



**METASENSING**  
Radar Solutions



## MetaSAR-L Airborne SAR

The MetaSAR-L is an advanced multi-channel airborne Synthetic Aperture Radar (SAR) operating at L-band radio frequencies. It provides high-resolution SAR imaging, useful for topographic and monitoring applications such as wide-area cartography, vegetation mapping, soil moisture measurements, agriculture, land cover classification, digital terrain model creation, glacier analysis, and detection of water leaks.

We provide a compact radar sensor that combines high-quality L-band radar performance with flexibility in swath size and resolution. The radar allows for all-weather observations of the scene to be monitored, and the system enclosure can be easily installed on multiple types of aircraft. It is the culmination of a decade of experience in creating and developing radar solutions that MetaSensing offers.

The collected airborne SAR data are processed with the MetaSAR-PRO application, MetaSensing's proprietary airborne SAR processor. This application uses the Polarimetric Interferometric SAR (PolInSAR) technique to generate georeferenced GeoTiff images, the standard used by professionals worldwide.

These high-resolution images, along with Coherent Change Detection techniques, can resolve even the smallest variations in an area over time, providing information invisible to the human eye.

The MetaSAR-L system consists of a radar electronic box, characterized by its compact size and light weight as well as low power consumption, along with dual-polarimetric flat-panel antennas and mounting fixtures as required. Details are provided in the technical specifications table.



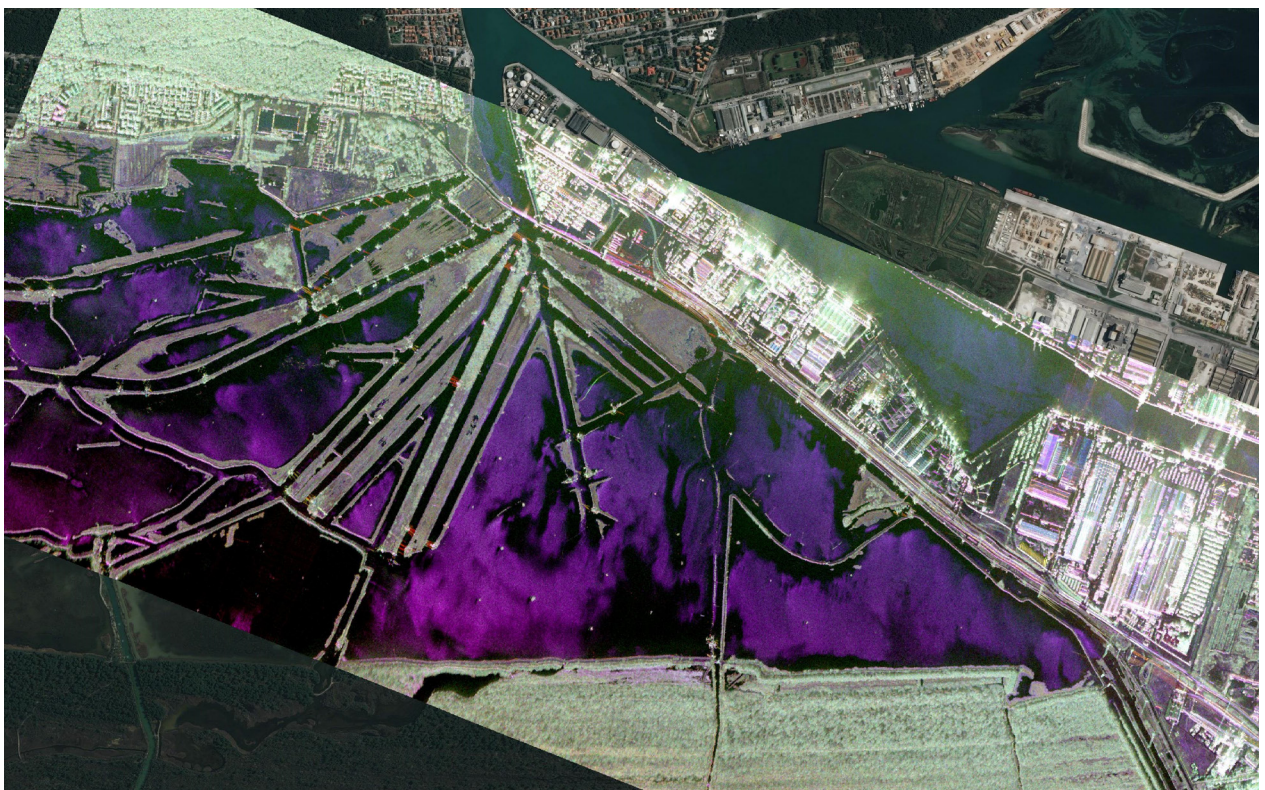
*The MetaSAR-L enclosure is compact and light-weight, allowing for quick and flexible mounting.*

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MetaSAR-L TECHNICAL SPECIFICATIONS	
Frequency	$f_c = 1.3$ GHz
Bandwidth	200 MHz
Antenna type	Microstrip patch
Antenna gain	15 dBi
Azimuth beamwidth	20 degrees
Elevation beamwidth	40 degrees
Polarization	Dual Linear: Vertical and Horizontal
Resolution	max 0.75 m
Total weight	< 18 Kg
Power consumption	< 200 W @ 18 - 30 V DC
Dimensions	Enclosure: 320x320x370 mm

The MetaSAR-L acquired data are suitable for comparison and integration with data acquired from the L-band SAR satellites for Land monitoring.



*Polarimetric image acquired over a city with lexicographic decomposition. Blue/purple indicates a strong VV component as well as a significant HH component to the total backscatter. Over forested areas, the green color indicates a dominant HV component, generally characteristic of vegetated zones. Over the built-up areas, the dominant colors are white and green, where white pixels correspond to equal amplitude in all polarimetric channels.*

**MetaSensing BV**  
**Huygensstraat 44**  
**2201DK Noordwijk**  
**The Netherlands**

**+31 71 751 5960**  
**info@metasensing.com**  
**www.metasensing.com**

