

International Nonproliferation Regimes and Arrangements

Regional Forum on Transshipment Controls

Bangkok

December 11, 2002

Framework of Export Control Regimes

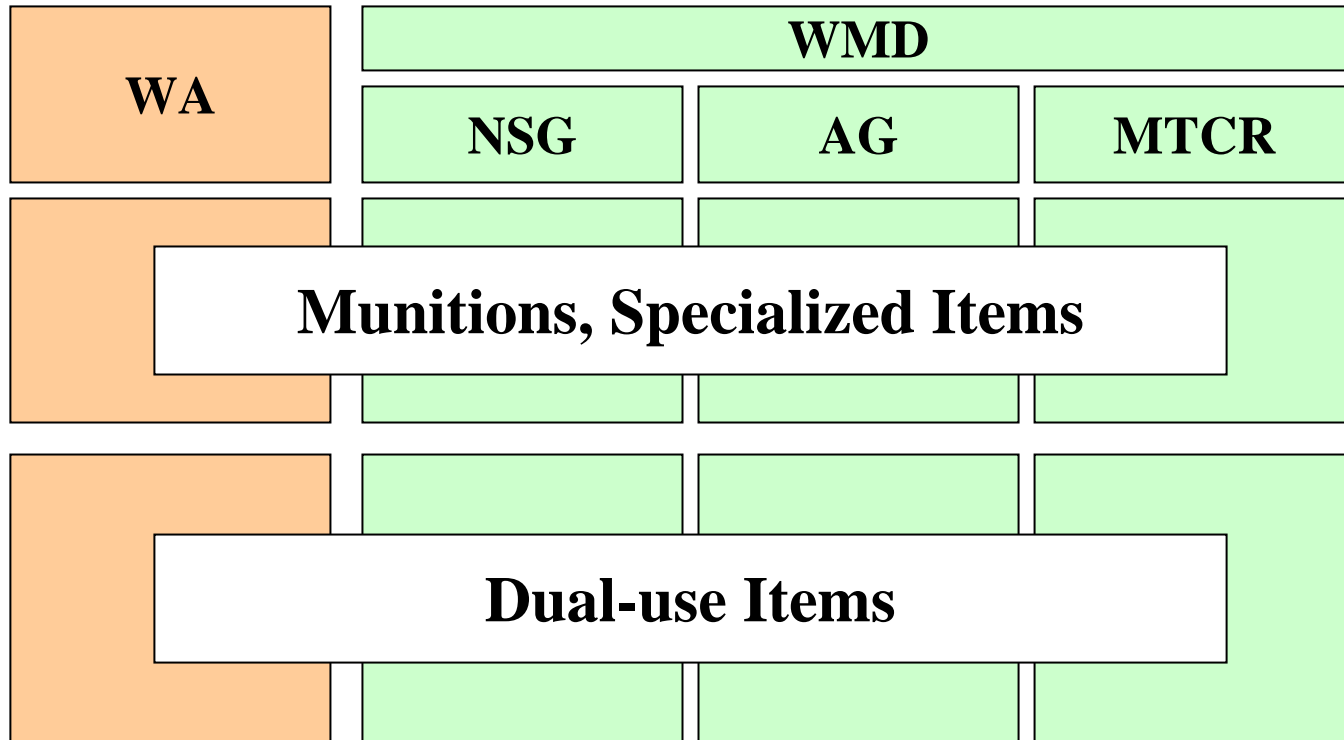
	Conventional Weapons	Weapons of Mass Destruction			
		Nuclear	Chemical	Biological	Missile
Treaty		NPT	CWC	BWC	
Export Control Regime	Wassenaar Arrangement (WA)	Nuclear Suppliers Group (NSG)	Australia Group (AG)	Missile Technology Control Regime (MTCR)	

NPT: Non-Proliferation Treaty
CWC: Chemical Weapons Convention
BWC: Biological Weapons Convention

Nature of Export Control Regimes

- Voluntary, non-binding arrangements
- Participation of like-minded supplier countries
- Agreed guidelines and control lists as the basis for national measures
- Information exchange

Coverage of Export Control Regimes



WMD : Weapons of Mass Destruction
Item : commodity, software, technology

Controlled Items (1): Munitions, Specialized Items

- **WA** Munitions
 - Guns, Bombs
 - Military ground vehicles, Military aircraft
 - Vessels of war etc.

- **NSG** Nuclear materials and equipment
 - Special fissionable material
 - Nuclear reactors
 - Uranium enrichment plant etc.

- **AG** (Chemical precursors, Biological agents)
 - Precursors of toxic chemicals
 - Viruses, Bacteria, Toxins etc.

- **MTCR** Missile system, Major subsystems
 - Individual rocket stages, Rocket engines
 - Guidance sets etc.

Controlled items (2) : Dual-use Items

- ‘Dual-use’ items
can be used...
 - in military and WMD-related uses
 - in commercial uses for peaceful purpose
- Rationale for the control of dual-use items
 - Militaries increasingly rely on commercial technology.
 - Because of stringent control of WMD items, proliferators may seek to develop indigenous WMD programs, using dual-use items.

Dual-use items in WMD programs : Example

Nuclear Weapon



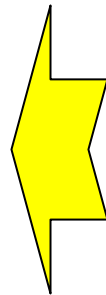
Enriched Uranium



Gas-centrifuges

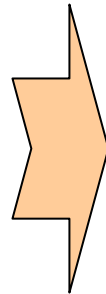


NC machine tools
Aluminum alloys
etc.



Stringent control

eg. Full-scope safeguard agreement
with IAEA



Dual-use Items

Controlled when these items exceed
technical specifications

Dual-use Items : Examples(1)

WA

- Advanced materials
 - Radar absorbing materials
 - Material processing
 - Machine tools
 - Electronics
 - Microprocessors, Lithography equip.
 - Computers
 - Telecommunications
 - Optical fibers
 - Information security
 - Cryptography software
 - Sensors and lasers
 - Radar
 - Navigation and avionics
 - Gyroscopes
 - Propulsion
 - Gas turbine engines
- etc.

NSG

- Industrial equipment
 - Machine tools
 - Materials
 - Carbon fibers, Alloys
 - Uranium isotope separation equip.
 - Frequency changers
 - High-voltage DC power supplies
 - Heavy water production plant related equipment
 - Pumps
 - Test and measurement equipment
 - Electric streak cameras
 - Components for nuclear explosive devices
- etc.

Dual-use Items : Examples(2)

AG

- Dual-use precursor chemicals
 - Thiodiglycol
- Chemical manufacturing equipment
 - Reaction Vessels
 - Storage tanks
 - Heat exchangers
 - Pumps and valves
- Biological equipment
 - Containment facilities
 - Fermenters
 - Centrifugal separators
 - Cross flow filtration equipment

etc.

MTCR

- Propulsion equipment
 - Lightweight turbo-jet engines
- Navigation equipment
 - Accelerometers
- Avionics
 - GPS
- Propellant
 - Oxidisers/Fuels
- Structural materials
 - Composites materials
 - Maraging steels
- Test equipment
 - Vibration test equipment

etc.

Dual-use items : Example(3)

	Use of Concern	Legitimate Use
Machine tools	Gas centrifuge, Fabrication of WMD	Parts and components of various machinery
Carbon fibers	Missile components	Golf club shafts, Fishing rods
Thiodiglycol	Mustard gas	Plastics, Dyes,Inks
Freeze-drying equipment	Stabilize biological agents for BW	Instant coffee

How to Control Dual-use Items

- Item

-specifications?

- ✓ Technical evaluation
- ✓ Identify use of concern

- End-user

-any concern?

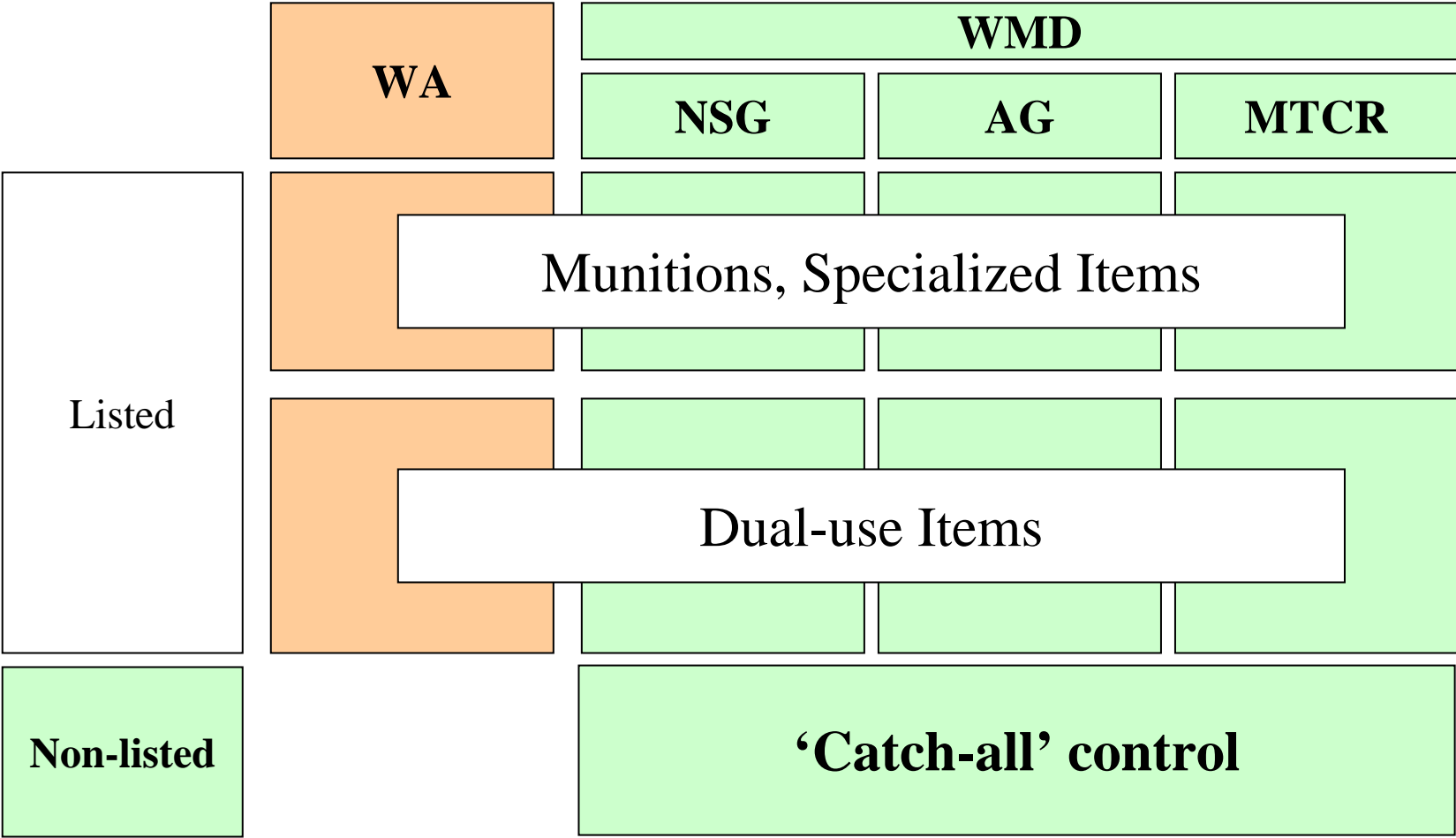
- ✓ Country of concern?
- ✓ Products and services
- ✓ WMD activities?
- ✓ Shareholders & Customers

- End-use

-any concern?
-risk of diversion?

- ✓ Reasonable specification?
- ✓ End-use certificate
- ✓ Business plan
- ✓ Evidence

'Catch-all' control



‘Catch-all’ Control : Why?

- List Control is not perfect.
- Not only high-tech (listed) items, but low-tech (non-listed) items may contribute to WMD development programs.
 - Lessons of UN inspection in Iraq
- Including all items to control lists is unrealistic.

‘Catch-all’ Control : How?

Export license is required...

- for items that are not on control lists
- but that could contribute to WMD proliferation program if exported.
 - when ‘informed’ by the government.
 - when the exporter is ‘aware’ that items are intended to contribute to WMD activities.

Example of 'Catch-all' Control

Item : Vacuum Freeze Dryer

- Destination: North Korea
- Stated End-Use:
 - used in a food factory
- End Use of Concern:
 - to stabilize viruses and bacteria
 - for biological weapons



For Effective and Efficient Export Control

- Export control is not intended to impede international trade.
- Government-Industry cooperation
- International cooperation
 - Outreach activities
 - Transshipment control