SATELLITE POSITION MANAGEMENT*

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ABSTRACT

Satellites located at synchronous orbital altitudes are a resource vital to the support of military operations. These satellites must be protected from radio frequency interference with their communications and from physical damage that could occur in space. Collateral damage to a synchronous satellite is possible, in the event of a nuclear attack on another satellite, when the spatial separation distance required between satellites is not maintained. Physical damage to a synchronous satellite can also result from collision with another satellite, active or inactive, or collision with space debris objects, some too small to be under surveillance by ground tracking systems. While only a few collision and collision-potential incidents have occurred, the growing number of satellites and objects being placed in synchronous orbit increases the likelihood of problems arising in the future.

This paper examines these threats to satellite integrity and operation and the analysis which has been accomplished on ways to protect against them. Satellite Position Management requirements are outlined and problems associated with managing satellite orbital positions are discussed. The Air Force recognizes the need to protect its space resources and is establishing guidelines and responsibilities for offices involved in the management of geosynchronous orbital altitude satellites. The actions being taken by the Air Force and other agencies to regulate satellite spacing and to reduce space debris are enumerated. The paper concludes that full protection will only be realized when DoD combines efforts with NASA and with foreign countries to develop international agreement on satellite orbital spacing and space debris control policies.

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