Battle Group "Force protection"

Given equal funding, any adversary could buy...

- 40 "Off-the-Shelf" Cruise Missiles
- 30 Recon UAVs
- 15 TBM with 5 TELs
- 10 Utility Helicopters
- 4 Attack Helicopters
- 1-2 Fixed-Wing Fighters

Low Cost/High Payoff Drives Changing Threat

Figure 2-1. Unmanned Systems Cost Advantage
A DIFFERENT PROBLEM!

The need to develop technology and combat-principles against many small and simultaneously incoming targets.
Combating a large number of simultaneously incoming small targets, i.e. Cruise Missiles

- Unguided Rocket – Fire and forget
- High Velocity – Short time to reach target
- Directed Warhead – Large stand off
- High Rotation Rate – Pinpoint target
Launcher Concepts

- Lightweight Launcher Concepts
- Recoiless Launch
- Could use existing Mount
- Rocket Motor provide fly-out speed
Rocket Functionality

- Rolling Airframe
- HF-pulsed LADAR
- Signal-processing
- Fire Control
- Advanced Warhead

Calibre: 120 mm
Length: 1600 mm
Weight: < 25 kg
Saturation Attacks

100:s / km²

Protection systems
Combat so that probability of own survival is maximized

10:s / 10 km²

UAV, mini CM’s
Attack msl saturation
CM’s saturation

10:s / world

UAV, mini CM’s
VSHORAD Msl
SHORAD Msl
Guns
Fix-winged
Fix-winged
Fix-winged
Fix-winged
Fix-winged AWACS

Air Defence Systems
Combat as soon as possible

ABRAHAM TECHNOLOGY

"Rented systems" Ballistic missiles

Passing/Attacking
ABRAHAM Warhead

- Airframe-integrated, 10 kg
- Tungsten Pre-Formed Fragments
- Long Range
- Short Range
Stand-Off Capability
SHORT RANGE MODE
LONG-RANGE MODE
AFTER TEST

WITHNESS-PLATES ~1000kg
30 mm STEEL at ~3m
Saturation Attacks

100:s / km²

Protection systems
Combat so that probability of own survival is maximized

10:s / 10 km²

Air-Defence Systems
Combat as soon as possible

10:s / world

Unguided munition
ABRAHAM TECHNOLOGY

Air threat increases

Passing/Attacking

100:s / km²

UAV, minCM`s
HARM saturation
CM`s saturation

Helicopters
VSHORAD Msl
Single CM`s
Fix-winged

Fix-winged
Ballistic missiles

FIGHTERS
“Rented systems”
LEO BETWEEN PLATFORMS

DISTRIBUTED CLUSTER-INTELLIGENS
- DECISION SUPPORT IN A LIMITED AREA
- OPTIMISES & MANAGES SENSORS AND WEAPON IN A CLUSTER
Window of opportunity
ABRAHAM Concepts

Land Platform

Naval Platform

Air Platform

In a Cluster

ABRAHAM
ABRAHAM RAP

SENSOR

ROCKET MOTOR

WARHEAD
QUESTIONS?