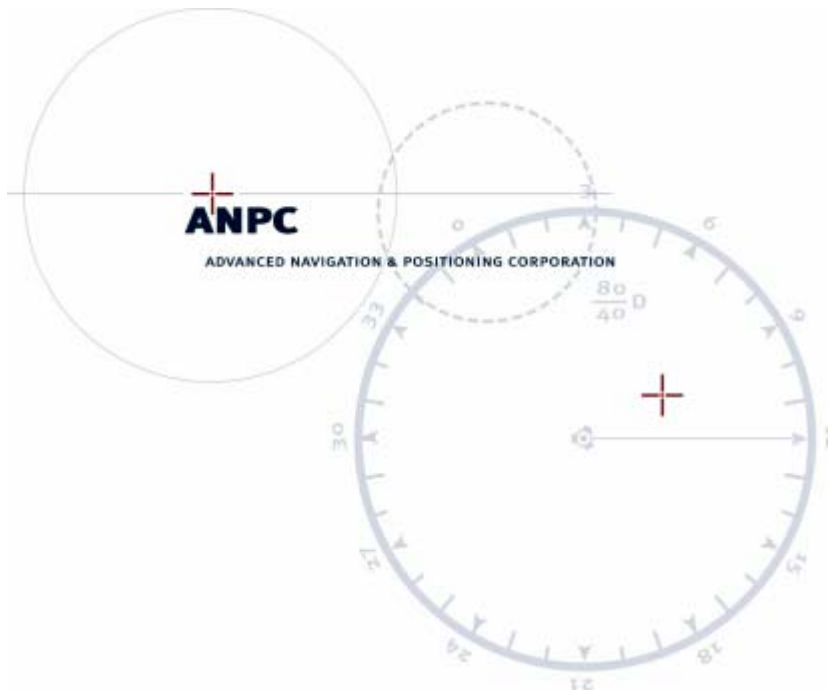




Description of TTLS Surveillance Demonstration At Truckee-Tahoe Airport

April 25, 2006

SECTION 1: INTRODUCTION

1.1 Purpose

A sub set of the Transportable Transponder Landing System (model Rhino III), developed by ANPC under NAVAIR contract with the U.S. Marines, is being deployed to Truckee-Tahoe Airport for system evaluation. The deployment will only be utilizing the surveillance functionality of the equipment. This project is an initial step in the joint TSAS project between ANPC and the FAA. The Special Transmit Authority is requested to support this activity occurring summer 2006. This document elaborates on system functions relevant to the STA application.

1.2 Aircraft Surveillance

The Rhino III uses SSR frequencies to accomplish 360° surveillance around the installation. The current implementation uses a sectorized interrogator of six slightly overlapping antenna beams. One sector is interrogated at a time. The nominal PRF is 17 Hz. Mode A and Mode C interrogations are interlaced. If the processing software detects overlapping transponder replies, it will proceed with a six-level whisper/shout sequence in that sector. The whisper/shout interrogations are performed at 68 Hz. The maximum effective interrogation rate of an aircraft in the surveillance volume is 3.2 Hz. An omni-directional P2 pulse is emitted to suppress replies from the back and side lobes of the interrogator antenna.

1.3 Regional Considerations

The facility elevation will be 5900 feet and surrounded by higher terrain. The site is bounded to the east by 10,000+ foot mountains within 10 NM of the airport. There are 8000+ peaks 5 NM south and 8 NM west of the airport

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