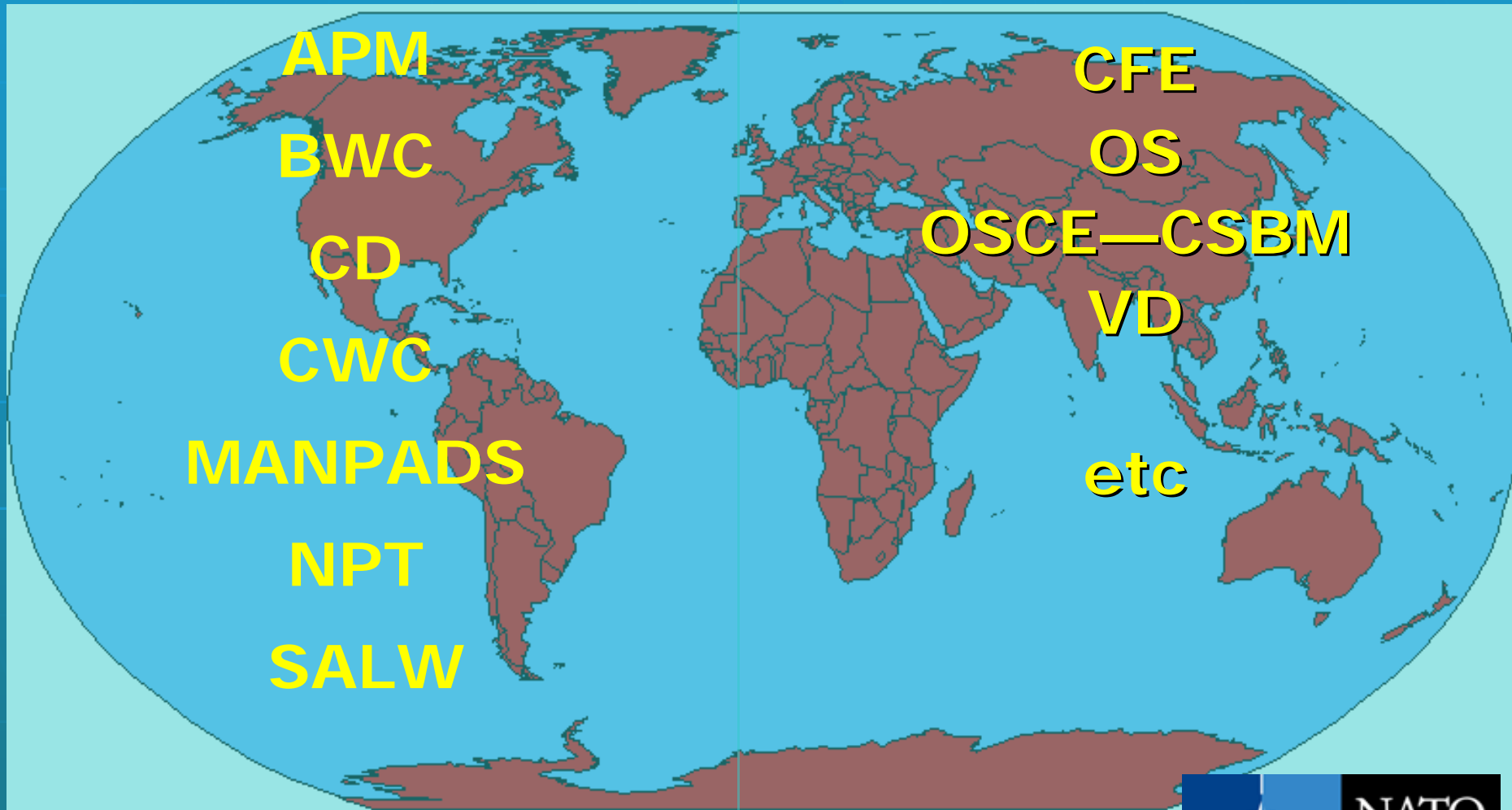


# Arms Control: Treaties and Practice



*Dr. Walter Dorn*  
*31 October 2008*

# Arms & Proliferation Control Abbreviations



# Why Control Arms?

- **Treat threats at level of “capabilities”**
  - Less capacity for attack
  - Helps determine intent
  - Increases transparency and predictability
    - Early warning
  - Mutual security/benefit
- **Risk to self of excess weapons**
  - Accident and miscalculation
  - Environmental
- **Reduce expenditures**
  - Avoid arms race
- **Non-proliferation**
  - Less access by others
- **Creation of norms**
  - “International control *regimes*”
  - Rule of law
  - Non-discriminatory

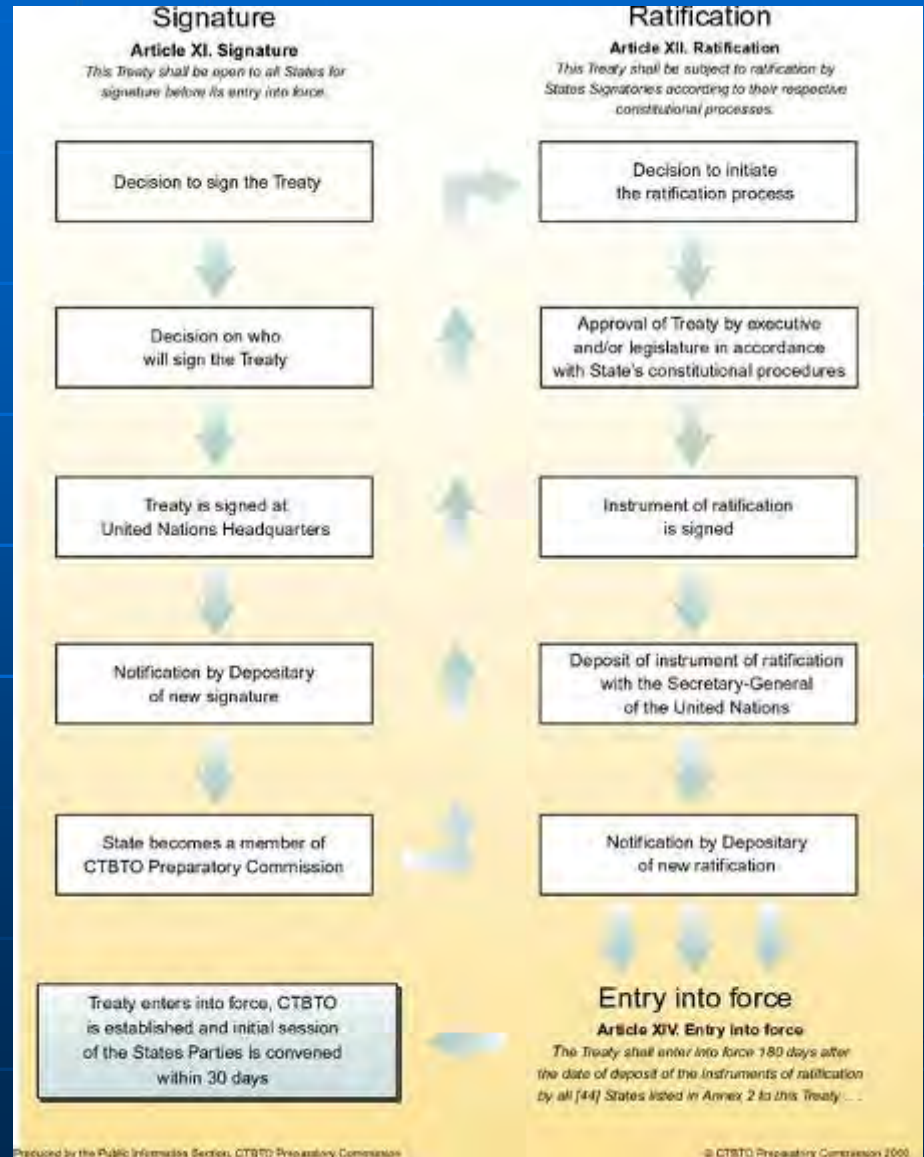
# Types of Arms Control

- Weapons of mass destruction (WMD)
  - Nuclear, chemical, biological, radiological
- Conventional Weapons
- Unilateral
- Bilateral
- Multilateral
  - Regional or Global
- Disarmament
- Confidence-building measures (CBMs)

# Treaty Process

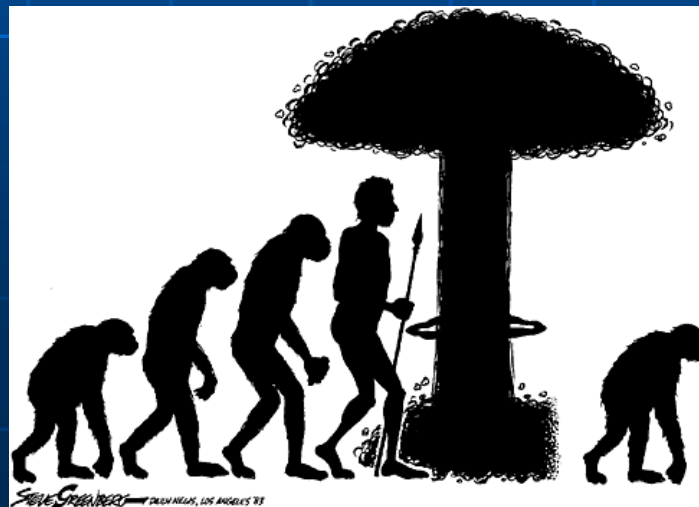
1. Negotiation  
GA endorsement
2. Signature  
Opening
3. Ratification  
Implementing legislation
4. Entry into force (EIF)

Example:  
Comprehensive  
Nuclear Test Ban  
Treaty (CTBT)



# TREATIES

# Weapons of Mass Destruction





# Hiroshima



15 kT



# 50 Megaton



Largest nuclear weapon test  
"Tsar Bomba", Novaya Zemlya  
October 30, 1961, yield 50 megatons

# Testing Control

## **Partial Test-Ban Treaty (PTBT)**

- 1963
- Bans nuclear weapon tests in atmosphere, outer space and under water

## **Comprehensive Nuclear-Test-Ban Treaty (CTBT)**

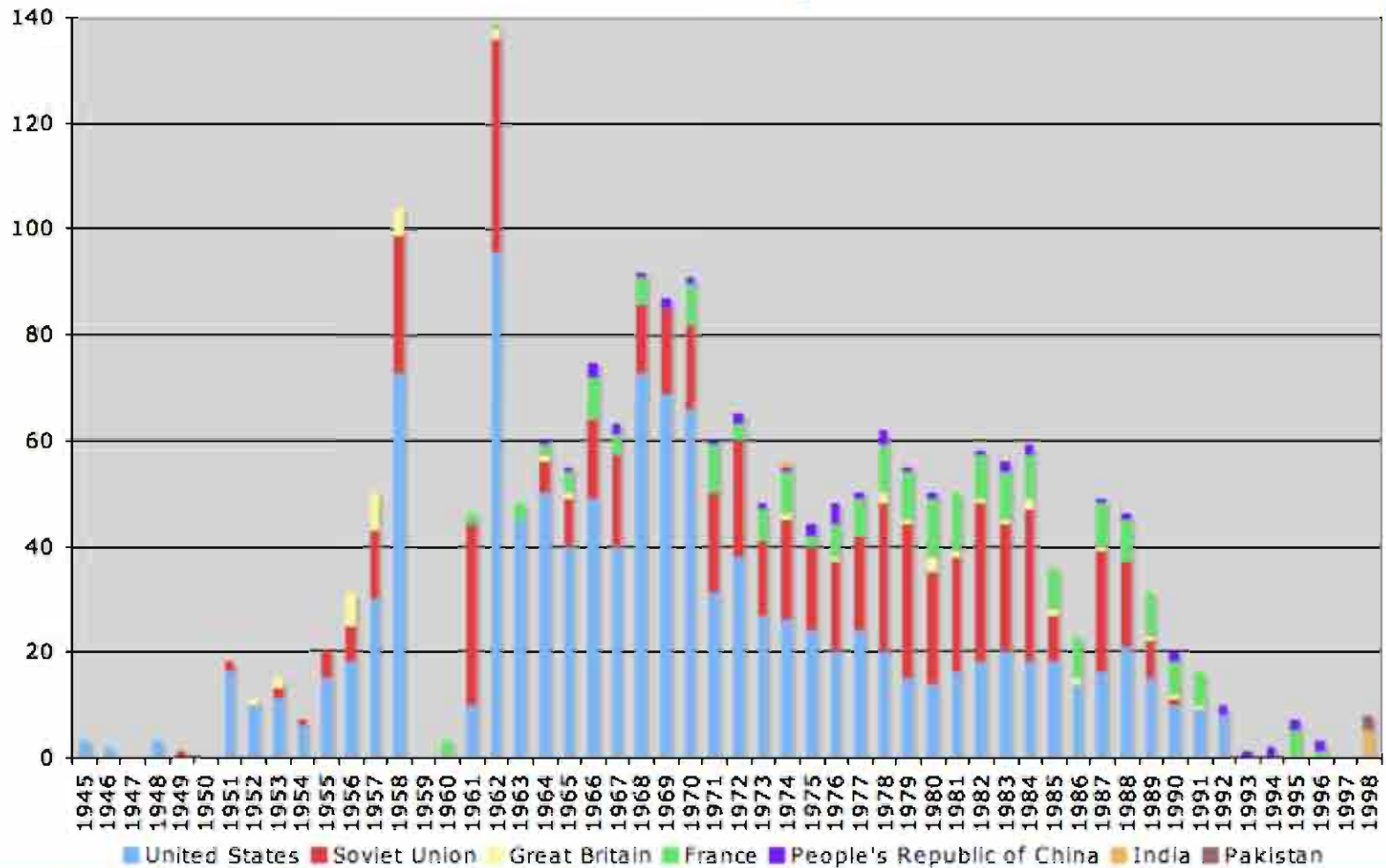
- 1996
- CTBT Organization (CTBTO) Preparatory Commission



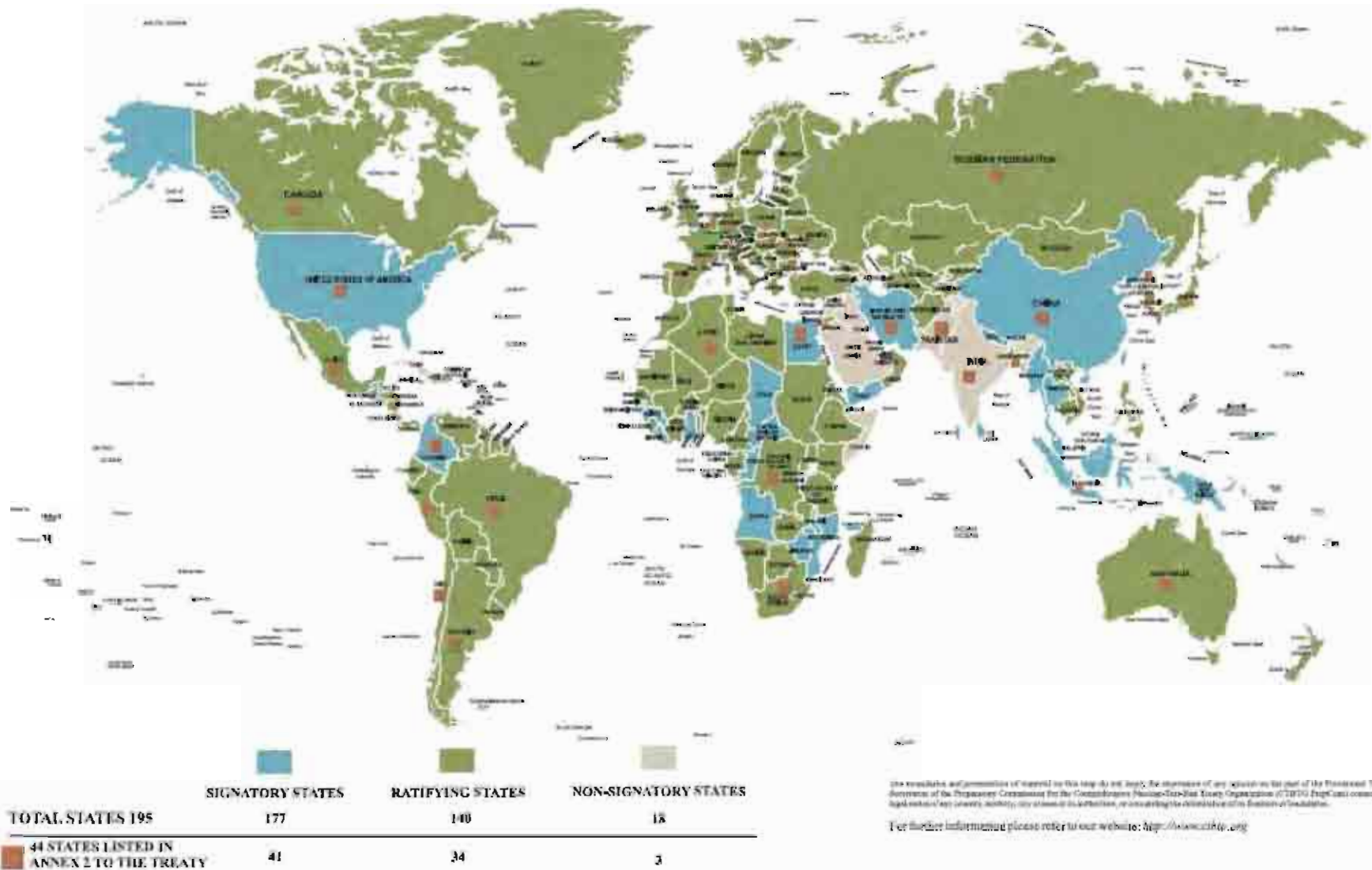
# NUCLEAR DISARMEMENT IN THE POST-COLD WAR ERA

PUGWASH NOVA SCOTIA  
1957 CONFERENCE

## Worldwide nuclear testing, 1945-1998



Status as of 4 September 2007



# Mitigating Nuclear Proliferation

## Nuclear Non-Proliferation Treaty (NPT)

- 1968, EIF 1970, 25 year term, renewed *indefinitely* 1995
- Two types of states
  - Nuclear Weapons States (NWS)
    - Fr, PRC, UK, US, USSR/R, UK only
  - Non-Nuclear Weapons States (NNWS)
- Grand bargain
  - NWS agree to share peaceful nuclear technologies
  - NNW states agree not to develop or acquire NWs



# NPT Article VI

*“Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to **nuclear disarmament**, and on a Treaty on general and complete disarmament under strict and effective international control.”*



# NPT Implementation

- 189 parties
  - Non-signatories: India, Pakistan, Israel & N. Korea
- International Atomic Energy Agency
  - Full-scope nuclear safeguards
  - Peaceful Uses



# IAEA Safeguards

- Over 900 facilities in 71 countries under inspection
- 250 inspectors, \$70 million per year
- Accountancy and physical inventory of materials
- Containment and surveillance
- Non-discriminatory approach
  - 79% spent in Canada, Europe and Japan
- Limited to declared materials and facilities
- Additional Protocol



# Bilateral Nuclear Agreements

## Strategic Arms Limitation Treaty (SALT) I

- 1972
- Froze number of strategic ballistic missile launchers



## Anti-Ballistic Missile (ABM) Treaty

- 1972
- 2002 US withdrawal

## SALT II

- 1979



## Intermediate-Range Nuclear Forces (INF) Treaty

- 1987
- 500-5,500 km range
- 2,692 destroyed (846 US, 1,846 Soviet Union)
- 2007: Putin threatens to withdraw



## Strategic Arms Limitation and Reduction Treaty (START I)

- 1991
- 6,000 deployed warheads (WH)



## START II

- 1993
- WH ceiling 3,000–3,500
- U.S. ABMT withdrawal, Russia not bound



## Strategic Offensive Reductions Treaty (SORT)

- Signed 2002; EIF 2003
- "Moscow Treaty"
- Deployed WH to 1,700-2,200 by 2012
- Expires 2012





# Nuclear Weapon-Free Zones



**Treaties:** Antarctic (1959); Tlatelolco (1967); Rarotonga (1985); NZ (1987); Palendaba (1996); Bangkok (1995); CANWFZ (2006)

# North Korea

- 1994 Framework Agreement
  - Freezes graphite-moderated reactor and related facilities/fuel; IAEA monitoring
  - \$4 billion incentives
    - Heavy fuel oil and two proliferation-resistant nuclear reactors
- Withdrawal
  - 2002 US announces N. Korea admitted to covert uranium enrichment program
  - Korean Peninsula Energy Development Organization (KEDO) cut off fuel oil shipments
  - IAEA inspectors ejected in 2002; withdraws from NPT
  - Restart nuclear reactor (>50 kg HEU)
- 2006 Nuclear Test
- 2007 Agreement
  - Six nation talks
  - Second summit



# Outer Space



- 1963 Partial Test-Ban Treaty
- 1967 Outer Space Treaty

“Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies”

- No WMD in orbit or on celestial body
- Moon only for peaceful purposes, no national claims
- 1979 Moon Treaty expanded OST but unratified by any major space-faring power



# Chemical Weapons

## Geneva Protocol

- Signed 1925
- Prohibits the use of biological & chemical weapons in war



## Chemical Weapons Convention (CWC)

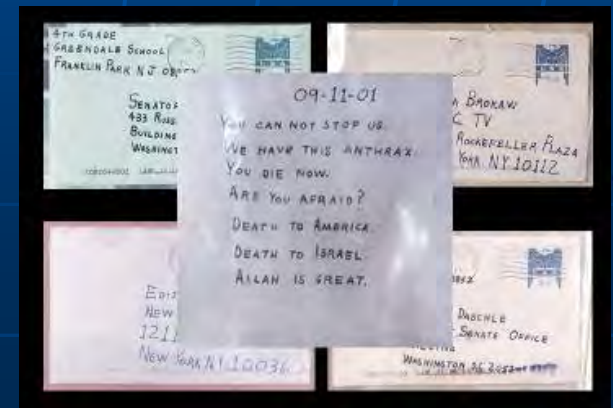
- Signed 1993; EIF 1997
- Organisation for the Prohibition of Chemical Weapons (OPCW)
  - The Hague



# Bioweapons

## Biological and Toxin Weapons Convention (BTWC or BWC)

- EIF 1975
- Small pox, anthrax, plague, botulism
- Prophylactic (defensive) research allowed
- No verification provisions
  - Proposed Verification protocol



# Conventional Arms Control

- Main conventional weapons
- Small arms and light weapons
- Anti-personnel mines (APM)

# Early Arms Control (Naval)

## Rush-Bagot Treaty (1817)

- First US arms control treaty
- Limits naval vessels on Great Lakes



## Washington Naval Treaty (1922)

- Five-Powers: US, British Empire, Japan, France, Italy
- Limited tonnage

# Small Arms & Light Weapons

- Real weapons of “mass murder”
- Estimated 639 million small arms and light weapons (SALW) in circulation worldwide.
- 49 major conflicts in 1990s, 47 small arms weapons of choice
- 300,000 killed every year by SALW



# SALW (Cont'd)

- United Nations Conference on the Illicit Trade in Small Arms and Light Weapons in All Its Aspects will take place
  - 2001 and biennially
  - SALW Programme of Action
- Practical Disarmament Measures
  - Trust Fund for the Consolidation of Peace through Practical Disarmament Measures



# UN Conference and Beyond

- Encourage greater transparency: “lessons learned” on SALW Programme of Action
  - SALW reporting mechanisms
- Norms of behaviour against illicit SALW
- Controls on brokers of SALW
- Engage/assist civil society
- Momentum on the international agenda





# Anti-Personnel Mine Treaty

- Ottawa Process / Convention
  - Ottawa 1997; EIF 1999
  - Expands Protocol II of the Convention on Certain Conventional Weapons
- 122 original signatories, currently 156
  - 39 countries have not joined yet
- Producing countries from 50 to about dozen
- Trade almost non-existent
- Only Burma and Russia use APM
- 40 million stockpiled mines destroyed
- \$400 million spent globally per year on mine action
- Victim assistance



# 1997 Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Antipersonnel Mines and on their Destruction



# UN Transparency Measures (Voluntary)



- **Register of Conventional Arms**
  - Annual reporting since 1992
    - battle tanks, armoured combat vehicles, large-calibre artillery systems, combat aircraft, attack helicopters, warships (including submarines), missiles and missile-launchers
  - 170 Member States reported one or more times
- **System for the standardized reporting of military expenditures**
  - Introduced 1980
  - World-wide platform for nations on defence spending
- **Comparison of military data**
  - Among nations
  - Of nations over time
- **Incentive for dialogue among nations**
- **Creation of an atmosphere of openness and trust**
- **Eventually lowering of military expenditures/arms**



# Transparency in Military Expenditures

RUSSIAN FEDERATION (millions of rubles)

Fiscal year: 2000

FORCE GROUPS----->	LAND FORCES	NAVAL FORCES	AIR FORCES	OTHER COMBAT FORCES	CENTRAL SUPPORT ADMINISTRATION AND COMMAND		PARAMIL ITARY FORCES	UNDIST RIBUTED	TOTAL MILITARY EXPEN DITURES	CIVIL DEFENCE
					SUPPORT	COMMAND				
RESOURCE COSTS	2	3	4	5	6	7	8	12	13	14
2.1.11 OTHER	974	1,031	567	2,048	1,356	153	14		6,143	77
2.2 CONSTRUCTION	2,768	1,432	2,126	3,298	1,074	584	1,270		12,552	23
2.2.1 AIR BASES, AIRFIELDS		160							160	
2.2.2 MISSILE SITES				710					710	
2.2.3 NAVAL BASES AND FACILITIES		165							165	
2.2.4 ELECTRONICS, ETC...										
2.2.5 PERSONNEL FACILITIES	2,364	998	2,005	1,705	738	376	87		8,273	9
2.2.6 MEDICAL FACILITIES	65	45	38	108	175				431	
2.2.7 TRAINING FACILITIES	20	8	3	4	38	6			79	
2.2.8 WAREHOUSES, DEPOTS, ETC	35	16		41	47	3			142	4
2.2.9 COMMAND AND ADM. FACILITIES	65	6	25	443		63			602	10
2.2.10 FORTIFICATIONS						5			5	
2.2.11 SHELTERS										
2.2.12 LAND										
2.2.13 OTHER	219	34	55	287	76	131	1,183		1,985	
3. RESEARCH AND DEVELOPMENT	1,305	2,382	1,564	4,205	2,928	2,412	37		14,833	14
3.1 BASIC AND APPLIED RESEARCH	74	85	44	459	580	72			1,314	14
3.2 DEVELOPMENT, TESTING AND EVALUATION	1,231	2,297	1,520	3,746	2,348	2,340	37		13,519	
4. TOTAL (1+2+3)	63,974	21,514	20,151	22,651	31,354	5,609	13,530	22,465	201,248	1,401



# Conference on Disarmament (CD)

- Established 1979 as disarmament negotiation forum
  - BTWC, CWC, CTBT
  - 65 Member States
- Current issues:
  - Nuclear disarmament
    - Fissile material cutoff treaty (FMCT)
  - Negative security assurances (NSA)
  - Prevention of nuclear war
  - Prevention of an arms race in outer space (PAROS)
  - Transparency
  - Deadlock
    - PAROS



# Cluster Munitions Ban

- Convention on Cluster Munitions (May 2008)
- Norwegian lead (Ottawa process)
- Signing ceremony (Dec 2008)



# Regional Disarmament & Confidence-building Measures

(Europe)



# Conventional Armed Forces in Europe (CFE) Treaty

- Signed 1990; Adapted 1999
- 30 participating states (22 Allies + 8 Partners)
- Land Areas “From Atlantic To Urals”

## Goals:

- Establish a secure & stable balance of conventional armed forces at lower levels
- Eliminate capability for surprise attack & large scale offensive action
- Establish new pattern of security relations

# CFE Treaty

## Accomplishments:

- 60,000 TLE reduced
- 4,000+ on-site inspections
- CFE demonstrated viability in peacetime and during crises
- New pattern of European security relations has been established
- Threatened 2007
  - BMD
  - Russia suspend treaty



# Vienna Document (VD-99)

- 54 states in Organization for Security and Cooperation in Europe (OSCE)
- CSBMs to increase transparency and predictability
- Sharing info
  - Holdings, organization, doctrine and supporting defence budgets
- Constrains size of specified military activities
- Intrusive inspection and observation regime.  
Provides measures to reduce risk and assist in crisis management
- Series of CSBM documents (VD90 and VD94) part of Helsinki process dating to 1975
- Signed 1999 as a politically binding document

# Open Skies

- Unarmed aerial surveillance flights over entire territory of participants
- From "Vancouver to Vladivostok"
- Negotiations started in Ottawa (1990)
- Signature in Helsinki (1992)
- Depositories: Canada and Hungary
- EIF 2002
- 34 States Parties



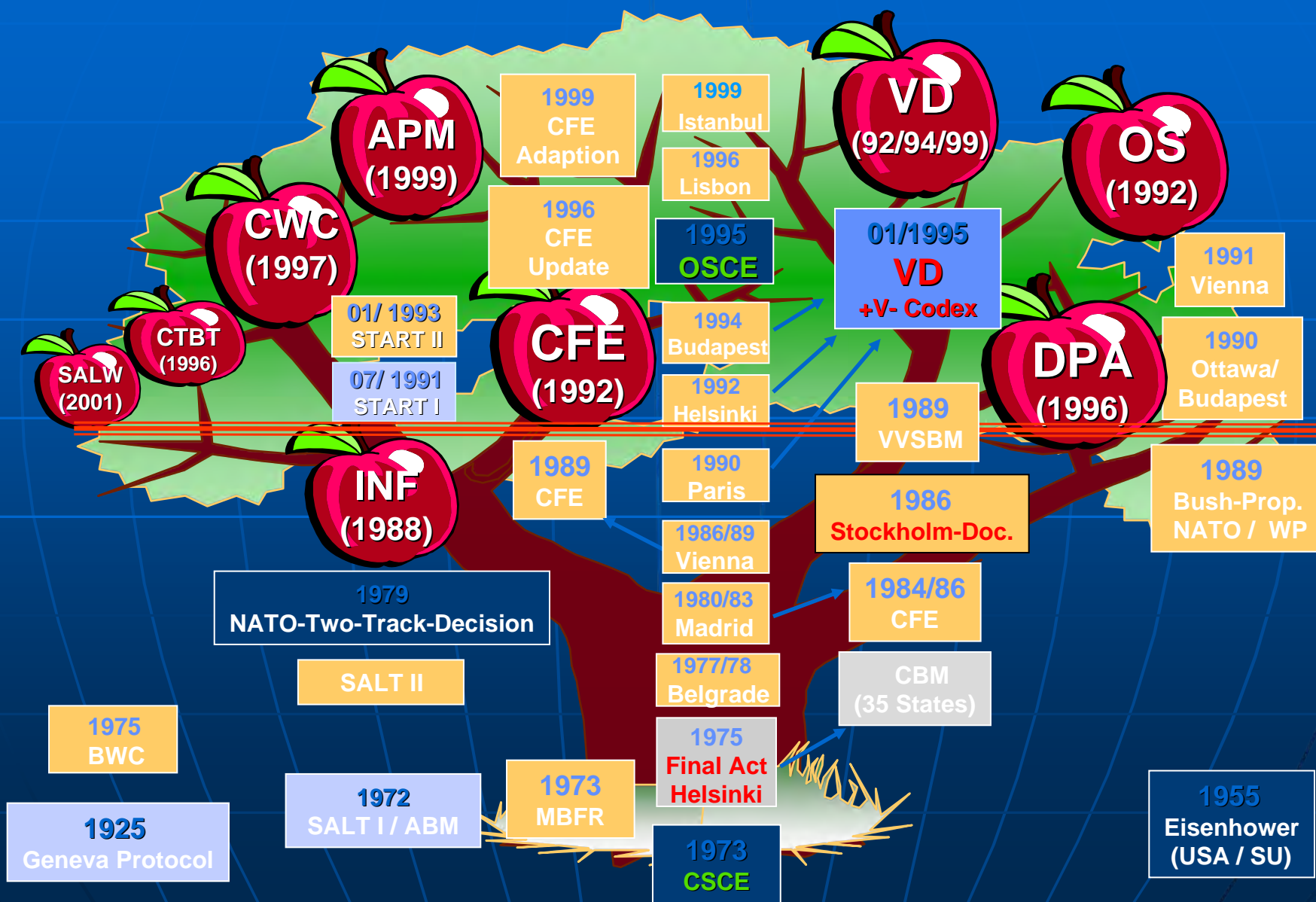
- Open Skies Consultative Commission (OSCC), Vienna
- Aircraft: observing *or* observed party ("taxi option")
- Sensors
  - Video, optical panoramic and framing cameras
  - Infra-red line scanners
  - Synthetic aperture radar
  - Commercially available to all
  - Recognize major equipment (tank/truck)
  - 30 centimetres resolution (limit)
  - Imagery available to any State Party
- Canada
  - CC-130
  - "SAMSON" sensor pod (converted fuel tank)
  - Consortium (Belgium, Netherlands, Luxemburg, Canada, France, Greece, Italy, Norway, Portugal, and Spain)
  - Shared flights with US

## ■ OS Quotas

- Accept proportion of its quota
  - US annual passive quota for US: 31 observation flights a year (first three-years)
  - Two flights requested over US in 2005: Russian Fed. & Belarus Group
- US entitled to 8 of the 31 annual flights available over Russia/Belarus.



# Arms Control Family Tree (Europe)



# Counter-Proliferation



# Reducing the SALW Threat: Physical Security & Stockpile Management

## ■ Goal

- Improve Security and Accountability
- Focus: Man Portable Air Defence Systems (MANPADS), Ammunition and High Explosives

## ■ Method

- Assessments
- Executive & Technical Seminars

## ■ Bottom Line

- "Supports War on Terrorism"
- "Big Return, Small Investment"

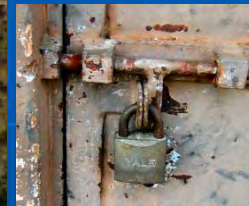






# MANPADS Storage Conditions

- Often poorly secured
- No fences, lighting or security
- Homes located 100m away



Antique lock securing bunker

- Usually SA-7, 14 or 16 missiles
- Manufactured 1978-1983.
- All moisture barrier seals broken
- Propellant deteriorated







Physical Security and Stockpile Management Mission  
Republic of the Congo

# Controlling Non-State Actors: UN Security Council Res 1540

- Adopted April 2004
- Prohibits supporting non-state actors
  - in developing, acquiring, possessing, transporting, transferring or using WMD
- Mandatory domestic legislation and controls
- 1540 Committee to monitor compliance





# G8 Global Partnership

- Informal partnership of G8 countries
  - France, Germany, United States, United Kingdom, Italy, Japan, Canada, Russia
- Kananaskis Summit, 2002
  - G8 “Global Partnership Against the Spread of Weapons and Materials of Mass Destruction”



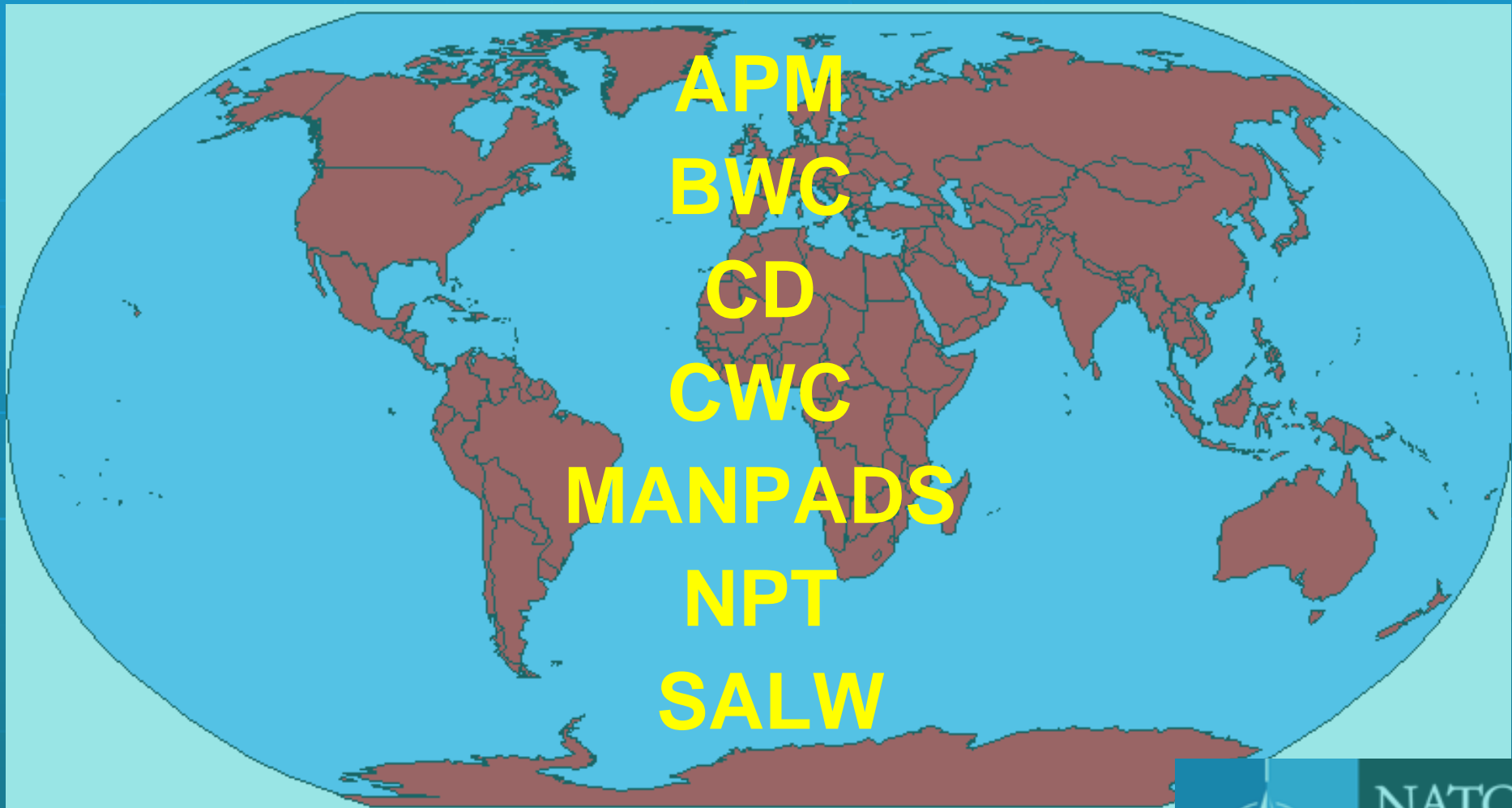
# Canadian Forces Arms Control Verification Operations

*Images in separate file  
showing*

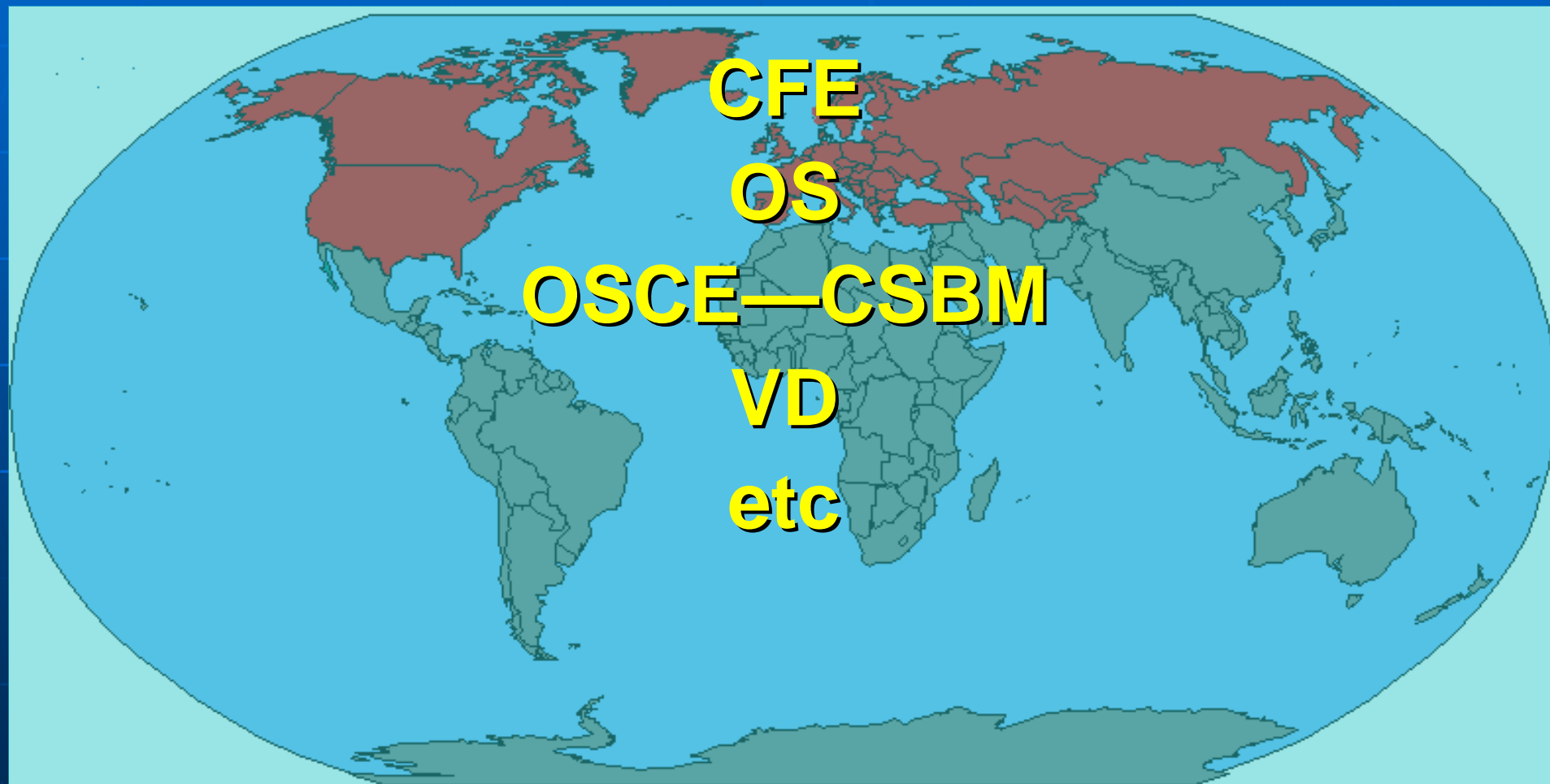
ACV-SJS, CFE, VD99, OS, DPA, CWC,  
GEMI, SALW/PSSM/MANPADS

# Conclusion

# Global Arms and Proliferation Control



# Regional Arms Control and Confidence Building (OSCE Area)



OTAN



# On Hold

- PAROS
- BTWC Verification Protocol
- CFE
- Fixing the “leaking roof”
  - Most needed when hardest to do
  - Easiest when least needed

# Future “Arms Trade Treaty”?

- UK-led Dec 2006 GA res (151:1:24)
- Regulated arms trade
  - Illicit brokers: “Merchants of death”
- Right of all states to participate in arms trade
- Global standards (human rights and IHL), sustainable development & good governance
- All int. transfers
- Info sharing, monitoring & enforcement mechanisms
- Group of Experts

# Future Nuclear Arms Control?

- Fissile Material Cutoff Treaty (FMCT)
- No-First Use Treaty
- Further Nuclear-Weapons Free Zones (Arctic, Middle East, Europe, etc.)
- More steps: Deep cuts, de-alerting, sequestration
- Nuclear Weapons Convention
  - Proposed by civil society
  - Submitted by Costa Rica to the UN General Assembly in 1997

# THE END



# Syndicate Discussion and Questions





**The End**



**IF I SEE ONE MORE POWER POINT  
SLIDE, I'LL SHOOT!!!**