

Reconfigurable Arrays and Signal Properties for Urban Sensing

PHASE II

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Project Summary:

Hybrid techniques of microelectronics, innovative antenna design, noise and channel mitigation, and radar and sensor signal processing are used to address important issues in the area of urban radar sensor system design. Urban radar systems perform several different functions which would otherwise have to be carried out by different dedicated systems. They exhibit a high degree of intelligence and flexibility, operate over a wide range of frequencies and bandwidth, and quickly adapt to changes in system functional requirements and changes in the sensing environment. The proposed research builds on current technologies of wideband urban radar sensor systems. It cultivates advances in reconfigurable antenna design and electronics, flexibility in waveform generation and alteration, radar image classification, and nonlinear motion detection to achieve system performance beyond what is presently offered by electronically scanned multi-function sensor systems.