2011-07

MMOWGLI, Massive Multiplayer Online Wargame Leveraging the Internet: New Capabilities for Crowd-Sourcing Innovation

Brutzman, Don

MMOWGLI

Massive Multiplayer Online Wargame Leveraging the Internet

New Capabilities for Crowd-Sourcing Innovation

Don Brutzman
brutzman@nps.navy.mil

mmowgli

massively multiplayer online war game leveraging the internet

MMOWGLI Game Overview

MMOWGLI is a new platform that uses the vehicle of massive multiplayer gaming to encourage innovation and explore new solutions to hard problems.

- The game itself is designed by Institute for the Future (IFTF) which has multiple significant successes with this approach
- Software is being developed at NPS by the Modeling, Virtual Environments and Simulation (MOVES) Institute

We are working to "change the game" by innovating with new technology across the Web, encouraging participation across the entire Navy and beyond.

The Kernel of the Idea
Garth Jensen, Program Manager

........ONR Science Advisor at the Pentagon

- .....a nagging sense of disconnect........between "innovators" and users...

- ......isn't there a better way? ....couldn't we put technology into the hands of the user???

parallel timeframe: Navy Strategic Planning Process

- ....alternative futures.......planning under uncertainty

the "Aha Moment"

- IFTF presentation to ONR Global All Theater Conference

  - …. World Without Oil, X2, Citizen Science

  - ….learning to see technology as a social phenomenon

THE VISION

The **future** is everything we can imagine: the
the inspiring, the inexplicable, the essential. 40 yea
founders imagined a world in which it would be po
improve human lives and build better
by thinking systematically about the future. Today,
practice **Foresight to Insight to Action.**

| World at Large	Focus on Health	New Business Propositions	Social Technologies	A F of

CURRENTS OF FORESIGHT

Our imaginations have led us through four decades of worl
and technological innovation.

Our founders were visionaries who saw the power of compu
build collective intelligence—and recognized the critical ne
intelligence to planning for the future. They assembled exp
opinions, tabulated cross-impacts, and modeled the results

Still in our first decade, we factored in human communicatio
became a tool not just for processing expert questionnaires but a platform for
connecting experts in so-called invisible colleges to address the most complex
problems of the day. Building the platforms and forecasting the impacts went

METHODS
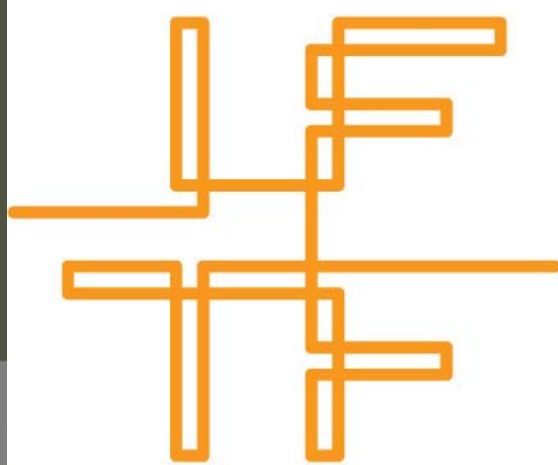
PRESIDENTS

1968	1970	1971
Frank Davidson	**Olaf Helmer**	**Roy Amara**
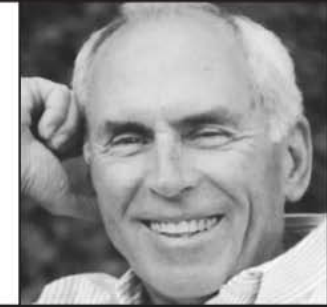
In 1968, Institute for the Future was founded by Paul Baran,

ALTH CA
Amara a
ch an a
health c

Roy Amara initiates the program
that will eventually become the
Ten-Year Forecast

■ Invisible Colleges

: GROUP COMMUNICATION
GH COMPUTERS
Vallee, with Bob Johansen,
FTF in its groundbreaking
computer-based human
nication

A role-playing game-in-a-box to make
better choices about teleconferencing

ELECTRONIC MEETINGS
Electronic Meetings
Bob Johansen,
Jacques Vallee,
Kathi Vian, 1979

THE HUB PROJECT:
INTERACTIVE GROUP MODELING
Hubert Lipinski pioneers the
computer science for group-based
communication and distributed
forecast modeling

Teletext and Videotex in the U
J. Tydeman, H. Lipinski, R. Ad
M. Nyhan, L. Zwimpfer, 1982

■ The Wired Household

GROUPWARE
BUSINESS TE
Bob Johansen
long-running
computer-base
for work teams

40 YEARS

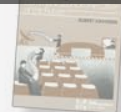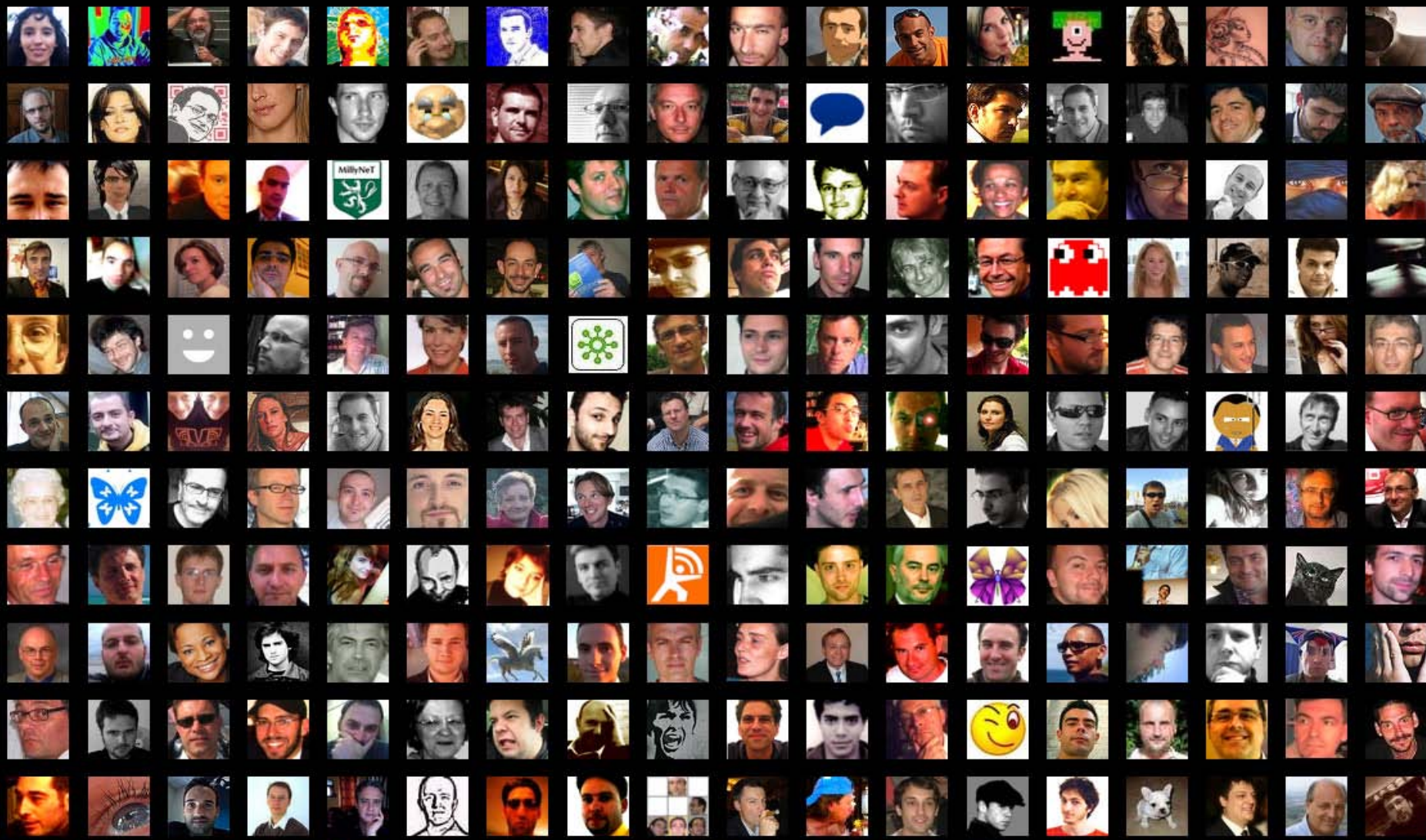| Social Evaluation of New Technologies:	Social Indicators:	Mathematical Modeling:	Simulation & Role Playing:	Scenarios & Vignettes:	Survey Re
Bob Johansen brings a sociologist's per-spective to assessing new computer and communication technologies	Gred Schmid leads the exploration of social indicators as a mathematical basis for planning and forecasting	Andrew Lipinski, Roy Amara, and Hubert Lipinski explore a range of mathematical modeling techniques to address issues from x to y	Bob Johansen, Jacques Vallee, Kathi Vian, and R. Garry Shirts explore scenario-based simulations and role playing as futures learning tools	Bob Johansen, Kathi Vian, and Jacques Vallee work with novelist Rob Swigart to develop the craft of the futures vignette	Andrea Sa leads the in applying research t to anticipa the future

1968

1978

scale & diversity of players
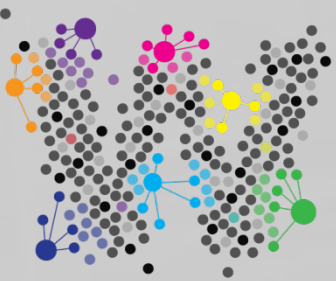
invisible hierarchy

knowledge accidents

designed with wicked problems in mind

Scenario: fighting Somali piracy

Tough problem, persisted for hundreds of years

- Skyrocketing activity in last decade

Combined Task Force Horn of Africa (CTF HOA)

- Many dozens of nations participating, affected

Fundamental naval, economic challenge

- But rooted in problems on the land
- No one person or group has all the answers

Ongoing innovation is important

The MMOWGLI platform itself is scenario agnostic. It is intended to be repurposable for use by future "entities" (Navy commands and others) who have their own scenarios or tough problems, for which they can use this platform to generate insights and solutions to their own problems.

Play the game. Change the game.
http://mmowgli.nps.edu

Building and Playing the Game

- Encouraging innovation through online gaming and social networking
- Motivating scenario of Navy coalition operations against Somali piracy
- Goal audience: everyone in the Navy plus interested outsiders
- Can group insight lead to new breakthroughs for Navy technology investments?
- Can we find better strategies and tactics for cooperating with other nations?
- How can modeling and simulation help us evaluate hard problems?
- How might your expertise, ideas and thesis research contribute?
- What future challenges might benefit from this game-based approach?

Operational Security (OPSEC)

Must avoid disclosing classified, sensitive info

What about aggregating information to levels of classified sensitivity? What about bad actors?

- Carefully considered possibilities, but…
- 30-50 nations are participating already
- Can filter later game events by participants

Eventually this becomes an "OODA loop" issue

- Whichever side innovates fastest will win

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Game dates

- Message to all flags   March 9
- Armed with Science blog   April 28
- ONR press release   May 9
- CNR interview MSNBC   May 27
- Move 1 "Turn the Tide"   May 31 – June 2
- Move 2 "Take Action"   June 21-23
- Move 3 "Pushing Back"   July 5-7
- Next moves?   Being planned…

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Game audience and numbers, so far

Display Active User Count ✕

Number of users* (including yourself) currently playing: 20

* Count incremented on login, decremented on timeout or logout.

Total registered users: 810

Moves 1, 2, 3:

- 810 played out of 2400 invited; 14000 on standby
- 4742 idea cards played, 36 action plans authored

During game:

- Everyone in Navy is invited, military and civilian
- Anyone else who wants to play is also welcome

Following game:

- Possible community of interest
- Continue work on piracy solutions

Display Card Count ✕

Number of cards played: 4742

36 action plans

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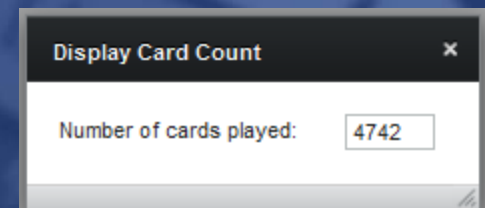
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How to get where we needed to go?

Our first mission: infiltrate NMCI

Navy Marine Corps Intranet ([NMCI](#)) is a centrally controlled enterprise network

Configuration management for every single PC in the Navy is difficult

- NPS is quite fortunate to maintain local control

Approval of new applications is even harder

- Expensive, difficult and time-consuming to deploy

Solution: build interactive game using Web browser

☺

Deploying via the web

Deliver HTML and Javascript-based content

- Primary browser Internet Explorer, several others

Must have full control over servers

- Configured to deploy and interact correctly

Special software for carefully crafted authoring

- Java VAADIN graphical user interface (GUI) toolkit
- Compiles to Java Google Web Toolkit (GWT), then
- Compiles to HTML/Javascript (not byte code)
- Tomcat servlets handle many simultaneous clients

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User experience

Looks like a professional application

- But no prior installation on system is required

Allows social networking experience by letting many users to interact directly with each other, simultaneously in real time

Also use elegant design, some good surprises, and interesting intuitive layouts

- Cool, proven methodology by IFTF
- Alpha testing in progress

Another programming topic, but everyone is an expert…

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Open source code bases

All MMOWGLI project code is open source to permit reuse, adaptation without restrictions

Protects government investment over long term and also encourages outside contributions

Repeatable best practices and lessons learned

But note: Open Source is more like "free puppy" than "free beer"

World class network support by ITACS; game architecture uses best practices
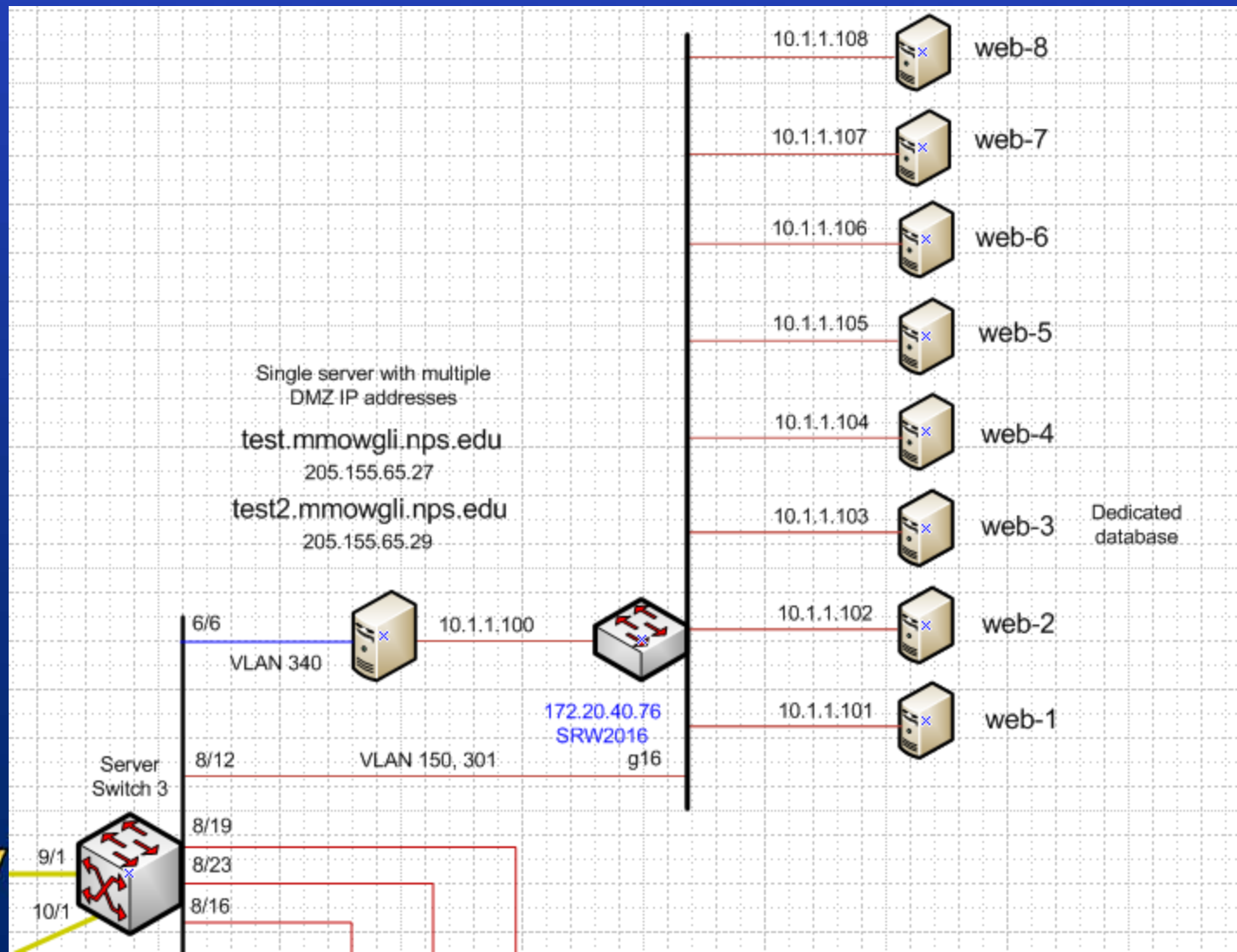
Mapping IP traffic
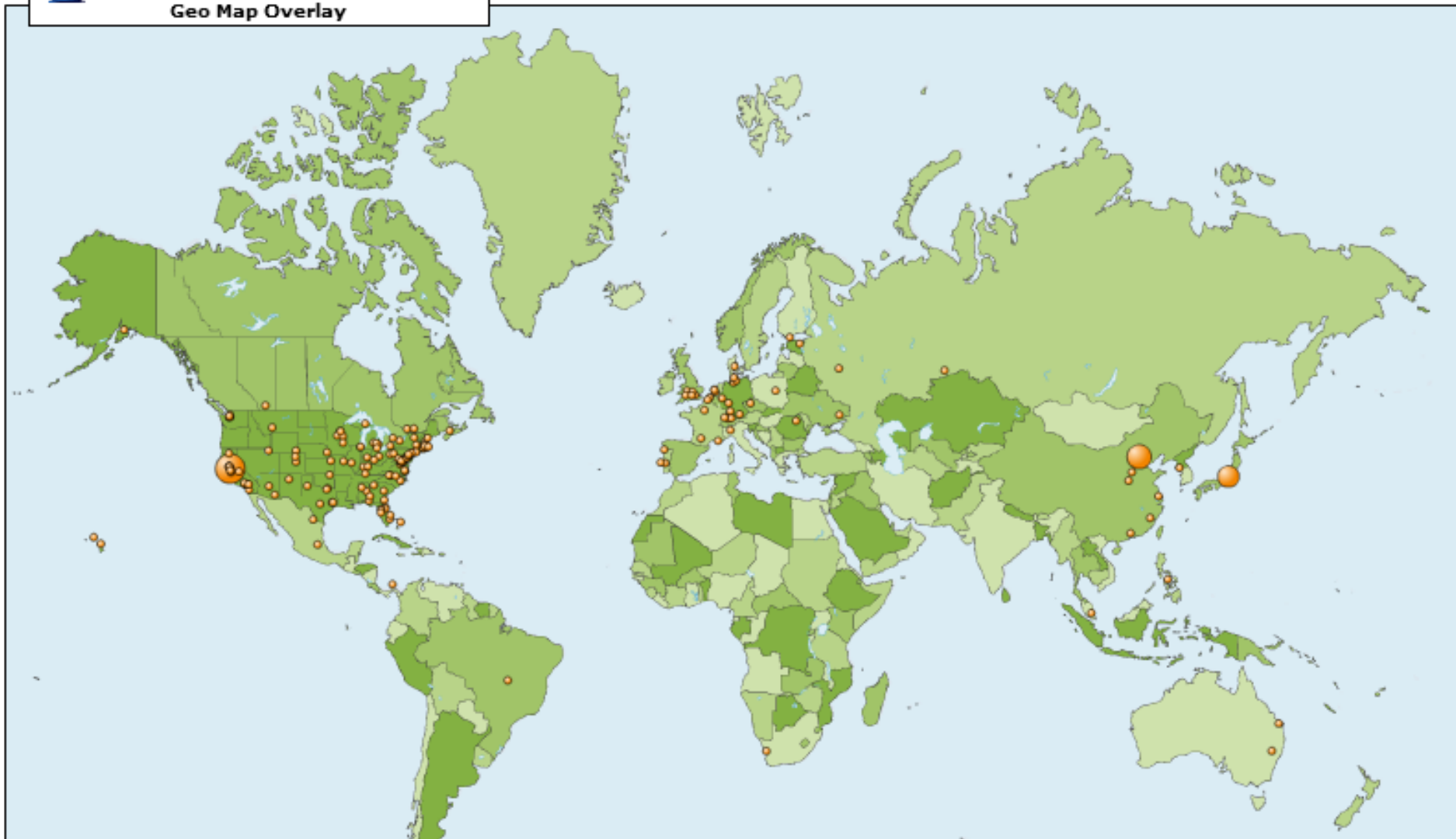
How do you play and win?

- Focusing challenge issued to all players
- Come up with a great idea and post it
  - React with others: build, dispute, adapt, redirect
  - Long chains of ideas, relationships can result
- Win points based on influence, not own cards
  - Most influential players, ideas rise to top of list
  - Pace of game encourages thoughtful contributions
- Win awards based on overall impact
  - Decided during and after the game

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DJSkipper84

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YOUR SCORE:
00070

Your Innovation Points: **00010**
Group Innovation Points: **00000**
Target : **9000** Innovation Points

PLAY AN IDEA   **TAKE ACTION**

MOVE 1: TURN THE TIDE

1:08 / 2:11   360p

The situation:

Three pirate ships are holding the world hostage.
Chinese-US relations are strained to the limit and both countries
have naval ships in the arena. Humanitarian aid for rig workers and
the East African coastline is blocked. The world is blaming the US
for plundering African resources.

Humanitarian aid for rig workers and the East African coastline is
blocked. The world is blaming the US for plundering African
resources. Merchant ship movement through the area is blocked.
Big cities from Mozambique to Djibouti are already feeling the
economic repercussions.

Two years ago, at a Navy-sponsored event, a select group of
participants set in motion dozens of innovations that could be used
in game changing ways in this situation. You were part of this
group. Now we need you to put those ideas to work. Help us create
a rapid fire brainstorm of the best strategies in this situation.

We need your help...
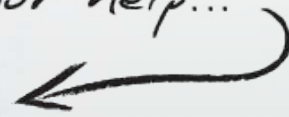
PLAY A CARD NOW:

Help us idenfity the worst. Start now, work fast, work together.

SCORE:
000

Your Innovation Points: **00000**
Group Innovation Points: **00000**
Target : **00000** Innovation Points

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PLAY AN IDEA

MOVE 1: TURN THE TIDE

The situatio

Three pirate ships are holdi
hostage. Chinese-US relations a
limit and both countries have naval
Humanitarian aid for rig workers an
coastline is blocked. The world is bl
plundering African resources.

Humanitarian aid for rig workers an
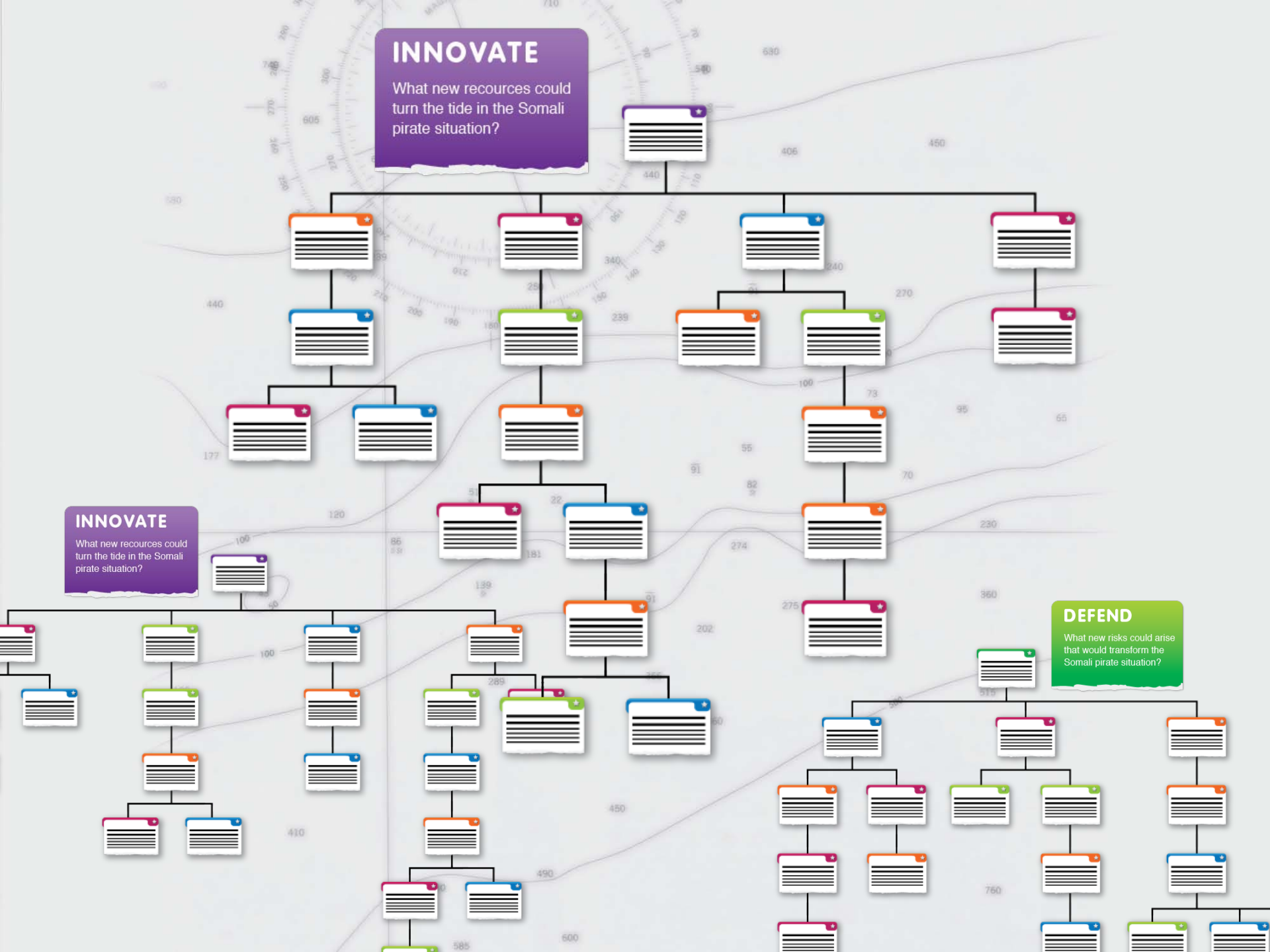
Call to Action [Videos](#)

Production, deployment together with IFTF
- Top-notch work by Jeff Weekley, Jeff Malnick
Wendy Walsh and Jessica Piombo were actors
- Set the stage motivating each game move

June 21, 2014

Moves start by challenging players
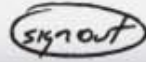
gm_donb   (sign out)   mmowgli   Leaderboard   Map   Game Blog   Learn More

Implementation Points: 8   PLAY AN IDEA   TAKE ACTION

EXPLORATION POINTS
2

SEARCH

MOVE 2: TAKE ACTION TOGETHER

The situation:

At the Elite Piracy Intervention Conference, you turned the tide. The resources and risks you developed together helped us implement the best new solutions and avoid the worst outcomes.

But now, in 2014, the situation has changed. The Yemen-Somalia-Union (YSU) is a powerful, ambiguous new alliance in the Gulf of Aden--needed economic revenue say some; to others, an amplified form of illegal piracy. The YSU militia has leapt beyond skiffs: fast vessels, geo-mapping tech, even automatic IDs to collect their tolls.

Resistance is still met with resistance, and a Bailey-McGregor oil rig has just been hijacked, now threatening the entire region with environmental catastrophe. EPIC has now become the Elite Piracy Intervention Command-- a multi-national force tasked with collaborating in new ways, through new structures, and more efficiently with fewer resources to do a better job.

Work together to design the **best strategy** for EPIC to pursue. Build on each other to imagine EPIC's **worst strategy** in response to these forces. You turned the tide. Now help us preserve peace in this even more volatile region.

Blue teaming then red-team opposition

Example dialog: rogue states

Card chains of focused dialog

	CARD CONTENT	AUTHOR
▼■	What if radical elements or rogue states "contract	Taco
▼■	Not necessarily directly related to piracy - more of	Taco
■	If piracy stopped paying - could alternate income k	CSO Rolf
■	Both the piracy-terrorism link and the financial res	Finius Storr
■	I agree. The current situation does not support link	CSO Rolf
■	Radicals would be going out of their way to contra	erwin
▼■	this builds on the idea that piracy is for monetary	ekimraew
▼■	If only we could meet their daily needs: they would	dlimm
■	Do an alternative livelihoods always diminish orga	Finius Storr
■	through some other sort of economic livliehood?	ekimraew
■	No, just give them food & shelter. Clothing & provi	dlimm
■	If only it were that easy....	ekimraew

IDEA DASHBOARD

MOST RECENT IDEAS	INNOVATE	DEFEND	Super-active chains

Super-active chains are sets of cards that have two or more authors and four or more follow-on cards at two levels.

CARD CONTENT	AUTHOR	CREA
▼■ (3678) EPIC builds several Oil Rig like Platforms	redsparow1	06/2
▼■ (3683) Tethered air balloon videos to oil platform	starship123	06/2
▼■ (3690) Perhaps we couple this with a blue force f	redsparow1	06/2
▼■ (3693) Over 99% of all unknown vessels will be ii	Finius Stormfroth	06/2
▼■ (3666) WORST STRATEGY: A military led unilate	redsparow1	06/2
▼■ (3668) Re: military led unilaterial YSU nation buil	gm_Rachel	06/2
▼■ (3676) This should be a State Dept, USAID and I	redsparow1	06/2
▼■ (3679) Work with Islamic Court Union (ICU) to for	starship123	06/2
▼■ (3688) Depends on where the popular support lie	redsparow1	06/2
▼■ (3692) The ICU effectively collapsed in 2007, sor	Finius Stormfroth	06/2
▼■ (3627) 2014 should see innovation in non-lethal	redsparow1	06/2
▼■ (3630) dolphins identify ships without highly cont	progressive thinker	06/2
▼■ (3634) What is the range for dolphins? Could thi	redsparow1	06/2
▼■ (3663) Use the same principle but instead of dolp	progressive thinker	06/2
▼■ (3627) 2014 should see innovation in non-lethal	redsparow1	06/2
▼■ (3630) dolphins identify ships without highly cont	progressive thinker	06/2
▼■ (3634) What is the range for dolphins? Could thi	redsparow1	06/2
▼■ (3659) Robotic swimmers tasked to certian areas	progressive thinker	06/2

Card chains lead to Action Plans

ACTION PLAN DASHBOARD

How to win the Action

Action plans

MY ACTION PLANS	NEED AUTHORS

All Plans

Click on this tab to see a list of all action plans which exist in the game. The other two tabs show lists of action plans filtered in various ways.

ID	TITLE	AUTHORS
1	Action plans can help solve piracy problems: guidanc	gm_melody,gm_Rachel,gm_donb,gm_lucian
2	Naval blockades	Parabellum,gm_Rachel,gm_chad,gm_donb,
3	Unmanned Vehicle Sentry	gm_dano,gm_donb,gm_donm,gm_garth
4	How to stop piracy by using unmanned vehicles	Mastermind,gm_Rachel,firefly2878,gm_donb
5	Establish an International Fusion Cell in the Region	mark.paytas,gm_donb,HotRod82,navarchus
6	Use of Convoys	nikonamscope,dieselpunk1,jersey,gm_garth
7	Long-term social change using the theme of shaming	gadfly,gm_donb,redsparow1,dieselpunk1,G(
8	Manipulating Interests	Mastermind,gm_Rachel,Finius Stormfroth
9	How can the YSU govern itself without piracy?	gadfly,gm_Rachel,Ears McShane,dieselpunk
10	How to bargain with YSU on fair passage tax?	aspizler,Ears McShane,dieselpunk1,mario 6!
11	How would a a peer-to-peer pirate patrol work?	gm_garth
12	Approach YSU with a plan to develop a system of cont	firefly2878,secund3r
13	New ways for transport through the region	gadfly,nikonamscope,GCReport
14	Pirates target unarmed vessels. Revert to the right to I	Mastermind,gm_donb,gm_luciano,gm_jenn,z
15	Develop Khat Industry Worldwide As Alternative to Pira	gm_Rachel,redsparow1,gm_garth
16	Exploiting New Opportunities to Transform the Political	Finius Stormfroth,gm_donb
17	Crowdsourcing of Data/Intel	gm_Rachel,Mastermind,progressive thinker,
18	Dolphins that identify highly controlled chemical tracer	pending
19	Investigation of shipping company employees and GP:	pending

ACTION PLAN:
Naval blockades

RATE THIS PLAN:

Average Rating: Your Rating:

13 Comments   **Add Comment**

Just In: **mark.paytas:** The Somali coastline is over 3000Km long, which is eqivalent to the west & east coast lines of the U.S. That area would be hard to cover with existing UAVs because their sensors don't have the range.

View card chain

RFE · REQUEST · FOR · EXPERTISE ·

Action Plan Authors:

Clayman
Parabellum
gm_Rachel
gm_chad
gm_donb
gm_garth

ADD AUTHOR

| The plan | TALK IT OVER | IMAGES | VIDEO | MAP |

EDIT THE PLAN   **CANCEL & REVERT**   **SAVE EDITS**

Congratulations! You're an author!

This is your workspace. Describe your action plan here. Talk it over with your fellow authors in real-time or asynchronous chat. Add images, videos, or map annotations. Remember this is a team effort! So work with your teammates to come up with the best possible plan.

Need some help? View a short Action Plan video here.

The 5 Basic Steps:

1. Start by entering a headline that captures the big idea.
2. Describe the basic plan in the

Who is involved?

This plan discusses using naval blockades to deter piracy.

What is it?

The Yemen-Somalia Union (YSU) is conducting acts of piracy using its coast guard assets. It is easier to monitor and interdict a few small areas, than to monitor and protect a much larger one.
A naval blockade of the Somali coastline will ensure the pirates can not gain access to the high seas. Heavy emphasis will be placed on known pirate camps and areas of significancant intelligence.

What will it take?

The resources needed are already in the Gulf of Aden and Indian Ocean, except an increase in Coast Guard Ledets, but utilizing a blockade the amount of ships should be able to decrease, even keeping patrols along the IRTC.
Assets needed: Surface ships (at least 2 amphibious) w/ VBSS teams, Coast Guard ledets or other federal agents, UAVs, P-3, helos.

Authors can chat, players can comment

3. Make a list of the resources you need in the What Will It Take? box.
4. Outline the steps to succeed in the How Will It Work box. *Hint: Use your card chain as a starting place.*
5. 5. Sum up the impact the last box, How Will Change the Situation in Somalia?

Click Save Changes often to make sure your text is saved. Click Revert to go back to previous versions.

Work fast. Work smart. Work together.

Good luck!

How will it work?

Phase 1: Shaping
Task: Identify Key Pirate Nodes
Task: Diplomatic shaping -- local, regional, global

How will it change the situation?

Naval blockade of key pirate nodes will make it hard/costly for pirates to do business. This attacks the goal of YSU-sponsored piracy, which are the economic benefits. It is not a complete solution in and of itself, but it can significantly reduce the incidents of piracy. It is the most feasible and realistic action the international community can take.

ADD COMMENT

Comments:

mark.paytas Thu, 23 Jun 2011 07:20:32 PDT
The Somali coastline is over 3000Km long, which is eqivalent to the west & east coast lines of the U.S. That area would be hard to cover with existing UAVs because their sensors don't have the range.

mario 69 Wed, 22 Jun 2011 18:42:20 PDT
I like everything about this, but it will be expensive to cover so much area and it mut be sustained for a long time. $$$

Type here to chat   submit

Parabellum 06/21 09:29 PDT	@Clayman: satellite surveillance could be costly over long term, and I"m not smart enough to know how persistent that could be. should definitely leverage satellite imagery to supplement air-breathing ops.
Clayman 06/21 09:04 PDT	Could persistent ISR via satellites help provide situational awareness of where things are? Example: http://www.maritimesun.com/news/satellites-locate-seized-italian-oil-tanker/
Parabellum 06/21 07:37 PDT	Please ignore my last post here -- nation building is OBE.
Parabellum 06/21 07:22 PDT	the long-term piece of this needs lots of thinking. hinges on whether there is a nation-building effort to support and transition to. that's hard, and short of that, this could be an op that runs for decades. unmanned platforms would help, but international political will to continue the blockade would be key.
Parabellum	I just added some initial ideas for phasing and general tasks, and to resources needed --

This is your team space.

Coming up with an action plan -- with people you may not know across multiple time zones -- can be a challenge. But you can use this private* chat room to trade ideas in real time or leave messages for your teammates.

You might want to start by discussing the basic ideas in your card chain. How are you going to make those ideas work? What's the core idea? And what are the actions you need to take?

REPLACE
DELETE

REPLACE
DELETE

Add some images!

Photographs, graphs, and charts bring your action plan to life and convey important details that might not fit easily into the text of your plan.

You can search the online library on Somalia for images or upload images from your own desktop. Be sure to add a caption that explains the significance of each image.

Hint: You may want to give one of your team members the responsibility for tracking down the images that support

Caption:

Pirate vessels are sometimes destroyed after capture. Some nations take pirates prisoners to face justice, if it can be found.

Caption:

Modern pirates are well funded and well equipped with combat weapons and communications gear.

Mmowgli Map
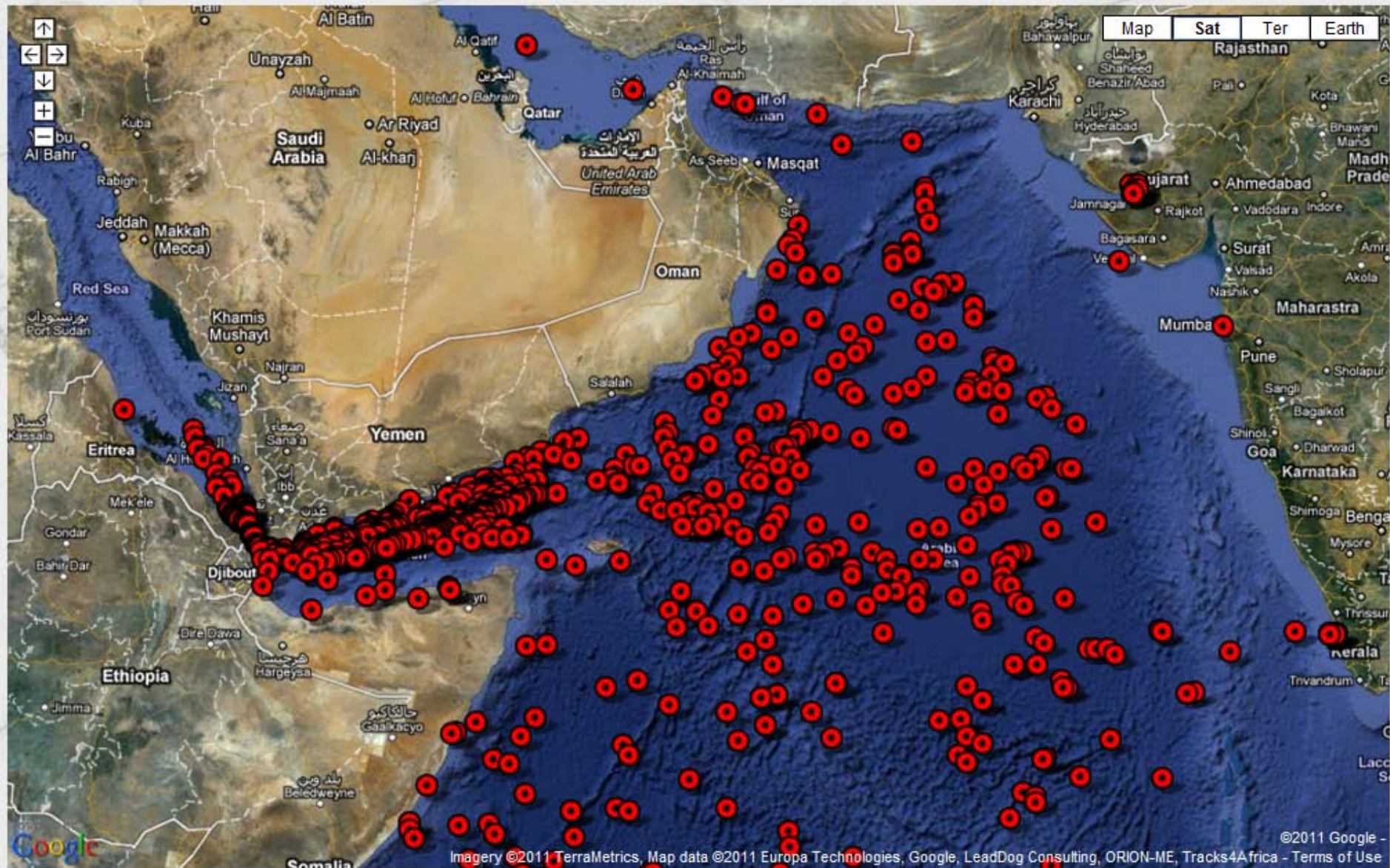
But how does a player know what to say?

Hey everybody, be yourself

Say what you think, tell what you know!

- "Wisdom of the crowd" can often help show which ideas have best merit (biggest impact)

Conversation across traditional organizational divisions or "union lines" can be surprising

- Unexpected combinations of ideas can lead to innovative new concepts and investments

ONR interested in technical solutions that help improve Navy effectiveness against piracy

Help turn the tide!

User portal provides rich resources

We have set up a "piracy portal" to provide additional social networking capabilities

- LifeRay open source server, Web based, Java
- (btw NPS also standing up LifeRay portal, myNPS)

Informed conversation is especially important when discussing hard problems without easy solutions…

How Pirates Treat Crews, ReCAAP, 2003-2007

	2007	2006	2005	2004	2003
KILLED/ MISSING	1	2	1	8	2
CREW ABANDONED	1	0	2	1	5
SERIOUSLY INJURED	1	4	4	8	10
KIDNAPPED/ HIJACKED	4	1	4	14	2
ASSAULTED/ HOSTAGE	8	24	16	27	30
THREATENED	3	5	6	11	10
NO INJURY OR NOT REPORTED	59	64	84	76	94
TOTAL NUMBER OF ACTUAL INCIDENTS	77	100	117	145	153

Source: RECAAP Information Sharing Center, Annual Report, 2007. P. 23
http://www.middlebury.edu/SouthChinaSea

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Game blog updates for players, public

Rapid response capability for game team

Long-term support for potential communities of interest

Player portal offers great flexibility

Wiki enables growing collections of easily authored, augmented content

- References, images, movies, slidesets, other sites

Mailing lists (with archives for future arrivals)

- Piracy news, trouble reports, design team, signups

Future: may add other social networking tools

- Blogs (web logs), user chat, team meetings, etc.

Goal: continue providing long-term value

- Even after our planned 3-move game finishes

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Welcome   Player Register   Send Invite   **Trouble Report**   Players Portal   Developers Portal

Trouble Report

If you find a problem with the game or the portal, please take a moment to alert our team. Thanks!

Your e-mail address

Problem type (network, game, portal, other)

Problem description

Urgency

Suggestion ▼

Text Verification

Send

Portal capabilities made it <u>easy</u> to design a web form which blocks spam, sends trouble reports

Simulation motivation

Players should be able to ask & answer the question "did my new idea make things better or worse?"

Any changes in simulation outcomes provide another way to inform game-play discussions

Adding modeling and simulation

Modeling and simulation (M&S) can support analysis of alternatives, provide expectation of likely outcomes despite uncertain options

Model design helps to build clarity about what factors exist, and how they can be influenced

This often takes time to accomplish effectively..

- But we want speedy MMOWGLI game experience!!

Challenge: can we "democratize simulation" while conducting meaningful analysis?

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Simulation scenarios of interest

Define a handful of common scenarios and build simple analytic models that match
- Not yet modeling wicked problems (like Somali clan politics), start with Navy operations on water
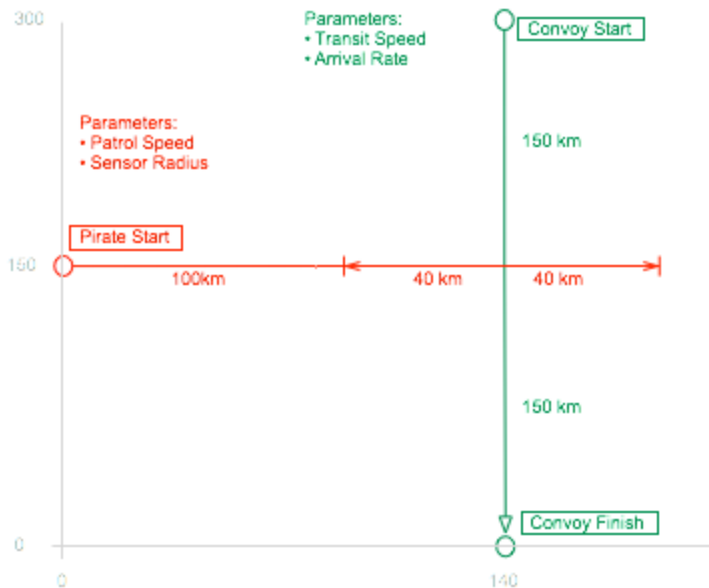
Focus on issues of direct interest to the Navy
- How many ships? How far can sensors detect?
- How fast can ships, aircraft, and robots travel?
- How fast and effective are merchants, pirates?
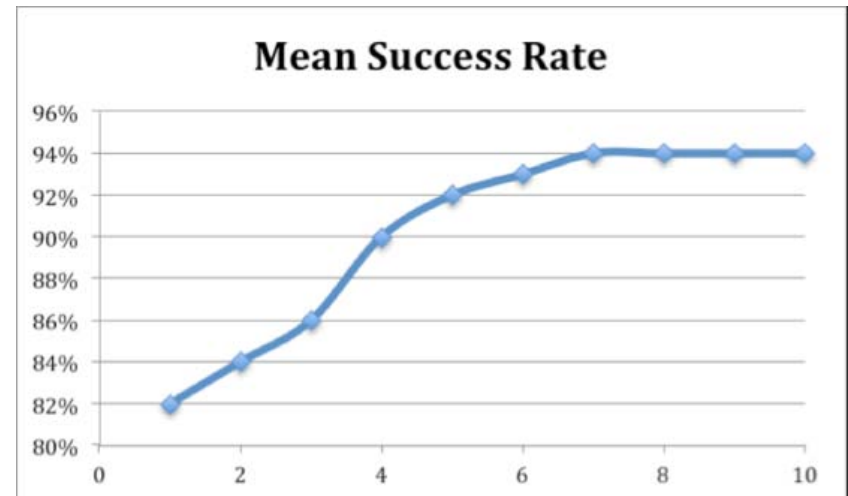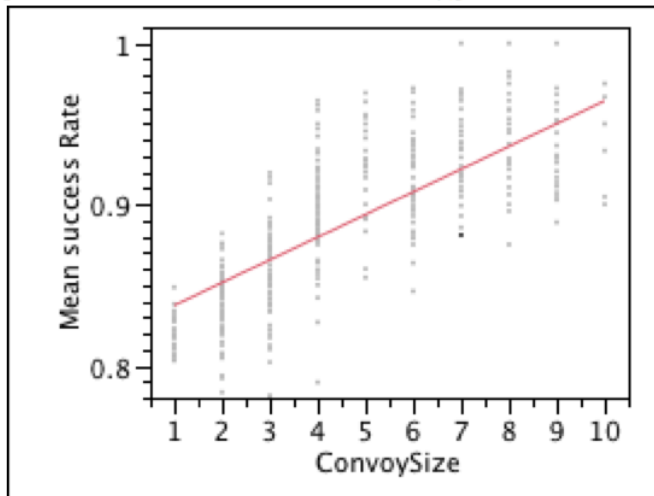- How much does it cost to operate? pay ransom?

Example simulation analysis: convoys
https://portal.mmowgli.nps.edu/convoys

<u>Simple setup</u>
Single pirate ship detects and attacks any transiting merchant ships, if intercept is possible

Idea card chain for convoy simulation...

Card Chain: convoy simulation

EXPAND
Build on this idea to amplify its impact

COUNTER
Challenge this idea

ADAPT
Take this idea in a different direction

EXPLORE
Something missing? Ask a question

EXPAND

Convoy size getting larger means that individual ships are less likely to be attacked by a single predator pirate.

gm_donb   07/11 16:08 PDT

COUNTER

Individual ships on a strict schedule or unusual route might not be able to join any convoy.

gm_donb   07/11 16:10 PDT

ADAPT

Throughput (and thus cost) may be deciding factor for industry adoption. A further simulation is needed for that.

gm_donb   07/11 16:04 PDT

EXPLORE

Lots of convoy analysis was performed in World War II, and helped turn the Battle of the Atlantic.

gm_donb   07/11 16:04 PDT

EXPAND

Faster speed by the convoy makes it harder for pirate ships to intercept in the open ocean.

gm_donb   07/11 16:07 PDT

EXPAND

Arrival rate of individual ships controls how soon convoy is assembled and ready to depart from the rendezvous location. The

gm_donb   07/11 16:06 PDT

Card chain   cancel

▼ ■	Convoy analysis using modeling and simulati	ahbuss	07/11
■	Individual ships on a strict schedule or unusu	gm_donb	07/11
▼ ■	Convoy size getting larger means that individu	gm_donb	07/11
■	Simulation analysis showed that increasing s	gm_donb	07/11
■	Convoys might be organized by ship speed (a	gm_donb	07/11
■	Larger convoy size also reduces the maximur	gm_donb	07/11
▼ ■	Faster speed by the convoy makes it harder f	gm_donb	07/11
■	Faster convory speed is actually reducing tim	gm_donb	07/11
■	Fast pirate ships can almost always outrun fa	gm_donb	07/11
■	Simulation showed that speed increase impro	gm_donb	07/11
■	Arrival rate of individual ships controls how so	gm_donb	07/11
■	Lots of convoy analysis was performed in Wo	gm_donb	07/11

Card chains illustrate tree of ideas + replies, expand/counter, adapt/explore

Convoy action plan

Showing the potential capabilities of simulation analysis to illustrate idea card chains and action plans

The plan

EDIT THE PLAN   **CANCEL & REVERT**   **SAVE EDITS**

Congratulations! You're an author!

This is your workspace. Describe your action plan here. Talk it over with your fellow authors in real-time or asynchronous chat. Add images, videos, or map annotations. Remember this is a team effort! So work with your teammates to come up with the best possible plan.

Need some help? View a short Action Plan video here.

The 5 Basic Steps:

1. Start by entering a headline that captures the big idea.
2. Describe the basic plan in the What Is It? box.
3. Make a list of the resources you need in the What Will It Take? box.
4. Outline the steps to succeed in the How Will It Work box. *Hint: Use your card chain as a starting place.*
5. 5. Sum up the impact the last box, How Will Change the Situation in Somalia?

Click Save Changes often to make sure your text is saved. Click Revert to go back to previous versions.

Work fast. Work smart. Work together.

Good luck!

Who is involved?

Merchant ships and intercepting pirates

What is it?

Reduce risk to merchant ships by convoying them together, possibly adding naval protection

What will it take?

Agreement by groups of merchant ships to rendezvous and then travel together

How will it work?

Merchant ships traveling together and faster may incress the success rate of merchant transit without attack

How will it change the situation?

Fewer attacks are good, but reduced throughput of merchant shipping is costly

Put your plan on the mmowgliMap!

You can annotate a map to show how your plan would work. Here are some ways to use the map:

- Annotate it with numbered steps to show how your plan will unfold.
- Mark the locations of resources your plan will draw on—or put in place.
- Add data points that explain the what's happening on the ground.

Maps are powerful tools for planning. Use yours in the way that best supports your plan!

To edit this map, click the *EDIT THE PLAN* button under *The Plan* tab. Save your changes from the same tab when finished.

New markers: drag one of the following icons onto the map. To delete a marker, click it on the map and follow directions in the popup window.

"come to papa" says the pirate

delete this marker   edit this text
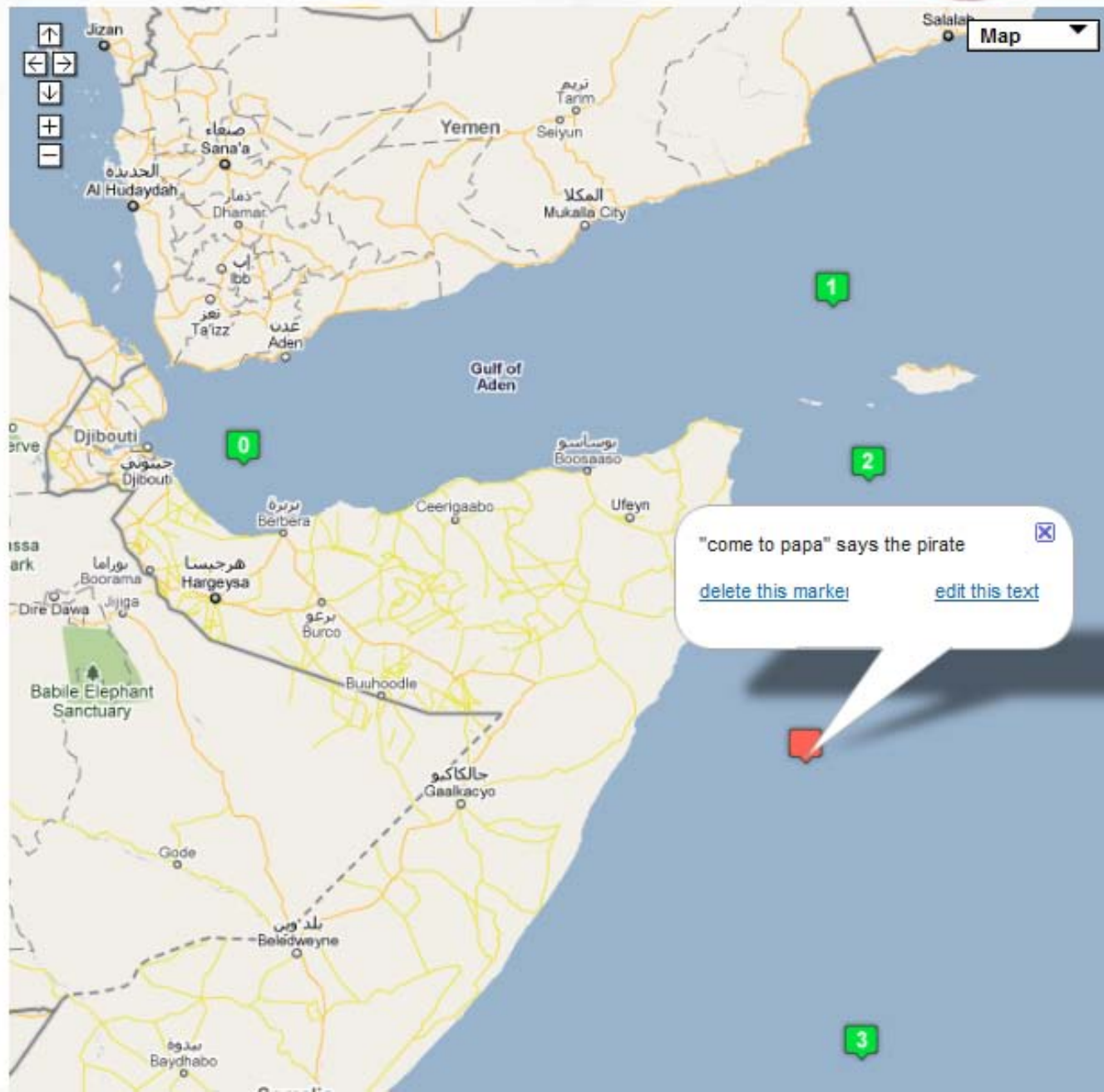
Where are we going next?

Next steps

Evaluate lessons from Moves 1, 2 and 3

Expose game to remaining 14000 signups

Greater analysis of collected information

Plan for ongoing capability in new fiscal year

Plan for additional games of interest

… Your idea here?

Hey, what about _my_ problem?

If you have an interesting new capability or relevant problem that you are working on,

If you are interested in some of the research challenges we are opening up,

If you have a project or proposal that might someday build on MMOWGLI capabilities...

Great, please tell us about it! ☺
Discussion is always welcome.

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Design team contributors

NPS MOVES: Mike Bailey, Don McGregor, Arnie Buss, Kirk Stork, Joe Sullivan, Jeff Weekley, Wendy Walsh, Jeff Malnick, Terry Norbraten, Dan Wilkinson, Don Brutzman

NPS National Security Affairs: Jessica Piombo

Institute for the Future (IFTF)

• Jason Tester, Kathi Vian, Rachel Hatch

ONR Office of Innovation

• Garth Jensen, Melody Cook

Contact

Don Brutzman

brutzman@nps.navy.mil
http://web.nps.navy.mil/~brutzman

Code USW/Br, Naval Postgraduate School
Monterey California 93943-5000 USA
1.831.656.2149 voice
1.831.656.7599   fax

Contact

Garth Jensen

garth.jensen@navy.mil

Director of Innovation
Naval Surface Warfare Center, Carderock Division
Bethesda Maryland

301.227.4800

Contact

Melody Cook

melody.cook.ctr@navy.mil
melody.cook@navy.smil.mil
cookmel@nmic.ic.gov

Innovation Analyst, Analytic Services Inc.
Office of Naval Research
703.696.2924

Contact

Jason Tester

jtester@iftf.org
http://www.iftf.org

Institute for the Future (IFTF)
Menlo Park California
650.233.9510

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