Description of MapSet Poland

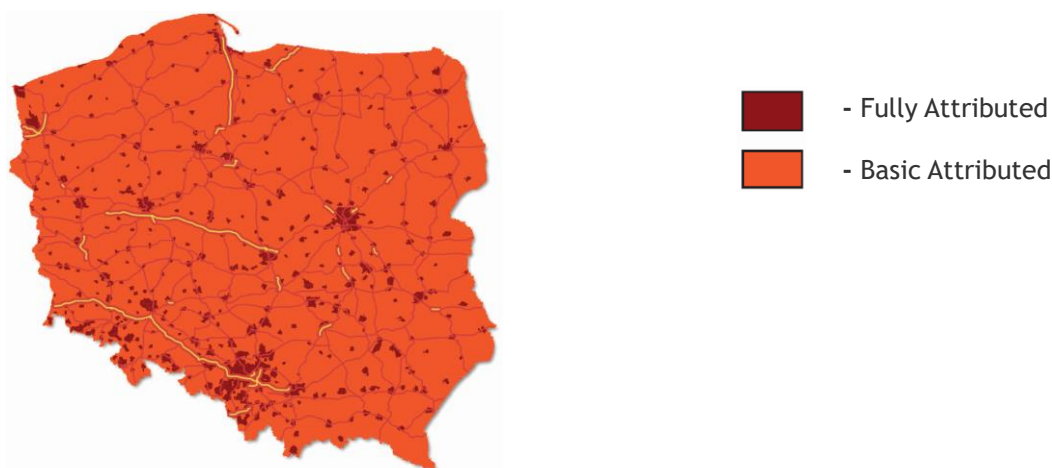**- detailed map of Poland available in Emapa's offer**

– Q3.2024

1.   MapSet Poland

MapSet Poland is the most detailed and comprehensive digital map of Poland available on the market. Its producer is Emapa, leader on Polish geoinformatics market, what guarantees highest quality and validity of the cartographic data.

Data included in MapSet Poland cover different aspects (i.a. districts' borders, towns, roads along with their names, traffic restrictions, house numbers), complete database of postal codes, over 424 844 POIs (Points of Interest: hotels, petrol stations, cash dispensers, restaurants, etc.), 2-D and 3-D buildings and a lot of other information. What distinguishes our map of Poland from competitors and gives Emapa S.A.. an unquestionable advantage is the detailed coverage not only within cities, but also in small towns.

Thanks to years of experience, top-flight specialists in cartography and IT and continuous updating of resources, the unique base of Emapa's digital maps always guarantees customer satisfaction.

2.   MapSet Poland – coverage (Q3.2024):

- Fully Attributed

- Basic Attributed

MapSet Poland	Q3.2024
Street Network (% population)	100
Fully Attributed (% population)	100
Settlements	124 637
Detailed City Maps	979
Detailed Town Maps	8075
Settlements represented as Street Network with house numbers	54 056
Total length of the road network (km)	791 066
Length of paved roads (km)	333 540

Length of unpaved roads (km)	457 526
Highways (%)	100
POIs	424 844
House numbers	9 262 113
Postal codes	100%
Postal codes areas	100%
2D buildings (complete database)	16 268 626
3D buildings	236

3.   MapSet Poland – modules

MapSet Poland includes a set of several separate modules with different resources and functionality. Depending on individual needs Client does not need to decide on a complete MapSet Poland package, but can freely select the modules useful to him.

Modules	
MapSet Basic	Basic module. Contains among others geometry and basic attributes of the road network, settlements, railways (excluding stations that are inside POI database), a network of rivers and water bodies, green areas (forests, parks, cemeteries), buildings, industrial areas, airport runways, squares, borders, provinces, counties, municipalities, districts.
MapSet Address Point	Includes numbers of buildings. This module allows geocoding (returning the right piece of the map on the basis of the specified address to the nearest number).
MapSet Route	Contains data for routing: the numbers of roads, categorized the various sections and crossings, geometry and attributes of maneuvers.
MapSet Navi	Contains data for navigation, including restrictions for different vehicle types (e.g. tonnage, speed).
MapSet POI	Contains a database of Points of Interest, i.e. POI.
MapSet ZIP	Contains Polish code areas and cities.
MapSet 3D	Includes 3D Buildings.
MapSet Buildings	Contains outlines of all buildings In the city.

MapsSet Signpost	Includes signposts.
MapSet Lane Assistant	Includes information for Lane Assistant.

4.   MapSet Poland – data description

MapSet Poland includes:

4.1.   Street Network of Poland

MapSet Europe contains road and settlement map of Europe. It is a vectorial, cartometric map with a preciseness close to 1:100 000, including following information:

- all paved roads, including major country roads, major voivodeship roads, (along with house numbers), district roads (of first and second district level) and most unpaved roads,
- detailed maps of 979 Polish cities,
- detailed maps of 8075 settlements,
- 54 056 Settlements represented as Street Network with house numbers,
- city borders and housing area outlines,
- borders of voivodeships, districts and communities,
- postal codes, railways,
- rivers and water basins,
- green areas (woods, parks and cemeteries)

*) settlement points network include cities, settlements and chosen communities (with distinguishing, high-density housing, having its own names, which from an administrative point of view are a part of a bigger village).

4.2   City Maps

Maps of all the cities with a preciseness close to 1:10 000, including following information:

- Major roads with names,
- House numbers,
- Postal codes (including allocated towns),
- Railways,
- Green areas,
- Rivers and water basins

5.   MapSet Poland – selected attributes overview

5.1 Maneuvers (MapSet Basic)

MapSet Poland that's also a number of extra elements and practical information:

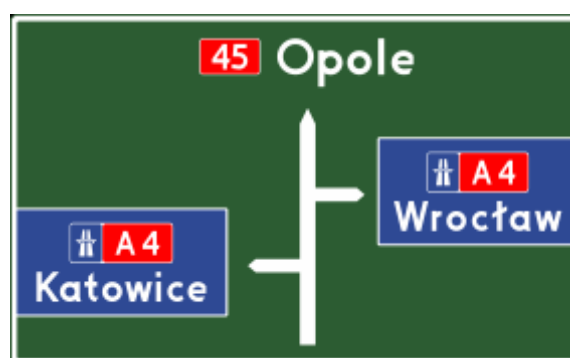| Maneuvers	
	Maneuvers Contain information about allowed maneuvers and traffic directions on cross roads. Thanks to this feature a user can be certain, that a route considers all traffic conditions and guides him in the right directions.

5.2   Lane Assistant (MapSet Lane Assistant)

Information on directions and possible maneuvers for each lane before the upcoming crossings or exits from highways, which greatly facilitates driver's maneuvers on multilane roads. The current database includes highways.

5.3   Sign Post Information (MapSet Signpost)

Data layer with roads directions reflecting real conditions. Informs about routes' destinations, thanks to which it is much easier to interpret maps and keep the sense of direction. Current database covers motorways and the biggest Polish cities, i.a.: Warszawa, Kraków, Łódź, Poznań, Wrocław, GOP.

5.4.   Road Restrictions (MapSet Navi):

Information about traffic conditions: speed limits, roads directions, allowed maneuvers, no right/left turns, access for each traffic participant (passenger vehicle, truck, pedestrian), taking into consideration 3 different kinds or restrictions: time, dimension and tonnage restrictions. Database includes motorways, expressways, over 50% of voivodeship roads and

main lines of communication in bigger cities.

Types of traffic participants	
	Passenger vehicle Route algorithm takes into account roads available only for passenger vehicles – in one or both directions, depending on a case.
	Truck Route algorithm takes into account roads available for trucks – in one or both directions, depending on a case. First of all it considers motorways, expressways and main country roads. The algorithm also provides for a vehicle tonnage and dimensions avoiding places inappropriate to given vehicle's specifics.
	Pedestrian Route algorithm provides for roads available for pedestrians – in one or both directions, depending on a case. It avoids motorways, expressways, but takes into consideration all unpaved roads.

Types of restrictions	
	Time restrictions Traffic restrictions (as described on sign posts) in specified hours/days.
	Dimension restrictions Traffic restrictions for vehicles of dimensions (height, width, length, cubature) exceeding those determined by road signs. The algorithm along with marking out a route, provides for information subscribed to the vehicle and avoids places inappropriate for it.
	Tonnage restrictions Traffic restrictions for vehicles of tonnage exceeding those determined by road signs. The algorithm along with marking out a route, provides for information subscribed to the vehicle and avoids places inappropriate for it.

Speed limits
Data about speed limits on particular road segments, as well as assigned to an attribute 'built-up / not built-up area'. Used in GPS navigation are an indispensable tool for car drivers – inform about maximal allowed speed on a road they're driving. Speed limits are also taken into account by an algorithm to calculate an optimal fastest route.

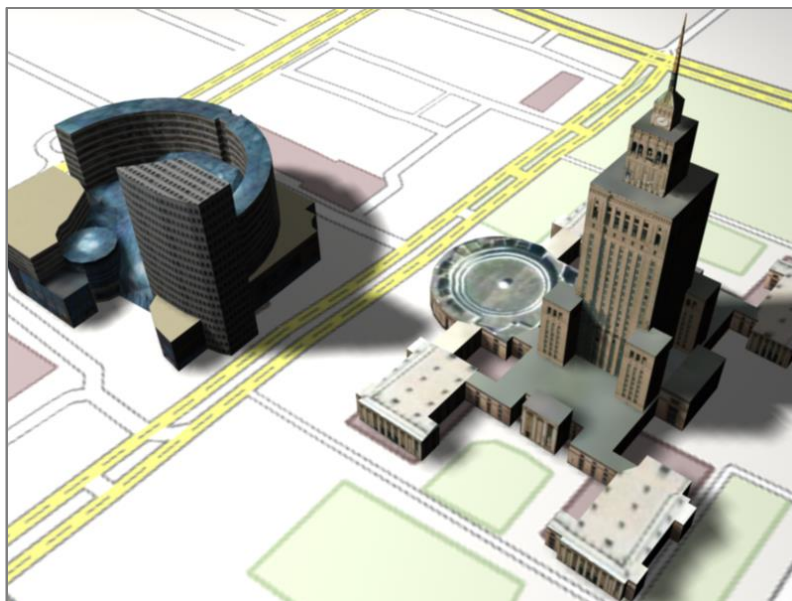## 5.5   2D Buildings Outlines (MapSet Buildings)

MapSet Poland has been equipped with 2D buildings models. At the moment database includes complete sets of buildings in 2041 Polish cities (including: Warszawa, Kraków, Łódź, Wrocław, Poznań, Gdańsk, Szczecin, Bydgoszcz, Lublin, Katowice, Białystok, Gdynia, Częstochowa, Radom, Toruń, Kielce, Olsztyn, Opole, Elbląg, Tarnów, Sopot, Augustów, Ustroń, Władysławowo, Sławno, Golub-Dobrzyń, Puck, Wisła, Hel, Łeba, Krynica Morska, Kostrzyń nad Odrą) comprising all together 16 268 626 objects.

Precise outlines considerable facilitate orientation in surroundings and make it shorter to reach searched point. Thanks to it working with maps is easier, consumes less time and - last but not least - is more pleasant.

5.6   3D Buildings (MapSet 3D)

Continually extended database of 3D characteristic Polish buildings. Apart from practical functions (improving the sense of direction), the buildings add unique value to the digital maps and considerably increase their appeal. Current database includes 236 objects in the biggest Polish cities (i.a. Warszawa, Kraków, Łódź, Poznań, Wrocław, Gdańsk, Szczecin, Katowice) as well as well as in tourist locations (i.a. as well as Malbork, Legnica, Głogów, Gniew).

Warsaw's Palace of Culture and Science, Złote Tarasy

7.   MapSet Poland – format

Digital cartographical data of MapSet Poland are available in ShapeFile (.shp) format. Our format specifics is described in details in MapSet Poland specification – available at Customer' request. On a special Client's demand there is also a possibility of customizing the data to chosen format.

8.   MapSet Poland – preciseness and validity of data

The localization of village roads and objects may differ from the reality up to 10m (in 95% of the cases), but not more than 100m (in 5% of the cases). Within the cities, the major street network may differ from the reality up to 5m (in 95% of the cases) and not more than 80m (in 5% of the cases). The mentioned variation are applicable to the whole country area.

MapSet Poland is continually being updated and upgraded. Teams of top-flight cartographers and IT-specialists incessantly develop data and make sure that all the maps details are close to the reality as much as possible. In achieving this goal we are strongly supported by our Customers and Users for who we have created a special protocol enabling to report map errors. Thanks to this solution we gain a lot of valuable pieces of information. We verify this kind of notification with hi-tech system, called "Car-to-graph" (vehicles equipped with cameras of the highest resolution and advanced IT devices and systems), that collects, monitors and controls maps data in the field.

Verification of mistakes, placing new roads investments, expanding maps resources with extra details and pieces of information allows us to make new, updated and upgraded versions of MapSet Poland quarterly accessible. Thanks to this solution we can offer to our Customers always up-to-date maps data of the highest quality.

In order to check our data, visit the website: **http://emapi.pl**.

Data provider: Emapa