National Incident Management System (NIMS) Supporting Technology Evaluation Program (STEP) Report

Previstar Continual Preparedness System (CPS)
Version 5.1

May 2008

FEMA

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EXECUTIVE SUMMARY

This report presents the National Incident Management System Support Center's (NIMS SC) results from a pilot evaluation of Previstar Incorporation's product Previstar Continual Preparedness System (CPS) 5.1. This evaluation was conducted in support of the Incident Management Systems Integration (IMSI) Division within the Department of Homeland Security's (DHS) Federal Emergency Management Agency (FEMA). The evaluation was conducted 11 to 15 February 2008 as part of the National Incident Management System Supporting Technology Evaluation Program (NIMS STEP). This evaluation had three objectives. The first objective was to evaluate the incorporation of the National Incident Management System (NIMS) concepts and principles. The second objective was to determine the product's adherence to the Organization for the Advancement of Structured Information Standards (OASIS) Common Alerting Protocol (CAP) 1.1 standard. The third objective was to determine the product's adherence to the OASIS Emergency Data eXchange Language-Distribution Element (EDXL-DE) 1.0 standard.

Previstar CPS is a web browser-based resource and information management system built to automate NIMS and Hospital Incident Command System (HICS) guidelines for preparedness, response, and recovery. The Previstar CPS manages resources for incident operations, and provides users with detailed information on resources, facilities, personnel, and documents. The system also includes a stand-alone Geographic Information System (GIS) module that geographically locates (geo-codes) both planning information and incident-related resource deployments, status boards, and other data pertinent to response efforts.

All evaluations were conducted on site at the NIMS SC facility in Somerset, Kentucky. Previstar CPS was accessible to the evaluators via a web browser using computer workstations from the NIMS SC facility. The vendor established user accounts for the participants, and provided a username and password to each participant. No installation was required on the users' computers. The vendor provided participants on-site training and a training manual. A total of 11 hours of training was conducted. Additionally, the vendor provided technical support remotely during the evaluation. Subject Matter Experts

(SMEs) evaluated the product for incorporation of NIMS concepts and principles, and test engineers evaluated the product for compliance to the CAP and EDXL-DE standards. This executive summary provides an overview of the results. Detailed evaluation findings and ratings are presented in Section 3, **Results**.

Overall, the product is consistent with the concepts and principles of NIMS; evaluators identified minor issues with the structure of the organizational charts and the use of the term Incident Action Plan (IAP). Previstar CPS is a command and control product that can support all 15 Emergency Support Function (ESFs); it applies to all nine Incident Command functions, to a multi-discipline response, and to all hazards, including national political conventions and large sporting events. The product supports management of resources; however, SMEs identified that the system does not track resource deployments completely. The product can task personnel and allocate resources, but there is no record that the recipient has accepted the task. Additionally, the product does not display if resources have arrived at the requesting point or when the task is completed. Previstar CPS is consistent with 11 out of 14 management characteristics of the ICS. It should take less than six months to implement the product, and a minimum of 40 hours of training; however, this will be dependent upon a user's computer literacy and the amount of data that is loaded into the system. Users must have the opportunity to practice regularly with the system; otherwise, they will lose proficiency due to the complexity of the product. Previstar CPS could enhance the user's ability to do his/her job due to the amount of information that can be made available if the data is entered into the system.

Test engineers determined that the product is compliant with all required elements of the CAP standard. Engineers successfully generated CAP alerts using both automated and manual methods. They used two eXtensible Markup Language (XML) validation tools to determine that the resulting messages were well-formed and valid. The capability to send CAP alerts to Disaster Management Interoperability Services (DMIS) was verified. However, Previstar CPS rejected all messages originating from DMIS. Previstar CPS rejected CAP messages transmitted from DMIS through the Open Platform for Emergency Network's (OPEN) because they contained invalid data for the "derefURI" element. The vendor stated that Previstar CPS correctly rejected CAP alerts that don't

meet CAP specifications. Further technical investigation is warranted regarding this issue and evaluators submitted it to the DMIS help desk for consideration.

Engineers identified limitations with manually generating CAP messages because Previstar CPS does not permit all Code Values allowable by the CAP standard. For example, the "status" element must be set to "Actual" or "Exercise"; otherwise, Previstar CPS will not generate or post a CAP message. However, the automatic message generation capability accounts for these specific requirements. Previstar CPS implements all four segments of the CAP alert. In summary, the product implements 100 percent of the mandatory elements and 32 percent of the optional elements of the CAP standard for automatically generated CAP messages. Previstar CPS supports 100 percent of the mandatory and optional elements if a user manually generates a CAP alert message.

Test engineers determined that the product is compliant with all required elements of the EDXL-DE standard. Previstar CPS automatically generates EDXL-DE messages which include a CAP message as XML content. The product does not permit the end-user to customize the EDXL-DE message. Test engineers sent EDXL-DE messages from Previstar CPS to the OPEN EDXL-DE service, but there was not a secondary system available from which to originate EDXL-DE messages. Thus, test engineers did not verify the capability of Previstar CPS to receive EDXL-DE messages from an external system. The product successfully imported raw EDXL-DE XML from a secondary system through a manual import feature. Previstar CPS implements two of the three possible segments of the EDXL-DE message. Overall, the product implements 100 percent of the mandatory elements and 13 percent of the optional elements of the EDXL-DE standard.

1.0 INTRODUCTION

This report presents the results from a pilot evaluation of Previstar Incorporation's product Previstar CPS 5.1. Evaluation activities are sponsored by FEMA. To support NIMS implementation, DHS established the NIMS SC in 2005. This program operates under a Cooperative Agreement between FEMA and the Justice and Safety Center/Eastern Kentucky University (EKU). This evaluation was conducted as part of the NIMS STEP, which supports NIMS implementation by providing an independent, third party evaluation of supporting technologies. Evaluation activities are designed to help create a uniform level of compliance, expand technology solutions, and provide the emergency response community with an objective process to evaluate their purchases. The objectives of this evaluation were to determine the product's incorporation of NIMS concepts and principles and its adherence to the CAP and EDXL-DE standards. Vendor participation in NIMS STEP is voluntary and the use of trade names and evaluation results in this document does not constitute a DHS or FEMA endorsement or certification of the use of such commercial hardware or software. The evaluations do not constitute a determination of NIMS compliance.

1.1 Program Summary

The NIMS provides a framework and sets forth, among others, the requirement for interoperability and compatibility to enable a diverse set of public and private organizations to conduct well-integrated and effective incident management operations. Systems operating in an incident management environment must be able to work together and not interfere with one another. Interoperability and compatibility are achieved through the use of tools such as common communications and data standards. The NIMS STEP supports NIMS implementation by providing an independent, third party evaluation of supporting technologies.

NIMS STEP personnel evaluate products primarily in a controlled, simulated, Emergency Operations Center (EOC)-based environment. Some products require demonstration in a limited field setting. In these cases, the field setting is considered an extension of the laboratory environment. Evaluations take place over the course of one week during which recognized experts in the field of emergency management and response gain hands-on experience with the system. The NIMS STEP team consists of objective evaluators, typically including at least three SMEs and two test engineers for each product under evaluation. SMEs adhere to a non-disclosure agreement and a code of conduct which ensures objectivity and the protection of company sensitive information. The SMEs conduct qualitative analysis and provide feedback on the product based on concepts and principles from NIMS (Publication FEMA 501). Engineers conduct technical analysis of the product's adherence to the standards under review.

1.2 Product Description[1]

Previstar CPS is an intelligent resource and information management system built to automate NIMS and HICS guidelines for preparedness, response, and recovery. The Previstar CPS manages disparate and related resources as a single interrelated operation, and provides up-to-date information on resources, facilities, skills, documents, and personnel. The system also includes a stand-alone GIS module that geographically locates (geo-codes) both planning information and incident-related resource deployments, status boards, and other data pertinent to response efforts. The vendor stated that the mapping portion of this product will allow a user to locate resources; however, the capability of the system to help the user track resources in real time using a Global Positioning System (GPS) is currently not available. The vendor may adapt the product to address this in a future release. **Figure 1** shows the modularization for Previstar CPS.

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[1] The vendor provided the majority of information within this section. Participants did not verify all of the system's description during the evaluation.
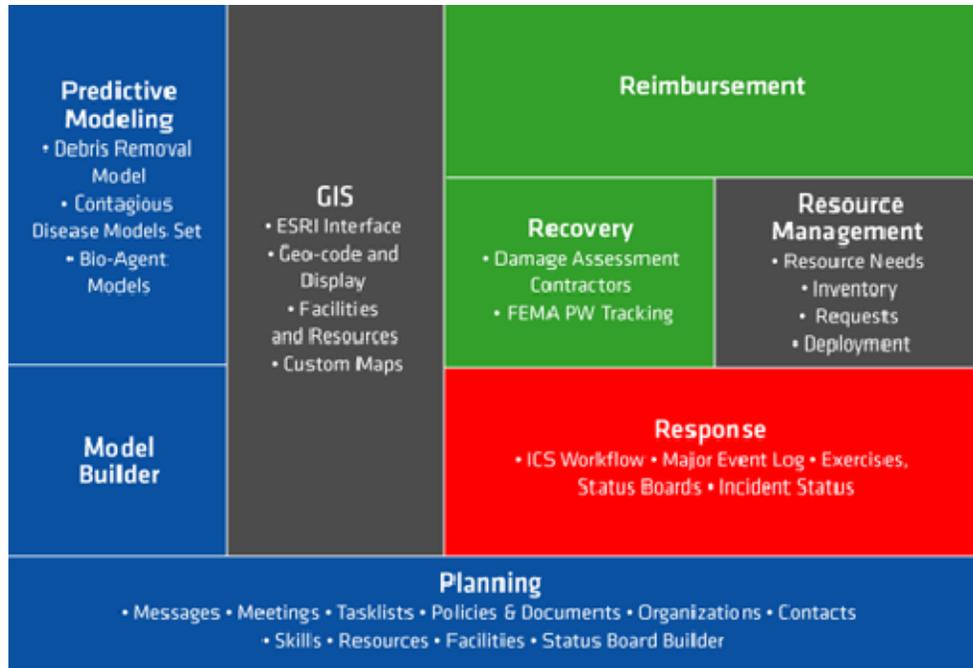
Figure 1: Previstar CPS Modularization

Previstar CPS is a web browser-based application that can be accessed by up to 250 concurrent users per server but the software will scale with the server capacity. For example, in a multi-server configuration thousands of users at multiple EOCs could be supported. For incidents involving possible loss of communication, the Previstar CPS can also be installed on stand-alone machines with a Microsoft SQL Server. This allows users to work locally in a disconnected environment and synchronize with the server through SQL Server's replication process when reconnected to the Internet.

To meet planning challenges, Previstar CPS aids users through the following:

- **Predict Resource Needs**: Automate management of personnel, resources, and activities, and identify shortfalls based on real world scenarios and predictive models.

- **Link Planning and Response Processes**: Build tasks and checklists to address specific response needs. Planned tasks can be activated instantly to execute the response activities.

- **Plan for Hazard Mitigation**: Previstar CPS aids in predicting impact and coordinating effective response.

- **Improve Exercises and Simulations**: A user can apply their own data to exercises.

Previstar CPS assists with the safety and effective operations of those involved in the response process through the following:

- **Maintain Real-time Situational Awareness**: Previstar CPS automatically updates information as the situation unfolds, enabling informed command decisions.

- **Deploy Resources**: Leverage intelligent data to put teams, equipment, and supplies in the right place at the right time.

- **Automate NIMS/ICS Processes**: Build the NIMS/ICS framework directly into response processes and documentation.

- **Activate Plans, Tasks, and Checklists**: Activate time-based tasks, data, and workflow based on precedents established during planning, exercises, or previous events.

- **Provide Access from Anywhere**: Access Previstar CPS from any web-enabled device, in the EOC, in the field, or even as a stand-alone laptop system for remote locations or extreme situations.

- **Streamline Communications**: Previstar CPS works with existing EOC or other communications systems, and supports information sharing with mutual aid partners.

Previstar CPS aids in addressing key challenges with the recovery and reimbursement process through the following:

- **Automate Documentation**: Previstar CPS captures all times, places, activities, and financial data, ensuring accurate reimbursement while reducing data entry and paperwork needs.

- **Align with NIMS/ICS Requirements**: In addition to providing FEMA forms, Previstar CPS provides a framework for automating key NIMS/ICS processes.

- **Manage Complex Operations**: Previstar CPS automatically manages and updates data on interrelated resources, activities, and locations across the entire recovery area.

- **Reduce Audit Risk**: Automated data capture and an electronic source document audit trail reduces the risks and workplace disruption of a federal audit.

- **Speed Time to Money**: A single accurate system of record reduces the time it takes to locate data, complete applications, and receive reimbursement.

Previstar CPS solutions range from EOC operations to tactical solutions for police and fire, to public health and medical information management. The primary users of the system are EOCs, emergency responders, emergency managers, schools, and health organizations. The technology addresses all phases of crisis management. The system is built from modules configured to meet the specific needs of emergency management and homeland security officials. **Figure 2** shows the Previstar CPS planning home page.
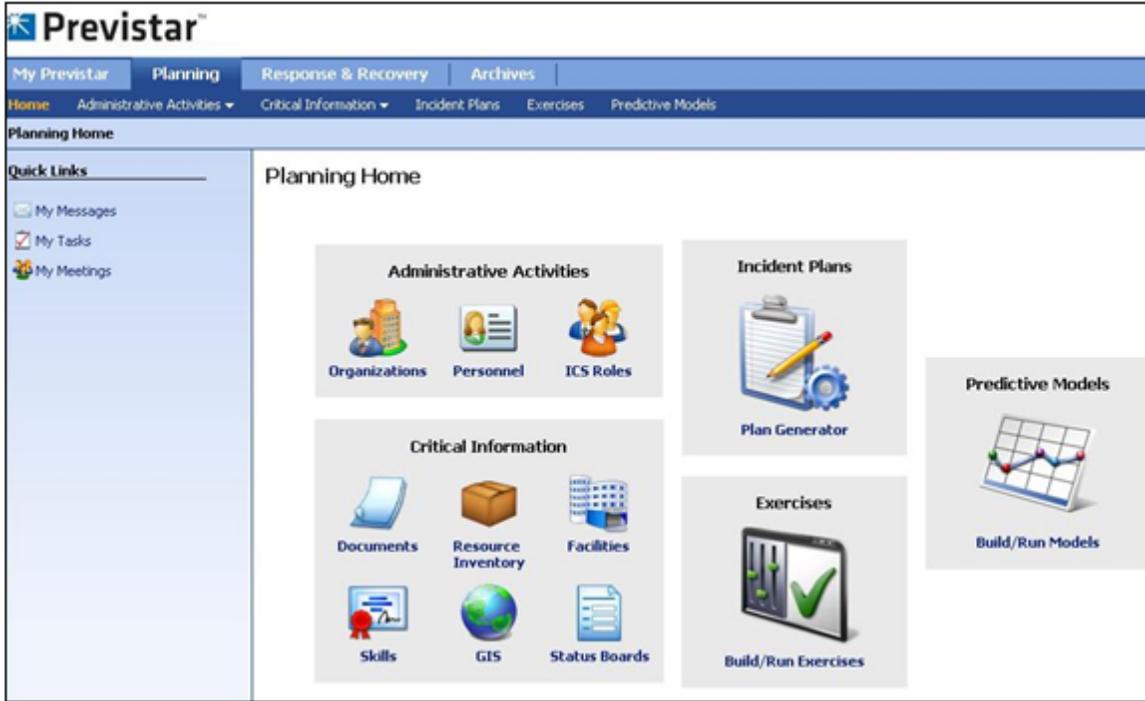
Figure 2: Previstar CPS Planning Home

1.3 Objectives

The evaluation team developed a set of objectives to provide the foundation for this evaluation (see **Table 1**).

Table 1: Evaluation Objectives

Objectives
Objective 1: Evaluate incorporation of NIMS concepts and principles.
Objective 2: Determine adherence to the CAP standard.
Objective 3: Determine adherence to the EDXL-DE standard.

Objective 1 addresses NIMS concepts and principles. The primary sub-elements of this objective were applicability to Emergency Support, Scalability, Hazards, Resource Management, Communication and Information Management, Command and Management, and Implementation of the product.

Objective 2 addresses the implementation of the CAP standard which is a format for exchanging all-hazard emergency alerts and public warnings. The CAP standard is on the

NIMS Recommended Standard List. IMSI Division encourages implementation of the CAP standard in technology solutions.

Objective 3 addresses the implementation of the EDXL-DE standard which describes a standard message distribution framework for data sharing among emergency information systems using an XML-based format. The primary use of EDXL-DE is to identify and provide information to enable the routing of content. EDXL-DE messages can be targeted to geospatial or political target areas for message delivery. The EDXL-DE standard is on the NIMS Recommended Standards List. IMSI Division encourages implementation of the EDXL-DE standard in technology solutions.

1.4 Evaluation Setup

Evaluators included two SMEs, and two test engineers. All evaluations were conducted on site at the NIMS SC facility in Somerset, Kentucky. Previstar CPS was accessible to the evaluators via a web browser using computer workstations from the NIMS SC facility. No installation was required on the workstations. The vendor provided the evaluators with usernames and passwords to access the system and conducted 11 hours of training.

1.5 Evaluation Schedule

The Previstar CPS evaluation schedule extended from 11 through 15 February 2008. **Table 2** provides a summary of key events and milestones.

Table 2: Evaluation Schedule

Event	Date(s) (2008)
Evaluation Readiness Review	08 February
Administrative system setup and pre-evaluation checks	11 February
Participant training	11 – 12 February
Rehearsal of system evaluation procedures	12 February
Evaluation execution	13 – 15 February
Data analysis and Quality Control (QC)	15 February

On 8 February 2008, the NIMS SC team conducted an Evaluation Readiness Review to ensure that logistical preparations were completed. The vendor provided participants on-site training on 11 and 12 February and participants received a training manual. Participants evaluated the system from 13 through 15 February 2008. During this timeframe, SMEs used the system and completed a scoring sheet on the product's incorporation of NIMS elements. Test engineers conducted laboratory tests to validate the conformance of Previstar CPS to the CAP and EDXL-DE standards.

1.6 Scope and Limitations

Table 3 lists the limitations and constraints that impacted the evaluation of Previstar CPS and the team's approach to mitigating them.

Table 3: Limitations

Limitation	Impact	Mitigation Strategy
Test engineers encountered intermittent problems generating messages in DMIS containing two "info" segments.	Test scheduling was impacted by DMIS issues.	Test engineers outreached to DMIS staff and continued working with the system until they had the appropriate CAP messages for test purposes.
A secondary system was not available with which to exchange EDXL-DE messages.	Engineers demonstrated the capability to send EDXL-DE messages using the OPEN EDXL-DE viewer. However, they could not verify receipt of a message.	The NIMS STEP team is in the process of obtaining additional tools to support testing of EDXL-DE transactions.

2.0 EXECUTION

2.1 Participant Credentials

Table 4 summarizes the evaluators' areas of expertise, role during the evaluation event, and years of experience. In addition to personnel identified below, NIMS SC Infrastructure staff members provided technical troubleshooting during the evaluation and maintained computer hardware/software to support the evaluation.

Table 4: Participant Credentials

Current Title	Role	Years of Experience
Senior Emergency Management Analyst	Emergency Management SME, NIMS Evaluation	18
Senior National Security Analyst	Emergency Response SME, NIMS Evaluation	36
Test and Evaluation Engineer	Test Engineer, CAP & EDXL-DE Testing	11
Test and Evaluation Engineer	Test Engineer, CAP & EDXL-DE Testing	11
Test and Evaluation Analyst	NIMS STEP Test Manager	7

2.2 Methodology

SMEs in the areas of emergency response and management performed an evaluation for NIMS concepts and principles in a simulated operational environment. Test engineers conducted an evaluation of the system's adherence to the OASIS CAP 1.1 and EDXL-DE 1.0 standards. The following sections describe the approach to each component of the evaluation in more detail.

2.2.1 NIMS Evaluation

After utilization of the system, SMEs completed a NIMS STEP Scoring Sheet and documented their observations through the online Test and Evaluation (T&E) Data Collection System (DCS) spot reports and observation logs. SMEs provided each element of the software a numeric score as rated against criterion in **Appendix A** of this document. Ratings were made on a scale of 0 to 5^2. The SMEs reviewed elements including applicability to Emergency Support, Scalability, Hazards, Resource Management, Communications and Information Management, Command and Management, and Implementation.

No numerical value was assigned for Communication and Information Management or Command and Management. The SMEs conducted a qualitative analysis and provided feedback on the product based on concepts and principles from NIMS. Input from the SMEs was captured using a Likert scale – a rating scale measuring the strength of agreement towards a set of NIMS-related statements. These methods are designed to help describe products and to determine the presence or absence of desirable attributes. This portion of the evaluation was primarily a qualitative evaluation based on the experience of the NIMS STEP team. A completed NIMS STEP Scoring Sheet is provided in the results section. **Appendix A** provides a detailed description of the criteria and rating scale used during the evaluation.

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[1] For additional details regarding the meaning of each rating, refer to **Appendix A** of this document.

2.2.2 CAP Evaluation

Engineers executed the CAP evaluation procedures, as identified in the Previstar CPS NIMS STEP Evaluation Plan. There were a total of four evaluation cases (see **Table 5**). Engineers scored each evaluation step as pass, fail, or conditional based on the performance of the system. Scores for each evaluation step were then combined for an overall rating for each of the four evaluation cases. Evaluators also documented their observations through the online T&E DCS spot reports and observation logs.

Table 5: CAP Evaluation Cases

Evaluation Case Identifier	Evaluation Case Title	Evaluation Objective
EVAL_001	Generate CAP Alert Message	Generate a CAP Alert message for use in the XML/Schema validation, CAP conformance, and transaction testing.
EVAL_002	XML/Schema Validation	Determine if the message is well formed and valid against a CAP 1.1 applied schema.
EVAL_003	CAP Conformance	Determine if the CAP standard is applied in the correct format to include proper application of cardinality of elements, CAP standard structure, mandatory and optional elements, and conditional rules.
EVAL_004	Transaction	Verify transaction with disparate systems.

2.2.2.1 Evaluation Case EVAL_001 "Generate CAP Alert Message"

The objective of this evaluation case was to generate a CAP alert message for use in cases EVAL_002 and EVAL_003. Test engineers created the CAP message through automated means by entering a new incident via "Response and Recovery" and through the "Major Events" menu. Engineers also generated CAP messages manually through the "Quick Links – New CAP alert" menu. Evaluators input data into all exposed optional and mandatory fields to develop the CAP alert message. The message contained one <alert> segment, one or more <info> segments, one or more <resource> segments, and one or more <area> segments.

2.2.2.2 Evaluation Case EVAL_002 "XML/Schema Validation"

The objective of this evaluation case was to determine if the CAP alert message was well formed and valid against a CAP applied schema. Evaluators used two software tools to complete this validation: XRay™2 XML Editor and ALTOVA® XMLSpy® 2008. Evaluators utilized the "CAP1_1Schema.xsd" file provided by staff from DHS' Command, Control, and Interoperability Division to complete this evaluation case.

2.2.2.3 Evaluation Case EVAL_003 "CAP Conformance"

The purpose of this evaluation case was to determine if the CAP standard was applied in the correct format to include proper application of cardinality of elements, CAP standard structure, mandatory and optional elements, and conditional rules. Evaluators used XRay™2 XML Editor and ALTOVA® XMLSpy® 2008 to find elements within the XML CAP alert message generated in case EVAL_001. Evaluators manually checked for each element, as well as verified that the system did/did not permit multiple entries of elements, as specified in the CAP standard.

2.2.2.4 Evaluation Case EVAL_004 "Transaction"

The purpose of this evaluation case was to verify transaction with disparate systems. Evaluators verified receipt and readability of a CAP alert message. Test engineers verified receipt and readability to a CAP alert message sent from Previstar CPS through OPEN and received by DMIS. Engineers also attempted to send messages from DMIS to Previstar CPS. Initially, Previstar CPS was configured to send messages to the DMIS Interoperability Collaborative Operating Group (COG) 1737 but was modified by developers on 11 February to use the NIMS STEP COG 5232.

Previstar CPS developers also provided a tool to support testing called Previstar OPENTST. This tool allowed engineers to view the CAP Servlet interface, edit the XML of CAP messages, and transmit CAP alerts between COGs. The tool also has a capability to generate a valid "derefUri" element including base-64 encoded data content. This tool is not part of a deployment for Previstar CPS so it was used only as a supplementary tool for CAP transaction test purposes.

2.2.3 EDXL-DE Evaluation

Test engineers executed the EDXL-DE evaluation procedures, as identified in the NIMS SC Previstar CPS Evaluation Plan. There were a total of four evaluation cases (see **Table 6**). Test engineers scored each evaluation step as pass, fail, or conditional based on the performance of the system. Scores for each evaluation step were then combined for an overall rating for each of the four evaluation cases. Test engineers also documented their observations through the online T&E DCS spot reports and observation logs.

Table 6: EDXL-DE Evaluation Cases

Evaluation Case Identifier	Evaluation Case Title	Evaluation Objective
EVAL_EDXL-DE_001	Generate EDXL-DE Message Set	Generate an EDXL-DE message for use in the EDXL-DE XML/Schema validation, conformance, and transaction testing.
EVAL_EDXL-DE_002	XML/Schema Validation	Determine if the message is well formed and valid against an EDXL-DE 1.0 applied schema.
EVAL_EDXL-DE_003	EDXL-DE Conformance	Determine if the EDXL-DE standard is applied in the correct format to include proper application of cardinality of elements, EDXL-DE standard structure, mandatory and optional elements, and conditional rules.
EVAL_EDXL-DE_004	Transaction	Verify transaction (both send and / or receive) with disparate systems.

2.2.3.1 Evaluation Case EVAL_EDXL-DE_001 "Generate EDXL-DE Message Set"

The objective of this evaluation case was to generate an EDXL-DE message for use in cases EVAL_EDXL-DE_002 and EVAL_EDXL-DE_003. Previstar CPS automatically generates EDXL-DE messages that include a CAP message as XML content. End-user customization is not permitted.

2.2.3.2 Evaluation Case EVAL_EDXL-DE_002 "XML/Schema Validation"

The objective of this evaluation case was to determine if the EDXL-DE alert message was well formed and valid against an EDXL-DE applied schema. Test engineers used two software tools to complete this validation: XRay™2 XML Editor and ALTOVA® XMLSpy® 2008. Test engineers utilized the "EDXL-DE_Schema_v1.0.xsd" file provided by staff from DHS' Command, Control, and Interoperability Division to complete this evaluation case.

2.2.3.3 Evaluation Case EVAL_EDXL-DE_003 "EDXL-DE Conformance"

The purpose of this evaluation case was to determine if the EDXL-DE standard was applied in the correct format to include proper application of cardinality of elements, EDXL-DE standard structure, mandatory and optional elements, and conditional rules. Test engineers used XRay™2 XML Editor and ALTOVA® XMLSpy® 2008 to identify elements within the XML EDXL-DE alert message generated in case EVAL_EDXL-DE_001. Evaluators manually checked for each element, as well as verified that the system did/did not permit multiple entries of elements, as specified in the EDXL-DE standard.

2.2.3.4 Evaluation Case EVAL_EDXL-DE_004 "Transaction"

The purpose of this evaluation case was to verify transaction with disparate systems. EDXL-DE messages were sent from Previstar CPS to OPEN's EDXL-DE service. There was not a secondary system from which to send EDXL-DE messages back to Previstar CPS. The capability of Previstar CPS to receive EDXL-DE messages from an external system was not verified. Previstar CPS included a manual capability to import raw XML from a secondary system and test engineers verified this capability.

2.3 Post-Assessment Activities

The primary data collected during this event was one collective NIMS STEP Scoring Sheet, a set of completed evaluation procedure logs for the CAP evaluation, and one for the EDXL-DE evaluation. All participants submitted observations electronically through the T&E DCS and participated in after action reviews. A data collector/manager was on-site during the evaluation to ensure data integrity and control. Data analysis and QC began during the evaluation and concluded with the development of this report.

3.0 RESULTS

3.1 Objective 1: Evaluate Incorporation of NIMS Concepts and Principles

Overall, Previstar CPS is consistent with the concepts and principles of NIMS. However, SMEs identified two inconsistencies. Organizational charts created in Previstar CPS were not consistent with NIMS and the ICS. The Public Information Officer (PIO), the Safety Officer, and Liaison Officer (Command Staff positions) are displayed at the same level as the Operations, Planning, Logistics, and Finance/Administration Sections within the charts. Additionally, SMEs identified a discrepancy in how the term Incident Action Plan (IAP) is implemented throughout the system. IAPs are formulated after an incident has occurred and they are customized to meet the goals and objectives of the incident. The software has the capability to "pre-plan" or pre-load a template or an example of an IAP, but without the specifics of an actual incident this is not an IAP. Referring to a template or example as the IAP is confusing to users. This feature is beneficial by organizing and pre-populating the ICS forms that are used to create the IAP especially if the emergency is a generic or routine event in which commonalities and structure components can be duplicated for ease of use or expediency.

Previstar CPS is a command and control product that can support all 15 ESFs (value 5), and it applies to all nine Incident Command functions (value 5). The product is primarily a tool for use at the Incident Command level; however, its CAP capability allows users to inform lateral and higher command levels of situations. It is also useful to emergency responders, local EOCs, State EOCs, and the private sector. Therefore, the product is applicable to a multi-discipline response (value 4). It is capable of handling small or large incidents and allows users to monitor the situation in multiple incidents simultaneously. The vendor claimed that up to 250 users would be able to access the program at the same time on one server but the software will scale with the server capacity. For example, in a multi-server configuration thousands of users at multiple EOCs could be supported. The product is applicable to all hazards (value 5), as well as events such as national political conventions and large sporting events. Furthermore, the product is a tool for Resource Management. It supports inventory (supplies and equipment), personnel, and management (value 5) but it does not track resource deployments completely. The

product can task personnel and allocate resources, but there is no record that the recipient has accepted the task. Additionally, the product does not display if resources have arrived at the requesting point or when the task is completed. Previstar CPS incorporates FEMA's 120 Typed Resource Definitions. A benefit of the system is the ability for the product to create a report where training and certifications can be queried, tracked, or flagged for follow-up training or recertification. This is a benefit for the credentialing of responders.

The product shares information via CAP messages or attaching reports to emails, and no system or vulnerability concerns were identified. Previstar CPS is consistent with 11 out of 14 management characteristics of the ICS. The product does not specifically address Modular Organization, Span of Control, or Information and Intelligence Management. The examples provided during training exceeded the prescribed Span of Control. It should take less than six months for a department/agency to implement this product (value 4). However, a fully functioning system with all the necessary databases could take much longer to implement. It should take a minimum of 40 hours of training (value 3); however, this is dependent upon the computer skills of personnel. The quality of training may be impacted by the amount of available data. Additionally, trainees must be given the opportunity to practice regularly on the system; otherwise, system proficiency will be lost. Instructor and system administrator training is available. In addition, the vendor provides a training manual and customer support. Product costs and funding for qualified personnel to set up and maintain the system may impact jurisdictions from implementing this product. However, this product will enhance the user's ability to do his/her job due to the data that can be entered. The data available through Previstar provides important information to decision makers. The completed NIMS STEP Scoring Sheet is provided in **Table 7**.

Table 7: NIMS STEP Scoring Sheet

NIMS STEP Scoring Sheet		
Product Name: Previstar CPS		
Criteria and Question	**Value**[3]	**Justification/Answer**
EMERGENCY SUPPORT *"EOCs may be organized by major discipline (e.g., fire, law enforcement, emergency medical services, etc.); by emergency support functions (e.g., transportation, communications, public works and engineering, resource support, etc.); by jurisdiction (e.g., city, county, region, etc.); or, more likely, by some combination thereof." – National Incident Management System* *"The Federal government groups most of its resources and capabilities, and those of certain private-sector and non-governmental organizations, under 15 Emergency Support Functions (ESFs)." – National Response Framework*		
Rating and Justification - Emergency Support Functions	5	Previstar CPS is a robust command and control product that can support all of the ESFs.
This product is applicable to <u>15</u> ESF(s).		Transportation, Communications, Public Works & Engineering, Firefighting, Emergency Management, Mass Care, Public Works, Resource Support, Oil & Hazmat Response, Agriculture & Natural Resources, Energy, Public Safety, Long Term Recovery & Mitigation, and External Affairs.
There are no impediments to ESF(s) accepting this product.		Strongly Disagree ☐ / Disagree ☐ / Agree ☒ / Strongly Agree ☐ / N/A ☐
Identify any impediments to ESF(s) accepting this product.		None identified.
Rating and Justification – Incident Command	5	All of the Incident Command functions defined in NIMS are able to be supported by Previstar CPS.
This product is applicable to <u>9</u> Incident Command functions.		Previstar CPS can support the following Incident Command functions: Command, Operations, Planning, Logistics, Finance/Administration, Intelligence, Public Information, and Safety.

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[3] For additional details regarding the meaning of each rating, refer to **Appendix A** of this document.

		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
There are no impediments to Incident Command functions accepting this product.		☐	☐	☒	☐	☐
Identify any impediments to Incident Command functions accepting this product.		None identified.				

SCALABILITY

"Communications and information systems should be designed to be flexible, reliable, and scalable in order to function in any type of incident, regardless of cause, size, location, or complexity. They should be suitable for operations within a single jurisdiction or agency, a single jurisdiction with multiagency involvement, or multiple jurisdictions with multiagency involvement." – National Incident Management System

"The NRF is intended to capture specific authorities and best practices for managing incidents that range from the serious but purely local, to large-scale terrorist attacks or catastrophic natural disasters."
– National Response Framework

Rating and Justification – Scalability	4	Previstar CPS is primarily a tool for use at the Incident Command level; however, its CAP capability allows users to keep lateral and higher command levels informed of the situation. It is capable of handling small or large incidents and allows users to monitor the situation in multiple incidents simultaneously.
Identify any limitations on the capacity of the system.		It is a user-based server system that is limited only by the capabilities of the server. The vendor claimed that up to 250 users would be able to access the program at the same time on one server. The software will scale with server capacity and the vendor claimed that it can be deployed in a multi-server configuration to support additional users and multiple locations.

		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
The product is applicable across the full spectrum of multi-agency events.		☐	☐	☒	☐	☐
The product is applicable across the full spectrum of multi-jurisdiction events.		☐	☐	☒	☐	☐
The product is applicable across the full spectrum of multi-discipline events.		☐	☐	☒	☐	☐
This product is applicable to multiple levels of Government(s).		☐	☐	☒	☐	☐

List Levels of Governments		The product is useful to emergency responders (ICS), up through local and State EOCs. The federal government is too far removed from the scene to directly interface with this product; however; the information created in this software would be useful to the federal government as an email attachment.			
This product is flexible enough to be applicable to the public and private sectors.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☐	☒	☐	☐
If not, what are the limitations?		The product was created to support the public sector. The product is also applicable to private sectors if they follow NIMS and ICS principles.			

HAZARDS

"Any incident, natural or manmade, that warrants action to protect life, property, environment, public health or safety, and minimize disruptions of government, social, or economic activities." – National Incident Management System

Rating and Justification – Hazards	5	Previstar CPS could be used to track the actions taken in any incident.			
The product is applicable to multiple Hazards.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☐	☒	☐	☐
Identify applicable Hazards		Natural-, Technological-, and Human-caused incidents as well as special events such as the Super Bowl, Olympics, and national political conventions.			

RESOURCE MANAGEMENT

"NIMS defines standardized mechanisms and establishes the resource management process to: identify requirements, order and acquire, mobilize, track and report, recover and demobilize, reimburse, and inventory resources." – National Incident Management System

"A standardized, integrated process conducted prior to, during, and after an incident by all emergency management/response personnel and their associated organizations." – National Incident Management System

"The credentialing process is an objective evaluation and documentation of a person's current license or degree; training or experience; competence or certification; and the ability to meet nationally accepted minimum standards, to provide particular services and/or functions or perform particular procedures during an incident." – National Incident Management System

Rating and Justification - Resource Management	5	The product supports inventory (supplies and equipment), personnel, and management.			
This product addresses the need to manage resources.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☐	☒	☐	☐

		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
This product allows for the Inventory of resources.		☐	☐	☒	☐	☐
This product provides for the inventorying of FEMA typed resources.		☐	☐	☒	☐	☐
This product provides for the inventorying of non-FEMA typed resources.		☐	☐	☒	☐	☐
This product allows for Personnel accounting.		☐	☐	☒	☐	☐
The product provides a record of Credentialed Personnel.		☐	☐	☒	☐	☐
The product provides a record of other personnel.		☐	☐	☒	☐	☐
This product assists users in the Management of an incident.		☐	☐	☒	☐	☐
The product provides for resource tracking/reporting.		☐	☐	☒	☐	☐
The product provides for resource requesting/ordering.		☐	☐	☒	☐	☐
The product provides for resource recovery.		☐	☐	☒	☐	☐
The product provides a reimbursement process.		☐	☐	☒	☐	☐

Identify any additional resource management comments.		The product does not track resource deployments completely. The product can task personnel and allocate resources, but there is no record that the recipient has accepted the task. Additionally, the product does not display if resources have arrived at the requesting point or when the task is completed.

<table>
<tr><td colspan="7" align="center">COMMUNICATION AND INFORMATION MANAGEMENT

"Codes should not be used, and all communications should be confined to essential messages. The use of acronyms should be avoided during incidents requiring the participation of multiple agencies or organizations."
– National Incident Management System

"Systems operating in an incident management environment must be able to work together (across disciplines and jurisdictions) and not interfere with one another. Interoperability and compatibility are achieved through the use of tools such as common communications and data standards, digital data formats, equipment standards, and design standards." – National Incident Management System</td></tr>
</table>

		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
The product adheres to the principle of plain language (clear text).		☐	☐	☒	☐	☐
If not, cite examples.		The product uses clear text.				
Incident reporting and documentation procedures are standardized to ensure that situational awareness is maintained and provides emergency management/response personnel with easy access to critical information.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☐	☒	☐	☐
Describe any issues with access to critical information.		None noted.				
The product provides a method for data sharing or interoperability.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☐	☒	☐	☐
Identify any deficiencies in data sharing.		Information can be shared via CAP messages or reports that are attached to emails.				
The product does not have potential security or vulnerability concerns.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☐	☒	☐	☐
Identify any potential security or vulnerability concerns.		None noted.				
The system provides adequate controls to restrict access to sensitive information.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☐	☒	☐	☐

COMMAND AND MANAGEMENT

" --- enable effective and efficient incident management and coordination by providing flexible, standardized incident management structures." – National Incident Management System

The product supports (or is it consistent with) the 14 management characteristics of ICS:	Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
Common Terminology	☐	☐	☒	☐	☐
Modular Organization	☐	☐	☐	☐	☒
Management by Objectives	☐	☐	☒	☐	☐
Incident Action Planning	☐	☐	☒	☐	☐
Manageable Span of Control	☐	☐	☐	☐	☒
Incident Facilities and Locations	☐	☐	☒	☐	☐
Comprehensive Resource Management	☐	☐	☒	☐	☐
Integrated Communications	☐	☐	☒	☐	☐
Establishment and Transfer of Command	☐	☐	☒	☐	☐
Chain of Command and Unity of Command	☐	☐	☒	☐	☐
Unified Command	☐	☐	☒	☐	☐
Accountability	☐	☐	☒	☐	☐
Dispatch/Deployment	☐	☐	☒	☐	☐
Information and Intelligence Management	☐	☐	☐	☐	☒
Identify any inconsistencies with the management characteristics of ICS.	The software was not designed to specifically address Modular Organization, Span of Control, or Information and Intelligence Management. Applications exist in the software for all other characteristics of the ICS.				

IMPLEMENTATION
"It can be partially or fully implemented in the context of a threat, in anticipation of a significant event or in response to an incident. Selective implementation allows for a scaled response, delivery of the exact assets needed – and a level of coordination appropriate for each event " – National Response Framework

		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
This product can be easily implemented.		☐	☒	☐	☐	☐
System documentation (including training materials and user's guides) is comprehensive.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☐	☒	☐	☐
Identify the type of training available for the average practitioner (e.g. online, train the trainer, etc.).		A training manual was available from the vendor as well as instructor based and system administrator training.				
Is an integrated help tool available? If so is it adequate/intuitive?		An integrated help tool was available. The tool gives users step-by-step directions of how to use the product.				
Is customer support available? If so, what is its availability and what medium is used (e.g. email, phone, live-chat, etc.)?		Customer support is available via telephone, and email. Serious problems may require on-site personnel support.				
Identify any deficiencies in system documentation.		No system documentation deficiencies were noted.				
Rating and Justification – Implementation (Time)	4	Implementing this product would not take long. Data entry may take a considerable amount of time depending on the user and the amount of data to be imported and formatted.				
How long would it take a department or agency to implement this product?		A department/agency could implement this product in less than six months. A fully functioning system with all of the necessary databases could take much longer to implement.				
Time from installation to proficiency will be short.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☒	☐	☐	☐
There are no specific time constraints on departments or agencies when implementing this product.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☒	☐	☐	☐
The size or make up of the department or agency will affect the implementation of the product.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☒	☐	☐	☐

Rating and Justification – Implementation (Training)	3	Computer literacy will be the deciding factor for training. Personnel with computer skills will be able to grasp the concepts and methodologies quickly. During training, students may be limited by the availability of databases to work with.

Training allows recipients to proficiently use this product.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☐	☒	☐	☐

There are no other impediments that would prohibit a department or agency from providing the training to implement this product.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☒	☐	☐	☐

Identify any impediments to training.		Trainees must be given the opportunity to practice regularly on the system because proficiency will be quickly lost without reinforcement of training.

Federal, state, or local laws or regulations will not hinder the implementation of this product.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☐	☒	☐	☐

If so, please describe how.		None noted.

The impact of implementing this product will not vary for urban vs. rural jurisdictions.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☒	☐	☐	☐

If so, please describe how.		The ability of a jurisdiction to implement this product may be impacted by product cost and the availability of qualified personnel to set up the system with organizations, personnel, ICS roles, and permissions. Some jurisdictions may not have high-capacity servers or a multi-server environment which would limit the scalability of the product.

The impact of implementing this product will not vary for wealthy vs. resource limited jurisdictions.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☒	☐	☐	☐

If so, please describe how.		Resource limited jurisdictions may not be able to afford the software and may not be able to hire even temporarily the person to set up the system and help maintain user proficiencies. Additionally, resource limited jurisdictions may not be able to afford high-capacity servers or a multi-server environment.

The impact of implementing this product will not vary for paid, combination, or volunteer departments.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☐	☒	☐	☐
If so, please describe how.		Each will face similar challenges of finding the right people to administer the system.				

Overall, the product is consistent with the concepts and principles of the NIMS.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☐	☒	☐	☐
Identify any inconsistencies.		The organizational charts created in Previstar CPS do not follow NIMS and ICS. The PIO, Safety Officer, and Liaison Officer (which are Command Staff positions) are displayed at the same level as the Operations, Planning, Logistics, and Finance/ Administration Sections within the charts.				
This product will enhance the user's ability to do his/her job.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☐	☒	☐	☐
If so, describe how.		Previstar CPS has provided ample mandatory and optional fields to include information. The data available through Previstar provides important information to decision makers.				
The product was easy to use and intuitive.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☒	☐	☐	☐
Identify any issues.		Repetition is the key to being able to use this product efficiently. If all of the permissions are set up and personnel and resource databases are in place, the product could be relatively easy to use. Users must have the opportunity to practice regularly with the system; otherwise, they will lose proficiency due to the complexity of the product.				
The product was reliable during the evaluation.		Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
		☐	☐	☒	☐	☐
Identify any issues with reliability.		No reliability issues were noted.				

3.2 Objective 2: Determine Adherence to the CAP Standard

Table 8 provides a summary of key findings for the CAP evaluation. The items shown in bold negatively impacted the rating in that area. The other items provided are observations. Test engineers determined that the product is compliant with all required elements of the CAP standard. Previstar CPS successfully sent messages to DMIS. The transaction (receive) portion of the test was unsuccessful with DMIS; Previstar CPS rejected messages originating from DMIS due to issues with the handling of the "derefUri" element when transmitted through the OPEN backbone. Evaluators did not rate this portion of the system because the vendor indicated that messages originating from DMIS contained invalid data in the "derefUri" element. Thus, Previstar CPS rejected the CAP messages which the vendor claimed did not adhere to the CAP standard. Engineers could not verify the receipt of CAP messages from a disparate system.

Evaluators found that Previstar CPS requires the element "derefUri" to be blank or have base-64 encoded data content when sending or receiving a CAP message. However, regardless of the content engineers entered in the DMIS "derefUri" element (e.g. left blank, filled with any text, or base-64 encoded data content), a date/time stamp was automatically inserted in this field by OPEN. This issue caused Previstar CPS to reject CAP alert messages originating from DMIS. After further testing and support from the vendor, engineers identified that they could only transmit a message with a valid "derefUri" by including the CAP message as a payload of an EDXL-DE message and sending it through OPEN's EDXL-DE service.

A limitation of the "scope" element was identified; this element was automatically populated with "public" which is an allowable value. However, the options to select "restricted" and "private" were not available when a CAP message was automatically generated from an incident. Engineers identified limitations with manually generating CAP messages because not all Code Values allowable by the CAP standard were permitted by Previstar CPS. For example, the "status" element must be set to "actual" or "exercise"; otherwise, a CAP message will not be generated or posted by Previstar CPS.

Previstar CPS accounts for these specific requirements when automatically generating a message.

Table 8: CAP Evaluation Results

Legend:

▲   Meets requirements; no issues identified.

△   Partially meets requirements; minor issues identified.

▽   Partially meets requirements; major issues identified.

▼   Does not meet requirements.

●   No Rating or Not Applicable (N/A) to the system.

Evaluation Case Identifier	Evaluation Case Title	Rating	Key Findings
EVAL_001	Generate CAP Alert Message	▲	▪ Messages were successfully generated by Previstar CPS. ▪ The <derefUri> element must be blank or use valid base-64 encoded data content.
EVAL_002	XML/Schema Validation	▲	No issues were identified. The messages were well formed and valid against the CAP schema.
EVAL_003	CAP Conformance	▲	▪ The CAP messages conformed to the CAP standard. ▪ Numerous optional elements were not utilized; several optional elements were listed as blank. ▪ Restrictions are set by Previstar CPS in terms of how the CAP message elements are completed. For example, the <status> element must be set to "actual" or "exercise"; otherwise, a CAP message will not be generated or posted by Previstar CPS. ▪ A limitation of the <scope> element was identified; this element was automatically populated with "public" which is an allowable value. The option to select "restricted" and "private" were not available.
EVAL_004	Transaction (send)	▲	▪ Messages were successfully sent from Previstar CPS to DMIS through OPEN.

	Transaction (receive)	⬤	• Engineers could not verify the receipt of CAP messages from a disparate system. Previstar CPS rejected all CAP messages sent from DMIS. This issue was attributed to the <derefUri> element and related handling issues caused by OPEN. Engineers generated CAP messages in DMIS using three different types of entries for the <derefUri> element (a blank field, miscellaneous text, and the base-64 encoded data content). Although DMIS will allow any type of data to be entered, the CAP standard for <derefUri> allows only for base-64 encoded data content. Test engineers found that regardless of the data entered in the <derefUri> element, a date/time stamp was automatically added when it was transmitted through OPEN. All messages from DMIS were consequently rejected by Previstar CPS because the messages did not meet the <derefUri> CAP standard of transmitting only base-64 encoded data content. Previstar CPS rejects all CAP alerts that don't meet CAP specifications. Previstar developers also indicated that the only method to post a CAP alert with a valid <derefUri> that can be retrieved in a non-JAVA system is to wrap the CAP message in an EDXL-DE and send it through OPEN's EDXL-DE service.

3.2.1 Mandatory and Optional CAP Elements

Previstar CPS implements all four segments of the CAP alert; thus, there are a total of 13 mandatory elements and 31 optional elements. Previstar CPS implements 13 of 13 (100 percent) of the mandatory elements and 10 of 31 (32 percent) of the optional elements for automatically generated CAP messages. Previstar CPS supports 100 percent of mandatory and optional elements when users manually generate CAP messages. **Table 9** provides a summary of the CAP elements and identifies which ones Previstar CPS uses for automatically generated messages. The elements that are mandatory per the CAP

standard are shown in bold text.[4] Each CAP Alert message consists of an "alert" segment, which may contain one or more "info" segments, each of which may include one or more "resource" and "area" segments.

There are six mandatory elements in the "alert" segment. The other three segments of the CAP alert are optional; however, under most circumstances CAP messages with a message type value of "alert" should include at least one "info" segment. If a vendor chooses to implement an optional segment ("info", "resource", and/or "area") then the supporting elements shown in bold text become required elements. There are five required elements in the "info" segment, and one each in the "resource" and "area" segments.

Table 9: CAP v1.1 Element Summary (Automatically Generated CAP Messages)

alert Segment	Used	Not Used	Comments
Message ID (identifier)	☒	☐	
Sender ID (sender)	☒	☐	
Sent Date/Time (sent)	☒	☐	
Message Status (status)	☒	☐	
Message Type (msgType)	☒	☐	
Source (source)	☒	☐	
Scope (scope)	☒	☐	This element is automatically populated by the system as "public". There was no option to select "restricted" or "private".
Restriction (restriction)	☐	☒	The element <scope> can not be set to "restricted" so this was not applicable.
Addresses (addresses)	☐	☒	The element <scope> can not be set to "private" so this was not applicable.
Handling Code (code) *	☐	☒	
Note (note)	☐	☒	
Reference IDs (references)	☐	☒	
Incident IDs (incidents)	☐	☒	
info Segment	Used	Not Used	Comments
Language (language)	☐	☒	

---

[4] Elements in **bold** are mandatory; elements in *Italics* have default values that will be assumed if the element is not present; asterisks (*) indicate that multiple instances are permitted.

	Used	Not Used	Comments
Event Category (category) *	☒	☐	This element is automatically populated depending on the previously selected incident type.
Event Type (event)	☒	☐	
Response Type (responseType) *	☐	☒	
Urgency (urgency)	☒	☐	
Severity (severity)	☒	☐	
Certainty (certainty)	☒	☐	
Audience (audience)	☐	☒	
Event Code (eventCode) *	☐	☒	
Effective Date/Time (effective)	☒	☐	
Onset Date/Time (onset)	☐	☒	
Expiration Date/Time (expires)	☐	☒	
Sender Name (senderName)	☐	☒	
Headline (headline)	☒	☐	
Event Description (description)	☒	☐	
Instructions (instruction)	☐	☒	
Information URL (web)	☐	☒	
Contact Info (contact)	☐	☒	
Parameter (parameter) *	☒	☐	
resource Segment	**Used**	**Not Used**	**Comments**
Description (resourceDesc)	☒	☐	
MIME Type (mimeType)	☒	☐	
File Size (size)	☒	☐	
URI (uri)	☒	☐	
Dereferenced URI (DerefUri)	☐	☒	The <derefUri> element must be blank or use valid base-64 encoded data content.
Digest (digest)	☒	☐	
area Segment	**Used**	**Not Used**	**Comments**
Area Description (areaDesc)	☒	☐	
Area Polygon (polygon) *	☐	☒	
Area Circle (circle) *	☐	☒	
Area Geocode (geocode) *	☐	☒	
Altitude (altitude)	☐	☒	
Ceiling (ceiling)	☐	☒	

3.3 Objective 3: Determine Adherence to the EDXL-DE Standard

Table 10 provides a summary of key findings for the EDXL-DE evaluation. The items shown in bold negatively impacted the rating in that area. The other items provided are observations. Test engineers determined that the product is compliant with the required elements of the EDXL-DE standard. Previstar CPS automatically generates EDXL-DE

messages that include a CAP message as XML content. No end-user customization of the EDXL-DE message was permitted. EDXL-DE messages were sent from Previstar CPS to OPEN's EDXL-DE service but there was not a secondary system available to send messages to Previstar CPS. Thus, test engineers did not verify the capability of Previstar CPS to receive EDXL-DE messages from an external system.

PILOT

EVALUATION

Table 10: EDXL-DE Evaluation Results

Legend:
▲ Meets requirements; no issues identified.
▲ Partially meets requirements; minor issues identified.
▽ Partially meets requirements; major issues identified.
▼ Does not meet requirements.
⬤ No Rating or Not Applicable (N/A) to the system.

Evaluation Case Identifier	Evaluation Case Title	Rating	Key Findings
EVAL_EDXL-DE_001	Generate EDXL-DE Alert Message	▲	Previstar automatically generates EDXL-DE messages using CAP messages as the payload. End-user customization of fields is not permitted.
EVAL_EDXL-DE_002	XML/Schema Validation	▲	No issues found. The messages were well formed and valid against the EDXL-DE schema.
EVAL_EDXL-DE_003	EDXL-DE Conformance	▲	▪ The EDXL-DE messages conformed to the EDXL-DE standard. ▪ Numerous optional elements were not listed.
EVAL_EDXL-DE_004	Transaction (send)	▲	▪ EDXL-DE messages were sent from Previstar CPS to OPEN's EDXL-DE service but not a disparate system.
	Transaction (receive)	⬤	▪ No messages were received by Previstar CPS because there was not a secondary system from which to send EDXL-DE messages back to Previstar CPS. The capability of Previstar CPS to receive EDXL-DE messages from an external system was not verified. ▪ The product successfully imported raw EDXL-DE XML from a secondary system through a manual import feature.

3.3.1 Mandatory and Optional EDXL-DE Elements

Previstar CPS implements two of the three possible segments of the EDXL-DE message ("EDXLDistribution" and "contentObject/XMLContent"). Thus, there are a total of six required elements. Previstar CPS implements six of six (100 percent) of the mandatory elements and two of 16 (13 percent) of the optional elements. **Table 11** provides a summary of the EDXL-DE elements and identifies which ones Previstar CPS uses. The elements that are required by the EDXL-DE standard are shown in bold text.[5] Each EDXL-DE message consists of an "EDXLDistribution" segment, each of which may include one or more "targetArea" and "contentObject" segments. The "contentObject" must include either XML or non-XML content. There are six mandatory elements in the "EDXLDistribution" segment. There is one required element in the "contentObject/nonXMLContent" segment if the segment is used.

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[5] Elements in **bold** are mandatory; elements in *Italics* indicates one or more unspecified optional elements; # indicates a conditional requirement, and asterisks (*) indicate that multiple instances are permitted.

Table 11: EDXL-DE v1.0 Element Summary

EDXL-Distribution Element	Used	Not Used	Comments
distributionID	☒	☐	
senderID	☒	☐	
dateTimeSent	☒	☐	
distributionStatus	☒	☐	
distributionType	☒	☐	
combinedConfidentiality	☒	☐	
Language	☐	☒	
senderRole *	☐	☒	
recipientRole *	☐	☒	
keyword *	☐	☒	
distributionReference * #	☐	☒	
explicitAddress *	☐	☒	
targetArea Element (0..*)	**Used**	**Not Used**	**Comments**
circle *	☐	☒	
polygon *	☐	☒	
country *	☐	☒	This segment is not used.
subdivision *	☐	☒	
locCodeUN *	☐	☒	
contentObject Element (0..*)	**Used**	**Not Used**	**Comments**
contentDescription	☒	☐	
contentKeyword *	☐	☒	
incidentID	☐	☒	
incidentDescription	☐	☒	
orginatorRole *	☐	☒	
consumerRole *	☐	☒	
confidentiality	☐	☒	
other *	☐	☒	
nonXMLContent Element	**Used**	**Not Used**	**Comments**
mimeType	☐	☒	
Size	☐	☒	This segment is not used. Content is limited to XML from CAP message.
Digest	☐	☒	
Uri	☐	☒	
contentData	☐	☒	
(or) XMLContent Element	**Used**	**Not Used**	**Comments**
keyXMLContent	☐	☒	
embeddedXMLContent	☒	☐	

3.4 Participant Observations

Testers noted the following observations during the evaluation:

Ease of Use

- An organization chart for non-ICS roles is not included. There is no way to show where the Emergency Manager falls in an organization.

- If a user does not complete various screens in updating an organizational role, the information in previous fields is lost and the user must start over.

- The organizational personnel roster is not updated when personnel are added to organizational roles. The product requires entering the same data in two places (organizational roles and organizational details/personnel).

- Users encountered difficulties with the administrative functions of adding new roles and permissions.

Documentation

- The Previstar CPS integrated help tool contained content for version 5.0, and not 5.1. Portions of the help tool did not correlate with the current version of Previstar CPS 5.1.

System Features

- The product is capable of keeping the most current version of any document and SMEs identified this as being important for planning. Although the storage of documents may be constrained by the capacity of disk space, the vendor reported that users can link to the internet for additional documents.

- The system has numerous non-mandatory fields (multiple contact information, email, phone, blackberry, etc.). These additional fields are beneficial and allow users to add as much information as needed.

4.0 CONCLUSIONS

Overall, the product is consistent with the concepts and principles of NIMS; evaluators identified issues with the structure of the organizational charts and the use of the term Incident Action Plan (IAP). This product could enhance the user's ability to do his/her job due to the amount of information that can be made available if the data is entered into the system. Previstar CPS can support all 15 ESFs, it applies to all nine Incident Command functions, to a multi-discipline response, and to all hazards including events such as national political conventions and large sporting events. The product is a tool for Resource Management; however, it does not track resource deployments completely. Previstar CPS is consistent with 11 out of 14 management characteristics of the ICS. It should take less than six months to implement the product, and a minimum of 40 hours of training; however, this will be dependent upon a user's computer literacy and the amount of data that is entered into the system. Trainees must be given the opportunity to practice regularly on the system; otherwise, they will lose system proficiency. The evaluation team identified minor ease of use issues.

The primary benefits of the system are the ability for the product to create a report where training and certifications can be queried, tracked, or flagged for follow-up training or recertification, and the ability to keep the most current version of any document. **Table 12** provides a summary of the SME ratings for NIMS elements.

Table 12: NIMS Elements Summary Table

Emergency Support		Scalability	Hazards	Resource Management	Communication and Information Management	Command and Management	Implementation	
ESF	ICS						Time	Training
5	5	4	5	5	No numerical value assigned	No numerical value assigned	4	3

Test engineers determined that the product is compliant with all required elements of the CAP standard. Test engineers successfully generated CAP alerts using both automated and manual methods. Engineers used two XML validation tools to determine that the resulting messages were well formed and valid. They verified the capability to send CAP alerts to DMIS. However, Previstar CPS rejected CAP messages transmitted from DMIS through the OPEN because they contained invalid data for the "derefURI" element. The vendor stated that Previstar CPS correctly rejected CAP alerts that don't meet CAP specifications. Further technical investigation is warranted regarding this issue and evaluators submitted the issue to the DMIS help desk for consideration. Evaluators identified limitations with manually generating CAP messages because Previstar CPS did not permit all Code Values allowable by the CAP standard. For example, a user must set the "status" element to "Actual" or "Exercise"; otherwise Previstar CPS will not generate or post a CAP message. However, the automatic message generation capability accounts for these specific requirements. Previstar CPS implements all four segments of the CAP alert. Thus, there are a total of 12 required elements. Previstar CPS implements 13 of 13 (100 percent) of the mandatory elements and 10 of 31 (32 percent) of the optional elements of the CAP standard for automatically generated CAP messages. Previstar CPS supports 100 percent of the mandatory and optional elements if a user manually generates a CAP alert message.

Test engineers determined that the product is compliant with all required elements of the EDXL-DE standard. Previstar CPS automatically generates EDXL-DE messages that include a CAP message as XML content. The system does not permit end-user customization of the EDXL-DE message. Test engineers sent EDXL-DE messages from Previstar CPS to OPEN's EDXL-DE service but there was not a secondary system available from which to originate EDXL-DE messages. Thus, engineers did not verify the capability of Previstar CPS to receive EDXL-DE messages from an external system. The product successfully imported raw EDXL-DE XML from a secondary system through a manual import feature. There are a total of six required EDXL-DE elements. Previstar CPS implements six of six (100 percent) of the mandatory elements and two of 16 (13 percent) of the optional elements.

5.0 APPENDIX A: NIMS CRITERIA

The Evaluation Criteria was developed by a cross-section of SMEs and members of the emergency response community selected by the NIMS SC team. Evaluators were asked to evaluate the product against the following evaluation criteria:

- Emergency Support

- Scalability

- Hazards

- Resource Management

- Communication and Information Management

- Command and Management

- Implementation

For the purpose of this evaluation, the product was given a numeric score as rated against each criterion; ratings were made on a scale of 0 to 5. The purpose of the rating is to help describe the evaluated product. A rating was provided for all of the criteria except the following: Communication and Information Management and Command and Management. SMEs conduct qualitative analysis and provide, to a large extent, qualitative feedback for all of the criteria listed above. Input from the SMEs is captured using a Likert scale – a quantitative method used to help measure positive or negative responses to NIMS-related statements. These methods are designed to help describe products and to determine the presence or absence of desirable attributes. Descriptions associated with this scale for each evaluation criterion are outlined below.

5.1 Emergency Support

The selected product should be applicable to ESF and/or the ICS. This is not to infer that a product cannot apply to a single category. Instead, it is intended to underscore a preference for product applicability across the greatest number of categories. ESFs are defined in the National Response Framework's (NRF) as:

- Transportation

- Communications

- Public Works and Engineering

- Firefighting

- Emergency Management

- Mass Care, Housing, and Human Services

- Public Health and Medical Services

- Resource Support

- Urban Search and Rescue

- Oil and Hazardous Materials Response

- Agriculture and Natural Resources

- Energy

- Public Safety and Security

- Long-Term Community Recovery and Mitigation

- External Affairs

Incident Command Functions are defined in the NIMS document as follows:

- Incident Command

- Operations Function

- Planning Function

- Logistics Function

- Finance/Administration Function

- Intelligence Function

- Public Information Function

- Safety Function

- Liaison Function

Table A-1: Definition of Scoring for Emergency Support Criterion

Applicability to ESFs	Applicability to Incident Command
0 - Not applicable to any ESFs	0 - Not applicable to Incident Command
1 - Applicable to 1-3 of the ESFs	1 - Applicable to 1-2 of the Incident Command functions
2 - Applicable to 4-6 of the ESFs	2 - Applicable to 3-4 of the Incident Command functions
3 - Applicable to 7-9 of the ESFs	3 - Applicable to 5-6 of the Incident Command functions
4 - Applicable to 10-12 of the ESFs	4 - Applicable to 7-8 of the Incident Command functions
5 - Applicable to 13 or more of the ESFs	5 - Applicable to 9 or more of the Incident Command functions
N/A - This criterion is not applicable to the product	N/A -This criterion is not applicable to the product

5.2 Scalability

NIMS is scalable to any situation from small, local events to incidents of national significance, whether pre-planned, forewarned, or no-notice. This scalability is essential for NIMS to be applicable across the full spectrum of multi-agency, multi-jurisdiction, and multi-discipline events.

Table A-2: Definitions of Scoring for the Scalable Criterion

Scalability
0 - Not applicable to any level of response
1 - Applicable to a single agency response
2 - Applicable to a multi-agency response
3 - Applicable to a multi-jurisdictional response
4 - Applicable to a multi-discipline response
5 - Applicable to all levels of response
N/A - This criterion is not applicable to the product

5.3 Hazards

Each product should mirror the all-hazards philosophy of NIMS to the greatest extent possible. The types of hazards identified in this section are from the National Fire Protection Association (NFPA) 1600: Standard on Disaster/Emergency Management and Business Continuity Programs. The standard should be referenced for specific examples and detailed definitions. Following is a summary list of hazards for reference in the evaluation of each product:

Natural hazards:

- Geological (earthquake, tsunami, volcano, landslide, etc.)

- Meteorological (flood, tidal surge, drought, forest fire, snow, windstorm, extreme temperature, etc.)

- Biological (emerging diseases [pandemic disease, West Nile virus, smallpox], Animal or insect infestation, etc.)

Human-caused incidents:

- Accidental (hazardous material spill or release, explosion/fire, transportation accident, building/structure collapse, air/water pollution, contamination, etc.)

- Intentional (terrorism [explosive, chemical, biological, radiological, nuclear, cyber], sabotage, civil disturbance, etc.)

Technological-caused incidents:

- Technological-caused incidents (central computer, mainframe, software, or application, ancillary support equipment, telecommunications, energy/power/utility, etc.)

Table A-3: Definitions of Scoring for the Hazards Criterion

Hazards
0 - Applicable to 1 or fewer hazard groups
1 - Applicable to 2 hazard groups
2 - Applicable to 3 hazard groups
3 - Applicable to 4 hazard groups
4 - Applicable to 5 hazard groups
5 - Applicable to 6 hazard groups
N/A - This criterion is not applicable to the product

5.4 Resource Management

When evaluating resource management applications, three subcategories should be considered: **Inventory** (supplies and equipment), **Personnel**, and **Management**. There are a total of eight criteria between the three subcategories as follows: Inventory-2, Personnel-2, and Management-4.

For **Inventory**, the two criteria to evaluate are: 1) Does this product provide for the inventorying of FEMA typed resources and 2) Does this product provide for the inventorying of non-FEMA typed resources? For **Personnel**, the two criteria to be evaluated are: 1) Does this product provide a means by which credentialed personnel can be tracked, and 2) Does this product provide a means by which other personnel (volunteers, etc.) can be tracked? For **Management**, there are four criteria to evaluate: 1) Does the product provide for resource tracking/reporting; 2) Does the product provide for resource requesting/ordering, 3) Does the product provide for resource recovery, and 4) Does the product provide a reimbursement process?

The score for **Resource Management** will be determined by the total number of criteria met in the subcategories. If the product met none of the criteria, the score is 0. If the product met 1 of the 8 criteria, the score is 1, if the product met 2 of the criteria, the score is 2, if the product met 3-4 of the criteria, the score is 3, if the product met 5-6 of the criteria, the score is 4 and if 7-8 criteria are met, the score is 5.

Table A-4: Definitions of Scoring for Resource Management Criterion

Resource Management
0 - Not applicable to any Criteria
1 - Meets 1 Criteria
2 - Meets 2 Criteria
3 - Meets 3-4 Criteria
4 - Meets 5-6 Criteria
5 - Meets 7-8 Criteria
N/A - This criterion is not applicable to the product

5.5 Communication and Information Management

Emergency management and incident response activities rely upon communications and information systems that provide a common operating picture to all command and coordination sites. NIMS describes the requirements necessary for a standardized framework for communications and emphasizes the need for a common operating picture. NIMS is based upon the concepts of interoperability, reliability, scalability, portability, and the resiliency and redundancy of communication and information systems. When evaluating this criteria, four subcategories should be considered: Plain language, incident reporting, interoperability, and security and vulnerability. A specific score will not be established for this category; SMEs will respond to questions in each area.

5.6 Command and Management

The Command and Management component within NIMS is designed to enable effective and efficient incident management and coordination by providing flexible, standardized incident management structure. The structure is based on three key organizational constructs: the Incident Command System, Multiagency Coordination Systems, and Public Information. ICS is based on 14 proven management characteristics, each of which contributes to the strength and efficiency of the overall system (Reference the NIMS Document Component IV Command and Management for additional information). A specific score will not be established for this category; SMEs will rate the product's applicability to each of the 14 management characteristics of ICS, if applicable.

5.7 Implementation (Ability to Readily Implement)

It is important to understand the implementation factors including the time and training impacts on governmental entities. This is especially important for small and rural agencies, which may have limited resources. The Ability to Readily Implement criterion is divided into two subcategories to consider time and training impacts associated with implementing the product. Scores will be applied to each subcategory and then averaged to create the score for the criterion.

Table A-5: Definitions of Scoring for the Ability to Readily Implement Criterion

Time	Training
0 - Greater than 15 months to implement	0 - Minimum of 100 hours of training per user
1 - Greater than one year to implement	1 - Minimum of 80 hours of training per user
2 - Less than one year to implement	2 - Minimum of 60 hours of training per user
3 - Less than nine months to implement	3 - Minimum of 40 hours of training per user
4 - Less than six months to implement	4 - Minimum of 20 hours of training per user
5 - Less than three months to implement	5 - Less than 20 hours of training per user

6.0 APPENDIX B: REFERENCES

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15. XRay™2 XML Editor - http://www.architag.com/xray/.

7.0 APPENDIX C: LIST OF ACRONYMS

CAP   Common Alerting Protocol

COG   Collaborative Operating Group

CPS   Continual Preparedness System

DCS   Data Collection System

DHS   Department of Homeland Security

DMIS   Disaster Management Interoperability Services

EDXL-DE   Emergency Data eXchange Language-Distribution Element

EKU   Eastern Kentucky University

EOC   Emergency Operations Center

ESF   Emergency Support Function

FEMA   Federal Emergency Management Agency

GIS   Geographic Information System

GPS   Global Positioning System

HICS   Hospital Incident Command System

HTTP   Hypertext Transfer Protocol

IAP   Incident Action Plan

ICS   Incident Command System

IMSI   Incident Management Systems Integration

N/A   Not applicable

NFPA   National Fire Protection Association

NIMS   National Incident Management System

NIMS SC   National Incident Management System Support Center

NIMS STEP   National Incident Management System Supporting Technology Evaluation Program

NRF   National Response Framework

OASIS   Organization for the Advancement of Structured Information Standards

OPEN   Open Platform for Emergency Networks

PIO   Public Information Officer

QC   Quality Control

SME   Subject Matter Expert

T&E   Test and Evaluation

XML   eXtensible Markup Language

8.0 APPENDIX D: VENDOR RESPONSE

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Previstar is proud to have participated in the NIMS STEP pilot evaluation and is very satisfied with the results of the evaluation. We will use the feedback to further enhance Previstar – CPS directly benefiting our customers. The National Incident Management System Support Center's SMEs and test engineers conducted a very thorough examination of the Previstar Continual Preparedness System and scored it highly in all three of the evaluation's objective areas: the incorporation of NIMS concepts and principles, the product's adherence to the CAP standard, and the product's adherence to the EDXL-DE standard.

NIMS CONCEPTS AND PRINCIPLES

Evaluation objective one, NIMS concepts and principles, was broken into seven sub-elements: Emergency Support, Hazards, Scalability, Resource Management, Communication and Information Management, Command and Management, and Implementation. On five of the seven elements, the evaluators rated Previstar on a scale of 5 to 0 with 5 being the highest possible rating. The other two elements were rated strictly on a Likert scale. The next few paragraphs will break down the scoring of objective one.

Emergency Support: Within the Emergency Support element, the evaluators concluded that the application "can support all 15 ESFs," "applies to all nine Incident Command functions, to a multi-discipline response, and to all hazards." Previstar was awarded a 5 for Emergency Support – ESF and another 5 for Emergency Support – ICS.

Hazards: Previstar received a score of 5 for the Hazards element. Evaluators concluded that Previstar CPS "could be used to track the actions taken in any incident…as well as special events such as the Super Bowl, Olympics, and national political conventions."

Resource Management: Previstar received a score of 5 for the Resource Management element. Evaluators agreed that Previstar contains all desirable resource management attributes. It allows for the inventorying of FEMA typed and non-FEMA typed resources; provides a means by which credentialed personnel and volunteers can be tracked. It also provides for resource tracking/reporting, resource requesting/ordering and supports resource recovery while providing for the management of the reimbursement process.

Scalability: The evaluators determined that Previstar could be applied across the full spectrum of single agency, multi-agency, multi-jurisdictional, and multi-discipline events. They agree that it is flexible enough to be applicable to both public and private sectors, and is applicable to multiple levels of government. However, Previstar received a score of 4 for scalability even though no scalability limitations are cited in the evaluation. Previstar contends that our product is applicable to all levels of response and is extremely scalable. Up to 250 users can access this web-based application simultaneously using one server and can scale to thousands of users in a multi-server configuration. The spectrum of our client list confirms our scalability – Previstar CPS is utilized by private organizations as small as a 20-bed nursing home to an entity as large as the U.S. Navy.

Communication and Information Management: While specific scores were not established for this sub-element, evaluators found Previstar to create a standard framework for communication and support a common operating picture. More specifically, evaluators found Previstar to adhere to the principles of plain language and documentation standardization, to provide emergency managers and responders with easy access to critical information, to provide an excellent method

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for data sharing and interoperability, and contain the security necessary to alleviate all information vulnerability concerns.

Command and Management: While specific scores were not established for this sub-element, evaluators found Previstar to be consistent with 11 of 14 ICS management characteristics; they found Previstar CPS not applicable to modular organization, manageable span of control, and information and intelligence management. We respectfully disagree with the evaluators' conclusion that Previstar CPS is not applicable to these three management characteristics.

Previstar incorporates modular organization characteristics according to the FEMA guidelines by providing customers with ICS Roles out of the box and allowing the Incident Commander and/or Section Chiefs to associate personnel to these ICS Roles as an incident/event expands. The Incident Commander and/or Section Chiefs can also create ICS Roles "on-the-fly" and immediately associate personnel with the newly created positions. These positions can be new Branches or Groups, including Command, Planning, Operations, and Finance & Admin and/or custom groups needed for the incident. Throughout an incident, Previstar CPS maintains an organization chart that can be viewed and printed. Previstar CPS also contains a flexible ICS 203 form that is synchronized with the ICS 214 Unit Log (Position Roster). Both forms are based on incident and changes to the organizational structure, are recorded by operational period, and can be archived for historical tracking, best practice determination, and reporting purposes.

In addition to the modular organization supported by Previstar CPS, Previstar incorporates span of control according to the FEMA guidelines. According to FEMA, "the span of control of any individual with incident management supervisory responsibility should range from three to seven subordinates, with the optimum being five." Previstar CPS implements an ICS structure where users (IC, Section Chiefs, Unit Leaders, etc.) can create various branches and groups in ICS 203 which then become part of the Organization Chart (ICS 207). This allows the Incident Command to manage a growing structure and enforces that no group gets larger than 7 at any time during an escalation.

Previstar also incorporates information and intelligence management to and beyond the FEMA guidelines. The NIMS Handbook, in regards to information and intelligence management, highlights "the collection, analysis, and sharing of incident related intelligence" along with various statuses (situation, resource, incident, etc) that are integral to incident escalation and management. Previstar CPS is centered upon a Planning module that houses organization, facility, personnel, and resource data. In the event of an incident, a responding organization can immediately locate all of their available resources and display them on map using Previstar's GIS module. They can also begin collecting and sharing situational awareness data through Previstar's real-time status boards. In addition to situational awareness, Previstar CPS also provides modeling capability to predict casualties, resource needs, projects and tasks requirements for various incident types.

Implementation: Previstar was given a score of 4 for implementation time which signifies that the evaluators determined that Previstar CPS could be implemented in less than six months. While it is possible that implementation could take up to six months for a very large project that involved multiple databases in multiple installations, a small department or agency could easily implement Previstar CPS in less than three months. Implementation time is truly determined by the size and scope of each individual project.

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Previstar was given a score of 3 for training which signifies that the evaluators determined that the successful implementation of Previstar would require a minimum of 40 hours of training per user. That is a lot of training and no one normal user would be expected to be proficient in all elements of an enterprise emergency management system. Previstar CPS admittedly is a comprehensive solution that has been developed to meet the needs of all 15 ESF's with functionality to support the numerous roles under each. For this reason we normally tailor training services to meet the specific objectives of our customers. We again respectfully disagree with this conclusion and have clients that are available to discuss their experiences and training best practices.

Our experience indicates that training requirements are truly determined by the size and scope of each project. For a client using the complete suite of CPS capabilities we recommend an onsite, instructor-based administrator training class that spans three days and user training that is usually completed in one day. Previstar has other clients that have implemented only a few CPS capabilities and required much less training. One such client having 200 users recently reached proficiency with the application after only one hour of online training.

Previstar considers training to be integral to the success of our clients. For that reason, our clients are continually supported by training manuals, a comprehensive integrated help tool, and readily available customer support representatives.

CAP AND EDXL-DE STANDARDS
Evaluation objectives two and three were each broken into four evaluation cases. Previstar CPS scored highly in all evaluation cases, and the NIMS STEP evaluation team found Previstar CPS to be "compliant with all required elements of the CAP standard" and "compliant with all required elements of the EDXL-DE standard."

When an incident is created within Previstar, a CAP message containing all 13 mandatory elements is automatically generated. Previstar also automatically generates an EDXL-DE message containing all 6 mandatory EDXL-DE elements and uses the CAP message as the payload. Users have the option to manually create CAP messages that incorporate all 31 of the optional elements and EDXL-DE messages that incorporate all 16 optional elements.

MINOR ISSUES
During the evaluation, the evaluators did identify "two inconsistencies" within Previstar CPS regarding the concepts and principles of NIMS. The first inconsistency centered on the organizational charts rendered by Previstar. That inconsistency was due to a reporting flaw which has been corrected. Organization charts created by Previstar CPS are now consistent with NIMS and the ICS. The second "inconsistency" centered on Previstar's use of the term Initial Incident Action Plan (IAP) in the Planning module. Evaluators determined that allowing some ICS forms to be pre-loaded as part of planning could be "confusing to users."

Although labeled an inconsistency that could cause confusion, the report calls our innovative use of Initial IAPs a "feature" and states that the "[Initial IAPs] are beneficial by organizing and pre-populating the ICS forms that are used to create the IAP especially if the emergency is a generic or routine event in which commonalities and structure components can be duplicated for ease of use or expediency."

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CONCLUSION

Previstar has created the industry's most comprehensive preparedness solution. It is no surprise that NIMS STEP evaluators found Previstar CPS a reliable, scalable, portable, and resilient information system that is "consistent with the concepts and principles of NIMS," "compliant with all required elements of the CAP standard," and "compliant with all required elements of the EDXL-DE standard." We appreciate the professionalism of the NIMS STEP team and promise their feedback will be used to further enhance Previstar CPS.

Jim Fetters
President & COO