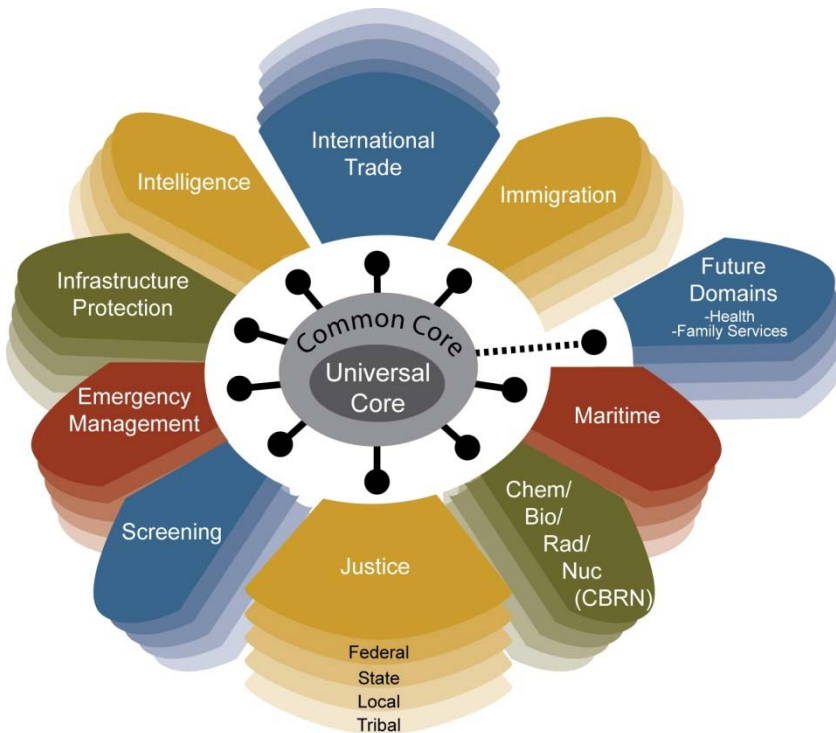




IJIS Institute

# NIEM Conformance for RFPs



## IJIS Institute Public Safety Technical Standards Committee (IPSTSC) White Paper

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## Introduction

### *Purpose and Goals*

This paper is intended to be a resource for public safety practitioners who are making decisions with regard to procurement for public safety computer systems that have, or may in the future have, information sharing requirements with other systems. The goal is to help ensure RFPs meet federal grant requirements and national best practices for information sharing, and to provide help in understanding the technology standards and how they relate to product selection. The [National Information Exchange Model \(NIEM\)](#), which is most often included in [U.S. Department of Justice \(DOJ\)](#) and [U.S. Department of Homeland Security \(DHS\)](#) grant requirements, is a national approach and common vocabulary for information exchange.

### *Who Should Read This Paper?*

Practitioners associated with management or oversight of grants referencing NIEM, RFP development and evaluation, or selection of a public safety software system that contains a requirement for information sharing with other systems. The following assumptions are made with regard to the reader's knowledge level:

- Basic knowledge/familiarity with public safety software systems (CAD, RMS, etc.)
- Basic knowledge/familiarity with RFPs
- Basic knowledge/familiarity with NIEM

If this is not the case, we suggest seeking additional information about these subjects. Resources are listed in the reference section.

## NIEM Conformance Requirements from DOJ and DHS Grants

Due to the trend toward enabling collaboration among public safety agencies through the effective use of technology, DOJ and DHS have recently added NIEM conformance requirements in the language for grants related to information sharing. Some examples of this are:

*"When procuring hardware, software, or professional services for an information-sharing initiative, a standards-based approach should also be used. Specifically, information-sharing initiatives should be compatible with the Global Justice XML Data Model (GJXDM) / National Information Exchange Model (NIEM). With input from the user community, these specifications have been developed to help build the technological foundation that supports data interoperability for the law enforcement and justice community. The National Criminal Intelligence Sharing Plan, as well as Office of Justice Programs (OJP), Department of Justice (DOJ), and Department of Homeland Security (DHS) grant conformance guidelines, require agencies to use the GJXDM / NIEM, as appropriate, when connecting disparate information systems in order to promote interoperability."*

- 2008 COPS Technology Grant Program Guide

*"To support public safety and justice information sharing, OJP requires the grantee to use the National Information Exchange Model specifications and guidelines for this particular grant."*

– United States Department of Justice Grant Office of Justice Programs (OJP)

*"NIEM compliance is a mandatory requirement for the Federal Emergency Management Agency's National Preparedness Directorate (FEMA/NPD) grant recipients and mandated by the Department of Homeland Security. Failure to comply with the NIEM may adversely affect recommendations for awards."*

- United States Department of Homeland Security Real ID Demonstration Grant Program

*“Deliverables will include ... Developing a gang information exchange standard (IEPD, or Information Exchange Package Documentation), based on the National Information Exchange Model (NIEM) to automate and improve the sharing of gang data across systems”*

- BJA’s National Justice Information Sharing (JIS) Initiative FY 2009 Competitive Grant, Category VII: Information Sharing to Address Gangs

Often these requirements can seem to be vague or confusing. The goal of this paper is to reduce confusion by explaining NIEM conformance, and how NIEM can help with any information sharing project, whether required by federal grants or local policy, or not.

## NIEM Conformance

All stakeholders must understand and be able to articulate NIEM conformance from a high level – especially if you are applying for or have secured a federal grant. A common misunderstanding is that entire systems or software packages can be NIEM conformant – this is not the case. Data exchanges are NIEM conformant, meaning the structure of data as it moves from one system to another must be consistent so that the system on the receiving side can understand and interpret the data as needed.

The proper definition of NIEM conformance is one that only a person with a technical background will truly fully grasp, but for reference, the technical rules for conformance are below:

1. NIEM XML schemas conform to the [NIEM Naming and Design Rules \(NDR\)](#). A “schema” is a technical definition document that describes the structure and content of the information being exchanged.
2. NIEM XML instances conform by correctly validating to NIEM-conforming XML schemas, with additional conformance rules specified by the NIEM NDR. An “instance” is an XML file schema containing actual data in the structure of its associated XML schema(s).
3. NIEM Information Exchange Package Documentation (IEPD) conforms to the NIEM IEPD Specification, which requires that XML schemas and instances are NIEM conforming. An ‘IEPD’ is a specification that defines an information exchange. It serves as the metadata for an information exchange and can be leveraged when implementing exchanges.

What most project managers and public safety leaders should know is that being NIEM-conformant means following the rules and guidelines that NIEM has established when developing those data interfaces between systems. When assessing RFP responses or grant compliance, this is the important factor to remember: data exchanges conform to NIEM – systems and databases do not. This is also an important test for service providers who claim to be NIEM-conformant in their products. With this information, you can properly test their level of conformance by discussing how their systems import and export data, and whether it does so using a standard NIEM interface, or “IEPD.”<sup>1</sup>



**Compliance versus Conformance** - The NIEM program does not define compliance because the term implies enforcement and the existence of an official certification process that verifies compliance or level of compliance. However, in common usage these terms are often misused, and may incorrectly imply the same meaning. These two terms have different meanings and should not be used interchangeably.

<sup>1</sup> In layman’s terms, an IEPD is a package of technical materials and documentation that enables a service provider to develop a data exchange to certain specifications.

In addition:

- Conformance has nothing to do with system security.
- Conformance has nothing to do with the business rules as to when an exchange should occur.
- NIEM exchanges are built using XML standards. To be NIEM-conformant it is not sufficient for an exchange to be XML-compliant. This is an important distinction when evaluating potential solutions.
- Systems, tools, or databases may have capabilities that specifically support the development of NIEM-conforming IEPDs or they may be part of a development environment that specifically supports the implementation and/or testing and validation of NIEM-conforming IEPDs. They cannot, in themselves, be positioned or thought to be NIEM-conformant.
- A system may also provide the capability to generate, send and receive, and/or process NIEM-conforming exchanges. These tools or systems are not considered NIEM-conforming, but since they do support conformance, they are considered NIEM-aware or NIEM-supporting.

### Request for Proposals – What Needs to be Included?

When writing an RFP it is important to clearly define under what circumstances, and to which partners, the sharing of data will need to occur once the system is in operation. Too often, references to exchanges are nothing more than a one-line statement indicating the need for one or more exchanges. Service providers often see the following vague and ambiguous language in RFPs:

- “We want the new CAD to talk to the existing RMS.”
- “We want the new CAD to interface to XYZ Alarm Company (or my existing property module, or a third party’s RMS, etc.)”
- “We want the new CAD (or RMS) to be able to share data with our surrounding counties.”
- “We want to be able to see calls on other agencies’ mobile devices.”

It is very important to know what exchanges you need, what information you want to share (incoming or outgoing), and what the information exchange must do when it arrives at its destination. Taking time to do this when crafting your RFP will reduce possible confusion and ambiguity for the responding service providers, which, in turn, will result in a more detailed and accurate RFP response. Further, the more thoroughly your exchanges are defined, the better the service providers can identify standard data exchanges versus custom exchanges. This directly impacts the level of effort and the cost (price) of your new system’s data exchanges. Ambiguous requirements entail risk for the service provider, and increased risk means increased cost associated with that portion of the project. Lastly, detailed specifications should certainly be completed when detailing the statement of work (SOW) that supports your contract with the service provider.

A fundamental goal of NIEM is the concept of reuse. When an RFP requires data exchange, reuse of existing NIEM defined exchanges (IEPDs) should first be pursued. This involves identifying the information exchanges needed and then researching to determine if one or more NIEM IEPDs already exists. The [IEPD Clearinghouse](http://www.it.ojp.gov/framesets/iepd-clearinghouse-noClose.htm) is one resource to locate existing IEPDs that are available: [www.it.ojp.gov/framesets/iepd-clearinghouse-noClose.htm](http://www.it.ojp.gov/framesets/iepd-clearinghouse-noClose.htm). Other sources may be found through [www.niem.gov](http://www.niem.gov).

If a NIEM IEPD exists that meets your needs, then it should be referenced in the RFP by actual name or ID. Some example NIEM IEPDs available today include:

- “CAD Detailed Call for Service” exchange (IEPD Clearinghouse ID 253)
- “CAD to RMS Transfer” exchange (IEPD Clearinghouse ID 273)
- “Law Enforcement National Data Exchange (N- DEx) Incident/Arrest Information Exchange Package Documentation (IEPD) v. 2.1.0” (IEPD Clearinghouse ID 425)
- “ISE SAR IEPD 1.1.1” exchange (IEPD Clearinghouse ID 321)

- “JTF Interstate Criminal History Rapsheet” exchange (IEPD Clearinghouse ID 193)

If no NIEM IEPD exists to meet your needs, then the RFP should meet the requirements listed below:

- A standards-based approach should be used. Exchanges must be conformant to NIEM when it makes sense to do so.
- Prior to implementing the exchange, require that the service provider check the IEPD Clearinghouse for an IEPD that may be close to what is being requested.
- Require that if the service provider creates an IEPD for the exchange being requested, that it be NIEM-conformant and will be posted to the IEPD Clearinghouse once it’s completed.

Even if an existing IEPD does not meet 100% of the needs, it is better to use an existing, similar exchange as a starting point and customize it (typically through an addition, or ‘extension’) or use a reference IEPD to better promote reuse of exchange standards across those potential partner agencies that will need to define their own technical interfaces. If the relevance of existing exchanges is not something that is easily evaluated, it may be valuable to include a reference in the RFP for the provider to perform such a search on the agency’s behalf.

### Request for Proposals – Sample Questions and Evaluation of Responses

Here is a brief but insightful example of RFP language that incorporates NIEM:

*“The procurement of a computer aided dispatch system, law enforcement and fire records management and jail management systems will further enable not only communication centers and regional CAD systems to interoperate, but law enforcement, fire and EMS services to better respond. It is the intent of ISP and IPSC to contract with a provider that provides quality public safety multi-jurisdiction/multi-agency computer aided dispatch, law enforcement and fire records and jail management system (JMS). The multi-jurisdictional CAD/RMS/JMS system is expected to support the dispatching and records management needs of all state agencies, as well as local/regional, county and Federal agencies who may wish to participate. Providers shall employ a solution that utilizes the NIEM 2.0 standard. Provider shall employ a CAD/RMS solution that provides for all N-DEx specifications and IEPD’s for information sharing to allow the State to be a full partner with N-DEx.”*

– Indiana State Police RFP for a Multi-Jurisdictional Public Safety (police, fire, EMS) Computer Aided Dispatch (CAD) and Records Management System

To assist in evaluating responses, below are some sample questions and considerations for evaluating the answers:

Sample Question	Considerations for Evaluating the Responses
1. Describe your conformance with national data exchange standards – specifically the use of GJXDM/NIEM data exchange technology with respect to interoperability between disparate systems.	<ul style="list-style-type: none"> <li>• Does the RFP response indicate that the provider’s exchanges comply with NIEM NDR rules and/or are NIEM-conformant?</li> <li>• Does the RFP response describe the process the provider uses to validate their product’s data exchanges conformance to NIEM?</li> <li>• Remember it is only the schema and XML instance to be shared with other systems that must be NIEM-conformant. A provider may have various methods of implementation or systems which do not impact NIEM and/or conformance.</li> </ul>

Sample Question	Considerations for Evaluating the Responses
2. List the data exchanges provided with your solution that are NIEM-conformant.	<ul style="list-style-type: none"> <li>• Are the exchanges listed by the provider in the IEPD Clearinghouse?</li> <li>• Do the entries indicate they are NIEM exchanges as opposed to GJXDM, or other XML models?</li> </ul>
3. List the data exchanges provided with your solution that are not NIEM-conformant and enumerate any plans to make them NIEM-conformant.	The intention of this question is to identify other non-NIEM exchanges that may be of value and to describe a plan to move them to NIEM in support of national information sharing initiatives.
4. Describe any systems of note (federal, state, other CAD, other RMS, etc.) to which your proposed solution interfaces. Which of these systems or applications use NIEM-conformant exchanges?	There are several national initiatives that include NIEM-conformant exchanges, such as N-DEx, Suspicious Activity Reporting (SAR), and the External Alarm Interface for example. Compare the responses to the IEPDs listed in the Clearinghouse.
5. Describe your exchange development environment and it's adherence to the IEPD Lifecycle.	Does the response indicate a knowledge and adherence to the NIEM Lifecycle?
6. Describe when and how you use the NIEM Conformance Tool.	<ul style="list-style-type: none"> <li>• The <a href="#">NIEM Conformance Tool</a> is used by software developers for conformance verification. It assists developers by automatically identifying potential locations of non-conformance within IEPD artifacts (e.g., schemas, metadata, catalog, XML, etc.) using the latest published NIEM specifications.</li> <li>• The tool is a dynamic work-in-progress. As of this writing, it automatically checks 78 out of approximately 180 NDR rules. It is not the authoritative source for NIEM conformance, and, therefore, cannot guarantee or be used to certify full NIEM conformance.</li> <li>• Proposal responses should indicate at least an awareness of this tool; a better response would describe the actual usage of this tool.</li> </ul>
7. Describe your participation and involvement with industry workgroups (such as the IJIS Institute), national, regional, or state information sharing initiatives using NIEM, and memberships on standards committees.	While not directly related to NIEM-conformance, these three questions seek to provide a measure of how involved the service provider is with standards development, national information sharing initiatives, and the like. Most public safety and justice thought leaders feel that involvement in activities such as these enable a provider to be more up to date on information sharing trends, technologies, and initiatives.
8. List which staff members have attended a NIEM Training course, when they attended, and how they are connected to the proposed project.	
9. List any staff members that have served directly on NIEM-related activities to include instruction for the NIEM Practical Implementer's course or other NIEM Training Curriculum, providing local or national level Technical Assistance, or contributed directly to implementation of NIEM in operational products and programs.	

There may be additional informational or background questions that you might ask in your RFP, either generally or regarding each defined exchange. The questions above serve to help evaluate the service provider’s understanding and support of NIEM’s data sharing strategy and goals.

## Conclusion

Defining data exchange requirements is an essential part of creating a successful RFP and ensuring that your public safety software system meets your needs as well as federal grant conditions. A well-written RFP outlining the need for NIEM-conformant data exchanges will help ensure that you receive proposals that fit your agency’s needs, promote reuse of work already completed, provide time and cost savings through use of consensus national standards, and ensure eligibility for certain federal grant funding opportunities.

## Additional Resources and References

- National Information Exchange Model (NIEM) - [www.niem.gov](http://www.niem.gov)
- NIEM Conformance document from the NIEM Technical Architecture Committee (NTAC) - [www.niem.gov/conformance.pdf](http://www.niem.gov/conformance.pdf)
- The IEPD Clearinghouse - <http://it.ojp.gov/framesets/iepd-clearinghouse-noClose.htm>
- National Information Exchange Model Tools - <http://niem.gtri.gatech.edu/niemtools/home.iepd>
- National Information Sharing Standards Knowledge Base and Help Desk - <http://www.it.ojp.gov/framesets/niss-noClose.htm>
- Law Enforcement Information Sharing Program - <http://www.usdoj.gov/jmd/ocio/leisp/>
- N-DEX: Law Enforcement National Data Exchange - [http://www.fbi.gov/hq/cjisd/ndex/ndex\\_home.htm](http://www.fbi.gov/hq/cjisd/ndex/ndex_home.htm)

## Acronyms

CAD	.....	Computer Aided Dispatch
COPS	.....	Community Oriented Policing Services
DHS	.....	Department of Homeland Security
DOJ	.....	Department of Justice
IEPD	.....	Information Exchange Package Documentation
IJIS	.....	Integrated Justice Information Systems Institute
N-DEX	.....	FBI Law Enforcement National Data Exchange
NDR	.....	Naming and Design Rules
NIEM	.....	National Information Exchange Model
NIEM PMO	.....	NIEM Program Management Office
OJP	.....	Office of Justice Programs
RFI	.....	Request for Information
RFP	.....	Request for Proposal
RFQ	.....	Request for Quote or Request for Qualifications
RMS	.....	Records Management System
SOW	.....	Statement of Work
XML	.....	Extensible Markup Language



## About the IJIS Institute

The [IJIS Institute](#), a 501(c)(3) nonprofit corporation, represents industry's leading companies who collaborate with local, state, tribal, and Federal agencies to provide technical assistance, training, and support services for information exchange and technology initiatives. Serving as the voice of industry, the IJIS Institute unites the private and public sectors to improve mission-critical information sharing for those who protect and serve our communities.



The IJIS Institute was founded in 2001 as a result of the [U.S. Department of Justice's](#) interest in raising private sector participation in the advancement of national initiatives affecting justice and public safety, and more recently homeland security. Today, the IJIS Institute represents the [leading companies](#) serving these and other related sectors. The IJIS Institute provides assistance to government agencies by bringing industry to the table in a constructive role, and continuing to drive toward achieving high regard for the companies that are dedicated to helping the public sector find high value solutions. The IJIS Institute is funded through a combination of Federal grants, industry contributions, and partnership agreements.

The IJIS Institute thanks the many companies who have joined as members that contribute to the work of the Institute and share in the commitment to improving justice, public safety, and homeland security information sharing.

For more information please see [www.ijis.org](http://www.ijis.org).

## About the IJIS Public Safety Technical Standards Committee (IPSTSC)

The IJIS Public Safety Technical Standards Committee (IPSTSC) broadens industry involvement in the vetting and endorsement of standards for dispatch and records systems. The committee develops technical standards needed to support information exchanges between dispatch and records systems from different companies, and the exchange of information with other justice computer systems in prosecutor and court agencies. The committee also reviews and comments on new and emerging functionality and technology that will improve the capabilities of public safety IT systems and makes recommendations for the practitioner and industry communities.