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Paper Title: **Multi-Mission Ground Based Radars and Advanced Processing for Space**

Global use of space has been steadily increasing, and is becoming further contested. In order to keep pace with Space Situational Awareness (SSA) needs and the transformation from classic space to contested space, utilizing all available sensor data and the latest advanced processing techniques is paramount. Ground based radar earth observation and remote sensing capabilities have long been a cornerstone of the complementary sensor architecture to address SSA. This point is further reinforced with the recent award of Space Fence, demonstrating the need for more and increasingly capable ground based radars for space applications

Abstract:

The recent global deployment of large surveillance and missile defense radars for tactical mission needs have the inherent performance capabilities and locations ideal to contribute to space missions. This paper will identify opportunities for leveraging latent capabilities in ground based sensors, and propose advanced processing techniques, to jointly enhance the number of objects collected, the number of total observations and the accuracy of the catalog. Further, this paper will identify future deployments of ground based radars for tactical mission purposes that will provide added enhancement to SSA.
