



# **CEROS Industry Day**

*Gordon Mattis*

*ONR Science Advisor to*

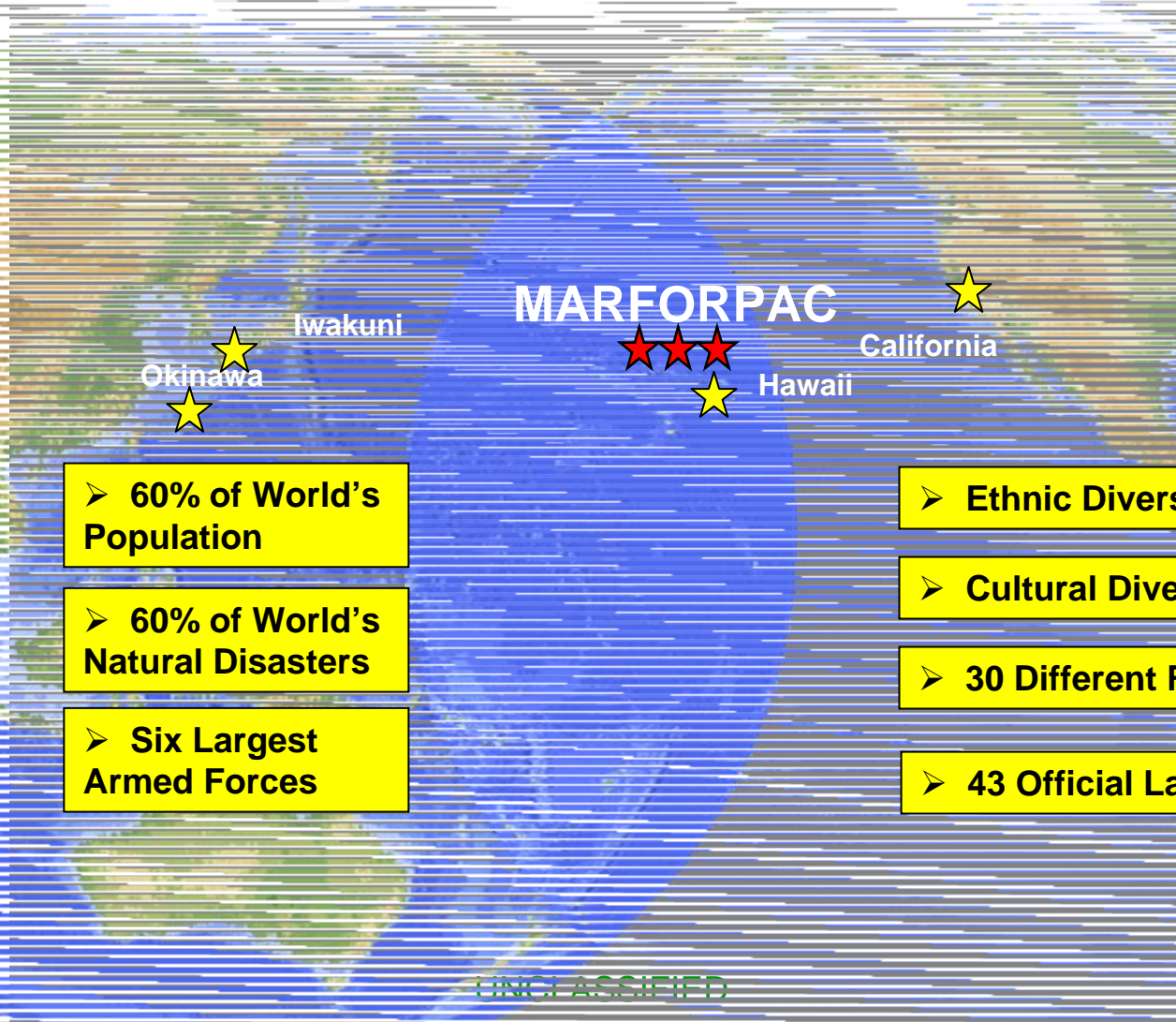
*U.S. Marine Corps Forces Pacific*

October 8, 2008

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# MARFORPAC Reach India to Yuma



➤ 60% of World's Population

➤ 60% of World's Natural Disasters

➤ Six Largest Armed Forces

➤ Ethnic Diversity

➤ Cultural Diversity

➤ 30 Different Religions

➤ 43 Official Languages



# Major Issues ...



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# Major Issues ...



Afghanistan



# Major Issues ...

## SOUTHEAST ASIA

War on Terror  
Bird Flu  
Tsunami's

- WMD and Arms Prolif
- Force on Force

Energy  
Oil  
Water  
Environment / Rising Seas

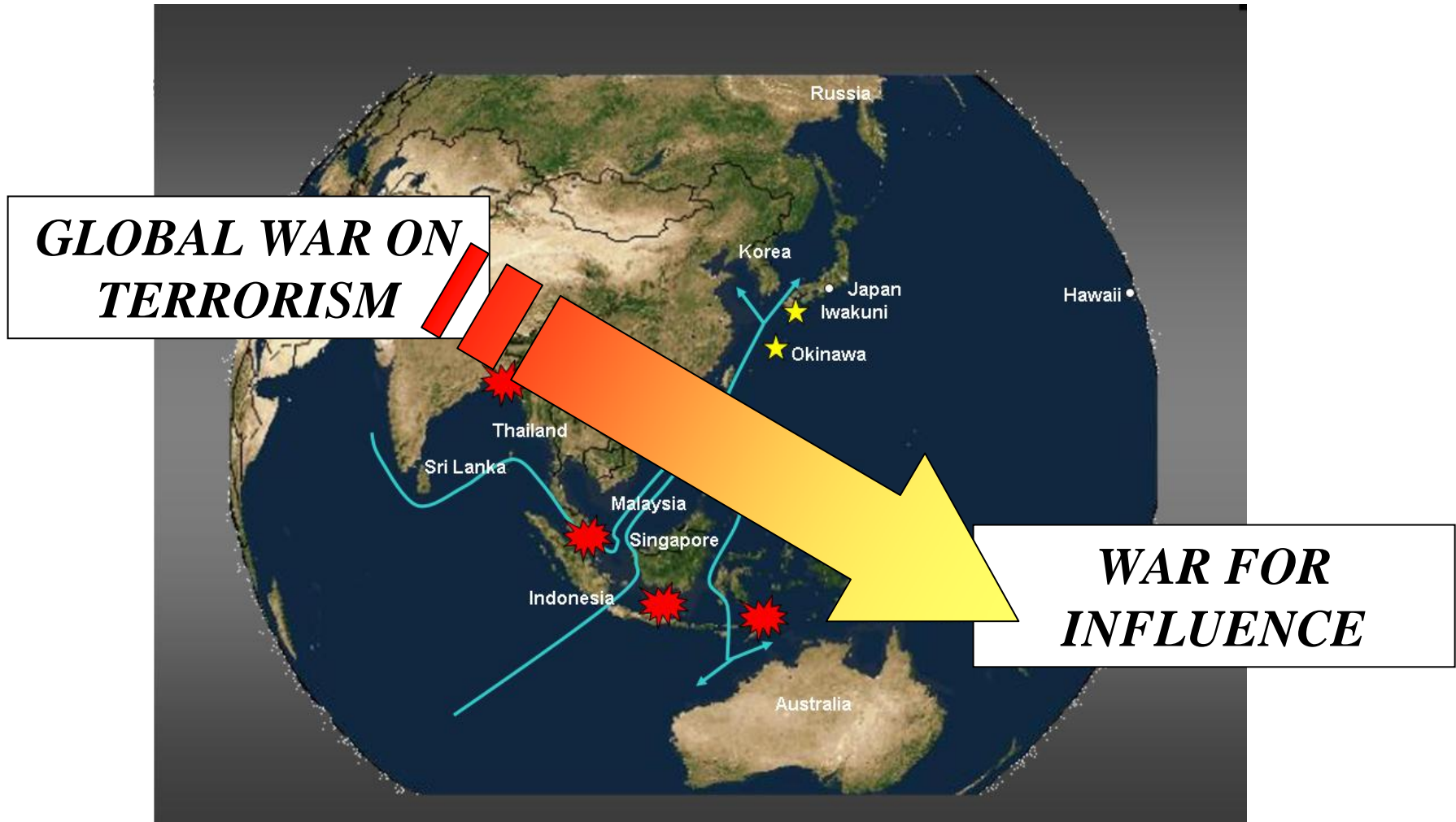
- Humanitarian Assistance
- Disaster Relief
- Narcotics Smuggling

- Piracy
- Securing strategic waterways
- Earthquakes
- Volcanoes





# The Sum of the Parts...



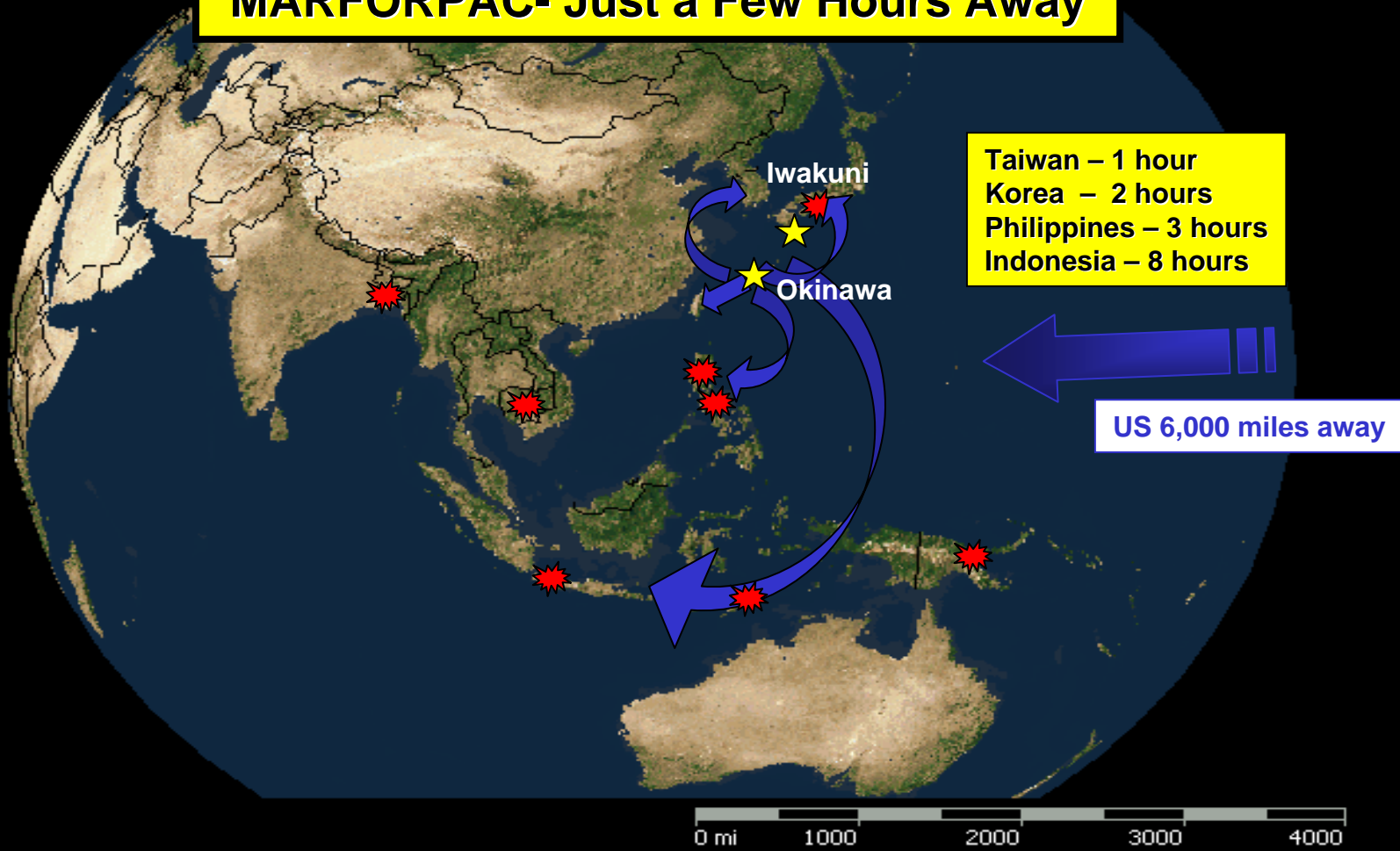
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# In Order To Get There..

## CONTINGENCY SUPPORT

MARFORPAC- Just a Few Hours Away





# ***Where we need innovation***

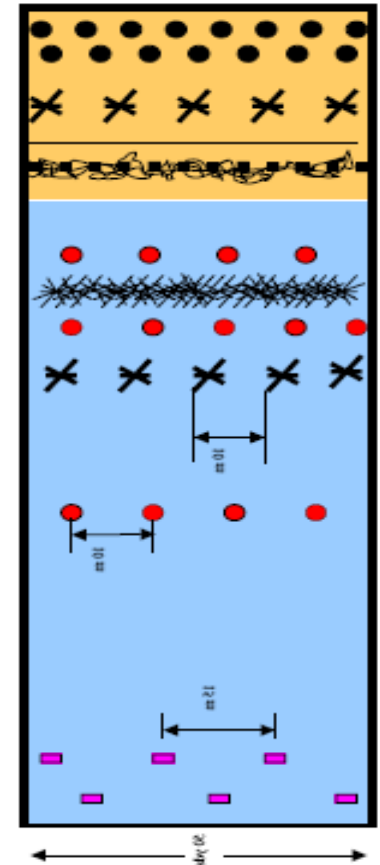
- Protect the Soldier, Sailor, Airman, Marine:
  - IED neutralization (*not jamming*)
  - Sniper detection (*BEFORE the shot is fired*)
  - Improved body armor
- Lighten the load:
  - Lighter equipment with same capabilities
    - Marines carry 80+ lbs of gear
  - Reduce or eliminate batteries



# *Where we need innovation*

## Mine Countermeasures:

- Single UAV package with sensors to detect and map mines deployed from shallow water to trails
- System to rapidly mark and destroy mines to clear a landing corridor in a matter of hours



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# *Where we need innovation*

- Command and Control Support Systems:
  - Graphical, intuitive presentation of information
    - Location, status, movement, mission
  - Language independent for use in coalition environment
  - Integration of C2/fires from HQ to squad level
    - Hard drive/mass storage that can survive extremes of heat and cold





# *Where we need innovation*

- Renewable energy and water technologies:
  - Enable self sustained training ranges across Pacific
  - Reduce cost and burden on local infrastructure (e.g. Guam)
  - Solar, wind, wave, waste-to-energy, etc
  - Energy storage
  - Grid management
- Improved fuels:
  - Major part of supply chain



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# *Where we need innovation*

- Winning hearts and minds:
  - Precision application of force
    - Minimize injury to non-combatants
    - Non-lethal weapons
  - Training tools for language and cultural understanding
  - Language agnostic communications
  - Machine language translation
  - Improved biometric identification technologies

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# *Where we need innovation*

- Pandemic Influenza:
  - Decision making tools to manage resources and control spread around Pacific rim
  - Low cost, rapid detection tool for individuals
  - Airborne virus detector
    - Quarantine and prevent spread of disease



# **MARCORSYSCOM**

## ***Industry Day***

### Needs of the Force:

- Lighten the load
- Wheeled tactical mobility
- Hearing conservation
- C2 and tactical networks
- ISR
- IED



# QUESTIONS?

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