DASFADS Surveys Nig. Ltd
Surveying · Mapping · Geospatial Consultancy

RC 1061094

▲ TECHNICAL FILE-FORMAT GUIDANCE

Data that fits your workflow, first time

CAD and GIS formats, coordinate reference systems in Nigeria and the delivery standards DASFADS works to, for engineers, designers, GIS teams and clients.

REFERENCE
DAS-DOC-03

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1.0

ISSUED
October 2026

AUDIENCE
Clients and technical teams

IN THIS DOCUMENT

- Formats at a glance
- Coordinate reference systems in Nigeria
- CAD drawings: DWG and DXF
- GIS data, survey data and imagery
- Documents, file naming and sending data
- Our quality checks

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▲ OVERVIEW

Formats at a glance

What we deliver by default, and what we ask you to send us. Other formats are available on request: tell us what your software needs.

CAD drawings
DWG · DXF

AutoCAD 2013 format or later; real-world coordinates in metres.

GIS layers
GeoPackage · Shapefile

GeoPackage preferred; shapefiles as a complete zipped set.

Coordinates
CSV

Point ID, easting, northing, height, code; coordinate system stated.

Imagery & elevation
GeoTIFF · COG

Orthophotos and terrain models with embedded georeferencing.

Point clouds & GNSS
LAS / LAZ · E57 · RINEX

LAS 1.4 or compressed LAZ; raw GNSS in RINEX.

Documents
PDF · PDF/A

Drawings and reports; PDF/A for long-term archiving.

▲ FOUR GOLDEN RULES

1. **State the coordinate system and units** on every file. Coordinates without them cannot be used safely.
2. **Send complete file sets.** A shapefile without its .prj, or a drawing without its references, is incomplete.
3. **Name files consistently,** with a date and version, so the latest is always obvious.
4. **Send copies, keep originals.** Never send the only copy of a document.

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▲ COORDINATE REFERENCE SYSTEMS

Where your coordinates belong

A coordinate reference system (CRS) defines how numbers relate to real positions on the Earth. The same point has different coordinates in different systems, so every dataset must say which system it uses.

SYSTEM	EPSG CODE	TYPICAL USE
WGS 84 (latitude, longitude)	4326	GNSS positions, web maps, KML and GeoJSON
WGS 84 / UTM zone 31N	32631	Engineering and mapping west of 6° E (e.g. Lagos, Ogun, Oyo)
WGS 84 / UTM zone 32N	32632	Engineering and mapping between 6° E and 12° E
WGS 84 / UTM zone 33N	32633	Engineering and mapping east of 12° E
Minna (latitude, longitude)	4263	Older maps and records on the national datum
Minna / Nigeria West Belt	26391	Cadastral and survey plans in the western belt
Minna / Nigeria Mid Belt	26392	Cadastral and survey plans in the central belt
Minna / Nigeria East Belt	26393	Cadastral and survey plans in the eastern belt
Minna / UTM zone 31N · 32N	26331 · 26332	Mapping on the national datum

Minna and WGS 84 are different datums

Nigeria's traditional survey plans use the Minna datum; GNSS receivers and web maps use WGS 84. Moving data between them needs a datum transformation with parameters suited to the area: simply relabelling coordinates can put features in the wrong place by tens to hundreds of metres. Tell us which datum your documents use; we transform and check data for you.

Heights

Unless agreed otherwise, heights are orthometric (above mean sea level) and every deliverable states its height datum. Heights measured by GNSS above the ellipsoid differ from these by tens of metres in Nigeria, so they must never be mixed without conversion.

ⓘ **Order and units.** We give projected coordinates as easting, then northing, in metres to three decimal places (millimetres); geographic coordinates as latitude, then longitude, in decimal degrees (at least seven decimals) or degrees-minutes-seconds. Our free online coordinate converter at dasfads.com/coordinate-converter.html helps check values.

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▲ CAD DRAWINGS

DWG and DXF deliverables

How we prepare drawings

- ✓ AutoCAD DWG or DXF, saved in AutoCAD 2013 format or later (older versions on request).
- ✓ Drawn in model space at real-world coordinates in metres: no local origin, scaling or rotation unless agreed.
- ✓ One coordinate system per drawing, stated in the title block and the file name.
- ✓ Survey points as blocks with attributes for point number, height and code.
- ✓ External references bound, unused items purged, and a PDF of every sheet supplied with the drawing.
- ✓ Fonts and line types that open in standard AutoCAD, BricsCAD and similar programs.

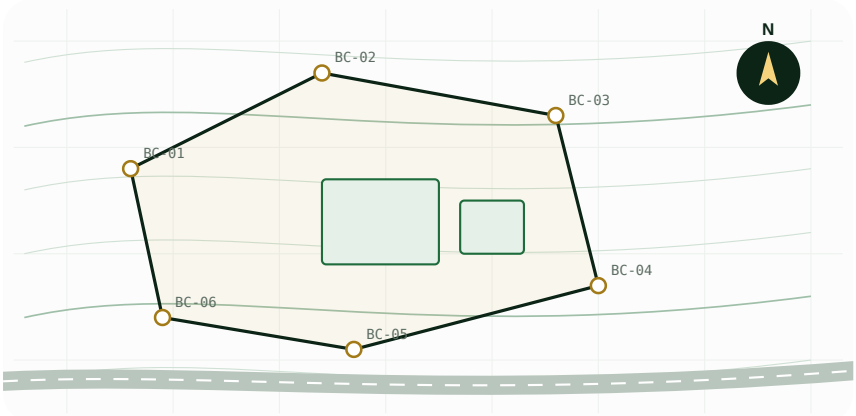
If you send us drawings

- ✓ Include every referenced file (xrefs, images, fonts), or bind them.
- ✓ Tell us the units and the coordinate system.
- ✓ Send a PDF as well, so we can see the drawing as you intend it.

Typical layer structure

LAYER	CONTENTS
SV-BOUNDARY	Parcel and property boundaries
SV-BEACON	Beacon symbols and their numbers
SV-BUILDING	Buildings and structures
SV-ROAD	Roads, kerbs, paths and drainage
SV-CONTOUR-MAJ / MIN	Major and minor contours
SV-SPOT	Spot heights
SV-UTILITY	Visible utilities: poles, manholes, valves
SV-TEXT	Annotation
SV-GRID	Coordinate grid and north arrow
SV-TITLE	Title block and legend

We can follow your organisation's CAD standard instead: send it with your request.



▲ ILLUSTRATION

How a boundary plan is organised in CAD

- SV-BOUNDARY
- SV-BEACON
- SV-BUILDING
- SV-ROAD
- SV-CONTOUR

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▲ GIS, SURVEY DATA AND IMAGERY

Formats for analysis and design

GIS vector data

- ✓ GeoPackage (.gpkg) is our default: one file, any coordinate system, long field names, several layers.
- ✓ Shapefiles are delivered as a complete zipped set: .shp, .shx, .dbf, .prj and .cpg. Field names are limited to 10 characters.
- ✓ KML / KMZ for viewing in Google Earth (always WGS 84); GeoJSON for web use (WGS 84).
- ✓ Clean topology: no gaps, overlaps or duplicate features, and a short data dictionary describing each field.

Imagery, terrain and point clouds

- ✓ Orthophotos as GeoTIFF or Cloud-Optimised GeoTIFF, with ground resolution stated.
- ✓ Terrain and surface models (DTM, DSM) as 32-bit GeoTIFF.
- ✓ Point clouds as LAS 1.4 or compressed LAZ; terrestrial scans also as E57.
- ✓ Drone photographs as JPG with location data, with a list of ground control and check points.

Coordinate lists (CSV)

COLUMN	EXAMPLE	NOTES
PointID	BC-01	Unique point number or beacon number
Easting	541236.418	Metres, 3 decimals
Northing	813877.205	Metres, 3 decimals
Height	212.637	Metres above the stated height datum
Code	BCN	Feature code, e.g. BCN beacon, BLD building, SPT spot height
Description	Concrete pillar	Optional free text

UTF-8 text with a header row, one coordinate system per file (named in the file name or a readme). Raw GNSS observations are available in RINEX format; total-station raw data on request.

▲ FROM FIELD TO FILE



Field observation — GNSS and total station

Processing — Adjustment and checks

CAD — DWG · DXF drawings

GIS — GeoPackage · Shapefile

Delivery — PDF and data via the portal

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▲ DOCUMENTS, NAMING AND SENDING DATA

Getting files to and from us

Documents and drawings

- ✓ Reports and drawings as PDF; PDF/A when you need to archive them long-term.
- ✓ Scanned documents in colour at 300 dpi, one document per file.
- ✓ Official survey plans are prepared and signed in line with the applicable surveying regulations; digital copies are supplied for convenience.

Every drawing's title block shows

- ✓ Project and client name
- ✓ Drawing title and number
- ✓ Scale and paper size
- ✓ Coordinate system and height datum
- ✓ Date and revision
- ✓ Surveyor's name and signature
- ✓ Sheet number

File names

Project, site, content, coordinate system, date and version, separated by underscores:

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BODIJA-PLOT14_TOPO_MINNA-WB_20261023_v01.dwg
```

Sending us files

- ✓ Website request forms accept PDF, JPG, PNG, Word and Excel files, up to 20 MB in total.
- ✓ Email CAD or GIS files to dasfads@dasfads.com; zip folders first. For large datasets, ask us for a secure transfer link.
- ✓ Always include the .prj file, references and a short readme saying what the files are.

Receiving files from us

Deliverables are published in your DASFADS Client Portal, where you can download them securely at any time. We do not send confidential survey documents as ordinary email attachments.



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▲ QUALITY

Checks on every deliverable

Accuracy is the foundation of every decision our clients make. These checks are built into how we work.

Measurement checks

Independent check measurements, closure and residual checks on every control network.

Coordinate checks

Coordinate systems, transformations and heights verified against known control.

Data checks

GIS topology, attribute completeness and file integrity tested before delivery.

Senior review

Drawings and reports reviewed by a senior surveyor before issue.

Version control

Every deliverable carries a revision number; changes are logged.

Secure delivery

Encrypted storage and delivery through the Client Portal.

Need a format that is not listed? Most software can exchange data through the formats in this guide. Tell us the program and version your team uses and we will supply data that opens correctly first time.

▲ OUR COMMITMENT

Precision in every point.
Confidence in every decision.

Every DASFADS deliverable is measured, checked and documented so that engineers, designers, lawyers and landowners can rely on it.

▲ DASFADS SURVEYS NIG. LTD

Precise data, in the format you need.

Questions about formats, coordinate systems or delivery? Our technical team is happy to help.

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