiable

5. Network Access Control — Identity is Mandatory

Unlike the open internet, ENTINET is restricted:

Only verified ENTIFY identities can connect.

This ensures:

- no bots
- no fake accounts
- no spam
- no trolling
- no social engineering

- no anonymous mass manipulation
- no botnet attacks

ENTINET is a human-only network.

Every node is a real person
with a real identity
verified by affidavit, biometrics, autograph, magic symbols, and ENTICARD.

This makes ENTINET the world's first network where:

everyone is real,
trust is native,
and attacks are extraordinarily difficult to perform.

6. ENTINET Resilience

ENTINET is designed to be:

- unshutdownable
- unseizable
- uncensorable
- power-efficient
- infrastructure-independent

Even if:

- a country disables the internet
- cellular networks go down
- ISPs collapse
- cloud servers are deleted
- submarine cables fail
- governments censor everything
- satellites are restricted

ENTINET continues.

Mesh nodes automatically reconfigure around outages.

This is the first civilian-grade communication and data network
that can survive full infrastructure failure.

7. ENTINET Storage Architecture

Data is stored using:

Content-Addressable Encryption (CAE)

Every data piece is encrypted before sharding.
Only the owner holds the keys.

Redundant Distributed Sharding (RDS)

Files are split into many fragments
and stored across dozens or hundreds of ENTIFONE/ENTILAP nodes.

Self-Healing Replication (SHR)

If nodes go offline, fragments are re-replicated automatically.

Geo-Optimised Distribution

The network stores fragments closest to where they are most used,
reducing latency and improving redundancy.

8. Possible ENTINET-Specific Applications

ENTIBANK

Full banking, lending, mutual credit, asset-backed minting —
all on a decentralised internet that cannot be shut down.

ENTI-ID Passport

A universal identity for travel, voting, employment, and contracts.

ENTI-Health

A private decentralised health network with authorised medical access.

ENTI-Work

The verified gig economy where real people provide real services and are paid in ENTOKEN.

ENTI-Research

Distributed scientific data storage for research institutions.

ENTI-Industry

Manufacturing supply chains recorded immutably across ENTINET.

9. Conclusion — A New Internet for a New Civilisation

ENTINET is not a competitor to the internet.
It is the successor.

A network that:

- cannot be censored
- cannot be hacked at scale
- cannot be surveilled
- cannot be controlled
- cannot be shut down
- cannot be owned by anyone

It is a humanity-owned communication and data layer
built on the principles of ENTIFY:

- Self-sovereign identity
- Mathematical trust
- Physical asset truth
- Decentralised justice
- Mesh-verified confidentiality
- Human-centric cryptography

ENTINET is the backbone of a new digital civilisation —
one where truth, privacy, and authenticity are built directly into the infrastructure itself.