

## **DESIGN AND USE OF A MOBILE, X-BAND, HIGH RANGE RESOLUTION, RADAR RESEARCH FACILITY**

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High range resolution (HRR) radar measurements can provide important feature information when performing non-cooperative target recognition. This paper presents a joint development of a mobile, X-band, HRR research radar facility, by the research industries of the Centre for Science and Industrial Research (CSIR) (South Africa) and King Abdul Aziz City for Science and Technology (KACST) (Saudi Arabia). The radar employs true wideband processing in its complete RF and IF chain, supporting instantaneous bandwidths of up to 400 MHz. Its intended purpose is to enable rapid measurement campaigns of radar phenomenology that are of interest to target recognition. In this paper an overview of its design, as well as its performance in three representative experiments are presented. The experiments include human gait measurement and ISAR imaging of motor vehicles.