

RF Data Link Multi-path Interference Mitigation

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Project Duration: December 2006 to September 2007

Project Summary:

This objective of this work is to analyze the effect of a variety of techniques designed to reduce the effect of RF multi-path interference in the L-band frequency regime. Of the specific interest is a navigation system where unmanned aerial vehicles receive signal from a source located in the sea surface. While modern data-link systems for terminal phase navigation require high data rates and low bit error rates, the data link performance between them is highly compromised due to the multi-path reflection and scattering, resulting in unacceptable quality of service. Such problem is difficult to be solved by merely increasing the transmit signal power or antenna design. Rather, sophisticated signal processing algorithms that exploit multiple antennas are proven to be effective.