COOPERATIVE MULTI TARGET TRACKING USING MULTI SENSOR NETWORK

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Abstract– ***Sensors provide a key feedback link allowing robotic and autonomous systems to react to their environments. Without this feedback, robotic and autonomous systems will operate in an uncontrolled manner, since they don't have the ability to perceive and respond to their environments. The limited capabilities of static sensors especially in complex applications and environments force the use of multiple sensors operating dynamically. This paper addresses the development of multiple objects tracking system using multiple mobile sensors. For the purposes of surveillance and security, trackers use an Extended Kohonen neural network to track the moving targets in their environments. The proposed tracking algorithm can be used for single and multiple target tracking. A clustering algorithm is used in order to minimize the number of active trackers over time and hence save energy. An auction based algorithm is used for the purpose of optimizing the cooperation between trackers. Quantitative and qualitative comparisons with other recent multi target tracking approaches show that our proposed tracking algorithm can provide a good coverage, and a better energy saving.***