Global Reference Architecture (GRA)

Frequently Asked Questions

What is the GRA?

The GRA is a service-oriented reference architecture for justice and public safety information sharing. Here is what that means.

Service-Oriented

The GRA adheres to the principles of service-oriented architecture (SOA), which are somewhat technical in nature but boil down to three things.

✦ First, when partners share information between justice systems, they implement a "layer" of technology in between so that the systems are "insulated" from one another, removing direct dependencies while reducing stovepipe systems. This allows a greater degree of flexibility and autonomy between the information sharing partners.

✦ Second, information sharing projects follow accepted and well-established open-industry standards whenever possible, rather than solutions and approaches proprietary to particular vendors. This allows everyone to participate, regardless of the vendor or technology used—and allows independence in these choices.

✦ Third, by adopting a formal governance structure, the partners strive for a common approach and a common technology infrastructure, rather than doing things on a project- or agency-specific basis. This tends to reduce the cost and effort of information sharing by eliminating redundancy and enabling better utilization of resources.

Reference Architecture

A reference architecture is a set of documents that the technologists—developers, architects, project managers—in a jurisdiction can use to accelerate the planning process for information sharing, while simultaneously aligning the final outcomes with proven best practices. A reference architecture is a tool practitioners can use to make it easier to develop a well-conceived, formal approach to designing information sharing solutions/systems. A key benefit of reference architecture is that it helps promote consistent thinking and approaches among the people who use it, even if they have not shared information with each other.

How does the GRA relate to SOA?

In 2004, Global encouraged the national justice community to adopt SOA as the standard approach to justice and public safety information sharing.[1] The GRA is the culmination of Global's efforts to follow through on this recommendation—by making it easier for state, local, and tribal justice agencies to adopt SOA.

A jurisdiction that develops an information sharing architecture based on the GRA—by explicitly adopting and following the guidance in the GRA documents—will have adopted a service-oriented architecture in alignment with Global's recommendation.

How does the GRA relate to other Global or federal initiatives, such as NIEM, GFIPM, N-DEx, Global privacy, and fusion centers?

Because the GRA takes a services approach to information sharing, it incorporates and reuses appropriate subsets of the National Information Exchange Model (NIEM), Global Federated Identity and Privilege Management (GFIPM), and Global privacy products. It is also being used to produce compliant services for fusion centers that address challenges identified by the Global Intelligence Working Group and Criminal Intelligence Coordinating Council (CICC). The GRA supports national

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1   A Framework for Justice Information Sharing: Service-Oriented Architecture (SOA), http://it.ojp.gov/default.aspx?area=globalJustice&page=1235.

programs such as the Federal Bureau of Investigation's Law Enforcement National Data Exchange (N-DEx), which also uses NIEM as a common data format.

The GRA is directly related to other Global/federal initiatives, including NIEM and GFIPM, and, in fact, provides practitioners with overarching guidance that demonstrates how these initiatives work together.

Who provides the oversight for the GRA, and what is their approach to managing it?

A group known as the Global Standards Council (GSC) provides the oversight for the GRA and many other normative standards as well. In accordance with the founding principle of Global, the GSC serves as a Global Advisory Committee (GAC) subcommittee, supporting broad-scale electronic sharing of pertinent justice- and public safety-related information by recommending to the Bureau of Justice Assistance (BJA), through the GAC, associated information sharing standards and guidelines. To further foster community participation and reuse, the GSC also reviews proposed information sharing standards submitted by Global consumers and stakeholders. You can learn more about the GSC and its activities by visiting http://www.it.ojp.gov/gsc.

The Global Standards Council employs an enterprise architecture approach for developing and maintaining the cohesive body of Global standards as one Global Standards Package (GSP) which includes GRA-associated standards. To review and access all standards contained within the GSP, please visit http://www.it.ojp.gov/gsp.

Could you elaborate more on the enterprise architecture approach?

Enterprise architecture is a strategic technology planning technique that involves frameworks for assessing capability gaps. The identification of these gaps can then drive strategic and tactical planning efforts to ensure that the resulting projects and investments align with business objectives.

To the extent that a jurisdiction or organization pursuing enterprise architecture identifies gaps in information sharing capabilities, the GRA can provide guidance on specific investments and strategies for closing those gaps.

It is important to note, however, that enterprise architecture and service-oriented architecture are different (but complementary) concepts aimed at solving technology strategy problems at different levels.

How can the GRA benefit my region/ state/county/city? What is the business case?

The GRA can benefit a jurisdiction by decreasing the time and effort necessary to develop and establish a service-oriented architecture. Thus, the business case for the GRA is really dependent on the business case for SOA.

The business case for SOA consists of three primary components:

✦ **Improved agility** (responsiveness of the technology to policy change) through decreased interdependencies between agencies. GRA implementers gain the ability to replace components as needed and upgrade/maintain incrementally without negative impact to other systems or external partners.

✦ **Increased sharing of infrastructure** (technology investments) across agencies and projects—a shared infrastructure, rather than a project-based infrastructure, approach. Partners share costs and resources, reducing stovepipe systems.

✦ **Alignment with open standards** that will increase the range of technologies, systems, and products that an organization can use—without everyone having to choose the same vendors and products. Information sharing and interoperability are possible for any organization regardless of the vendor it chooses.

Where have practitioners implemented the GRA?

Global is aware of the following states that have formally adopted, or are in the process of reviewing, the GRA for information sharing applicability and adoption: Alabama, Alaska, California, Hawaii, Illinois, Maine[2], Missouri, Pennsylvania, Tennessee, and West Virginia. Other states and counties—several of which are participating in the

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2   For the state of Maine's publication, please see *Maine Justice Information Sharing Architecture*, Version 1.0, October 15, 2007, http://www.state.me.us/dps/mjisa/docs/MJISAversion1_0.doc.

development of the GRA—have implemented closely aligned SOA initiatives that predate the publication of the GRA. Examples include Iowa and Utah.

The states of Alabama, Kansas, Nebraska, and Wyoming are leveraging the GRA to establish interstate information sharing among their Criminal Justice Information System portals.

If your jurisdiction is working on an SOA initiative or plans to implement the GRA, please let us know by sending an e-mail to it@it.ojp.gov.

What is the first step I should take in adopting the GRA?

There are many steps to implementing an SOA framework such as the GRA. A good place to start is by reaching out to SOA experts and other justice organizations for technical assistance. This assistance can help implementers in leveraging the GRA and in bridging any gaps within their organizations. Resources are available that can assist implementers with developing requirements, setting standards, writing RFPs, and ensuring conformance, as well as providing general support with the GRA.

Where can I learn more or receive technical assistance?

The best place to start learning more about the GRA is at the National Initiatives page on the Office of Justice Programs (OJP) Web site; see http://it.ojp.gov/globalGRA.

You can also request technical assistance from the Bureau of Justice Assistance (BJA) by e-mailing it@it.ojp.gov and from its technical assistance providers, who have participated in the development of the GRA. Technical assistance partners include:

- ✦ IJIS Institute: www.ijis.org
- ✦ National Center for State Courts: www.ncsconline.org
- ✦ SEARCH, The National Consortium for Justice Information and Statistics: www.search.org

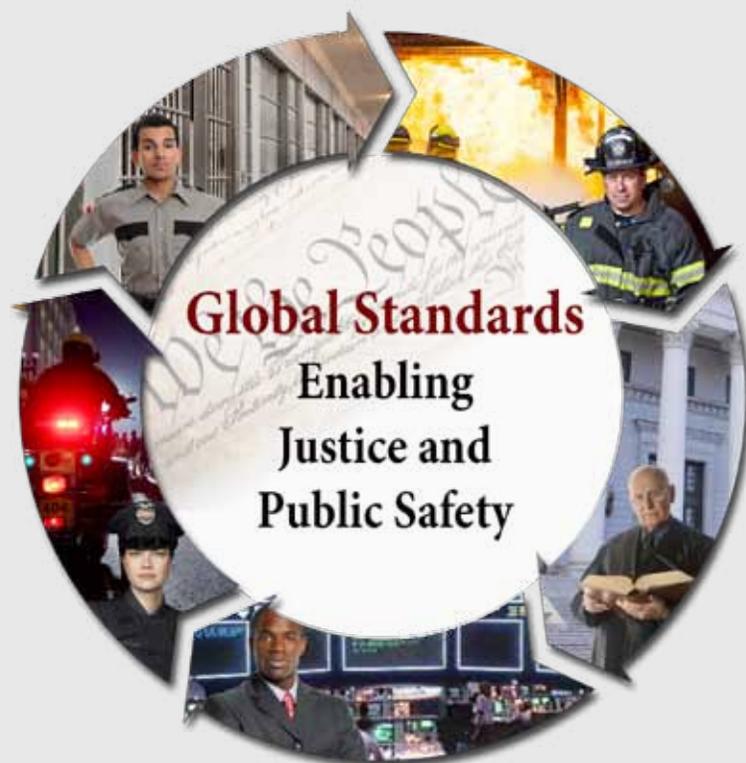## Is there training available on the GRA?

Global and the NIEM Program Manager's Office (PMO) have begun to align the "implementations considerations" module of the NIEM practical implementer's course with the GRA.

Beyond that, Global has tentative plans to develop both online training and a seminar-style, in-depth training

program for the GRA, but no availability dates have been established yet. If you or your agency would benefit from such a training program, please contact us and let us know.

Is the GRA required by DOJ in grant special conditions?

Yes. The Global Standards Council (GSC) was created to support the work of Global working groups and related bodies by coordinating the establishment of a common, consistent, and standards-based approach to implementing justice information sharing solutions. To further this goal, the GSC developed the Global Standards Package (GSP), which describes a full information sharing technology standards implementation suite that addresses data standardization, messaging architecture, security, and privacy requirements. In order to promote consistency and interoperability of systems across the justice and public safety community, the Office of Justice Programs (OJP) requires grantee compliance with the GSP and all components thereof. In addition to offering a common mechanism to share information across agencies, the GSP also promotes the use of open, consensus-based standards to avoid proprietary or restrictive approaches to system integration and interface development. This approach enables adopters to fully realize the cost savings and operational efficiencies that have been demonstrated by those who already have implemented elements of the GSP. Please visit http://www.it.ojp.gov/gsp_grantcondition to learn more.

Global Standards
Enabling
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Does the GRA tell me what tools/infrastructure to buy or which vendors to use?

No. However, the GRA's Execution Context Guidelines deliverable provides high-level guidance on the capabilities and features of particular tools and infrastructure useful in supporting SOA.

It is important to note that SOA is not primarily about buying technology (message brokers, enterprise service buses, etc.). It is primarily about setting standards for the design and implementation of information exchanges—it is more about what you *do* than what you *buy*.

Will the GRA help me write my RFP?

Yes. If you are purchasing services for the design and/or implementation of information sharing solutions in your jurisdiction, the documents in the GRA will do much of the "heavy lifting" for you, in terms of establishing requirements and standards for the successful vendor to follow in executing the project. The GRA provides a vendor-neutral approach, based on open-industry standards rather than any particular vendor's methodology or tools that you can use to ensure that you achieve the promise of SOA.

Anecdotal evidence indicates that jurisdictions can save up to 80 percent of the time normally required to write a middleware or integration RFP by leveraging the GRA.

Who developed the GRA?

The GRA was developed by Global, which consists of public-sector, nonprofit, and private-sector (industry) experts with real-world experience in implementing SOA in a justice environment.

For more information on DOJ's Global and its products, please visit the Global Justice page at www.it.ojp.gov.

What is the current status of the GRA? Is it "mature"?

The GRA is constantly evolving to capture best practices as they emerge. GRA deliverables go through a rigorous vetting process—within BJA and Global—before publication to the Web site, ensuring that the view of those bodies is that documents are "mature" at the time of publication. There are generally GRA deliverables in progress at all times; for more information on deliverables in draft status, call (850) 385-0600, extension 272.

What are the plans for future GRA development/activities/deliverables?

In addition to future updates to the basic GRA documents, there are two major areas of work for the immediate future. The Services Task Team will continue working with practitioners and industry to define new GRA reference services to assist justice agencies in leveraging the GRA. Also, the GRA will be included in a Global Information Sharing Toolkit (GIST) of products to be formally defined as an integrated and standardized collection of standards, guidelines, and best practices that vendors and justice agencies can use.

I am working on an SOA initiative in my jurisdiction—how can I contribute what I have learned to the GRA?

Please contribute your lessons learned by e-mailing information about your initiative to it@it.ojp.gov.

About the Global Advisory Committee

The Global Advisory Committee (GAC) serves as a Federal Advisory Committee to the U.S. Attorney General. Through recommendations to the Bureau of Justice Assistance (BJA), the GAC supports standards-based electronic information exchanges that provide justice and public safety communities with timely, accurate, complete, and accessible information, appropriately shared in a secure and trusted environment. GAC recommendations support the mission of the U.S. Department of Justice, initiatives sponsored by BJA, and related activities sponsored by BJA's Global Justice Information Sharing Initiative (Global). BJA engages GAC-member organizations and the constituents they serve through collaborative efforts, such as Global working groups, to help address critical justice information sharing issues for the benefit of practitioners in the field.

BJA
Bureau of Justice Assistance
U.S. Department of Justice