

# A 21st Century Response: Implementing GIS-based Incident Management

That's not how any of this works...



# Technology Disparities

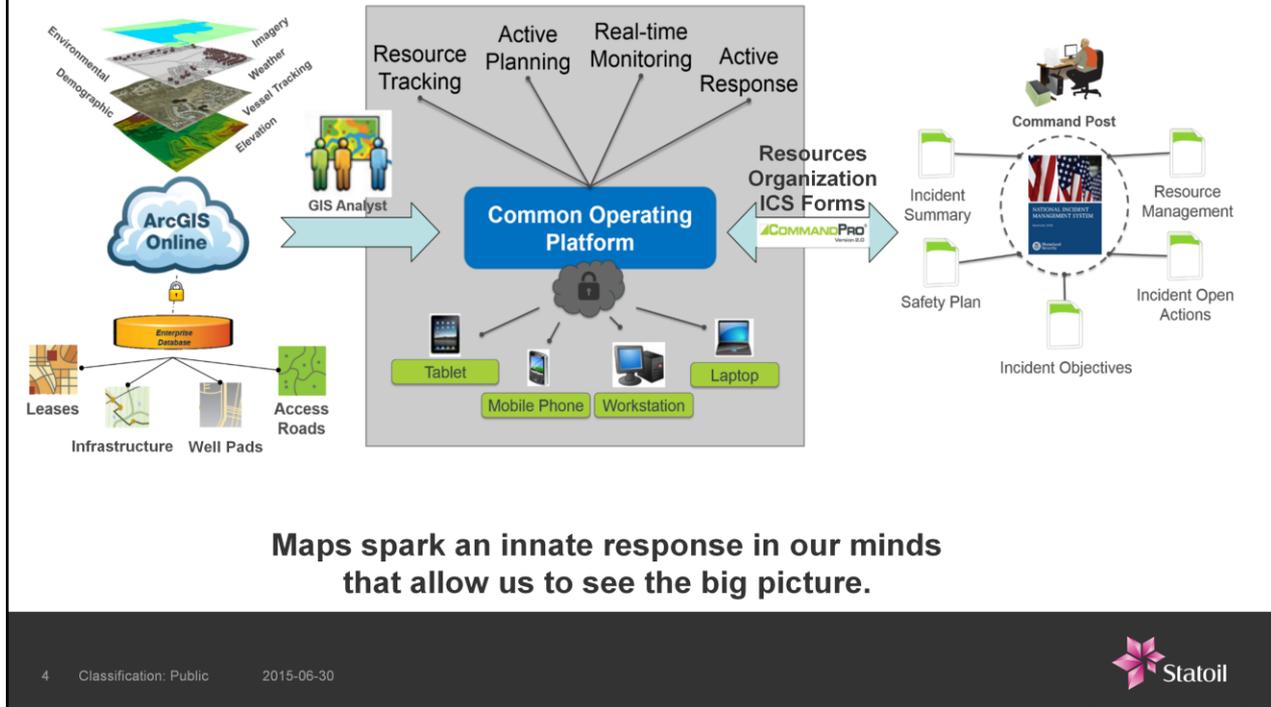


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In today's world of emergency response, we have engineering marvels- equipment never thought possible. However, in the rush to meet technological demands at the well head, we often forget that we need help managing an incident. Instead IMTs fall back upon tried and true methods – paper-driven, disconnected electronic communications, and manual processes. Such was the case in our US operations. We have some of the best IMT staff in the world, rigorous documentation and procedures, but we lacked the benefits that an integrated GIS and electronic live command system would provide. Everyone was too busy, rightfully so, with ensuring that our sections were staffed with discipline experts and that we were fully compliant with regulatory bodies.

# The Geographic Advantage



The advantages of a live integrated GIS and Command System are numerous, but it can be very difficult for a GIS and integration team to convince an IMT that it is worth the effort when another, albeit manual, way is proven.

# How to combat the 'Why GIS?'

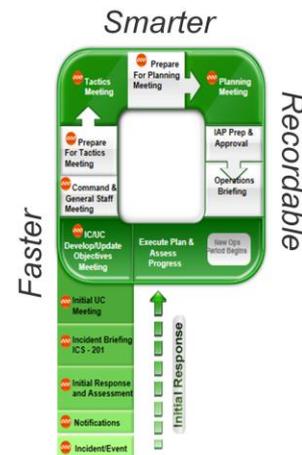
- "I have google maps."
- "Just print me a paper map."
- "I don't have time for fancy analysis."



- **Don't make it about GIS...**

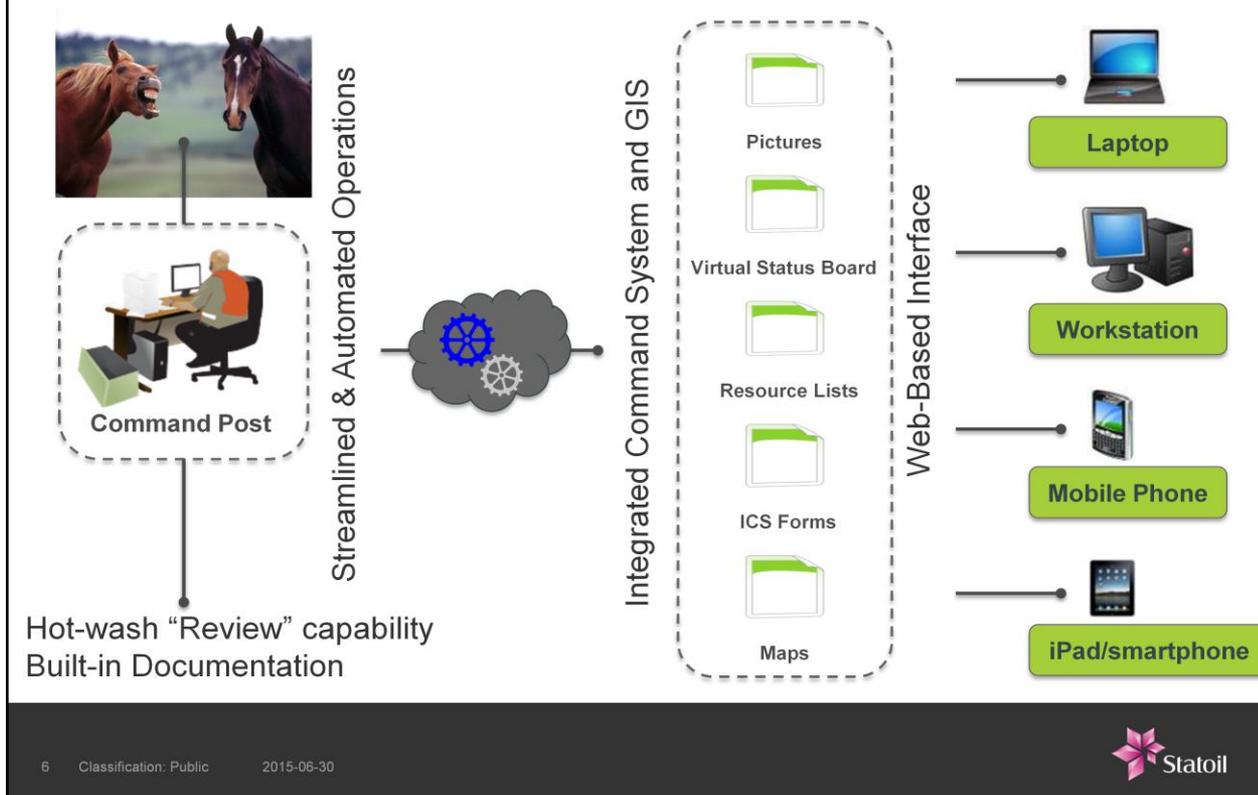
- Automation
- Efficiency
- Cost Savings
- Documentation
- Public Image
- Regulatory Integration & Compliance

- *Sneak it in....*



Explaining the need for GIS to non-GIS people can be difficult for GIS experts. Using GIS in incident management can be complex; a non-GIS person making all the connections without being able to see it in action can be nearly impossible. So, we took a different approach: Don't make everything about GIS. Make it about what integration and GIS can provide to the user: automation, efficiency, cost savings, and most importantly- documentation, public image, and regulatory compliance. We in the GIS team know that these benefits cannot be achieved without a high level of GIS integration and a live command system.

# Convincing them the Car is Better than the Horse...



These benefits must be sold to your IMT stakeholders. The focus should be on the automation and efficiency of the live command system, not necessarily on the maps...

## The Cost & Time are Negligible....



- 2 years spent trying to get HSE leadership's attention

*Mistake → All about GIS.*

- Sought approval within EXP Line

- Pilot project

*Build an infrastructure that can be built upon.*

- No interruption to IMT

*Don't be needy. Do not be demanding!*

- Integration

*Don't make them change... much....*

- Quick results

*Don't make it perfect.*

- Partnered with Communications and Public Relations

*You need them.*

- **Still need HSE leadership and the IMT to succeed.**

*Don't leave them out.*

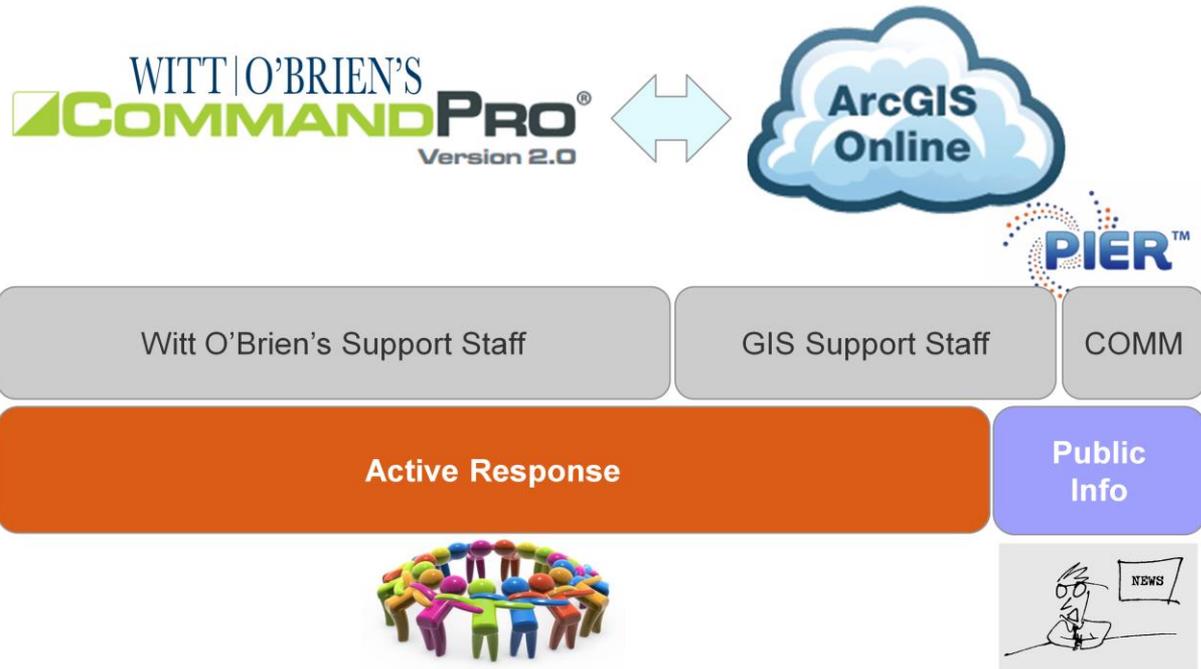
The cost of not being the best prepared are negligible compared to that of not being prepared in a real incident. In Statoil USA, we sought approval for a pilot within our own business line for two reasons: less resistance to exploring new options, and exploration owns the exploration wells that the IMT are responsible for in case of an incident. We promised a cheap pilot project that would not interrupt or ask the IMT to change much, and that would show quick results which could then be capitalized upon going forward. We combined forces with our communications and public relations team to help push the pilot as a way to show transparency to the public and regulators. However, we still needed the IMT stakeholders- they must be willing to participate.

# Pilot Project: Integration – Not Interruption

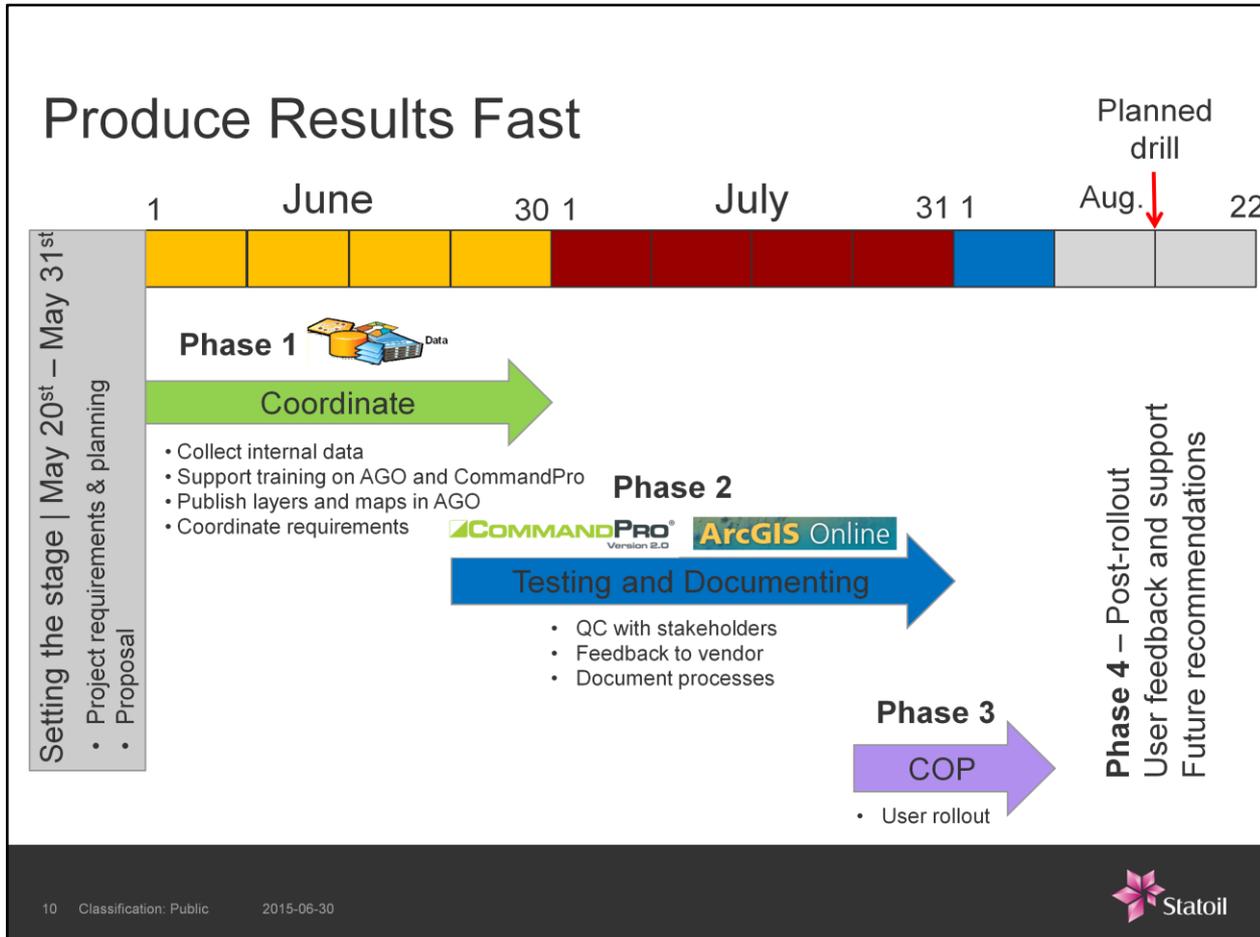
- Identified Witt –O'Brien's as key co-pilot:
  - Provides IMS contract services to Statoil USA
  - Turn-Key software: CommandPro & ArcGIS Online COP
  - Provided staff to input data into system
- GIS Support Tasks:
  - Provided GIS data sets
  - Created COP basic maps
  - Coordinated information gathering from IMT to Witt –O'Brien's application rollout team
  - Provided staff to create maps

Witt – O'Brien's was chosen as our initial pilot project provider because Statoil USA already contracts initial response with them and because of their turn-key software solutions which would allow us to deliver on our promises to our stakeholders. The GIS team provided the data sets, maps, and acted as liaison to the IMT.

# Integration Inside Statoil

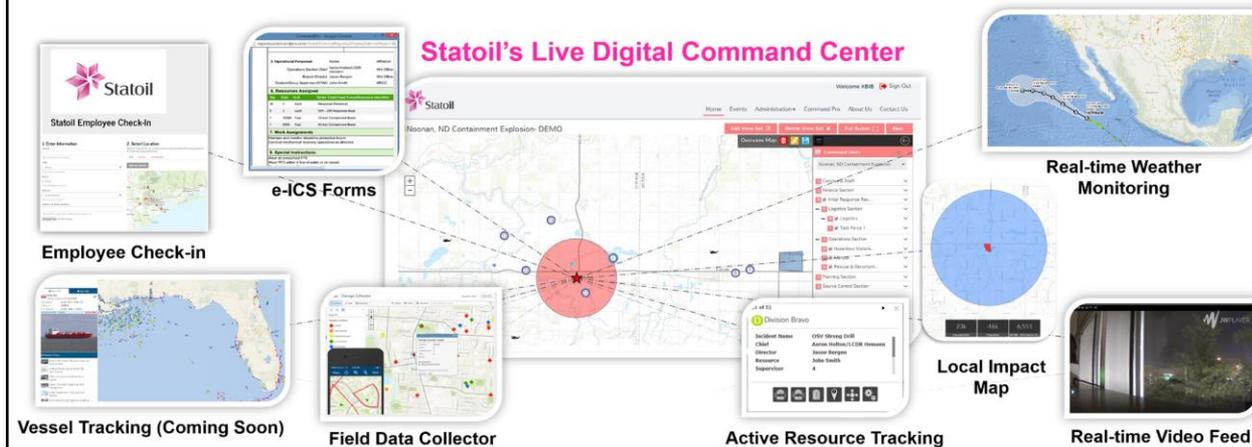


The pilot was streamlined as much as possible: all systems operate within the cloud, expert staff runs these systems. This allows the IMT and Communications to do their jobs effectively- focus on the mediating the incident.



The were able to produce a live system within approximately 3 months and participate in a planned drill just after user rollout. Results were fantastic, with section staff wanting more!

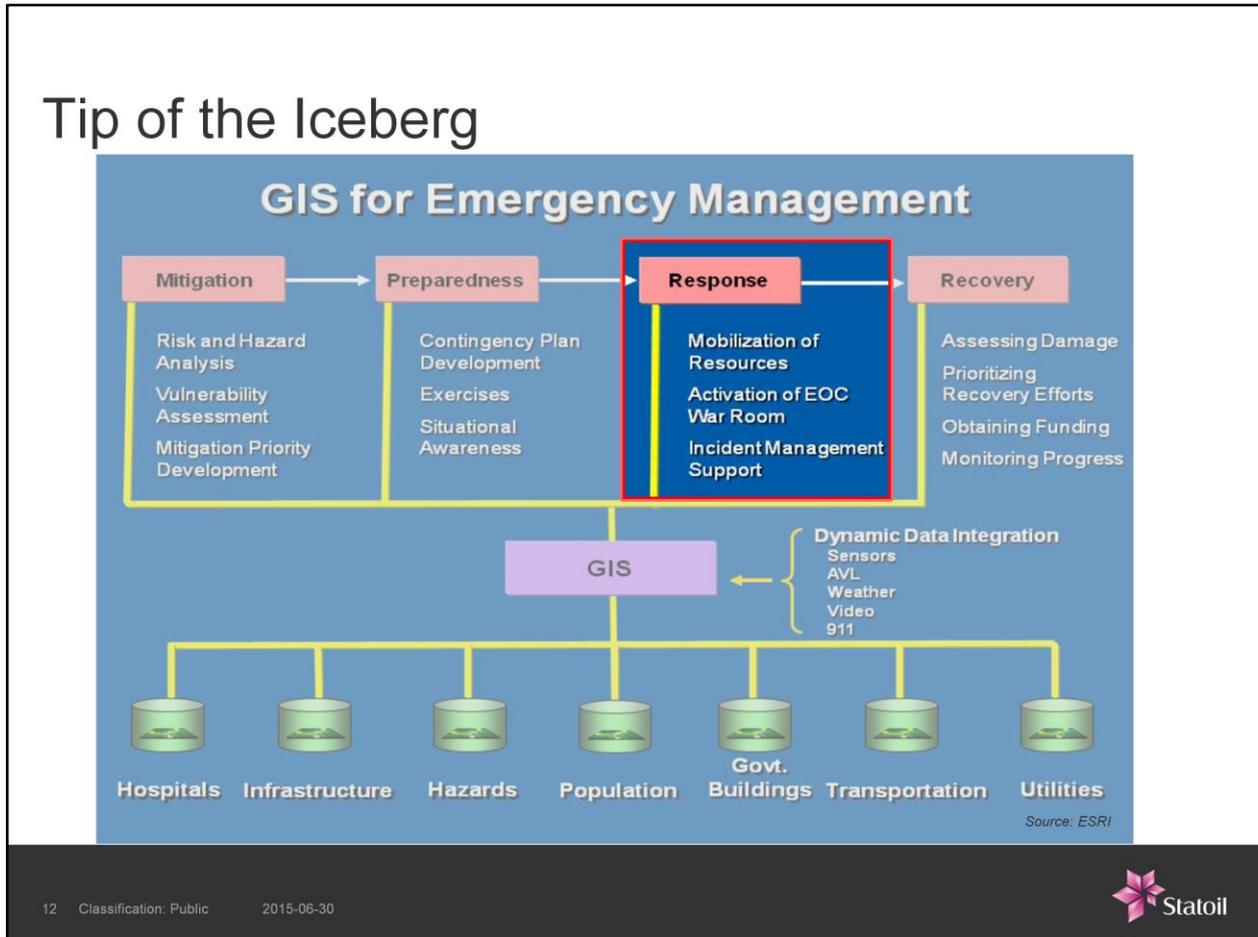
# Payoff



- Better prepared for an incident...
  - Know where our relevant spatial data are
  - Basic maps and tools prepared
  - GIS Support role understood

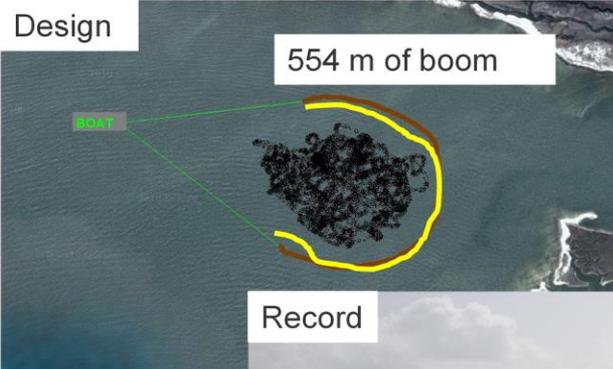
Now Statoil USA has a live command center assessable from anywhere in the world. This has led Statoil ASA, our corporate centre in Norway, to begin developing a corporate incident management solution.

# Tip of the Iceberg



However, what we have done is just the tip of the ice burg. GIS can and should play a significant role in mitigation, preparedness, and recovery exercises. This is where we will move next.

# The Sky is the Limit



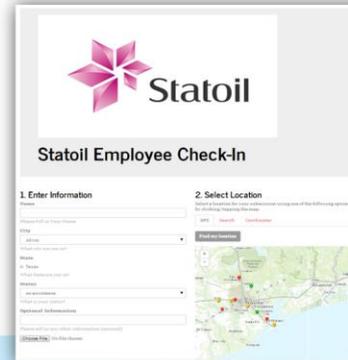
- Calculate resources needed at site
- Define resources placement in the field
- Track resource placement in real time

Some simple examples would be using GIS to place boom in real time, calculate the amount needed, send placement coordinates and instructions to the operator, and then collect from the operator in real time the actual location of boom.

# The Sky is the Limit



- Track Personnel
  - IMT
  - Employee during an Incident



Employees could use GIS apps and badges for location during an incident.

# The Sky is the Limit

- Feedback GIS analysis to IMS

The screenshot displays the WITT O'BRIEN'S Command Pro interface. The top navigation bar includes 'Home', 'Events', 'Administration', 'Command Pro', 'About Us', and 'Contact Us'. The main area is divided into several sections:

- Operations:** A map view showing Pelican Island and the Gulfstream Express. A red arrow points from the 'All active incidents' table to a specific location on the map.
- Active Incidents:** A table listing various incidents with columns for 'Location', 'Start Date', and 'Status'. A red arrow points to the 'All active incidents' header.
- Legend:** A section with a red arrow pointing to it from the 'All active incidents' header.
- Incident Trends:** A bar chart showing the number of incidents from June 2013 to May 2014.
- Incident News:** A section with several news items.

A large blue arrow points from the 'All active incidents' table towards the map, indicating the flow of data from the table to the GIS visualization.



Most importantly, we feel that there should be more feedback from the GIS COP to the Command System- feeding locations, quantities, etc as they are placed on the map in real time by the operations and planning sections.

There's never been a better  
time for good ideas

A 21<sup>st</sup> century Response: Implementing  
GIS-Based Incident Management

Jonathan Clark  
Leader: EXP NA Data Mgmt Services  
Joel@statoil.com

[www.statoil.com](http://www.statoil.com)



Thank you.