Japan’s BMD

September, 2008
Ministry of Defense, Japan
### Characteristics of Ballistic Missile

<table>
<thead>
<tr>
<th>Ballistic Missile</th>
<th>Cruise Missile</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ High trajectory flight; propelled by rocket engine</td>
<td>○ Aircraft-like guided missile; propelled by jet engine</td>
</tr>
<tr>
<td>○ Capable of attacking targets over long distances</td>
<td>○ Capable of low altitude flight</td>
</tr>
<tr>
<td>○ High speed</td>
<td>○ Highly accurate with in-flight course adjustment capability</td>
</tr>
</tbody>
</table>

#### Type Range Time Re-entry Speed

<table>
<thead>
<tr>
<th>Type</th>
<th>Range</th>
<th>Time</th>
<th>Re-entry Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-range Ballistic Missile</td>
<td>Approx. 1,000km and less</td>
<td>Approx. 5-10 min.</td>
<td>1 ~ 3 km/second (Approx. Mach 3-9)</td>
</tr>
<tr>
<td>Medium-range Ballistic Missile</td>
<td>Approx. 1,000-5,500km</td>
<td>Approx. 10-20 min.</td>
<td>3 ~ 7 km/second (Approx. Mach 9-21)</td>
</tr>
<tr>
<td>Long-range Ballistic Missile</td>
<td>Approx. 5,500km-</td>
<td>Approx. 20-30 min.</td>
<td>7 ~ 8 km/second (Approx. Mach 21-24)</td>
</tr>
</tbody>
</table>

※1 Medium-range Ballistic Missile can be categorized into intermediate class.

※2 (Ref.) The maximum speed of F-15 is Approx. Mach 2.5 (Approx. 0.85 km/second).

**Challenges to Interception of Ballistic Missiles**

| High speed | · Intercept speeds far exceed hitting a bullet with another bullet |
| Short Response time | · Time available to detect and intercept missiles is very short |
| High Altitude | · Advanced technology required capable of guiding interceptors accurately at extremely high altitudes |
| Small target | · Need improved radar capability to detect and track small, high speed target missiles plus capability to destroy them by a hit-to-kill |

**Requires High Performance Intercept System**
### Current Situations of Ballistic Missile Proliferation

#### As of 2008

<table>
<thead>
<tr>
<th>Nations or Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
</tr>
</tbody>
</table>

| United States    |
| United States    |
| Cuba             |
| Ecuador          |
| Peru             |
| Argentina        |
| DPRK             |
| ROK              |
| China            |
| Taiwan           |
| Vietnam          |
| Algeria          |
| Libya            |
| Sudan            |
| Congo            |
| Afghanistan      |
| Syria            |
| Israel           |
| Egypt            |
| Ethiopia         |
| Saudi Arabia     |
| UAE              |
| Yemen            |
| Iran             |
| Bahrain          |
| India            |
| Pakistan         |
| Angola           |
| UK               |
| France           |
| Italy            |
| Serbia           |
| Turkey           |
| Poland           |
| Ukraine          |
| Bosnia-Herzegovina |
| Greece           |
| Belarus          |
| Romania          |
| Bulgaria         |
| Kazakhstan        |
| Armenia          |
| Azerbaijan        |
| Turkmenistan      |
| Georgia          |
| Russia           |

<Notes>
- The above chart indicates the nations which have or are suspected to have developed, possessed, and imported in the past "Ballistic Missile" or "Unguided Rocket", as defined in Janes' and/or The Military Balance.
- The missiles include those equipped with multipurpose rocket system developed by the U.S. and short-range FROG-7, etc developed by the Soviet Union in 60's.
- The number of nations above includes the nations which have gained independence from the former Soviet Union. (Missiles of these nations may be under the control of Russia now.)

One of the factors that make long-range ballistic missiles attractive as a delivery vehicle for weapons of mass destruction is that the United States and our allies lack effective defenses against this threat.

“National Policy on Ballistic Missile Defense” The White House 2003.5.20
It has been revealed, by DPRK MOFA spokesman (Dec 2002) that DPRK not only produces missiles but also exports them to gain foreign currency.
The U.S. BMD Deployment Plan
(Reference: MDA FY09 request etc.)

FY09 Budget for Missile Defense
(Ref. 2008.02.04 President Bush’s FY2009 Defense Budget)

$10.5B (¥1,050B) Total
Up 9% from previous fiscal year

Rate: $1=¥100

※ FY08 Budget: $9.6B (¥960B) Total

<table>
<thead>
<tr>
<th>Category</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDA (Total: 9,336)</td>
<td></td>
</tr>
<tr>
<td>Boost Phase</td>
<td>$421</td>
</tr>
<tr>
<td>Midcourse Phase</td>
<td>$2,076</td>
</tr>
<tr>
<td>Terminal Phase</td>
<td>$1,019</td>
</tr>
<tr>
<td>Sensor and others</td>
<td>$1,077</td>
</tr>
<tr>
<td>Technology Development &amp; Testing</td>
<td>$4,742</td>
</tr>
<tr>
<td>Joint Staff/Army (Total: 94)</td>
<td>System Research etc $96</td>
</tr>
</tbody>
</table>

Category | Budget |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Patriot PAC-3</td>
<td>$523</td>
</tr>
<tr>
<td>MEADS</td>
<td>$462</td>
</tr>
</tbody>
</table>

Sea-based Midcourse Defense
Aegis Engagement Cruisers/Destroyers
(18 by FY2008)
→52 SM-3 by 2009

<SMDFlyingdales, UK>

Upgraded Early Warning Radar
Upgraded Early Warning Radar
Deployed to each place
Ground-based X-band Radar ×3

<MDib> (Thule, Greenland)
(Upgraded and integrated by 2009)

Upgraded Early Warning Radar
Early Warning Satellite

<MDi>

Ground-based Interceptors: 22 msls (Alaska)

<MDii>

Ground-based Interceptors: 2 msls (California)

<MDii>

GMD interceptors (Alaska+California) plan to be increased to 30 msls

<PAC-3>: 712 msls (By 2009)

Beale AB

Sea-based X-band Radar

Cobra Dane

Deployed inside/outside the U.S.
Japan’s BMD Architecture

- Ballistic Missile
- Detection & track by various sensors (Ground-Based Radar, Aegis SPY-1 Radar)
- Exo-atmospheric intercept by Aegis BMD system
- Endo-atmospheric intercept by PAC-3
- PAC-3 missile
- Patriot PAC-3 System (Terminal-phase BMD)
- SM-3 missile
- Ground-Based Radar
  - FPS-5
  - FPS-3UG (Upgraded)
- Defended Area by Aegis BMD system
- Defended Area by PAC-3
- Aegis BMD system (Midcourse-phase BMD)
- Aircraft warning and control units
- BMD Commander
- JADGE system
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993 Dec</td>
<td>Started consultations with the U.S. on BMD</td>
</tr>
<tr>
<td>1995 Apr</td>
<td>JDA commenced BMD study (possible BMD architecture, cost estimation, other issues)</td>
</tr>
<tr>
<td>1998 Dec</td>
<td>The beginning of Japan-US Cooperative Research Project was approved by the Security Council of Japan and the Cabinet. (Memorandum of Understanding was signed with the US in Aug 1999).</td>
</tr>
</tbody>
</table>
| 2002 Dec | Japan-US Defense Summit meeting: Minister Ishiba met US Secretary Rumsfeld  
"Japan will conduct study with the perspective of future development and deployment" [Minister Ishiba] |
| 2003 May | Japan-US Summit meeting: PM Koizumi met President Bush  
"Japan further accelerates its consideration on Missile Defense" [PM Koizumi] |
| 2003 Aug | JDA requested BMD related budget for FY 2004 to MOF for the first time  
Dec | GOJ’s decision on introduction of BMD system |
| 2004 Dec | New NDPG and MTDP showed GOJ’s strong commitment on BMD. Japan and the US signed BMD Framework MOU for broader and deeper cooperation |
Oct | SCC Documents emphasized the importance of Japan-US BMD cooperation  
Dec | GOJ’s decision on start of SM-3 Joint Cooperative Development |
| 2006 Jun | THE STANDARD MISSILE–3 BLOCK IIA COOPERATIVE DEVELOPMENT (SCD) PROJECT (US-Japan) started |
| 2007 Mar | PATRIOT PAC-3 deployed at Iruma Air Base (Japan’s first interceptor in history)  
Dec | KONGO successfully conducted first SM-3 Flight Test. (Japan's first SM-3 Capability) |
The Government of Japan decided to introduce the multi-layered defense system composed of Aegis BMD system and Patriot PAC-3.

The technological feasibility of BMD system has been verified through the results of interception tests and various performance evaluations in the United States and also through our own simulation results.

BMD system is the only and purely defensive measure, without alternatives, to protect life and property of the citizens of Japan against ballistic missile attacks, and meets the principle of exclusively defense-oriented national defense policy. Therefore, it is considered that this presents no threat to neighboring countries, and does not affect the regional stability.

The Japan-U.S. Joint Technological Research Project currently undergoing is not for the system being introduced this time, but it aims to improve the capability of future interceptor. It remains important to carry on the Research Project in order to take all possible measures to ensure national defense.
Japan’s NDPG (National Defense Program Guideline) and MTDP (Mid-Term Defense Program) (Dec. 2004) clearly state the importance of establishing BMD capability.

- MTDP states that GOJ will improve AEGIS and PATRIOT system.
- NDPG and MTDP clearly states the importance to enhance US-Japan BMD Cooperation.
- In the Annex of NDPG, GOJ sets an independent category of the main equipment and the major units for BMD as a “fourth category”, following “GSDF”, “MSDF” and “ASDF” categories.
Japan’s BMD Capability Buildup

<table>
<thead>
<tr>
<th>JFY</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012 …</th>
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<tbody>
<tr>
<td>Weapons</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>“Kongo” modification</td>
<td>“Chokai” modification</td>
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<td></td>
<td></td>
<td></td>
<td>“Myoko” modification</td>
<td>“Kirishima” modification</td>
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<td></td>
<td></td>
<td>PAC-3 installation (I): 4 FUs</td>
<td>PAC-3 installation (II): 4 FUs</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>PAC-3 installation (III): 4 FUs</td>
<td>PAC-3 installation (IV): 4 FUs</td>
</tr>
<tr>
<td>Sensors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FPS-5 (I)</td>
<td>FPS-5 (II)</td>
<td>FPS-5 (III)</td>
<td>FPS-5 (IV)</td>
<td>3 FPS-3 radars upgrade</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FPS-5 (I)</td>
<td>FPS-5 (II)</td>
<td>FPS-5 (III)</td>
<td>FPS-5 (IV)</td>
<td>4 FPS-3 radars upgrade</td>
</tr>
<tr>
<td>C2BMC (JADGE)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>System Design, Basic Design, Production, etc.</td>
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<td></td>
<td>Connection with FPS-5 etc.</td>
<td></td>
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<td></td>
<td></td>
<td>Connection with FBX-T etc.</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Connection with SEW etc.</td>
<td></td>
</tr>
</tbody>
</table>

- The acquisition of BMD major weapon systems (16 PAC-3 FU and 4 Aegis BMD), which current NDPG decided to introduce, has already been budgeted by JFY07.
- The first Aegis BMD Kongo became operational in December last year. MOD has established initial multi-layered BMD defense posture.
- 4 PAC-3 FUs were deployed by the end of JFY07.
## Budget related to BMD

### Program Title

<table>
<thead>
<tr>
<th></th>
<th>JFY04 Budget</th>
<th>JFY05 Budget</th>
<th>JFY06 Budget</th>
<th>JFY07 Budget</th>
<th>JFY08 Budget</th>
<th>JFY09 Request</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weapon System</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add BMD Capabilities to AEGIS (Including acquisition of SM-3 missiles and SM-3 firing test)</td>
<td>340</td>
<td>307</td>
<td>309</td>
<td>312</td>
<td>199</td>
<td>135</td>
</tr>
<tr>
<td>Upgrade Patriot System, etc*1</td>
<td>555</td>
<td>572</td>
<td>685</td>
<td>769</td>
<td>404</td>
<td>476</td>
</tr>
<tr>
<td>Acquire PAC-3 missiles</td>
<td>64</td>
<td>75</td>
<td>101</td>
<td>132</td>
<td>31</td>
<td>104</td>
</tr>
<tr>
<td><strong>Sensors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construct FPS-5, etc</td>
<td>--</td>
<td>0</td>
<td>189</td>
<td>185</td>
<td>180</td>
<td>202</td>
</tr>
<tr>
<td>Modify FPS-3UG, etc</td>
<td>--</td>
<td>--</td>
<td>28</td>
<td>27</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>C2BMC</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add BMD capabilities for JADGE and others*2</td>
<td>19</td>
<td>205</td>
<td>32</td>
<td>142</td>
<td>112</td>
<td>103</td>
</tr>
<tr>
<td>Install TDS, etc</td>
<td>13</td>
<td>31</td>
<td>17</td>
<td>5</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td><strong>Sub Total (Buildup of BMD Systems)</strong></td>
<td>991</td>
<td>1188</td>
<td>1361</td>
<td>1572</td>
<td>930</td>
<td>1032</td>
</tr>
<tr>
<td><strong>R&amp;D etc concerning Future BMD Systems</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan-U.S. Joint Cooperative Development concerning advanced SM-3 missile for ballistic missile defense and others*3</td>
<td>76</td>
<td>9</td>
<td>37</td>
<td>216</td>
<td>201</td>
<td>245</td>
</tr>
<tr>
<td>Participation to BMD Multinational Conference, etc.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Sub Total (BMD Research and Development)</strong></td>
<td>77</td>
<td>10</td>
<td>38</td>
<td>217</td>
<td>202</td>
<td>247</td>
</tr>
<tr>
<td><strong>Sub Total (Supplementary)</strong></td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>37</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1068</td>
<td>1198</td>
<td>1399</td>
<td>1826</td>
<td>1132</td>
<td>1279</td>
</tr>
</tbody>
</table>

*We added 76 billion yen for the early procurement of PAC-3 missile and 66 billion yen for the improvement of EP-3 in JFY2007 supplementary budget JFY2006. *1 Includes acquisition and modification costs of maintenance equipment, etc for Patriot system upgrade. *2 Includes C2BMC related budgets except for installing TDS. *3Figures of JFY04 and 05 represent the costs required for Japan-U.S Joint Technical Research only.
JMSDF ship *Kongo* was equipped with SM-3 BMD capabilities in Dec 07.

- Radar, software and launcher modified
- SM-3 missiles equipped inside VLS (Vertical Launch Systems).

*Japan’s first Aegis BMD Ship KONGO*

**Defended Area (Image) by Aegis BMD System**

- The entire territory can be defended by two to three Aegis BMD ships.
JFTM-1, JS Kongo SM-3 Flight Test, took place in the morning of 18th December 2007 (Japan Time) off Kauai Island, Hawaii. (1212PM 17 Dec., HT)
As the image shows, the target was successfully intercepted outside the atmosphere by the SM-3 missile fired by the JMSDF Aegis BMD Ship.
Deployment of PAC-3

-First PAC-3 unit was deployed in March 07 to Iruma AB.

Air Missile Defense Bn. 1
Iruma AB
(FY06-07)

Air Missile Defense Bn. 2
Kasuga AB
(FY10)

Air Missile Defense Bn. 4
Gifu AB
(FY09)

Air Missile Defense Training Gr.
2nd Technical School
Hamamatsu AB
(FY08)

Structure of Battalion

Formation of 1 FU (Fire Unit)

○ Launcher Stations × 5

○ Engagement Control Station (ECS)
○ Radar Set (RS)
○ Antenna Mast Group (AMG)
○ Electric Power Plant (EPP)

Equipped with PAC-3 missiles
Radar Sites

- FPS-5: Upgraded FPS-3
- OMINATO: Deployed by FY2010
- YOZADAKE: Deployed by FY2011
- SADO: Deployed by FY2009
- WAKKANAI: Upgraded by FY2009
- TOBETSU: Upgraded by FY2009
- ABASHIRI: Upgraded by FY2009
- NEMURO: Upgraded by FY2009
- OKUSHIRI: Upgraded by FY2008
- KAMO: Upgraded by FY2008
- WAJIMA: Upgraded by FY2009
- KYOGAMISAKI: Upgraded by FY2009
- OTAKINE: Upgraded by FY2008
- IIOKA (Research Facility)

Image of Sensor

- Tracking
- Detection

FPS-5
FPS-3 (Upgraded)
Japan-US BMD cooperation

• **Cooperation in the policy areas**
  - Requesting U.S. cooperation on earlier deployment of Japan’s BMD assets
  - Considering additional deployment of U.S. BMD assets to Japan
  - Information sharing: Ensuring the sharing of BMD-related information collected by Japan and U.S. BMD assets.

• **SM-3 Cooperative Development Project (SCD)**
  - Started in June, 2006 (revised MOU signed between Japan and U.S.). The project has been progressing steadily.

• **Cooperation in the operation areas**
  - U.S. BMD assets have been deployed to Japan, and Japan’s own BMD assets have been deployed since the end of JFY 2006. The phase of Japan-U.S. cooperation has now shifted to the operation areas.
Japan and the U.S. maintain a close relationship in ballistic missile defense. The U.S. BMD assets have been deployed to Japan step-by-step for the security of Japan and the region.

- 2006
  - Jun: FBX-T was deployed to JASDF Shariki Sub Base (Aomori).
  - Aug: USS Shiloh with the BM mid-course interception capabilities arrived at Yokosuka Naval Base.
  - Sep: PAC-3 battalion deployed to USFJ Kadena Air Force Base (Okinawa).
  - Dec: PAC-3 battalion commenced its operation.

- 2007
  - Jun: FBX-T relocated to the Objective Site (permanent site) on Shariki Sub Base.

Deployment Schedule of US BMD Assets to Japan

- Japan and the U.S. maintain a close relationship in ballistic missile defense. The U.S. BMD assets have been deployed to Japan step-by-step for the security of Japan and the region.
- 2006
  - Jun: FBX-T was deployed to JASDF Shariki Sub Base (Aomori).
  - Aug: USS Shiloh with the BM mid-course interception capabilities arrived at Yokosuka Naval Base.
  - Sep: PAC-3 battalion deployed to USFJ Kadena Air Force Base (Okinawa).
  - Dec: PAC-3 battalion commenced its operation.
- 2007
  - Jun: FBX-T relocated to the Objective Site (permanent site) on Shariki Sub Base.
US and JAPAN have conducted Joint Cooperative Research on AEGIS BMD Missiles. The purpose of the research is to increase capability of Future Standard Missiles of AEGIS BMD, rather than to increase capability of Current Standard Missiles for AEGIS BMD (Block 1A). The research is composed of the researches on the following four elements.

**Joint Cooperative Research on AEGIS BMD Missile**

- **Nosecone**
  - Protect Seeker and KW during inner space flight
  - Increase the credibility of separation of KW / Improve the response-performance

- **Seeker**
  - Discriminate and Track targets by using Infra-Red Radiation
  - Improve the capability to discriminate targets from decoys

- **Kinetic Warhead**
  - Attack and destroy targets with kinetic energy
  - Improve orbit collection
  - Capability and enlarge its interceptable area

- **Second Stage Rocket Motor**
  - Improve the flight speed
  - And enlarge its interceptable area
Overview of SM-3 Cooperative Development Project (SCD)

Project Goal
◆ To develop Advanced SM-3 missile for ballistic missile defense making the most of the cutting edge technologies of US and Japan.

Outline
◆ Features:
  – Improved kill capability
  – Increased battle space and defended area
◆ Spiral development with incremental capability improvements:
  – The requirements are developed through experimentation and risk reduction activities based on BMD system concept study; not just from the viewpoint of technological feasibility or BMD capability in the future, but of legal constraint, assumed future operational environment, threat, and the other various factors.
◆ Schedule for about 9 years (JFY06 – JFY14):
  – Observe the current schedule to complete SCD by JFY 2014.
◆ Cost:
  – Depends on sharing of work. Each side will bear the necessary costs to complete the development of allocated sections.

(Ref.) Currently the cost of Japan side is estimated $1.0-1.2B, the total is estimated around $2.1-2.7B. Necessary review will be done as the project progresses.
SCD System Engineering Process and Status

1. **Concept Definition**
   - Develop System and Component Guidelines

2. **Preliminary Design**
   - Develop preliminary design for the System components and subcomponents

3. **Detailed Design**
   - Develop detailed Design and Fabricate and Test Sub-Components

4. **Integration And Test**
   - Integrate Sub-Components and Components and Test

5. **Flight Test**

   - **MCP**: Mission Control Panel
   - **CDR**: Critical Design Review
   - **PDR**: Preliminary Design Review
   - **SDR**: System Design Review
   - **SRR**: System Requirements Review (completed)
   - **SCR**: System Concept Review (completed)

Current Status: Proceeding to SDR
(Basic Concept of This Legislation)
• Where Defense Order is issued, the Japan Self Defense Forces (JSDF) can take actions against incoming ballistic missiles in accordance with the Order. On the contrary, where the Order is not being issued, JSDF cannot take any actions under the current JSDF law.
• But, there is no other choice than to kill and destroy the incoming ballistic missiles by interceptors in order to prevent the enormous damage regardless of Defense Order is issued or not.
• This legislation covers the lack of the legal authority by adding a new Article to the JSDF law, taking the following into consideration….
  1. prompt and appropriate response
  2. secure strict civilian control

(Secure Strict Civilian Control)
• Under the new Law, the approval of the Prime Minister and the order of the Defense Minister are required to destroy the incoming ballistic missiles. And under certain circumstances where the response time is limited, the Defense Minister will be authorized to issue, in accordance with the Emergency Response Procedures made in advance by the Defense Minister with the approval of the Prime Minister, an order to destroy the ballistic missiles for a defined period of time.
Emergency Response Procedure for Ballistic Missiles or Other Objects

**Situation identified as having sufficient possibility that BM or other objects will fly toward Japan**

- **Examples:**
  - Expression of intent to attack Japan by another nation.
  - BM launch is imminent.

- **Identified as Armed Attack Situation**

- **Certified as Armed Attack Situation**

- **Minister of Defense issues Defense Operations Order**

- **BM or other objects fly toward Japan**

- **Interception** (Article 76)

  (Defense Operations)

**Situation identified as NOT having sufficient possibility that BM or other objects will fly toward Japan**

- **Examples:**
  - Only partial intelligence is available on possible BM launch.
  - A satellite or satellite launch rocket, having lost control due to an accident, has gone off orbit and may fall onto Japanese territory.

- **Minister of Defense issues Destruction Order in advance in accordance with Emergency Response Procedure**

  (*) Drafted by Minister of Defense, Approved by Prime Minister

- **BM or other objects are actually flying toward Japan**

- **Interception** (Article 82-2 (1))

  (Defense Operations)

  (Destruction Measures against BM or Other Objects)

- **Interception** (Article 82-2 (3))
Minister of Defense may order destruction when:

- It is likely that ballistic missiles have been launched or are in danger of being launched
- Objects such as a satellite launch rockets are in danger of falling from the sky due to some accident

Method of confirmation:

- Japan’s ballistic missile defense system confirms that ballistic missiles or other objects are flying toward Japan
  → Destruction

Definition of “ballistic missiles or other objects”, Methods of destruction:

- Ballistic missiles flying toward Japan, satellite launch rockets, satellites, etc.
- Destruction by launch of SM-3 missile or Patriot PAC-3 missiles
Area of units' operation

- Japanese territory and surrounding high seas as well as air space above
- Minister of Defense specifies the Area of Operation, taking into account the posture of the relevant units and the potential damages caused in case the impact of ballistic missile etc. actually occurs.

Cooperation with relevant government bodies

- Ministry of Defense will immediately transmit below information to relevant government bodies:
  - When it has confirmed that ballistic missiles or other objects are flying toward Japan
    ⇒ Fact of confirmation as well as estimated impact region and time
  - When destruction has been executed
    ⇒ State of destruction

- Other necessary cooperation will be conducted upon requests by relevant government bodies

Relevant government bodies: Cabinet Secretariat, National Police Agency, Fire and Disaster Management Agency, Ministry of Foreign Affairs, Fisheries Agency, Ministry of Economy, Trade and Industry, Ministry of Land, Infrastructure and Transport, Japan Coast Guard, as well as other agencies deemed necessary by Minister of Defense according to the situation
V. Strengthening BMD and Operational Cooperation

Alliance BMD capabilities, which contribute to the Alliance’s overall deterrence posture, are strengthened to the extent that U.S. and Japanese systems can operate together effectively. The SCC members confirmed that, as both countries develop and deploy capabilities, every effort must be made to ensure tactical, operational, and strategic coordination. In that light, the United States and Japan will take appropriate measures, in close coordination, in response to ballistic missile threats against alliance interests.

In this context, the SCC members highlighted the following areas of operational cooperation:

- To strengthen operational cooperation, bilateral planning efforts must take into account missile defense capabilities, today and in the foreseeable future. To that end, the two sides’ forces will clarify concepts, roles, and missions for each side in the conduct of missile defense and related operations in response to ballistic missile threats. At the same time, a policy-level forum will ensure that policy guidance for BMD operations is unambiguous and current.

- On October 29, 2005, the SCC directed the creation of a bilateral joint operations coordination center (BJOCC). During the North Korean missile provocations of June-July 2006, the United States and Japan exchanged information in a timely manner, including through an interim coordination facility at Yokota Air Base with SDF liaisons. The success of this facility in ensuring that both sides had a common awareness of the evolving situation validated the importance of continuous enhancement of bilateral policy/operational coordination including through establishment of the BJOCC at Yokota Air Base.

- Recognizing the importance of improving the situational awareness of U.S. forces and the SDF, the two sides are committed to the routine sharing of BMD and related operational information directly with each other on a real time, continuous basis. The two sides will also develop a bilateral common operational picture (COP).

- The two sides will establish a comprehensive information-sharing roadmap to identify broader operational information and data to be shared support of alliance roles missions, and Capabilities
VI. Enhancing BMD System Capabilities

The SCC members noted with satisfaction that past alliance decisions about missile defense, coupled with recent accelerated cooperation have strengthened BMD capabilities in the region.

They highlighted key advances, including:

- The operational deployment of a U.S. X-Band radar system to Air SDF Shariki Base, Japan, with associated U.S. delivery of radar data to Japanese forces.

- The operational deployment of a U.S. PAC-3 battalion to Kadena Air Base, Japan.

- The recent and continuing addition of Standard Missile (SM-3) defense capabilities to the forward-deployed naval forces of the U.S. Pacific Fleet.

- Japan’s decision to accelerate modification of its Aegis ships with SM-3 capabilities. Japan will complete modification of DDG Kongo by the end of 2007, and will expedite modification of DDGs Chokai, Myoko, and Kirishima.

- Japan’s decision to expedite the deployment of PAC-3, which resulted in deployment of the first PAC-3 fire unit in March 2007 and its goal to deploy 16 PAC-3 capable fire units by early 2010.

- Priority focus on U.S.-Japan cooperative development of the next generation SM-3 interceptor. The basic agreement on a framework for technology transfer reached by the two sides will facilitate progress on this project as well as in future U.S.-Japan technology cooperation projects.
Clear commitment on the BMD cooperation
- Emphasize the importance of the BMD cooperation as one of specific cooperative areas which should be improved
- Specifically, emphasize the importance of
  (i) closely coordinating improvements in BMD capabilities
  (ii) constant information gathering and sharing
  (iii) high readiness and interoperability
  (iv) close coordination of bilateral command and control system

Deployment US BMD assets in and around Japan
- Agree to examine optimal site for US X-band radar in Japan
- Commit to deploy US active defenses, such as PATRIOT PAC-3 and SM-3 when appropriate
As both sides deploy additional capabilities and improve their respective ballistic missile defense capabilities, close coordination will continue.

The optimum site for deployment of a new U.S. X-Band radar system has been designated as Air SDF Shariki Base. Necessary arrangements and facility modifications, funded by the USG, will be made before the radar becomes operational in summer 2006.

The USG will share X-Band radar data with the GOJ.

U.S. Patriot PAC-3 capabilities will be deployed to Japan within existing U.S. facilities and areas, becoming operational at the earliest possible time.