iMerit

GLOSSARY
OF GEOSPATIAL TERMS

Roads

Residential Area

Farmlands

iMerit
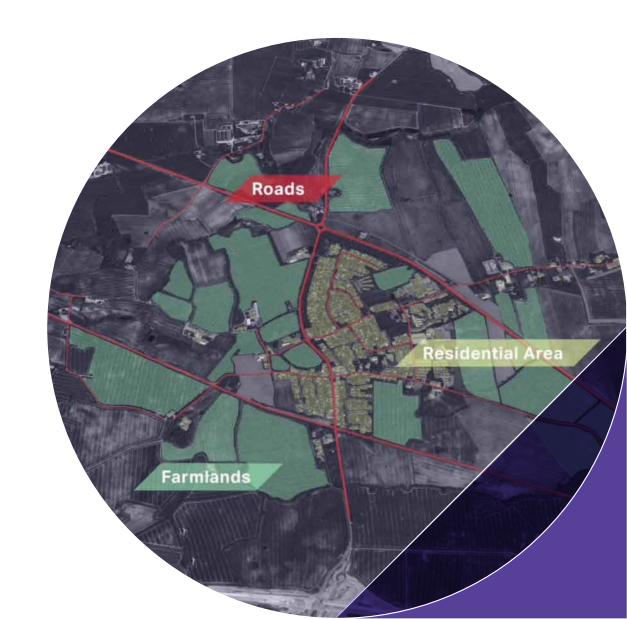
AGTECH/DIGITAL FARMING

The application of new digital technologies throughout the agricultural value chain, including tools that digitally collect, store, analyze, and share electronic data and/or information, to rapidly improve the efficiency of agricultural output.

CHANGE DETECTION

The process that measures how the attributes of a particular area have changed between two or more time periods. Change detection often involves comparing aerial photographs or satellite imagery of the area taken at different times.

EARTH OBSERVATION

The use of satellite and aerial remote-sensing technologies to gather data and analyze the physical, chemical, and biological systems of the planet.

ELECTRO-OPTICAL (EO)

The application of new digital technologies throughout the agricultural value chain, including tools that digitally collect, store, analyze, and share electronic data and/or information, to rapidly improve the efficiency of agricultural output.

FEATURE EXTRACTION

This specific form of dimensionality reduction for machine learning processes redundant data into a reduced representation set of features (also named features vector). The process extracts the relevant information from the input data using this reduced representation instead of the full size input.

FOUO

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GEOSPATIAL ANALYTICS

Any of the formal techniques which study entities using their topological, geometric, or geographic properties.

GIS

A geographic information system (GIS) is a framework for gathering, managing, and analyzing data. Rooted in the science of geography, GIS analyzes spatial location and organizes layers of information into visualizations using maps and 3D scenes.

IMAGE CLASSIFICATION

The process of assigning land cover classes to pixels based on the United States Geological Survey designations. For example, classes include water, urban, forest, agriculture and grassland.

KEYPOINTS

Also known as interest points, are spatial locations, or points in a photographic image that define what is interesting or what stands out in the image.

LAND USE CLASSIFICATION

The system for classifying land use and land cover adopted by the U.S. Geological Survey, Department of the Interior, for its national land use mapping program.

MARINE DOMAIN AWARENESS

Accurate and timely information about everything on, under, related to, adjacent to, or bordering a sea, ocean or other navigable waterway. This includes all related activities, infrastructure, people, cargo, vessels, or other means of transport.

OBJECT RECOGNITION

A computer vision technique for identifying objects in images or videos that mimics the human ability to identify and differentiate people, objects, scenes, and other visual details. It is a key output of deep learning and machine learning algorithms.

PATTERN OF LIFE

A method of surveillance specifically used to document or understand a subject's habits. It can be used for security, scientific research, traffic analysis, and other initiatives, often but not always with anonymized data.

PIXEL CLASSIFICATION

Unlike object-based classification, which employs both spectral and spatial information from the set of similar pixels that comprise an object, pixel-based classification is based solely on the spectral information in each pixel.

REMOTE SENSING

The use of passive sensors, such as film photography, infrared, charge-coupled devices, and radiometers to take measurements of the earth. Remote sensing typically employs satellites and aircraft rather than on ground measurements.

SYNTHETIC APERTURE RADAR (SAR)

A form of radar used to create two-dimensional images or three-dimensional reconstructions of objects, such as landscapes. SAR uses the motion of the radar antenna over a target region to provide finer spatial resolution than conventional beam-scanning radars.

UNCLASSIFIED DATA

Raw data (typically images and sensor data) that has not yet been assigned to a class or category or arranged according to characteristics.