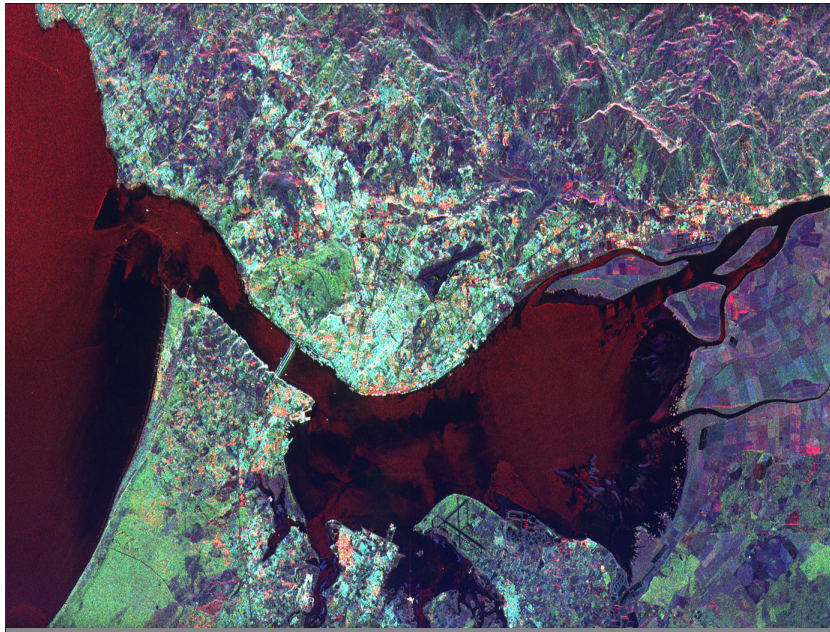


TECHNOLOGY SOLUTION

Electrical and Electronics



Concept Development for Advanced Spaceborne Synthetic Aperture Radar

Advanced spaceborne radar system for the measurement of
terrestrial biomass and ecosystem structure

Spaceborne Synthetic Aperture Radar (SAR) can globally monitor dynamic processes on the Earth's Surface. The last SAR to be developed and deployed by NASA was in the year 2000. This system's high costs inhibited development of new and improved designs. NASA has developed a new, state of the art, SAR system that is capable of providing capabilities beyond established systems and at a fraction of the cost.

BENEFITS

- Rapidly image large areas of the surface
- Single radar system can provide different data types
- Multiple synthetic aperture radar (SAR) imaging techniques



THE TECHNOLOGY

The current innovation utilizes heritage flight proven L-band Digital Beamforming Synthetic Aperture Radar (DBSAR) in conjunction with a new P-Band Digital beamforming Polarimetric and Interferometric EcoSAR (ESTO IIP) architecture. The system employs digital beamforming (DBF) and reconfigurable hardware to provide advanced radar capabilities not possible with conventional radar instruments. The SAR is operated without the use of a slewing antenna allowing the single radar system to provide polarimetric imaging, interferometry, and altimetry or scatterometry data types. The SAR is also capable of Sweep-SAR, simultaneous SAR/GNSS-R , and simultaneous active/passive techniques.

This system has an increased coverage area and can rapidly image large areas of the surface using the simultaneous left/right imaging. The resulting images maintain their full resolution and allows for faster full coverage mapping

APPLICATIONS

The technology has several potential applications:

- Remote Sensing
- Environmental Modeling

PUBLICATIONS

Patent No: 10649081

More Information

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