

Broadband Automotive Sensors in Industrial and Security Applications

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ABSTRACT: Recent advances in the area of automotive radar forced the development and availability of integrated components (MMICs) in the millimeter-wave range. Besides the automotive sensors also industrial and security applications can take benefit from these components. In this workshop different applications using an imaging sensor at 24 GHz and a broadband sensor at 78 GHz will be presented. The 24 GHz sensor was successfully tested in brown coal surface mining areas, once to protect the surrounding of bucket excavators but also to monitor the cross-section of a wagon during the loading process. Using the broadband 78 GHz sensor a feasibility study for airport runway surveillance was conducted. It could be shown that sensitivity and resolution are sufficient to detect even very small objects on the runway surface. It is intended to develop a distributed system consisting of a number of comparatively low-cost and low-profile sensors, which check the runway before an airplane takes off.