# Case Study – Custom Machine Learning Algorithm Development

Earth-i works with companies and government agencies around the word to create custom multi-resolution and multi-sensor data-agnostic machine learning algorithms to answer their specific questions at scale. We are engaged with numerous customers including space agencies and commercial businesses to understand their business objectives and match these to data sets and machine learning methods. We pre-agree an achievable target accuracy and define the inputs and outputs rigorously to ensure that these are met. Once completed Earth-i then transfers the ML algorithm to the customer's infrastructure and enables them to create an automated processing chain for operational use, and provides ongoing support, development, and training. We assist customers with varying levels of remote sensing, infrastructure, and ML knowledge to achieve their aims through:

- Programme development and management
- Project definition and Algorithm and System specification
- Data procurement, data labelling and ML model training
- ML model testing
- ML model transfer and operationalisation
- Ongoing maintenance and support
- Customer training
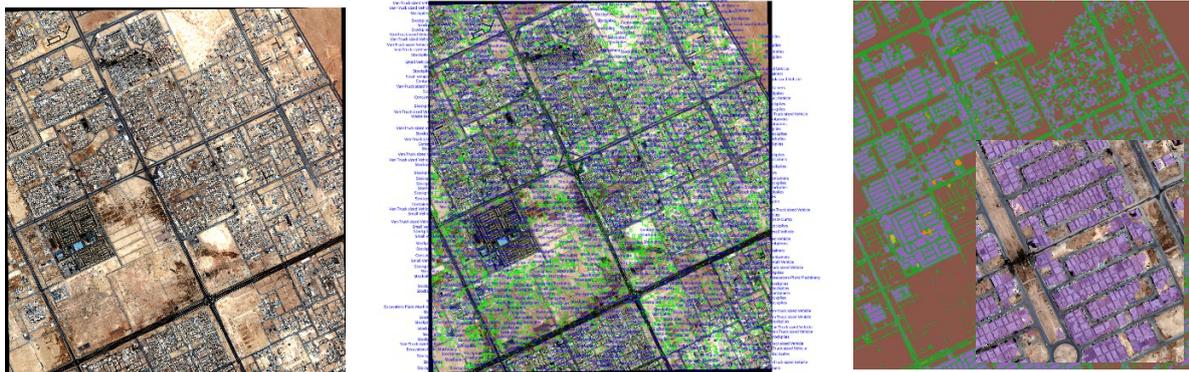
Our customers have used our technologies for object detection and building footprint detection to inform national planning regulations. We have also extended these technologies for other applications such as crop detection and agricultural monitoring. Data sources include video, optical and radar data allowing these capabilities to span multiple domains and atmospheric conditions.