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A real-time implementation of a DPCA GMTI technique for a UAV SAR demonstrator system developed by the CSIR

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Abstract

This paper presents a real-time Displaced Phase Center Antenna (DPCA) Ground Moving Target Indication (GMTI) processor. The GMTI processor performs clutter suppression, target detection, target tracking and target geolocation in real-time on a C-band airborne UAV radar demonstrator system. The processor is implemented on the GPU to meet the real-time performance requirements. A clutter suppression extent of 12.1 dB is achieved per frame in real-time.