



Core Image Manager

Import the box photographs, calibrate them to depth, segment the intervals and log structures directly on the image — with automatic alpha and beta angle computation.

- Group: Integration
- Cylindrical trace fitting
- 5 steps · 5 tabs
- 5 dedicated database tables

EXPORTED RECORDS

ID	PROJECT	HOLE ID	BOX#	FROM	TO	FILE	
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Executive summary

Core Image Manager ties the tray photograph to depth: calibration markers placed row by row let the depth of any point on the image be interpolated — so a log can be re-read without pulling the core out again.

01 What it replaces

The trip back to the core yard to check an interval, and the tray photograph filed away with no link to depth.

02 How it works

You place at least two markers per row — one start, one end — with the right row number. Interpolation between them gives the depth of every point.

03 Who it is for

The geologist revisiting an old log, the auditor checking a published interval, and the remote team with no access to the core yard.

2

markers minimum per row

1

marker pair per tray row

∞

re-readings with no core handling

JSONL

structural logging log

Contents

01 What the module is for

Turn the box photograph into measurable data, not an archive.

02 Import and organisation

Automatic filing by hole and box number.

03 Depth calibration

Amber markers, multi-row 2D interpolation, tray-bound detection.

04 Segmentation

Green rectangles that become depth-tagged intervals.

05 Structural logging

Traces drawn with the mouse, alpha and beta computed with a confidence score.

06 3D visualisation

Logged structures placed back into the hole's space.

07 Database tables

Five dedicated tables, from the image to the structural measurement.

08 Business value

The core stays consultable after it has left the site.



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SECTION I

The module

The problem addressed, the capabilities delivered, the processing chain and the module's place in the platform.

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- 01 Context
 - 02 Key capabilities
 - 03 Processing chain
 - 04 Place in the platform
-

Context

Core ends up in a shed, hundreds of kilometres away, and sometimes it disappears. The box photograph is the only surviving record — provided it can be used.

The module moves the photograph from archive to data: calibrated to depth, segmented into intervals, and carrying structural measurements.

Calibration turns pixels into metres

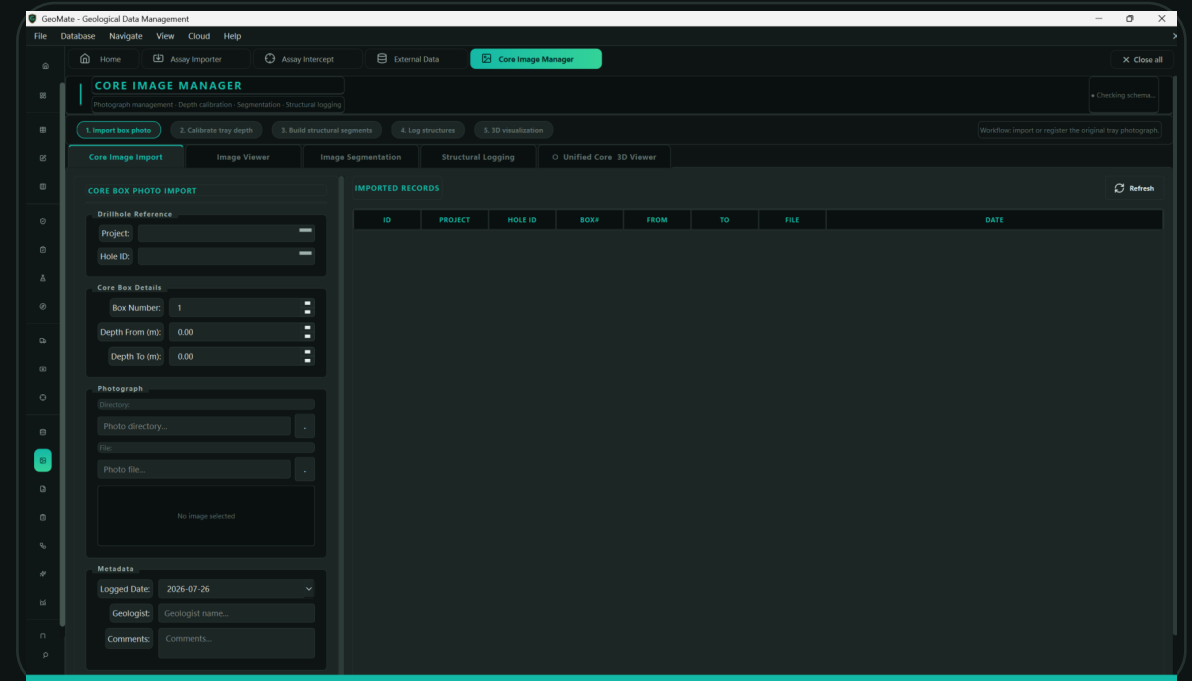
Amber markers placed at known depths establish the correspondence; 2D interpolation handles multi-row trays.

The structural trace is drawn

Click and drag along the vein, fault or foliation; cylindrical fitting derives alpha and beta from it.

Confidence is quantified

Every alpha probe returns a score from 0 to 1; below 0.5 the orientation is poorly resolved and the trace should be redrawn.



Place at least two calibration markers per row — one at the top and one at the bottom of each tray row. The more markers, the better the depth interpolation.

Key capabilities



01

Photo import

JPG, PNG or TIFF, filed automatically in the project folder by hole and box number, with bulk import and a progress bar.



02

Depth calibration

Amber markers pairing pixel and depth, with start or end type, and 2D interpolation for multi-row trays.



03

Automatic detection

Detection of the core-tray extent in the image, from 45 % confidence upwards.



04

Segmentation

Green rectangles defining depth-tagged intervals, with category and notes, re-croppable to span a full row.



05

Alpha and beta angles

Structural traces drawn with the mouse, cylindrical fitting, several alpha probe variants and a confidence score.



06

Unified 3D view

Logged structures are placed back into the hole's space for visual checking.

Processing chain

From the tray photograph to an interval locatable in depth.

A Inputs

Photographs and references

- Tray photographs, one or several rows
- Hole and depth range covered by the tray
- Row number for each marker pair
- The existing log to check against the image
- Company logo for the header band of the outputs

B Calibration

Markers and interpolation

- Start marker and end marker per row
- Correct row number on every pair
- Linear interpolation of depth along the row
- Re-reading an interval directly on the image
- Structured logging into `structural_logging_debug.jsonl`

C Outputs

Verification and reporting material

- Annotated image usable in a report
- Verification of an interval with no physical handling
- Visual support for remote review
- A photographic archive tied to depth
- PDF or PNG export with header band and logo

THE MARKER RULE

At least two markers are needed per tray row — a start and an end. If the box has several rows, each needs its own pair, with the correct row number. It is the number-one cause of wrong interpolation.

Place in the platform

FED BY

03 Data Entry

Supplies the log to check against the image, interval by interval.

— Tray photography

Systematic photography in the core yard, before destructive sampling.

13 Hole register

The hole / interval attachment that gives the calibration its meaning.



Core Image Manager

The hole's visual memory: it allows an observation to be revisited months later, without the core.

FEEDS

08 Structural Analysis

A doubtful measurement can be retaken on the photograph rather than on the core.

15 Audit Report Builder

The calibrated photograph is a verification exhibit independent of the log.

14 Report Builder

The annotated image illustrates an interval quoted in the report.



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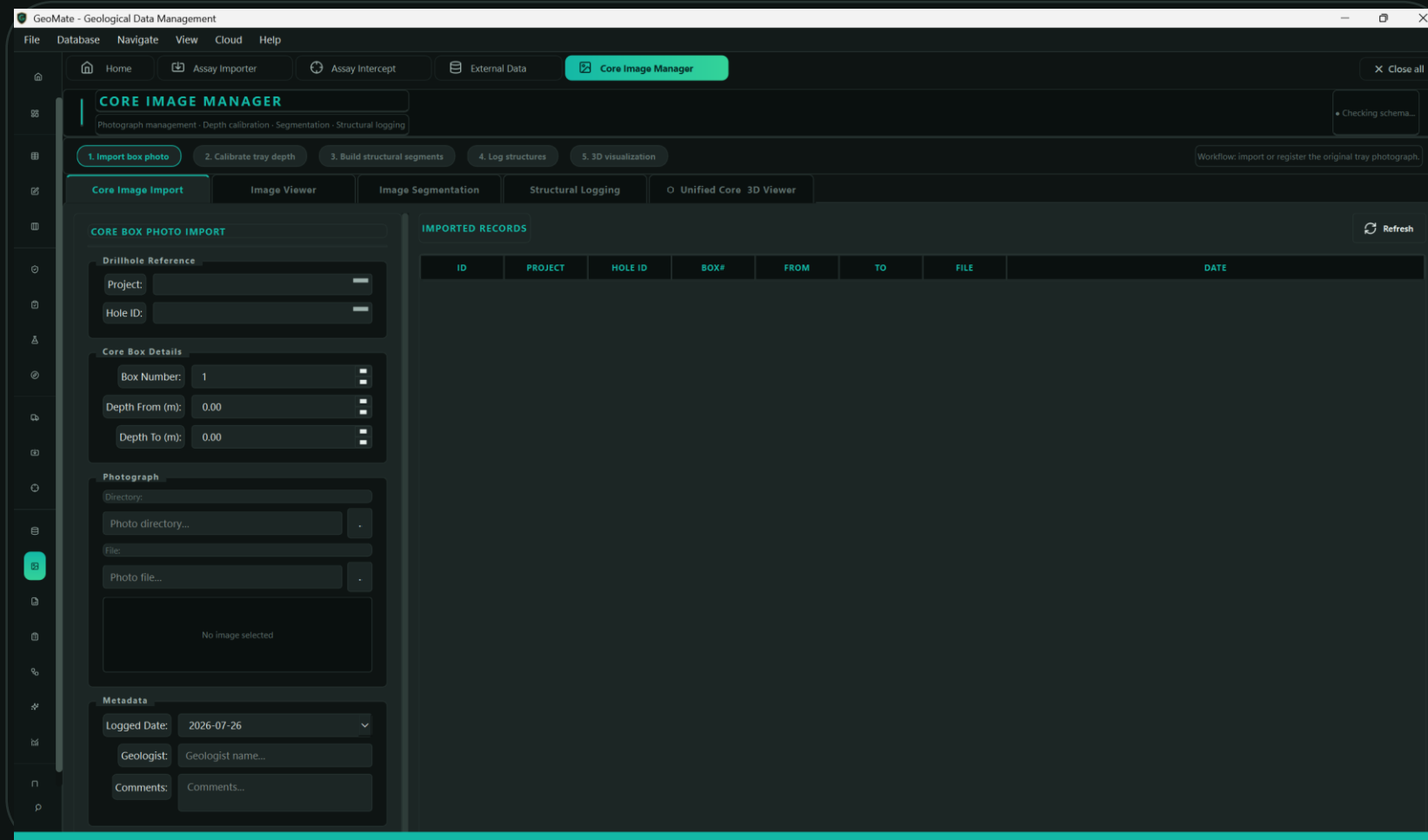
SECTION II

In practice

The real interface, the operating workflow, the reference settings, good practice and the questions that come up.

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- 01 The interface
 - 02 Operating workflow
 - 03 In depth
 - 04 Good practice
 - 05 Frequently asked
-

The interface



1 Step strip

Import the photo, calibrate depth, segment, log, visualise in 3D.

2 Five tabs

Import, viewer, segmentation, structural logging, unified 3D viewer.

3 Drillhole reference

Project and hole identifier, with box number and from/to depths.

4 Metadata

Logging date, geologist and comments attached to each photograph.

5 Imported records

Every registered image: project, hole, box, depths, file, date.

Actual GeoMate 2026 v2026.3.1.5 screen capture — Midnight theme.

Operating workflow

Six actions, from the camera memory card to the structural measurement.

1

Import

Every box photo of a hole, filed automatically by number.

2

Open in the viewer

Select the hole and box number; wheel to zoom, drag to pan.

3

Place the markers

At least two per row, with row, start or end type, and the known depth.

4

Save the calibration

The pixel-to-depth mapping is written to the database and becomes reusable.

5

Segment

Draw the rectangles over the intervals of interest, with their category.

6

Log the structures

Trace veins, faults and foliations; check the alpha confidence score.

The module's five steps

STEP	WHAT IS DONE	TABLE POPULATED
1 · Import	Box photos imported and filed by hole and by box	DHCoreImages · DHCoreBoxes
2 · Calibration	Amber markers placed at known depths, zoom and pan with the mouse	DHImageCalibration
3 · Segmentation	Rectangles defining depth intervals, category and notes	DHImageSegments
4 · Structural logging	Traces drawn on the segments, alpha and beta computed with confidence	DHStructuralMeasurements
5 · 3D view	Spatial rendering of the logged structures inside the hole	Read-only

Good practice

The conditions for a reliable calibration.

✓ Two markers per row, minimum

A start and an end. Below that, interpolation has nothing to work from and the depth read is wrong.

✓ The right row number on every pair

A multi-row box needs one pair per row, correctly numbered. This is the most frequent error.

✓ Photograph before sampling

Once the core is split, the image can no longer be retaken. Photography must come before destructive sampling.

✓ Constant photographic conditions

Same distance, same lighting, same orientation: comparison between trays only means something under constant conditions.

✓ Load the logo once

The logo picker feeds the header band of the PDF and PNG exports. Without it the band comes out with no identity.

✓ Check against a known depth

After calibration, read back a marker whose depth is certain: that is the check that validates the marker pair.

Frequently asked

The questions asked at calibration.

Q The markers do not interpolate correctly

At least two markers per row are needed — a start, an end. If the box has several rows, each must have its own pair with the correct row number.

Q The logo is missing from the PDF or PNG export

Use the Logo Picker in the Log Plot panel. Accepted formats: PNG and JPG; the image is scaled proportionally to the header band.

Q Where is the processing logged?

In `logs/structural_logging_debug.jsonl` — the debug log of image-based structural logging.

Q Does the photograph replace the core?

No. It allows an observation to be checked and discussed remotely; it replaces neither physical measurement nor assay.

Q How many rows per box?

As many as the box has — the constraint is not the number, but having one correctly numbered marker pair per row.

Q Can an old log be re-read?

That is precisely the use: revisiting an interval logged months ago without pulling the core back out of the yard.



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SECTION III

The data

What the module produces on a real dataset, and the vocabulary needed to read those results.

01 Anonymised data

02 Key concepts

Anonymised data

What the module brings to a campaign the size of KOUKOUDAN.

41 736 m

METRES TO PHOTOGRAPH

across the campaign's 805 holes

~8 350

CORE BOXES

at 5 m per standard box

5

DEDICATED TABLES

DHCoreImages · DHCoreBoxes ·
DHImageCalibration · DHImageSegments
· DHStructuralMeasurements

2

MINIMUM MARKERS

per tray row, for depth interpolation

Once the boxes are photographed and calibrated, the campaign's 41,736 metres stay queryable by depth — even after the boxes have been emptied. Structural measurements logged on the image feed the Structural Analysis module directly.

Source: KOUKOUDAN project database (Senegal) — figures computed from the real data exported from GeoMate.

Key concepts

The vocabulary of calibrated core photography.

Core tray

The container receiving the core in successive rows, in order of increasing depth.

Interpolation

The computation deriving the depth of any point from the two markers that frame it.

Log plot

The vertical representation of the hole — lithology, grades, structures — that the image illustrates.

Calibration marker

A point placed on the image at a known depth. One pair per row defines that row's depth scale.

Row

One line of core in the tray. Each has its own depth scale, and therefore its own marker pair.

Oriented core

Core whose original angular position is known — the condition of any usable structural measurement.



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SECTION IV

Value & specifications

What the module changes for the project, and its technical integration profile.

01 Business value

02 Technical profile

Business value

The core survives its own destruction

A calibrated, segmented photograph stays queryable by depth years after the box has been emptied.

Usable archive

Structure is logged without the core

Alpha and beta are computed from the trace drawn on the image, with a confidence score that says whether to start again.

Score 0 to 1

Depth is exact, not estimated

Multi-marker calibration and 2D interpolation replace the ruler laid over the photograph.

2D interpolation

Logging feeds the structural analysis

Measurements written to DHStructuralMeasurements are read directly by the Structural Analysis module.

Direct chaining

The field photographs, the office logs

Detailed structural logging can be done at head office, outside the site's time window.

Deferred work

Technical profile

Images

Formats

JPG · PNG · TIFF

Filing

Automatic by hole and box number

Import

Single or bulk, with progress

Navigation

Wheel zoom, drag to pan

Calibration

Markers

Amber, with row and start / end type

Multi-row

2D depth interpolation

Detection

Tray extent, 45 % confidence threshold

Minimum

2 markers per row

Structures

Capture

Trace drawn by click-drag on the segment

Computation

Cylindrical fitting, alpha probe variants

Confidence

Score 0 to 1 — below 0.5, redraw

Output

DHStructuralMeasurements, read by Structural Analysis



One platform, from field to report

The “Core Image Manager” module is one of the 19 modules of GeoMate 2026 — a single, fully offline platform covering the whole chain: database design, data entry, validation, QA/QC, dispatch, analysis and reporting.