

# **The Need for Sensor Fusion**

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## **ABSTRACT**

Joint Vision 2010 and 2020 envision a future where smaller forces will achieve what larger forces used to do and they will do so by being more effective through better information enabling closer coordination. This increases the importance of the joint digital data links that provide fast, jam resistant information exchange between large numbers of warfighting units. However, as more participants join the data links, as the data links are asked to support more missions, the situational awareness on these links actually degrades. To use these links more effectively is going to require new approaches to the integration of participants on the network and better techniques for combining target information from many sources without degrading performance.

This paper describes some of the current approaches resolving those deficiencies and achieving a single integrated air picture. We show that there are limits to the quality of the air picture that can be achieved using a network that is premised on the assignment of reporting responsibility to a single, albeit the best, sensor. By fusing the target information across sensors the performance barrier can be broken and the data from large numbers of sensors can be combined reliably.