

Reading water meters with *computer vision.*

For a South African water utility, 10decoders built an AI Vision solution that reads meter values directly from a photo or video — turning a slow, manual field task into an automated, auditable digital workflow.

Automated Reading

Computer vision reads digits from any photo

Phone-based Capture

No special hardware or field equipment needed

Full Audit Trail

Every reading backed by captured image

— AT A GLANCE

Client Profile

Segment	South African water utility (Utilities · Metering)
Capability	AI Vision · Computer Vision · OCR
Documents	Meter photos and short video clips from mobile devices
Stage	Demo / Proof of concept
Workflow	Capture → Detect meter → Read digits → Validate → Structured output

— THE CHALLENGE

Manual meter reading was slow, error-prone, and hard to audit.

Water utilities depend on accurate meter readings to bill customers and manage supply — yet most readings are still captured by field staff who travel to each meter, read the dial by eye, and transcribe the value by hand. Across a large, distributed meter fleet, that process is slow, costly, and prone to human error.

Varied meter types, shifting lighting, and inconsistent capture angles made results unpredictable. And without a captured image on file, disputed readings had no evidence trail to resolve them.

The bottleneck was consistency at scale.

Meter types, lighting, and angles made reads unpredictable — errors flowed straight into billing with no audit trail.

— CHALLENGE & APPROACH

From a manual field task to an *automated read.*

● The challenge

- ✗ Manual reading is slow and labour-intensive across a distributed meter fleet
- ✗ Hand transcription introduces errors that flow straight into billing
- ✗ Varied meter types, lighting, and angles make reads inconsistent
- ✗ No easy audit trail to verify a disputed reading after the fact

● Our approach

- ✓ Capture the meter with a standard phone camera — photo or short video
- ✓ Computer vision locates the meter and reads the digits automatically
- ✓ Low-confidence reads are flagged for quick human confirmation
- ✓ The captured image is retained as evidence for a clean audit trail

— WHY AI VISION

10decoders works at the image, *not the spreadsheet.*

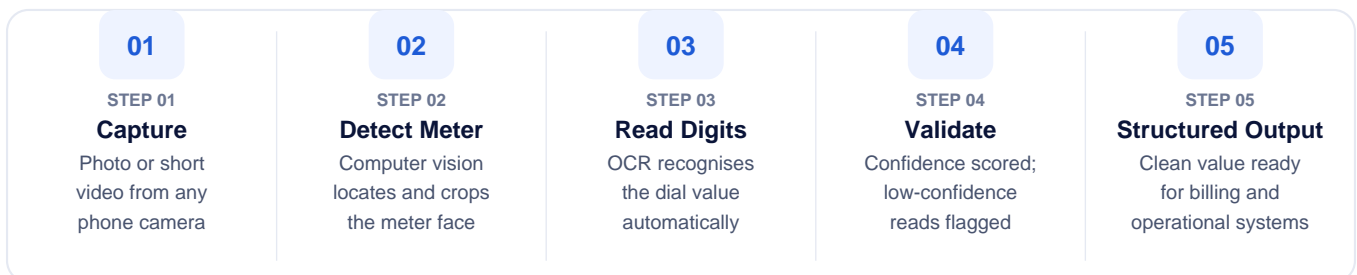
Most meter-reading workflows try to fix errors after the fact — through exception reports, billing disputes, or manual re-reads. 10decoders built a solution that works at the point of capture, reading the value the moment the image enters the system.

Instead of correcting a transcription error weeks later, operators now get a structured, validated reading the moment the photo is taken — while there is still time to recapture if confidence is low.

— HOW IT WORKS

The AI Vision *reading pipeline.*

A simple capture-to-reading flow that runs on everyday devices and returns structured, billing-ready output.



— WHAT IT DOES

Built for real-world *meter conditions*.



Reads the meter automatically

Computer vision detects the meter and recognises the dial digits from an ordinary photo — no special hardware required.



Handles varied conditions

Designed to cope with different meter types, lighting, and capture angles found in the field.



Flags uncertainty for review

Low-confidence reads are surfaced for a quick human check — keeping accuracy high where it matters.



Works from a phone

Field staff capture a photo or short video on a standard device — no specialist equipment to deploy or maintain.



Returns structured readings

Outputs a clean, structured value ready to flow into billing and operational systems.



Keeps an audit trail

The source image is retained alongside each reading, making disputed values easy to verify after the fact.

— WHY IT MATTERS

The value of an *automated read*.

Qualitative benefits from the proof of concept. Quantified field results can be added once measured at scale.

✓ Less manual effort

Removes hand transcription from the meter-reading workflow entirely.

✓ Fewer reading errors

Consistent digit recognition reduces the mistakes that reach billing.

✓ Scales across the fleet

A repeatable, device-based capture process scales to many meters without additional staff.

✓ Auditable & transparent

Image evidence behind every reading supports disputes, compliance, and audit.

— WHAT'S NEXT

A growing capability, *not a one-off demo.*

The proof of concept demonstrated in this case study is the foundation for a full production deployment. The engagement can expand to:

- Scaling to the full meter fleet as the solution moves from POC to production
- Expanding meter-type coverage to handle additional dial and digital formats
- Adding GPS tagging and meter-ID matching for fully automated field workflows
- Deeper integration with billing and order management systems for straight-through processing