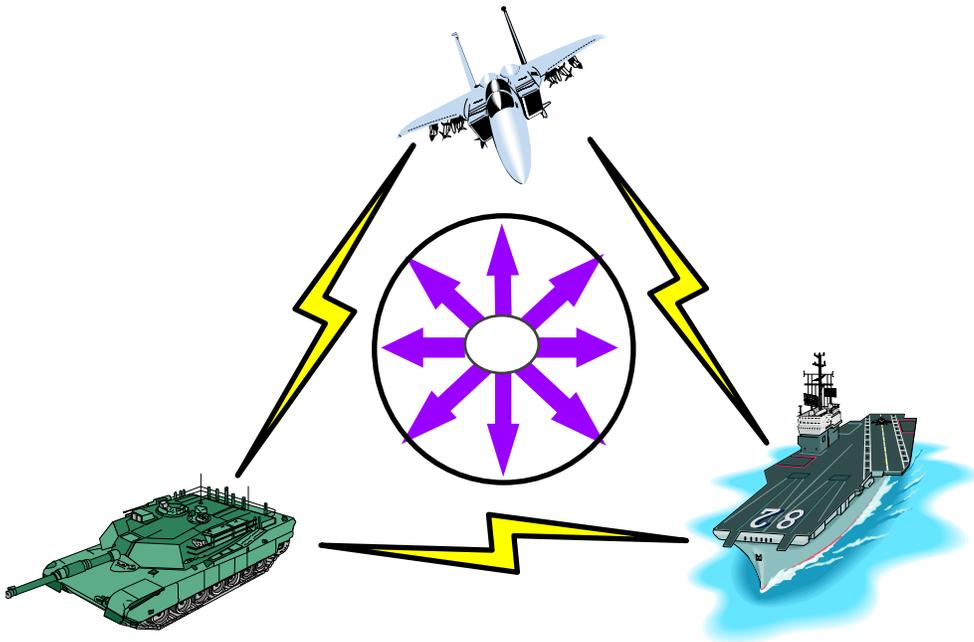


SUPPORTABILITY STRATEGY
JOINT TACTICAL RADIO SYSTEM (JTRS)
CLUSTER 5



Product Manager – JTRS Cluster 5
Ft. Monmouth, NJ 07703-5000
28 August 2003

SUPPORTABILITY STRATEGY
FOR
JOINT TACTICAL RADIO SYSTEM (JTRS)
CLUSTER 5

This Supportability Strategy provides the details of the logistics requirements of the JTRS Cluster 5 Program. The undersigned has reviewed and approved the Supportability Strategy In accordance with the provisions of Army Regulation 700-127.

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JTRS CLUSTER 5 SUPPORTABILITY STRATEGY

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SOURCE DOCUMENTS

1. Mission Need Statement (MNS) for the Joint Tactical Radio, 21 August 1997
2. Operational Requirements Document (ORD) for JTRS, Revision 3.2, 9 Apr 2003
3. JTRS Joint Concept of Operations (CONOPS), Version 2.0, 30 June 2000
4. Cost Analysis Requirements Description (CARD)
5. Test and Evaluation Master Plan (TEMP)
6. DoD Regulation 5000.2R, 12 May 2003
7. AR-700-127 Integrated Logistics Support, 10 Nov 99
8. DA PAM 700-XX, Supportability Planning and Procedures in Army Acquisition, October, 1999
10. Manpower Estimate Report (MER)
11. Joint Tactical Radio System Acquisition Strategy Report

SECTION 1 - GENERAL

1.1 INTRODUCTION

1.1.1 Purpose and Scope. This JTRS Cluster 5 Supportability Strategy (SS) provides essential information for the successful accomplishment of the supportability program for the JTRS Cluster 5 Program. Part of the overall program management and documentation, the SS shows current ILS status and future plans and actions. The SS also serves as a working document for the organizations responsible for managing the JTRS Cluster 5 ILS Program. Finally, it will be used for information purposes by all Services, major commands, subordinate commands and Department of Defense (DoD) agencies concerned with this acquisition. The following objectives are established for this SS:

- Provide program background information.
- Identify and document supportability requirements and constraints.
- Describe required supportability actions, tasks and milestones.
- Ensure all relevant ILS elements are identified and considered.
- Provide supportability information for Major Milestone Review (MMR) decisions.
- Establish responsibilities for ILS program participants.
- Implement Performance Based Logistics (PBL).

Review, update and validation of this JTRS Cluster 5 SS is the responsibility of the Product Manager, JTRS Cluster 5. This SS serves as the JTRS Cluster 5 Integrated Support Plan (ISP)/Product Management Plan and will be circulated, reviewed and updated on a continual basis. Members of the Supportability Integrated Product Team (SIPT) will use this document to ensure that all logistics actions are integrated with all Cluster 5 hardware and software development schedules. This SS is consistent with accepted ILS procedures, current Army maintenance concepts and AR 700-127 and the CECOM Draft Integrated Logistic Support and Supportability Strategy (SS) Interim Policy Memo (Preparation Guidance), dated 6 Jun 01.

1.1.2 Program Overview. The JTRS program consists of a series of related joint acquisitions (Clusters) executed by the Joint Program Office (JPO) and designated Services' Program Management Offices (PMOs). Current participants in the Cluster 5 effort include the US Army Program Executive Office – Command, Control and Communication Systems (PEO C3S), PEO Soldier, PM, Future Combat System (FCS). The Army is the designated lead service for the Cluster 5 hardware acquisition.

The overall JTRS program includes the JPO Capstone, which is the JTRS JPO portion of the overall program that includes development and maintenance of the software waveforms pertaining to the JTRS Program. The JPO is responsible for the acquisition and support of the software architecture and software waveform application supported by the JPO library of waveforms. No new waveforms are being developed under the Cluster 5 Program.

The JTRS Cluster 5 Program has been selected as the material solution for the Handheld, Manpack and Small Form Factor (SFF) embedded radio requirements. The Cluster 5 Program

will meet the requirements of the JTRS Operational Requirements Document (ORD) and the JTRS Joint Program Office (JPO) mandated Software Communications Architecture (SCA).

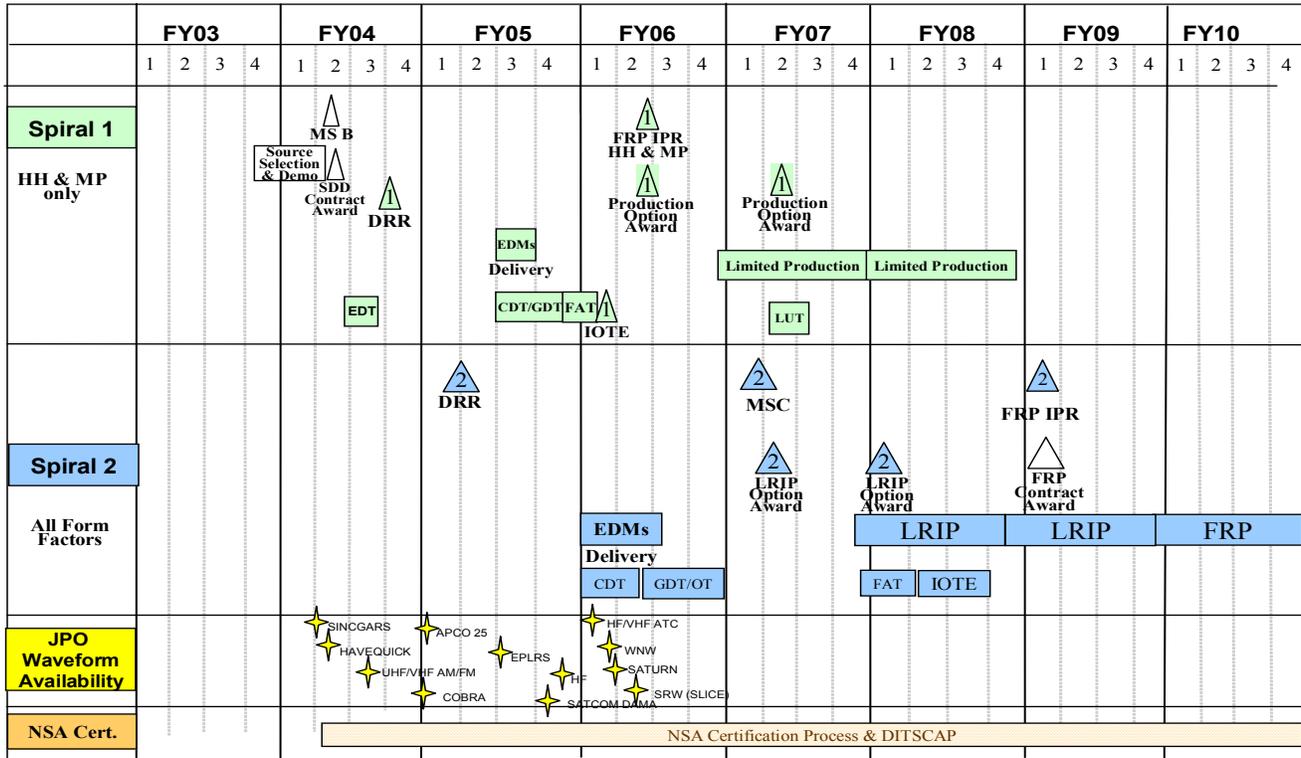
The Cluster 5 SFF acquisition will satisfy the Army and Joint Service requirements of the Future Combat System of Systems and the FCS/Objective Force (FCS/OF) technical performance and integration requirements and timelines. The SFF embedded radios are classified as “complementary systems” supporting the Future Combat System (FCS) Program. FCS platforms requiring the SFF radio include PEO Soldier (Land Warrior), Unattended Ground Sensors (UGS), Non Line of Sight-Launch System (NLOS-LS), and Intelligent Munitions System (IMS).

The JTRS Cluster 5 program is Pre-MDAP with a formal Acquisition Category (ACAT 1C) designation at the upcoming Milestone B Decision Review. This SS covers the JTRS Cluster 5 System Development and Demonstration (SD&D) Phase with two Full Production options for Spiral 1 and two Low Rate Initial Production (LRIP) Phase options for Spiral 2. The SS will be updated during the SDD phase when significant program changes. The SS will also be updated to support the Milestone C decision for the LRIP I of Spiral 2.

The Joint Tactical Radio System Cluster 5 Program will begin full and open competition for the award of a single (Cost Plus Type) in 2QFY04 with two Low Rate Initial Production (LRIP) Phase Options using the same contract vehicle with separately priced options. A Milestone C Decision Review will initiate the LRIP fixed price options. This Joint Tactical Radio System (JTRS) Cluster 5 SS will enter the System Development and Demonstration Phase with a Milestone B Decision Review to be conducted in 2QFY04.

The Cluster 5 Program employs an evolutionary acquisition strategy using spiral development to obtain the technical performance requirements specified in the ORD. The first spiral will provide an initial capability at the earliest possible time. The first spiral development is in compliance with the Acquisition Decision Memorandum (ADM) dated 8 May 03, supporting the design, development, testing and delivery of single channel Handheld and dual channel Manpack radios. The second spiral development is to design, develop, test and field the SFF Embedded Radio, to expand the single channel Handheld to dual channel and port additional waveforms to the dual channel Manpack radio.

JTRS Cluster 5 Integrated Program Schedule



PROJECT MANAGER **WARFIGHTER INFORMATION NETWORK - TACTICAL**

Figure 1-1. Cluster 5 Integrated Program Schedule

1.2 MATERIAL SYSTEM DESCRIPTION

1.2.1 System Overview. The JTRS Cluster 5 Program includes three separate form factors: Handheld (HH), Manpack (M) and the Small Form Factor (SFF). The SFF include variants which will be integrated into a variety of platforms:

- SFF-A Intelligent Munitions System (IMS) and Unattended Ground Sensors (UGS) Single Channel
- SFF-B Land Warrior Leader
- SFF-C Land Warrior Soldier
- SFF-D Unmanned Aerial Vehicle (UAV) Single Channel
- SFF-E Unmanned Aerial Vehicle Two Channel
- SFF-F Small Unmanned Ground Vehicle (SUGV)
- SFF-G Non Line of Sight Launch System (NLOS-LS)
- SFF-H Intelligent Munitions System (IMS) and Unattended Ground Sensors (UGS) Two Channel
- SFF-I LandWarrior (Type III Encryption)
- SFF-J Next Generation Range Instrumentation Initiative (NexRI)
- SFF-K Range Instrumentation Requirements

The Manpack and Handheld radios and the SFF variants have distinct capability requirements for the number of channels, required waveforms, level of encryption, range and other parameters. These capabilities are defined in the JTRS Cluster 5 System Performance Specification.

The Cluster 5 radios will be compliant with the JTRS Software Communications Architecture (SCA), allowing them to use various combinations of authorized waveforms. Table 1-1 lists the required Cluster 5 waveforms and the type of requirement.

Table 1-1. Cluster 5 Waveforms

WAVEFORM	Threshold	Objective
SINCGARS ESIP (VHF-FM Military Tactical AJ)	SFF, HH, M	
HAVE QUICK II (UHF-AM/FM/PSK Military Tactical AJ)	SFF, HH, M	
UHF SATCOM Military (181-182-183 DAMA)	M, HH, SFF	
Enhanced Position Location Reporting System (EPLRS)	SFF, HH, M	
Wideband Networking Waveform (WNW)	SFF, HH, M	
Link 16/TADL-J		M
UHF SATCOM Military Protocol (184)	SFF, HH, M	
HF Single Side Band (SSB) w/Automatic Link Establishment (ALE) AJ	M	HH
HF ATC Data Link	M	
VHF FM Military Tactical	M, HH	
VHF for ATC		M

WAVEFORM	Threshold	Objective
VHF AM ATC	M, HH	
VHF/UHF FM LMR	SFF, HH, M	
VHF ATC Data Link (NEXCOM)	M	
UHF AM/FM PSK Military Tactical	M	
SATURN (UHF PSK AJ NATO)	M	
Soldier Radio & WLAN & Advanced Capability	SFF, HH, M	
COBRA	HH	
MUOS-CAI	SFF, HH, M	
Cellular Radio & PCS	SFF, HH, M	
Mobile Satellite Service (MSS)		M, HH
Integrated Broadcast Service (IBS)	M	

The Cluster 5 radio will be software- programmable, hardware- configurable digital radio that will provide flexibility and adaptability to support the varied Warfighter mission requirements. The Cluster 5 radio will provide for internal growth capability by using an open systems architecture and its design will support modularity, scalability and flexibility in each of the form factors. A substantial growth capability will be built into the radios (i.e., memory, throughput, and processing power) to accommodate technology advancements and increasing warfighter requirements. The operator will be able to load and reconfigure the radio's modes and capabilities via software and hardware while in the operational environment. Radios may have several different waveforms stored in memory allowing the operator to adapt to changing mission requirements. Each of the form factors will have the capability to detect and isolate faults within its system and provide status indications and diagnostic results to the operator and maintainer.

1.2.2 System Hardware. The Cluster 5 Program radios will be developed to support platform peculiar requirements. Table 1-2 below lists the number of channels supporting each of the Form Factors:

Table 1-2. Form Factor Channel Requirements

FORM FACTOR	PLATFORM	1 CHANNEL	2 CHANNEL	3 CHANNEL	4 CHANNEL
A	IMS/UGS	X (Threshold)	X (Objective)		
B	Land Warrior (LDR)		X (Threshold)	X (Objective)	
C	Land Warrior (SDR)	X (Threshold)	X (Objective)		
D	UAV (I,II and IV)	X (Threshold)	X (Objective)		
E	UAV (III)		X (Threshold)	X (Objective)	

FORM FACTOR	PLATFORM	1 CHANNEL	2 CHANNEL	3 CHANNEL	4 CHANNEL
F	SUGV	X (Threshold)	X (Threshold)		
G	NLOS-LS		X (Threshold)	X (Objective)	
H	IMS/UGS	X (Threshold)	X (Objective)		
I	LANDWARRIOR (TYPE III ENCRYPTION)				
J	Two Channel variant to satisfy the NLOS-LS Launcher				
K	Range instrumentation requirements				
Handheld		X (Threshold)	X (Threshold)	X (Objective)	
Manpack			X (Threshold)		X (Objective)

JTRS Cluster 5 includes Radio Sets (B-kits) and installation kits (A-Kits). Examples of Kit components are listed in Table 1-3.

Table 1-3. Example A and B Kit Components

Installation Kit (A-Kit)	Joint Tactical Radio System (B-KIT)
Mounting Tray/Rack/Tie downs	Joint Tactical Radio (JTR) LRU - Embedded
Antenna (VHF/UHF)	JTR – Manpack (Dismounted)
Power Conditioner (UPS)	JTR - Handheld
Interface Devices (Handset/Headset)	JTR – UAV/UAG
Cables/Wiring Harness	JTR – Munitions/Missiles
Platform Integration Software	Waveform Software
Intercom	Transport Case/Packaging
	Cosite Mitigation Device

The JTRS Cluster 5-Kit design may vary for each installation platform.

The Cluster 5 radio, when required, shall be able to operate combinations of waveforms. If reconfiguration is required, ancillary equipment shall automatically be configured when the waveform combinations are changed.

The frequency band of operation will be in the range of 2 MHz to 2 GHz or above and will run the waveforms specified in Table 1-1 above. Specific form factors may have limited frequency coverage due to specific roles being performed. Each channel shall operate independently, and a failure in one channel shall not degrade the operations of the remaining channels.. The operator will have the capability to change the channel operating parameters, monitor channel performance, perform maintenance and turn a channel on/off without affecting the operation of the other channels.

The Cluster 5 embedded SFF will be capable of providing an integral Global Positioning System (GPS) capability if the platform application requires it. The Handheld and Manpack radios will have built-in-GPS.

It is anticipated that the Cluster 5 Radio Sets (HH, MP and SFF) will have similar hardware and software requirements, and that the respective radio hardware solutions to meet these requirements will have a high degree of commonality.

1.2.3 JTRS Software.

1.2.3.1 JTRS Waveforms.

The JTRS application and waveform software will comply with the industry-developed Software Communications Architecture (SCA), a non-propriety open systems approach making maximum use of commercial standards and Application Program Interfaces (API). The SCA will promote portability of waveform applications to other JTRS radios and enable software-inserted capabilities. The Joint Program Office (JPO) has the lead for the SCA waveform development/certification. Many of the waveforms are under concurrent development. For example, under the Cluster 1 Program, the Wideband Networking Waveform (WNM) is currently being developed by the JTRS JPO.

There will be no waveform development under the JTRS Cluster 5 Program. Cluster 5 Waveforms will be ported from the JTRS JPO Waveform Library.

1.2.3.2 Cluster 5 Software Products.

Under the Cluster 5 Program, three categories of software products will be acquired: Radio System Applications, Operational Environment Applications, and External Support Equipment Software.

A Software Product Specification (SPS) is being developed for each of the JTRS Cluster 5 Software Products. The SPS shall contain the executable software, source code/files and software support information, including “as built” design information and compilation, build, and modification procedure for each software product.

The CECOM Software Engineering Center is responsible for maintaining the JTRS Radio System application and Operating Environment application software and Post Deployment Software Support (PDSS).

1.3 OPERATIONAL CONCEPT

The JTRS operational concept is to provide warfighters with a modular, multi-band, and multi-mode communications system throughout the battlespace. To achieve this operational concept, JTRS will provide task-organized warfighting elements that require communications across both vertical and horizontal hierarchies with seamless, high speed, and digital information exchange within the battlespace. The JTRS will allow operators in the field to expand and modify the capacity and capability of individual JTRS sets, links and networks to accommodate user demand, as it becomes known. The JTRS will be employed worldwide in both hostile and non-hostile environments, and in a variety of terrains and climatic conditions. The JTRS will support Joint and Combined/Coalition operations by providing the capability to transmit, receive, bridge and gateway between similar and diverse waveforms over multiple communications media and networks. The JTRS will operate in existing shelters, vehicles, boats, aircraft, and buildings, in the field and in future systems. JTRS will be capable of being operated and monitored while unattended, and remotely controlled.

The Single Channel Handheld and Two Channel Manpack Radios will be acquired under the Spiral 1 effort to fulfill an immediate need of tactical radios. The Cluster 5 Program is also providing the SFF(Embedded Radios) required to support the Future Combat System (FCS), LandWarrior leader/soldier radio, and other joint service requirements.

The JTR System will provide warfighters with seamless, high-speed communications and digital information exchange, across both vertical and horizontal hierarchies, throughout the battlefield. The embedded application SFF radio will be designed for integration into Land Warrior (FCS and Advanced Capability), Unattended Aerial Vehicle (UAV), Unmanned Ground Vehicle (UGV), Unattended Ground Sensors (UGS), Non Line of Sight – Launch System (NLOS-LS) and Intelligent Munitions System Platforms and the Next Generation Range Instrumentation Initiative (NexRI).

1.4 OPERATIONAL REQUIREMENTS

The JTRS performance requirements are identified and summarized in the JTRS Operational Key Performance Parameters (KPPs). The performance requirements cited below are capabilities for the JTR System or as they apply to each JTR Set configuration. Requirements are denoted as Key Performance Parameters (KPP); Threshold (T) and as Objective (O). These categories are to assist in the evolutionary acquisition process by showing precedence. The KPPs do not represent acquisition blocks. These core performance parameters listed in Table 1-4 (ORD KPP SUMMARY) below are the minimum requirements necessary to achieve a significant, stand-alone, operationally effective, and suitable military capability such that, should no further development occur within that family/domain, the user will have a significant capability.

Table 1-4. ORD KEY PERFORMANCE PARAMETERS (KPP) SUMMARY

Key Performance Parameter	Threshold	Objective
Have an internal growth capability. (Ref. ORD Para. 4a(1)(b))	Open System Architecture IAW Joint Technical Architecture (JTA); Modular, Scaleable, Flexible Form Factors.	Same as Threshold.
JTR Set modes/capabilities configuration and reconfiguration via software. (Ref. ORD Para. 4a(1)(c))	By operators in their operational environment.	Same as Threshold.
Multi-channel routing and retransmission. (Ref. ORD Para. 4a(1)(e) and Table 4-2)	KPP waveforms that are compatible in mode (voice, video and data) and use compatible data rates.	Objective waveforms that are compatible in mode (voice, data, or video) and use compatible data rates.
Support time-critical waveforms. (Ref. ORD Para. 4a(1)(f) and Tables 7-1 to 7-5)	See Tables 7-1 to 7-5 in the Operational Requirements Document (ORD).	See Tables 7-1 to 7-5 in the ORD.
Operate on designated number of channels at the same time. (Ref. ORD Para 4a(1)(h), Annex A, Para. 4a(1)(e), Annex B, Para 4a(1)(a) and Annex C, Para. 4d(3))	GPS + 1 (Hand-Held) GPS + 2 (Dismounted) GPS + 6 (Vehicular) GPS + 8 (Airborne) GPS + 4 (Maritime/Fixed)	GPS + 2 (Hand-Held) GPS + 4 (Dismounted) GPS + 8 (Vehicular) GPS + 10 (Airborne) GPS + 10 (Maritime/Fixed)
Scaleable networking services. (Ref. ORD Para. 4a(3)(a))	Ground and Airborne Domains.	Maritime/Fixed Domain.
Network extension / coverage. (Ref. ORD Para. 4a(3)(b))	Across organizational boundaries.	Same as Threshold.
JTR System network interoperability. (Ref. ORD Para. 4.a. (1)(q) and Appendix E, Information Exchange Requirements (IERS))	Interoperate with Service and Joint networks; satisfy 100% of critical top-level IERS.	Interoperate with Allied / Coalition and commercial networks; satisfy 100% of top-level IERS.
Operational Availability (Ao) (Ref. ORD Para 4.c. (1))	0.96	0.99

1.5 APPLICATION

This SS pertains to the SD&D Phase, Low Rate Initial Production (LRIP), Full Rate Production (FRP), fielding and the sustainment of the JTRS Cluster 5 Program. This plan will be updated as required to accommodate program revisions or major program reviews. The Plan will be distributed within the Supportability IPT Members for review and comments and for staffing within their associated agencies and commands.

1.6 ITERATION

This is the initial SS supporting the Milestone B decision for the Cluster 5 Program. The SS will be updated when significant information is developed from the ongoing analysis after contract award, and the decisions arrived from the Supportability Working Integrated Product Team Working Group (WIPT).

1.7 ABBREVIATIONS

A glossary of the JTR System terms, acronyms and abbreviations is included at Appendix A.

1.8 LIFE CYCLE COSTS (KEY COST DRIVERS IN OPERATIONAL AND SUSTAINMENT [O&S])

A JTRS Sustainment Cost Management Annex (SCMA) to the Acquisition Strategy establishes a baseline configuration and identifies the Cluster 5 Operation and Support (O&S) cost driver categories. The Cluster 5 baseline operational performance parameter set is based on the present requirements for the ground Cluster 1 system with an of an A_o of 0.96, a Mean Time Between Failure (MTBF) of 2400 hours (threshold) for each JTRS channel at the 70% confidence level and an OPTEMPO of 2,672 hours (battalion size, wartime).

In order to keep these cost drivers to a minimum, the reliability and maintenance issues are being fully addressed and the program is instituting a Reliability and Developmental Growth Test (RDGT) program to grow the MTBF of each JTR channel.

The SCMA will be updated as necessary throughout the Cluster 5 program. A team of key representatives from the cost, logistics and technical WIPTS will be chartered to monitor O&S costs and its impacts due to design changes and/or modifications.

Table 1-5. JTRS Cluster 5 O&S Cost Drivers

JTRS Cluster 5 Cost Drivers	% of Total O&S
JTRS Cluster 5 Operating and Maintenance	
Replenishment Depot Level Repairables (Spares)	80%
Other O&M	7%
JTRS Cluster 5 Army Working Capital Funds	
AWCF Class IX War Reserve	3%

1.9 ACQUISITION STREAMLINING

The Cluster 5 Program has an immediate need for the use of Handheld and Manpack Spiral 1 radios and is a complementary system to the FCS/OF. Therefore, technical performance, integration requirements, and timelines must be satisfied to meet the acquisition requirements for both Spiral 1 and 2 radios. To support this requirement, Acquisition Streamlining objectives will

be incorporated throughout each phase of the lifecycle to reduce time and costs and to improve the quality of system acquisition. Acquisition streamlining techniques are being employed such as evolutionary acquisition strategy, a two- spiral development approach, performance based specifications, best commercial practices, an open architecture, and CAIV principles.

The contractor's acquisition approach will be implemented under this acquisition. The contractor will be required to qualify one or more sources for Spiral 1 and at least two sources for Spiral 2, for each form factor and SFF variant. This approach optimizes competition for Full Rate Production (FRP), while maintaining the commonality required for interchangeability, supportability and affordability. The prime contractor is responsible for verifying the performance and interchangeability for each form factor and each SFF variant. The prime contractor is not precluded from being one of the two sources for the SFF radios.

A Cost-Plus Award Fee (CPAF) contract type will be award and applied to the Spiral 1 and Spiral 2 developmental efforts. The contract will have options for Spiral 1 production and Spiral 2 LRIP quantities. The Cluster 5 contract will incentivize the contractor to achieve established cost, schedule and technical performance objectives. These objectives will be linked and the contractor will be required to achieve some degree of success to qualify for the fee. These objective considerations will preclude the potential of the contractor focusing on only one consideration. The fee will be structured into periods of performance to facilitate evaluation of the contractor's achievements.

Design and development of both Spiral 1 and Spiral 2 will commence simultaneously upon contract award in 2QFY04. The objective of Spiral 1 is to modify COTS/NDI for a single channel Handheld and a two channel Manpack radio, certify the hardware as SCA-compliant, achieve National Security Agency (NSA) certification and Defense Information Technology Security Certification and Accreditation Process (DITSCAP) accreditation and field Spiral 1 radios to support a critical and near term warfighter requirement in 4QFY06. Available certified JPO waveforms will be ported to the Cluster 5 Spiral 1 radios and certified by NSA for use on the hardware platform.

Spiral 2 objective is to further evolve and expand the Spiral 1 capabilities in designing, developing, testing and fielding the dual Handheld, dual channel Manpack and SFF and to port additional available waveforms.

Delivery of a Spiral 1 production representative single channel and two channel Manpack radios will begin approximately 9 months after the Spiral 1 Design Readiness Review. . These assets will support the schedule Contractor and Government Development Test (GDT) starting in 3QFY05. These tests will validate the system performance against the requirements identified in the Cluster 5 specification. In accordance with the direction provided in the ADM signed 29 May 2003, these assets will also be used to support a Multi-Service Operation Test and Evaluation (MOTE). The MOT&E will be executed in early QFY06 and is limited to Spiral 1 radios. A system Evaluation Report (SER) from the MOT&E will support a Full Rate Production (FRP) In Process Review (IPR) for Spiral 1 in late 2QFY06. This will allow the Cluster 5 Program to award a fixed-price option for Spiral 1 production assets.

The DRR for Spiral 2 will be conducted in 2QFY05. Test activities conducted during SDD for Spiral 2 include CDT, GDT and early operational test events. These tests events will leverage from other on-going acquisition efforts, such as the Future Combat System (FCS) scheduled test events.

Independent Assessments of development and operational test activities conducted during SDD for Spiral 2 radios will support a Milestone C Decision Review for LRIP quantity radios in 1QFY07. Following the Milestone C Decision Review for LRIP for Spiral 2 radios, a fixed price option contract award will be exercised for a sufficient quantity of LRIP assets to support Spiral 2 MOT&E and prove out production processes. Spiral 2 LRIP assets will be delivered in 4QFY07 and be subject to a First Article Test (FAT). It is anticipated that the Spiral 2 LRIP radios will be fielded “in-place” to test the unit. Radio assets will also be available to support FCS as required.

A second Spiral 2 LRIP Option will be exercised in 1QFY08 to procure sufficient LRIP assets to ramp up production to accommodate Full Rate Production quantities. This second option is required to preclude costly and efficient break in production, and will introduce risk that the contractor cannot establish capability to satisfy FRP quantities. All assets procured under the second LRIP option for Spiral 2 will be fielded. A System Evaluation Report of Spiral 2 MOT&E will be completed to support the FRP IPR in 1QFY09. This review will be the vehicle to authorize the Spiral 2 FRP. Following the Spiral 2 FRP IPR, multiple Fixed Price contracts will be awarded for FRP quantities.

During Spiral 2 LRIP, the contractor will be required to delivery Form, Fit and Function (F3) documentation. This documentation will support the look, feel, operation and performance of each form factor, but not the actual detail design. The F3 documentation will allow the competition of FRP requirements.

It is anticipated that there will be substantial DoD cost savings employing a spiral development approach whereby the developers will reuse common hardware and software modules. The contractor will have the flexibility of proposing a best value solution that provides a militarily useful capability on an incremental basis as a reasonable cost while minimizing risk to the Spiral 1 schedule.

The Cluster 5 JTRS contract will minimize the requirement for the use of military specifications and standards. The specification establishes performance and functional requirements for the Cluster 5 radios. As a result, the contractor has the option of using military standards, commercial standards or other commercial practices to develop JTRS hardware and software. This latitude encourages the use of (COTS) products and may significantly reduce cost and encourage technology advancement.

1.10 REPLACED/DISPLACED EQUIPMENT

The JTRS Cluster 5 radios will eventually displace and or replace currently fielded legacy manpack and handheld tactical radios. Examples of these systems include, but not limited to, SINCGARS, High Frequency (HF) SSF with ALE, Single SSATCOM (UHF DAMA), handheld

Secure (PRC-148), HaveQuick I/II Ground UHF DAMA, and VHF AM radios. The Cluster 5 SFF (Embedded radios) will displace Secure Single Channel Handheld radios currently used by the Land Warrior Program.

The other family of JTRS Cluster tactical radios will eventually displace and or replace the current legacy tactical radio systems that include SINCGARS Ground and Airborne, EPLRS, ,HaveQuick I/II Ground and Army Rotary Wing, JTIDS, MIDS.

1.11 SUPPORTABILITY INTEGRATED PRODUCT TEAM

The JTRS SIPT was chartered by the JTRS Product Director to develop the supportability strategies and objectives for the Cluster 5 Program. These strategies were incorporated into the Cluster 5 JTRS Statement of Work and will be utilized for program planning. The JTRS SWIPT Charter, which is Annex A to this SS, the JTRS Statement of Work, the Performance Specification, and the JTRS Operational Requirements Document (ORD) set the groundwork for the development and execution of this JTRS SS.

SECTION 2 – PLANS, GOALS, AND STRATEGIES

2.1 PERFORMANCE BASED LOGISTICS APPROACH

Under the Performance Based Logistics Approach, the goal is to achieve the logistics objectives at the lowest lifecycle cost. The logistics support system shall:

- Provide an Ao of 96% for single channel radios, with an objective of 99% for two or more channels
- Minimize the logistics footprint
- Operate and maintain in the existing manpower and personnel structure
- Achieves lowest possible lifecycle costs

To meet these goals, the contractor will perform a Business Case Analysis (BCA) which will quantify alternative support strategies and their costs, and provide appropriate logistics support recommendations to the Government. The BCA will cover support to the JTRS Cluster 5 radios over an expected 20-year life cycle.

When performing the BCA, the contractor will evaluate the following logistics design considerations:

- Minimize contractor support below division level.
- Maximize use of organic support across the battlefield.
- Provides a single point of turn-in.
- Minimize single points of failure.
- Maximize commonality of parts among the SFF Platforms.
- Maximize use of Common Support Equipment.
- Strive for interchangeability of modules among form factors.
- Plug and play at the operator level.

The Business Case Analysis (BCA)/Logistics Support Study will be performed in several phases:

Phase 1 - Pre-Design. This phase will analyze logistics related design considerations that will influence hardware and software designs of the Cluster 5 JTRS. These design considerations are those the contractor proposes to incorporate in specifications for items the contractor develops and those that will flow down to subcontractors and vendors. This is the preliminary design review that supports the overall Design Readiness Review (DRR) logistics considerations.

Phase 2 - Critical Design. This critical design phase also supports the DRR, and will analyze logistics design and logistics related resources to assure proper implementation and proper demonstration for the Maintainability/Logistics Demo and the Contractor's Development Test (CDT)/Government Development Test (GDT) and Operational Test.

Phase 3 – Post Testing and Production Readiness. This phase will assess lessons learned from DT/OT. Improvements and corrections to the developing logistics design, maintenance

concept and resources will be assessed. This phase will determine those logistics related elements that need to be updated prior to Spiral 1 limited production quantities and Spiral 2 LRIP.

The Cluster 5 Stakeholders will review and approve the results of the BCA. The BCA will provide support alternatives and lifecycle costs associated with each alternative. The Army will procure a design for all Cluster 5 stakeholders that is cost effective for logistics and maintenance support.

2.2 LOGISTICS REPORTING SYSTEM (LRS)

A logistics reporting system will be developed under the PBL effort. The LRS will capture metrics used to verify logistics performance requirements have been met. The LRS shall be available online by the start of the DRR. The LRS will connect to existing government logistics systems to the maximum extent possible. The Cluster 5 stakeholders will determine the metrics to be used in the LRS.

2.3 MAINTENANCE CONCEPT

The maintenance concept for Cluster 5 will be developed using Performance Based Logistics (PBL) methods. Cluster 5 Program will utilize a modular design concept. Operator level check/maintenance will utilize Built-In-Test/Built-In-Test Equipment (BIT/BITE) to fault isolate to the LRU.

The contractor will use Government approved software models to evaluate the support alternatives, such as the Achieving a System Operational Availability Requirements (ASOAR), Selected Essential Item Stockage for Availability Method (SESAME), Computerized Optimization Model for Predicting and Analyzing Support Structures (COMPASS) Logistics Cost Estimating Tool (LCET) and the Automated Cost Estimating Integrating.

2.3.1 Field Maintenance. Operator/field level maintenance for the Cluster 5 JTRS radios will consist of, but is not limited to, (depending on form factor):

- Operational checks and scheduled inspections.
- Replacement of batteries, knobs, etc.
- External adjustments, such as volume, frequency and output power.
- Corrosion prevention and equipment cleaning.
- Loading of software.
- Fault detection and isolation using BIT.
- DX Single Exchange point
- Common Support Equipment
- Plug-and Play at the field level

2.3.2 Depot Maintenance

Initiation of a Depot Maintenance Inter-Service Agreement (DMISA) between the users will be contingent upon the results of the BCA. Field returns will be received at Single Point of return for the designated depot repair activity.

A Core Depot Assessment will be conducted to determine which portion of the depot workload is core and must be addressed organically.

2.3.3 Warranty. Warranties implications may be unique per spiral and or/per SFF. The Business Case Analysis results will further define the suitability of a warranty per Spiral, as well as the type of warranties incurred and the costs associated with the warranty timeframe.

2.4 DESIGN INTERFACE

Design interface is the interface of design-related characteristics to other integrated logistics support elements. The Government's requirements for design interface will be assured through design analysis, test/demonstration, and an underlying incentive structure that leads the contractor to exceed threshold requirements and pursue objective values. This will support the Government's system readiness needs and assure effective, efficient, and safe system operations and maintenance. Major design interface elements are addressed below.

2.4.1 OPERATIONAL AVAILABILITY AND RELIABILITY

Under PBL, it is intended that logistics considerations will influence design. The Cluster 5 radios will be designed to optimize operational availability and reliability. The JTRS Operational Availability (Ao) is defined in the Operational Requirements Document (ORD) as each channel shall demonstrate an operational availability of 0.96 (threshold) and .99 (Objective). Reliability for JTRS is defined in terms of a Mean Time Between Failure of each JTR Set Channel of no less than 2400 hrs at a 70% lower confidence level in all the Form Factors.

2.4.2 DESIGN FOR MAINTAINABILITY

The JTRS radios will be designed to minimize field maintenance actions, as well as tools and support equipment requirements. No modifications will be necessary to install, replace or perform maintenance. The JTRS design will provide ease of accessibility in support of maintenance. The JTR Set will have a maintenance and test access capability that permits authorized personnel to troubleshoot the set while installed on the platform and will deny access to any unauthorized operator, maintenance personnel or network personnel attempting to access internally configured set parameters and software.

Design and construction will make it impossible to install equipment incorrectly or to attach cables, electrical plugs or any other such items in an improper manner. LRUs are replaceable without cutting any wires or unsoldering any connections. Built-in-test (BIT) and Built-in-Test Equipment (BITE) will be used.

The Mean Time to Repair (MTTR) for the first level of field maintenance = 30 minutes

2.4.3 DESIGN FOR TESTABILITY

The JTR Set will provide audio and visual signals to alert an operator to a critical change in the system or equipment status. The alarm audio output will be adjustable and have a mute capability. Upon power-on the JTR Set will perform Power-On Self test (POST) functions to determine the system status. Testability objectives emphasize the requirement that the JTRS contain sufficient Built-In Test (BIT) to allow the user to quickly identify, isolate and correct faults. This emphasis minimizes the need for special skills and test equipment. The POST will indicate an operational JTR Set status 95% of the time.

The Cluster 5 JTRS Radios will have the capability of commanded BIT and continuous BIT to detect and locate faults. The BIT diagnostics will detect 95% of all faults and of fault isolate to a single LRU at least 90% of detected faults.

2.4.4 PLANNING FOR PARTS OBSOLESCENCE

The design of the JTRS will provide for an internal growth capability through an open systems architecture that will enable technology refreshment of hardware and software to extend system life and reduce costs due to obsolescence of parts.

2.4.5 PLANNING FOR TECHNOLOGY INSERTION

It is envisioned that technology insertion/refreshment will occur on the Cluster 5 radios periodically due to obsolescence of parts, user driven improvements/enhancements and mission related requirements.

The Value Engineering Change Proposal (VECP) process will be used for technology insertion to improve system performance. Re-qualification of JTRS performance will be evaluated prior to any changes being incorporated in the Performance Requirements Document (PRD), F3 Specifications and Interface Control Documents (ICDs) and Logistics Technical Data Products.

2.5 MANPOWER AND PERSONNEL INTEGRATION (MANPRINT)

Manpower and Personnel Integration (MANPRINT) is a comprehensive program the Army uses for improving the effectiveness of systems at minimum cost throughout their life cycle. The JTRS will be safe and will promote ease of operation and maintenance by designated military personnel. The JTRS will be designed to facilitate its use within the military's existing manpower, maintenance and training structure. The JTRS will not cause unmanageable safety or health hazards nor have features or procedural requirements that degrade Human Machine Interface (HMI) and/or system performance or which degrade soldier survivability (usable in MOPP-4, at night, with NVGs, etc.)

MANPRINT considerations will lead the JTR Set design and support system away from the difficult and complex and insure there is no increase in the force structure and ensure that it will

be operated and maintained by personnel assigned to the applicable platform. Formal operator training will be minimized and the design will limit the sophistication skills required to operate and maintain the system to those possessed by existing legacy personnel.

A joint MANPRINT Working Group will be established and will be convened after contract award to prepare the JTRS System MANPRINT Management Plan (SMMP).

It is currently anticipated that additional manning or creation of new skills will not be required for JTRS. The JTRS is a user owned and operated system. No impacts are foreseen with regard to Cluster 5 JTR system integration. It is anticipated that the workload on the user/operator will be reduced since the JTRS combines functionality of multiple legacy radio systems into a single system. Maintenance workloads are also anticipated to be reduced as legacy radio systems are phased out over time.

The Cluster 5 JTRS will not cause an increase in the force structure or create new Military Occupational Specialties (MOS). The Cluster 5 JTRS will be operated and maintained by personnel assigned to the applicable platform. The Cluster 5 JTRS is a General Purpose User (GPU) system operated by the unit's organic personnel.

2.6 SUPPLY SUPPORT

The JTRS radios will be supported by commercial sources and/or the DOD Wide infrastructure practices to provide the most cost effective Performance Based Logistics (PBL) support solution. The JTRS will be designed to maximize the commonality of hardware Line Replaceable Units (LRUs), Field Level Maintenance Replacement Parts and the use of common software product configuration items throughout the various radio set platform configurations. to take advantage of economies present in commercial design practices. The intended result of this evolving commonality of hardware will result in the gradual DoD wide reduction in operational, training, maintenance and manpower requirements. These reductions will increase as the JTR Set replaces numerous dissimilar radio sets and their respective training and maintenance infrastructures with standard JTR Set and support programs. Existing Service's Maintenance Personnel and established maintenance structure will maintain the JTR Set. No additional manpower and no new facilities are anticipated to support the system.

2.7 SUPPORT EQUIPMENT/TEST EQUIPMENT

Where the DoD logistics structure is used, General Support Equipment (GSE) and General Purpose Electronic Test Equipment (GPTE) will be selected from existing standard GPETE equipment lists. The use of Special Purpose Electronic Test Equipment (SPETE), special purpose support equipment and special tools is not desirable. Utilization of BIT/BITE will not be accomplished using GPETE, SPETE or substituting modules. For all NDI, the contractor will identify automatic test equipment (ATE). For contractor provided logistics support, equipment and processes will be identified.

2.8 SUPPORTABILITY TEST AND EVALUATION

The purpose of the Cluster 5 JTR Set's test and evaluation strategy is to:

- Verify that design risks have been minimized
- Substantiate achievement of contract technical performance requirements
- Verify the degree that the system hardware and software design has stabilized so as to reduce manufacturing and production decision uncertainties
- Verify that the JTRS provides Interoperability to Joint, Service and Legacy Networks IAW the ORD
- Certify Readiness for dedicated operational testing
- Evaluate the operational effectiveness, suitability, and survivability of JTRS Cluster 5 radios.
- Certify that the JTRS is suitable for fielding

2.8.1 Test and Evaluation to Date. The JTRS Cluster 5 has conducted no testing to date.

2.8.2 Logistics Assessment.

Contractor in-plant testing prior to Spiral 1 FRP IPR and Spiral 2 MS-C will be conducted in two segments. The first segment will be the Contractor Development Testing (CDT) which is a midpoint test used to determine design maturity and primarily waveform Interoperability centric. A Logistics Assessment will be performed during the CDT. This CDT testing will be conducted on each type of EDM Cluster 5 radio prior to hand-off to the Government test agencies conducting the Government Development (GDT). The Contractor will perform a Logistics Assessment of the design (BIT, MANPRINT, parts interchangeability, maintainability, embedded resources as well as the status of logistics resource development (manuals, training materials etc). Results of the Logistics Assessment will be documented in the CDT Test Report.

2.8.3 Maintainability Demonstration (M-Demo).

As Part of the CDT, the contractor will conduct a Maintainability Demo to demonstrate compliance with the MTBF, verify maintenance reliability and validate BIT and fault isolation.

2.8.4 Logistics Demonstration (LD).

The Logistics Demonstration (LD) will be conducted by the contractor under the direction of the Government. The LD will assess the suitability of the Systems Support Package (SSP). The SSP will contain spare parts, technical manuals, training materials and any special tools and equipment (if applicable) developed by the contractor to support the JTR Sets. The LD will assess the ability of the designated military maintainers to support the JTR Set when trained using the designated training course materials and the spare parts, technical manual procedures and tools identified in the SSP. Deficiencies found during the Logistics Demonstration will be corrected prior to final acceptance LRIP units. The Logistics Demonstration will be a non-destructive Development Test/Operational Test (DT/OT) event. The PMs and user representatives will evaluate the adequacy of maintenance planning for the Cluster 5 radios (such

as task allocation and troubleshooting etc.). The tasks tested during the Logistics Demonstration, the tools, and the remove and replace times will be the baseline for evaluation of operator and maintenance tasks.

2.8.5 Safety and Health.

Results of tests, inspections, and review of safety related documentation will be used to develop and issue a safety release to enable soldiers to operate the JTR sets. Safety assessments and airworthiness assessments will be assessed throughout the test program to generate enough data for a Safety release.

2.8.6 Multi-Service Operational Test and Evaluation (MOT&E).

The primary purpose of MOT&E is to determine whether the JTRS is operationally effective and suitable for the warfighter. Data collected from the Cluster 5 JTRS MOT&E will be used to determine the operational effectiveness, suitability and survivability of the JTRSs. Data on network performance, survivability, training, MANPRINT, interoperability, Reliability, Availability and Maintainability (RAM) and logistical support will be collected. RAM data will also be collected and evaluated consistent with the Combat Developers Analysis. The MOT&E will provide the evaluation for the Full Rate Production (FRP) and fielding decision.

The Cluster 5 JTRS configurations will be tested under realistic operational conditions during the MOT&E. The MOT&E player units and site locations will be as approved by the TSARC. The record test phase will be based on tactical scenarios IAW the Training Support Package (TSP) and OMS/MP. Electronic Warfare and Information will also be assessed IAW the TSP and OMS/MP.

All data will be reviewed and additional testing conducted if deemed necessary to certify JTRS are ready for MOT&E.

2.9 SAFETY, ENVIRONMENTAL AND HEALTH CONSIDERATIONS

A Programmatic Environmental, Safety and Occupational Health Evaluation (PESHE), dated 18 Mar 2002 was prepared by the CECOM Safety Office and describes the program's strategy for meeting all environmental, safety and health requirements, establishes responsibilities and identifies how progress is to be tracked. No program risks are identified in the PESHE. An evaluation of the system's potential impact on the quality of human environment was conducted using the Record of Environmental Consideration and Communications-Electronics Command's (CECOM) Environmental Impact Analysis Work Sheet (AMSEL-SF FORM 07). This initial evaluation noted that the JTRS components are not anticipated to have any adverse affects on the environment. These will continue to be updated and evaluated for hazardous materials such as reactive or flammable chemicals, toxins, carcinogens and ozone depleting substances. Record of the Environmental Consideration and Environmental Impact Analysis is listed as Appendix 8-1 (PESHE). Battery handling and disposal will be IAW Technical Bulletin TB 43-0134, Battery Disposition and Disposal and the Code of Federal Regulations Title 49.

A System Safety Program in accordance with MIL-STD-882D has been established for managing, identifying, documenting, tracking, and categorizing all environmental, safety, and health hazards (ESH) risks and issues associated with JTRS. The system safety program is outlined in the System Safety Management Plan (SMMP). A Safety Assessment Report (SAR) will be procured as a contractor prepared data item.

The contractor will implement an approach to ensure that any necessary system safety activities are executed in a timely and cost effective manner. To ensure that safety tasks are completed as required, the contractor will provide qualified personnel to accomplish any required safety tasks, establish the authority for implementing safety tasks through all levels of management, allocate appropriate resources, and establish lines of communication between system safety and other functional elements of the program. A procedure will be in place for incident alerting/notification, investigation, and reporting, including Government notification. The authority for resolution of identified hazards will be established.

The developmental requirements of the JTRS are in terms of functional capability. The contractor controls all aspects of the product that may affect the environment, and has the responsibility to comply with all national, state and local environmental laws and regulations.

The following Environmental, Safety and Health related assessments will be prepared and approved to support the Millstone B Review: (1) Manprint Assessment, (2) Health Hazard Assessment, (3) Safety Assessment.

The JTR Set will be designed to insure that under all conditions of normal use (installation, operation and maintenance) as well as under a fault condition (including human error), it protects against the risk of electrical shock and other hazards. Safety and health hazards, as stipulated in MIL-STD-454, are required.

2.10 HUMAN FACTORS ENGINEERING

During the Cluster 5 JTRS SD&D Phase, emphasis will be placed on human factors engineering and specifically on man-machine interface. The JTRS will be able to be operated and maintained safely, efficiently and effectively under all operational conditions by designated personnel. The JTRS design will allow operators and maintainers to perform all critical tasks required to install, operate and maintain the radio correctly on the first attempt 90% of the time (With the exception of MOPP Gear).

2.11 TRAINING

The JTRS will be designed so that formal operator training will be minimized. The design will limit the sophistication of skills required to operate and maintain the system to those already possessed by legacy personnel. At a minimum, prompting, cues, informative feedback and status, simple error handling and help functionality will be provided to reduce training time. The JTRS will not cause an increase in the force structure or create new Military Occupational Series (MOS).

Initial Instructor and Key Personnel (IKP) training for Cluster 5 and LRIP will be developed by the contractor. IKP training will be taught at the Contractor's facility to selected Government personnel representing all of the services. A Training Support Package (TSP) will be developed by the contractor consisting of lesson plans, student guides, multimedia, Computer Based Training (CBT), manuals, tests, etc to support training.

2.11.1 Training Support Package (TSP). The TSP will be tailored by the Contractor to meet the needs of each service during both Institutional and New Equipment Training (NET). The primary training media for the JTRS system will be composed of instructor led classes using the contractor developed JTRS TSP for Operator/Maintainer and Network Manager. The TSP will be validated and used to support training for the Developmental and Operational testing of the Cluster 5 JTRS. Advanced technologies, including Interactive Computer Based Training (ICBT), Embedded Training (ET), Interactive Multi-media Instruction (IMI) and Simulation will be investigated during system development for application of those technologies into LRIP and FRP JTR Sets. These technologies, when implemented, will become part of the TSP.

2.11.2 New Equipment Training (NET). New Equipment Training (NET) will be provided to Active units being fielded the JTRS system by CECOM NET Teams as part of Total Package Fielding (TPF). The NET teams will conduct Operator/Maintainer and Network Manager courses using the validated JTRS TSP materials. In addition, the Army will be the lead service and its NET teams will provide additional IKP training to the Joint Services and Agencies selected personnel. These Services and Agencies can then develop and provide their own NET Training using JTRS TSP materials. Field Maintenance and Sustainment Maintenance have not been fully defined for Spiral 1 and Spiral 2 radios from FY 06 through FY 09 will have Interim Contractor Support (ICS) below the field level. The assumption is that the system will migrate from ICS to a shared Organic/CLS approach. Based on the approach, a maintenance course for the remaining organic maintenance tasks previously accomplished under ICS, will be developed and implemented during FRP fielding.

2.11.3 Unit Sustainment Training. After completion of NET, the validated JTRS TSP, including Lesson Plans, Training Guides, electronic technical documentation, embedded training, and CBT, will be issued to units to support sustainment training for Operator/Maintainer and Network Manager.

2.11.4 Institutional Training. The PM will provide a JTRS TSPs to the Army's proponent school as well as the proponent schools for the Joint Services and Agencies, consistent with supportability requirements, as a basis for development of entry level and professional development courses at the respective schools. Any designated special tools or equipment will also be provided to the schoolhouses as applicable

2.11.5 Training Devices. TBD

2.12 TECHNICAL DATA

The government will obtain the data necessary to procure, operate, maintain and manage the Cluster 5 JTRS radios and ancillary equipment. All data will be furnished electronically in accordance with contract requirements.

2.12.1 Technical Data Package (TDP). All hardware items, ancillary items and support equipment will be documented in a Form, Fit, Function (F3) TDP. This will include all system specifications, hardware and software specifications, interface requirements and interface control documents. The various platform A-Kit Material Developers will provide the same level of documentation.

2.12.2 Technical Manuals (TMs) / Interactive Electronic Technical Manuals (IETMs).

During the SD&D Phase, the contractor will conduct a Business Case Analysis (BCA) to investigate and evaluate alternative approaches to providing logistics support information to operators and maintainers of JTRS Cluster 5 equipment. The BCA will determine the appropriate level of TM functionality needed to support each of the various Cluster 5 systems, while meeting the logistics performance requirements and minimizing lifecycle cost. Tradeoffs can be made between levels of IETM functionality and cost, considering benefits that increased functionality provides in improving maintenance and training activities.

The BCA will investigate technologies for the application of interactive media for training, training simulators, embedded training, IETMs, embedded diagnostics and information technology integration with Army support systems. The BCA will investigate and address the development of Interactive Courseware (ICW) and Web Based Training (WBT).

The contractor shall deliver an Operator's/Unit Level maintenance manual, including Repair Parts and Special Tools List (RPSTL), and a quick reference operator's pocket. The contractor will provide all applicable updates for the life of the contract.

Manuals will be developed in accordance with MIL-STD 40051B using the CECOM implementation of MIL-STD 2361 (DTD) from the Army SGML/XML Registry and Library.. The contractor will provide all digital files to the Government.

2.13 COMPUTER RESOURCES

The JTRS will provide the operator or appropriate personnel, with the ability to load and/or reconfigure modes/capabilities (via software) while in the operational environment. The components of the Cluster 5 JTRS will provide checks for computer operations system viruses during system initialization and routine operations. The virus protection software will be capable of virus database updates on a regular basis over the network. The JTRS will alert the operator when a virus is detected.

2.14 PACKAGING, HANDLING, STORAGE, AND TRANSPORTATION (PHS&T)

The Cluster 5 radio Line Replaceable Units (LRUs) will be fully transportable by air, sea, rail and truck. When installed into a host platform, transportability requirements for that host apply. No special preparation should be required for routine transport. Commercial carriers will be used for transportation of non-COMSEC items direct to the user or to a COMSEC custodian for crypto controlled items. Items in transit will be tracked using commercial carrier's on-line tracking system. The most efficient and cost effective measures will be employed to minimize transportation costs.

The JTRS distribution and basing will be consistent with existing force structures and deployment concepts. If the JTRS is integrated into another system, transportability requirements of the host system apply.

2.15 FACILITIES. No new facilities are required.

2.16 CRYPTOGRAPHIC CONTROLLED ITEMS (CCI)

Accountability, storage, protection, packaging and transportation will be conducted in accordance with TB 380-40-22, Security Standards for Controlled Cryptographic Items (CCI).

Serial number accountability of the Cluster 5 JTRS LRUs will be in accordance with AR 710-3, Asset and Transaction Reporting System. A Controlled Inventory Item Code (CIIC) will identify CCI (AR 708-1, Cataloging and Supply Management).

2.17 STANDARDIZED AND INTEROPERABILITY (S&I)

The Cluster 5 JTRS will interoperate with service, joint, allied, coalition, government agency and commercial and North Atlantic Treaty Organization (NATO) systems and other allies through the use of common doctrine, procedures and support systems.

2.18 FIELDING

The Cluster 5 JTRS fielded to Army units will be in accordance with the Total Package Fielding (TPF) procedures specified in AR 700-142, Material Release Fielding and Transfer and DA Pamphlet 700-142, Instructions for Materiel Release, Fielding and Transfer. Fielding to other services will be supported by their respective Material Fielding Plans.

2.19 POST-FIELDING SUPPORT

Post fielding assessments for the JTRS will be conducted in accordance with AR 700-127. The scope, procedures and responsibilities will be developed during the Production and Deployment Phase for the JTRS.

2.20 POST-PRODUCTION SUPPORT

Post Production support requirements will be addressed during the production planning process. A Post Production Support Plan will be developed if required.

APPENDIX A

ACROYNM LIST

ACAT	Acquisition Category
ACEIT	Automated Cost Estimating Integrated Tools
API	Application Program Interface
Ao	Operational Availability
ASOR	Achieving s System Operational Availability Requirements
ATE	Automatic Test Equipment
A2C2S	Army Airborne Command and Control System
BIT	Built-In Test
BITE	Built-In Test Equipment
BLOS	Beyond Line of Sight
CALS	Continuous Acquisition Lifecycle Support
CARD	Cost Analysis requirements Description
CBT	Computer Based Training
CBTDEV	Combat Developer
CCI	Controlled Cryptographic Item
CDT	Contractor Development test
CLS	Contractor Logistics Support
COMPASS	Computerized Optimization Model for Predicting
COMSEC	Communication Security
COTS	Commercially Available, Off-the-Shelf
CTSF	Central Technical Support Facility
C4I	Command, Control, Communications and Intelligence
DoD	Department of Defense
EOA	Early Operational Assessment
FAT	First Article Test
GPETE	General Purpose Electronic Test Equipment (GPETE)
GOVT	Government
GFE	Government Furnished Equipment
GPU	General Purpose User
GPS	Global Positioning System
ICBT	Interactive Computer Based Training
ICW	Interactive Courseware
IETM	Interactive Electronic Technical Manual
IKP	Instructor and Key Personnel

ILS	Integrated Logistics Support
JITC	Joint Interoperability Test Command
JTRS	Joint Tactical Radio System
KPP	Key Performance Parameter
LOS	Line of Sight
LRIP	Low Rate Initial Production
LRU	Line Replaceable Unit
LUT	Limited User Test
MATDEV	Material Developer
MaxTTR	Max time to Repair
MDAP	Major Defense Acquisition Program
MER	Manpower Estimate Report
MIL-STD	Military Standard
MOS	Military Occupational Specialties
MOT&E	Multi-Service Operational Test and Evaluation
MMR	Major Milestone Review
MSC	Major Subordinate Command
MTBF	Mean Time Between Failures
MTTR	Mean Time To Repair
NATO	North Atlantic Treaty Organization
NDI	Non-Developmental Item
NET	New Equipment Training
NETT	New Equipment Training Teams
ORD	Operational requirements Document
O&S	Operational and Sustainment
PDR	Preliminary Design Review
POST	Power-On Self Test
PHS&T	Packaging, Handling, Storage and Transportation
PMO	Program Management Office
PQT	Production Qualification Test
PSC	Prime System Contractor
SCA	Software Communications Architecture
SCMA	Sustainment and Cost Management Annex
SD&D	System Development and Demonstration
SESAME	Selected Essential Item Stockage for Availability Method

SIL	System Integration Lab
SIPT	Supportability Integrated Product team
SPETE	Special Purpose Electronic Test Equipment
SS	Supportability Strategy
TAT	Turn-Around Time
TEMP	Test and Evaluation Master Plan
TPF	Total Package Fielding
TSP	Training Support Package
USAF	United States Air Force
USMC	United States Marine Corps
USN	United States Navy
VECP	Value Engineering Change Proposal
WBT	Web Based Training

APPENDIX B

SUPPORTABILITY INTEGRATED PRODUCT TEAM (SIPT) FOR THE CLUSTER 5 JOINT TACTICAL RADIO SYSTEM (JTRS) CHARTER

VISION STATEMENT

To successfully field a fully supportable system while meeting all service's customer needs within cost and schedule constraints and ensure the full logistic support of the JTRS.

1. **REFERENCES:** AR 700-127, Integrated Logistic Support
DoD 5000.2- 12 May 2003
DA PAM 700-56, Draft Supportability Planning and Procedures in Army Acquisition

2. **SYSTEM DESCRIPTION:** The Cluster 5 Joint Tactical Radio System (JTRS) is a software-programmable and hardware-configurable digital radio system that will provide increased interoperability, flexibility and adaptability to support varied mission requirements of the warfighters. The three (3) Form Factors (Handheld, Manpack and Small Form Fit (SFF) Embedded Radio) that comprise Cluster 5 will be vehicular platforms to meet requirements for the Army ground and Marine Corps ground and other customer requirements. The JTRS supports joint operations by providing the capability to transmit, receive, bridge, crossband and gateway between similar service boundaries. The JTRS ensures joint operational readiness and success by providing military commanders with the ability to communicate with their forces via voice, video and data during all aspects of military operations. It provides Command, Control, Communications, Computers and Intelligence (C4I) capabilities via Line of Sight (LOS) and Beyond Line of Sight (BLOS) transmissions.

3. **GENERAL:** The Supportability Integrated Product Team (SIPT) is a permanent, identifiable source of technical skill and expertise established to manage the supportability effort throughout the JTRS's life cycle. The SIPT functions as an advisory board to the Product Manager. Members of the SIPT serve as focal points for their respective services, organizations and commands and are responsible for ensuring that sufficient technically qualified personnel are available to attend scheduled supportability meetings.

4. **PURPOSE:** The purposes of the SIPT are to:
 - a. Assist in acquisition data development and proposal evaluation.
 - b. Function in an advisory capacity to the Product Manager.
 - c. Provide guidance and resolve issues concerning support policies and procedures.
 - d. Review and recommend approval or disapproval to the Product Manager, of all supportability analysis and supportability issues.

- e. Ensure that all test data is used in developing the deliverable products, which define and allocate logistic resources.
- f. Ensure that the final data reflects the production baseline system configuration.
- g. Review status of milestone schedules.
- h. Review status of technical manuals, provisioning, training, reliability, maintainability, transportability, sustainability and MANPRINT.
- i. Plan and budget for logistic support for the JTRS.
- j. Ensure all necessary logistic support products and data required for deploying and sustaining the JTRS data are provided to meet specified readiness requirements in the most cost-effective manner.
- k. Coordinate with other JTRS Cluster IPTs, providing information as required/requested.
- l. Interface with other groups, councils specific to JTRS.

5. **MEMBERSHIP:** This Charter reflects the current membership for the JTRS SIPT:

- a. JTRS SIPT Chairperson
- b. JTRS SIPT members will include the following:

Government/Contractor Support:

Product Manager	Deputy Product Manager
RMD Division Chief	JTRS Cluster 5 ILS Manager
NET ILS Manager	PM TRCS Test Officer
Cost Analyst	CECOM ILS Manager
Maintenance Engineer	IK Platform Integrator
Technical Manual Writer	Air Force ILS Manager
Marine Corps ILS Manager	
PM LandWarrior	
PM FCS Rep	
SOCOM	
PM UGS	
PM RUS	
PM CCS	
JTRS JPO ILS Manager	Tobyhanna Army Depot Rep
Safety Engineer	Systems Engineering IPT Lead
TRADOC	PM TMDE
*DCSOPS Representative	Army Safety Center
*JTRS JPO ILS	ARL-HRED Engineer
*CECOM Production Engineer	
*PM JTRS Log	Army Environmental Center
Prime Contractor ILS Manager	NSA
Hardware Contractors ILS Managers	

Contractor Support (*) (Participate in Reviews; Not Chartered Members of the SIPT)

6. **RESPONSIBILITIES:**

- a. The SIPT Chairperson will:
 - 1) Schedule and prepare for SIPT meetings (on site, off-site, contractor's facility, VTC, etc.).
 - 2) Establish and/or revise team procedure.
 - 3) Schedule the review format and notify the team members of the time and place of the review.
 - 4) Provide Review Team members all appropriate ILS documentation to assist them in conducting reviews and meetings.
 - 5) Ensure the contractor provides material and administrative support needed for formal reviews after contract award. This will include logistic support data sheets, output reports, supporting documentation and hardware as appropriate. Digital transmission and media will be used to maximum extent possible, without jeopardizing the Government's need for written progress reporting. Written progress can be electronic.
- b. Parent organizations of SIPT Members are responsible for:
 - 1) Designating technically qualified personnel as members of the team, ensuring their availability for SIPT meetings and maintaining the continuity of membership to the maximum extent possible.

7. **PROCEDURES:**

- a. Supportability IPT
 - 1) SIPT meetings will be conducted as an advisory process to assist the Product Manager and/or ILS Manager with logistic planning, requirements identification, documentation evaluation and logistic coordination. Each SIPT meeting will:
 - (a) Determine the status of the JTRS supportability development.
 - (b) Monitor adherence to schedule.
 - (c) Ensure the adequacy and timeliness of Government inputs to required documentation.
 - (d) Assess the contractor's compliance with support and supportability requirements, regulations and statement of work.
 - (e) Develop proposed solutions to logistics problems.
 - (f) Provide guidelines for logistic material acquisition.
 - 2) Meetings are scheduled throughout the system development and demonstration phase. Meetings are held as required until all logistic products are delivered. Additional meetings will be held as required.

- 3) Meetings may be Government-only meetings or may be conducted jointly with the contractor. During joint meetings, Government-only sessions may be held to resolve issues or to coordinate and/or define a Government position or course of action.
- 4) The Supportability IPT Chairperson schedules meetings. For joint Government/Contractor SIPT meetings, the proposed agenda will be jointly developed by the Government and the contractor ILS Managers and approved by the Government ILS Manager. In all cases, the Senior Government ILS Manager is responsible for the agenda. Notification of meetings will be provided to all participants no less than two weeks prior to the scheduled meeting.

8. **ACTION ITEMS:** At each SIPT meeting, the recorder will document errors, deficiencies and corrective actions on Action Item Forms. The chairperson will assign action items as necessary and ensure timely resolutions. Any member assigned an action item is responsible for completing the item before the assigned suspense date. Action items requiring a written response shall be submitted to the chairperson for incorporation into the meeting minutes.

9. **MINUTES:** A report of the SIPT meeting findings will be jointly prepared by the chairperson and the recorder, as soon as possible following the review. This report will identify problems and discrepancies, recommend corrective actions, tradeoffs and will capture and report all action items and/or recommendations. The chairperson will distribute the minutes to each participant within five working days after a meeting. Classified/sensitive minutes from the meeting will be distributed separately.

10. **REVISIONS:** This charter shall be amended and/or updated as necessary to provide for changes in policy, regulations, directives or membership. Revisions to this charter will be coordinated through the JTRS SIPT Chairperson.

ULTIMATE GOALS:

- * Work as an Integrated Government and Industry Product Development Team, developing and procuring support products for the JTRS System to improve operational availability.
- * Demonstrate, through the successful conclusion of this effort, the positive benefits of Acquisition Excellence while setting the standards by which inter-service cooperation and Government/Industry teaming are judged in the future.