SATHI

Situational Awareness and Tactical Handheld Information

Armed with Information

Another first for the Indian armed forces.

The world's first integrated battle computer.

It is a proud moment for the armed forces. For the first time in the world, an integrated battle computer that will give soldiers the most powerful weapon of all - information. Compact, user friendly and packed with excellent features, this is one device that will enable the army in operations of all kinds.

Presenting SATHI - The portable combat information system

Developed jointly by Bangalore based Encore Software and the Indian Army, SATHI combines India's indigenous hand held computer, with an integrated GPS and Radio, a customised GIS and a battlefield application. Updates to command is available over an external combat net radio link.

SATHI is the world's first tactical computer, with a dynamic wireless LAN spread over multiple kilometers, providing battlefield situational awareness and communication to a soldier who is part of a team.

Customised GIS System

SATHI has a customised Geographical Information System (GIS), which along with the GPS input makes it an ideal navigational tool, displays military maps (vector & raster) and location of other devices on the map. Field sketches are possible with a customised symbol library for map marking.

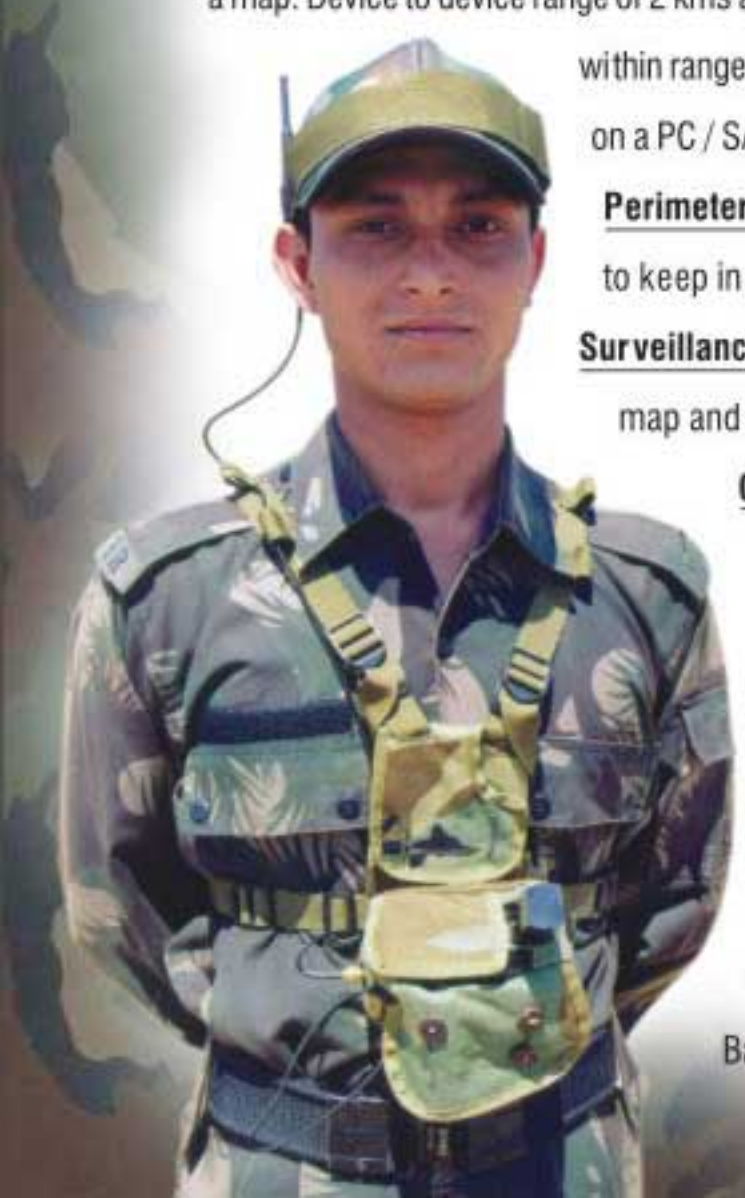
Mutiple Communication Modes

SATHI can support voice and text (SMS) for a network of devices deployed in the mission area. Its software controlled radio, allows it to be deployed on an ad hoc basis, sending regular updates of device positions, messages and map markings over the entire network, directly or by relay, automatically!

SATHI also incorporates several security and encryption measures to enable tactical deployment. It also has the ability to send mission updates automatically, at frequent intervals to the Base over the Combat Net Radio.

Battlefield Applications

Battlefield Situational Awareness Establishes contact with other devices in the network and displays relative position of the user on a map. Device to device range of 2 kms and base station to device of 3 kms. Multiple hopping to devices out of range through devices within range. The Common Operating Picture seen on the devices can be viewed by Higher Headquarters on a PC / SATHI / Laptop.



Perimeter Security The device makes it possible for people around different points on a boundary to keep in touch with each other, lending to greater security.

Surveillance and Target Designation Each user has the ability to mark observed targets on the GIS map and transmit it to others leading to target designation with great accuracy.

Command and Control Improves command and control by providing team awareness and communciations.

Integration with higher HQs Receiving orders from higher headquarters in text as well as diagrammatic form and reporting back are made easier with SATHI.

Single User Mode Serves a general purpose tool for navigation and recce. With a GPS patch antenae it can be used from within a vehicle.

Potential Applications Situational awareness in static and mobile warfare, integration with Tac C3I systems (Battlefield Surveillance, Target Designation, Fire Control and Battlefield Management Systems)

An overview of SATHI's capabilities

While allowing up to 30 devices in a network, the SATHI has a wide range of capabilities, ensuring absolute control and security in all possible situations. It can work independent of back end support, and does not require infrastructure to be set up. Maps can be loaded with a memory stick, new machines configured and batteries kept ready with a solar charger, constituting a truly mobile and self-sufficient system.

Positioning

- GIS for display of military maps (vector & raster) and position of devices
- Positioning based on military Grid Reference • Dynamic display of self and friendly devices on map

Communication with Command

- Back channel connectivity to base over CNR radios like STARS - V (Position updates, Map edits, Messaging & Pre-formatted Reports)

Text Messaging

- Short messaging including pre-formatted SMS

Map Marking

- Mark maps and broadcast to network / base.
- Free Hand Drawing

Security Features

- Secure communication using triple DES encryption
- Decoy mode of operation
- Identify Friend or Foe (IFF)
- Self / Remote destruct in enemy hands
- **Harness allows one-handed operation**

Non Battlefield Applications

- Access Dial up server
- Internet Browser
- E-mail client
- MP3 Player
- Memo Pad
- Address Book
- Scientific Calculator
- Image Viewer
- File Transfer
- Games

Basic Features

CPU:	Intel PXA RISC Processor
RAM:	128MB
Flash:	96MB
Display:	240 x 320 (3.5") Colour with Touch Screen
Battery:	2 Li-Ion Battery Packs, field changeable for upto 24 hour operation
GPS:	Integrated GPS
Radio:	Integrated Frequency Hopping Spread Spectrum radio modem

External Devices (USB Based)

- Map loading with USB Disk • Camera • Printer • Keyboard • PC

External Devices (Serial Port Based)

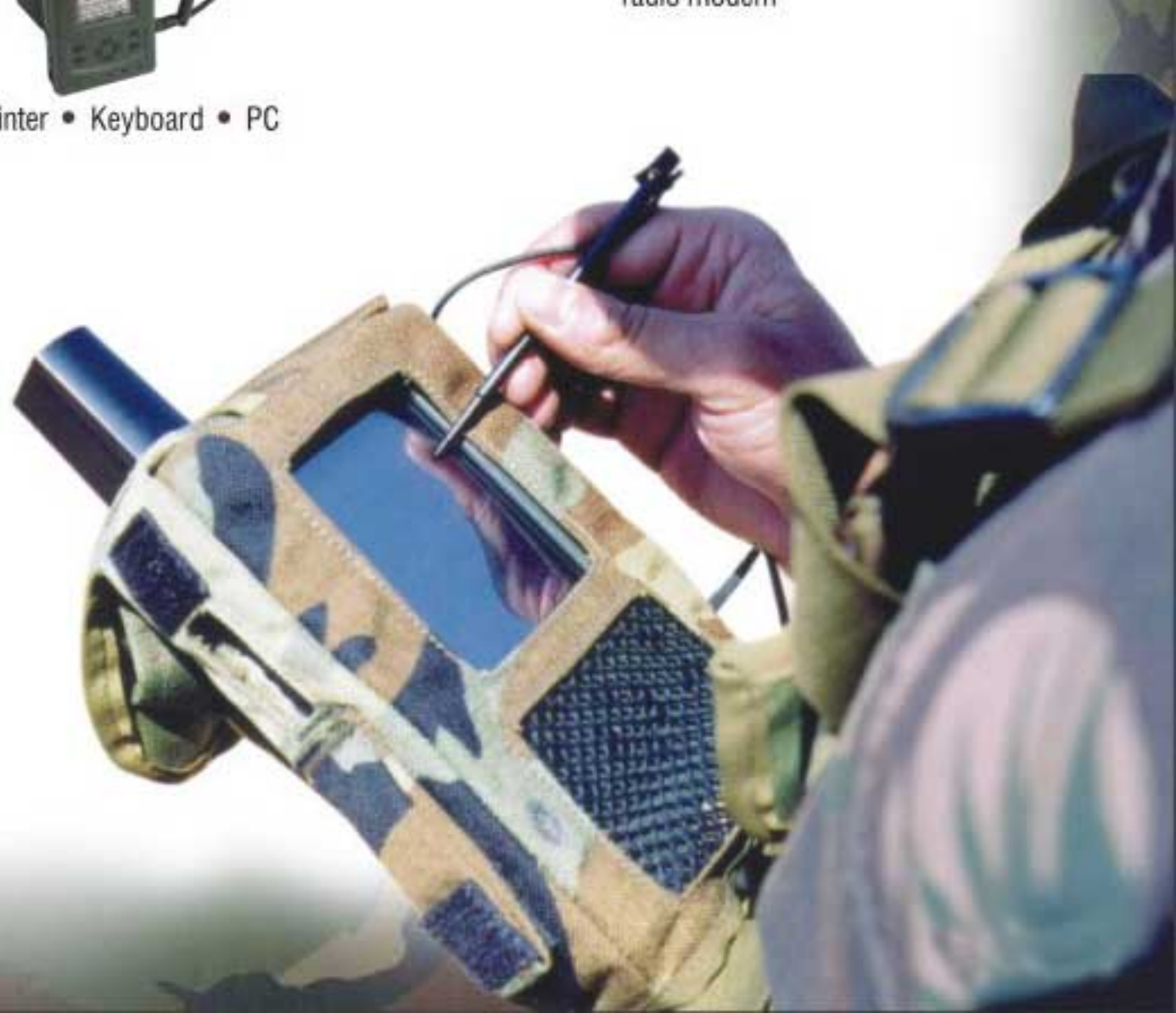
- RS STARS V • PRIME

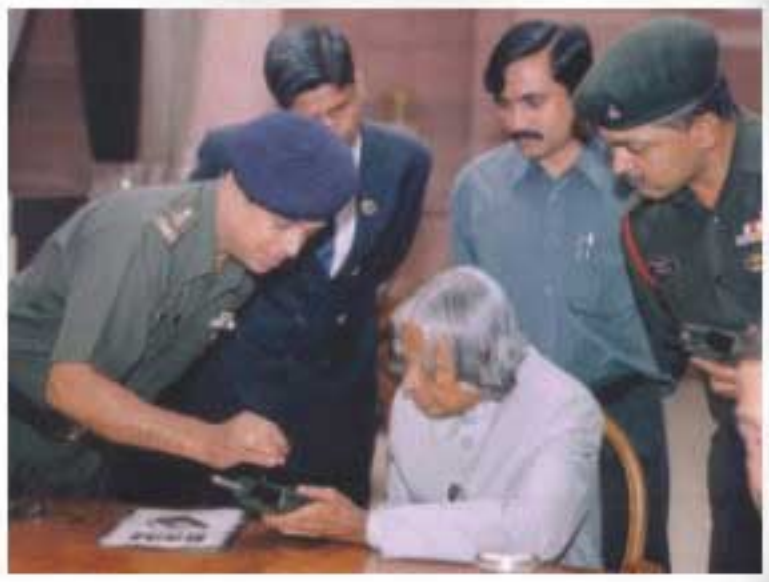
Packaging

- Total Weight : 875 gms
- Metal

Accessories

- Chest Harness
- Base station for extending network range
- Interface to CNR
- Interface to PC
- Headband Mounted Antenne
- Mic & Speaker Headset
- Solar Charger





SATHI being demonstrated to his Excellency Dr. ABJ. Abdul Kalam, President of India

Encore Software - Continued success in custom hardware

Encore's core comptency has been in devising indigenous hardware solutions with excellent application software support. The team has played a stellar role in developing the Simputer, among the world's most admired hand held computing devices and helping bridge the digital divide.

Project Beta

A joint venture between the Indian Army and Encore Software, Project Beta was aimed at creating a single unit, multi-mode communications device for use in combat situations. The Encore team with constant support and active contribution in design from the Army, completed the project in a record time of 2 years, resulting in the world's first integrated battle computer.

Certifications and Awards

Presently deployed in Jammu & Kashmir in counter terrorist operations. • Larger numbers are being procured for use in conventional operations by the Indian Army. • The development of Sathi has also led to IETE conferring the 3rd IETE N V Gadadhar Memorial Award to Lt.Col. P.R.Menon for developing 'Grapevine'- the ad hoc radio networking algorithm for SATHI.

SATHI, a proud moment for the Indian army

Developed for Project Beta by Encore Software, in collaboration with DGIS, the SATHI is a revolutionary device that has been specifically customized for the armed forces with features that are advantageous in combat situations. Directorate General of Information Systems (DGIS) is the nodal agency for the development/procurement of Tactical C3I Systems in the Indian Army.

Directorate General of Information Systems
Army Headquarters, EDP Enclave, Rao Tula Ram Marg, New Delhi 110010

Encore Software

Encore Software Limited
44 & 45 Residency Cross Road, Bangalore 560 025
Tel: +91-80-5112 4291 / 5112 4295, Fax: +91-80-558 7690
www.ncoretech.com/sathi • sathi@ncoretech.com