StormCenter Communications, Inc.

SBIR-DG-13W-12-CQ-041 Option 3
Integrate NWS Weather Products into State/Local Emergency Operations Centers

NWS GeoSync MEMA Interim Report

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March 2015 v.2

Intro

The National Weather Service (NWS) has a requirement to integrate its weather products into state and local Emergency Operations Centers (EOCs). The multi-platform collaborative decision environments being developed under StormCenter's NASA SBIR Phase II contract have been identified as a potential solution for geospatial weather products visualization, sharing and collaboration.

The NWS Roadmap 2.0 is focused on building a Weather-Ready Nation (WRN), which means building community resilience in the face of increasing vulnerability to extreme weather-dependent impacts. To this end, NWS is enhancing decision support services, improving technology to track and forecast storms, and expanding its dissemination efforts to achieve far-reaching national preparedness. To implement the WRN Roadmap, focused Impact-based Decision Support Services (IDSS) activities are occurring as a part of NWS WRN Pilot Projects. In addition, through ongoing prototype activities, many other offices across NWS are exploring new ways of providing decision support services.

Working together with the NWS Sterling, VA WFO and Maryland's Emergency Management Agency – MEMA at Reisterstown, MD, the goal of this project is to provide the WFO forecasters solutions to improve the provision of IDSS to emergency management through the creation and enhancement of existing geospatial interactive maps, or Common Operating Pictures (COPs), and adding StormCenter's collaborative capabilities to them: **NWS GeoSync**.

The solutions presented address an issue of significant importance to the WFOs, and will help seek new solutions to the need of delivering IDSS to emergency management.

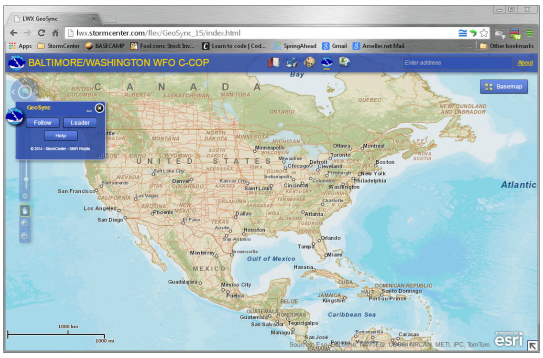
This document includes a report on the December 2 2014 exercise and responses to the survey. At the time this report is being completed all deliverables to the NWS and to MEMA are in place for operational use. The NWS Sterling WFO has an operational collaborative interactive map viewer ready for use and the MEMA portion of the NWS GeoSync code has been approved for use on MDDoIT / MEMA servers and has been deployed in MEMA's WebEOC/Osprey systems.

MEMA's Osprey interactive map viewer, which will host the NWS GeoSync app, is used by a large variety of public safety stakeholders across Maryland for geospatial situational awareness. Tasks 3B (StormCenter support during an exercise or live event) and 3C (final report) remain to be completed with the system fully deployed and operational on MEMA's Osprey system.

Executive Summary

System components

StormCenter has delivered a collaborative interactive map viewer to the NWS using ESRI's ArcGIS Viewer technology. This NWS map viewer has a GeoSync widget installed that provides the tools necessary to take the LEAD and to FOLLOW during real-time geospatial collaboration.



This viewer is operationally available for the Sterling WFO to use at:
https://lwx.geocollaborate.com

GODADDY.COM VERIFIED & SECURED

Lead users from the Sterling WFO have lead username / password access to the system.

All other participants only need to click on the "Follow" button on the NWS GeoSync widget. To be a follower no Username / Password credentials are needed to access the system. The Sterling WFO can now direct any user or groups of users to this site to provide IDSS with geospatial mapping support.

NWS GeoSync code has recently been approved and deployed in MEMA's WebEOC/Osprey systems which allows for public safety stakeholders in Maryland with access to the Osprey mapping system to follow briefs and receive NWS data directly on the emergency manager's MEMA Osprey interactive map viewer app.

Exercise Results

3 scenarios were conducted by 2 NWS forecasters: Heather Sheffield from the Baltimore / Washington NWS WFO, and on site deployment to MEMA by Kenneth Widelski. During their presentations, the scenarios performed replicated typical real-life, fast-paced, NWS-MEMA IDSS scenarios, and NWS GeoSync integration was very well performed:

1. A MEMA scheduled conference call with traditional screensharing support integrated with new GeoSync support during a Winter Storm.
2. An on-site deployment of NWS personnel to MEMA's Emergency Operations Center (EOC) with new GeoSync support during a tropical system, and
3. A MEMA training/tabletop exercise with new GeoSync support simulating a moderate risk severe/tornado event at two different times (morning watch and afternoon warning)

All of the exercises required NWS GeoSync to be used. Screensharing support was only necessary for the first exercise and it was kept running during the remaining exercises for presentation slides to be displayed. As reported previously by MEMA, approximately 50% of participants calling in to NWS briefings cannot use the screen capabilities offered by MEMA's WebEx screensharing system. This happens for several reasons, including IT installations, software updates and bandwidth issues. It is important to note that screensharing functions are pre-existent in this IDSS workflow and are not part of the GeoSync system. Despite WFO bandwidth issues that impacted screensharing streaming, GeoSync functioned properly during all the exercises and delivered the intended products to all the end users.

Careful planning was put into the exercise to not waste time during execution, but prove the technology fully. The exercise was well received and the move to operational use was approved at MEMA.

The video of the NWS - MEMA GeoSync December 2, 2014 exercise is available at:
http://www.stormcenter.com/geosync_exercise/
It can be viewed in both traditional desktop and mobile devices.

Survey Results

Every participating user was able to experience NWS GeoSync first hand on their systems, either through the MEMA Osprey system or through the NWS web map (to be a follower no Username / Password credentials are needed to access the NWS web map). All participants found the tool to be user friendly and self-explanatory.

GeoSync functioned properly during all the exercises and delivered the intended products to all the end users despite the bandwidth issues that impacted WebEx screensharing streaming.

Overall there were positive responses to the technology and to the exercise. The only remaining step before full approval for operational use is the integration of NWS GeoSync into MEMA's WebEOC/Osprey systems. This last step has recently been performed as MEMA's portion of the NWS GeoSync code has been approved by Maryland's Department of Information Technology (MD DoIT) and is integrated within MEMA's Osprey systems, allowing for operational deployment (either in a real-life scenario or an exercise).

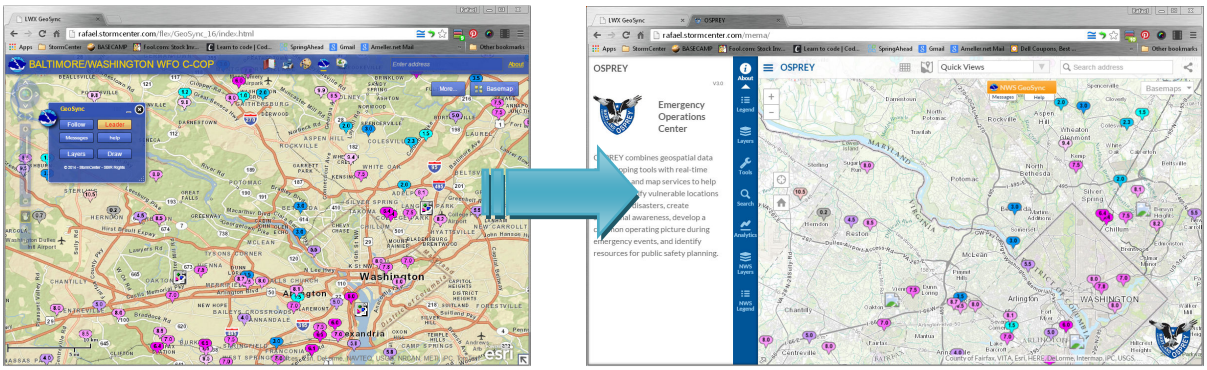
Detailed results of the survey sent out after the exercise are presented in this document together with responses to questions raised by the participants.

Next Project Steps

Now that the process of approval of MEMA's portion of the NWS GeoSync code has been completed and integrated within MEMA's Osprey systems, allowing for operational deployment (either in a real-life scenario or an exercise) we are ready to proceed with the next two project tasks: Tasks 3B (StormCenter support during an exercise or live event) and 3C (final report).

At the Sterling office one of the forecasters we trained for GeoSync, Heather Sheffield, has a very good working knowledge of GIS and we have interacted with her as a anchor point for geospatial data discovery at the Sterling WFO. Although the GeoSync tool is designed to have a simple user interface and to not require any special IT or GIS expertise, we have discovered during this project that NWS forecasters best utilize all geospatial technologies (such as NOAA's nowCOAST, the NWS EDD, and GeoSync) with prior knowledge and basic understanding of GIS and NWS data access. Professional services for this GIS training can be provided by StormCenter, internally by GIS-knowledgeable staff, and/or through the NWS ESRI Enterprise-wide license agreement (ELA).

Together with MEMA and Maryland's Geographic Information Officer: Barney Krukoff, it has been determined that the best way to begin utilization of the NWS GeoSync tool is to provide key "take-away" NWS geospatial products during the execution of the NWS briefings to MEMA. These take-away products are simple geospatial layers that provide the most significant information on weather impacts provided to emergency managers. This information can be automatically updated or manually changed as weather events unfold without having to schedule weather briefing calls between emergency managers and the WFO. A messaging system included with the tool allows NWS forecasters to submit short messages with updates on the information displayed to public safety stakeholders within their Osprey mapping system.



An example of a useful NWS "take-away" product is the observed snowfall layer, created by the Sterling WFO. This layer becomes extremely useful when used in interactive map viewers that emergency managers use at for situational awareness.

As both NWS and public safety stakeholders become more familiar with the new functions and datasets provided, the system is designed to grow with further expansion of NWS geospatial product offerings. With GeoSync NWS forecasters have the ability to choose which layers are available on the NWS web map, and can change and update the list of layers as needed.

As we move forward, forecasters at the Sterling WFO will continue to determine and discover which NWS geospatial products are most relevant for the provision of IDSS in each scenario and which trusted authoritative sources of those datasets are available.

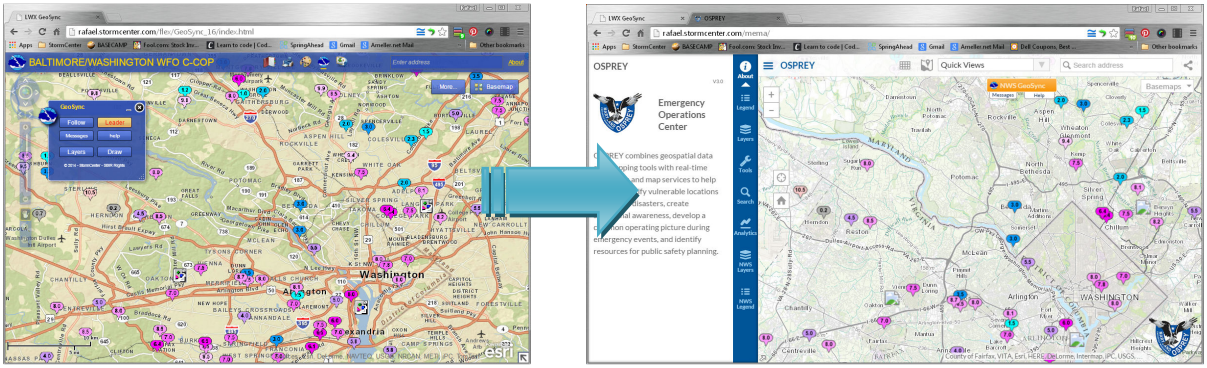
For more detailed information on how GeoSync is being implemented please refer to the project CONOPS document delivered to NWS in December 2013. For a copy of this document please contact Rafael Ameller - Rafael@StormCenter.com / 410-203-1316

NWS GeoSync MEMA Exercise Report - Tuesday December 2, 2014

The NWS Sterling WFO delivers IDSS to MEMA in three ways: scheduled conference calls with screensharing support, response to unscheduled calls from emergency management and on-site deployment of personnel to MEMA's Emergency Operations Center (EOC).

On December 2 2014 an exercise where 3 different scenarios in which the Baltimore/Washington Weather Forecast Office briefs Maryland Public Safety Stakeholders were simulated using the new collaborative functions available via NWS GeoSync.

1) MEMA conference call/ briefing - presented by Heather Sheffield, Baltimore/Washington NWS WFO
   Event: Winter Storm
   IDSS delivery: Scheduled state-wide emergency management conference calls with screensharing support
2) On site deployment to MEMA - presented by Kenneth Widelski, Baltimore/Washington NWS WFO
   Event: Tropical System
   IDSS delivery: On-site deployment of personnel to MEMA's Emergency Operations Center (EOC).
3) MEMA training exercise support - presented by Heather Sheffield, Baltimore/Washington NWS WFO
   Event: Moderate Risk Severe/Tornado Event
   IDSS delivery: Trainings / tabletop exercises

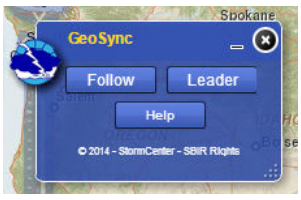


For the exercise we asked participants to join the Conference Call by phone, join MEMA's WebEx screensharing meeting, and open on their PC or Mac browser at least one of the following two websites with the GeoSync capabilities:

1- http://lwx.stormcenter.com - this site has been updated to **https://lwx.geocollaborate.com**

2- http://mema.stormcenter.com - NWS GeoSync code is on **https://maps.mema.md.gov**

At different times during the exercise users were asked to activate GeoSync on their browsers.



On lwx.stormcenter.com
click “Follow” to activate GeoSync when prompted

To regain full control of the map viewer click on Following to deactivate GeoSync.

On mema.stormcenter.com
click “NWS GeoSync” to activate GeoSync when prompted
To regain full control of the map viewer click on NWS GeoSync to deactivate GeoSync.

Each scenario was reset by refreshing / reloading GeoSync on their browsers.

All of the exercises required NWS GeoSync to be used. Screensharing support was only necessary for the first exercise and it was kept running during the remaining exercises for presentation slides to be displayed. The exercise was designed to be carried out even if participants did not have screensharing running on their systems.

As reported previously by MEMA, at times approximately 50% of participants calling in to NWS briefings cannot use the screen capabilities. This happens for several reasons, including installation, software updates and bandwidth issues. It is important to note that screensharing functions are pre-existent in this IDSS workflow and are not part of the GeoSync system. During the exercise several users reported issues with the screen sharing support mostly due to bandwidth issues at the WFO. This was not a surprise, and the GeoSync collaborative tools in place are designed to function properly despite these bandwidth issues. GeoSync functioned properly during all the exercises and delivered the intended products to all the end users despite these bandwidth issues that impacted screensharing streaming.

Careful planning was put into the exercise so as to not waste time, but prove the technology fully. The exercise was well received and the move to operational use was approved at MEMA.

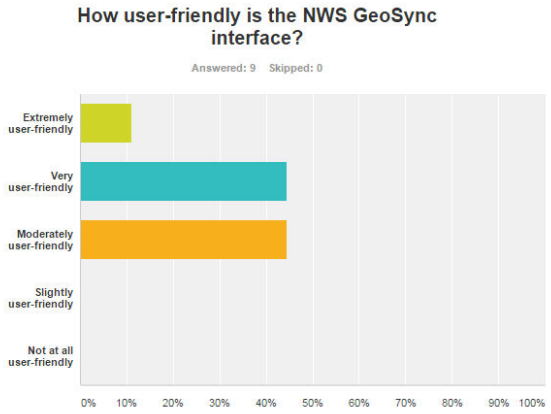
The video of the NWS - MEMA GeoSync December 2, 2014 exercise is available at:
http://www.stormcenter.com/geosync_exercise/
It can be viewed in both traditional desktop and mobile devices.

For more detailed information on how GeoSync is being implemented please refer to the project CONOPS document delivered to NWS in December 2013. For a copy of this document please contact Rafael Ameller - Rafael@stormcenter.com

SURVEY

A survey email with a link to 9 multiple choice questions was sent after the exercise. Feedback from 9 participants was received from both MEMA and NWS.

Q1. How user-friendly is the NWS GeoSync interface?



Answer Choices	Responses	
Extremely user-friendly	11.11%	1
Very user-friendly	44.44%	4
Moderately user-friendly	44.44%	4
Slightly user-friendly	0.00%	0
Not at all user-friendly	0.00%	0
Total		9

Comments (6)

Contractor comments:

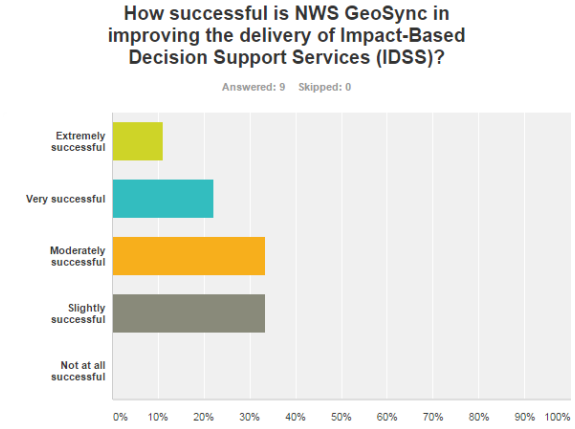
We are pleased that all participants found the tool to be user friendly and self-explanatory.

GeoSync functioned properly during all the exercises and delivered the intended products to all the end users despite the bandwidth issues that impacted WebEx screensharing streaming.

Comments left by survey participants to this question	Contractor's response	Contractor's actions
Functions seem to be self-explanatory	Contractor agrees.	
The system itself was easy enough but it would required some getting used to for our EM partners	It is expected that more frequent usage of the tool during NWS briefings will make EM partners more familiar with the tool.	With approval for use of GeoSync code on MEMA WebEOC / Osprey systems we are moving towards operational use.
Whoever is controlling the content needs to remember to tell people on the other end to click on the geosync button	Contractor agrees	Participants will be made aware of the intent of using GeoSync when scheduling the calls and during the calls.
Needs map legend to get extremely friendly score	Legends are not a function of the GeoSync system, but of the geospatial layers used	Recommendations to NWS data publishers can be provided.
Wasn't sure about the need to refresh the screen many times	This was done to simulate 3 different real-life scenarios. The user in question did not refresh after each exercise and GeoSync worked properly, but this did not simulate a real life scenario.	
Hard to evaluate as bandwidth issues at WFO impended DEMO ** One respondent to the survey pasted this question into every comment box. Before and during the*	GeoSync functioned properly during all the exercises and delivered the intended products to all the end users despite these bandwidth issues that impacted WebEx screensharing streaming.	Contractor will emphasize the fact that GeoSync adds additional access to NWS data and briefing visuals that pre-existent screensharing functions cannot provide, especially when

exercise all users were advised that screensharing is currently used by NWS for IDSS, and at times it will not work for approximately 50% of callers as reported by MEMA.		experiencing bandwidth issues. All this is done without disrupting current workflows.

Q2.How successful is NWS GeoSync in improving the delivery of Impact-Based Decision Support Services (IDSS)?



Answer Choices	Responses	
Extremely successful	11.11%	1
Very successful	22.22%	2
Moderately successful	33.33%	3
Slightly successful	33.33%	3
Not at all successful	0.00%	0
Total		9

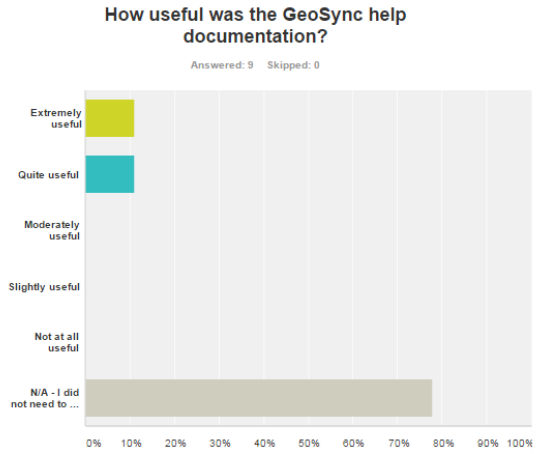
Comments (7)

Contractor comments:
GeoSync adds additional access to NWS data and briefing visuals that pre-existent screensharing functions cannot provide, especially when experiencing bandwidth issues. All this is done without disrupting current workflows.

Comments left by survey participants to this question	Contractor's response	Contractor's actions
The technology looks promising, and based on the exercise it should work well...the "proof" will be in its actual use during real situations.	Contractor agrees.	With approval for use of GeoSync code on MEMA WebEOC / Osprey systems we are moving towards operational use
I like the GIS sharing capabilities and the ability of the customers/MEMA to have the data after the briefing. Think it would be useful @ MEMA and the wealthy counties, but many low-resource counties would prob have trouble with bandwidth or not be interested.	The NWS map viewer provided has a GeoSync widget installed that provides the tools necessary to take the LEAD and to FOLLOW during real-time geospatial collaboration, even for participants who do not have their own map viewer app or mapping system. GeoSync is designed to function properly despite bandwidth issues, surpassing systems currently in place such as screensharing.	Briefing participants should be made aware of the possibility of using the NWS map viewer when scheduling the calls and during the calls. To be a participant on the NWS map viewer no Username / Password is needed to access the NWS GeoSync system. The Sterling WFO can now direct any user or groups of users to this site to provide IDSS with geospatial mapping support.
Minor issues only with things like matching colors.	Layer colors are not a function of the GeoSync system, but of the geospatial layers used.	Recommendations to NWS data publishers can be provided.
Improvement over WebEx, one	It is expected that the NWS will	

concern is the speed at which NWS will compile the necessary layers and gis data into a publishable format.	have many of the GIS datalayers necessary for IDSS ready for use prior to any situation that would require briefings. NWS is improving the delivery of geospatial data.	
Can achieve the same result through existing methods.	The intent is to not only display information during screensharing, but to actually make the data available on interactive map viewers so end users can interact with the NWS data being presented (pan, zoom, turn other layers on or off, etc,) Users experiencing bandwidth issues that impacted WebEx screensharing streaming were able to follow the briefing via GeoSync only.	Contractor will emphasize the fact that end users are receiveing data that they can further analyze, and not just broadcast desktops that turn off when the briefing is over. Additionally, GeoSync provides access to data layers AFTER the briefing is over. If a user missed the screensharing session GeoSync provides an opportunity to get and see the updated data displayed after the briefing conclusion.
There was not a great deal of information displayed that we would not get from simply sharing a screen with NWS.	The intent is to not only display information during screensharing, but to actually make the data available on interactive map viewers so end users can interact with the NWS data being presented (pan, zoom, turn other layers on or off, etc,). Users experiencing bandwidth issues that impacted WebEx screensharing streaming were able to follow the briefing via GeoSync only.	Contractor will emphasize the fact that end users are receiveing data that they can further analyze, and not just broadcast desktops that turn off when the briefing is over. Additionally, GeoSync provides access to data layers AFTER the briefing is over. If a user missed the screensharing session GeoSync provides an opportunity to get and see the updated data displayed after the briefing conclusion.
Hard to evaluate as bandwidth issues at WFO impended DEMO ** One respondent to the survey pasted this question into every comment box. Before and during the exercise all users were advised that screensharing is currently used by NWS for IDSS, and at times it will not work for approximately 50% of callers as reported by MEMA.*	GeoSync functioned properly during all the exercises and delivered the intended products to all the end users <u>despite</u> these bandwidth issues that impacted WebEx screensharing streaming.	Contractor will emphasize the fact that GeoSync adds additional access to NWS data and briefing visuals that pre-existent screensharing functions cannot provide, especially when experiencing bandwidth issues. All this is done without disrupting current workflows.

Q3.How useful was the GeoSync help documentation?



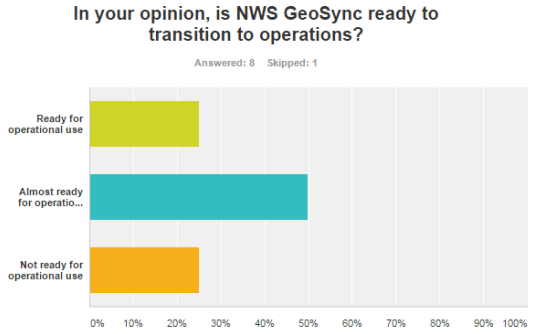
Answer Choices	Responses	
Extremely useful	11.11%	1
Quite useful	11.11%	1
Moderately useful	0.00%	0
Slightly useful	0.00%	0
Not at all useful	0.00%	0
N/A - I did not need to use the help documentation	77.78%	7
Total		9

Comments (1)

Contractor comments:
We are pleased that all participants found the tool to be user friendly and self-explanatory, and the use of help was hardly needed (Majority of responses: "N/A - I did not need to use help"). Those who did access the help found it to be useful.

Comments left by survey participants to this question	Contractor's response	Contractor's actions
Perhaps a link on the screen would be useful	Links to HELP are available on the widgets. The user must have missed this.	

Q4.In your opinion, is NWS GeoSync ready to transition to operations?



Answer Choices	Responses	
Ready for operational use	25.00%	2
Almost ready for operational use	50.00%	4
Not ready for operational use	25.00%	2
Total		8

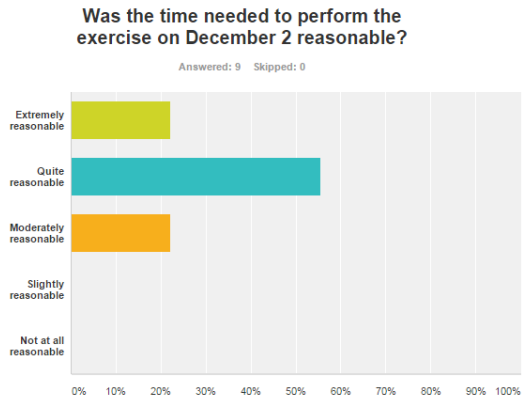
Comments (6)

Contractor comments:
With approval for use of GeoSync code on MEMA WebEOC / Osprey systems we are moving towards operational use.
It has been determined that the best way to begin utilization of the NWS GeoSync tool is to provide key "take-away" NWS geospatial products during the execution of the NWS briefings to MEMA.
Recommendations for GIS workforce development to improve forecasters' geospatial abilities and knowledge of NWS GIS products and services will be provided.

The NWS viewer is operationally available for the Sterling WFO to use at:
https://lwx.geocollaborate.com

Comments left by survey participants to this question	Contractor's response	Contractor's actions
Only way to truly test is to try it.	Contractor agrees.	With approval for use of GeoSync code on MEMA WebEOC / Osprey systems we are moving towards operational use
Ready for operational testing in a low impact setting.	Contractor agrees.	With approval for use of GeoSync code on MEMA WebEOC / Osprey systems we are moving towards operational use
The technology itself seems ready...the human interface needs a bit more work to refine. On the NWS side, they seem mostly proficient at using the product; ease of use for them will come with practice. On the end-user side, I think we'll need some sort of roll-out, with awareness training, to prep people for its use.	It is expected that more frequent usage of the tool during NWS briefings will make all participants more familiar with the tool.	Contractor will continue work with NWS and MEMA to ease roll-out. Participants will be made aware of the intent of using GeoSync when scheduling the calls and during the calls.
Some training will need to be done for staff that wants/needs to use GeoSync.	It is expected that more frequent usage of the tool will make all presenters more familiar with the tool and with geospatial technologies.	Recommendations for GIS workforce development to improve forecasters' geospatial abilities and knowledge of NWS GIS products and services will be provided.
Many of the layers were missing.	GeoSync functioned properly during all the exercises and delivered the intended products to all the end users despite these bandwidth issues that impacted WebEx screensharing streaming. Possibly the user was referring to products displayed during the screensharing?	It has been determined that the best way to begin utilization of the NWS GeoSync tool is to provide key "take-away" NWS geospatial products during the execution of the NWS briefings to MEMA (vs. trying to provide every product displayed as a GIS layer).
Hard to evaluate as bandwidth issues at WFO impended DEMO ** One respondent to the survey pasted this question into every comment box.* *Before and during the exercise all users were advised that screensharing is currently used by NWS for IDSS, and at times it will not work for approximately 50% of callers as reported by MEMA.*	GeoSync functioned properly during all the exercises and delivered the intended products to all the end users despite these bandwidth issues that impacted WebEx screensharing streaming.	Contractor will emphasize the fact that GeoSync adds additional access to NWS data and briefing visuals that pre-existent screensharing functions cannot provide, especially when experiencing bandwidth issues. All this is done without disrupting current workflows.

Q5.Was the time needed to perform the exercise on December 2 reasonable?



Answer Choices	Responses	
Extremely reasonable	22.22%	2
Quite reasonable	55.56%	5
Moderately reasonable	22.22%	2
Slightly reasonable	0.00%	0
Not at all reasonable	0.00%	0
Total		9

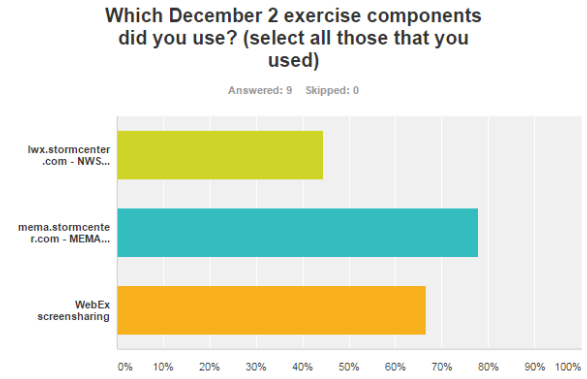
Comments (2)

Contractor comments:
Careful planning was put into the exercise to not waste time, but prove the technology fully. The exercise was well received and the move to operational use was approved at MEMA.

The exercise was intended to be carried out regardless of any screensharing or bandwidth issues that could impact any of the participants.

Comments left by survey participants to this question	Contractor's response	Contractor's actions
Was able to see it used and that helped.		
Hard to evaluate as bandwidth issues at WFO impended DEMO ** One respondent to the survey pasted this question into every comment box.* *Before and during the exercise all users were advised that screensharing is currently used by NWS for IDSS, and at times it will not work for approximately 50% of callers as reported by MEMA.*	GeoSync functioned properly during all the exercises and delivered the intended products to all the end users despite these bandwidth issues that impacted WebEx screensharing streaming.	Contractor will emphasize the fact that GeoSync adds additional access to NWS data and briefing visuals that pre-existent screensharing functions cannot provide, especially when experiencing bandwidth issues. All this is done without disrupting current workflows.

Q6.Which December 2 exercise components did you use? (select all those that you used)



Answer Choices	Responses	
lwx.stormcenter.com - NWS viewer	44.44%	4
mema.stormcenter.com - MEMA Osprey viewer	77.78%	7
WebEx screensharing	66.67%	6
Total Respondents: 9		

Comments (4)

Contractor comments:

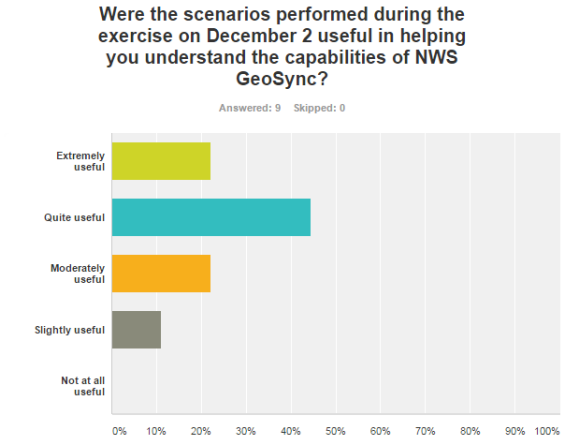
All the users participating were able to experience NWS GeoSync first hand on their systems, either through the MEMA Osprey system or through the NWS web map (to be a follower no Username / Password credentials are needed to access the NWS web map).

Before and during the exercise all users were advised that screensharing is currently used by NWS for IDSS and at times it will not work for approximately 50% of callers as reported by MEMA.

The NWS viewer is operationally available for the Sterling WFO to use at:
https://lwx.geocollaborate.com

Comments left by survey participants to this question	Contractor's response	Contractor's actions
Not able to write words and draw a free hand line in the same image. NHC watch/warning layers look too basic and not professional.	The look of NHC Watch/Warning Layers are not controlled by the GeoSync system, but by the data publishers.	Recommendations to NWS data publishers can be provided. Recommendations to NWS on how to improve IDSS solutions and technology will be provided. Updates to the lead code will be rolled out, improving draw tools and other tools for both lead and participants.
We had bandwidth issues here that degraded the presentation, but that prob simulates what some users would encounter.	Contractor strongly agrees. GeoSync functioned properly during all the exercises and delivered the intended products to all the end users despite these bandwidth issues that impacted WebEx screensharing streaming.	Contractor will emphasize the fact that GeoSync adds additional access to NWS data and briefing visuals that pre-existent screensharing functions cannot provide. All this is done without disrupting current workflows.
I tried to use lwx.stormcenter.com on my iPad, but that requires Flash, which my iPad does not have.	The current lead technology needs to be run on PCs or MACs. Participants on the Osprey system can use an iPad or any other mobile device.	Updates to the lead code will be rolled out, increasing compatibility with mobile devices and tablets for both lead and participants.
Hard to evaluate as bandwidth issues at WFO impended DEMO ** One respondent to the survey pasted this question into every comment box.* *Before and during the exercise all users were advised that screensharing is currently used by NWS for IDSS, and at times it will not work for approximately 50% of callers as reported by MEMA.*	GeoSync functioned properly during all the exercises and delivered the intended products to all the end users despite these bandwidth issues that impacted WebEx screensharing streaming.	Contractor will emphasize the fact that GeoSync adds additional access to NWS data and briefing visuals that pre-existent screensharing functions cannot provide, especially when experiencing bandwidth issues. All this is done without disrupting current workflows.

Q7.Were the scenarios performed during the exercise on December 2 useful in helping you understand the capabilities of NWS GeoSync?



Answer Choices	Responses	
Extremely useful	22.22%	2
Quite useful	44.44%	4
Moderately useful	22.22%	2
Slightly useful	11.11%	1
Not at all useful	0.00%	0
Total		9

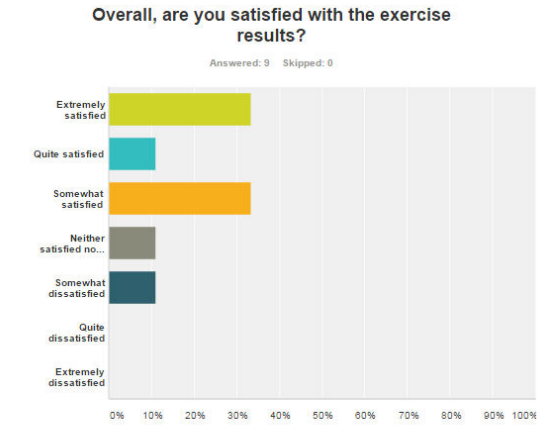
Comments (2)

Contractor comments:
The good reviews are mostly due to the excellent work performed by Heather Sheffield from the Baltimore / Washington NWS WFO, and on site deployment to MEMA by Kenneth Widelski. During their presentations, the scenarios performed replicated typical real-life, fast-paced, NWS-MEMA IDSS scenarios and NWS GeoSync integration was very well performed.

The video of the NWS - MEMA GeoSync December 2, 2014 exercise is available at:
http://www.stormcenter.com/geosync_exercise/
It can be viewed in both traditional desktop and mobile devices.

Comments left by survey participants to this question	Contractor's response	Contractor's actions
They were ok but need more expensive testing of different scenarios and capabilities.	It is expected that more frequent usage of the tool during NWS briefings will make partners more familiar with the tool and capabilities.	With approval for use of GeoSync code on MEMA WebEOC / Osprey systems we are moving towards operational use
Hard to evaluate as bandwidth issues at WFO impended DEMO ** One respondent to the survey pasted this question into every comment box. Before and during the exercise all users were advised that screensharing is currently used by NWS for IDSS, and at times it will not work for approximately 50% of callers as reported by MEMA.*	GeoSync functioned properly during all the exercises and delivered the intended products to all the end users despite these bandwidth issues that impacted WebEx screensharing streaming.	Contractor will emphasize the fact that GeoSync adds additional access to NWS data and briefing visuals that pre-existent screensharing functions cannot provide, especially when experiencing bandwidth issues. All this is done without disrupting current workflows.

Q8.Overall, are you satisfied with the exercise results?



Answer Choices	Responses	
Extremely satisfied	33.33%	3
Quite satisfied	11.11%	1
Somewhat satisfied	33.33%	3
Neither satisfied nor dissatisfied	11.11%	1
Somewhat dissatisfied	11.11%	1
Quite dissatisfied	0.00%	0
Extremely dissatisfied	0.00%	0
Total		9

Comments (3)

Contractor comments:
We are pleased that the majority of participants found the exercise satisfactory..

Comments left by survey participants to this question	Contractor's response	Contractor's actions
I think it would be a useful tool for high end users. It would just be a cost/benefit decision. The NWS needs to do a better job of GIS data sharing, someone at HQ will need to decide which method is used to accomplish that.	The NWS map viewer provided has a GeoSync widget installed that provides the tools necessary to take the LEAD and to FOLLOW during real-time geospatial collaboration, even for participants who do not have their own map viewer app or mapping system. GeoSync is designed to function properly despite bandwidth issues, surpassing systems currently in place such as screensharing.	To be a participant on the NWS map viewer no Username / Password is needed to access the NWS GeoSync system. The Sterling WFO can now direct any user or groups of users to this site to provide IDSS with geospatial mapping support.
This is good for Osprey and adds a few components that make it better for in between nws meetings	Contractor agrees. When providing IDSS scheduled conference calls with screensharing support visual support is available, but when responding to unscheduled calls from emergency management and during on-site deployment of personnel to MEMA's Emergency Operations Center (EOC) there is no support for visuals.	Contractor will emphasize that when responding to unscheduled calls from emergency management and during on-site deployment of personnel to MEMA's Emergency Operations Center (EOC) GeoSync can be used as support for visuals (even though no screensharing support has been scheduled).
Hard to evaluate as bandwidth issues at WFO impended DEMO ** One respondent to the survey pasted this question*	GeoSync functioned properly during all the exercises and delivered the intended products to all the end users despite these bandwidth issues that impacted	Contractor will emphasize the fact that GeoSync adds additional access to NWS data and briefing visuals that pre-existent screensharing functions

into every comment box. Before and during the exercise all users were advised that screensharing is currently used by NWS for IDSS, and at times it will not work for approximately 50% of callers as reported by MEMA.	WebEx screensharing streaming.	cannot provide, especially when experiencing bandwidth issues. All this is done without disrupting current workflows.

Q9.How can we improve NWS GeoSync or the exercise?

Comments left by survey participants to this question	Contractor's response	Contractor's actions
I believe time will tell how useful the tool becomes during a weather event. Otherwise I thought it was great technology.	Contractor agrees.	With approval for use of GeoSync code on MEMA WebEOC / Osprey systems we are moving towards operational use
More archived data would be useful but I understand that it is not available yet.	Contractor agrees. The best way to begin utilization of the NWS GeoSync tool is to provide key "take-away" NWS geospatial products during the execution of the NWS briefings to MEMA. These take-away products are simple geospatial layers that provide the most significant information on weather impacts provided to emergency managers.	Recommendations to NWS data publishers can be provided.
Must have mapping together with PowerPoint in one easy to use format. Better drawing tools, better layers especially NHC.	StormCenter will be providing recommendations to NWS to expand the technology to include other functions such as presentation slides. A solution that would allow forecasters to store all archived and active IDSS presentation materials on the internet for immediate access from any location has been identified as a desired function by NWS Forecasters.	Recommendations to NWS data publishers can be provided. Recommendations to NWS on how to improve IDSS solutions and technology will be provided. Updates to the lead code will be rolled out, improving draw tools and other tools for both lead and participants.
Add legend, add two way drawing, check color rendering.	Layer colors are not a function of the GeoSync system, but of the geospatial layers used.	Recommendations to NWS data publishers can be provided. Recommendations to NWS on how to improve IDSS solutions and technology will be provided. Updates to the lead code will be rolled out, improving draw tools and other tools for both lead and participants.
Ensure all locally-originating layers (e.g., those made by	Contractor agrees. The best way to begin utilization of the NWS	Recommendations to NWS data publishers can be provided.

NWS-Sterling) are available in short time/with short notice to be loaded into the product.	GeoSync tool is to provide key "take-away" NWS geospatial products during the execution of the NWS briefings to MEMA. These take-away products are simple geospatial layers that provide the most significant information on weather impacts provided to emergency managers.	
Build in audio component so that we do not have to use a separate audio system	GeoSync technology is not intended to handle conference calls. Multiple commercial Conference Call Service providers already exist, including some for free.	Recommendations to NWS on alternative Conference Call Service providers can be provided.
Add an audio component so we don't have to use a 3rd party service	GeoSync technology is not intended to handle conference calls. Multiple commercial Conference Call Service providers already exist, including some for free.	Recommendations to NWS on alternative Conference Call Service providers can be provided.

BENEFITS

Without removing current functionality or altering current IDSS workflows we are addressing the needs of both the NWS, by improving the delivery of IDSS to emergency management, and MEMA, who wants to increase the usage of their Osprey system. The tools proposed will encourage greater usage without disrupting workflows.

By facilitating access to the NWS data by introducing products though the system that MEMA currently uses for situational awareness (Osprey) it is expected we increase the usefulness of the weather products, as well as the number of users viewing the visual part of NWS presentations (either live during presentations or when logging in after a call).

By using MEMA's Osprey to display NWS data it is expected that MEMA staff and stakeholders will be able to:

- Receive new functions that are compatible with current collaborative webinar-based solutions (WebEx).
- Provide the ability for emergency management to keep an eye on only one platform, or operating picture.
- Use NWS data more efficiently for decision making and situational awareness because it will be fused on the Osprey map with the Osprey data on delivery.
- Provide better feedback to the NWS about what is useful and what isn't.
- Have better questions (thanks to the hands-on experience with the data).
- Practice during training on the mapping tools that are used during an actual event by showing historical or archived weather data layers in Osprey on-demand for training or exercises.
- Receive a take-away from the NWS briefing that is already integrated in their COP, and with the layers important to MEMA staff and stakeholders.
- Have access to products they might not have known about at the right time, without overwhelming them by sending them a list of products.

By providing the right tools in the NWS COP, including access to on-the-fly exported data from the AWIPS thin client and pre-staged geo-products, we are expecting:

- WFO forecasters to find it easier to show more NWS mapped products to emergency management
- The data in the Layer repository products will be updated more frequently than a static image in a Power Point
- During presentations there will be greater interaction with the data presented (clicking on map for info, zooming around, etc)
- WFO forecasters will be able to deliver visuals to emergency management during the response to unscheduled calls from emergency management (outside of pre-planned scheduled conference call and without screensharing support). This can be accomplished by activating the layers necessary in the NWS C-COP and any Osprey user at any time can click to collaborate and get the latest NWS update.
- Even without a call or screensharing presentation, the WFO can keep up the most significant map information loaded on the viewer so that Osprey users can access it even without the need of a call and/or screensharing. We will work with the WFO to develop banners as static overlays that can be displayed on top of the Osprey map to extend the collaboration to non-real time briefing functions.
- WFO forecasters can show historical or archived weather data layers in Osprey on-demand for training or exercises, allowing practice during training on the mapping tools that are used during an actual event
- Discovery of the most useful information to emergency mangers for them to take better decisions, by combining these layers with the layers they use for situational awareness.
- WFO forecasters will be able to present and test new GIS layers from the NWS to EMs outside of scheduled calls, which normally happen during event activations and are a bad time to present new products. This will provide the ability to display new weather generated products and see if they are useful in emergency manager's decision making process as well as improve the refinement of products the WFO is currently experimenting with.
- Provides functionality that could be used every day, facilitating the "ramp-up" to full operations