



OpenSight

THE OPENSIGHT FOUNDATION

Making the physical world visible.

Our Founding Story

How OpenSight began, what we decided, and why it is open

The OpenSight Foundation

September 2026

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Why this document exists

OpenSight began with a simple question and a stubborn problem. This is the story of how one led to the other, and why we decided the answer should belong to everyone.

We are publishing our founding story because openness is the point. Anyone who joins OpenSight, whether as a contributor, a council, a contractor, a researcher or a sponsor, should know what was decided before they arrived, why, and what is still open for them to shape. A fuller technical record with every decision and reference sits behind this document and is available on request.

1

SEE

Capture the physical world.

2

SHARE

Make observations accessible.

3

ENHANCE

Add intelligence, context and insight.

4

CREATE

Build value together.

1. A question about potholes

In September 2026, after more than a decade inside Australian road maintenance contractors, Clynton Husband asked a practical question. Could the street-level imagery already sitting on Mapillary be used to find road defects, and would it help to contribute imagery as well?

The short answer was yes. Mapillary allows commercial use, lets organisations capture a road as often as they like, and offers an API to get imagery back out. The more useful answer was different. Finding a pothole in a photograph is no longer hard. The hard and valuable thing is keeping a regular record of every road, so that you know what has changed since the last drive and can prove it.

| *The useful question is what has changed on this road since we last drove it.*

That shift, from detecting defects to keeping a continuous record of the road, is the founding idea of OpenSight. Everything that followed came from taking it seriously.

2. The road we already drive

Roads are not neglected. Inspectors drive them constantly, on strategic routes sometimes twice a week, looking for hazards and defects. Every year or so, or every few years, the road authority or its contractor also commissions a comprehensive condition survey: specialist vehicles with LiDAR, deflection equipment, roughness and rutting profilers and high-resolution imagery. Those surveys are excellent and expensive, and they produce a snapshot.

The gap sits between the two. The routine drives happen all the time but leave almost no lasting digital record, because the inspector sees the road and moves on. The comprehensive survey leaves a superb record, but only every year or three. Nobody has the week-by-week digital picture of the network that you would need to know what changed, when, and whether the repair held.

Clynton had watched this gap up close. From 2013 onward, while working for four different organisations, he worked with camera-system vendors, in-house teams and consultants, each time trying to turn those routine inspection drives into a regular image record. Each time the same thing happened. The capability was built or bought for one contract, every vendor had a competing version, and when the contract ended the capability and its data ended with it.

| *The contract should end. The data shouldn't.*

The market for this is real but small. In his judgement it is too small for ordinary commercial forces to innovate and commoditise, so the technology keeps being rebuilt and never accumulates. OpenSight exists to do the two things that never quite get done. First, make the regular ingestion of road imagery cheap and ordinary, so that every routine drive leaves a record. Second, put that growing record to work: defect and hazard inspection, condition tracking, verifying repairs, planning the next comprehensive survey, and uses nobody has thought of yet.

3. Turning vehicles into sensors

The proposition is easy to state. A low-cost open device (a Raspberry Pi, a dash camera, a GNSS receiver, a modem and an SSD, costing a few hundred dollars rather than a hundred thousand) rides along in a vehicle that is driving the roads anyway: an inspector's ute, a patrol vehicle, a council truck. It captures georeferenced imagery on every trip, keeps working when there is no mobile coverage, uploads when it can, and publishes openly.

You do not need the device to take part. Anyone with a dashcam or a phone, whether an inspector, a council worker or a commuter, can contribute imagery straight into Mapillary today and OpenSight will pick it up. The device simply makes contribution automatic and repeatable for the vehicles that drive the network every week.

The same is true of the software. The repositories are open. Anyone can take them, build on them, improve them and share what they make back. Contributions are reviewed, checked and, where they make the platform better, adopted into it, so the work of one council, contractor or developer becomes available to all of them.

Drive the same road twice a week and something new appears: a time series. A crack on the 26th. A crack and a failed patch on the 2nd. A pothole on the 9th. Larger on the 16th. Repaired on the 23rd. Still intact on the 30th. From that you can read current condition, the rate of deterioration, whether an intervention worked, and how much to trust what you think you know about any stretch of road.



We settled on three rules for the platform on day one, and they have not moved since.

- The fundamental record is an observation, meaning a georeferenced, timestamped capture with its positioning quality and provenance, rather than any particular camera's recording. Cameras are adapters.
- Mapillary is a partner and a distribution layer, not our foundation. Contributed imagery becomes open under CC BY-SA. The observation database and evidence archive stay under the control of whoever captured them.
- Source imagery, derived observations and private customer data are three different things, kept apart with their licences intact.

4. It already existed

Part way through these conversations Clynton mentioned that he had made "a sort of start" and might need to rebuild it from scratch. He then shared what he had built.

It was not a sketch. It was a working in-vehicle appliance: a Raspberry Pi that lives permanently in a car, pulls recordings from a dash camera, records centimetre-accurate RTK positioning, captures

georeferenced stills, buffers everything locally and uploads over home Wi-Fi. It keeps working across three tiers of connectivity, updates itself safely across a fleet with automatic rollback, keeps his own home out of anything published, and publishes to Mapillary. It had a web console, an API, fleet dashboards and GPS tracks you could open on a phone to see how long ago each stretch of road had been driven.

The decision was immediate. Do not start again. Roughly three-quarters of that engineering is the unglamorous part that usually kills projects like this. What needed rebuilding was the domain model around it, generalising a "BlackVue bridge" into an open edge appliance that any camera, any GNSS receiver and any organisation can use.

The first milestone

OpenSight Edge v1: an open vehicle appliance costing \$500 to \$1,000 that captures georeferenced road imagery on its own, publishes it openly, and keeps a local, offline evidence archive. Then, in order: import into an open observation database, defect detection, road-segment condition history, an authority and contractor dashboard, and finally many cameras, many manufacturers and many organisations.

5. Open by design

OpenSight is open source because roads are public infrastructure. It makes no sense for every authority, contractor and university to build the same underlying technology independently and then lock it inside a contract. Common tools, standards and datasets let universities research, councils experiment, contractors integrate, manufacturers build compatible devices, AI researchers contribute models, mapping communities contribute data, and companies build commercial products on top.

What is open

- Hardware: a reference design and build guide, not a mandated configuration.
- Software: from camera adapters and device management through to the map, the API and the AI pipeline.
- The Observation Schema: an open data standard for observations, imagery, positioning, road segments, assets, defects, condition, interventions and provenance. If this is right, others can build against it without using our software at all. It may be the most important thing we produce.

What open does not mean

Open source does not mean every dataset is free to redistribute. Imagery from Mapillary and others carries its own licence. Data an authority collects about its own network is theirs to keep private. Model training data built on third-party imagery is governed separately. Commercial services such as hosting, support, integration, analytics and models are welcome. Openness is meant to enable them, not prevent them.

Ten principles

Principle	In practice
Open by default	Core technology can be inspected, modified and reused.
Hardware agnostic	Any camera, any GNSS receiver, any edge computer.
Offline first	A vehicle keeps working with no connection at all.

Principle	In practice
Evidence first	Every conclusion traces back to an image and an observation.
Human-verifiable	AI supports inspectors. It never becomes an unchallengeable black box.
Standards based	Reuse existing geospatial standards before inventing new ones.
Privacy by design	Privacy zones, blurring, retention and access control are built in.
Cloud optional	Run it on your own infrastructure if you need to.
Vendor neutral	No camera, cloud, model or GIS platform controls the ecosystem.
Commercially compatible	Open should make commercial adoption easier, not harder.

6. From OpenRoad to OpenSight

The project was first drafted under the working name OpenRoad. As the discussion paper for collaborators took shape, the ambition kept outgrowing the word. The same appliance, schema and principles apply to footpaths, signs, drains, street furniture, vegetation and bridges: to the physical world rather than the carriageway alone. Roads remain the first domain and the proof case.

A search of the Australian business register found no entity associated with "OpenSight". The name was adopted, the organisation named The OpenSight Foundation, and the purpose written in a sentence we still use.

OpenSight is an open, public-interest initiative creating the common infrastructure for capturing, sharing, enhancing and understanding the physical world.

Four verbs fell out of that sentence and became the way we describe what OpenSight does. See (capture the physical world), Share (make observations accessible), Enhance (add intelligence, context and insight) and Create (build value together). The tagline followed naturally.



The identity, an open aperture with a beam of information released outward in Open Green and Deep Navy, was developed on 12 September 2026 along with a first production asset pack. It is a working identity. Trademark registration and final design refinement are still ahead of us, which is why you will see OpenSight™ rather than ®.

7. Where we are now

At the very beginning, and we would rather say so plainly. As at September 2026, OpenSight is one founder, one prototype vehicle in Sydney, a set of decisions, a discussion paper and a brand. The OpenSight Foundation is not yet a registered company. The intended structure is The OpenSight Foundation Ltd, an Australian public company limited by guarantee, and charity registration will be sought once it exists. Until then there is no board, no bank account and no tax-deductible status, and nothing on this site should be read as claiming otherwise.

The website is live now, before any of that is settled, for a reason. It exists to share progress as it happens, decisions included, and to gather three things: support, funding and contributors. We would rather build in the open from the first week than appear one day with a finished product and ask people to trust it.

OpenSight is meant to be community built and community driven. The founder started it, but the intention is that the schema, the hardware, the software, the defect taxonomies and the governance are shaped by the councils, contractors, researchers and developers who use them, and that the Foundation exists to hold the work in common rather than to own it. Its future will depend on donations, grants and the time of people who think this is worth doing.

The first demonstration

We are starting small on purpose. One vehicle drives a defined road network repeatedly. The system captures imagery, records where it was taken, uploads it openly, keeps its own record, detects a handful of defect types, places them on a map, and does it again next week. The story we want to be able to tell is this.

The pothole story

A pothole appears. The system detects it. The vehicle drives past again and the system recognises the same pothole, and that it has grown. A crew repairs it. The next pass confirms the repair. That sequence proves the proposition better than any architecture diagram.

What we are working on next

- Incorporating the Foundation, registering the business name and securing the trademark.
- Defining the Observation Schema and opening the repositories.
- Turning the prototype into OpenSight Edge, with a documented reference build and bill of materials.
- A short sponsor prospectus with a concrete ask.
- Choosing the first road network and starting the repeat passes.

8. An invitation

OpenSight is an experiment in what happens when road authorities, contractors, researchers, technology companies and open-source developers share one technical foundation instead of rebuilding it separately. We do not yet know the answers to some important questions: what the minimum vehicle should cost, which defect classes matter most, how AI performance should be independently validated, how the project should be governed. We would rather answer them with you than for you.

If you build hardware, write software, work in GIS, train models, manage roads, run a research group, or can lend vehicles, cloud capacity, equipment or funding, there is a place for you here. The site will show what has been done, what is being worked on and what is stuck, and you can join at any of those points.

We want to show that an affordable, open and repeatable system can turn ordinary vehicles into reliable road-observation platforms. If it can, the opportunity is considerably larger than roads.

opensight.com.au

About the founder

Clynton Husband has spent more than twenty years in civil construction and maintenance across Australia, New Zealand and the United Kingdom. Since 2009 he has held senior commercial, strategy and growth roles with Amey, Broadspectrum, Ward Civil & Environmental Engineering, Downer and Service Stream, including leading pre- and post-contract commercial management for Broadspectrum Transport across Australia and New Zealand and serving on the leadership team of the Eastlink Alliance.

From 2013 he worked repeatedly to bring vehicle-mounted camera systems into routine road inspection, alongside vendors, in-house teams and consultants while at four different organisations, and saw each effort stall at the end of a contract. In 2026 he built the vehicle appliance that became the OpenSight prototype, and founded The OpenSight Foundation to make the answer open. He lives in Sydney.

Key decisions at a glance

Decision	
1	The goal is a regular, ongoing digital record of the road, with commoditised ingestion first and then everything you can do with the data. It is not a pothole detector.
2	Open hardware, open software and an open Observation Schema. Third-party and private data are governed separately. Commercial services are welcome on top.
3	The observation is the fundamental record. Cameras are adapters. Mapillary is a partner, not a dependency.
4	Keep the existing prototype and generalise it into OpenSight Edge rather than starting over.
5	Start with one vehicle, one network and one convincing story.
6	OpenSight, The OpenSight Foundation Ltd (company limited by guarantee), opensight.com.au. Charity registration to follow incorporation.
7	Success is measured by adoption and usefulness before revenue.