

THALES



Defensie Materieel Organisatie



# Hold Your Fire! Preventing fratricide in the dismounted soldier domain

Jeroen de Jong, Gertjan Burghouts



- Background: Innovation game
- Relevance
- Current approaches
- Building on existing technology
- Demonstrator
- Interfacing
- Current / future steps



## “What can AI do to help preventing fratricide?”

- It should be a *support system*
- Ground to Ground
- (dism.) Soldier to Soldier
- Build upon current technology



- Since WWI: about 15% of casualties are fratricide
- Desert Storm: 35 of 148 US casualties
- Practice situations: high rates of would-be fratricide.
- Night of 12 to 13 January, 2008: 2 Dutch and 2 ANA soldiers killed in the province of Uruzgan, Afghanistan in fratricide incidents.



Alpha & Charlie company, making themselves ready for the night, were 800 meters apart.

- 20.30: Alpha company mistook Charlie company personnel for enemy fighters. 1 Corporal was killed. A soldier offering first aid was killed a little later.
- 21.00: Charlie company mistook Alpha company personnel for enemy fighters: 1 soldier shot in legs, which had to be amputated.
- Shortly afterwards: Two ANA soldiers, warming themselves in cloths, were mistaken for enemy forces and killed.

The 3 incidents exemplify the 2 general causes for fratricide: position error and identification error.





- Identification Friend-or-Foe: primarily air-to-air.
- BTID (Battlefield Target Identification): Only between vehicles (too heavy to carry).
- Soldier-soldier: mostly absent; a lot of procedural measures.





## Dutch Soldier Modernization Programme (SMP):

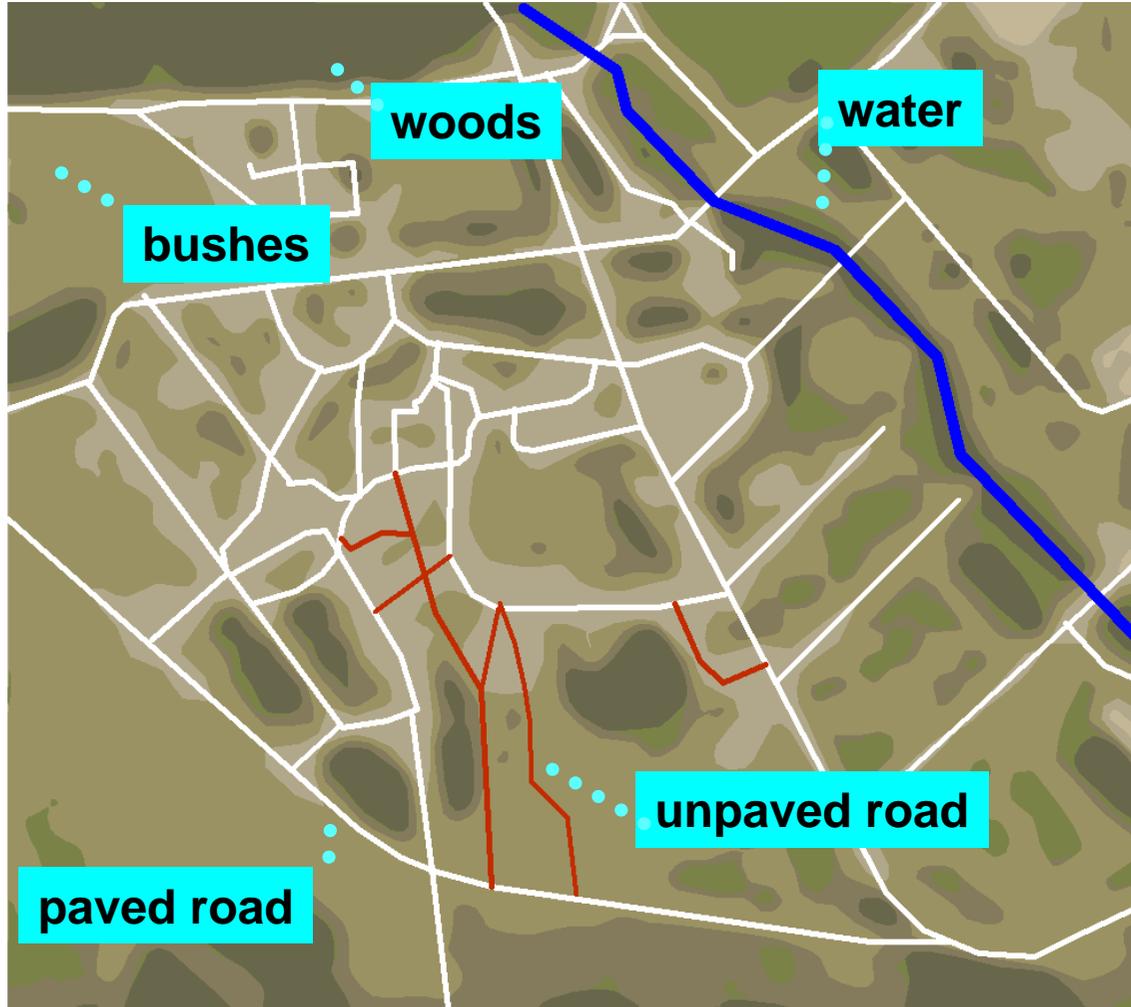
- Soldier has a GPS sensor
- Digital uplink with Battlefield Management System (BMS)
- CIM (Communication and Information Module)

## COTS products:

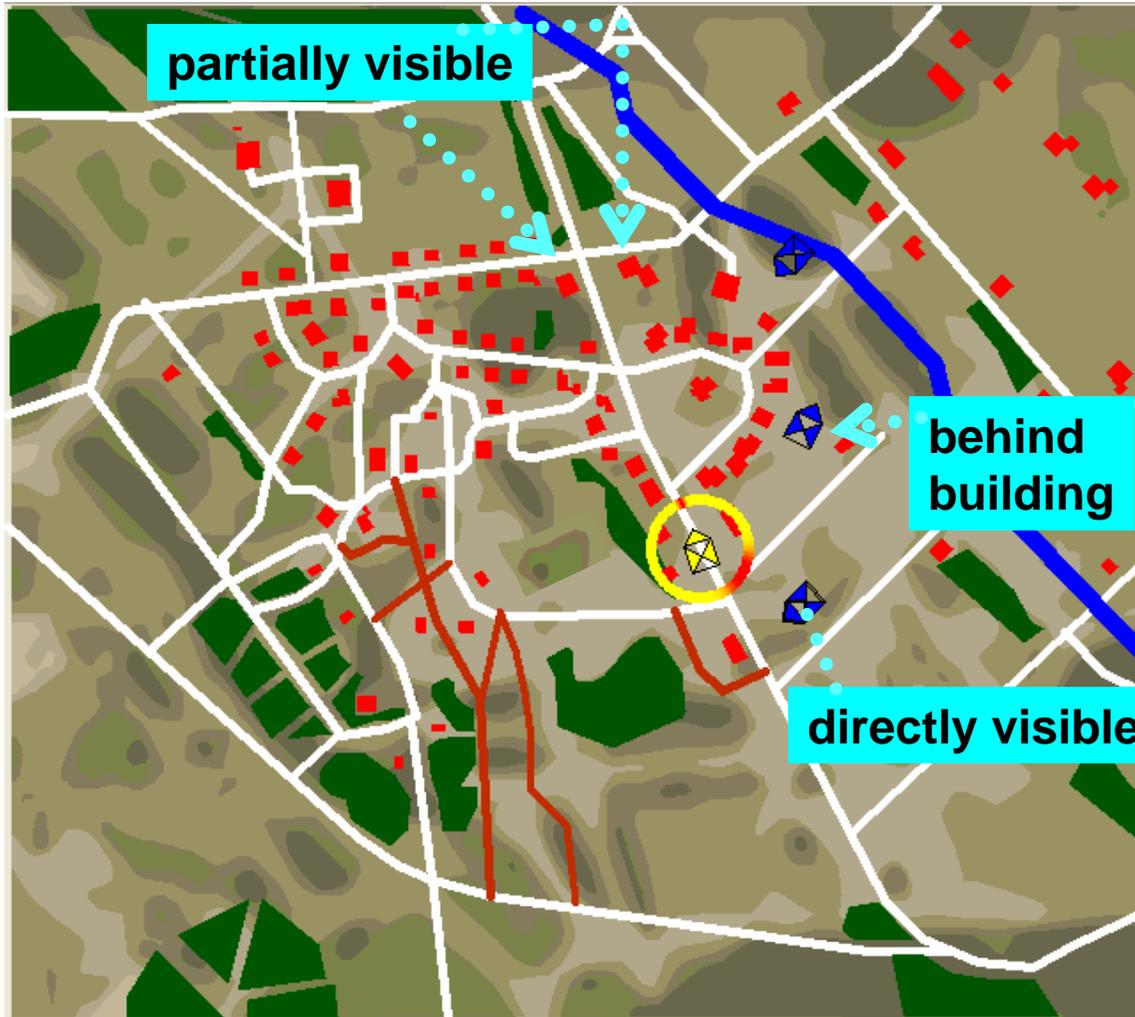
- Inertial Navigation Systems









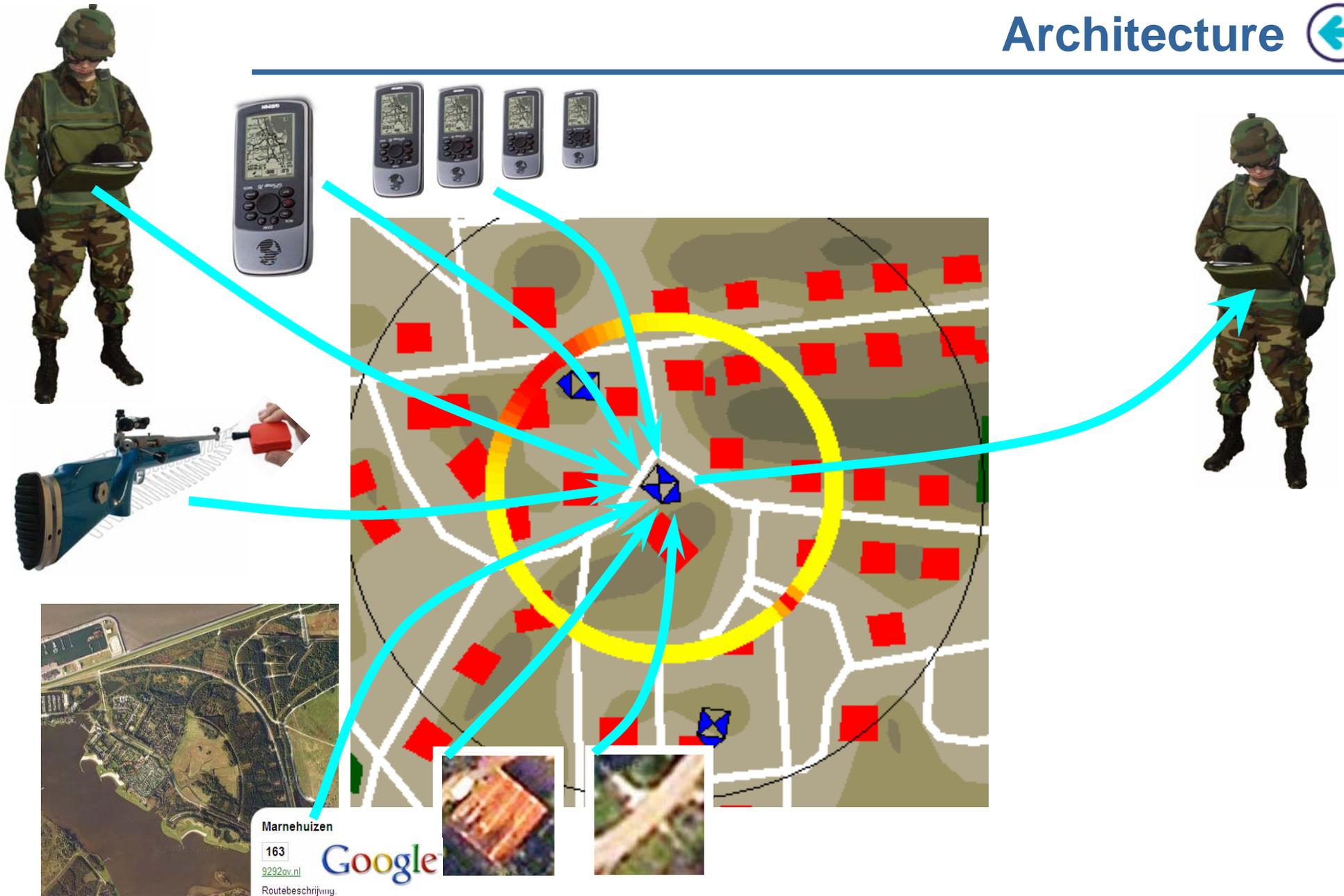




## Commander Information Module

Bellevue / 17-19 June 2008

This document and any data included are the property of Thales. They cannot be reproduced, disclosed or used without Thales' prior written approval. ©THALES 2005. Template: itcoen version 1.0.2

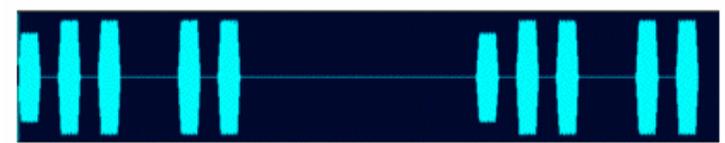




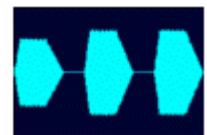
## Visual feedback



## Auditive feedback



High priority



Medium priority

Bellevue / 17-19 June 2008

Hoggan, E. and Brewster, S.A.  
*New Parameters for Tacton Design*  
ACM CHI 2007

Brewster, S.A., Wright, P.C. & Edwards, A.D.N.  
*Experimentally derived guidelines for the creation of earcons*  
ACM CHI 1995

This document and any data included are the property of Thales. They cannot be reproduced, disclosed or used without Thales' prior written approval. ©THALES 2005. Template: Ircocon version 1.0.2

- Currently, SMP is implemented as VOSS (Verbeterd Operationeel Soldaat Systeem – Enhanced Operational Soldier System), a 250M€ project.
- Field studies & implementation issues will likely be part of this effort.
- Research proposals have been issued to other sources of funding.



