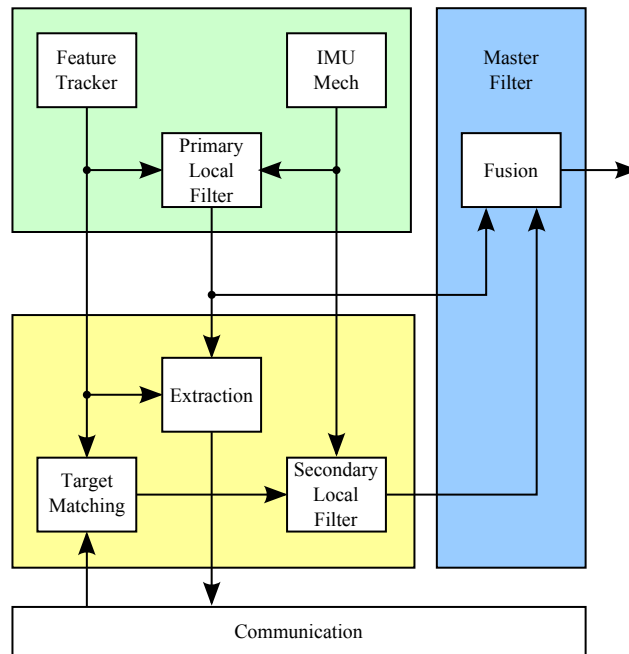


Vision-Aided, Cooperative Navigation for Multiple Unmanned Vehicles

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This research focuses on expanding previous research into the fusion of optical and inertial sensors for robust, autonomous navigation to multiple platforms. This research is motivated by the recent, and future, increase in the number of small unmanned vehicles with the ability to operate in environments where external navigation reference sources are unavailable. The overall objective of this research is to exploit the increased numbers of unmanned vehicles in a theater; and the on-board vision and wireless communication capabilities inherent in these systems. At the heart of this research is the development and validation of a cooperative navigation system based on the measurement of vehicle position relative to shared landmark position estimates. A Matlab[®] simulation has demonstrated the ability of the cooperative system to improve the pose estimate compared to the non-cooperative system.

For more information see “J. Bingham and M. Veth, “Vision-Aided, Cooperative Navigation for Multiple Unmanned Vehicles.” *Proceedings of ION ITM 2009*, Anaheim, CA, Jan 2009”.

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