



## PIRANA

### HIGH-PERFORMANCE RADAR IN COMPACT, COMPETITIVELY PRICED FORMAT

Officially recognised in June 2006, the PIRANA project's aim was to demonstrate the feasibility of low-cost radar transmission and reception using X-band frequencies for airborne maritime surveillance. In particular, the project featured the design, creation and validation of a demonstrator antenna with a multi-layer printed circuit board, using electrical components currently available on the market.

The project's aims have largely been attained:

The concept of planar antenna architecture with transmission and reception timing has been validated. A demonstrator was created and validated in accordance with the technical requirements anticipated and in line with simulation results. Several technical problems relating to multi-layer planar antenna technology, integrating high-density radio frequency and low-frequency functions and circuits, were resolved.

Three international patents have been registered as a result and PIRANA technology, applied to the field of security radar, has been the subject of two international publications. The industrial manufacturing process of the printed circuit has also been validated. Lastly, the goal of reducing the cost of the product now seems attainable given the physical characteristics, manufacturing processes and components involved. In addition, the partners are continuing to collaborate beyond the end of the project and PIRANA technology is being exploited in the communications field via the SEANET project.

- 3 international patents registered
- 2 international publications

#### Partners

##### Companies

Thales DMS, Brest [Project Developer]  
Estar, Rennes et Dinard  
Satimo, Brest

##### Research center

IMT Atlantique Bretagne-Pays de la Loire,  
Brest

#### Funders

- FEDER
- Région Bretagne
- Conseil départemental du Finistère
- Conseil départemental d'Ille et Vilaine
- Brest métropole

#### Labelisation

16/06/2006

#### Overall budget

1 530 K€