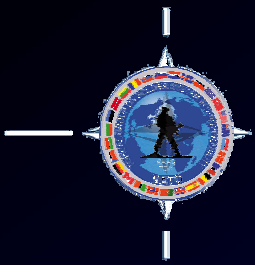# Soldier System in NATO

Mr. Vernon E. Shisler
Chairman
NATO AC225 TG/1

Contents

➢ **The changing role of the dismounted soldier**

➢ **NATO TG/1 as the soldier modernisation platform now and in the near future**

➢ **The TG/1 Expert's teams**

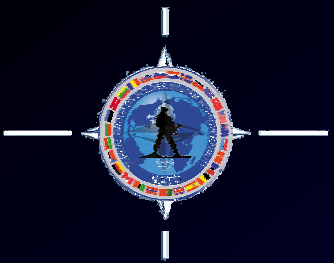➢ **TG/1 and the industry**

➢ **Summary**

The soldier from 1915 till 2005

The soldier today

Soldier's spectrum of operations

Domestic Support
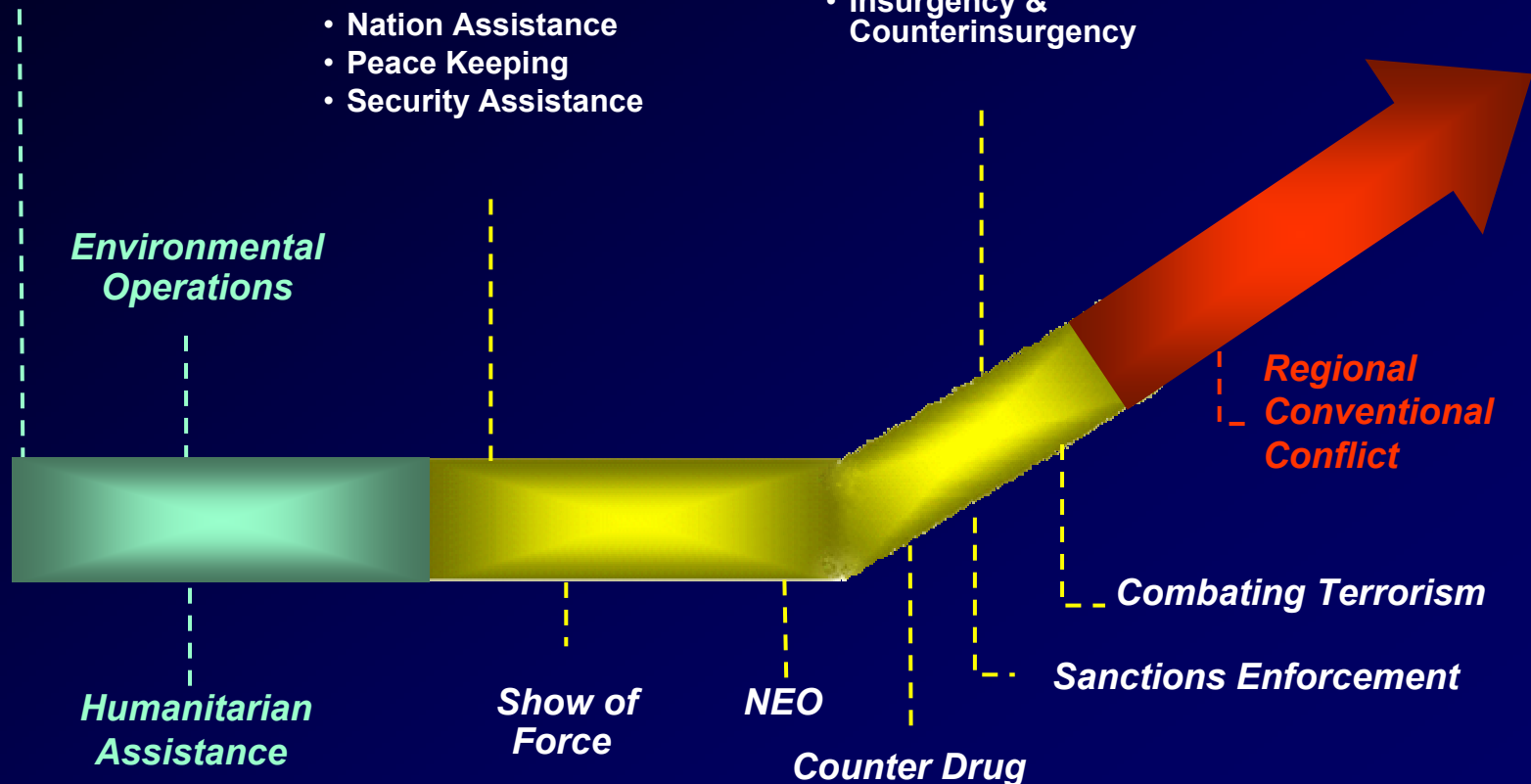- Disaster Relief
- Civil Support

Peace Operations
- Peace Building/Making
- Military to Military Contacts
- Arms Control
- Nation Assistance
- Peace Keeping
- Security Assistance

Limited Conflict
- Raids
- Strikes
- Insurgency & Counterinsurgency

Nuclear War
- Strategic Weapons
- Tactical Weapons

Environmental Operations

Regional Conventional Conflict

Combating Terrorism

Sanctions Enforcement

Humanitarian Assistance

Show of Force

NEO

Counter Drug

5

Soldier´s in joint operations

NATO activities on Soldier Modernisation till now

➢ **1993 - 1994 Prefeasibility study Soldier Modernisation**

➢ **1994 - 2000 LG/3/WG/3 on Soldier Modernisation**

➢ **2000 - 2005 NAAG/TG/1 on Soldier System Interoperability**
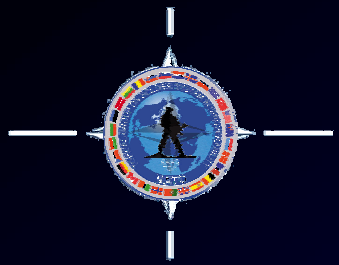
The Soldier System Concept

Integration of *everything* the soldier

➤ ***Wears***

➤ ***Carries***

➤ ***Consumes***

for enhanced individual and collective (small unit) capability within their national command control structure.

© G. van Osbree

The balance

The final solution will be a compromise between the five capability areas

- **C4I**
- **Lethality**
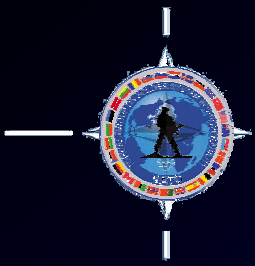- **Mobility**
- **Survivability**
- **Sustainability**

and must have a relation with

- **Education**
- **Training**

© Björn Arndt

The Complexity of Soldier System

Night Vision

Protective Eyewear

Radio

Computer

Ballistic Protection

Load Carrying

Weapon System

Gas Mask

Environmental Clothing

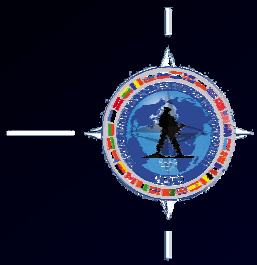Integrate "each" into a Soldier System

Integrated Operating System

➤ **Modular design**

➤ **Mission tailor-able**

➤ **Links the individual soldier to the Digitized Battlefield**

➤ **Increased survivability**

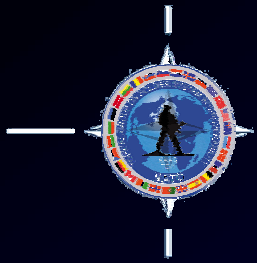➤ **Opportunity for interoperability**

Soldier capability

What kind of system is the soldier?

LVSRHMLSFWS

Light, Very Short Range, High Mobility,

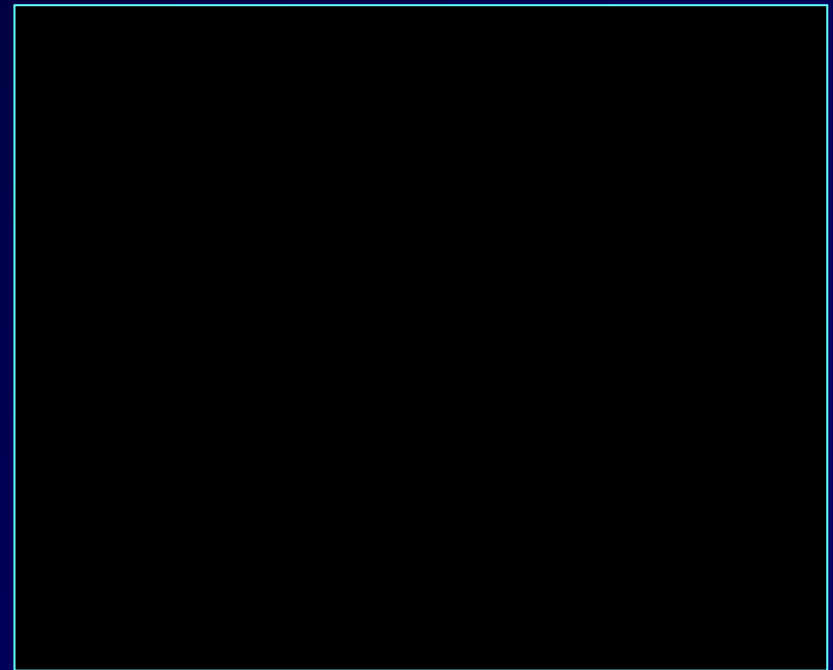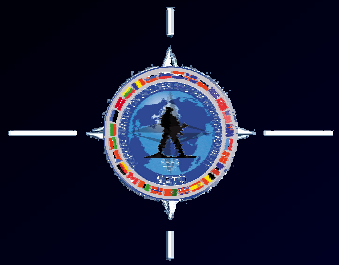**Low Speed, Flexible Weapon System**

Soldier 2000 Demonstration

**Bergen op Zoom
The Netherlands June 2000**

➢ **For Senior NATO Officials and Military**
➢ **Presentations**
➢ **Static Displays**
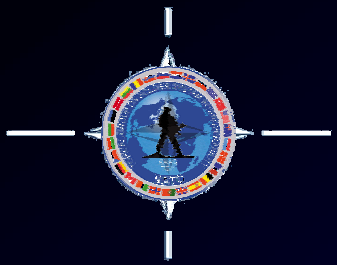➢ **Live Firing Exercises**
➢ **Tactical Demonstrations**
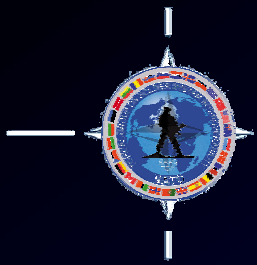
Mission TG/1

Ensure interoperability between future national soldier systems
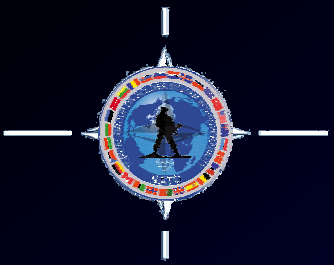
Participating Nations

- The Netherlands
- Norway
- Portugal
- Spain
- Turkey
- United Kingdom
- United States
- Czech Republic
- Slovakia
- Romania

- Belgium
- Canada
- Denmark
- France
- Greece
- Germany
- Italy
- Hungary
- Lithuania
- Slovenia

- Austria
- Azerbaijan
- Sweden
- Switzerland
- Ireland
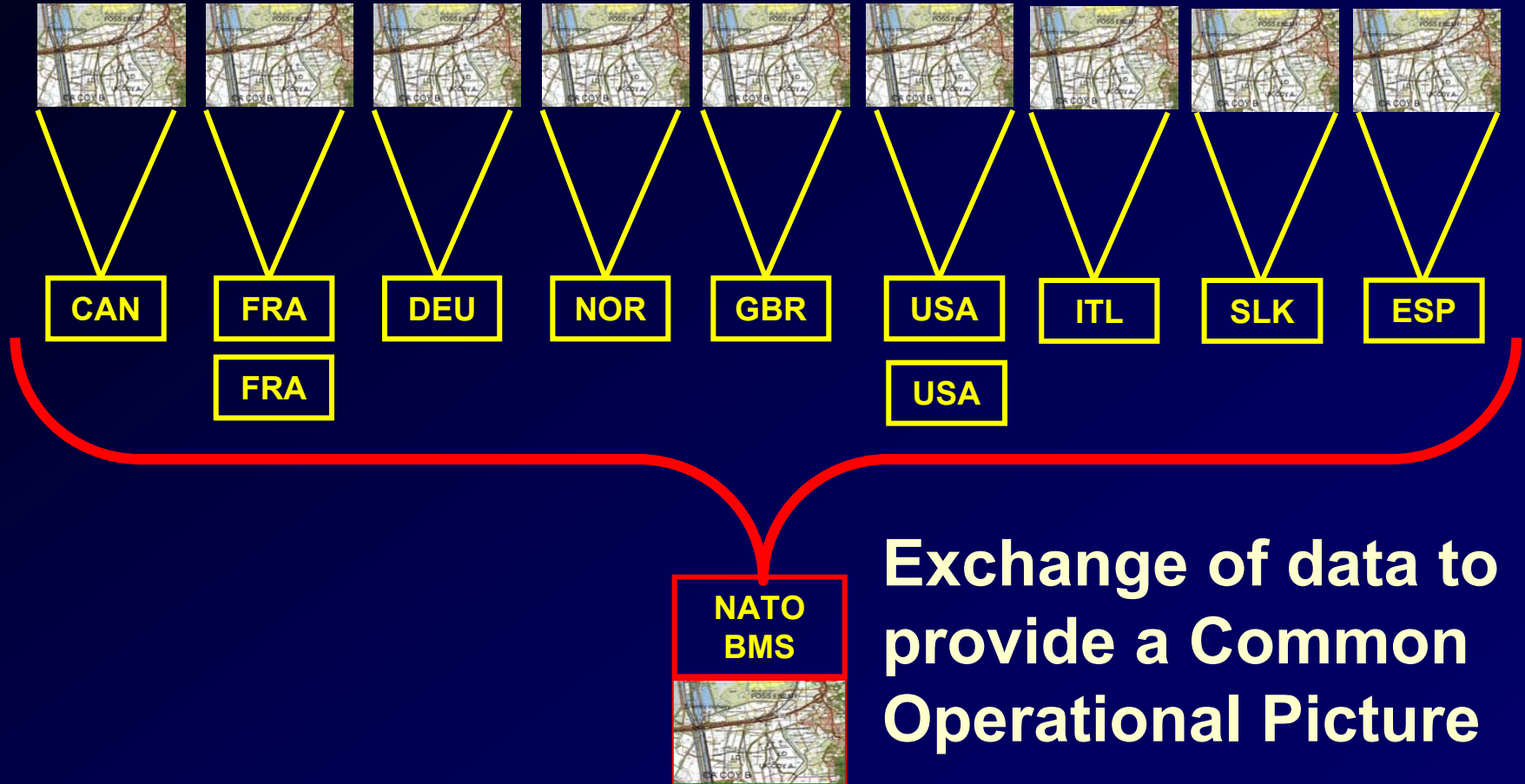- Ukraine
- Finland
- Croatia
- Australia

Take C4I efforts to the individual level

➢ **To facilitate the exchange of information across force boundaries and in mixed force operations at soldier to soldier level**
Defining map related symbology

➢

✓ **Specifying a NATO format for identifying data (building on standard NATO symbols)**

✓ **Creating a NATO data exchange software library**

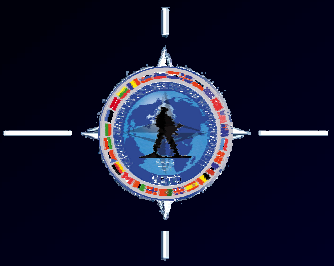✓ **Generating STANAG for information interoperability**

C4I demo Rome Oct 03

CAN · FRA · DEU · NOR · GBR · USA · ITL · SLK · ESP

FRA

USA

NATO BMS

Exchange of data to provide a Common Operational Picture

Focus on individual positional Information

Power

➢ **TG/1 has drafted a STANAG to provide the ability to share power on the battlefield**

➢ **TG/1 approved it at the Fall meeting 04**

➢ **NATO staffing in process**

Combat Identification

➢ **LG/6 has completed and approved a NATO Staff Requirement**

➢ **Agreement on laser frequency**

➢ **STANAG is under construction**

Integration

Modularity and interoperability are essential elements of each soldier system.

Essential elements to attain this are the standardization of
connectors and electrical signals

Deutsch Warrior Programs Connectors

Tomorrow's Infantry Warrior - Solutions

- Over molding
- Composite connector with metalisation
- Lanyard push pull locking system
- Sealing conductor gasket
- More than 5000 mating
- Easy mounting (no tools)
- Connector sealed when mated and unmated
- Dead face protection system

Mighty Mouse 80 series connectors for Soldier Systems

- Connector mating of up to 5000 mates and de-mates already tested
- Quick release and push pull connectors already developed for Soldier systems programs.
- Sealed connector rear ends to avoid water ingress when being cleaned
- Contact will accept multiple wire sizes 28 to 22 AWG
- Fully tested to meet the needs of our military customers
- Colour coding is possible

Glenair

HYPERTAC **DESIGN CHARACTERISTICS**

Receptacle Connector, cont.

Prop_0297_B

Expert teams TG/1

- C4I
- Power
- Architecture
- Weapon Systems
- Head Born Systems
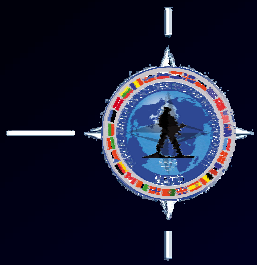- Combat Clothing Individual Equipment and Protection (CCIEP)

Expert team Weapon System

➢ Not a developer

➢ Creating interoperability between the different small arms in use now or in the future

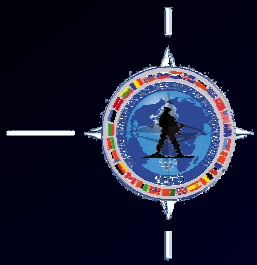➢ Standardisation connecting and power sources

➢ Starting NATO/RTO study

GE G36

TG/1 and industry

➢ **In 2003 an industrial initiative led to the**

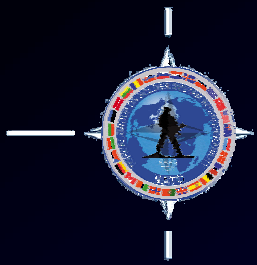**Soldier System Standardisation Industrial Working Group**

➢ **The aim of this group is:**

- ✓ **to address interoperability issues and seek harmonization of interface standards**
- ✓ **to provide support to the NATO and governmental initiatives on soldier modernisation**
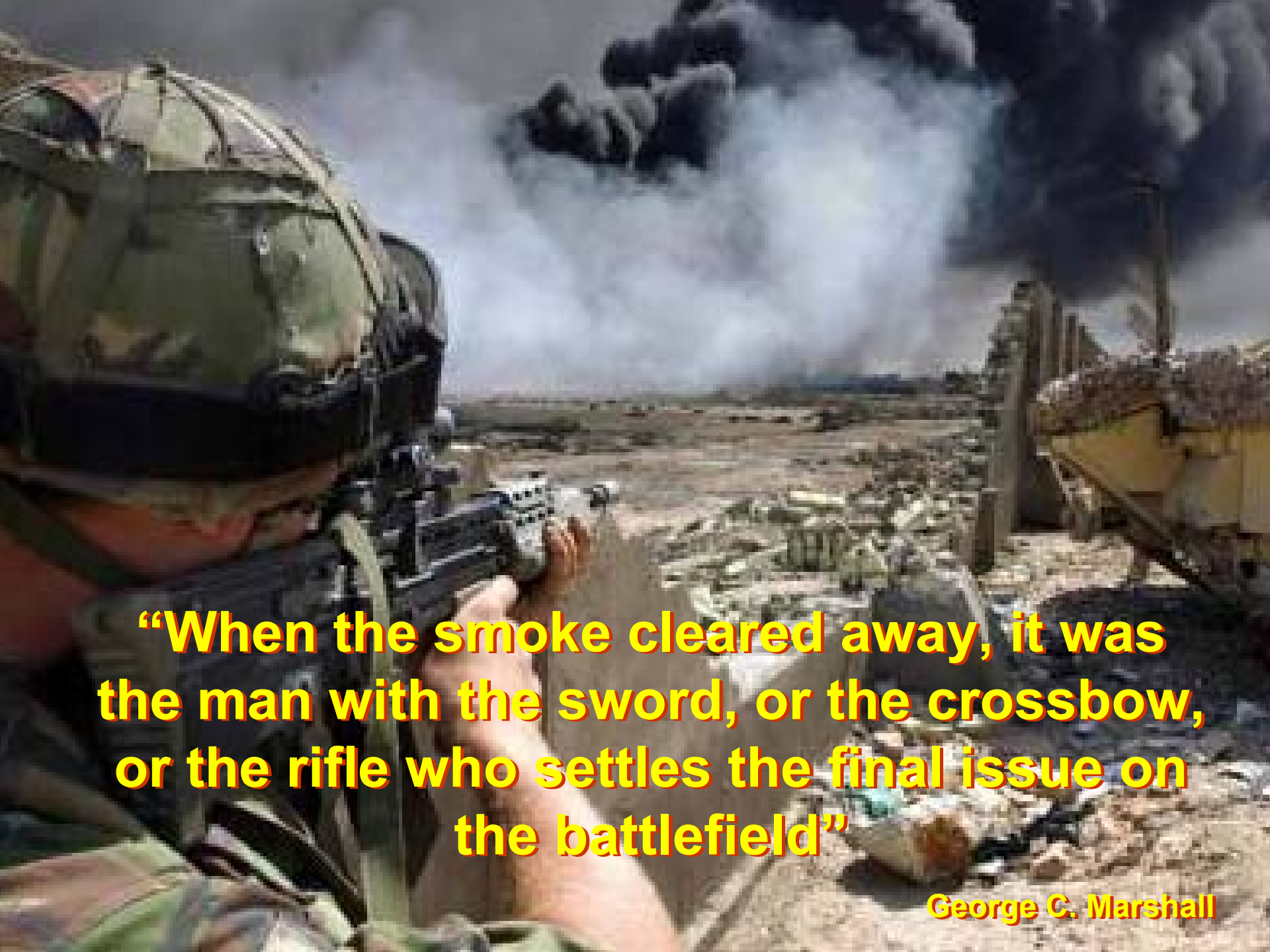
TG/1 and industry

Industry Partners are

- ✓ **EADS Dornier (GE)**
- ✓ **Marconi Selena Comm SpA (IT)**
- ✓ **Thales Defence Ltd (UK)**
- ✓ **TNO (NL)**
- ✓ **Thales Comm (NO)**
- ✓ **General Dynamics (USA)**
- ✓ **Sagem (FR)**

Summary

➢ **TG/1 is the lead multinational body in the area the soldier system**

➢ **TG/1 will work together with industry to implement the ultimate goal: interoperability at soldiers level**

➢ **TG/1 will be renamed LG/1 Dismounted Soldier Systems and will cover all the components of the soldier system**

"When the smoke cleared away, it was the man with the sword, or the crossbow, or the rifle who settles the final issue on the battlefield"

George C. Marshall