MISSILE INTERFACE DEFINITION

FINAL REPORT

Contract Number DASG60-88-C-0079

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This report summarizes SPARTA activities performed under Contract DASG60-88-C-0079, Missile Interface Definition. The activities related to this contract were performed in support of the U.S. Army Strategic Defense Command (USASDC) Ground Based Interceptor (GBI) Project office. The objective of this contract was to perform efforts to support development and demonstration of an exoatmospheric interceptor.

Activities under this contract fell under two broad areas within the Scope of Work. The first area, entitled "Evaluation of Exoatmospheric Interceptor Development Efforts," required assessment of the GBI Dem/Val and Phase I interceptor program to ensure that evolving interceptor subsystem concepts were commensurate with the midcourse strategic defense system performance objectives. In addition, SPARTA assessed GBI Dem/Val plans to ensure that system interface issues identified by other organizations were properly included in the Dem/Val test plans. The other major activity within the Scope of Work was entitled "Interface Development for the Phase I Exoatmospheric Interceptor." Under this area, SPARTA assessed the interoperability of each of the major components or exoatmospheric interceptor concepts (i.e., missile, support equipment, system interfaces) to recommend compromises and tradeoffs necessary to combine preferred components into tactical configurations. In addition, SPARTA performed evaluations of GBI ground support equipment (GSE) to quantify characteristics and resulting tradeoffs with other elements of the interceptor subsystem. Finally, SPARTA assessed the impact of endgame algorithm performance on engagement miss distance, including consideration of seeker design characteristics, algorithms employed, target characteristics, and potential countermeasures.

Throughout the course of this contract, SPARTA has documented the results of these activities in the form of reports provided to the Government. The following is a list of major reports which best summarize the activities performed. Included along with the title of each report is the SPARTA document control number, to aid in retrieval if details concerning these activities are desired.

H88:2500-3	Exo-Technology Requirements
H88-2501-1	Evolving Interface Requirements for ERIS
H89-0859-1	Inputs to ERIS Review to Project Office - Sunlight Engagements
H89-1347-16	SDS Ground Based Elements Integrated Basing Study Final Task Briefing
H89:1612-18	Sunlit Threat Trajectory Briefing to GBI Project Office
H89:1639-1	Missile Interface Definition Task E-SP-89-S Final Report
H90:0110-1	Innovative Kill Vehicle concept for GBI Midcontract Review
H90:0216-1	Missile Interface Definition-Review to the GBI Project Office
H90:0332-1	GBI Baseline Engineering Team (BET) Meeting Minutes

H90:0525-2 Review of ERIS Phase I Design Notebook Dated 26 Feb 1990

H90:0595-1 Earliest Engagement Scenarios for Five GBI-X Concepts

H90:1206-0 Ground Based Sweeper Subsystem (GBSS) Cost Analysis Requirements Document (CARD) for Midcourse Terminal Tier Review MATTR

H90:1354-1 BIS Effectiveness Study SPFE Probe Launch Vehicle IPR #1 Data Package and Report

H90:1379-7 GBI Summary Description

H90:1467-3 Summary Description of MATTR GBI

H90:1468-5 Evaluation of Martin Marietta GBI Concept

H90:1534-1 Evaluation of Rockwell GBI Concept

H90:1535-1 Evaluation of Hughes GBI Concept

H91:0061-1 GBI LPS Analysis Inputs

H91:0109-1 GBI Handover and Divert Requirements Operational Organizational and Support Concept for Exoatmospheric Reentry Vehicle Interceptor Subsystem ERIS

H91:0131-0 GBI LPS Trades

H91:0250-1 GBI Inputs to Midcourse and Terminal Interface Study

H91:0265-24 ERIS FTV-01 Systems Engineering Post-Flight Analysis

H91:0290-1 GBI Inputs to Architecture Integration Study

H91:0445-1 Ground Based Interceptor (GBI) Role in Limited Protection System (LPS)

H91:0547-1 Near Term Deployment Ground Based Interceptor (GBI) Description

H91:0680-1 Utility of Lower Engagement Altitudes Against Depressed-Trajectory Attacks

H91:0970-49 Operational Requirements Document (ORD) for the Ground-Based Interceptor (GBI)

H91:0848-1 GBI-X Performance in an LPS/GPALS System

H91:0917-1 GBI/E2I Technical Comparisons

H91:0962-1 GBI Briefing

H91:0984-0 GBI Response to AIS Questions

H91:1006-2 GBI Briefing to POET

H91:1114-1 GBI-X Performance in an LPS/GPALS System

H92:0178-1 Trip Report GBI Discrimination Meetings in Washington, D.C.

H92:0275-1 PBV Intercept Requirements

H92:0338-5 Impact of RV Signature on GBI Performance

H92:0380-1 Projected GBI Seeker Design Performance in a Nuclear Environment

H92:0535-3 Debris Gamma and Radiance Environments for NMD Limited Operational Capability (NMD LOC)

H92:0629-4 National Missile Defense (NMD) Ground Based Interceptor (GBI) Cost Analysis Requirements Document (CARD)

H92:0654-1 FTV2 Post Flight Analysis

H92:0673-16 ERIS FTV System Engineering Analysis, FTV-02C Post-Flight and FTV Program Analyses

H92:0751-1 GBI Hardness Requirements for GPALS Scenarios

H92:0752-1 GBI Briefing for SAS Weapons Workshop

H92:0766-8 Sun Exclusion Impacts on Interceptor Coverage

H92:0779-1 GBI Hardness/VBO Trades

H92:0851-1 Acquisition Costs for Various Basing Concepts

H92:0878-1 SPARTA Environment Requirements Analyses for GBI

H92:0947-3 GBI VBO Requirements

H92:1387-28 Ground Based Interceptor (GBI) Element for National missile Defense (NMD) Technical Requirements Document (TRD)

H92:1491-1 GBI TRD Threat Overview to J. Katechis GBI Discrimination - Inputs to Advanced Interceptor Study