

Artificial intelligence speeds up the practice but does not sign the survey report

AI in a land surveying practice (sole trader, town, municipality, county) · law and market as of 4 October 2026

In October 2026 a licensed surveyor running a one-person practice in Poland may lawfully use artificial intelligence at almost every stage of the work, but only as a tool: Polish surveying law does not contain a single provision on AI, while it places the entire responsibility for the method, the accuracy and the result on the surveyor in charge of the survey works (kierownik prac geodezyjnych), who is subject to disciplinary liability for a lack of due diligence and for acting contrary to “the principles of contemporary technical knowledge” ([consolidated text of the Geodetic and Cartographic Law \(Prawo geodezyjne i kartograficzne, PGiK\), Journal of Laws \(Dz.U.\) 2024 item 1151](#)). In practice this means a division into three zones. **The hard core** (establishing boundaries in the presence of the parties, boundary demarcation, re-establishment of boundary marks, setting out, control surveys, signature, certification and the statement of positive verification made under criminal liability) remains a personal act of a human being. **The assisted zone** (the design base map, as-built surveys, updates of the land and building register (EGiB) and of the large-scale topographic object database (BDOT500)) admits AI for change detection, completeness checks and drafting, but not for supplying the coordinates of Group I details, because the technical standards require 0,10 m relative to the control network and AI models working from orthophotomaps do not guarantee that ([Dz.U. 2022 item 1670](#)). **The open zone** covers the office (correspondence, quotations, technical reports, the National e-Invoicing System (KSeF)), volume surveys, building surveys and analytical services for municipalities based on free data from the Head Office of Geodesy and Cartography (Główny Urząd Geodezji i Kartografii, GUGiK), which do not go through verification at the county geodetic and cartographic documentation centre (powiatowy ośrodek dokumentacji geodezyjnej i kartograficznej, PODGiK). Horizontal regulation is gentler for such a business than the noise around the AI Act suggests: typical surveying applications are not high-risk systems, so the real obligations are taking measures to support AI literacy (Article 4 of the AI Act as softened by the Digital Omnibus from 27 July 2026), the GDPR for data from the EGiB, and drone law. Economically, AI will not raise prices (the market prices a basket of four typical services at about 6 032 PLN net, while the level surveyors regard as fair, 8 149 PLN, is 35,1% higher, meaning actual prices are about 26% below the “fair” ones), but it can shorten office processing and allow more commissions to be handled without hiring an assistant, who is hard to find anyway ([Geoforum, 2026 survey](#)). The nearest external turning point is the state eOperat platform project with an AI assistant: its implementation starts in November 2026 (this is the start of the project, not the launch of the platform) and is scheduled to run until December 2028, and the practice should already be preparing its data workflow for it.

Quotations from Polish legislation are unofficial translations.

● The law does not prohibit AI, but every result is signed by a licensed surveyor

Technological neutrality cuts both ways

None of the key acts (the Geodetic and Cartographic Law, the technical standards, the regulations on the EGiB, BDOT500 and the geodetic register of utility networks (GESUT)) contains the words “artificial intelligence” or any reference to automated methods (a full-text search through the Sejm ELI API returned no hits). The consolidated text of the PGiK, Dz.U. 2024 item 1151, applies as subsequently amended (2024 item 1824; 2025 items 1019, 1542 and 1792), and no newer consolidated text has been published ([ELI, PGiK record](#)). The key point is that under Art. 2(1)(c) PGiK **survey work also includes “the calculation or processing of the**

results of measurements, studies and imagery” (PGiK consolidated text, Art. 2). An algorithm that classifies a point cloud or vectorises an orthophotomap therefore performs survey work within the meaning of the Act, and if its output goes into the resource, it must pass through notification of the works (Art. 12), a surveyor in charge holding a licence number (Art. 11-12) and verification at the documentation centre (Art. 12b). AI can be a tool of the contractor, never the contractor or the surveyor in charge.

The technical standards (consolidated text, Dz.U. 2022 item 1670) are equally neutral: § 3 allows any “methods, techniques and technologies” that ensure the required accuracy, and **“the choice of the methods applied (...) and ensuring the required accuracy rests with the surveyor in charge of the survey works” (Dz.U. 2022 item 1670).** The same formula works both ways. The clause “in accordance with the principles of contemporary technical knowledge” in Art. 42(3) PGiK entitles the surveyor to adopt new methods, but Art. 46 makes it the basis for disciplinary liability, which is independent of civil and criminal liability (Art. 46b); the catalogue of penalties in Art. 46a(1) comprises a caution, a reprimand, suspension of the licence for 6-12 months and withdrawal of the licence (PGiK consolidated text, Art. 42-46p). Uncritical acceptance of a model's output without checking can easily be classified as a lack of due diligence. The law provides no exemption from liability on account of faulty software; a tool error can at most affect the severity of the penalty through the degree of fault (an inference from the wording of Art. 46a). No judgments concerning an AI error by a surveyor were found, but the administrative courts have upheld penalties for ordinary workmanship failings: in 2013 the Supreme Administrative Court (NSA) dismissed the cassation appeal of a surveyor to whom the Surveyor General of Poland (GGK), under the former administrative decision procedure, had issued a caution with an entry in the central register for an incomplete survey report (operat techniczny) and a defective boundary record and settlement in demarcation proceedings (NSA, II GSK 883/12, 22 October 2013).

The hard core that AI will not take over, legally or practically

Art. 42(1)-(2) PGiK reserves to licensed persons the management and direct supervision of notified works, the technical and administrative activities in boundary demarcation, works “necessary for making entries in land and mortgage registers” and works whose results could endanger life or health, in particular **the setting out of building structures, control surveys and surveys of displacements and deformations (PGiK consolidated text, Art. 42).** The establishment of boundary lines is carried out by a surveyor authorised by the head of the municipality (wójt, burmistrz or city mayor); in a dispute the surveyor encourages the parties to reach a settlement, which has the force of a court settlement (Art. 31-32), and the re-establishment of marks requires notification of the parties and a record (Art. 39). § 33 of the EGiB regulation provides that boundary lines are established by a surveyor holding a licence under Art. 43(2) or (5), on the basis of concurring indications by the parties entered in the record (EGiB consolidated text, Dz.U. 2024 item 219). On the construction side, the setting-out sketch is signed by the licensed surveyor and the site manager, and the setting out is confirmed by an entry in the construction log (§ 21(3) of the technical standards regulation), while the as-built survey is a precondition for notifying completion of construction (Art. 43 and 57 of the Construction Law, consolidated text, Dz.U. 2026 item 524). In the subdivision of real property, the application includes, among other things, the boundary acceptance record and the map with the subdivision design, which are subject to acceptance into the resource (Art. 97(1a)-(1b) of the Real Estate Management Act (UGN), consolidated text, Dz.U. 2026 item 399).

On top of this come personal acts of a documentary nature: certifying copies of records and maps as true copies of the original (Art. 42(4)), a handwritten signature or a qualified, personal or trusted signature on the design base map (§ 30(3) of the technical standards regulation) and the statement of a positive verification result, equivalent to an official clause and made **“under penalty of criminal liability for making false statements” (Art. 12b(5a)-(5c) PGiK).** In these places AI may prepare a draft document, but it cannot be the source of the decision.

The accuracy barrier: 0,10 m for Group I details

The line between “AI assists” and “AI measures” has a numerical dimension. The standards divide survey details into three groups and require accuracy relative to the control network of **0,10 m for Group I** (boundary points and marks, buildings, above-ground utility structures and elements), 0,30 m for Group II (embankments,

ditches, underground structures) and 0,50 m for Group III (land-use contours, natural watercourses, forest compartments) (§ 6 and § 16, [Dz.U. 2022 item 1670](#)). The standards do not mention photogrammetry, scanning or orthophotomaps at all. BDOT500, however, provides an acquisition method attribute with values including "vectorisation" (D) and "photogrammetric measurement" (F), so an object captured from imagery may enter the database, but with the method explicitly recorded ([Dz.U. 2021 item 1385](#)). In the EGiB a boundary point derived from photogrammetry is given the value "established" only if its position was established earlier or if the mark was signalised before the flight; the accuracy attribute "meets" is available only at 0,10 m ([EGiB consolidated text, Annex 4](#)).

The practical conclusion: building outlines vectorised by a model from an orthophoto will not replace measurement of building contours for the EGiB, for the design base map or for an as-built survey. The widest margin for AI-derived data concerns Group III (0,50 m) and non-notified studies, provided that the accuracy achieved is documented in the technical report (sprawozdanie techniczne).

Data from the resource may be used only for the notified work

Art. 12(8) PGiK provides that materials from the resource made available in connection with a notification **"may be used solely for carrying out the survey works covered by that notification or its supplement"** ([PGiK consolidated text](#)). Processing them in an external AI service for the purposes of that same work falls within this purpose, but training one's own model on materials from many notifications, or passing them to a provider that uses input data for training, goes beyond this provision. Open data are a different matter: Art. 40a(2)(1) exempts from fees the orthophotomap, the digital terrain model (NMT), the topographic object database BDOT10k, control networks, the geometry and identifiers of parcels and buildings and, from 13 February 2026, also the real property price register (RCN) ([Dz.U. 2025 item 1542](#)). From 30 September 2026 the RCN is also to be made available as GML files on open data portals ([Dz.U. 2026 item 1094](#)). These are the natural input and training material for AI in a small business.

What the UD60 bill and the eOperat platform will change

The government bill amending the PGiK (UD60) introduces a definition of a licensed surveyor and the principle that survey works may be performed only by licensed persons or under their direct supervision; it also provides for extending free access to data on parcels, buildings and boundary points ([GUGiK, 13 January 2026](#)). According to the GUGiK, the bill narrows the scope of verification at the documentation centres and abandons inspections of businesses ([geoportal.gov.pl, 2 April 2026](#)). The bill was discussed by the Committee for Digital Affairs (KdsC) on 29 June 2026 and had not reached the Sejm by 3 October 2026 ([KdsC, UD60](#)). If it enters into force, the burden of quality control, including control of AI outputs, will shift from the documentation centre to the surveyor.

In parallel, GUGiK is building eOperat: a central platform for preparing, validating and submitting survey reports, with the modules Survey Report Wizard (Kreator Operatu), PDF generator, GML validation, API and an **AI Assistant hosted locally at GUGiK**; its value is 15 261 885 PLN gross, 79,71% funded from FERC, with project implementation from November 2026 to December 2028 (roll-out of the platform is planned for 2028), and the aim of reducing average verification time from 10 to 7 working days. The documentation declares compliance with the AI Act (transparency, human oversight, event logging), and the project's own risk register lists assistant hallucinations, model drift and leaks of confidential data ([OZZG, 1 September 2026](#)). *Caveat: the details of eOperat come from a summary of the project's "Description of assumptions" published by the trade union OZZG; the GUGiK documentation itself was not verified.* The platform does not in itself change the EGiB, BDOT500 or GESUT; the survey report still goes to the PODGiK.

● Nine typical jobs show where AI saves time and where it only offers suggestions

A small practice working at city, municipality and county level lives on a few repetitive products. Statistically, an active licensed surveyor signs about 140 jobs a year (own calculation: about 1,134 million notified works in 2024 for about 8 100 active signatories) ([Geoforum, number of works](#); [Geoforum, surveyors in survey firms](#)).

At that volume the biggest gain comes from automating the office part, not from replacing fieldwork. Fieldwork on a “domestic” commission usually takes a few hours, while the deadline is determined by obtaining materials, processing, the survey report and verification (statutorily 7, 10 or 20 working days depending on the area), and in 2024 the documentation centres used on average 47% of the statutory time ([W. Izdebski, verification statistics](#)). The table assigns applications to types of work; prices are national net averages from the Geoforum 2025 survey and, where these are missing, from the price lists of practices or consumer guides.

Type of work (indicative net price)	What AI can realistically do	What AI will not do	Maturity
Design base map up to 0,5 ha (1 189 PLN)	detecting changes in buildings on the orthophoto before going on site (comparison map against the terrain, § 8 of the standards), completeness check, draft technical report, drafting	supplying Group I coordinates, the verification statement	high for support, low for measurement
As-built survey of a service connection (779 PLN)	completeness check of the survey report and GML before submission, description for the technical report, comparison with the design	measuring elements before they are covered, signature	high (office)
Setting out a building (1 134 PLN)	preparing setting-out data from the design, checking discrepancies	setting out, entry in the construction log, signed sketch	office only
Subdivision into 2 parcels (2 930 PLN)	analysis of archival survey reports and land and mortgage registers, drafts of notices and schedules of land changes	accepting boundaries, the record, the decision on the boundary line	medium (documents)
Re-establishment and setting out of boundary points (no price data from the survey; price lists from 1 000 PLN)	finding and summarising documentation, identifying discrepancies between the EGiB and the archive	determining the position, acts in the presence of the parties, the record	medium
Boundary demarcation, establishing boundaries for the EGiB (no reliable average prices)	preparing summonses and records, analysis of archival maps	everything that happens “in the presence of the parties”, the settlement	low
EGiB update, building records	detecting new buildings and land-use changes (Group III) from orthophotos, LiDAR and LoD models	a building contour in the EGiB without a 0,10 m measurement	medium
Measuring volumes of earthworks, stockpiles, excavations (individual quotation)	drone photogrammetry and automatic ground classification, digital terrain model, volume	nothing significant (non-notified work or work with looser requirements)	high
Surveys of buildings and interiors	SLAM scanner with AI classification of walls, floors and services	boundary work and setting out	medium to high

The prices and the description of the market come from a Geoforum survey covering more than 600 firms ([Geoforum, 2025 prices](#)) and from the price list of a sample practice ([Geodezja Gabrek](#)). The actual national average price of a design base map in 2025 was 1 189 PLN, and the expected price for 2026 is 1 634 PLN; the figure of 1 256 PLN from the same survey is the expected price of a service connection as-built survey in Warsaw, not the price of a design base map (MDCP) ([Geoforum, 2026 survey](#)). Consumer guides give ranges 1,5-2 times higher (e.g. MDCP 2 100-2 900 PLN net), probably for large cities or including documentation centre fees ([Extradom, 2026 price list](#)).

Design base map and EGiB updates: AI as a change detector

The most convincing, and at the same time cost-free, case is the chain “GUGiK data downloader (Pobieracz danych GUGiK), segmentation in QGIS, comparison with the EGiB and BDOT500”. The Deepness plugin from Poznan University of Technology runs any ONNX model in QGIS for segmentation and detection on orthophotos from aircraft, satellites or drones ([SoftwareX 2023](#); [GitHub Deepness](#)), and SamGeo and GeoAI give access to SAM 1-3 models with text and point prompts ([QGIS, SamGeo](#); [QGIS, GeoAI](#)). Orthophotos in

cities have a 5 cm pixel (e.g. Wrocław 2025) ([Wrocław Geoportal](#)), and GUGiK provides free LiDAR point clouds of 4-20 points/m² and LoD1/LoD2 building models ([Geoportal, LiDAR](#); [Geoportal, LoD1](#)). In research, building outlines from true ortho and nDSM achieve an F1 of about 96-97%, and adding height raises F1 by 3,27 pp ([ISPRS 2022](#)). This, however, is **a measure of object detection, not of vertex accuracy in centimetres**; no Polish study giving the RMSE of outlines relative to the EGiB was found. With a 5-10 cm pixel and a vectorisation error of around 1-3 pixels (an assumption, not measured), an outline may be off by 5-30 cm, which is at the limit of, or beyond, Group I. The lawful application is therefore a list of places to check in the field: new buildings, shelters, extensions, before going on site for a design base map or during EGiB modernisation. Deputy Surveyor General Dr Anna Bober describes the role of AI in the same way for the BDOT10k update project: AI is to "indicate the places where changes have occurred that require verification" ([Executive Magazine, 6 August 2026](#)).

Point clouds: classification is mature, vectorisation requires checking every object

Automatic point cloud classification (ground, buildings, vegetation, poles, lines) is built into TerraScan, Trimble Business Center, Leica Cyclone 3DR, Agisoft Metashape, DJI Terra and ArcGIS Pro ([Terrasolid](#); [Leica Cyclone 3DR](#); [Esri](#)). In research, vector extraction for the basic map achieves 91,7% completeness at 95,5% correctness for carriageway edges (with and without kerbs), and about 96% for manhole covers ([Sensors, kerbs; manhole covers, MLS](#)). This means that **for every hundred manhole covers or carriageway edge segments, a few will be missed or falsely detected**, and a manhole cover on its own, without information from the network operator, does not reveal which network it belongs to. In 2025 a European mapping agency assessed ML classification in TerraScan and IGN Myriad3D as "ambiguous" ([LIDAR Magazine, 27 September 2026](#)). For GESUT and BDOT500, every AI-derived object therefore needs verification before submission to the documentation centre.

Documents, archives and the office: the greatest savings at the lowest measurement risk

General-purpose language models (Claude, ChatGPT, Copilot) are suitable for drafting a technical report from a list of completed activities, summarising and comparing archival survey reports, compiling discrepancies between the EGiB and the survey, analysing the content of land and mortgage registers and decisions, drafting notices, records and schedules of land changes, and client correspondence. This is our own assessment, not a test result: **no Polish study on the use of LLMs for technical reports or survey reports was found**. For handwriting there are Transkribus HTR models for Polish (the Polish General Model and the multilingual Text Titan I), but none was trained on field sketches or coordinate lists ([Transkribus, Polish models](#)). In Polish surveying software AI is appearing on the authorities' side (the AN module in EWOPIS 9 from GEOBID, March 2026; announcements from Geo-System), whereas no AI announcements were found for contractor software (C-Geo, WinKalk, GEONET) ([GEOBID, news](#); [Geoforum, Jachranka 2025](#)). The OpenGeoAgent assistant for QGIS accepts text and voice commands in Polish and requires the user's consent before changing layers, but it is still under development ([Geoforum, 11 May 2026](#)). Office automation is also being forced by KSeF: from 1 April 2026 it is mandatory for most active VAT payers, and from 1 January 2027 for taxpayers whose sales documented by invoices do not exceed 10 000 PLN gross per month ([inFakt](#)). County e-services (iGeoMap, ePODGiK, GEO-INFO) have no public APIs for contractors, so automation ends with preparing the data for the notification.

Municipality and county as clients for analytical services

AI faces the fewest legal barriers in studies that are not notified works under Art. 12: land inventories and capacity analyses for municipalities, support for the Urban Planning Register (Rejestr Urbanistyczny), and market analyses based on RCN data. The planning reform has created demand for such data; the deadline for general plans was finally moved to 31 August 2026, and from 1 September 2026 decisions on development conditions require a general plan ([Dz.U. 2026 item 781](#)). After that date demand may shift towards local spatial development plans (MPZP) and plan amendments (an inference, not data). The road register segment with photographic records shows, however, how tough the competition is: in one procurement procedure bids ranged from 9 840 PLN to 39 608 PLN ([Platforma Zakupowa, 448009](#)). Modernisations of the EGiB for entire cadastral districts run to hundreds of thousands of zloty (e.g. an estimated contract value of 462 601,62 PLN

in Sokołów County) and for a sole proprietorship (jednoosobowa działalność gospodarcza, JDG) are realistic mainly as subcontracting ([eGospodarka, Sokołów Podlaski](#)). Contractual liability towards the municipality remains in full, even if the work does not go through verification at the documentation centre.

Tools: free QGIS to start, a drone at around 30 000 PLN only once volume justifies it

The cost range is enormous: from zero (QGIS with plugins and GUGiK data) to more than 100 000 PLN (a drone with LiDAR and software). Manufacturers' prices are quoted in USD or EUR net; the conversions in the table assume an indicative rate of 3,7-4,0 PLN per USD (an assumption, not data from the sources).

Category	Example	Net cost	Use in a JDG
GIS and AI on imagery	QGIS + Deepness, SamGeo, GeoAI, GUGiK data downloader	0 PLN	change detection, vectorisation of drafts, analyses for municipalities
Photogrammetric drone	DJI Matrice 4E with RTK, class C2	16 259-16 900 PLN	volumes, MDCP for large sites, roads, green areas
Drone with LiDAR	DJI Matrice 350 RTK + Zenmuse L2	87 396,75 PLN	large areas, wooded terrain
Photogrammetry software	Agisoft Metashape Pro (perpetual licence)	3 499 USD (approx. 13 000-14 000 PLN)	point clouds, orthophotos, ML classification
	DJI Terra Pro / Electricity / Agriculture	1 299 / 2 599 / 999 USD/year	ground classification, digital terrain model from L2
	Pix4Dmatic Analyst / Standard / Pro	2 290 / 3 990 / 4 990 USD/year	vectorisation to CAD
Cloud classification	Flai	by km ² and classes (1 PU = 0,01 EUR)	no GPU workstation needed
SLAM scanner	FJD Trion P2 / XGRIDS Lixel K1 / Lixel X1	approx. 26 000-33 000 PLN / approx. 12 000 EUR / 95 000 PLN	surveys of buildings and interiors
SLAM scanner with GNSS	CHCNAV RS10 (below 5 cm absolute, below 1 cm relative)	approx. 24 000 EUR	as above, with georeferencing
SLAM scanner of approx. 5 mm class	Stonex X200GO / FARO Orbis	approx. 35 000 EUR / approx. 50 000 EUR	as above, greater certainty

Price sources: drones and scanners in Polish shops ([Navigate](#), [Matrice 4E](#); [Dalmierze.pl](#), [M350 + L2](#); [GPS Global Solutions](#), [Trion P2](#); [SklepGeo](#), [Lixel X1](#)), software from manufacturers and distributors ([Pix4D](#); [thefuture3d](#), [DJI Terra](#); [3D Mapping Tools](#), [Metashape](#); [Flai](#)), and a SLAM test with indicative prices ([3Dsurvey](#)). Prices for TerraScan, TBC and Cyclone 3DR are not public (sold through dealers), and LLM subscription prices in PLN were not verified.

Accuracy figures determine the applications. The Zenmuse L2 declares **5 cm horizontally and 4 cm vertically** from a height of 150 m ([DJI, L2 specification](#)), which fits within 0,10 m only with a twofold margin; spot points from the cloud for a design base map must be checked with GNSS or a total station. Drone photogrammetry with 13 ground control points gave, in a test over 30 ha, an RMS of about 1,7 cm horizontally and 2,3 cm vertically ([Geoforum/SkySnap](#)). Low-cost SLAM scanners declare about 2-3 cm and, according to the 3Dsurvey test, can be unstable in difficult environments; an accuracy of about 5 mm is declared by the Stonex X200GO (approx. 35 000 EUR) and the FARO Orbis (approx. 50 000 EUR), the CHCNAV RS10 (approx. 24 000 EUR) declares below 5 cm absolute and below 1 cm relative, and the test did not give independent RMSE values ([3Dsurvey](#)). Local AI classification requires a workstation with an NVIDIA (CUDA) graphics card ([AEC Magazine](#)); cloud services remove the hardware requirement but mean handing data over to the provider. An area without reliable sources remains AI in checking GNSS and total station observations; classical rigorous least-squares adjustment with outlier tests is sufficient, and AI is not needed here.

● Economics: AI pays back in office hours, not in the price of the service

The market will not pay more because a practice uses AI. Prices in 2025 rose by 6,3% while costs rose at 85,2% of firms, revenues rose at only 32,3% of firms, and the basket of "fair" prices (8 149 PLN) exceeds the actual one by 35,1% ([Geoforum, 2025 prices](#); [Geoforum, 2026 survey](#)). Regions differ markedly: the basket costs 7 334 PLN in the Silesian Voivodeship and 4 478 PLN in the Podlaskie Voivodeship. The market is fragmented (7 457 firms with Polish Classification of Activities (PKD) code 71.12.A in the Central Register and Information on Economic Activity (CEIDG) as at 1 January 2026, with incomplete recoding), and there are about 8 100 active signatories against 19 109 licensed persons according to 2021 data, including those not professionally active ([Geoforum, CEIDG](#); [Geoforum, number of licensed surveyors](#)). The number of people starting surveying degrees has fallen since 2011 from about 4 500 to about 1 500 a year, and the Occupational Barometer (Barometr Zawodów) indicated a shortage of surveyors in 53 counties ([Geoforum, education](#); [Geoforum, Barometer](#)). For a JDG, AI is therefore not an advantage of scale but a substitute for an assistant who is hard to hire.

The payback calculation is best done in working days. Self-employed surveyors report an average of **10 232 PLN net per month** ([Geoforum, 2025 pay](#)), or about 490 PLN per working day (own calculation at 21 days). Saving 1-2 days a month through office automation and checking of survey reports is worth about 5 900-11 800 PLN a year, while the outlay on business-class LLM accounts and free QGIS is an order of magnitude lower (estimate). A drone is a different league: an entry package of a Matrice 4E, an annual DJI Terra licence, training, the specific category and liability insurance comes to around **30 000 PLN net** (own estimate). On a typical 0,1 ha building plot a drone gives little gain over GNSS and a total station; it pays back in volume surveys, maps for large sites (Extradom gives, for example, 2 000 PLN for the first hectare and 700-1 000 PLN for each additional one, and Murator 2 120-2 620 PLN for an MDCP of 1 ha depending on the voivodeship; [Extradom](#); [Murator](#)) and surveys of roads or green areas. Examples of work being shortened by 80% come from marketing material, not from independent studies (wios.warszawa.pl). No independent Polish studies of the return on a drone or an LLM in a JDG were found. A LiDAR package (about 87 000 PLN plus software) makes sense only with a steady stream of commissions over large areas.

Funding is modest and partly uncertain. **The robotisation tax relief** (ulga na robotyzację) gives an additional deduction of 50% of costs incurred in 2022-2026; 2026 is the last year, and the Ministry of Finance (MF) has not announced a continuation (a bill to raise it to 100% was in the Sejm) ([iKsięgowa](#); [Euro-Funding](#)). The relief under Art. 26eb of the Personal Income Tax (PIT) Act concerns industrial robots used in production activity and is not available to taxpayers on the flat-rate tax (ryczałt), so its application to a drone or scanner in a surveying practice is doubtful; a purchasing decision should not be tied to it without an individual tax ruling. **The National Training Fund (KFS)** has digital and AI skills as a priority in 2026 and a budget of about 419,6 million PLN ([Dagma, KFS 2026 priorities](#); kik.edu.pl, [KFS 2026 budget](#)). Under Art. 126 of the Act of 20 March 2025 on the labour market and employment services, the county head (starosta) may fund up to 70% of training costs, and for entities with no employees or with up to 9 employees up to 90%, subject to a limit of 200% of the average salary per participant and 4 times the average salary per applicant per year; the application is filed electronically with the county labour office (PUP) ([Dz.U. 2025 item 620](#)). The Act thus expressly covers firms without employees, but the award of funds is decided by the county head according to the priorities and the pool available at the given PUP. The SMART Path (Ścieżka SMART) under FENG requires an R&D (B+R) component in 2026, so a small practice is unlikely to qualify ([PARP, SMART Path](#)). Digitalisation vouchers in regional programmes were not verified. Depreciation and leasing remain.

● Compliance: the AI Act and the AI Systems Act weigh less than the GDPR and drones

The AI Act after the Digital Omnibus: the practice is a deployer of low-risk systems

The Digital Omnibus package on AI was adopted as Regulation (EU) 2026/1744 and entered into force on 27 July 2026. It postponed the obligations for stand-alone high-risk systems under Annex III to 2 December 2027,

and for AI in products under Annex I to 2 August 2028; most of the transparency obligations of Article 50 apply from 2 August 2026 (the transitional period until 2 December 2026 concerns only content marking by systems placed on the market before that date) (Orrick, July 2026; Freshfields). The Omnibus also softened Article 4: instead of an obligation to ensure a “sufficient level” of AI literacy of their staff, providers and deployers are to “take measures to support” the development of that literacy, without an obligation to guarantee a particular level; in other words, an obligation of result has been replaced by an obligation of means; the Commission and the Member States are to support these efforts, especially in small and medium-sized enterprises (Law and Technology; NicFab). The original wording of Article 4 applied from 2 February 2025 (Regulation (EU) 2024/1689). *The number, dates and wording of the amendments come from concurring analyses; the text in the Official Journal of the EU was not verified.*

Typical surveying applications (drafting technical reports with an LLM, point cloud classification, photogrammetry, OCR of archives) are not listed in Annex III; nor are they safety components in the management of water, gas or energy supply or of road traffic. A surveyor measuring a network for an as-built survey is not the operator of that infrastructure. The practice is therefore a “deployer” of minimal or limited-risk systems, and the obligations relating to general-purpose models rest with their providers. The practical minimum that documents the measures under Article 4 is a short written AI use policy and a record of completed training or self-study (tool limitations, hallucinations, rules for entering data), also covering any subcontractor or assistant acting on behalf of the firm. Article 50 may be relevant for photorealistic visualisations of investments shown publicly, e.g. at municipal consultations.

The Act, Journal of Laws (Dz.U.) 2026 item 1003, and KRiBSI

The Act of 3 July 2026 on artificial intelligence systems (Dz.U. 2026 item 1003) was published on 27 July 2026 and entered into force on 11 August 2026, with Articles 8-18 and Chapters 3-5, 8 and 9 entering into force on 28 October 2026 (Art. 127) (Dz.U. 2026 item 1003). The market surveillance authority and single point of contact is **the Artificial Intelligence Development and Security Commission (Komisja Rozwoju i Bezpieczeństwa Sztucznej Inteligencji, KRiBSI)** (Art. 5), which among other things issues individual opinions (Art. 6(13) and Art. 8) and establishes and manages regulatory sandboxes (Art. 6(11)). Financial penalties derive from the AI Act; the Polish Act allows them to be reduced only under a settlement with the Commission, by 20-70% as standard, and by 30-90% where the proceedings were initiated on the basis of information provided by the entity itself, which had previously ceased the infringement (Art. 70(6) in conjunction with Art. 84(1)). The provisions on penalties and the criminal provisions (Chapter 8) enter into force on 28 October 2026 (GDPR.pl). Compliance with the AI Act does not mean compliance with the GDPR; the two regimes operate in parallel. For a JDG the risk of a KRiBSI inspection is low, but an individual opinion is a way to obtain certainty for an unusual application, e.g. an AI service for a municipality.

GDPR and EGiB data: the most serious everyday risk

On receiving materials from the resource in connection with a notification, including EGiB data on persons, **the contractor becomes the controller of those data**: it needs a legal basis under Article 6 of the GDPR, fulfils the information obligation under Article 14 and is responsible for security (PTG, personal data and the PZGiK). Pasting an EGiB extract, data from a land and mortgage register (KW) or the content of a survey report into a free consumer chat whose provider acts as controller and may train the model on input data is, in practice, a disclosure of data to a third party without a legal basis. Safe practice means business accounts with a data processing agreement (Article 28) and no training on data by default, safeguards for transfers outside the European Economic Area (Data Privacy Framework or standard contractual clauses), a preference for processing in the EU, pseudonymisation (removing PESEL numbers, names and KW numbers before sending a prompt) and local models for archives containing personal data; GUGiK itself chose the last of these patterns for eOperat. In August 2026 the Personal Data Protection Office (UODO) published guidance for firms using off-the-shelf AI tools: analysing each application before purchase, establishing a legal basis before entering data, a data processing agreement, an assessment of transfers, rules for staff and human verification of outputs concerning individuals (CyberDefence24, 17 August 2026; UODO, artificial intelligence). *The content of the guidance is known from a press summary; the title and address of the document itself were not established.* In Opinion 28/2024 the European Data Protection Board (EDPB) pointed out that a model trained

on personal data is not always anonymous (EDPB, Opinion 28/2024). The 2020 precedent, when UODO found that the GKG had infringed the GDPR by publishing KW numbers in the Geoportal, shows that data from the resource are under the regulator's scrutiny (KPMG RODOnews). Drone photographs and point clouds showing faces and number plates are also personal data; it is advisable to blur them before sending them for cloud classification. A firm routinely processing EGiB data is unlikely to benefit from the exemption from keeping a record of processing activities (Article 30(5)), because the processing is not occasional (an inference).

Drones: registration, categories, liability insurance and photography bans

Survey flights are governed by Regulations (EU) 2019/947 and 2019/945: the open category up to 25 kg, 120 m and VLOS, or the specific category via an STS declaration, an authorisation from the Civil Aviation Authority (ULC) or an LUC; the operator of a drone with a camera must be registered regardless of its mass (ULC, specific category; dron.edu.pl, [drone law 2026](#)). The Matrice 4E is class C2, so flights near buildings require at least an A2 certificate or an STS declaration (an inference). **Mandatory operator third-party liability insurance (OC)**: from 13 November 2025 the operator of a drone with a take-off mass of 0,25-20 kg, including a recreational drone, must hold an OC policy; the legal basis is Art. 209(1a) of the Aviation Law and the regulation of the Minister of Finance and Economy (MFiG) of 24 October 2025, published on 28 October 2025 (Dz.U. 2025 item 1485), with a minimum sum insured of 50 000 SDR per occurrence (Dz.U. 2025 item 1485). Industry sources cite a fine of up to 4 000 PLN for lacking a policy and premiums from about 50 PLN (hobby) to 1 500 PLN and more (commercial) (PIU; agenci-online.pl). Drones above 20 kg are subject to a separate regime under Regulation (EC) 785/2004 (ubezpieczenia-magro.pl). The 2025 ban on photographing facilities (Art. 616a of the Homeland Defence Act), following the amendment in force from 12 August 2025, now covers only facilities of military units and special services marked with a "ZAKAZ FOTOGRAFOWANIA" (photography prohibited) sign; permissions are granted by the commanders or heads of the services (sektorobronny.pl; chip.pl).

Professional liability insurance, cybersecurity and disinformation

The law does not impose mandatory professional liability insurance on surveyors; in the full text of the PGiK the word "insurance" in its various forms appears only in the name of the labour and social insurance court and in the title of the Act on pensions from the Social Insurance Fund, and the obligation arises contractually from municipal tenders and from general contractors (Saga Brokers; przewodnikubezpieczeniowy.pl). One source claims that liability insurance is mandatory for those performing independent technical functions, but it does not cite a provision and appears to be wrong (insureo.pl). With automation, a tool error (a misclassified point cloud, a coordinate or KW number misread by OCR) is the surveyor's error, for which a JDG is liable with all its assets under the Civil Code; it is worth asking the insurer in writing about exclusions concerning software errors and data incidents. The amendment to the Act on the national cybersecurity system implementing NIS2 (Dz.U. 2026 item 252) has applied since 3 April 2026 (Dz.U. 2026 item 252; Wolters Kluwer); a one-person practice is below the size thresholds and outside the listed sectors, but a municipality, a water utility or an energy operator may impose contractual supply chain security requirements on it, including rules on the use of cloud AI. A separate risk is industry disinformation: the text about a "GeoLexAI" system deciding a boundary dispute before the Regional Administrative Court (WSA) in Rzeszów, which won a Geoforum.pl competition, is **futurological fiction set in 2045**, which search engines are sometimes inclined to summarise as if it were real news (Geoforum, A.D. 2045). It is a good illustration of why every fact supplied by AI needs to be checked at the source.

Risk	Likelihood in a JDG	Consequence	Mitigation
Leak of EGiB or KW data into a consumer chat	high without a policy	GDPR breach, Art. 12(8) PGiK	business accounts with a data processing agreement, pseudonymisation, local models
Acceptance of an erroneous AI result into a survey report	medium	negative verification, disciplinary penalty, loss to the client	field check of Group I, checklist, technical report stating the method

Risk	Likelihood in a JDG	Consequence	Mitigation
Hallucination in a technical report or letter	medium	erroneous document under signature	LLM only for drafts, answers with sources
Drone flight without qualifications, OC or permission	low with a procedure	fine, liability for damage	A2 or STS, policy, airspace zone check
No documented measures supporting AI literacy (Article 4 of the AI Act as amended: an obligation of means)	high without a policy	weak evidence of diligence in a dispute or inspection	one-page policy and training log
Supply chain requirements from NIS2 clients	rising	loss of contracts	written rules for storing and transmitting data

● Implementation plan in four stages, from October 2026 to 2028

The sequence follows three criteria: first what reduces risk and costs nothing, then what shortens office processing without changing the measurement workflow, and equipment only when the volume of commissions justifies it. The milestone dates are set by external events: application of the supervisory provisions of the Polish AI Systems Act from 28 October 2026, KSeF for the smallest taxpayers from 1 January 2027, and the start of eOperat project implementation in November 2026, with platform roll-out planned for 2028.

Stage 0: legal housekeeping (October-December 2026, cost close to zero). The practice writes a one-page AI policy: which tools, for what, what data may be entered, who verifies the output and how; it documents its own AI training for the purposes of Article 4. It moves work from free chats to business accounts with a data processing agreement and training switched off, adds the AI tools to the record of processing activities and introduces a rule of pseudonymising EGiB and KW data. It checks with the insurer the scope of professional liability cover in respect of software errors. If a drone is planned, the purchase decision should not be tied to the robotisation tax relief (it ends on 31 December 2026, concerns industrial robots and is not available under the flat-rate tax), unless an individual tax ruling confirms that it applies.

Stage 1: office and documents (Q1 2027). The LLM takes over drafts of technical reports, correspondence, draft notices and records, summaries of archival survey reports and comparisons of text data; automation covers quotations from the price list, a deadline calendar (notification, materials, verification) and invoice flow in KSeF. The measure of success is the office processing time in hours per commission for the three core products, measured before and after implementation, together with the rate of negative verifications, which must not rise.

Stage 2: spatial data and QGIS (Q2-Q3 2027). The practice builds the cost-free chain: GUGiK data downloader, orthophotos, LiDAR and LoD models, the Deepness or SamGeo plugins, comparison with the EGiB and BDOT500, and uses it as a difference map before going on site for design base maps and during EGiB updates. In parallel it prepares its data workflow for GML validation in eOperat and watches the release of the first e-services (as-built survey, design base map, map with subdivision design). At this stage it is worth testing an analytical offer for a municipality or county based on open data (RCN, geometry of parcels and buildings).

Stage 3: equipment according to volume (from 2027, conditional decision). A photogrammetric drone of the Matrice 4E class with DJI Terra or Metashape, with A2 or STS qualifications and an OC policy, makes sense when the practice has a steady stream of volume surveys, large sites or surveys of roads and green areas; a SLAM scanner when the number of building surveys grows; LiDAR at about 87 000 PLN only for large areas or subcontracting. Every product derived from aerial data is checked with GNSS or total station points, and the technical report describes the method and the accuracy achieved.

Stage 4: eOperat and the new law (2027-2028). When eOperat and its AI Assistant become available, the practice uses them as a pre-submission check of the survey report, not as a substitute for its own control; it

also follows the fate of UD60, which may restrict verification at the documentation centres and thereby increase the weight of the practice's own quality system.

● Uncertain or conflicting findings

Issue	What is known	Why it is uncertain
KFS funding for a JDG	Art. 126 of the Labour Market Act: up to 70%, up to 90% for entities without employees or with up to 9 employees	the award depends on the county head's decision, the priorities and the pool of funds at the PUP
Details of eOperat	modules, budget, timetable (implementation November 2026 - December 2028), KPIs and risk register from the OZZG summary	the GUGiK documentation was not verified
Digital Omnibus 2026/1744	dates and the new wording of Article 4 (supporting measures instead of ensuring a level of literacy) from concurring analyses by Orrick, Freshfields, Law and Technology and NicFab	the text in the Official Journal of the EU was not verified
UODO guidance on AI (August 2026)	content from a press summary	title and address of the document not established
Robotisation tax relief for a drone	relief until the end of 2026 for industrial robots, not available under the flat-rate tax	application to a drone or scanner doubtful, requires an individual tax ruling
Status of UD60 after 29 June 2026	bill at the KdsC, no Sejm print	further course unknown
MDCP prices	Geoforum survey: actual 1 189 PLN (2025), expected 1 634 PLN (2026)	consumer guides give 1,5-2 times more
Accuracy of AI outlines in cm	F1 about 96-97%	no Polish RMSE study relative to the EGIB or BDOT500

● Conclusions

The most important change of perspective is that in Polish surveying the question “may AI be used?” is the wrong question: the law allows any method, but forgives nothing. The risk therefore does not lie in the AI regulations, which for a one-person practice come down to a policy and training, but in three well-known places: in the protection of data from the resource, in Group I accuracy and in the personal signature under a statement made under criminal liability. Whoever builds a process around these three points can use AI more widely than the competition, without additional exposure.

The second, less obvious implication concerns the direction of change in the state. By introducing eOperat with a local AI assistant and automatic validation, and by restricting verification at the documentation centres in UD60, GUGiK is shifting quality control from the authority to the contractor and at the same time standardising the format of the work. For a small practice this means that the advantage in 2027-2028 will not be a drone or the most expensive licence, but an orderly, verifiable data workflow (GML, a technical report describing the method, an audit trail of checks) to which both its own AI tools and the state validator can connect.

● Glossary

Term	Meaning
A2, C2	A2 is the remote pilot competency certificate for drone flights in the A2 subcategory of the open category, and C2 is a drone class under Regulation (EU) 2019/945 permitting flights closer to people.
AEC	Architecture, engineering and construction; here in the name of the journal AEC Magazine.
AI	Artificial intelligence.

Term	Meaning
AI Act	Regulation (EU) 2024/1689 laying down harmonised rules on artificial intelligence.
API	Application programming interface, through which programs exchange data automatically.
BDOT10k	Baza danych obiektów topograficznych: topographic object database at the level of detail of a 1:10 000 map, created and maintained by the voivodeship marshal in agreement with the GKG (Art. 7c(1)(3) PGiK).
BDOT500	Baza danych obiektów topograficznych: topographic object database at the level of detail of the basic map, maintained by the county head (starosta).
B+R	Badania i rozwój: research and development (R&D).
CAD	Computer-aided design; here, technical drawing software.
CEIDG	Centralna Ewidencja i Informacja o Działalności Gospodarczej: Central Register and Information on Economic Activity, the register of businesses run by natural persons.
CUDA	Compute Unified Device Architecture, NVIDIA's technology for computing on graphics cards, required by many AI tools.
Digital Omnibus	Package of amendments to the AI Act adopted as Regulation (EU) 2026/1744, in force from 27 July 2026.
Dz.U.	Dziennik Ustaw Rzeczypospolitej Polskiej: Journal of Laws of the Republic of Poland, in which statutes and regulations are published.
EGiB	Ewidencja gruntów i budynków: land and building register (the real property cadastre).
ELI	European Legislation Identifier, a standard for addressing legal acts, under which the Sejm makes the texts of acts available through an API.
EOG	Europejski Obszar Gospodarczy: European Economic Area (EEA), i.e. the EU Member States plus Iceland, Liechtenstein and Norway.
eOperat	Platform being built by GUGiK for preparing, validating and submitting survey reports (operaty techniczne).
EROD	Europejska Rada Ochrony Danych: European Data Protection Board (EDPB), the EU body issuing guidelines and opinions on the GDPR.
EUR, PLN, USD	Currency codes: euro, Polish zloty and US dollar.
F1	Detection performance measure combining completeness (recall) and correctness (precision).
FENG	Fundusze Europejskie dla Nowoczesnej Gospodarki: European Funds for a Modern Economy 2021-2027 programme.
FERC	Fundusze Europejskie na Rozwój Cyfrowy: European Funds for Digital Development 2021-2027 programme.
GDPR	General Data Protection Regulation, the English abbreviation for RODO; here also in the name of the website GDPR.pl.
GESUT	Geodezyjna ewidencja sieci uzbrojenia terenu: geodetic register of utility networks.
GKG, GUGiK	Główny Geodeta Kraju: Surveyor General of Poland, and the Główny Urząd Geodezji i Kartografii: Head Office of Geodesy and Cartography, which supports the Surveyor General.
GIS	Geographic information system.
GML	Geography Markup Language, an XML-based spatial data format used when submitting data to the resource.
GNSS, GPS	GNSS (Global Navigation Satellite Systems) are global satellite navigation systems, and GPS (Global Positioning System) is one of them, the American one.
GPU	Graphics processing unit, used for AI computation.
Groups I, II, III	Grupy szczegółów terenowych: classes of survey details under the technical standards, with required accuracy of 0,10 m, 0,30 m and 0,50 m respectively.
HTR, OCR	HTR (handwritten text recognition) is the recognition of handwriting, and OCR (optical character recognition) the recognition of printed text.
IGN	Institut national de l'information géographique et forestière (National Institute of Geographic and Forest Information), the French mapping agency.
ISPRS	International Society for Photogrammetry and Remote Sensing.

Term	Meaning
JDG	Jednoosobowa działalność gospodarcza: sole proprietorship (a business run by one natural person).
KdsC	Komitet Rady Ministrów do spraw Cyfryzacji: Council of Ministers Committee for Digital Affairs, which reviews government digital projects.
KFS	Krajowy Fundusz Szkoleniowy: National Training Fund, a separate part of the Labour Fund for the lifelong learning of employees and employers.
KPI	Key performance indicator.
KRiBSI	Komisja Rozwoju i Bezpieczeństwa Sztucznej Inteligencji: Artificial Intelligence Development and Security Commission, the AI market surveillance authority under the Act in Dz.U. 2026 item 1003.
KSeF	Krajowy System e-Faktur: National e-Invoicing System.
KW	Księga wieczysta: land and mortgage register.
LiDAR	Light detection and ranging: laser scanning from an aircraft, a drone or the ground.
LLM	Large language model, e.g. Claude, ChatGPT, Copilot.
LoD1, LoD2	Levels of detail of 3D building models: a block with a flat roof and a block with the roof shape.
LUC	Light UAS operator Certificate, which allows an operator to authorise its own flights.
MDCP	Mapa do celów projektowych: design base map (map for design purposes).
MF, MFiG	Ministerstwo Finansów: Ministry of Finance; MFiG is the Minister Finansów i Gospodarki (Minister of Finance and Economy), the name of the office since 2025.
ML	Machine learning.
MLS	Mobile laser scanning.
MPZP	Miejskowy plan zagospodarowania przestrzennego: local spatial development plan.
nDSM	Normalised digital surface model, i.e. the height of objects above the ground.
NIS2	Directive (EU) 2022/2555 on cybersecurity, implemented by the amendment to the Act on the national cybersecurity system (Dz.U. 2026 item 252).
NMT	Numeryczny model terenu: digital terrain model (DTM), describing the height of the ground without buildings and vegetation.
NSA, WSA	Naczelny Sąd Administracyjny: Supreme Administrative Court, and wojewódzki sąd administracyjny: Regional (voivodeship) Administrative Court.
OC	Ubezpieczenie odpowiedzialności cywilnej: third-party (civil) liability insurance.
ONNX	Open Neural Network Exchange, a file format for AI models.
OZZG	Ogólnopolski Związek Zawodowy Geodetów: National Trade Union of Surveyors.
PARP	Polska Agencja Rozwoju Przedsiębiorczości: Polish Agency for Enterprise Development.
PDF	Portable Document Format, an electronic document format.
PESEL	Personal identification number in the Powszechny Elektroniczny System Ewidencji Ludności (Universal Electronic System for Registration of the Population).
PGiK	Prawo geodezyjne i kartograficzne: the Geodetic and Cartographic Law (statute).
PIT	Podatek dochodowy od osób fizycznych: personal income tax; here the Act on that tax.
PIU	Polska Izba Ubezpieczeń: Polish Chamber of Insurance.
PKD	Polska Klasyfikacja Działalności: Polish Classification of Activities.
PODGiK	Powiatowy ośrodek dokumentacji geodezyjnej i kartograficznej: county geodetic and cartographic documentation centre.
pp.	Punkt procentowy: percentage point, the difference between two values expressed as percentages.
PTG	Polskie Towarzystwo Geodezyjne: Polish Geodetic Society.
PU	Processing unit, the billing unit in the Flai price list, worth 0,01 EUR.
PUP	Powiatowy urząd pracy: county labour office.

Term	Meaning
PZGiK	Państwowy zasób geodezyjny i kartograficzny: state geodetic and cartographic resource.
RCN	Rejestr cen nieruchomości: real property price register.
RMSE, RMS	Root mean square error, a measure of geometric accuracy.
RODO	Rozporządzenie o ochronie danych osobowych: Regulation (EU) 2016/679 on the protection of personal data (GDPR).
RTK	Real-time kinematic: real-time satellite positioning with corrections, giving centimetre accuracy.
SAM	Segment Anything Model, a general-purpose image segmentation model.
SDR	Special Drawing Rights, the unit of account of the International Monetary Fund.
SI	Sztuczna inteligencja: artificial intelligence; the abbreviation used in Polish legislation.
SLAM	Simultaneous localisation and mapping, the technique used by handheld and mobile scanners.
STS	Standard scenario for flights in the specific category, carried out on the basis of a declaration to the ULC.
TBC	Trimble Business Center, Trimble's software for processing survey data.
t.j.	Tekst jednolity: consolidated text of a legal act.
UD60	Number of the government bill amending the PGiK in the list of legislative works.
UE, WE	Unia Europejska: European Union (EU); WE is Wspólnota Europejska: European Community (EC), used in the designations of older acts.
UGN	Ustawa o gospodarce nieruchomościami: Real Estate Management Act.
ULC	Urząd Lotnictwa Cywilnego: Civil Aviation Authority.
UODO	Urząd Ochrony Danych Osobowych: Personal Data Protection Office.
VAT	Value added tax (podatek od towarów i usług).
VLOS	Visual line of sight: flight within the operator's visual line of sight.

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