USPACOM Science and Technology

“Developing S&T Solutions for Capabilities Needed”

Gregory Power, Ph.D.
Science and Technology
USPACOM J85 EC&P/JCTD Liaison
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Combatant Command Structure

Geographic Commands

- Central Command
- European Command

Functional Commands

- Special Operations Command
- Transportation Command
- Strategic Command

Secretary of Defense

President of the United States

Chairman, Joint Chiefs of Staff

Pacific Command

Africa Command
Northern Command
Southern Command

Secretary of Defense

Organizations
US PACOM protects and defends, in concert with other U.S. Government agencies, the territory of the United States, its people, and its interests. With allies and partners, we will enhance stability in the Indo-Asia-Pacific region by promoting security cooperation, encouraging peaceful development, responding to contingencies, deterring aggression, and when necessary, fighting to win. This approach is based on partnership, presence, and military readiness.

We recognize the global significance of the Indo-Asia-Pacific region and understand that challenges are best met together. Consequently, we will remain an engaged and trusted partner committed...
Capabilities Needed for USPACOM Mission

Capabilities needed are driven by Mission
- Protect US; Defend Homeland
- Stable Indo-Asia-Pacific
- Preserve security, stability and freedom

Capabilities needed must
- Support Military Preparedness:
  - Respond to contingencies
  - Deter aggression; enable fight to win
- Include allies and partners
- Support enduring regional presence
- Be through collaboration with Services and CCMDs

“Capabilities needed” are driven by mission

Defending America’s Interests in the Indo-Asia-Pacific
S&T Strategic Mission Statement

- USPACOM S&T Strategic Mission
  - Discover, develop and demonstrate solutions to war fighter challenges
  - Inform S&T community about USPACOM requirements
  - Avoid technical surprise
  - Build international defense partnerships

- USPACOM S&T Regional Partner Cooperation Strategy
  - Engage countries in cooperative tech development to address mutual concerns
  - Build long-term relationships
  - Enhance partner nation capability and interoperability
  - Achieve capability advances quicker and at less cost

S&T Mission frames approach to address “capabilities needed”
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PACOM Characteristics and Challenges

- Over half of world population (3.72 B)
- Top 4 populous countries
- >52% of Earth’s surface; 17% of total land
- 36 countries
- 16 time zones

- World’s 7 of 10 largest armed forces - potent military capabilities
- 3 of largest and 5 smallest economies
- 5 of 7 U.S. Mutual Defense Treaties

- Historic animosities and grievances
- Unresolved wars
- Separatist movements
- Territorial disputes
- Religious conflict
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- Kashmir Sectarian & cross-border violence
- India Maoist (Naxalite) conflict
- India Terrorism
- Thailand Ethno-nationalist conflict
- Strait of Malacca Piracy / maritime crime
- Philippines Muslim extremists
- Philippines Ethno-religious conflict
- Philippines Communist conflict
- Uyghur Auto. Reg Ethno-religious conflict
- Tibet Auto. Reg Ethno-religious conflict
- India, BGD, Burma Resource competition
- Bangladesh Terrorism, extremism
- Burma Ethno-nationalism, narco-trafficking
- Thailand–Cambodia Border demarcation
- Cambodia Ethno-religious extremists
- Indonesia Terrorism, extremism
- Timor-Leste Ethno-nationalist conflict
- Papua New Guinea Ethno-nationalist conflict
- Indonesia Sectarianism
- Indonesia Ethno-nationalist conflict
- Nepal Maoist, political violence
- Antarctic Whaling-environmentalists
- China–Taiwan Cross-Strait Conflict
- North–South Korea Provocation, conflict
- India–Pakistan Military confrontation
- China–Vietnam Energy rights, territory (Paracels)
- Spratly Islands Competing claims, energy
- China–Japan Energy, territorial rights
- South Korea–Japan Territorial claims
- Japan–Russia Territorial claim
- Arctic Resource competition

Active, Ongoing Violence
Aperiodic Violence
Potential Area of Conflict
USPACOM’s sheer vastness makes “capabilities needed” complex

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Huge diversity in nations, cultures, languages, and affluence makes "capabilities needed" complex
The largest and growing militarization makes “capabilities needed” complex

Defending America’s Interests in the Indo-Asia-Pacific
(U) Interoperability With Partners

"Capabilities needed" must be viewed in the context of a coalition operation

Defending America’s Interests in the Indo-Asia-Pacific
While I’ve been known to be critical of China’s provocative military activities the past two years… I’ve also acknowledged when China has been helpful such as counter-piracy efforts off the Horn of Africa and the search for Malaysian Airliner M.H.-370 off Australia. -Adm Harris Oct 2015
Army S&T Collaboration in PACOM

KOREA
- 5 x Collaborative S&T Projects
- 17 x Data Exchange Agreements
- No Academic Seed Projects
- 3 x ESEP
- 4 x Exercises

THAILAND
- Master IEA (Pending)
- No Academic Seed Projects
- No ESEP
- 2 x Exercises

INDIA
- 2 x Collaborative S&T Projects
- 5 x Data Exchange Agreements
- 7 x Academic Seed Projects
- ESEP MOU (Pending)
- 1 x Exercise (Pending)

SINGAPORE
- 2 x Collaborative S&T Projects
- 1 x Foreign Comparative Test
- 9 x Data Exchange Agreements
- 4 x Academic Seed Projects
- 3 x ESEP
- 1 x Exercise (pending)

PHILIPPINES
- S&T Experimentation Center
- S&T Umbrella MOU
- 1 x Exercise

JAPAN
- 2 x Collaborative S&T Projects
- 14 x Data Exchange Agreements
- 5 x Academic Seed Projects
- 1 x ESEP
- 1 x Exercise

TAIWAN
- 3 x Data Exchange Agreements
- 2 x Academic Seed Projects
- 1 x ESEP (Proposed)

AUSTRALIA
- 7 x Collaborative S&T Projects
- 1 x Foreign Comparative Test
- 19 x Data Exchange Agreements
- 4 x Academic Seed Projects
- 3 x ESEP
- 1 x Exercise

NEW ZEALAND
- 1 x Data Exchange Agreements
- 3 x Academic Seed Projects
- 1 x ESEP (Proposed)

OTHER PARTNER COUNTRIES
- Malaysia
- Vietnam
- Indonesia

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Defending America’s Interests in the Indo-Asia-Pacific

“Capabilities needed” to support US treaty responsibilities

USPACOM Mutual Defense Treaties

5 of 7 U.S. mutual defense treaties
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Counter Transnational Threats

- Illegal Migration
- Information Technology Crime
- Terrorism / Extremism
- Illegal Narcotics
- Piracy
- Weapons Proliferation
- Other Transnational Crime

“Capabilities needed” for transnational threats
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- Pandemic
- Consequence Management
- Humanitarian Assistance/Disaster Relief

“Capabilities needed” to support Humanitarian missions
Most Disaster Prone

13 of the 18 worst countries for natural disaster risk

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Evolving North Korean Threat

- Declining conventional forces
- Nuclear capability
- Quest for intercontinental delivery of nuclear weapons
- Proliferation
- Internal stability

“Our strong bilateral relationship with the RoK and Japan and our growing trilateral cooperation are critical to deterring the DPRK…”
Adm (ret) Robert F. Willard

“Capabilities needed” must be robust to address evolving scenarios
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"Capabilities needed" must be robust to address evolving scenarios

"Development of weapon systems and CONOPS that support the Gulf of Mexico and the South China Sea." - Admiral Harris, US Pacific Command

South China Sea
- $5.3 trillion in trade traverses each year
- China preposterous territorial claims
- China land reclamation
- China destabilizing militarization
- Chinese freedom of navigation operations

China: Military Modernization
- largest conventional sub force
- growing # of multi-role fighter A/C
- extending and upgrading IADS
- anti-ship ballistic missiles
- capability to deny space to adversary
- enhancing nuclear force
- cyber forces

Evolving Scenarios

"Saying the South China sea belongs to China is like saying the Gulf of Mexico belongs to Mexico." - Admiral Harris, US Pacific Command

China: Complex Relationship
- Regional, global engagement
- Economic strength, ties
- Military modernization

China: Expansion of Interests
- Self-proclaimed sovereignty limits
- Claims to South China Sea, Spratley Islands, Senkakus, India border areas
- Overlapping EEZ's
- Committed to Reunification of Taiwan
Evolving Scenarios

Russia

- Revitalizing its ability to execute long-range strategic patrols
- Basing its newest strategic ballistic missile submarine and bomber flights around Japan

“Capabilities needed” must be robust to address evolving scenarios
Violent Extremism

- Recent terrorist attacks in Indonesia underscore the fact that violent Islamic extremism is a global concern that must be crushed.

"Given that four of the five strategic problem sets identified by Secretary Carter -- China, North Korea, Russia and ISIL -- are in our region, I'd say that we can't Rebalance fast enough." - Adm Harris, Feb 2016

"Capabilities needed" must be robust to address evolving scenarios.
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**Improved Operational Capabilities**

- Maritime Security/ Maritime Domain Awareness
- Integrated Air and Missile Defense
- Space Assurance
- ISR/Communications in a contested environment
- Cyber Defense / Network Security
- C2/C4I
- Data Fusion/ Sense Making capabilities
- Electromagnetic Spectrum/Electronic Warfare
- Counter unmanned threats
- Assured Navigation
- Joint interoperable systems
- Small Sat/responsive launch capabilities
- Power and Energy
- Weapons (including directed energy/non-lethal)

*Enhance interoperability among allies/partners*

*Building Partner Capacity*

*“Capabilities needed” must address operational capabilities*
Questions

“Capabilities needed” to address a wide range of issues and must be responsive to USPACOM’s tyranny of distance, militarization, diverse geopolitics, mutual defense responsibilities, humanitarian relief, numerous transnational threats, operational needs and evolving scenarios with China, Russia, North Korea, and ISIL.