The Future is now?

Volatile, Uncertain, Chaotic, Ambiguous
The Future is now?

Complex; Congested; Cluttered; Contested; Connected; Constrained and Coastal
What trends will shape the future?

- Demographic Dichotomy
- Urban Density and Sprawl
- Uneven Prosperity
- Resource Scarcity
- Economic/Power Shift Toward Asia
- Struggle for Sovereign Legitimacy
- Blurring Character and Conduct of Warfare
Military Challenges

- Anti-Access Area-Denial Weapons
- Urban Littoral Mega City
- IPAD & Google Earth mortar
- Commercial drones by ISIS & in Eastern Ukraine
- Advanced MANPADS employment in Syria & eastern Ukraine
The EF-21 MAGTF
How the Marine Corps will fight

• **NAVAL**
  MAGTFs capable of fighting distributed or concentrated in order to achieve overmatch

• **EXPEDITIONARY**
  MAGTFs able to rapidly deploy, employ, and sustain in the future operating environment

• **LETHAL**
  MAGTFs employ 21st Century combined arms

• **AGILE**
  MAGTFs employ 21st Century maneuver to generate combat power overmatch
Third Offset

- Autonomous Learning Systems
- Human-Machine Collaboration
- Assisted Human Operations
- Manned-Unmanned Combat
- Cyber and Electronic Warfare (EW) Hardened and Networked-Enabled Autonomous Weapons
LOOK WHAT I’VE INVENTED!

WHAT USE IS IT?

GRIND

Developing Science & Technology
Autonomy
MAGTF Integrated C2:
A black core, service-oriented, IP-based network with open architecture that allows voice, data and full motion video sharing down to the individual Marine and at every level of command. The system will support multiple applications to allow effective awareness and communication across every warfighting function—over the horizon, on the move and within amphibious ships.
Manned-unmanned teaming
Developing new concepts
Table-Top ‘Generals’ Fight Battles With Model Soldiers
US MARINE LOGIC

If you don't understand this,
You've never met Marines...
Why mess with 233 years of success?

Experimenting
Some ideas from the psych major...

- Enhanced training in the digital age
- Signal management/masking
- Information Warfare as the 7th warfighting function?
- Intuitive robotic control/tasking
- Swarms
- Modeling cyber/EW effects
- Use of AI in wargaming
- CUAS / CAI
- Sustaining distributed forces
- Medical care and human performance improvement for the distributed environment
- Personnel management for the robotic MAGTF
- Directed Energy on the battlefield
- “Apps” for warfighting functions/C2 requirements
- Air-launched ISR UAS
Questions?

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The overall classification level of this brief is: UNCLASSIFIED

We drive the future of the Marine Corps