



CSEEL

COMBAT SURVIVOR EVADER LOCATOR

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CSEL Capabilities

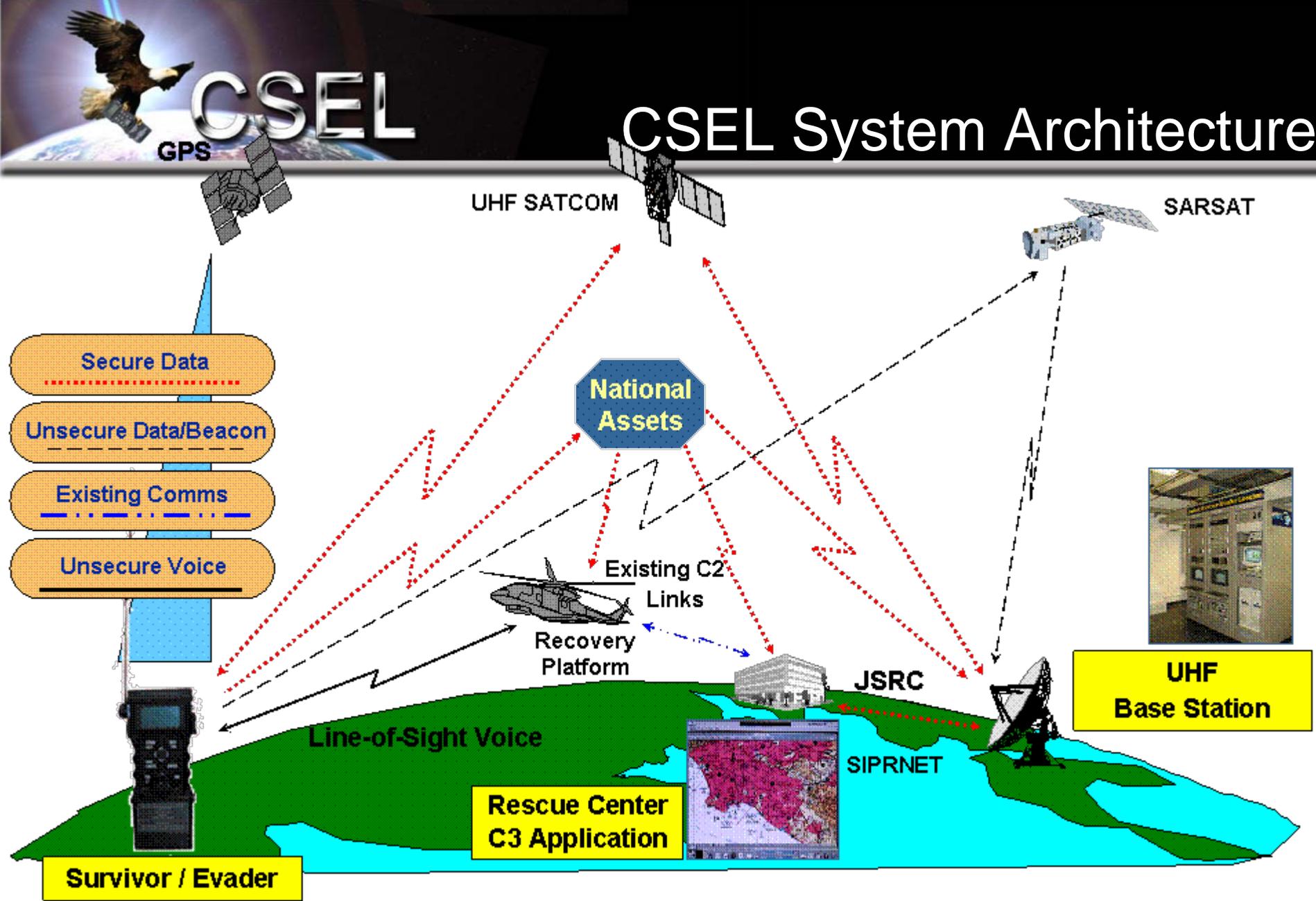
- 2-way OTH communication between Isolated Person (IP) & Theater/Service C2 nodes, with highly reliable IP location
- US Govt Approved Security Architecture and Design
- Provides integrated view of IP with other situational awareness information through Common Operating Picture (COP)
- Global coverage, continuous access
 - 2-way UHFSATCOM encrypted data communications 70° N/S Lat.
 - Low probability of intercept/detection secure data communication
 - Cospas SARSAT International beacon Polar Areas
- Precision anti-spoofing navigation/positioning
- Software-reprogrammable hand-held radio



CSEL provides exact GPS coordinates to the Rescue Forces

CSEL

CSEL System Architecture

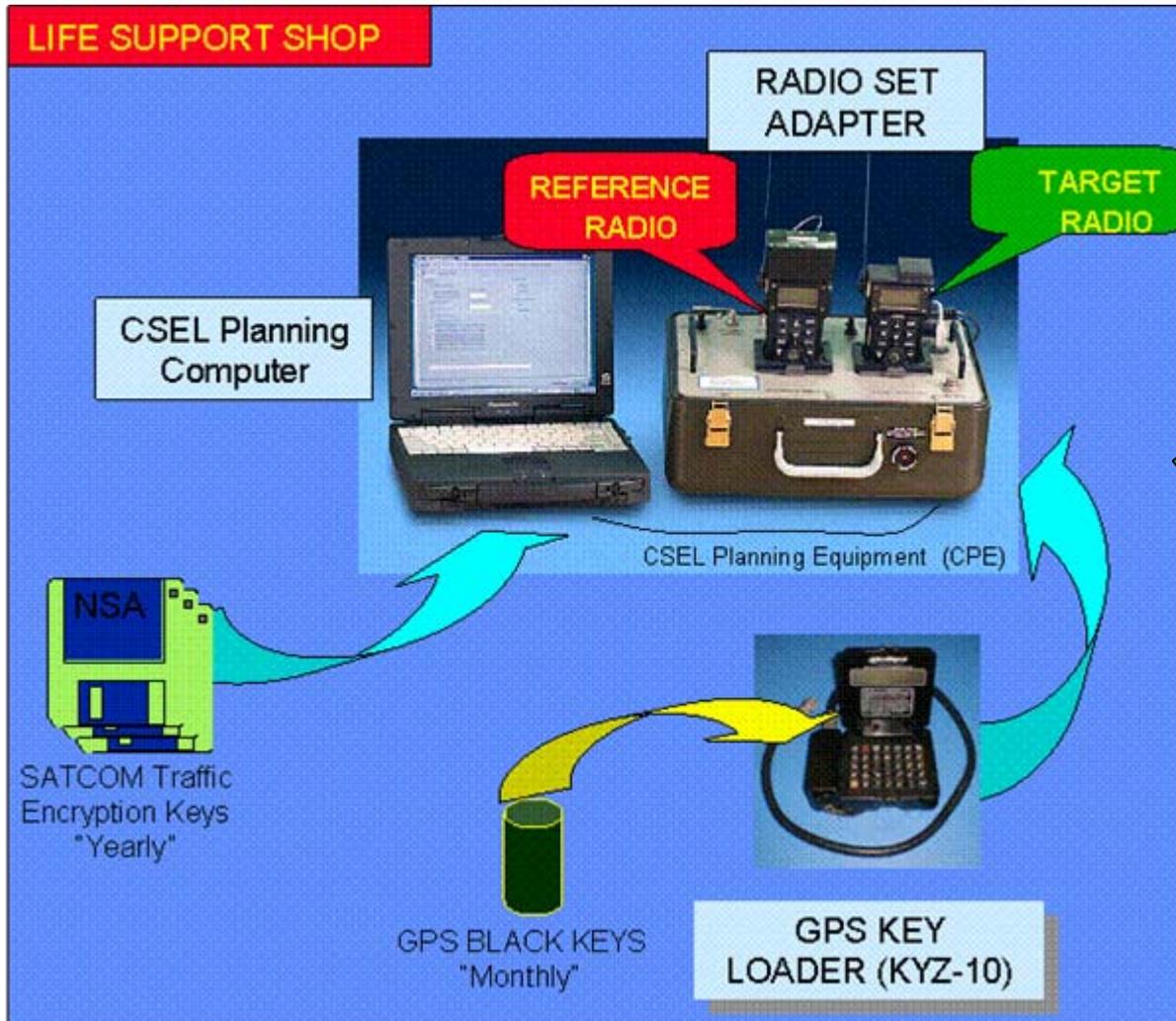




Hand-Held Radio Features

- Multi-Function -- Voice/Secure Data
 - 6 Programmable UHF Voice, SATCOM
 - 4 Fixed LOS UHF Frequencies
 - AM Swept Tone beacons on 121.5 and 243
 - 1 SARSAT Unsecured Data Frequency
 - Long data message & beacon on 406.025
 - 23 Canned messages, 8 Maritime, 1 Custom
- Multi-Band/Broadband -- VHF/UHF
- Military GPS – Direct Y on L₁ or L₂
- Weight: 31.8 Ounces w/ non-rechargeable
 - 33.4 ounces w/ rechargeable**
- Survive salt water immersion, 10m for 5 min
- -20 to +55°C Operating Temperature
- Rechargeable and Non-rechargeable batteries





- **Requires:**
 - GPS feed
 - NSA provided encryption keys
 - GPS keys
 - Key fill device
- **Load mission data**
 - Authentication question
 - SAR Frequencies (OTH & LOS)
 - Mission Parameters
 - Waypoints



READY FOR ISSUE



CSEL

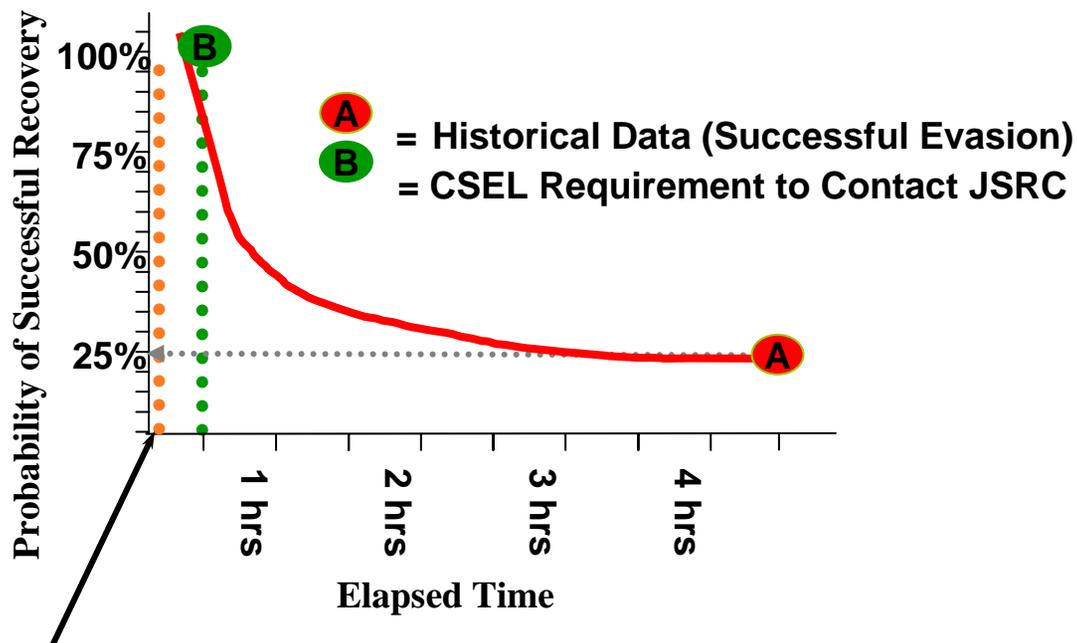
CSEL (JSRC) Workstation



Rescue Coordination C2 Workstation

- **Two-way comms between Rescue Coordinator and Isolated Personnel (IP) via UHF SATCOM**
 - Displays IP Location & Message Alerts
 - ISOPREP Confirmation for IP Authentication
- **Installed ashore & afloat**
 - USAF-managed ashore locations: JSRCs, CAOCs, RCCs
 - Navy afloat: 1 workstation per CVN or LHD/LHA for assigned Strike Grp
- **Primary & backup JSRC designation for each HHR**

- CSEL - Enabler for reducing rescue mission authorization timeline
 - Key to increasing probability of successful rescue
 - Key to successful recovery using Time Sensitive Targeting process



CSEL – Average Time to Notify, Authenticate & Locate: 4 min 40 sec



Near Term Improvements

- Standup of Global CSEL Help Desk - April 06
 - Support to all CSEL Segments
 - 24/7; DSN, SIPRnet and NIPR access
- Block 1B - early CY07
 - Web based JSRC option
 - Reliability improvements to UBS
 - Inject IP UHF & C2 node operator messages into the Integrated Broadcast System (IBS)
- Terminal Area Communications (TAC) - early CY08
 - Provides 2-way secure LOS data/text comm between IP and rescue force(s)
- Terminal Area Guidance (TAG) – early CY09
 - Provides rand and bearing (DME) function

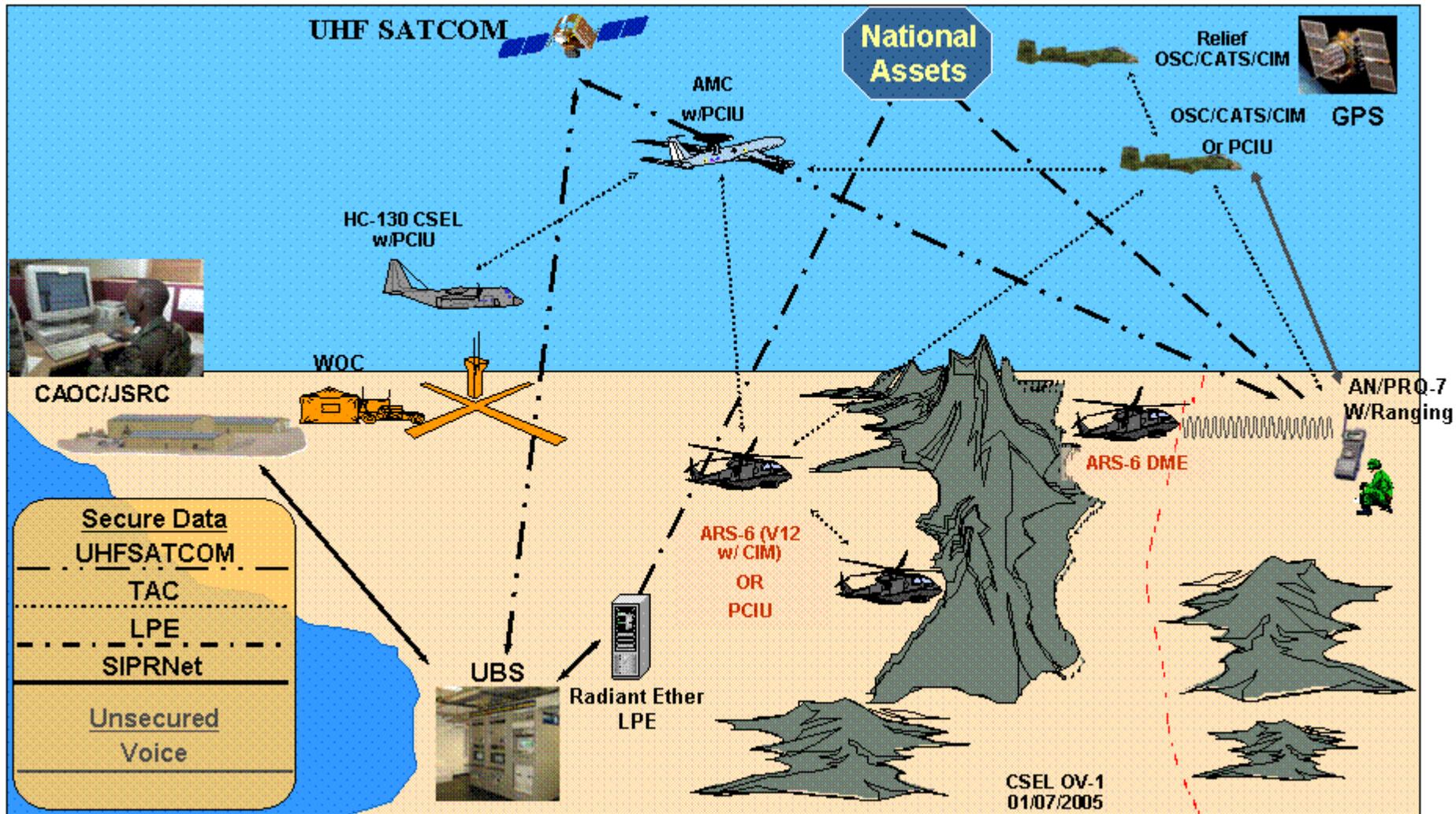


Terminal Area Guidance (TAG)

- Provide customer requested ARS-6 range and bearing (DME) function
 - Provides rough bearing and range to IP
 - Accuracy dependent on terrain
 - Open desert: good
 - Mountains, dense foliage: inconsistent
 - Urban: not usable
 - Exploitable waveform
- TAG Development
 - Requires hardware/software modification of radio to add ranging waveform
 - Supports DME function of existing and emerging AN/ARS-6 versions
- No functional improvement over current ARS-6 DME



Block 2 – TAC, TAG CSEL System Architecture





CSEL Radio Projected Inventory

Estimated Cumulative Fielded Totals by FY

	FY 03	FY 04	FY 05	FY 06	FY 07	FY08	FY09	** FY13
AF	150	595	1,126	2,225	4,573	6,921	9,010	17,869
Army	488	1,719	2,906	4,198	5,290	6,409	7,077	18,531
Navy	200	1,302	4,753	6,047	7,565	7,233	7,233	7,558
Total	838	3,616	8,785	12,470	17,428	20,563	24,622	43,958



Summary

- CSEL is more than a radio; a survival radio system
- World-wide coverage 24/7 UHF SATCOM OTH operations in place
- Support and provisioning infrastructure in place
- User product improvement process in place & proven responsive
- In Full-rate production 40,000+ radios programmed over FYDP
 - Over 11K radios delivered to date
- TAC and TAG in development
- Radios fielded to CENTCOM
- Air Force establishing training/operations at Kirtland AFB
- FMS sales case in development

CSEL – NO SEARCH, ALL RESCUE



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Questions?

