

Geofeasibility Scores

Company

Lockheed Martin

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Team common language

English

References

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2. David Hall, *Mathematical Techniques in Multisensor Data Fusion*, 2nd edition, Artech House, 2004.
3. Ronald P. S. Mahler, *Statistical Multisource-Multitarget Information Fusion*, Artech House, 2007.
4. D.H. Johnson and S. Sinanovic, *Symmetrizing the Kullback-Leibler Distance*, <http://cmc.rice.edu/docs/docs/Joh2001Mar1Symmetrizi.pdf>

Abstract

The Recognized Maritime Picture (RMP) is defined as a composite picture of activity over a maritime area of interest. In simplistic terms, building an RMP comes down to finding whether an object of interest, a ship in our case, is there or not, determining what it is, determining what it is doing and determining whether some type of follow-on action is required. The Canadian Department of National Defense currently has access to several sensor systems. The data from these systems must be fused in a timely and accurate manner.

Currently, the RMP is overloaded with multiple tracks that represent the same ship. The RMP receives multiple reports, and each report associates an area of uncertainty (AOU) of elliptic shape delimiting a 2-sigma probability area to each potential ship. The goal of this project is to define (and develop a method for evaluating) a geo-feasibility score g that quantifies the overlap of two AOU. The score must range between 0 and 1, with 0 being reported if the ellipses do not overlap and 1 being reported if the ellipses totally overlap.