



Documentation

Digital Topographic Map 1 : 100 000

DTK100



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1 Overview of the dataset

Product:	DTK100
Content:	georeferenced raster data of „Digital Topographic Map 1 : 100 000“ (DTK100) • 1 combined layer containing the colour-coded image of the map • 24 single layers, classified according to the map colours.
Area:	Federal Republic of Germany
Spatial structure:	tiling scheme defined by AdV (The Working Committee of the Surveying Authorities of the Laender of the Federal Republic of Germany), approx. 290 seamless tiles 40 by 40 km
Spatial reference*:	UTM projection zone 32 or 33 Datum ETRS89, Ellipsoid GRS80 height system DHHN92 (NHN)
Currentness:	see Aktualitätsübersicht
Optional Resolution:	200 Pixel/cm or 508 dpi
Data formats:	• GeoTIFF, LZW compressed, 8-bit colour depth, RGB-colour palette (combined layer) • GeoTIFF, LZW compressed, 1-bit colour depth (single layers)
Data supply*:	Download OGC Web map service (WMS)
Data source	Automatically derived from Basis-DLM or DLM50 and DSM by the Surveying Authorities of the Laender

* Please note that not all forms of delivery can be provided with each georeferencing and data format. If you have any questions, feel free contact the Service Centre (DLZ).

2 Description of the dataset and online services

2.1 Content

2.1.1 General

The Digital Topographic Map 1 : 100 000 (DTK100) contains computer-aided derived data from the ATKIS® DLM50 and DGM by the Surveying Authorities of the Laender, stored as raster data at map scale 1 : 100 000. They are presented in map graphics according to ATKIS® signature catalogue (ATKIS®-SK100). The actual content is limited to the federal territory of Germany.

The datasets of the Laender have been merged into one seamless nationwide dataset. The raster data has not been modified in content. Existing differences in the map graphics between the federal states have not been eliminated.

The raster data are subdivided into several layers according to their cartographic content. Besides the coloured combined layer, containing the complete coloured map image, there are 24 monochrome single layers part of DTK100.

Please note that cartographic symbols may contain graphical gaps to avoid certain overlays with symbols of other layers. This is because the single layers were generated for the purpose of map printing.

2.1.2 Content and colour maps of single layers and coloured combined layer

Table 1: layer classification according to ATKIS® signature catalogue 1:100 000¹(only in German)

index	label	colour name in col layer	red	green	blue	content	remark
1	schw	Schwarz	0	0	0	Straßenkonturen; Wege; andere Grundrisselemente (z.B. Konturen von Hochhäusern, Flughäfen/-plätze, Rollbahnen), Eisenbahnen; schwarze Symbole; Felsen, Geröll	
2	swtx	Schwarz	0	0	0	schwarze Schriften	
3	grbr	Grundrissbraun	102	0	0	Hochspannungsleitungen; grundrissbraune Symbole; Sand; Schriften von Landschaften, Bergen	
4	rebr	Reliefbraun	204	102	102	Höhenlinien; Böschungen; Dämme; Höhenlinienzahlen	
5	babl	Bachblau	0	128	255	Gewässerkonturen; kleine Gewässerflächen; blaue Schriften; blaue Symbole; Fährlinien	
6	baum	Baumgrün	0	204	0	baumgrüne Symbole; baumgrüne Schriften; Grenze Nationalpark, Biosphärenreservat und Naturschutzgebiet	Grenze Nationalpark, Biosphärenreservat und Naturschutzgebiet Tonwert: 50%
7	viol	Violett	153	0	255	Verwaltungsgrenzen	
8	-	-	-	-	-	-	

¹ excerpted from appendix A2 of AdV's product standard for Digital Topographic Maps

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index	label	colour name in col layer	red	green	blue	content	remark
9	haus	Gebäudegrau	102	102	102	Gebäude außerhalb von Siedlungsflächen	nur freigestellt durch Layer 10, 19 und 20
10	weis	Weiß	255	255	255	Decker untergeordneter Straßen, Rollbahnen; Plätze; weiße Schriften (z.B. Auto-bahn- und Europastraßen-Nummern); Innenflächen von Symbolen, die lt. Signaturenteil des SK100 weiß dargestellt werden müssen (z.B. Signatur 21000=Kraftwerk); Ackerflächen; Grünland; Baumschulen; Obstbauplantagen; Sandbank; Gewässerbegleitflächen	keine Freistellung durch Elemente der Layer 1 bis 9 und Layer 22; alle Flächen (Layer 10 bis 21, 23 und 25) zusammen ergeben ein lückenloses Kartenbild (keine Flächen sind mehrfach belegt)
11	sebl	Seeb blau	191	255	255	Gewässerdecker; Decker in Schleusen; Hafenbecken; Priel; Meer	
12	hrot	Wohnflächen-hellrot	255	153	179	Siedlungsflächen; Flächen besonderer funktionaler Prägung: jeweils offene Bebauung	
13	grau	Industrieflächen-grau	204	204	204	Industrieflächen; Halden; Tagebau; Bergbauflächen; Bahnverkehrsflächen; Schiffsverkehrsflächen; Schleusenanlagen	
14	acke	Ackerocker	255	255	230	Weinbauflächen; Hopfenflächen	
15	brac	Brachbraun	230	230	204	Klärbecken; Torfstich; Moor; Moos; Sumpf	
16	wald	Waldgrün	191	242	128	Waldflächen; Gehölzflächen	
17	wies	Wiesengrün	230	255	204	Flughäfen/-plätze; Friedhöfe	
18	park	Parkgrün	153	255	179	Gartenland; Sport-, Freizeit- und Erholungsflächen	
19	stor	Straßenorange	255	179	0	Decker Autobahnen und Bundesstraßen	
20	stge	Straßengelb	255	255	0	Decker Staats- und Landesstraßen; Bundesstraßensymbol (Innenfläche)	
21	watt	Wattgrau	191	230	230	Wattflächen	
22	utm	Schwarz	0	0	0	UTM-Gitter mit Schrift	nur im Bereich der Karte; Freistellungen wie im Druck
23	mrot	Wohnflächen-mittelrot	255	77	128	Siedlungsflächen; Flächen besonderer funktionaler Prägung: jeweils geschlossene Bebauung	siehe Bemerkung zu Layer 10 ff
24	trup	Gefahrenrot	255	120	255	Grenze von Truppenübungs- oder Standortübungsplatz	Tonwert: 50%
25	heid	Heideviolett	237	217	222	Heideflächen	siehe Bemerkung zu Layer 10ff

The label for the coloured combined layer is „col“.

Table 2: colour map of the coloured combined layer (col) according to ATKIS® signature catalogue 1:100 000² (only in Germany)

index	colour name	red	green	blue	remark
0	NoData	250	250	250	noData-Bereich: Bereiche ohne Karteninhalt (nicht weiß!), i. d. R. außerhalb des Landesgebiets/der Zuständigkeit
1	Hintergrund	255	255	255	Bereich außerhalb des Kartenfeldes bei Abgabe an Kunden
2	Weiß	255	255	255	
3	Wattgrau	191	230	230	
4	Parkgrün	153	255	179	
5	Wiesengrün	230	255	204	
6	Waldgrün	191	242	128	
7	Brachbraun	230	230	204	
8	Ackerocker	255	255	230	
9	Seeb blau	191	255	255	
10	Industrieflächengrau	204	204	204	
11	Wohnflächenhellrot	255	153	179	
12	Wohnflächenmittelrot	255	77	128	
13	-	-	-	-	
14	-	-	-	-	
15	-	-	-	-	
16	-	-	-	-	
17	Heideviolett	237	217	222	
18	Gefahrenrot	255	120	255	aufgerastert, Tonwert 50%
19	-	-	-	-	
20	Gebäudegrau	102	102	102	
21	Straßengelb	255	255	0	
22	Straßenorange	255	179	0	
23	-	-	-	-	
24	-	-	-	-	
25	Grenzviolet	153	0	255	
26	Baumgrün	0	204	0	Grenze Nationalpark, Biosphärenreservat und Naturschutzgebiet, aufgerastert, Tonwert 50%
27	Bachblau	0	128	255	
28	Reliefbraun	204	102	102	
29	Grundrissbraun	102	0	0	
30	Schwarz (ohne Schrift)	0	0	0	ohne UTM-Gitter
31	Schwarze Schrift	0	0	0	ohne UTM-Koordinatenangaben

² excerpted from appendix A3 of Adv's product standard for Digital Topographic Maps

2.1.3 Data format

The thematic map DTK100 is provided as GeoTIFF files compressed with LZW without image pyramids or overviews. The resolution for printing true to scale is 200 px/cm or 508 dpi.

The image files of the coloured combined layer were produced with a colour depth of 8 bit and an integrated colour palette.

The image files of the single layers were produced as black & white images with 1-bit colour depth. The colour at index 0 corresponds to the background displayed in white/transparent and the colour at index 1 corresponds to the actual content displayed in black.

Each raster file provides spatial reference information as:

- embedded tag in GeoTIFF format
- corresponding ESRI worldfile (file extension tfw)

2.2 Notes on data delivery

2.2.1 Spatial structure

To provide large amounts of seamless data we use the long-term defined tiling scheme by the Adv. Dependent on the georeference system the data will be split into square tiles. This supports the user in processing the current data more efficient and updating the data by replacing single tiles.

Tile indexes are available at <https://www.geodatenzentrum.de/>.

The DTK100 is provided as a set of 40 km x 40 km tiles. The dimension of an image file is 8000 by 8000 pixel.

The nomenclature of these single tiles is based on the coordinates of the lower left corner in the particular coordinate system. They are structured as follows:

PRODUCT EAST_NORTH_SIZE_LAYER

PRODUCT name of the product (here dtk100)

EAST easting coordinate of the lower left corner of the tile, unit „km“
(with zone indication for UTM)

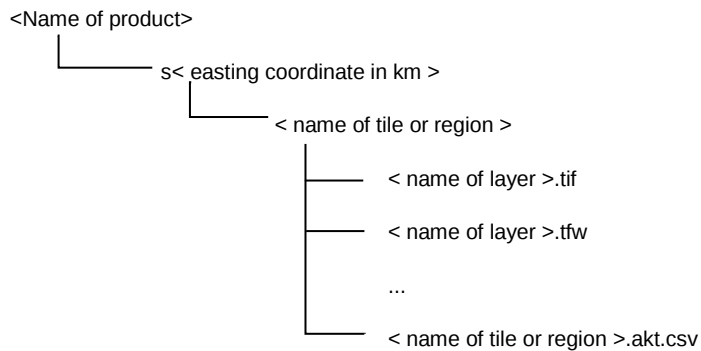
NORTH northing coordinate of the lower left corner of the tile, unit „km“

SIZE edge length of the tile, unit „km“ (here 40)

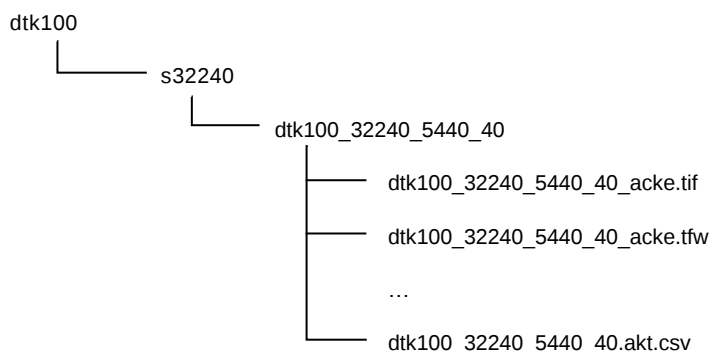
LAYER layer label according to Table 1, coloured combined layer = col

2.2.2 Directory structure

The data is stored and provided in the following directory structure:



Example:



2.2.3 Metadata

Metadata about federal datasets as well as datasets of the federal states are available at the meta information system of the AdV (AdV-MIS). They are maintained by the responsible authority.

The currentness of data is shown here: [Aktualitätsübersicht](#)

Additionally, an ERSI Shape file is provided along with this documentation which contains the same attributes as the view linked above.

Example excerpt from the ESRI Shape file:

NUMMER	LAND	GRUNDAKT	SPITZENAKT	STAND	DATUM_LIEF
C3946	BE	20220706	20230605	20240402	20240402

description of the attributes:

NUMMER = label of the provided spatial unit

LAND = ISO abbr. of the federal state which administrates the unit

GRUNDAKT = date of first-time acquisition

SPITZENAKT = date of last time the unit was updated

STAND = date of generation by the responsible authority

DATUM_LIEF = date of delivery by the responsible authority

2.2.4 Online service

The service centre (DLZ) provides the standardized web map service *wms_dtk100* according to the specifications of the Open Geospatial Consortiums (OGC).

More information about this service can be found on the web portal of our service centre (DLZ).

3 Data acquisition

The database can be obtained free of charge on our website <https://www.bkg.bund.de/> under the heading „Products and Services“ → „Open Data“.

4 Terms of use

The data are protected by copyright. The data are made available free of charge in accordance with the licence [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/). Data licenced under Creative Commons Attribution 4.0 International may be shared, reproduced and modified under the condition of attribution. The attribution is included in the source note. The source note must be observed.

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