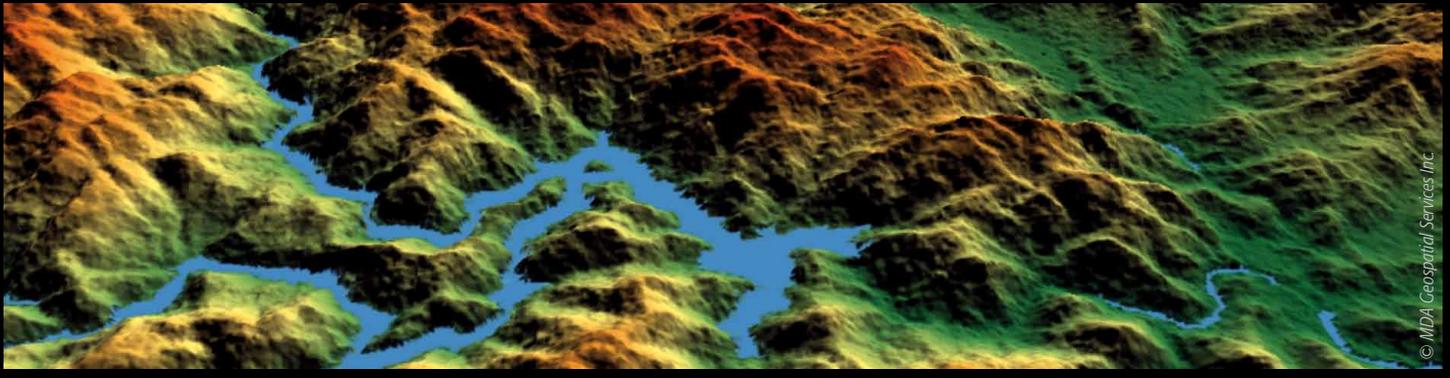


CASE STUDY Digital Elevation Models for the Center for Geological Survey



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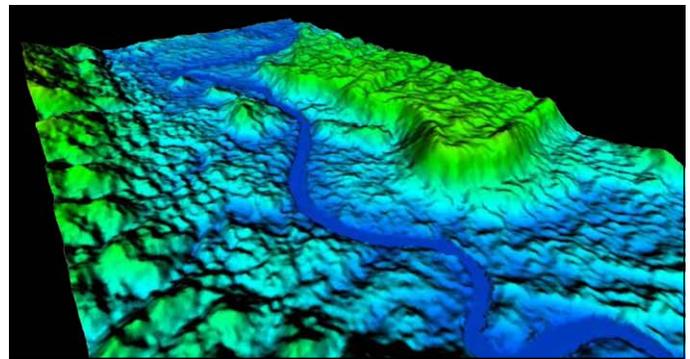
MDA's Digital Elevation Products enable the Indonesian Center for Geological Survey to provide enhanced geological mapping services for vast areas of the country.

THE CHALLENGE

When the Indonesian Pusat Survei Geologi (Center for Geological Survey, CGS) was tasked with developing 1:50,000 scale geological maps for the regions of Papua and Kalimantan, one of the greatest challenges was to acquire the required elevation and terrain data for an area larger than France while maintaining the project schedule. In these remote, cloudy, and forested areas of Indonesia, obtaining the necessary data using traditional airborne methods could have taken years, creating significant delays in the critical early stages of the CGS mapping project.

With this in mind, CGS turned to MDA to deliver Digital Elevation Models (DEMs), Ortho Rectified Images (ORIs), and drainage network maps, on the condition that the entire area totalling

over six hundred thousand square kilometres had to be digitally mapped in less than 4 months in order to maintain the overall project schedule.

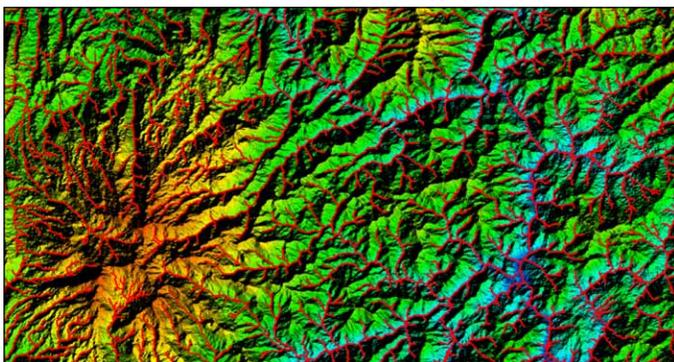


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Water bodies are identified and rivers set to flow downhill as part of MDA's standard finishing process.

THE SOLUTION

To meet the tight schedule required by CGS while maintaining quality, MDA utilized the powerful capabilities of its RADARSAT-2 satellite. Its unique, wide-swath beam modes enabled rapid acquisition of radar imagery over greater areas, and its ability to collect imagery day or night, through clouds, fog and rain allowed uninterrupted capturing of information. Additionally, MDA's control of RADARSAT-2 enabled the company to prioritize the required image acquisitions and ensure that every step of the data collection process was completed on time and in a consistent manner.



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MDA can provide drainage network information based on the elevation data in the DEM.

MDA's experienced DEM production teams utilized best-of-breed commercial software and proprietary tools to produce high-quality DEMs, which were used to produce drainage network maps and combined with the source imagery to create highly accurate ORIs. Throughout the project, MDA staff worked closely with CGS project leads to provide customized product finishing, resulting in a number of product improvements that increased the operational utility of the end deliverables.

By providing a single source for elevation data, orthorectified imagery, and drainage networks, MDA enabled CGS to focus on its core geological mandate while delivering on time and within schedule.

THE BENEFITS

MDA's has a unique capability to acquire vast amounts of RADARSAT-2 imagery and rapidly produce DEMs, ORIs, drainage networks, and other value added products based on elevation, which enables the following key benefits:

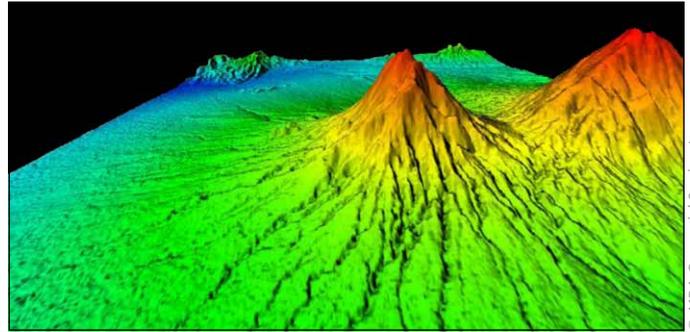
UP TO DATE TERRAIN INFORMATION – MDA typically acquires new imagery for its elevation models, minimizing the impact of human or natural changes to the landscape.

HIGH ACCURACY – RADARSAT-2 imagery has higher resolution than previous missions, enabling it to be used to create DEMs that have much higher accuracy than available global datasets, with no voids.

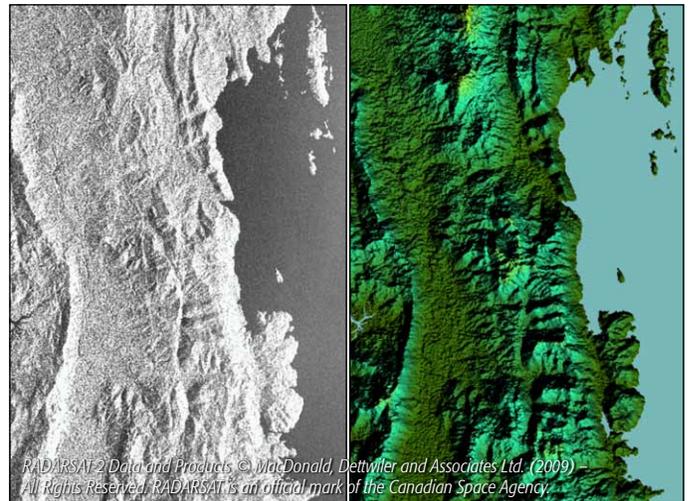
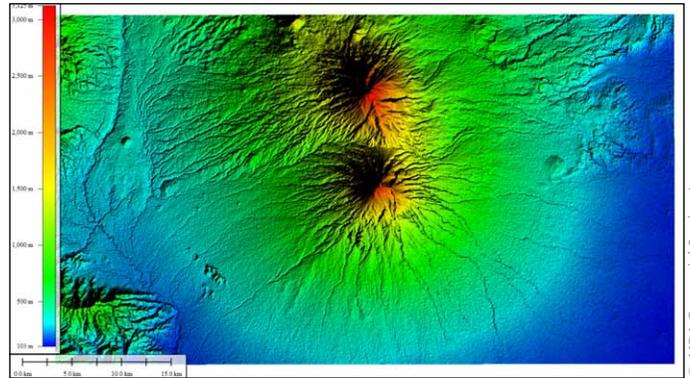
CONSISTENT DATA – By utilizing MDA's tightly-controlled process to cover a large area, customers receive a consistent elevation data set with seamless edge matching between tiles, unlike patchwork programs with multiple data sources, which can require significant customer effort to ensure overall consistency.

RAPID DELIVERY - Use of satellite imagery eliminates the schedule risk associated with seeking aerial overflight permissions, and RADARSAT-2's C-band radar can see through cloud cover that prevents aerial photo and optical satellite sensors from acquiring data.

LOW COST – With the widest high resolution radar swath widths available, an efficient team capable of producing over 50,000 km² of DEMs per week, and streamlined operations from data acquisition to customer delivery, MDA is able to provide accurate elevation products at lower cost than traditional methods. In short, MDA is able to rapidly deliver up-to-date elevation products for large areas at globally competitive prices.



3D shaded relief provides enhanced topographic visualization



Satellite SAR imagery is used to create detailed DEMs, shaded relief, and orthorectified images

FOR MORE INFORMATION

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