

Games as a model for distributed fusion

Henrik I. Christensen

Centre for Autonomous Systems

Department of Numerical Analysis and Computer Science

Royal Institute of Technology

SE-100 44 Stockholm, Sweden

hic@nada.kth.se

Abstract - *A significant challenge to design of network centric information fusion systems is scalability and robustness. A distributed approach to integration and control is needed to make the fusion tractable. One such approach to fusion relies on distributed multi-agent theory based on a game theoretical model of the system. In this presentation the ideas behind game theoretical control are presented, and it is shown how such methods can be applied to information fusion systems in terms of sensor scheduling and control of a team of mobile robots. The applications include both basic tracking of objects, and situation assessment. A comparison to performance using a centralised approach is also presented.*