



LuxCarta

Hydro-Enforced Digital Terrain Model

LuxCarta's **Hydro-Enforced Digital Terrain Model** (HDTM) is a high-resolution elevation product optimized for hydrologic and hydraulic modeling. It combines **automated bare-earth** extraction with **enforced water flow paths** to create a **hydrologically correct terrain**. Derived from **high-resolution DSM** and **orthoimagery**, HDTM removes above-ground features and ensures accurate simulation of drainage and water flow making it ideal for **flood risk, watershed modeling, and terrain visualization**.

Key Benefits

Hydrologically Correct Elevation Data

Ensures accurate representation of streams and flow paths by enforcing channel continuity in the terrain model.

Removes Artificial Obstacles

Corrects common DTM artefacts like road embankments, bridges, and buildings that disrupt water flow in standard models.

Ready for Hydrological Analysis

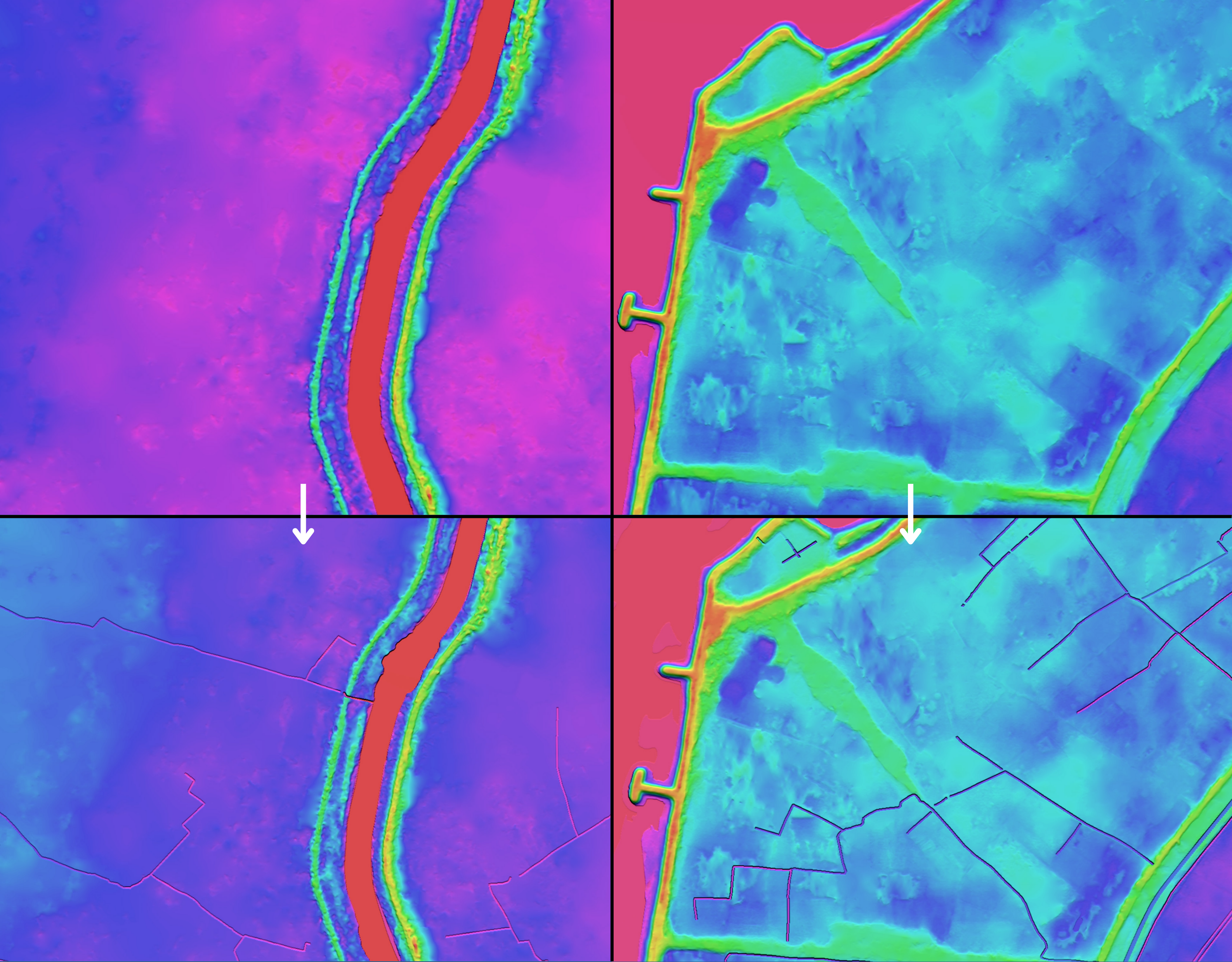
Provides a clean, ready-to-use dataset optimized for flood mapping, hydraulic simulations, and water resource planning.

Improves Modeling Accuracy

Enhances the reliability of hydrological models by aligning terrain data with real-world water movement.

Why choose HDTM ?

HDTM addresses the **limitations of traditional DTM** datasets by incorporating **hydrological intelligence** into the **elevation model**. It ensures a **seamless representation** of **water networks**, enabling **planners and engineers** to make **informed decisions** with **greater confidence**.



High-accuracy bare-earth DTM with hydrologic flow enforcement

Formats

Inputs: High-resolution DSM (30–50 cm or 1m, GeoTIFF) and orthoimagery (RGB or NIR, 30–50 cm) with matching coordinate systems.

Outputs: GeoTIFF, ESRI Shapefile (.shp), and custom formats available on request.

Deliverables

- **HDTM1m.tif** – Hydro-enforced terrain model (GeoTIFF)
- **DSM1m.tif** – Original digital surface model
- **Ortho50cm.tif** – Color imagery used for water feature identification
- **HDTM1m_contours.shp** – 1m contours generated from HDTM
- **Optional Layers (on request)** Bare-earth DTM (GeoTIFF) and breaklines for CAD/GIS (SHP).

Looking to improve the speed and accuracy of your derived geospatial data?

Contact us today for a personalized demo: sales@luxcarta.com | www.luxcarta.com



Hydro-Enforced Digital Terrain Model is powered by LuxCarta, one of the world's leading map data companies.

HDTM is LuxCarta's automated platform for producing hydrologically corrected digital terrain models. Designed for accurate water flow and drainage representation, it delivers clean, high-resolution elevation data ready for hydrologic and hydraulic modeling, flood risk assessment, and terrain visualization. It leverages over 30 years of geospatial expertise to provide standardized, interoperable datasets for your workflows.