

JTRS Cluster 2

USSOCOM

PM JTRS Cluster 2

Mr. Gus Zader

zaderz@socom.mil





Agenda



- JTRS Cluster 2 Description
- JTRS Cluster 2 Acquisition Strategy
- User Requirements
- Key Technologies
- Challenges and Risks
- Coordination and Relationships



JTRS Cluster 2 Description

Gus Zader



JTRS Strategic Vision



Current: Today

- Legacy Systems are Network Dependent; interoperability requires special purpose radios and personnel to deploy with units so service and coalition forces can interoperate.

Near-Term: 2005

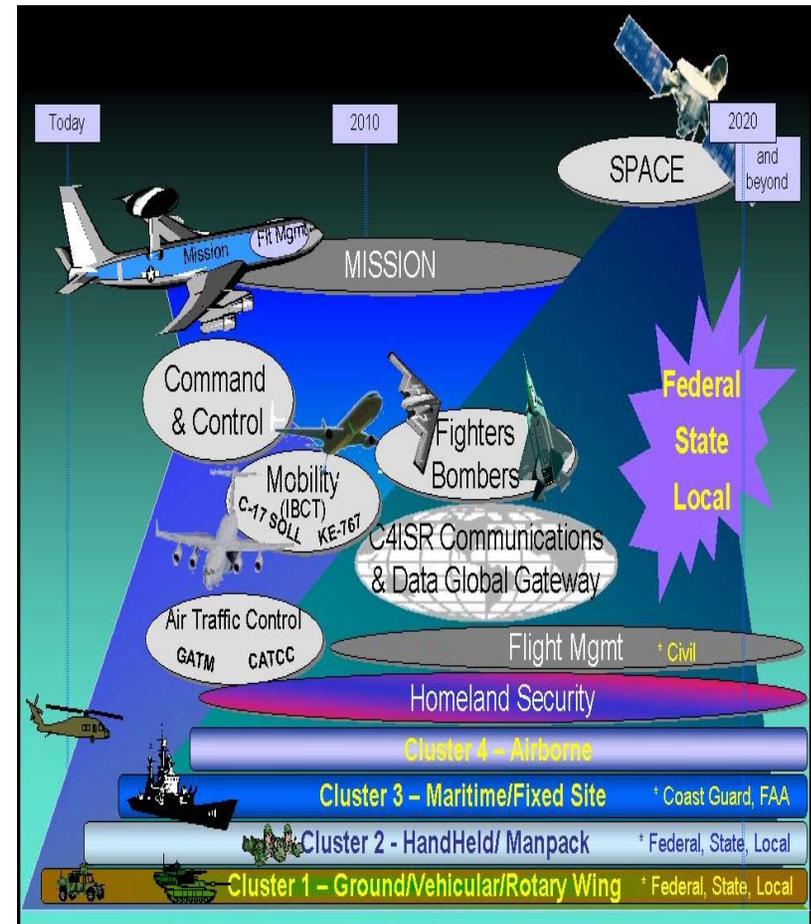
- Interoperable communications links via legacy waveforms and WNW.
- Relay voice, data, and video beyond line of sight amongst the battlefield users
- Route and retransmit through dedicated JTRS nodes

Mid-Term: 2010

- Limited JTRS tactical networks
- Enhanced network management
- Spectrum management
- Security management
- Self-establishing and self-healing “smart” network
- Route and retransmission between JTRS and legacy networks
- Refined doctrine

Long-Term: 2020

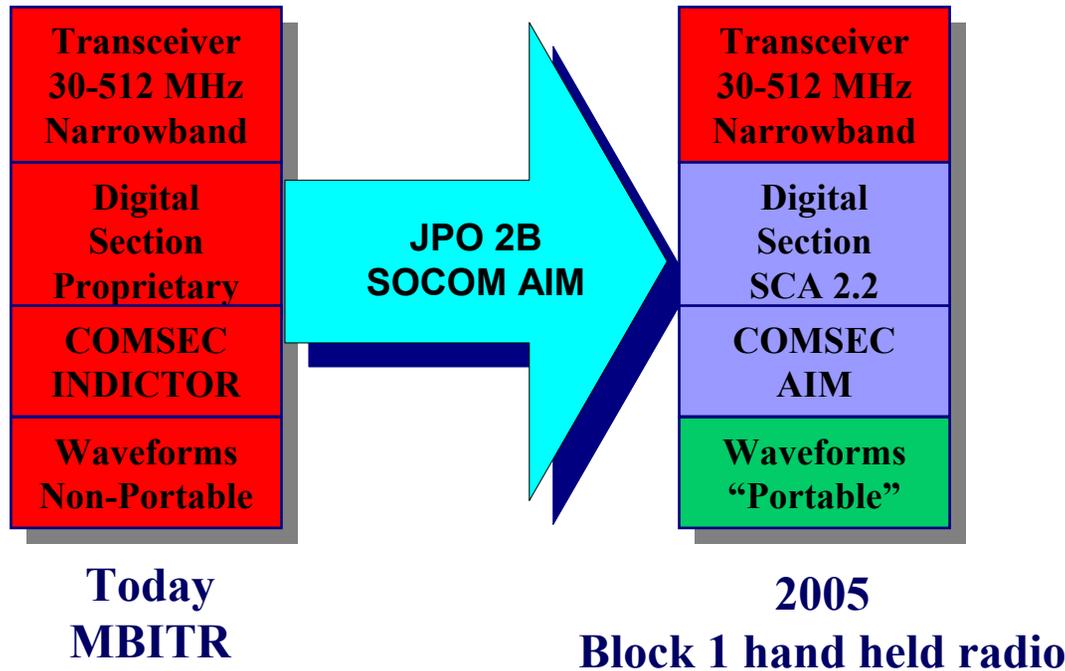
- Fully integrated information system network
- Active and passive information
- Transparent communications network





Current Path SCA Compliance

- Implementation of SCA 2.2 & Security Supplement using AIM and JEM ECP





Basic SOW



- SCA 2.2 Compliance
- Porting of Third Party Waveforms
 - LOS
 - SINCGARS
 - HAVEQUICK I/II
 - ANDVT
 - APCO 25
- Software Documentation
- ILS Documentation and Support
- Meetings and Reviews
- Government Testing
- Increased Hardware Accessories



JTRS Cluster 2 Acquisition Strategy



SOF Radio Migration Strategy



**NEAR TERM
FY 96-97**

**MID TERM
FY 98-03**

**LONG TERM
FY 04-07**

**OBJECTIVE
FY 08-Beyond**

- AN/PRC-104
- ISHMRS
- SMRS
- AN/PRC-117D(V) 2

ISHMRS

SMRS

AN/PRC-117F



- AN/PRC-113
- AN/PRC-119
- LST-5C
- MST 20
- AN/PSC-3
- AN/PSC-5

MBMMR



- MX-300
- SABERI/II/III
- AN/PRC-126
- AN/PRC-139

MBITR



**PLANNED
SYSTEM
IMPROVEMENTS**





Handheld Acquisition Strategy



Handheld Acquisition Strategy



- Spiral Development/Evolutionary Acquisition
 - Objective is to accelerate fielding of JTRS handheld radios to the warrior in order to achieve threshold JTRS ORD parameters.
- Block 1 – ECP
 - USD (AT&L) JTRS ADM dated 24 June 2002 directed USSOCOM to modify the existing MBITR.
 - Funded by MFP 3
 - USSOCOM COMSEC Obsolescence ECP to existing MBITR radio.
 - Funded by MFP 11



Handheld Acquisition Strategy Cont.

- Block 2 & 3 - Competitive RFP
 - Funding Sources and Requirements identification are critical and must be identified NLT 3rd Quarter FY03 to achieve Program schedule.
 - Dual Source Competitive RFP to fulfill JTRS ORD Block 2&3.



Cluster 2 Handheld Spiral Development Strategy



Delivery

FY 02



SINGARS ESIP VHF/UHF FM LMR
 UHF AM/FM COBRA H/W Hooks
 VHF FM VHF/UHF FM LMR (APCO 25)
 INFOSEC Chip GPS HAVEQUICK I/II

FY05

FY04-06



EPLRS UHF DAMA/DASA SATCOM
 COBRA UHF FM LMR
 VHF/UHF FM LMR (APCO 25) SOLDIER RADIO

FY 06

FY05-06



WNW CELLULAR RADIO
 ANSCIA (MUOS)
 MSS Embedded GPS Module

FY 07



Block 1 ECP Strategy



- Proposal divided into two sub-elements
 - Core Proposal
 - Waveform Porting/Features

- Basic SOW – Core Proposal
 - SCA 2.2
 - Project 25
 - Baton upgrade
 - Implementation of Project 25 Data Mode protocol
 - Port 3rd party waveform
 - Software Documentation
 - GPS
 - ILS support
 - Frequent Meetings and Reviews
 - Disciplined support to Government Testing
 - Hardware deliverables



Block 1 ECP Strategy

Cont.



- Waveform Porting/Features
 - JTRS JPO provided SCA Waveforms (requires additional funding and negotiation)
 - Waveform porting
 - LOS
 - SINCGARS
 - HaveQuick I/II
 - ANDVT
 - Features (require additional funding and negotiation)
 - COBRA waveform porting
 - JEM Compatibility in Vehicle Adapter
 - SAASM GPS Module



JEM Core Efforts



- System Design
- Electrical Design
- Software Design Tasks
 - SCA 2.2
 - Raytheon Core Framework version 2.2
 - Thales Communication Inc. labor to support



JEM Core Efforts

Cont.



- Project 25 CAI and OTAR
 - Porting of GFE provided Waveform
 - Requires Baton upgrade to do Type I Data
- Mechanical Design
 - Includes design for one additional cable to provide simultaneous data and GPS operation.
- Integration
- Contractor Developmental Test
 - Preliminary Qualifications Testing on early release
 - Covers all environmental, EMI, TEMPEST and CV testing



JEM Core Efforts

Cont.



- Early Operational Assessment
 - Government testing of early release radios performed for 3-4 weeks
- Production Qualification Test
- SCA Compliance
 - JTel Support
- DT/OT
 - DT performed in government lab
 - OT performed over 6-8 weeks in the field
- JITC Interoperability Certification



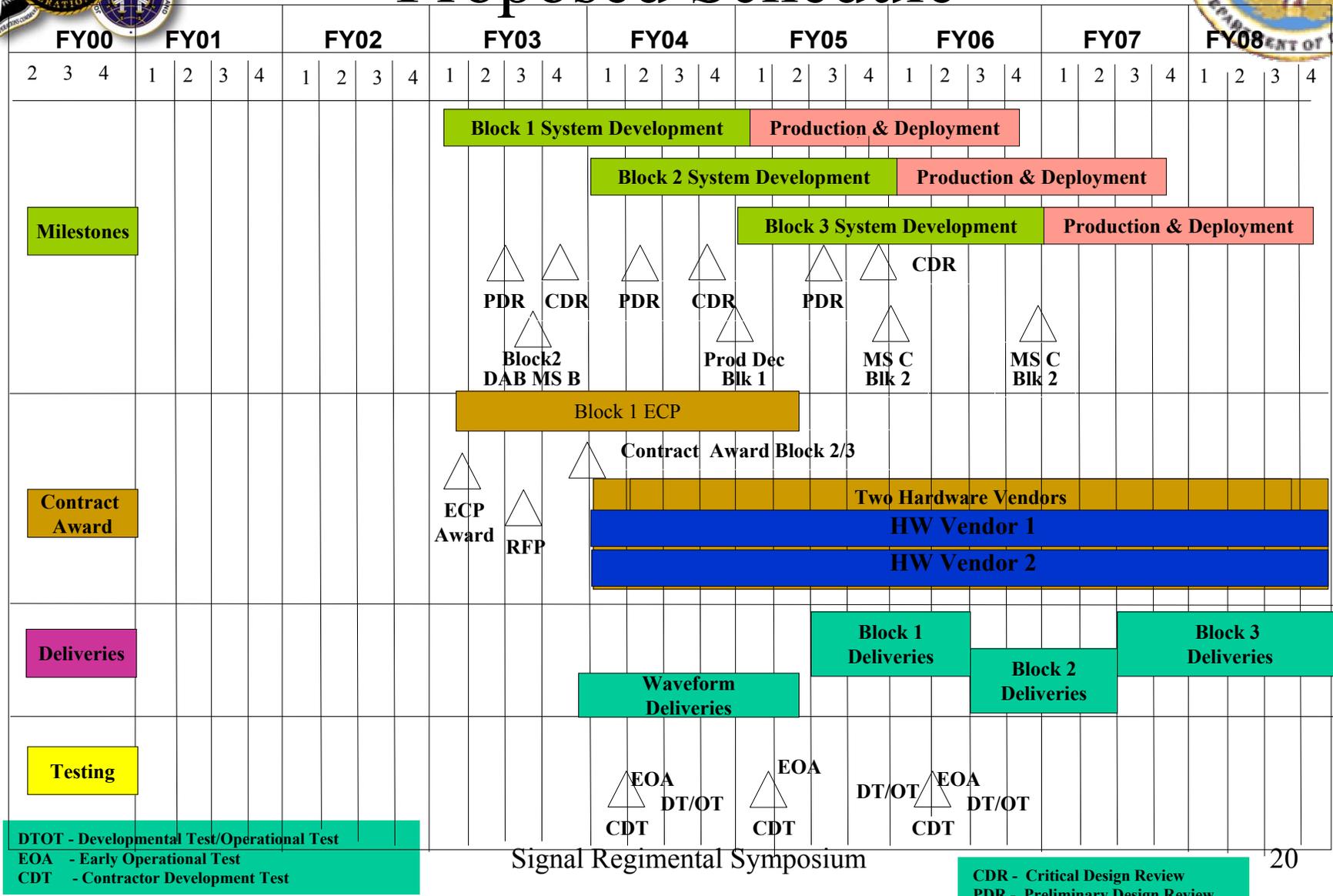
JEM Core Efforts Meeting and Conferences



- Kick Off Conference at TCI Clarksburg MD 17 Dec 02
- Program Management Reviews
 - 1 every six months 2 at TCI, 2 in Tampa
- Test and Evaluation Planning Conference
 - 2 each at Tampa
- Integrated Product/Process Teams
 - LOE assumes one person ½ time for 2 years to support working groups and Cluster 1 meetings
- Technical Interchange Meetings
 - 1 per month (1 of 4 at an off-site location)
- Program Reviews
 - Every 2 months at TCI



Cluster 2 Handheld Proposed Schedule



Signal Regimental Symposium

DTOT - Developmental Test/Operational Test
EOA - Early Operational Test
CDT - Contractor Development Test

CDR - Critical Design Review
PDR - Preliminary Design Review



MBITR



Multiband Inter/Intra Team Radio OVERVIEW

Unclassified



Description

- Program status: **GREEN**
- Provides SOF teams with ability to communicate on a user selected frequency (30-512 MHz) using a single handheld radio. Interoperable with various agencies of the US Government, Air Traffic Control (ATC) and allied foreign forces.
- 33 cubic inches/31 ounces
- 20 meter and 2 meter immersible versions
- Embedded COMSEC
- Reduces combat load of individual operator
- Augments/Replaces: AN/PRC-126, AN/PRC-68, MX-300, MX-300S, MX-300R, MX-350, AN/PRC-113, AN/PRC-119

Contractor: Thales (Formerly Racal)

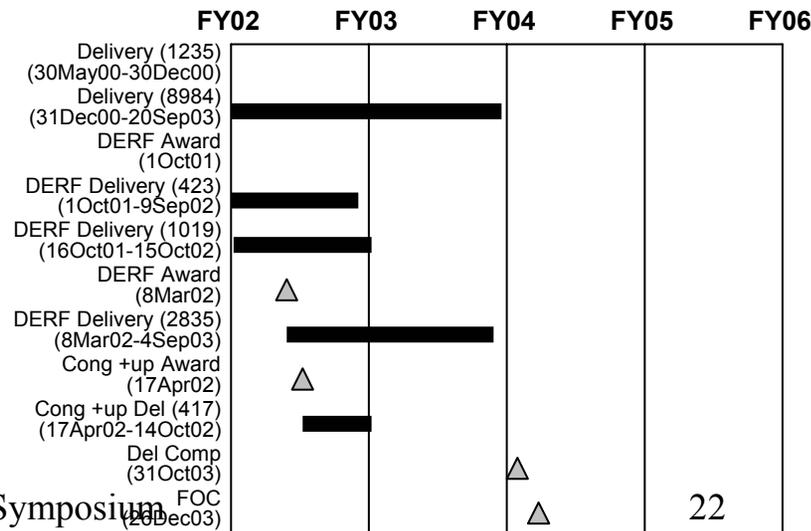
PPBES: FY04 BES (\$M)

APPN	Prior	FY02	FY03	FY04	FY0509	TOTAL
RDTE	7.0	0.9	--	--	--	7.9
PROC	40.0	30.6	--	--	--	70.6
OM	3.2	1.2	2.4	4.6	25.8	37.3
TOTAL	50.2	32.7	2.4	4.6	25.8	115.8

Note: Prior includes \$2.5M DERF Funds;
FY02 includes \$27.6M DERF Funds

12/03/02

Schedule, Phase III / MS III C1



Signal Regimental Symposium



Manpack Acquisition Strategy



Manpack Acquisition Strategy



- Spiral Development/Evolutionary Acquisition
 - Objective is to accelerate fielding of the JTRS dismounted radios to the warrior in order to achieve threshold JTRS ORD schedule parameters.
 - Separate acquisitions for the Handheld and Dismounted domains.
 - Block technology insertions
 - Block 1, 2 & 3 - Competitive RFP to two vendors to fulfill JTRS ORD Block 2 & 3 waveform requirements and other JTRS key performance parameters
- Key source selection criteria will be total ownership cost.



Manpack Spiral Development Strategy



FY 04-07

BLOCK 1

SINGARS ESIP	UHF AM/FM PSK LOS
UHF DAMA/DASA SATCOM	HAVEQUICK
UHF AM	VHF FM
One Channel	VHF/UHF FM LMR (APCO 25)
HF SSB w/ALE	Internal GPS Module
ATC HF DL	UHF FM LMR (APCO 25)
Dual Channel	ATC VHF DL
SATURN	SOLDIER RADIO
COBRA	VHF ATC

FY 07

FY 07-08

BLOCK 2

WNW	CELLULAR RADIO
MSS	LINK 16

FY 08



Manpack Notional Schedule



	FY02				FY03				FY04				FY05				FY06				FY07				FY08				FY09							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Milestones									System Development and Demonstration								Production and Deployment																			
									△ DAB MS B				△ LRIP EL OIPT				△ MS C																			
Contract Award									<div style="background-color: #008080; height: 20px; width: 100%;"></div> <div style="background-color: #0000FF; height: 20px; width: 100%;"></div> <div style="background-color: #008080; height: 20px; width: 100%;"></div>																											
									△ Contract Award				△ PDR				△ CDR																			
Deliveries																	Block 1 Deliveries				Block 2 Deliveries															
Testing																	□ BOA				□ DT/OT															
																	△ CDT				△ CDT															
Fielding																					△ FUE															
NSA Cert.																	NSA Certification Process & DITSCAP																			

12/02/03

Signal Regimental Symposium

DTOT - Developmental Test/Operational Test
EOA - Early Operational Test
CDT - Contractor Development Test

FRP - Full Rate Production
FUE - First Unit Equipped

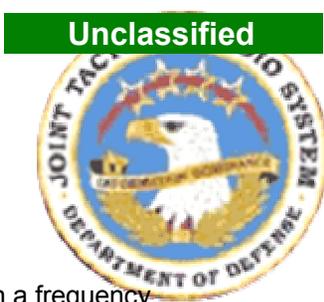
LRIP - Low Rate Initial Production
MS - Milestone Decision
PQT - Production Qualification Test



MBMMR



Multiband, Multimission Radio OVERVIEW



Unclassified

Description

- Program status: **GREEN**
- A lightweight, multiband radio that operates on a frequency selectable from 30-512 MHz; interoperable with various agencies of the US Government, Air Traffic Control (ATC) and allied foreign forces.
- Reduces the combat load carried by the SOF team
- 444 cu in, and 12.5 pounds
- Manpack and fixed mountable
- Embedded COMSEC
- Replaces/Augments: AN/PRC-117B/D/D(V)2, AN/PRC-119, AN/PRC- 113, AN/PRC-85, AN/PSC-3, AN/PSC-5, AN/PSC-7, LST-5B/C/D and HST-4A/B

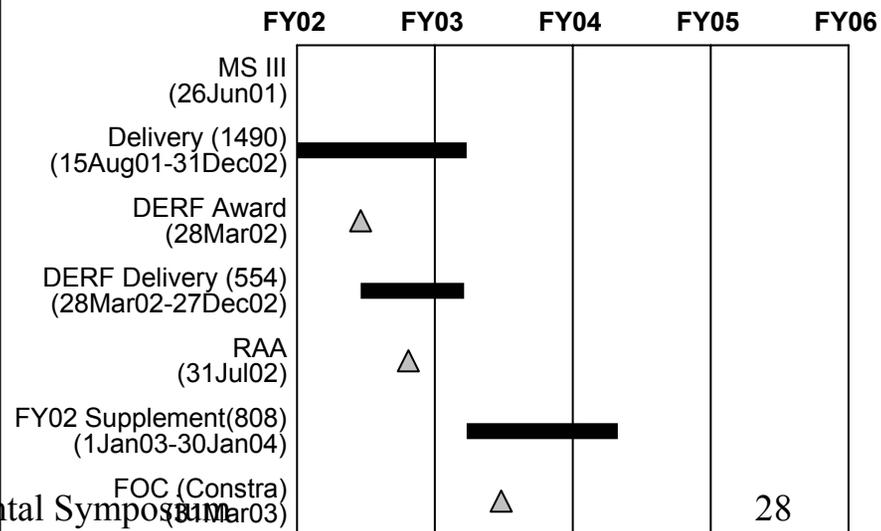


PPBES: FY04 BES (\$M)

APPN	Prior	FY02	FY03	FY04	FY0509	TOTAL
RDTE	0.1	--	--	--	--	0.1
PROC	22.1	25.4	4.5	2.6	1.4	56.0
OM	3.6	1.1	1.6	1.9	10.9	19.1
TOTAL	25.7	26.5	6.1	4.5	12.3	75.2

Note: FY02 includes \$11.7 DERF Funds;
 FY04-09 Procurement funds are for the DAMA Satellite Simulator.

Schedule, Phase III / MS III



12/03/02

Signal Regimental Symposium



Joint User Requirements



Joint User Requirements



- Radios are considered Life Support Systems; survival and mission success depend on reliable secure communication.
- All Services require Secure, Smaller, Lighter, Faster and Interoperable Communications.
- JTRS Handheld radios must feature:
 - Reduced Size
 - Reduced Weight
 - Extended Battery Life
 - Increased Radio performance and functionality
 - Easy to use



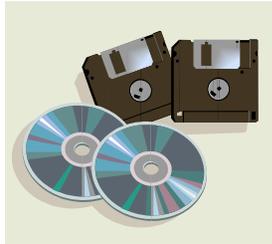


Key Technologies



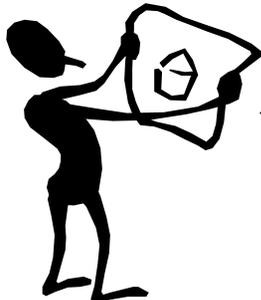


Technical Approach Waveform Porting



GFE
Waveform

Analyze
Source Code
and Design
Documents



Discuss findings
and formulate an
approach.

Discuss porting
plan at PDR.



Port the
waveform to
the JEM



Testing and
SCA
Compliance

12/03/02

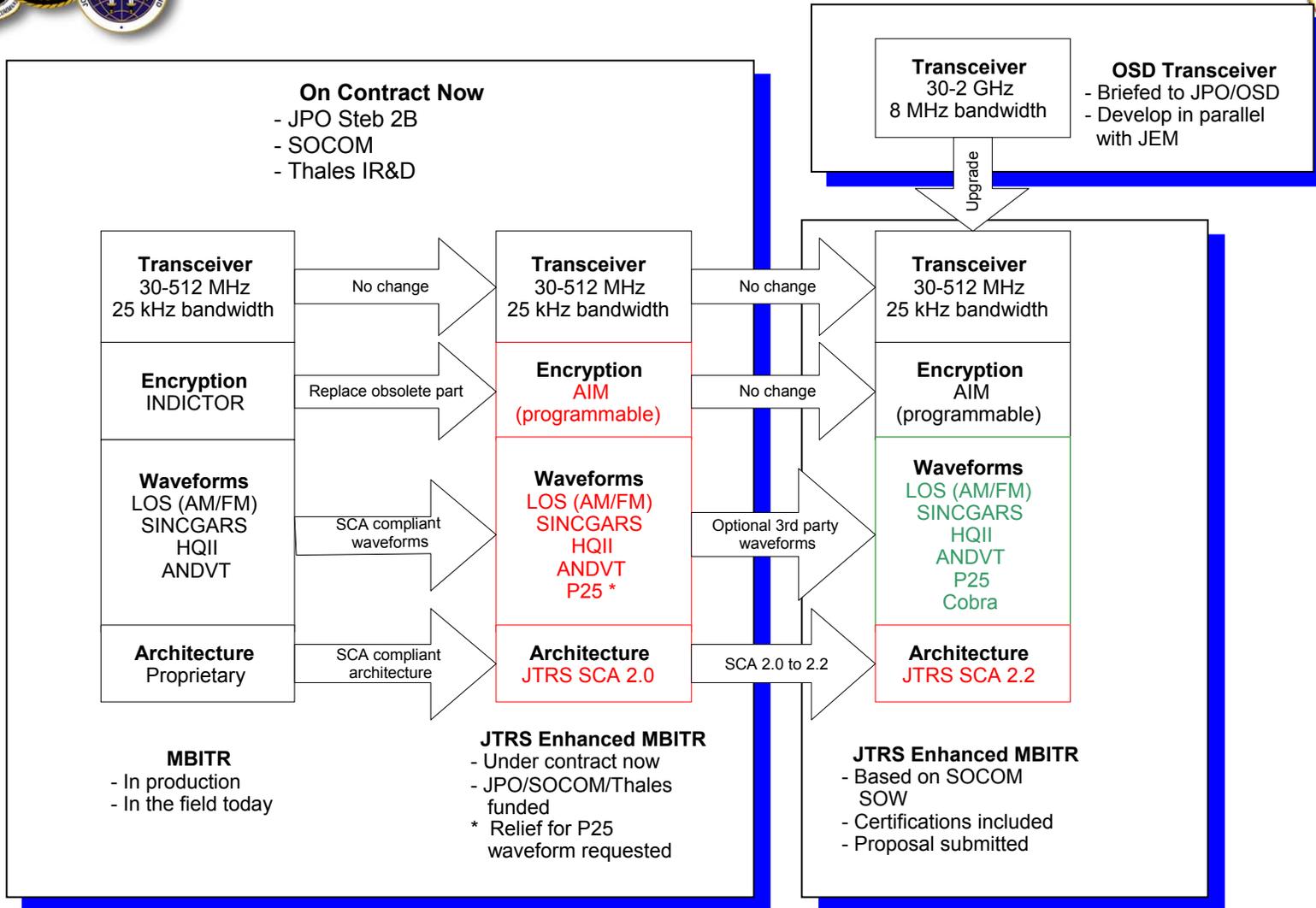
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JTel

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MBITR Evolution





Key Technological Areas



- Multi Band Antenna Development
 - Extended ranges
 - Smaller size antennas
 - Broader Frequency Spectrums
- High Capacity Battery Development
 - Extended battery life
 - Rechargeable
 - Lighter weight
- Micro Miniaturization
 - Smaller components
 - Increase MTBF
 - Reduced Radio Size and weight



Challenges and Risks



Challenges

Cluster 2



- 2 Channel versus 1 Channel Handheld
 - Air Force, Navy, USSOCOM and USMC are adamantly opposed to the Army mandating that all Hand Held radios be 2-channel capable.
 - 2 Channel Handheld radios will:
 - Increase Size, Weight, and Cost
 - Reduce battery Life
 - Introduce VERY HIGH Technical Risk

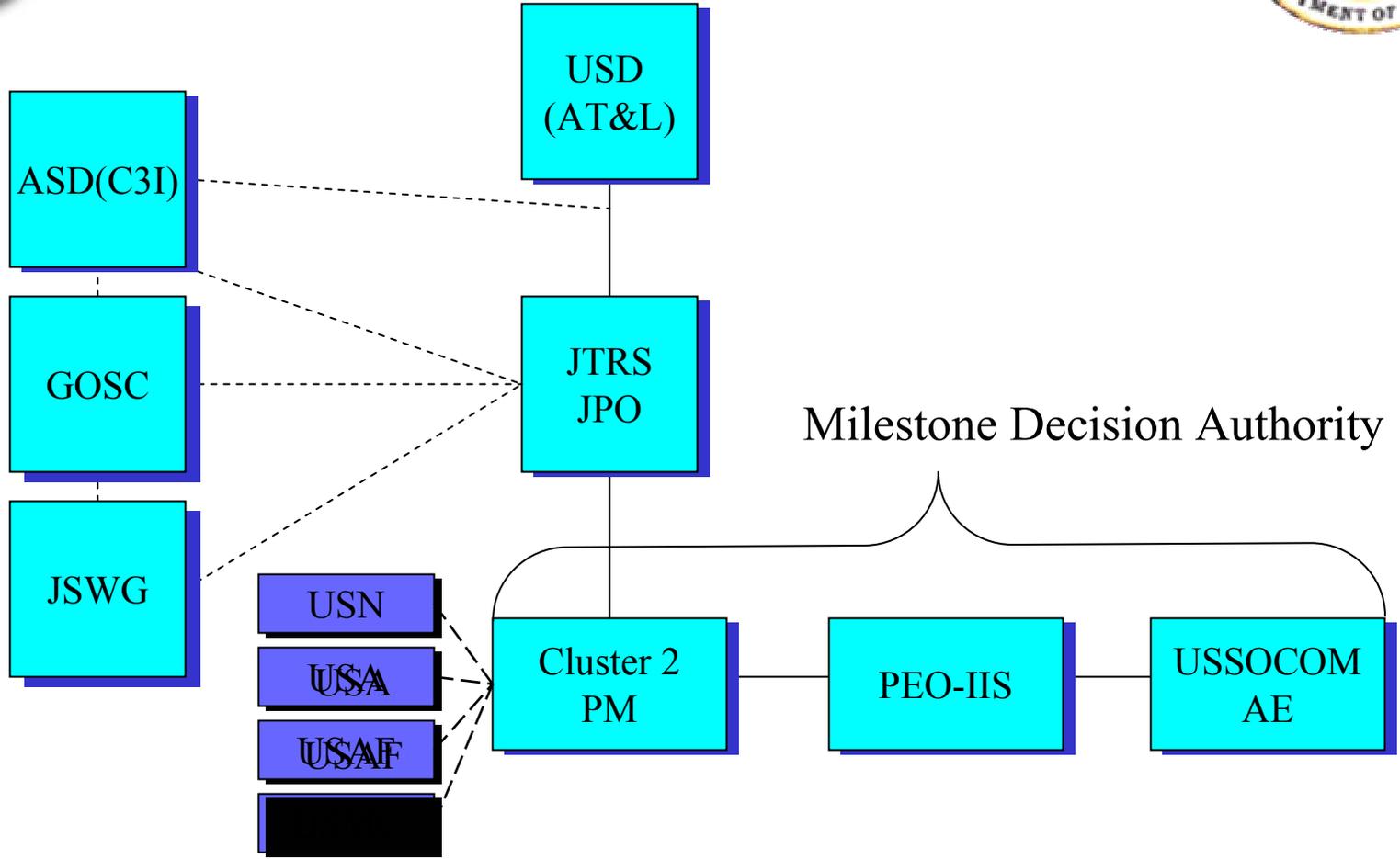




Coordination and Relationships



JTRS CLUSTER 2 MANAGEMENT STRUCTURE





Conclusions



- COMUSSOCOM fully supports JTRS program objectives and requirements.
- SOAE requires flexibility to execute modernization goals.
- PM JTRS is prepared to initiate JTRS Handheld Block 2 and Manpack acquisition efforts.
- Resource Sponsorship of JTRS Cluster Two Handheld and Dismounted should be via JTRS JPO or ASD(C3I).

