

# **ADVANCED SAR / OPTICAL MONITORING OF TROPICAL FORESTS – GEO FOREST CARBON TRACKING TASK SUPPORTING THE UNFCCC REDD PROCESS**

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## **1. ABSTRACT**

The GEO Forest Carbon Tasks (GEO FCT) (<http://portal.geo-fct.org>) aims to demonstrate that coordinated Earth Observations can provide the basis for reliable information services of suitable consistency, accuracy and continuity to support Forest Carbon Tracking. It has been established to facilitate access to long-term satellite, airborne and in situ data, provide the associated analysis and prediction tools, and create the appropriate framework and technical standards for a global network of national forest carbon tracking systems.

The Intergovernmental Panel on Climate Change has shown that global carbon emissions could be reduced by as much as 20% by reducing deforestation and forest degradation alone. To achieve this, global agreement on robust and comparable national monitoring, reporting and verification (MRV) systems will be necessary, so that certainty can be provided (i.e. in terms of robustness and consistency) in the various national forest carbon emissions estimates.

Seven initial national demonstrators (ND) have been established together with the responsible national institutions in the three major tropical forest areas. Coordinated by CEOS they have been covered by various optical and radar sensors during June/September 2009. To aid the establishment of spatially explicit National Forest Monitoring and Carbon Accounting Systems within the UN initiative on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD), a number of methodologies {1-4} for analysing forest cover change are being compared over verification sites within the NDs. These methods do not produce definitive estimates of deforestation, logging or any

other type of disturbance rather ecologically meaningful information for interpretation by the responsible authorities. The successful use of such approaches requires the establishment of technical guidelines, quality indicators ('fitness for purpose', traceability, reference standards and quantification of uncertainty) and benchmarking such that the monitoring of the state of forests and their evolution over time is independently verifiable.

It needs to be shown that interoperability and complementarity among different kinds of radar and optical sensors is a very practical solution for achieving consistent and repeatable results – all to provide confidence to the climate negotiators and that negotiated agreements can rely on viable MRV systems which will be supported by space agency programmes.

## 2. REFERENCES

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