Command and Control of a Composite Wing Body Aircraft

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Abstract

The concept of the combined wing body aircraft has been used as a thought exercise to enhance flexibility in networks of varying topology and explore the possibility of coordinated flight amongst individual nodes online. By attaching wing-tip to wing-tip to increase the aspect ratio, the endurance of the composite is extended while maintaining the maneuverability of the individual nodes over the operational zone after separation and conserving power expenditure. With this multi-layered adaptive control problem, command over the network as well as maintenance of stability in flight must be addressed. Concentrating on these two aspects, this seminar presents a consensus based auctioning algorithm to determine leadership in a network as well as concepts of system identification to estimate the changing system parameters during flight.