

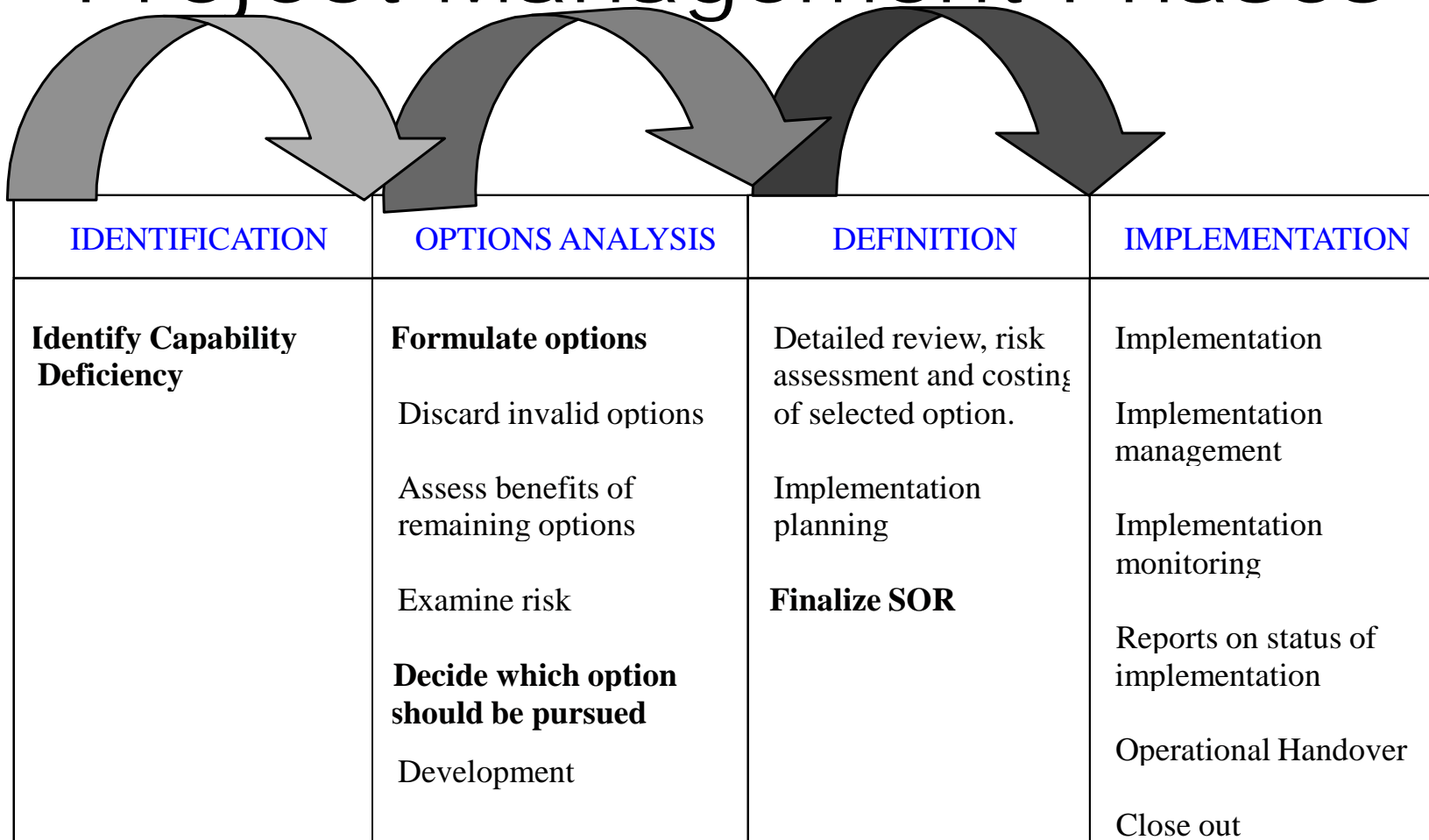
Small Arms Replacement Project 2 Presentation to the NDIA

**Maj B Gilchrist
DLR 5-5**

Outline

- **Canadian Project System**
- **SARP 2**
- **Research and Development**
- **Networked Weapons**

Project Management Phases



Decision
SS(ID)

Decision
SS(PPA)

Decision
SS(EPA)

X yrs

2-3 yrs

2-4 yrs

7 yrs

Aim of SARP 2

**SARP 2 will modernize or replace
the CF small arm capability**

CANADIAN FORCES SMALL ARMS - MENU ARMES LÉGÈRES DES FORCES CANADIENNES - MENU



• 71349 •
RIFLE, AIR, .177 calibre, DAISY, Modèle 853C
FUSIL À AIR, calibre .177, DAISY, Modèle 853C



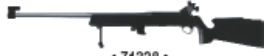
• 71314 •
RIFLE, AIR, .177 calibre, ANSCHÜTZ, Modèle 1380
FUSIL À AIR, calibre .177, ANSCHÜTZ, Modèle 380



• 71313 •
RIFLE, TARGET, 22 calibre, ANSCHÜTZ, Modèle 1403
FUSIL DE TIR SUR CIBLE, calibre .22, ANSCHÜTZ, Modèle 1403



• 71317 •
RIFLE, BIRTHLON, 22 calibre, ANSCHÜTZ, Modèle 1927 & Forster
FUSIL DE BATHLON, calibre .22, ANSCHÜTZ, Modèle 1927 & Forster



• 71328 •
RIFLE, TARGET, 5.56mm, C11
FUSIL DE TIR SUR CIBLE, 5.56mm, C11



• 71347 •
RIFLE, TARGET, 7.62mm, C12A1
FUSIL DE TIR SUR CIBLE, 7.62mm, C12A1



• 71108 •
RIFLE, 22 calibre, LEE ENFIELD, C No 7 MK 1
FUSIL, calibre .22, LEE ENFIELD, C No 7 MK 1



• 71111 •
RIFLE, .303 calibre, LEE ENFIELD, No 4, all marks
FUSIL, calibre .303, LEE ENFIELD, No 4, toutes les variantes



• 71327 •
RIFLE, SAR, 30.06 calibre, RUGER, Modèle M77
FUSIL, SAR, calibre 30.06, RUGER, Modèle M77



• 71107 •
PISTOL, 9mm, BROWNING FN,
HE No 2 MK 1 *
PISTOLET, 9mm, BROWNING FN,
HE No 2 MK 1 *



• 71318 •
PISTOL, 9mm, SAUER,
Modèle P225
PISTOLET, 9mm, SAUER,
Modèle P225



• 71227 •
PISTOL, 22 calibre,
COLT Police Target
PISTOLET, calibre .22,
COLT, Police de tir sur cible



• 71258 •
PISTOL, Signal,
1-1/2 inch, AN M9
PISTOLET, Signalisation,
1-1/2 pouce, AN M9



• 71323 •
PISTOL, SIGNAL,
19mm, H&K
PISTOLET, Signalisation,
19mm, H&K



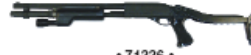
• 71117 •
SHOTGUN, Double Barrel, 12 gauge, LION
FUSIL DE CHASSE, à deux canons, 12 gauge, LION



• 71288 •
SHOTGUN, Semi-automatique, 12 gauge, REMINGTON, Modèle 1100
FUSIL DE CHASSE, Semi-automatique, 12 gauge, REMINGTON, Modèle 1100



• 71336 •
SHOTGUN, Pump, 12 gauge, REMINGTON, Modèle 870P
FUSIL DE CHASSE, Pompe, 12 gauge, REMINGTON, Modèle 870P



• 71336 •
SHOTGUN, Pump, 12 gauge, REMINGTON, Modèle 870P
FUSIL DE CHASSE, Pompe, 12 gauge, REMINGTON, Modèle 870P



• 71104 •
GUN, G.A.S., 38mm, W/SAFETY LOCK
GUN À GAZ, 38mm, avec loquet de sûreté



• 71234 •
RIFLE, SNIPER, 7.62mm, C1A1
FUSIL DE PRÉCISION, 7.62mm, C1A1



• 71361 •
RIFLE, SNIPER, .338 (LM) calibre, C14
FUSIL DE PRÉCISION, calibre .338, (LM) calibre, C14



• 71348 •
RIFLE, SNIPER, 50 calibre, Mc MILLAN, Tactico II
FUSIL DE PRÉCISION, calibre 50, Mc MILLAN, Tactique



• 71340 •
GUN, SUB-MACHINE, 9mm, H&K, MP5N
MITRAILLETTE, 9mm, H&K, MP5N



• 71294 •
CARBINE, Automatique, 5.56mm, C3
CARABINE, Automatique, 5.56mm, C3



• 71294 •
CARBINE, Automatique, 5.56mm, C3A3
CARABINE, Automatique, 5.56mm, C3A3



• 71295 •
RIFLE, Automatique, 5.56mm, C7
FUSIL, Automatique, 5.56mm, C7



• 71295 •
RIFLE, Automatique, 5.56mm, C7A1
FUSIL, Automatique, 5.56mm, C7A1



• 71295 •
RIFLE, Automatique, 5.56mm, C7A2
FUSIL, Automatique, 5.56mm, C7A2



• 71350 •
LAUNCHER, GRENADE, 40mm, M-203A1, w/rifle C7A1
LANCE GRENADE, 40mm, M-203A1, avec rifle C7A1



• 71296 •
MACHINE GUN, Light, 5.56mm, C9
MITRAILLEUSE, Légère, 5.56mm, C9



• 71296 •
MACHINE GUN, Light, 5.56mm, C9A1
MITRAILLEUSE, Légère, 5.56mm, C9A1



• 71296 •
MACHINE GUN, Light, 5.56mm, C9A2
MITRAILLEUSE, Légère, 5.56mm, C9A2



• 71267 •
MACHINE GUN, GPMG, Flexible, 7.62mm, C5
MITRAILLEUSE, Polyvalente, Mobile, 7.62mm, C5



• 71267 •
MACHINE GUN, GPMG, Coaxial, 7.62mm, C6
MITRAILLEUSE, Polyvalente, Coaxiale, 7.62mm, C6



• 71267 •
MACHINE GUN, GPMG, LAV, Coaxial, 7.62mm, C6
MITRAILLEUSE, Polyvalente, VBL, Coaxiale, 7.62mm, C6

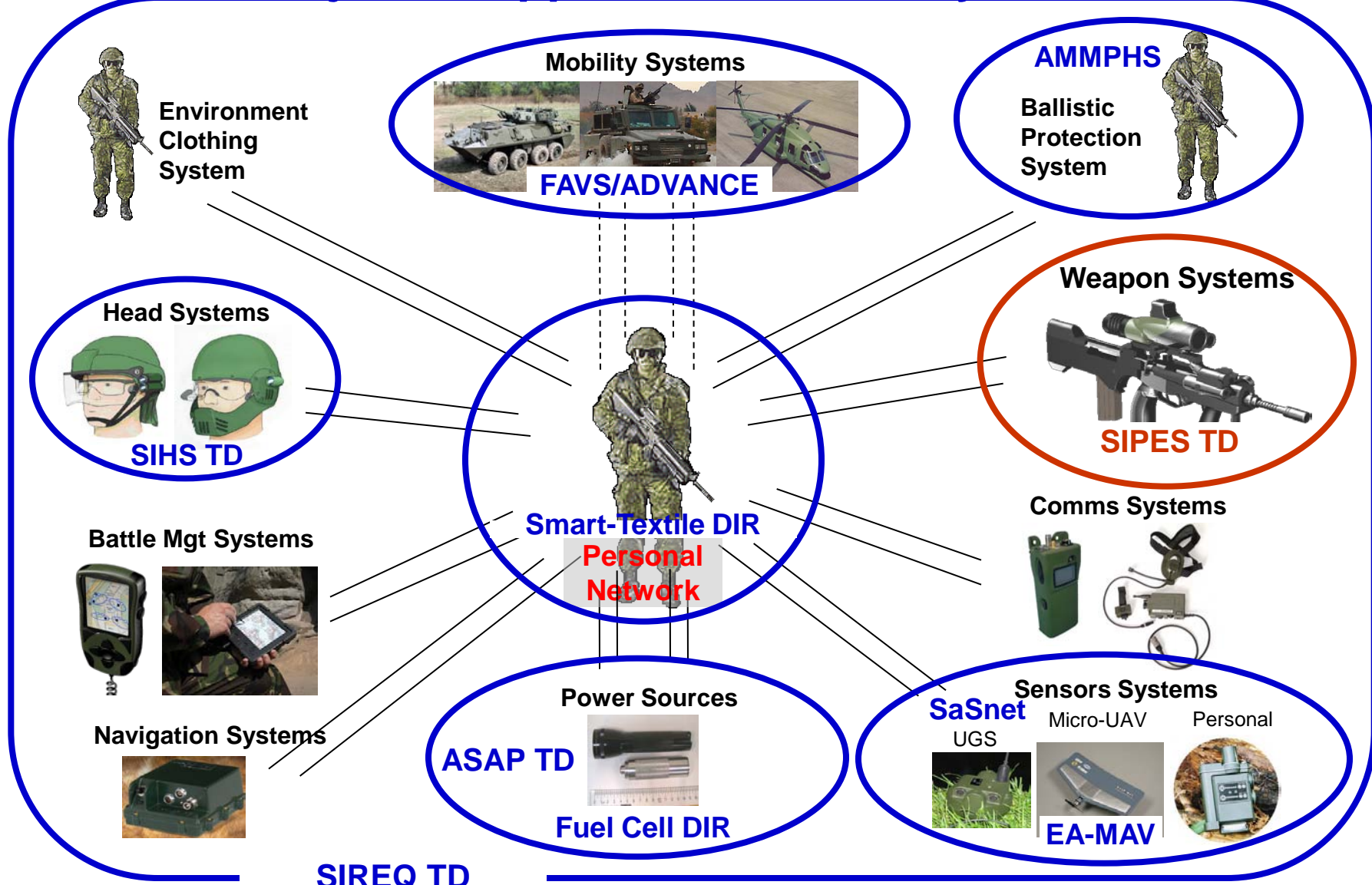


• 71159 •
MACHINE GUN, Heavy, Flexible, 50 calibre, M249, OC8
MITRAILLEUSE, Lourde, Mobile, calibre .50, M249, OC8

SARP 2

- **Value \$1.0 Billion to 1.4 Billion**
- **Three phases**
- **Definition followed by procurement**
- **Phase 1 (Tentative 2012-2015)**
 - Pistol, Ranger Rifle, Grenade Launcher, Shotguns & Breaching System
- **Phase 2 (Tentative 2015-2018)**
 - PDW, Other Service weapons, Light Vehicle Armament System
- **Phase 3 (Tentative 2018-2022)**
 - Infantry Assault Weapons

S&T Projects Support the Soldier System Vision



Soldier Integrated Precision Effects System

Objective

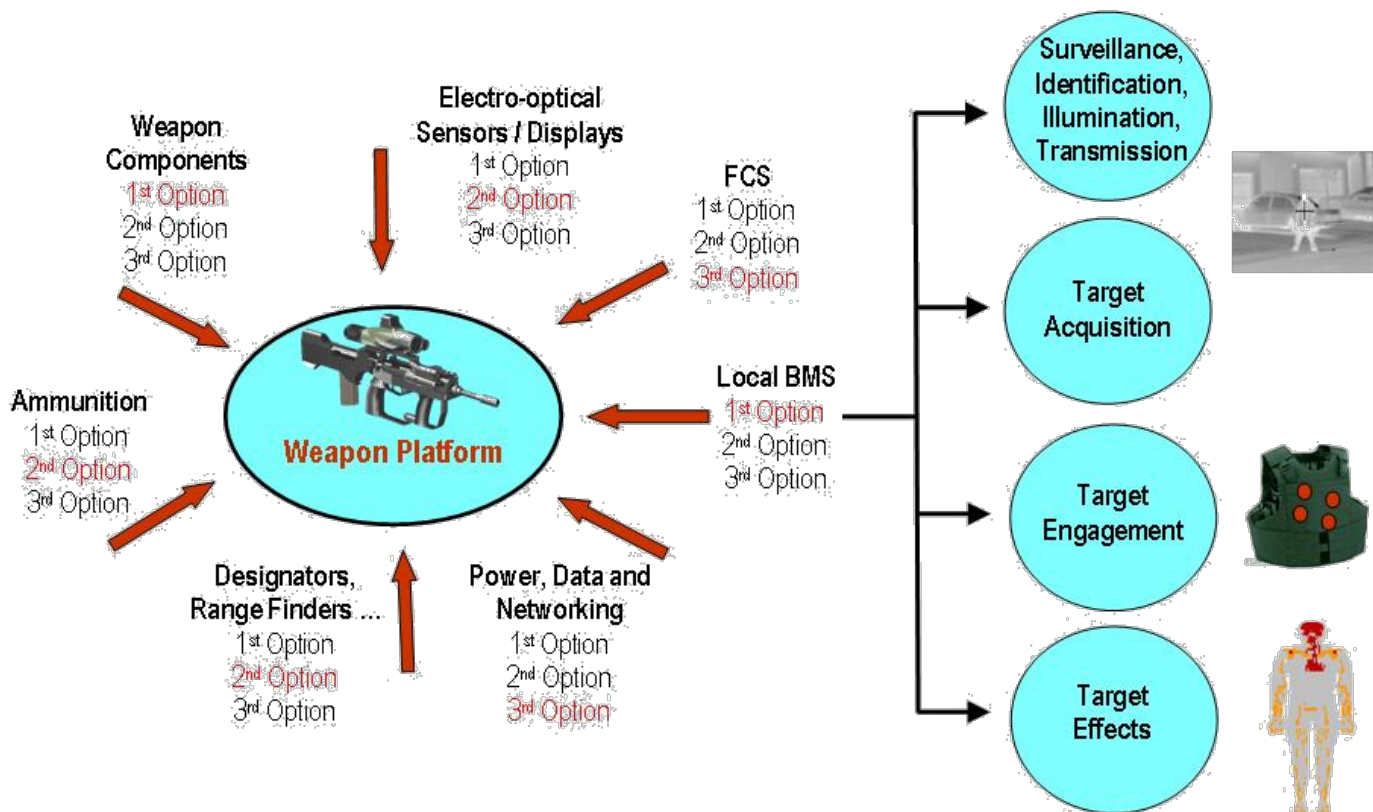
To demonstrate the viability, utility and usability of integrated novel and high pay-off small arms related lethal and non-lethal technologies for future, lightweight, small calibre weapon systems which address current capability deficiencies

Key Deliverables

- **Scientifically rigorous requirements analysis for SARP 2**
- **Improved weapon systems evaluation capabilities**
- **Optimized soldier lethality options**
- **A future small arms R&D program plan**

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Weapons and the Network

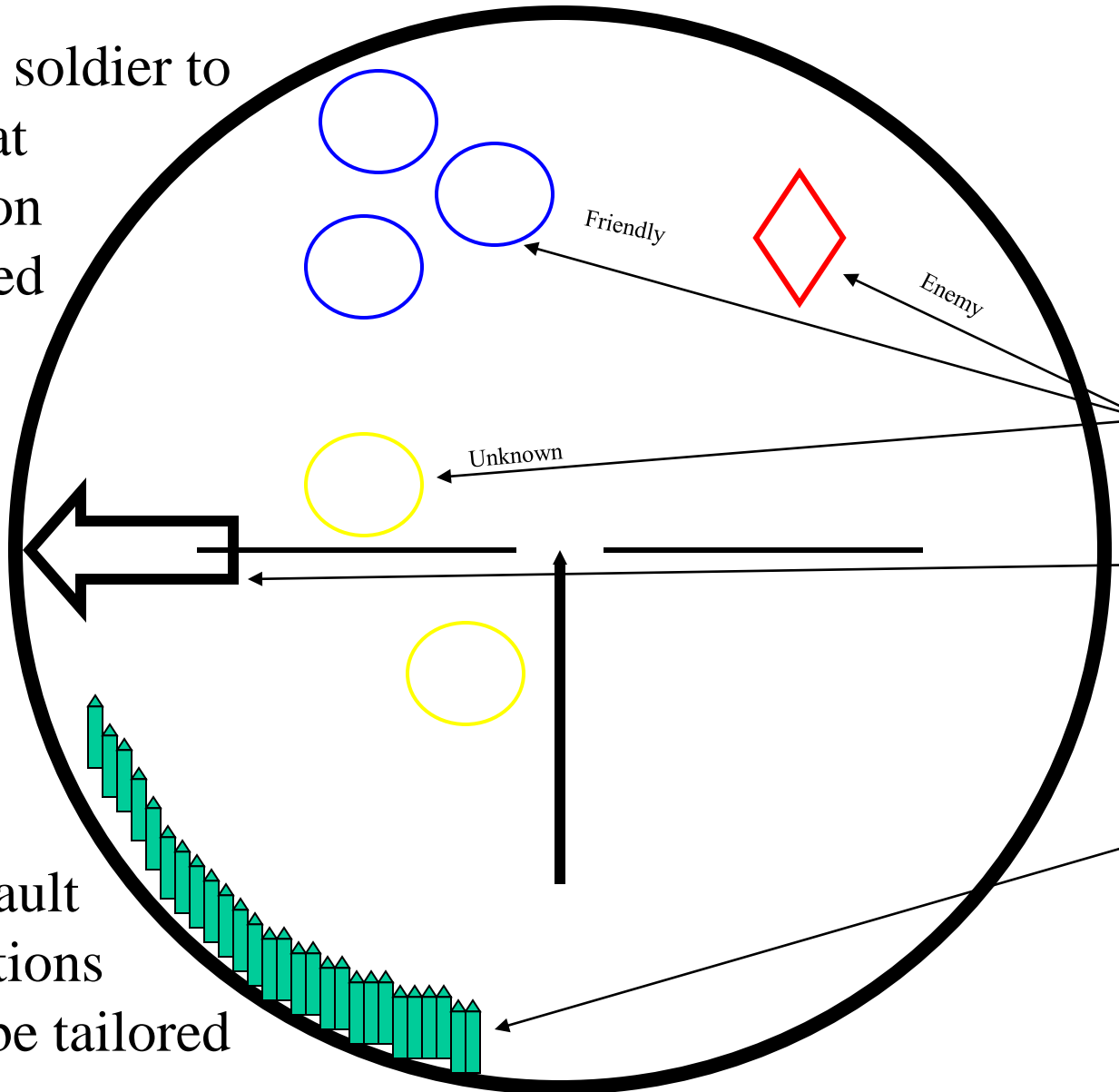
Networked Weapon?

- **The weapon is already the location for sensors and electronic devices**

- **Pointing with a weapon is natural for a soldier**
 - Export information used by accurate pointing
 - Use the Battle Management System to help the soldier locate the tgt in the weapon sights

- **Accurate pointing can be used to enhance the squad SA if the EO devices export information & images to the network**
 - Need to be geo-referenced
 - Time stamped

Allow the soldier to select what information is displayed



Information from the network

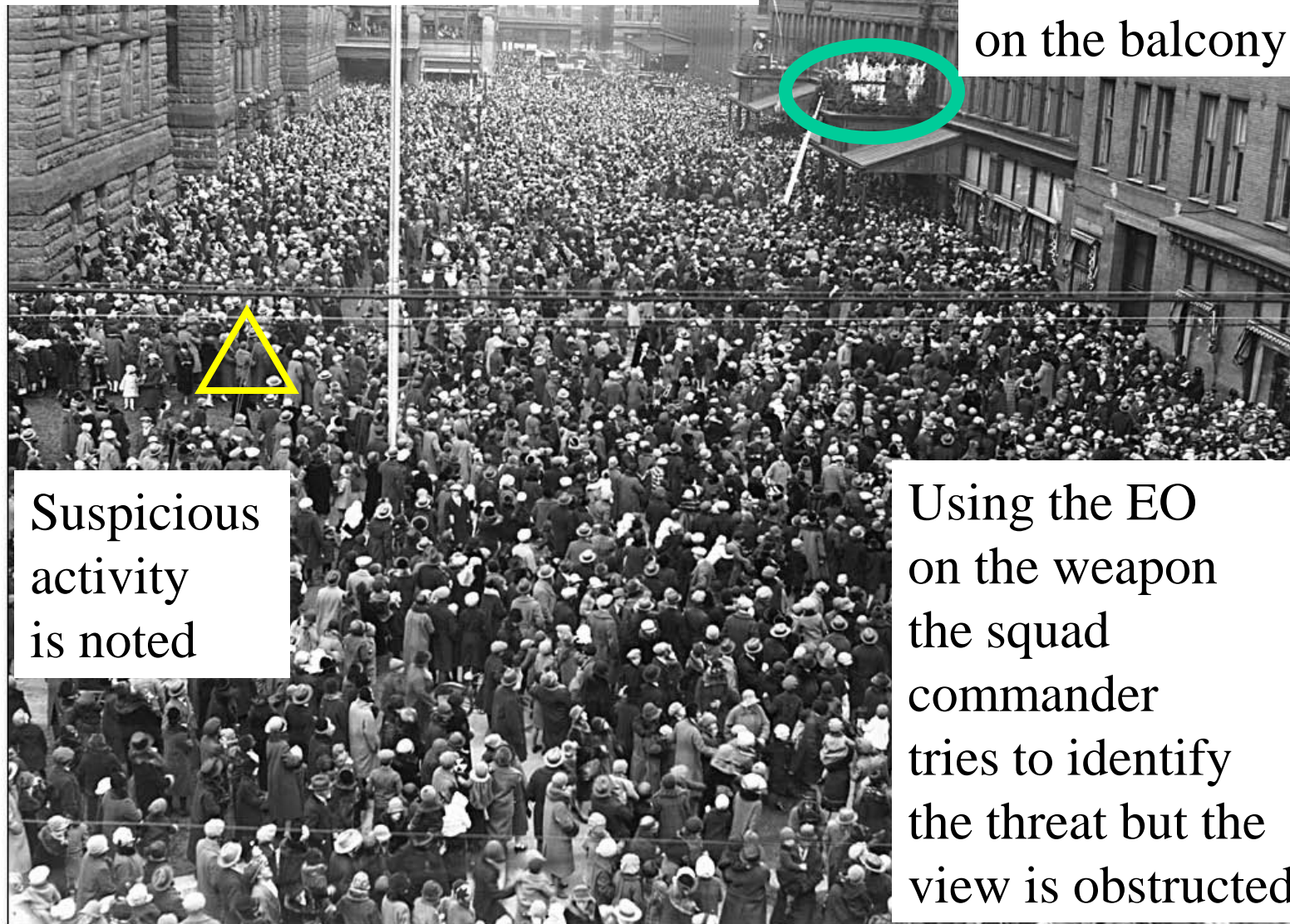
IFF

Direction to an assigned target

Remaining Ammunition

1 or 2 default configurations
That can be tailored

The Squad Commander's view



Fire team
on the balcony

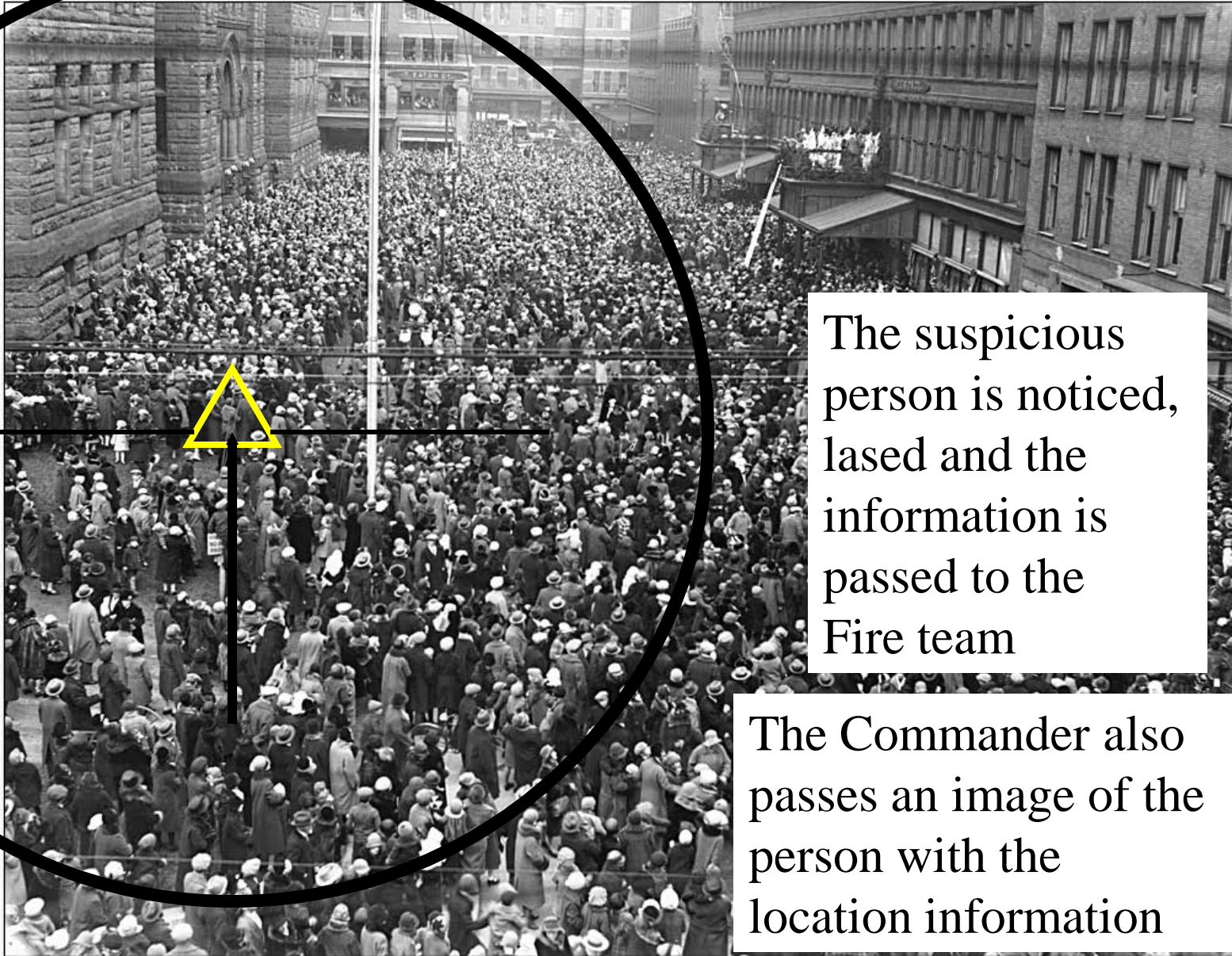
Suspicious
activity
is noted

Using the EO
on the weapon
the squad
commander
tries to identify
the threat but the
view is obstructed

The Scene



The Fire Team's
view

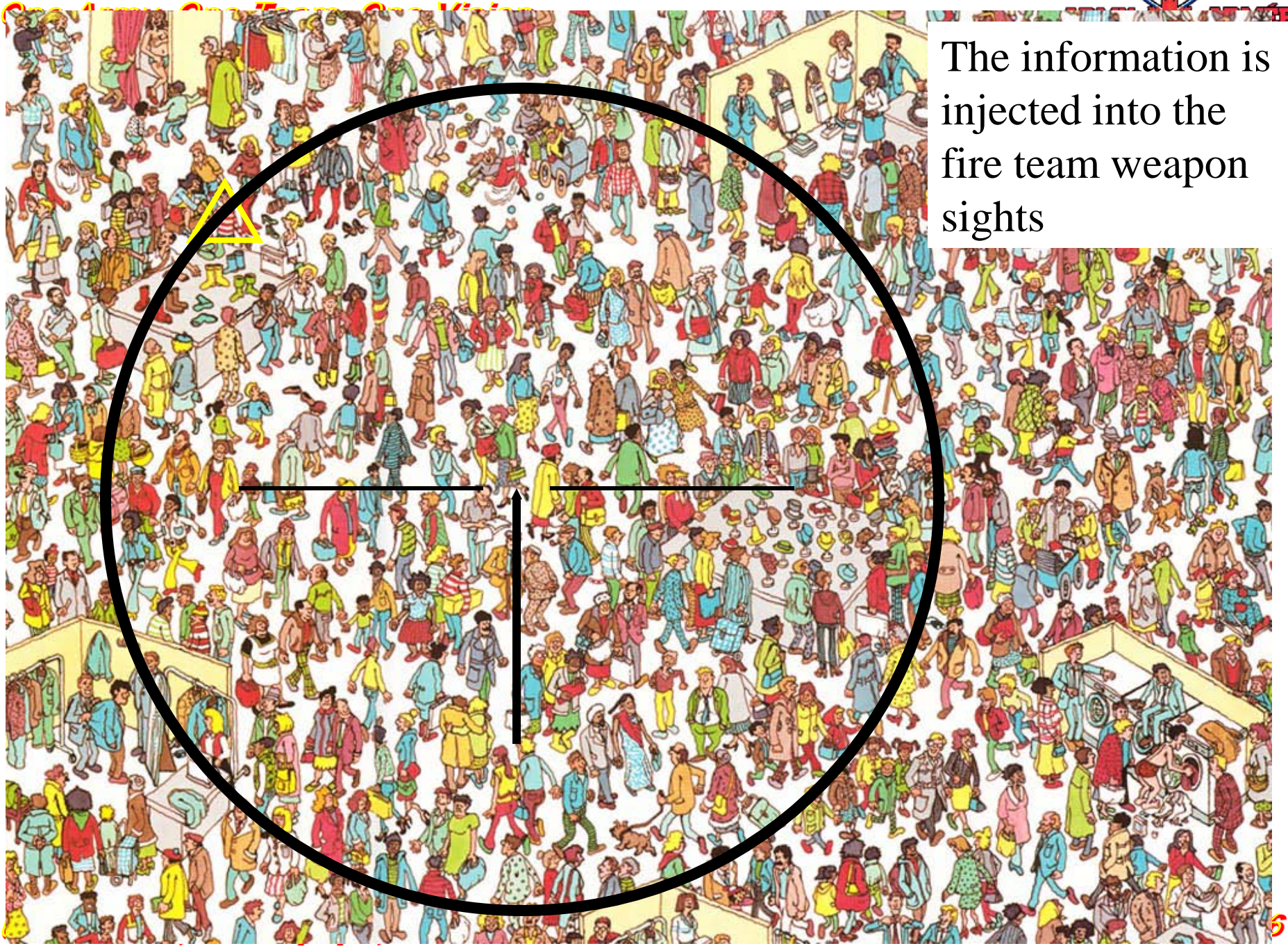


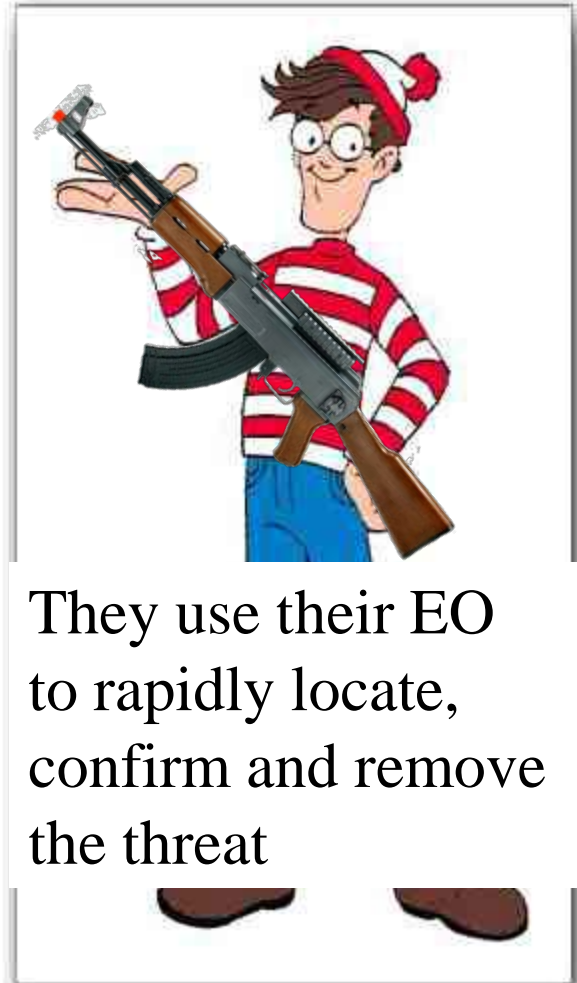
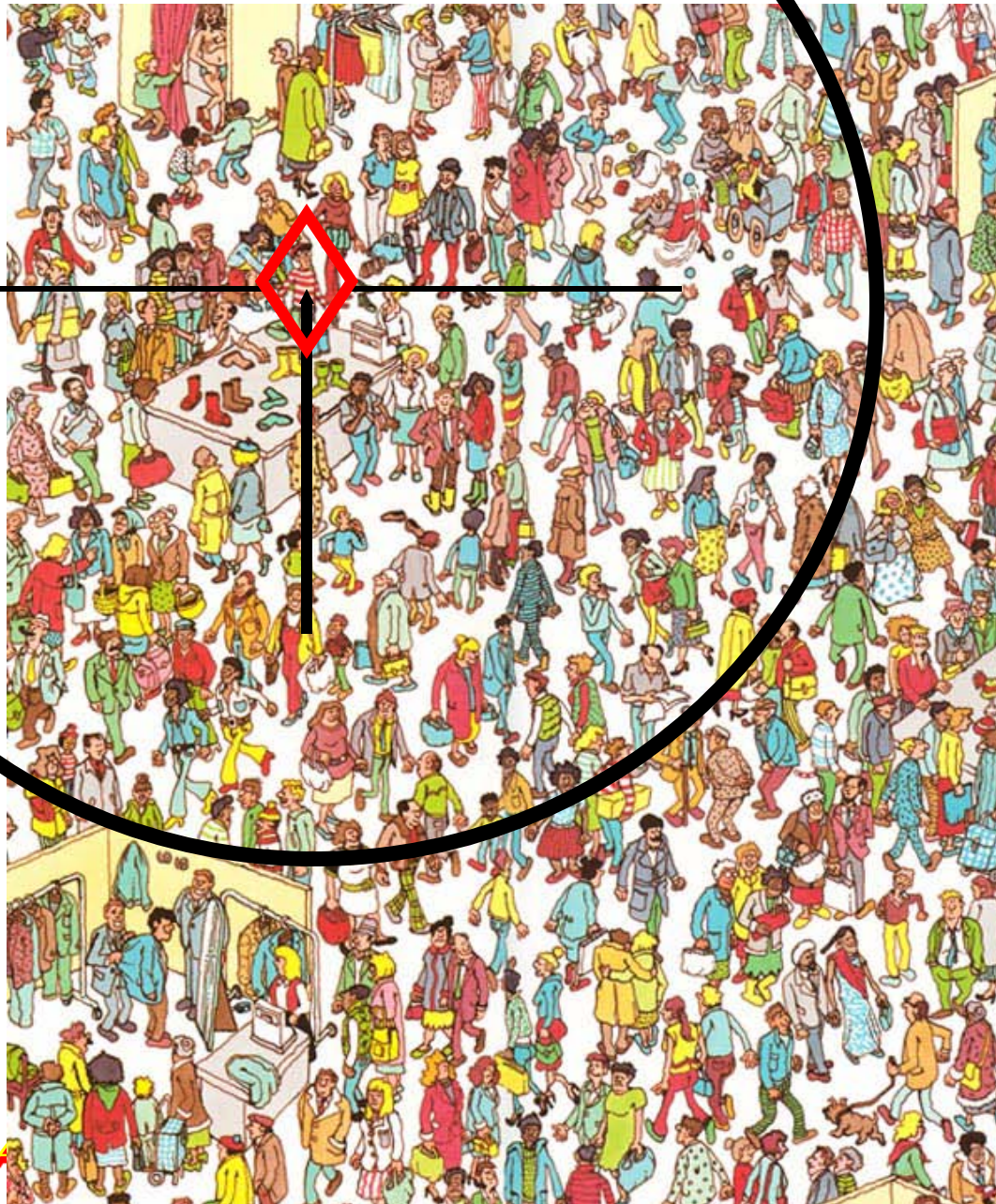
The suspicious person is noticed, lased and the information is passed to the Fire team

The Commander also passes an image of the person with the location information

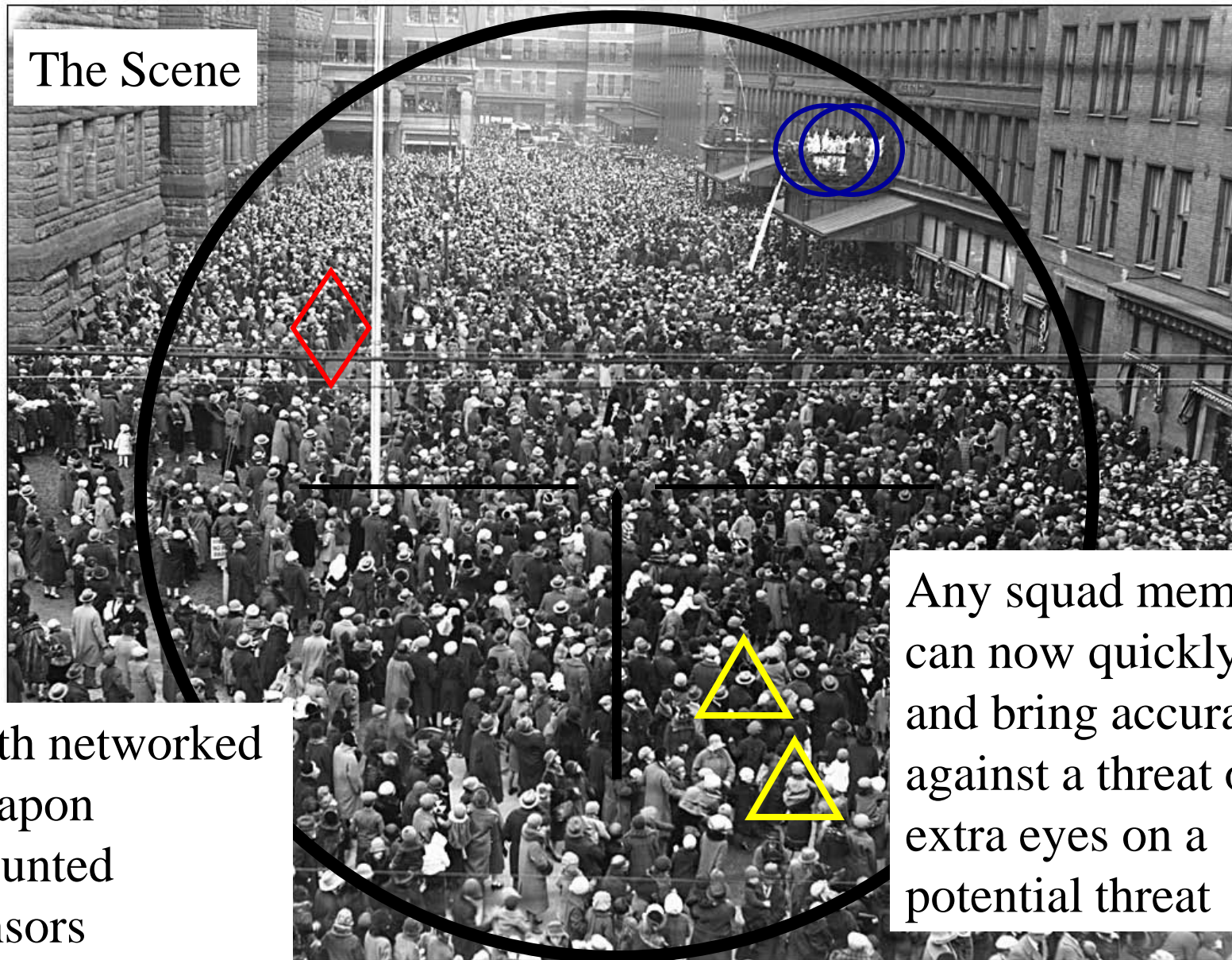


The information is injected into the fire team weapon sights





They use their EO to rapidly locate, confirm and remove the threat



The Scene

With networked
weapon
mounted
sensors

Any squad member
can now quickly locate
and bring accurate fire
against a threat or put
extra eyes on a
potential threat

The networked weapon with the right capability can enable target handoff at the soldier to soldier level

The networked weapon with the right capability could be used to control and/or direct a UAV or UGV or other system's weapons

Like This

Even unstressed persons are not that steady especially when fatigued

Through the sight the target appears to jump around & pass by the point of aim



Image recognition technology coupled to the sensors can be used to identify an obscured target & overlay “windows” on the critical parts of the target

The overlays can be coupled to an electronic fire control system to fire when the weapon is correctly aligned to hit the target within the window

Image recognition technology coupled to the sensors can be used to identify an obscured target & overlay “windows” on the critical parts of the target



The overlays can be coupled to an electronic fire control system to fire when the weapon is correctly aligned to hit the target within the window

Summary

- **SARP 2 will be a science based project requiring:**
 - Long term scientific effort
 - Collaborative Effort DRDC + DLR + Industry guided by an R&D Plan
 - Close integration with the products of existing projects
- **SARP 2 will integrate the weapon with the soldier system**
- **The networked weapon will enhance soldier lethality and precision**

Questions?