

Imaging Based On Bi-Static SAR Using GPS L5 Signal

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Abstract : GPS signals are used for navigation and positioning purposes by a diverse set of users. However, this project intends to utilize the reflected GPS L5 signals for location of target in a region of interest by generating an image that highlights the positions of targets in the area of interest. The principle of bi-static radar is used to detect the targets or any movement or changes. The idea is confirmed by the results obtained during MATLAB simulations. A matched filter based technique is employed in the signal processing to improve the system resolution. The simulation is carried out under different conditions with moving receiver and targets. Noise and attenuation is also induced and atmospheric conditions that affect the direct and reflected GPS signals have been simulated to generate a more practical scenario. A realistic GPS L5 signal has been simulated, the simulation results verify that the detection and imaging of targets is possible by employing reflected GPS using L5 signals and matched filter processing technique with acceptable spatial resolution.

Keywords : GPS, L5 Signal, SAR, spatial resolution

Conference Title : ICCSP 2016 : International Conference on Communications and Signal Processing

Conference Location : London, United Kingdom

Conference Dates : March 17-18, 2016