

Impact Evaluation of Discriminant Analysis on Epidemic Protocol in Warships's Scenarios

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Abstract : Disruption Tolerant Networks (DTN) are an evolution of Mobile Adhoc Networks (MANET) and work good in scenarios where nodes are sparsely distributed, with low density, intermittent connections and an end-to-end infrastructure is not possible to guarantee. Therefore, DTNs are recommended for high latency applications that can last from hours to days. The maritime scenario has mobility characteristics that contribute to a DTN network approach, but the concern with data security is also a relevant aspect in such scenarios. Continuing the previous work, which evaluated the performance of some DTN protocols (Epidemic, Spray and Wait, and Direct Delivery) in three warship scenarios and proposed the application of discriminant analysis, as a classification technique for secure connections, in the Epidemic protocol, thus, the current article proposes a new analysis of the directional discriminant function with opening angles smaller than 90 degrees, demonstrating that the increase in directivity influences the selection of a greater number of secure connections by the directional discriminant Epidemic protocol.

Keywords : DTN, discriminant function, epidemic protocol, security, tactical messages, warship scenario

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