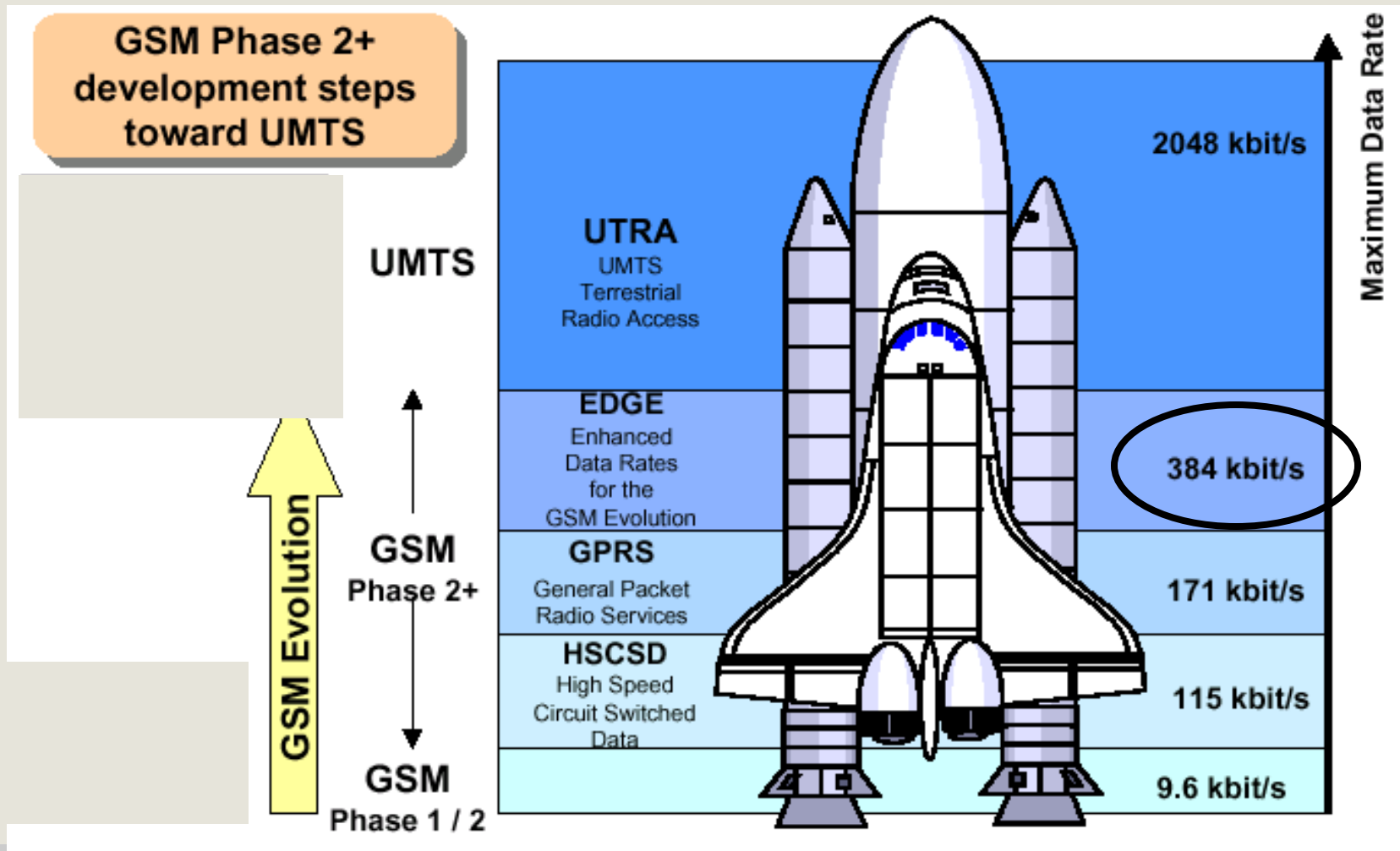**ERICSSON**

US and Swedish Industrial Support to Network Centric Warfare for US and Swedish Forces

October 9, 2003

Frank McGhee
Vice President, Government and Space
Ericsson USA

Evolution and capabilities

GSM Phase 2+ development steps toward UMTS

Maximum Data Rate

UMTS — UTRA (UMTS Terrestrial Radio Access) — 2048 kbit/s

GSM Phase 2+ — EDGE (Enhanced Data Rates for the GSM Evolution) — 384 kbit/s

GPRS (General Packet Radio Services) — 171 kbit/s

HSCSD (High Speed Circuit Switched Data) — 115 kbit/s

GSM Phase 1 / 2 — 9.6 kbit/s

GSM Evolution

ERICSSON ⪜

What can Ericsson do for the agencies and the users today?

- Wireless Networks: Large ⟶ Small
    - GSM
    - CDMA
    - WCDMA
    - Satellite
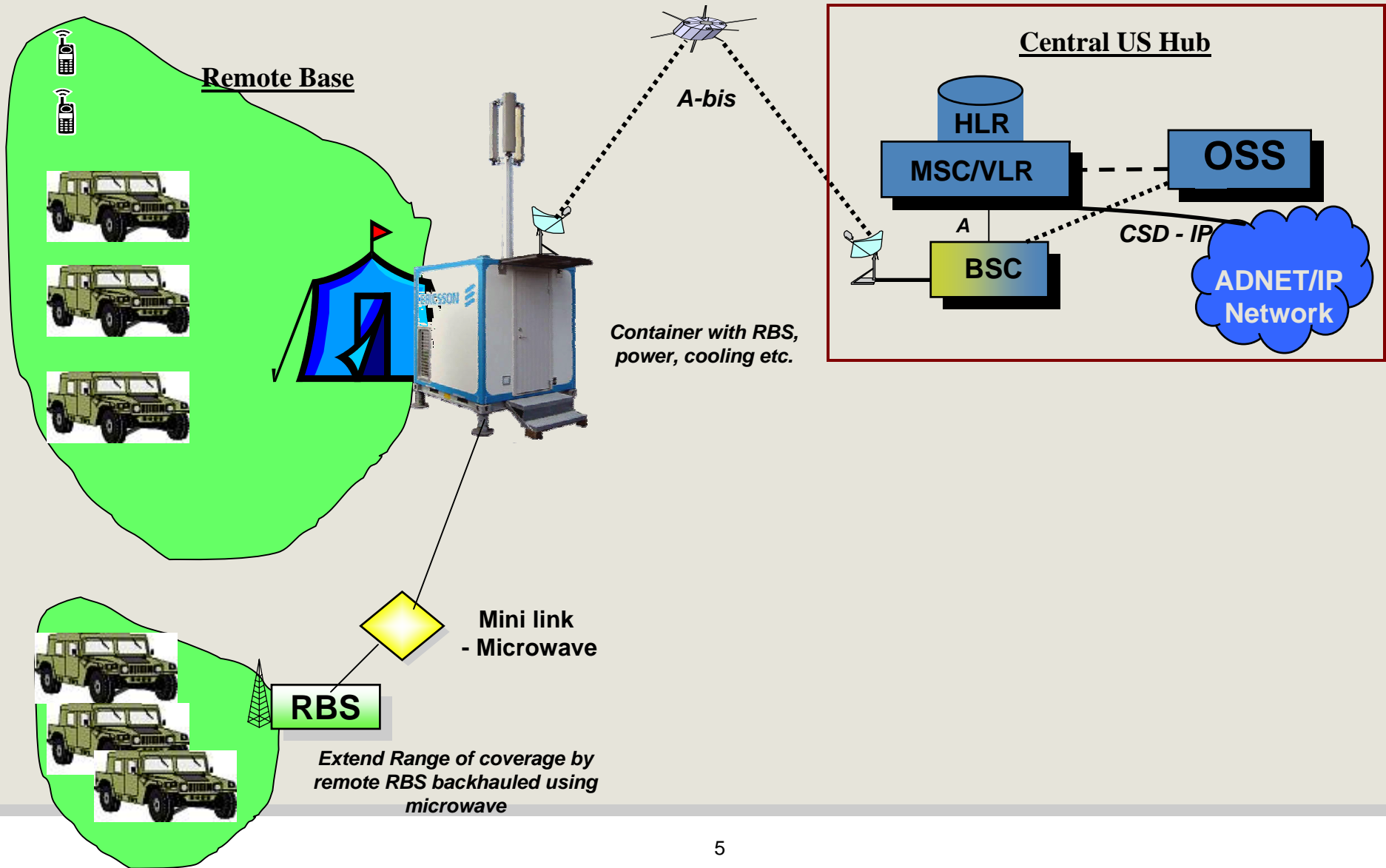- Handsets (through partners)
- Applications

MiniGSM

- Complete GSM system

- Ruggedized for Military use

- 4 way forkliftable

- Certified for Airlift (C130, C141,…)

- Helicopter slingable

- Weather, dust and sand-proof

- Optional Casters and wheels for easy towing

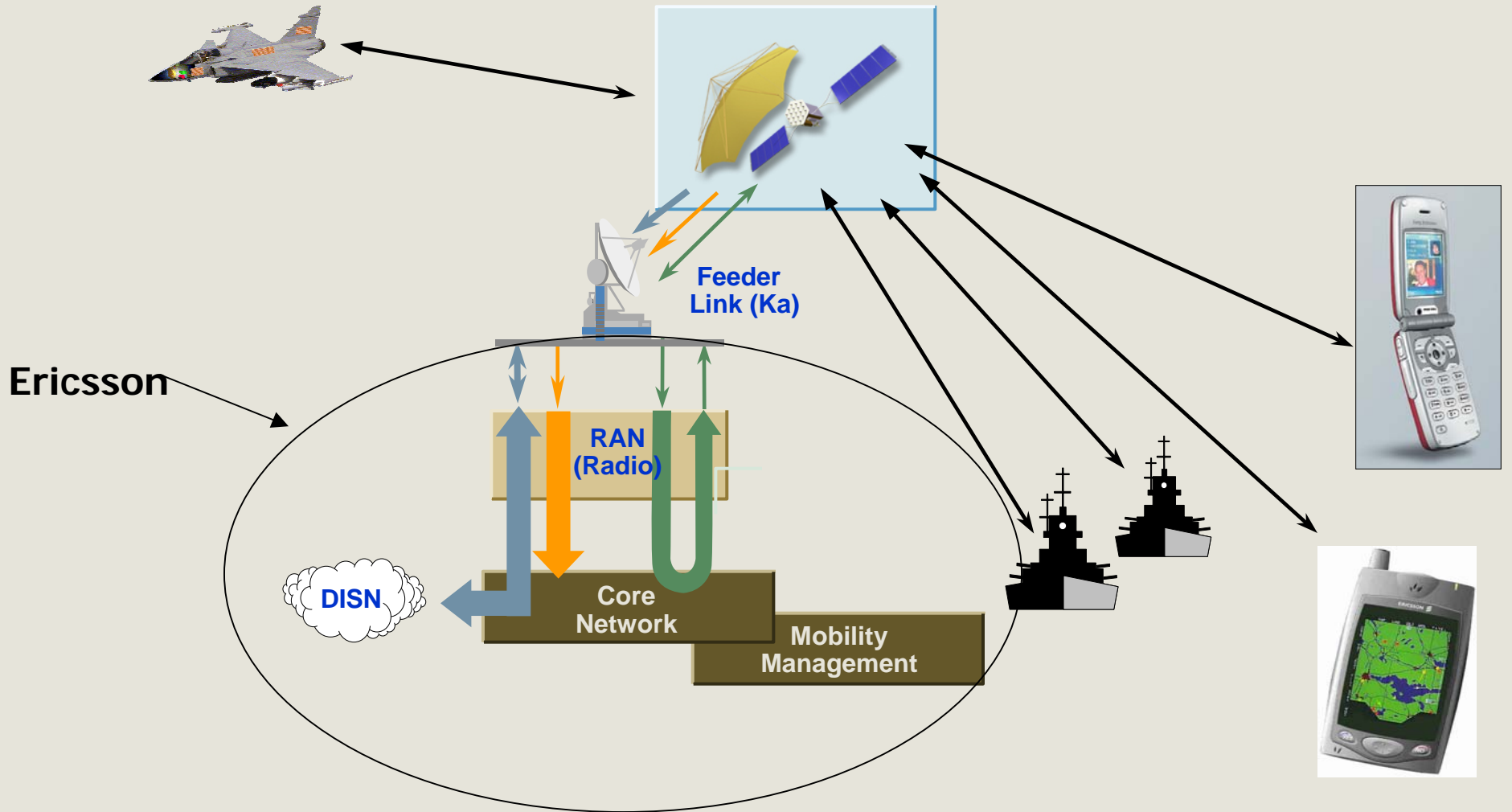- Colors to suit military use (forest green, desert sand, etc).

- 7' x 9' container

Example MiniGSM Deployment

Remote Base

A-bis

Central US Hub

HLR

MSC/VLR

OSS

A

BSC

CSD - IP

ADNET/IP Network

Container with RBS, power, cooling etc.

Mini link - Microwave

RBS

Extend Range of coverage by remote RBS backhauled using microwave

ERICSSON

Feeder
Link (Ka)

RAN
(Radio)

Ericsson

DISN

Core
Network

Mobility
Management

Ericsson WCDMA Container System

What's Included:

➢ Completely tested, configured, WCDMA network

➢ Applications

➢ Terminals (10)

➢ Support (technical and general)

➢ Demo and test specifications

➢ Training paths proposal

WCDMA Trials

The 20 ft. trial container
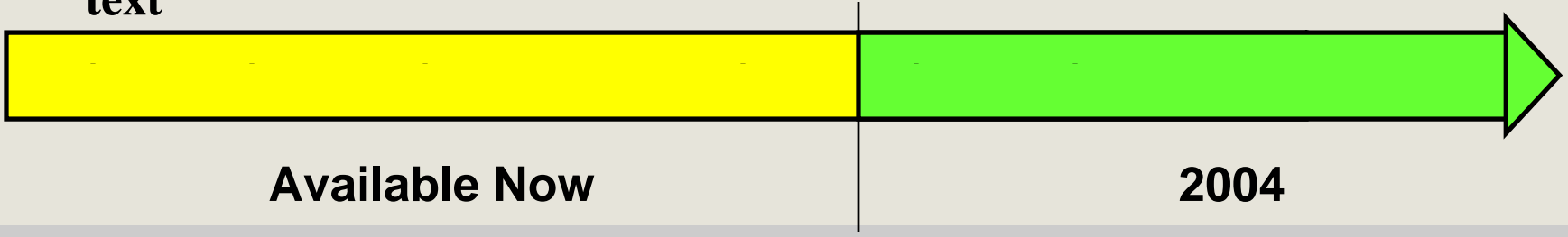
ERICSSON ⧩

WCDMA Micro Base Stations

- **New RBSs for hot-spot, challenging sites and extreme capacity/coverage**
  - **Micro RBS**
    - Micro RBS 3303, 1 sector 5W
  - **First Main Remote Base Station**
    - RBS 3402 (Main for 3 x RRU) + 3401 (6W remote radio unit - RRU)
  - **Extreme capacity and coverage RBS 3101/3202**
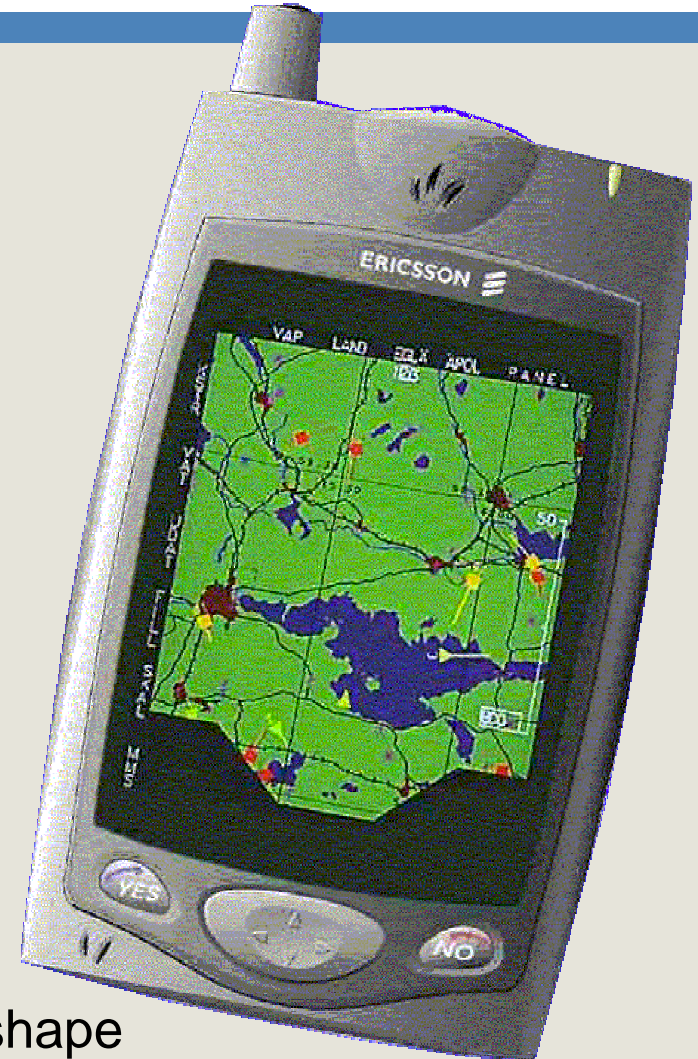   - 6 sector configurations

Evolution of applications - User perspective

Video Streaming

Video Download

MMS

EMS

SMS

•interactivity
•movies

videoclip

photos
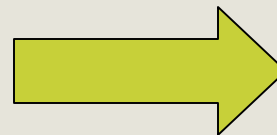
pictures

text

Available Now

2004

Situation awareness:
3G for wide area coverage

- Practical range around 5-10 km
- Network topology can be tailored depending on requirements
- Future additions to the standard:
  - HSDPA (8-10 Mb/s downlink)
  - Smart antennas
  - All IP
  - SIP for session set-up
  - Group calls
  - Enhanced security
- Affordable, yet advanced terminals in any shape
- Low cost base stations
- Robust waveform

Example 1, Team/individual level: Giving orders, share intent

- Virtual meeting over the network
- White-boarding and chat room

In charge: COL   Smith
Next order 17.30 PM

Example 1, Team/individual level: Search & Rescue - coordination of movements

- Units see each others' positions on the handheld device
- Critical locations plotted as they occur

Sony Ericsson

Area for text based messages

Example 2, Logistics/telematics:
A vehicle breaks down

- The vehicle automatically sends a trouble code to a mobile support center
- The center connects to the vehicle to perform remote diagnostics
- The center sets up a video call with the driver

Example 2, Logistics/telematics: The vehicle is repaired

- A part needs to be replaced in the vehicle

- The driver gets instructions how to replace the part

- The driver uses his mobile diagnostics tool to check after repair

Situation awareness:
Bluetooth for personal area network

- Example: Local surveillance:
- Bluetooth-enabled camera-to-eye link