BRINGING IMAGERY TO LIFE TO FOSTER A GREENER FUTURE

Deimos Imaging's high-quality and precisely calibrated sensors are the perfect tool to support the information needs of forestry management and deforestation tracking.

by Ana Isabel Martínez

Deimos Imaging provides reliable monitoring and crucial data about the impact caused by deforestation and its evolution over time, with a focus on protected areas management and sustainable forestry.

Forests cover 31% of the land area on Earth. They produce vital oxygen and provide homes for people and wildlife. The loss and degradation of the world's forests account for around 17% of carbon emissions and could have far-reaching consequences for humanity. According to the Food and Agriculture Organization (FAO), *"current deforestation trends point toward catastrophic and irreversible losses of biodiversity and runaway climate change"*.

The Amazon rainforest has the world's highest deforestation rates. And despite their decline over the last decade, they continue at an alarming rate. The state of Mato Grosso, located in the southern region of the Brazilian Amazon, has one of the highest deforestation rates in Brazil. These land use changes are the result of a complex series of problems, but they can be partly explained by the expansion of pasture and mechanized agriculture, primarily based on soybean crops.

Deforestation is a threat that comes in many forms, including fires, clear-cutting for agriculture, ranching and development, unsustainable logging and degradation due to climate change. And while there are global programmes, such as REDD+, that incentivise sustainability and

About Author

Ana Isabel Martínez
Communications Manager
DEIMOS IMAGING, an UrtheCast Company
Email: *ana-isabel.martinez@deimos-imaging.com*

emission reduction, monitoring their progress is still a challenge. It's notoriously difficult to get an accurate picture of the changes in forest cover from the ground and to spot the countless, small-scale logging and forest clearing activities at the hectare level. This is where geospatial information has proved a crucial tool to deliver the much-needed evidence.

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Monitoring the World's Forests With Unprecedented Precision
Deimos Imaging's high-quality and precisely calibrated sensors are the perfect tool to support the information needs of forestry management and deforestation tracking. We provide a wide range of multi-sensor, multi-spectral and multi-resolution imagery that enables frequent monitoring, from global to local scale. You can monitor

very vast areas to detect hotspots to 'zoom in' and identify specific and ongoing activities such as small-scale logging and clear-cutting operations. Additionally, our extensive archive imagery allows to detect land cover changes and deforestation trends since 2009.

A feasibility study carried out over the entire Amazon basin showed that, combining our virtual constellation medium and high-resolution sensors, we are capable of imaging the whole region, on average, twice per week. Medium- and high-resolution data are key for vast areas monitoring and to detect changes.

Mapping forests at medium resolution is key to detect large-scale deforestation, but to really understand the changes and to identify what is driving them, you need very much more detailed satellite imagery that reveals what is happening on the ground. Thus, very-high resolution data is the ideal solution for the identification of ongoing and/or illegal activities, such

as logging and land clearing. With over 20 sensors at a resolution equal to or better than 1 meter, we guarantee exceptional revisit capabilities.

A feasibility study carried out over a 12 square kilometers parcel near the Xingu Indigenous Park in Brazil's Mato Grosso showed that we can cover this area 15 times per week in average, being able to get a full coverage of it several times per day.

This daily frequency of fresh imagery allows to track deforestation and to manage forest resources with unprecedented precision, especially in areas where cloud cover is common. The status of every hectare can be assessed daily and illegal activities can be identified and tracked, as well as patterns in land cover changes and deforestation. This information is essential to support decision making and the development of integrated policies and concerted action across the region that support sustainable development and management.

Figure 1. Medium resolution image of deforestation near the Xingu Indigenous Park in the state of Mato Grosso, Brazil.

A Greener Future with UrtheDaily™

As a natural evolution from our virtual constellation and given the importance of satellite imagery to monitor and protect our environment, we are developing a new constellation specifically designed for monitoring purposes: UrtheDaily™. This planned constellation will provide high-quality multispectral optical imagery of the Earth's entire landmass (excluding Antarctica) every day, at the same time, from the same altitude, directly into your applications. With these exceptional capabilities, UrtheDaily™ will present a disruptive and problem-solving technology that will bring imagery to life and help fostering a greener future worldwide, daily.
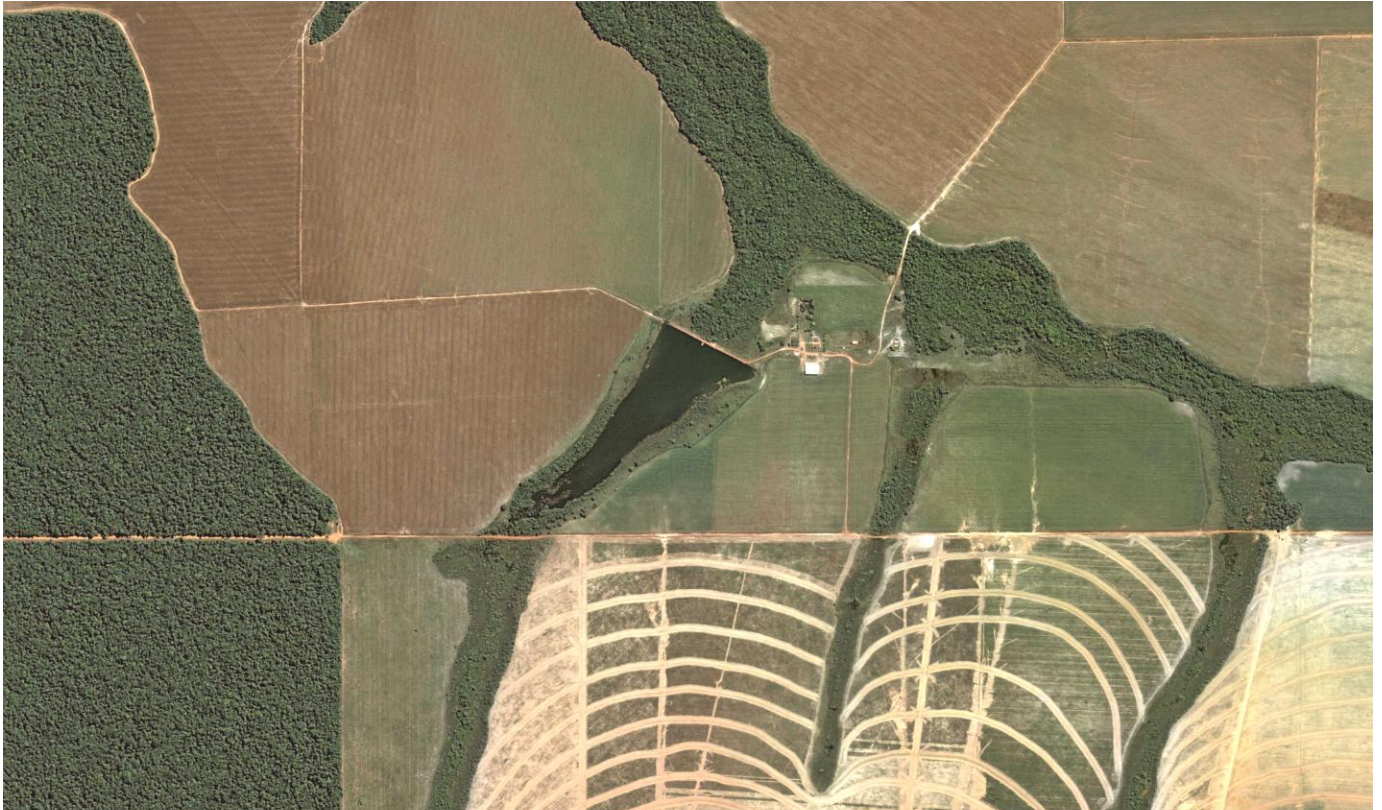

Figure 2. Very-high resolution image of deforestation near the Xingu Indigenous Park in the state of Mato Grosso, Brazil.
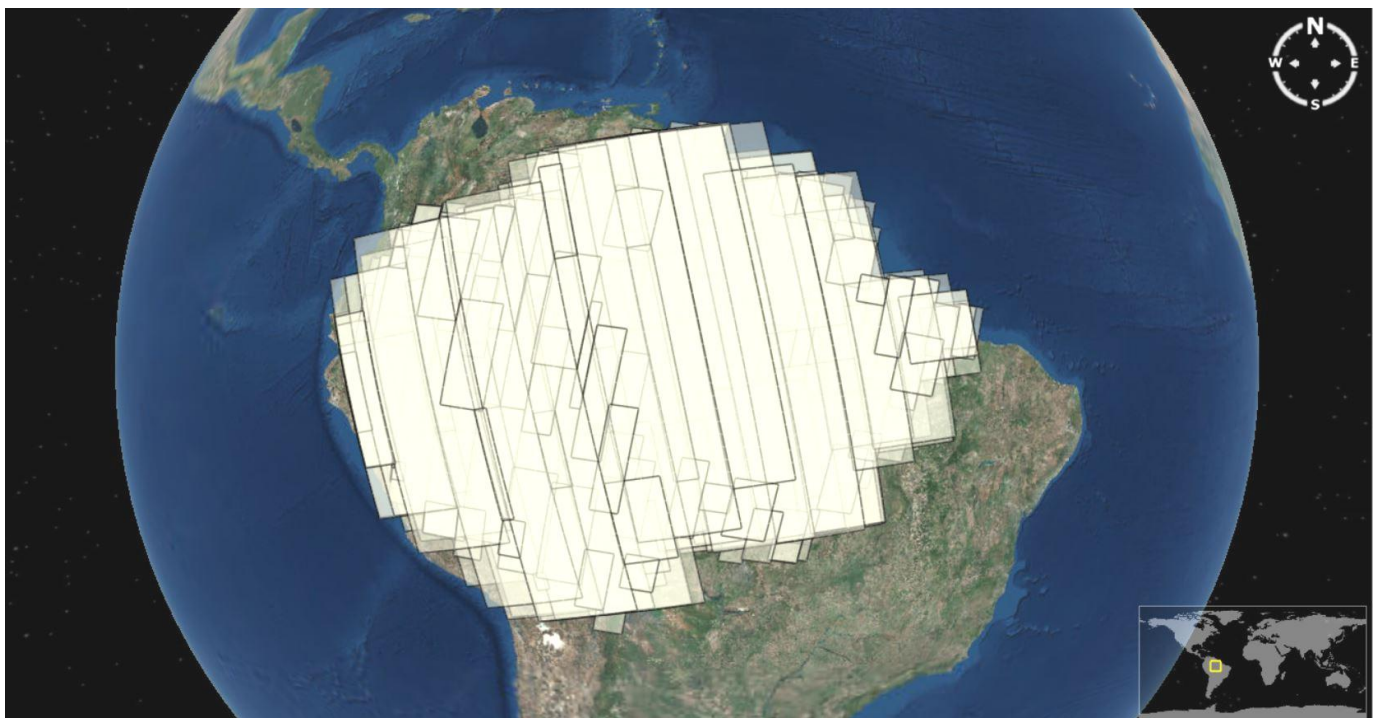

Figure 3. Feasibility study showing the capability of Deimos Imaging's medium and high-resolution sensors to capture the Amazon basin during September 2018.