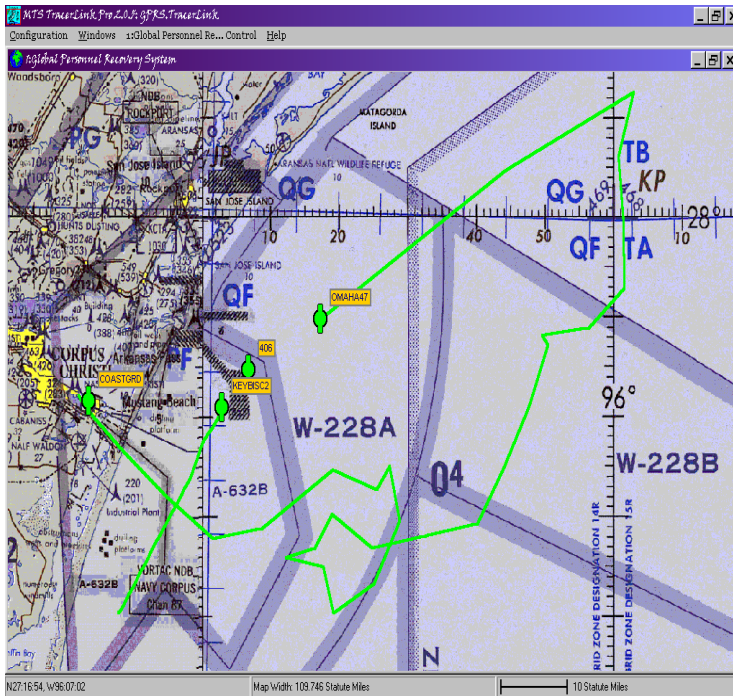




Global Personnel Recovery System

A Solution for Deficiencies
in
Blue Force Tracking /
Situational Awareness





What Is GPRS?

- **Next Generation** of Today's Movement Tracking System (MTS), and the FBCB2 Blue Force Tracker (L-Band Range Extension)
- **An Architecture That Supports:**
Tagging, Tracking, Location, ID – Anyone, Anything, Anywhere, Anytime (Fully Releasable to Non-US Forces and Individuals)
- **A Technology That Provides:**
Two-Way, Secure, LPI/LPD Data Messaging for All Users (Land/Sea/Air Dynamic Net Control, Record of All Traffic)
- All of the Above in a **Very Small Package** – “Fat Credit Card” (Prototype 3.4 x 2.1 x 0.6 inch Transceiver Module, Dec 2005)

There is No Other System Being Fielded or Developed That Satisfies These Needs -- GPRS Is Doing So Now!





Real-World Baseline: MTS and FBCB2/BFT

Provided Critical Joint (and Coalition) Blue Force Situational Awareness and Basic C2 During Major Combat in Iraq; Now in OIF, OEF, and Mo



Jim Watson / AFP

**Over 10,000 Fielded By FY04, Over 30,000 Planned By End of FY06
(Army Vehicle Mounts Only, Does Not Include Handheld "Dismounts")**





Migrating to the GPRS Single Card Solution (SCS)

Reduces

- **Size** from “laptop” (8 x 8 x 4 in.) to “credit card” (PCM-size, 3.4 x 2.1 x 0.4 in.)
- **Volume** by over 98% (from about 256 cubic in. down to about 3 cubic in.)
- **Weight** by about 90% (from 3 lbs to less than 1/3 lb prototype, then to 1/4 lb)
- **Power consumption** by about 75% average (transmit > 50%, receive by 80%)

Adds

- **Security** -- Type 1 classified, or Type 3 sensitive but unclassified, or others
- **Stealth** – Allows Low Probability of Detection / Low Probability of Exploitation
- **“S-Band receive”** allowing access to an additional global satellite constellation
- **Ability to embed** in many host devices – handheld radios, PDAs, “wearables”





SCS Working Prototypes

Top View



Bottom View

OFFICIAL USE ONLY

(© 2005 Microwave Monolithics Inc)





GPRS – Flexibility and Advanced Capabilities

The SCS is a “Software-Defined Radio” with programmable:

- **Center Frequencies** of L-band transmit, L-band receive, and S-band receive
- **Waveforms (Modulations and Signal Protocols)** for several satellite services
 - Load for CMDC or “CMDC-like” or Globalstar or INMARSAT BGAN, etc.
- **Security** Type 1, Type 3, or others for releasability or for special applications
- **Stealth** via demonstrated modern techniques (ready to implement in GPRS)

GPRS will be a “User-Defined Network” with programmable:

- **Dynamic Configuration** – who’s in any group, who communicates with whom
- **Security** – Over-the-air re-key, zeroization, key recovery and stealth control
- **Behavior** – SCS/GPRS may act one way in one zone, another way in others
- **Interoperability** with other ground networks, software systems, displays, etc.



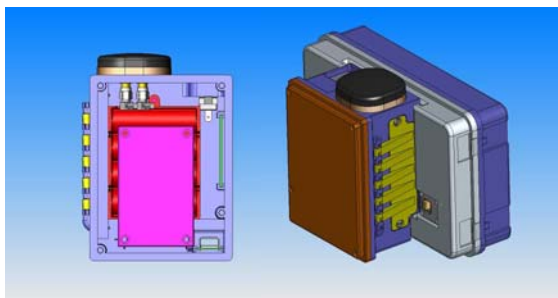


Initial SCS Integrations

PRC-112G "Hook"



AFSOC's GPRS Radio Module (alone, & plugged into "palmtop" computer)



Commander's Digital Assistant (rugged PDA)



BFT/SA Laptop



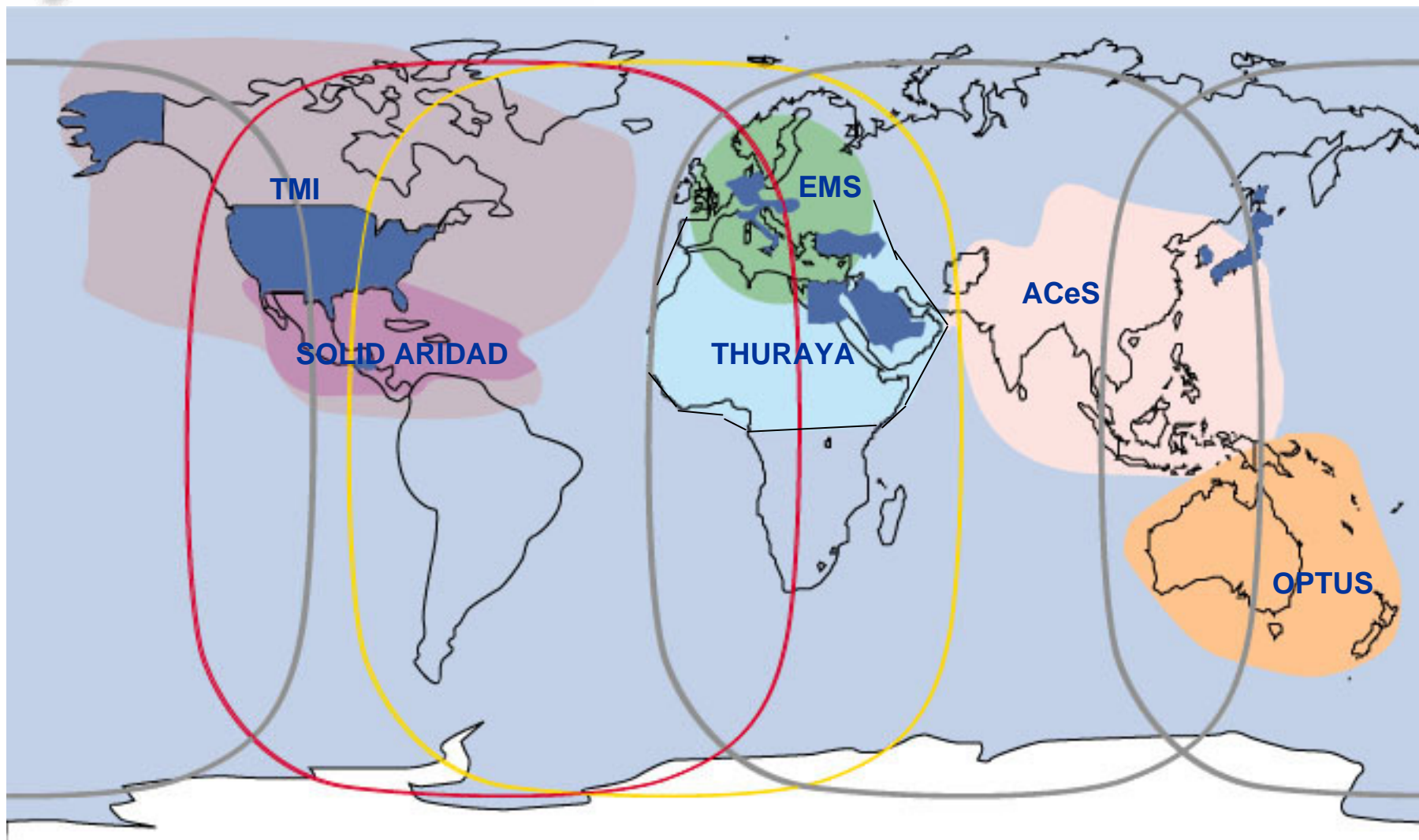
Electronic Digital Manager (EDM) (Kneeboard Flight Bag)





Current Availability

Coverage of "Continental" GEO Satellites & INMARSAT
(Does Not Show Coverage of Globalstar Constellation)





Oversight Provided by an Integrated Product Team (IPT)

Members

- “Invited representatives of federal offices and executing contractors”
- Meetings – attend, participate in discussion, receive minutes etc., but **no vote**
- Pre-production **availability of prototypes** for DT&E, concept development, etc.
- Initial production – allocation of early production units only **if and as available**

Voting Members

- “Members who have made **significant contributions** to development”
- Meetings – **may vote** to resolve issues of **features, availability, allocation**, etc.
- Pre-production **availability of GPRS** for integration options, new software, etc.
- Initial production – allocation of early production units **assigned by IPT vote**

