



NLS orthophotos



NLS orthophotos are an aerial photo data set covering the whole of Finland. The geometry of the orthophotos corresponds to a map. The terrain resolution is 0.5 m. Some 0.25 m orthophotographic data is also produced in conjunction with laser scanning flights. NLS orthophotos are updated every 3 to 10 years. The product is a part of the NLS raster material.

The product NLS orthophotos is available via the service interface.

The product is a part of the open data of the National Land Survey of Finland. More information: Acquisition of open data

<http://www.maanmittauslaitos.fi/en/opendata/acquisition>.

Purpose: Orthophotos are utilized for mapping and also for planning and monitoring the environment. Colour or black-and-white orthophotos are suitable for planning or as background material for various map presentations. Colour-IR orthophotos are best suitable for forest inventory. The product can be printed out on scales ranging from 1:5 000 to 1:20 000.

Geographic location: Entire Finland

Responsible party: National Land Survey of Finland

Pixel size: 50cm

Spatial representation: Raster

Data content: An orthophoto is an uninterpreted image of the terrain.

Versions of the orthophotos:

Film, black-and-white
 pixel size 0.5 metres
 normal size 10 000 x 10 000 pixels (in the KKJ national grid coordinate reference system)
 normal size 12 000 x 12 000 pixels (TM35 map sheet division)
 consists of a maximum of 256 different shades of grey

Film, colour-IR
 pixel size 0.5 m
 normal size 10 000 x 10 000 pixels (in the KKJ national grid coordinate reference system)
 normal size 12 000 x 12 000 pixels (TM35 map sheet division)
 consists of three colour channels (near-IR, red, green)
 each colour channel contains a maximum of 256 different shade values

Digital, colour
 pixel size 0.5 m
 normal size 12 000 x 12 000 pixels (TM35 map sheet division)
 consists of three colour channels (red, green, blue)
 each colour channel contains a maximum of 256 different shade values

Digital, colour-IR
 pixel size 0.5 m
 normal size 12 000 x 12 000 pixels (TM35 map sheet division)
 consists of three colour channels (near-IR, red, green)
 each colour channel contains a maximum of 256 different shade values

Digital, colour
 pixel size 0.25 m
 normal size 6 000 x 6 000 pixels (TM35 map sheet division)
 consists of three colour channels (red, green, blue)
 each colour channel contains a maximum of 256 different shade values

Digital, colour-IR
 pixel size 0.25 m
 normal size 6 000 x 6 000 pixels (TM35 map sheet division)
 consists of three colour channels (near-IR, red, green)
 each colour channel contains a maximum of 256 different shade values

Maintenance: Updating frequency: 3–10 years. The data set is maintained by the National Land Survey. The most up-to-date version of the 0.5 m pixel size product version is available via our service interfaces and browsing services. The product version 0.25 m does not have a maintenance plan. The product is only produced in conjunction with laser scanning flights and is available for laser scanned areas only. Coverage indexes (maps, in Finnish): <http://www.maanmittauslaitos.fi/node/297>.

Quality information

Lineage: NLS Orthophotos is the only set of aerial photographs that cover the whole of Finland.

About positional accuracy:

The positional accuracy depends on the structure of the camera, the altitude from where the photo is taken and the elevation model used in producing the orthophoto. The elevation model has the biggest influence on the geometrical accuracy of the photo. Due to different elevation models (Elevation model 25 m, 10 m and 2 m) the positional accuracy of each photo is 0.5–2 meters.

Orthophotos are updated every 3–10 years.

Conformity: COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services 2010-12-08 The information product specification has not been published yet. false

Distribution and further information

Distributor: National Land Survey of Finland, customerservice@nls.fi

Retailers (in Finnish), <http://www.maanmittauslaitos.fi/aineistot-palvelut/digitaaliset-tuotteet/hankinta-o>

Conditions applying to access and use: The product is a part of the open data of the National Land Survey. Open data license: <http://www.maanmittauslaitos.fi/en/en/data-and-services/digital-products/datasets-free-charge/terms-...> More information: Acquisition of open data <http://www.maanmittauslaitos.fi/en/opendata/acquisition>. The data set NLS

Orthophotos is available as a version that covers the entire country or as a version that covers a particular area. The area limitation is done according to map sheet division (3 x 3 km, 5 x 5 km or 6 x 6 km). Orthophotos are available as of 1995. Starting from 2009 orthophotos are also available in colour and colour-infrared format. Starting from 2014 orthophotos with a 0.25 m pixel size are available for some limited areas. The coordinate reference system used in the photo shoots until 2007 was KKJ, i.e. the national grid coordinate system (zones of the coordinate reference system). As of 2008 the coordinate reference system used when taking aerial photos has been ETRS89/TM35FIN. Updating frequency and coverage index (map) (in Finnish):

<http://www.maanmittauslaitos.fi/kartat/ilmakuvat/ilma-ortokuvien-indeksikartat> (the index is updated as orthophotos become available). The product version 0.5 m is available in the map image service (WMS) <http://www.maanmittauslaitos.fi/aineistot-palvelut/rajapintapalvelut/karttakuvapalvelu-wms> (in Finnish) and the map image service (WMTS) <http://www.maanmittauslaitos.fi/aineistot-palvelut/rajapintapalvelut/karttakuvapalvelu-wmts> (in Finnish).

Limitations on access: The copyright and the other immaterial rights on the data set NLS Orthophotos are owned by the National Land Survey of Finland. The data material is not confidential. Public access to the material is not restricted by the INSPIRE Directive. Areas defined by the Finnish Defence Forces may limit the access to 0.25 m orthophotos in some regions.

Reference system: ETRS-TM35FIN, KKJ

Distribution format: Tiff (tiff), JPEG2000

Further information: The metadata of the orthophotos is provided by request.

Keywords: [Digitaaliset tuotteet](#)