

“DEFENSE SATELLITE COMMUNICATION SYSTEM”

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ABSTRACT

This paper will present an overview of the Defense Satellite Communication System (DSCS) with emphasis on its current capabilities and future planning. The DSCS is DoD's strategic satellite communications system providing unique and vital worldwide service to the National Command Authorities (NCAs), Worldwide Military Command and Control System (WWNCCS), the White House Communications Agency (WHCA), the Defense Communication System, NATO-Allied nations and other special users. The DSCS will soon expand to encompass the Army/Air Force Ground Mobile Forces SHF-Tactical applications and the Advanced Airborne Command Post (AABNCP).

The DSCS began operations in 1967 when the first of eventually 26 subsynchronous low capacity Phase I satellites were launched that operated with a compliment of R&D earth terminals providing point-to-point service. It has since grown in capacity and capability to the current system using the high-capacity geo-stationary Phase II satellites and a mix of earth terminals with antennas ranging in size from 1 to 18 meters in diameter.

The dynamics of world politics and the quick reaction capabilities of todays military forces have placed a heavy burden on DoD communications systems. The DSCS's role is expanding to meet these challenges by providing all-digital encrypted communications, anti-jam capability for selected users and greater electronic and physical survivability in the ground and space segments. Also, in order to handle the rapidly changing and resource limited system a real-time-adaptive-control (RTACS) capability is being developed to dynamically allocate DSCS assets.

With the advent of the multi-channel Phase III satellites and new ground hardware, more users and services can be provided to support project DoD strategic communications well into the 1990's. Investigations into the next generation SATCOM system (Phase IV) are beginning; this system will apply new technology and provide more cost-effective communications for wider classes of users.