

Multi-sensor fusion platform for monitoring systems

Summary/Characteristics

A research group from University Carlos III of Madrid (UC3M) offers advanced sensor fusion technologies for surveillance applications, capable of integrating and unifying data from diverse sensor types within their context. The solution leverages Artificial Intelligence techniques and advanced information fusion methods.

The group is seeking technical collaboration for R&D projects with companies in the maritime and industrial aeronautics sectors.

Innovative Aspects

- Advanced Multi-Sensor Fusion: Integration of radar, AIS, ADS-B, cameras and contextual data to significantly enhance surveillance over large scale areas.
- Proprietary High-Level Algorithms: Custom alignment, association, and non-linear estimation algorithms (Interacting Multiple Model - IMM) combined with computational intelligence for adaptive and robust system performance.
- Modular & Generic Architecture: Fully configurable framework designed for seamless deployment across diverse maritime, aerial and coastal scenarios.
- Context-Aware Processing: Leveraging geographic, dynamic and operational contextual information to optimize tracking accuracy and minimize false alarms / errors.
- Proven Functional Demonstrator: The system has been validated using both real-world and simulated data, ensuring reliability before full-scale industrial implementation.

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Competitive Advantages

- Risk Mitigation: Significant reduction of human and structural risks against both intentional and accidental threats.
- Predictive Modeling: Established capabilities for complex scenario modeling, eliminating the need for costly or destructive testing.
- Certification Support: Validation within controlled environments to facilitate and streamline industry certification processes.
- Versatile Applications: Tailored solutions suitable for both defense requirements and the protection of critical civilian infrastructures.

Technology readiness level:

Developed and ready for its demonstration. TRL 7.

Intellectual and Industrial Property Status:

Industrial secret– *know how*

Type of collaboration sought:

Technical Cooperation Agreements are sought with industrial partners interested in co-developing and integrating the tool into their systems.