Meeting Background, Purpose, and Introductions

The Office of Justice Programs (OJP or "Office"), U.S. Department of Justice (DOJ), convened the Global Justice Information Sharing Initiative (Global) Infrastructure/Standards Working Group (GISWG or Working Group) meeting on November 4-5, 2004. In the past few years, this Working Group has been very active, supporting the development of the Justice Standards Clearinghouse for Information Sharing (JSC or "Clearinghouse") and the Global Justice Extensible Markup Language (XML) Data Model (Global JXDM). These tools are aimed at facilitating broadscale information sharing and achieving the Global vision: *Leading the way—getting the right information to the right people, in the right place, at the right time.* Moving forward, GISWG continues to focus on standards but is turning a considerable amount of attention to the issue of service-oriented architecture (SOA)—its implications, opportunities, and challenges for justice constituencies. Considering this express intent of exploring SOA, GISWG was reconstituted at the beginning of 2004 with representatives from a different pool of expertise than in the past. This was the third GISWG meeting of the year.

Working Group Chair Tom Henderson, Ph.D., and Vice Chair Harlin McEwen convened the meeting, reviewed the agenda, and facilitated attendee introductions. The following participants were in attendance:

John Aerts
  Los Angeles County Sheriff's
  Department
  Norwalk, CA

Don Blackburn
  Interstate Commission for Adult
  Offender Supervision
  Lexington, KY

Scott Came
  Justice Integration Solutions, Inc.
  Olympia, WA

Tom Clarke
  Supreme Court of Washington
  Olympia, WA

David Clopton
  National Institute of Justice
  Washington, DC

Steven Correll
  NLETS – The International Justice and Public
  Safety Information Sharing Network
  Phoenix, AZ

Fred Cotton
  SEARCH, The National Consortium for Justice
  Information and Statistics
  Sacramento, CA

Scott Edson
  Los Angeles County Sheriff's Department
  Norwalk, CA

Paul Embley
  Practitioner Resource Group
  Frankfort, KY

Ken Gill
  Bureau of Justice Assistance
  Washington, DC

Kael Goodman
New York City Departments of
Correction and Probation
New York, NY

Ronald Hawley
SEARCH, The National Consortium
for Justice Information and
Statistics
Sacramento, CA

Tom Henderson
National Center for State Courts
Arlington, VA

Bill Henry
CapWIN
Greenbelt, MD

Monique La Bare
Institute for Intergovernmental
Research
Tallahassee, FL

Jim Martin
Datamaxx
Columbia, SC

John Matthias
Northrop Grumman Mission Systems
Denver, CO

Jay Maxwell
American Association of Motor Vehicle
Administrators
Arlington, VA

Harlin McEwen
International Association of Chiefs of Police
Ithaca, NY

Donna Rinehart
Institute for Intergovernmental Research
Tallahassee, FL

Michael Ryan
Minnesota Office of Technology
St. Paul, MN

Bob Slaski
Advanced Technology Systems, Inc.
McLean, VA

Jennifer Zeunik
Law Enforcement Information Technology
Standards Council Technology Center
Alexandria, VA

The chief purpose of this meeting was to build on the unanimous recommendation for GISWG's *A Framework for Justice Information Sharing: Service-Oriented Architecture (SOA)*[1] report by the Global Advisory Committee (GAC or "Committee") members (discussion following). GISWG members convened in Albuquerque to discuss "continuing the momentum, because this is a marathon, not a sprint," and facilitating adoption of an SOA by the justice community. This examination included dividing GISWG members into subcommittees aligned with prominent SOA issues: standards, registries, and services.

GAC: Unanimous Recommendation of SOA Report

At the September 28-29, 2004, meeting of the GAC,[2] held in Arlington, Virginia, Dr. Henderson presented *A Framework for Justice Information Sharing: Service-Oriented Architecture (SOA)* for Committee consideration, including support for the report's ambitious slate of recommendations. GAC members were provided advance copies of the SOA report with the knowledge they would be called to take action. At the Committee meeting, Dr. Henderson noted, "The report . . . is intended for the manager and policymaker who are responsible for providing the leadership, resources, and management of the justice community. Technologists are already addressing the

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[1] Available at http://it.ojp.gov/topic.jsp?topic_id=57.
[2] The fall 2004 Global Advisory Committee meeting summary is available at http://it.ojp.gov/documents/20040928-29_GAC_meeting_summary.pdf.

questions of design, software, and hardware. The more important issues of how SOA will serve the business concerns of the justice community must still be confronted. Only the police, prosecutors, public defenders, judges, court managers, probation officers, corrections officers, and their cohorts in relevant fields who are responsible for leading and managing their agencies can resolve these issues. It is to them we commend this report."

When the floor was opened for comments, many Global members (and observers alike) lauded the document, noting SOA is already the "way of industry" and applauded GISWG foresight to "get ahead of the curve" when, often, justice agencies (and the public sector, in general) are late adopters of technological innovations. This is an opportunity for the private sector and justice community to work in concert.

Recommendation: At the fall 2004 GAC meeting, a motion was made to accept the SOA report and attendant recommendations. An amendment to the motion was made to add language emphasizing privacy policy development. The amended recommendation was put to a Committee vote and passed unanimously.

The resolution was accepted as follows:

The GAC adopts this report (as amended to address privacy and information quality issues) of the Global Infrastructure/Standards Working Group, titled *A Framework for Justice Information Sharing: Service-Oriented Architecture* (SOA).

Global:

- **Recognizes SOA as the recommended framework for development of justice information sharing systems,**
- **Adopts the report's action agenda for its activities to further the utility of SOA for the justice community, and**
- **Urges the members of the justice community to take corollary steps in the development of their own systems.**

According to the preface of the report, "Global's approval was based on the understanding that SOA is an approach that is most likely to result in an infrastructure that will support its vision of how information should be shared among the justice community. That vision can be stated as follows:

Any member of the justice community can access the information they need to do their job, at the time they need it, in a form that is useful, regardless of the location of the data.

Several things about this statement are important. First, the emphasis is upon access to information, not the origin of the data. Second, the focus is on the form, utility, and content of the message that the user receives. And third, it expects that information sharing will cross agency, discipline, and government boundaries. This is an ambitious vision that requires an equally ambitious action agenda."

GAC Approval of SOA Pursuit—Now What?

Dr. Henderson outlined the GISWG plan for advancing the SOA effort:

- *Working Group Structure*—In advance, members were polled as to their interest (and assigned in absence of response) to one of three topical subcommittees: the Services Subcommittee (led by Tom Clarke, Ph.D.), the Standards Subcommittee (led by Ms. Jennifer Zeunik), and the Registries Subcommittee (led by Mr. Kael Goodman).

- *Subcommittee Task: Develop a Work Plan*—Dr. Henderson elaborated on the goal of the meeting and indeed the coming year: "The important part for us today is the last section [of the SOA report] —the agendas, which lay out the issues that will drive us during the coming year. We have four on our table: 1) definition of 'services,' 2) issues of technology standards and our participation [in those issues], 3) what registries look like, and 4) interagency agreements [see notes, below]." Subcommittee leaders were charged with developing work plans, per their content areas, that included **recommendations to four key audiences:**

  o State and local policymakers—"What do we recommend that policymakers think about, and what agenda do we promulgate?"
  o State and local technology managers (*not* technologists).
  o Vendor community—"What products do we need from you to do this?"
  o Federal funding agencies (to include those outside of OJP/DOJ, such as the U.S. Departments of Homeland Security and Health and Human Services)—Focus on this audience was identified as the "overarching goal." Participants should identify "what kind of projects should be funded to do this [SOA]."

- *Staff Research Project: Interagency Agreements*—Originally, the topic of "interagency agreements" (an umbrella category including service agreements, memorandums of understanding, and interstate compacts) was the fourth subcommittee. This task, for the time being, has been remanded to staff as a research project to include:

  o Using GISWG members' expertise and suggestions, to compile examples of these mechanisms' information sharing at any level or scope of government, such as point-to-point, interorganizational, regional, and national.
  o Moving beyond GISWG and the public sector into the private realm by contacting commercial groups and associations.

- Conducting a literature review, utilizing publications by recognized experts, such as the Gartner Group, to document "things that have been done before."
- Providing a counterpoint: "Leaven this high-level look at the justice community with an examination of other communities' comparable agreements."
- The results of this effort will likely bleed into governance issues; per Dr. Henderson, that is to be expected.
- The resulting material from this large research-and-compilation project will be organized in the most logical format and presented to GISWG members for review and critique.

At the conclusion of the first morning's plenary session (which also included briefings by GAC and Global XML Task Force (GXSTF) leaders, guest speakers, and OJP officials[3]), members adjourned to separate meeting rooms for respective subcommittee work plan development. Using a template constructed by subcommittee leaders, participants were charged with developing a PowerPoint for presentation during the following day's concluding plenary session.

Summaries of these subcommittee presentations follow.

Subcommittee Reports: Services Subcommittee

Services subcommittee Chair Tom Clarke, Ph.D., delivered his group's report.

- Mission Statement: Develop a process to identify, define, and deploy a consistent set of justice services and validate the process through the identification and definition of an initial set of justice services.

- What is a/are service(s)?

  - Per the GISWG SOA report, services are "software components that expose the capability to produce information on demand."
  - Services typically are coarse-grained, discoverable, and loosely coupled. Coarse-grained services bundle functionality at a level that makes sense for a business process. Discoverable services can be found at the time of desired use by a unique identity, interface, and service. A loosely coupled service connects to other services and systems using dependency-reducing message methods. The service is designed with no affinity to any particular service consumer. Poorly designed services, which are logically locked into their service consumers, may render the entire application monolithic.

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[3] Mr. Steve Correll and Mr. Fred Cotton reported on the Global Security Working Group (GSWG) Web Services Security Task Force; GISWG Vice Chair Harlin McEwen reported on Presidential Executive Order 13356; GXSTF Chair Paul Embley provided an update on his group's efforts; and Mr. Ken Gill discussed related efforts in the larger justice community in his OJP report.

- Also, the service is produced and consumed by systems without human intervention. A service interface is a contract that establishes the identity of the service and the rules of the service invocation. Its nature is and should be a black box, meaning that sufficient metadata is provided in the interface to identify the purpose and function of the service.
- An SOA is preferred for the typical synchronous request/response model where the same back-end business functions are reused across different user categories, in different situations and or using different devices. Some justice exchanges may be better modeled and implemented as event-driven architectures. These are typically long-running asynchronous processes with complex multiple steps. We may want to separate desired information exchanges into SOA and event-drive architecture (EDA) groups.
- The role of services in the justice community is to provide an integration point where one member of the justice community makes information available or business processes available.

- How can the GISWG Services Subcommittee help guide the adoption of the service process?

   - Promote development of and leverage reference documents.
   - Leverage SEARCH's Justice Information Exchange Model (JIEM).[4]
   - Leverage industry services standards, e.g., WS-I.
   - Provide supplemental language for the Integrated Justice Information Systems (IJIS) Institute's *Pre-RFP Toolkit*.[5]

- How can the GISWG Services Subcommittee help guide the deployment of services?

   - Prioritize services to pilot.
   - Identify existing candidate projects.
   - Identify new pilots.

- Relationship to other subcommittees' efforts:

   - Registry.

      $\Rightarrow$ Version/configuration control.
      $\Rightarrow$ Service search attributes.

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[4] Information on the JIEM is available at http://www.search.org/integration/info_exchange.asp.
[5] Information about the *Pre-RFP Toolkit* is available at http://www.ijisinstitute.org/procure/index.html#Pre-RFP.

- o Interagency agreements.

    - ⇒ Security, reliability, access, performance, availability.
    - ⇒ Business relationship aspects.

  - o Standards.

    - ⇒ Technology standards.
    - ⇒ Global JXDM.

- • Other Global committees/areas which this subcommittee will interact with or have impact on are the Global Security Working Group (GSWG) Web Service Security Task Force (WSSTF), Global Privacy and Information Quality Working Group (GPIQWG), and intelligence community service requirements.

Recommendations

1. The GSWG should identify appropriate business rules and express them in a modular and consistent way.

2. The GPIQWG should identify appropriate business rules and express them in a modular and consistent way.

3. The GISWG Interagency Agreements Subcommittee (or equivalent mechanism) should identify the necessary business rules for each service and express them in a modular and consistent way.

4. The GISWG Interagency Agreements Subcommittee (or equivalent mechanism) should describe a syntax for expressing business rules in both human and machine/application (Web Services Description Language [WSDL]) formats.

5. The GISWG Registries Subcommittee should publish the services in a registry.

6. The GISWG Registries Subcommittee should publish the standards required to implement the services in a registry.

7. The GISWG Registries Subcommittee should describe a consistent syntax, categorization, and language for describing services so that they may be reliably discovered in the services registry.

8. The GISWG Registries Subcommittee should categorize the Reference Model exchanges by type.

9. The GISWG Registries Subcommittee should prioritize the Reference Model exchanges by type and justice association.

10. The GISWG Registries Subcommittee should describe WS-I reference scenarios for each of the exchange types.

11. The GISWG Registries Subcommittee should prioritize the creation of Global JXDM reference documents by association.

12. The GISWG Registries Subcommittee should analyze the reusability of data model components across reference documents.

13. The GISWG Registries Subcommittee should identify and define a small set of standard messaging profiles to implement the justice services.

14. The GISWG Registries Subcommittee should identify the logical and physical networks that can deliver the standard services.

15. The GISWG Registries Subcommittee should prioritize services to implement in pilot projects.

16. The GISWG Registries Subcommittee should establish a formal process for improving the justice services architecture based on the experiences of pilot projects.

Subcommittee Reports: Standards Subcommittee

Standards subcommittee Chair Jennifer Zeunik delivered her group's report.

- Mission Statement: To promote utilization of appropriate standards for implementation of service-oriented architecture (SOA) in the justice environment in support of the broader Global vision of justice information sharing by:

  o Identifying applicable standards currently available.
  o Identifying gaps in available standards based on the Global vision.
  o Identifying appropriate mechanism(s) to address based on identification and gap analysis of missing components to perform particular functions.

- Identifying the Business Problem: DIVERSITY is the overarching issue.

  o Multiple platforms.
  o Federated.
  o Confederated.
  o No "buses" (vendor).
  o Security—delegate to GSWG.
  o Multiplicity of interfacing.

- o Accountability—authentication and data quality.
- o Privacy.
- o Agreements, "Rules of Engagement" or "Trust Agreements," and service audits.
- o Different levels of authentication.
- o Business practices (what type of data).
- o Granularity.

- Task: Identifying currently existing standards.

  - o Standards that belong to SOA and apply to justice.
  - o Literature research/other resources (experts).
  - o Overlap analysis.
  - o Research Implementations.

    - ⇒ Outside of justice (medical, HIPPA, banking).
    - ⇒ Inside justice.

  - o Vetting/feedback.
  - o Surveys.
  - o **Recommendations** regarding identifying currently existing standards.

    - ⇒ **For Policy Personnel.**

      - ? *Executive Summary.*
      - ? Presentations.
      - ? Marketing (brochures, CD, Web site posting, etc.).

    - ⇒ **For Technology Managers.**

      - ? More in-depth report justifying use of standards, including list of all reviewed standards.
      - ? Prioritized.

    - ⇒ **For Vendors.**

      - ? Ensure communication strategy encompasses info flow both ways.
      - ? Expand *Pre-RFP Toolkit* to include SOA standards issue.
      - ? Solicit position paper.
      - ? Look at other standard-setting bodies.

    - ⇒ **For Federal Funding Entities**: Recommend funding research, particularly "revitalization" or maintenance of research at least annually.

- Task: Identifying gaps based on Global's vision.

  - Describe as-is.
  - Describe future state.

    ⇒ Where do we want to be?

  - Identify areas that are left to be filled.
  - Establish strong communication/dialogue with other Global working groups.
  - Focus first on establishing a standard for intersystem exchange or application program interface (API) of information for open systems.
  - Address commercial off-the-shelf (COTS) products.
  - **Recommendations** regarding identifying gaps based on Global's vision for Technology Managers.

    ⇒ **Surveys of field (general).**
    ⇒ **Research of "best practices" in systems already utilizing SOA.**

- Question: How do we get to where we want to be? Answer: Based on identification of existing standards, gap analysis, and identification of missing components to perform particular functions, identify appropriate process and mechanism that address:

  - Identifying standards body/bodies to address.
  - Identifying process/operations.
  - Vetting/validation.

    ⇒ Demonstration pilot.

  - Feedback.
  - Publishing.
  - Short-term plan.
  - Long-term plan—maintenance.

- **Products/Recommendations.**

  - **For Policy Personnel.**

    ⇒ *Executive Summary.*
    ⇒ Refer to publications/resources.

  - **For Technology Managers.**

    ⇒ More detailed strategy.
    ⇒ Media-based outreach.

   ⇒ Tutorial.
   ⇒ Resources to use.

  o **For Vendors.**

   ⇒ Articulate expectations through functional requirements.

  o **For Federal Funding Entities**.

   ⇒ Fund and support pilots.
   ⇒ Enable communication of success stories.

- **Next Steps.**

  o Identify standards.
  o Develop framework for report on existing standards landscape.

   ⇒ Will drive *Executive Summary* (conference call December).
   ⇒ Draft by March 2005.
   ⇒ Final by August 2005.

  o Gap analysis begins after "identifying."
  o Outline adaptable process/develop strategy for addressing gaps.

   ⇒ Draft by June 2005.

  o Develop strong communication strategy to ensure strong dialogue:

   ⇒ To and from vendor community.
   ⇒ To and from policymakers—training/presentations.
   ⇒ To and from tech managers.
   ⇒ With Global—presentations.
   ⇒ With working groups and committees.

    ? Provide with committee output.
    ? Cross-meeting attendance.
    ? Strong communication between committee chairs.

Subcommittee Reports: Registries Subcommittee

Registries subcommittee Chair Kael Goodman delivered his group's report.

Mission Statement: Within Global's SOA effort, the role of the GISWG Registries Subcommittee is:

- To clarify the role and use of registries, and
- To help drive deployment in the justice community.

"Registries," as Defined by GISWG:

"At the heart of SOA is the assumption that software components (services) will be shared. This requires not only standard definitions but also a means for locating and accessing relevant components. The solution to these issues has focused on the concept of a system of repositories and federated registries. These are sites where either the reusable software could be located [repositories] or the instructions for accessing the software [registries] can be found." - *A Framework for Justice Information Sharing: Service-Oriented Architecture (SOA); pp. 14-15.*

What Is a Registry, Technically Speaking?

A registry is a defining piece of SOA. Put another way, an architecture is *not* a SOA without a registry.

A registry is a structural component of SOA that is intended to enable and facilitate the interactions of remote Web services over computer networks.

More specifically, a registry is a database-driven system <u>into which</u> service providers publish service details and <u>from which</u> service consumers discover these service details.

What Is a Registry? Explaining Registries to Policymakers:

A registry is a directory that houses what information is available and how to obtain it. A registry is an index or "yellow pages" of services and where to get them.

How a Registry Works:

Once a service consumer has discovered the enabling information from the registry and made proper contact with the service provider, the publisher and consumer can then conduct a business transaction independently of the registry.

As a structural component, however, a registry is not limited to enabling a single transaction. Rather, its persistent availability helps publishers and consumers maintain interactions over multiple transactions over periods of time.

Registries Subcommittee Relationship to Non-Global Committees/Efforts:

- Leverage work of the Organization for the Advancement of Structured Information Standards (OASIS) and other standards bodies.
- Federal government leadership, guidance, and expertise.
- Other countries:

    o Canada
    o UK
    o Korea
    o Singapore

Registries Subcommittee Relationship to Other Global Committees:

- Integrally linked to *all,* at different points in time.
- Particularly, need to stay closely aligned with the Services subcommittee.

  o Subcommittee cross-pollination:

    ⇒ Members moving back and forth
    ⇒ Joint subcommittee sessions

Recommendations: *For the Benefit of* Federal Funding Agencies

Tiered recommendation:

- Recommend sponsoring the creation of model specifications to be used by vendors for the justice community in developing registries. Specs to be developed directly by Global or by a separate body, created per Global recommendation.
- Recommend sponsoring the creation of a Model Registry to be used by the justice community. Make it open-source.

Recommendations: *For the Benefit of* Local and State Policymakers

- Are registries deployed by geography, discipline, or both—or by some other parameter?
- A combination of publicly and privately accessible registries.
- Global would recommend pilot implementations like local law enforcement, a state discipline, and an interstate cross-discipline organization and would recognize certain organizations as leaders to focus on this effort.
- Creation of education materials on what is a "registry." Leverage Global outreach committee for technical and policy audiences to sort through education.
- Leverage experience from other verticals in governance, deployment, vendors, and funding.

Recommendations: *For the Benefit of* Local and State Information Technology Managers

- Identify functional requirements.
- Identify standards compliance, ie., XML, in order to keep vendors from drifting into proprietary solutions.
- Generate a question-and-answer guideline that helps to assist in the creation of good procurement vehicles, including functional and technical requirements.
- Leverage the Global Web site and the Justice Standards Clearinghouse to be as close as possible to a one-stop shop for technical resource materials.

Recommendations: *For the Benefit of* **Vendor Community**

- Bring them in early to participate in the registries subcommittee.
- To help vendors make products, develop functional requirements that set minimum specifications, and identify standards that will have to be met.

Next Steps/Next Meetings

Considering the Working Group's discussions and subcommittee presentations, the next steps to advance GISWG's agenda include:

1) Reworking/supplementing membership, especially adding technical experts on the Registries subcommittee.

2) As previously discussed, tasking Global staff with addressing interagency agreements and similar information sharing policy mechanisms. This area may become a fourth subcommittee as the effort progresses, but at this point, it is a staff research project.

3) Securing a collaborative tool to facilitate subcommittee interaction. As previously utilized by GISWG leaders, conference call capability is available.[6] Staff is in the process of also securing an online mechanism (i.e., Traction) to better enable subcommittee document work. The tool will be demonstrated at the next Working Group meeting. Face-to-face subcommittee meetings will be considered on an ad hoc basis.

4) Utilizing the SOA report, the following outreach activities were suggested:

   i. Drafting a *10 Steps for SOA* flyer, modeled after the *10 Simple Steps to Help Your Agency Become a Part of the National Criminal Intelligence Sharing Plan*[7] document. Subcommittee chairs were also encouraged to craft a similar piece, per their content area, within the next year.

   ii. GISWG leaders will draft an article that "steals from this report" for distribution to association magazines, online newsletters, and other outreach venues. Again, subcommittee leaders were urged to consider similar actions per their areas.

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[6] Please call Donna Rinehart at (850) 385-0600, extension 285, or e-mail drinehart@iir.com to schedule a conference call.

[7] Located at http://it.ojp.gov/documents/Ten_Steps.pdf.

iii. Develop a basic SOA PowerPoint presentation for customization, per event, because—as Dr. Henderson noted— "One of the prices you pay on being in this group is that you have to become a prophet of Global and SOA . . . ."

5) For the April GAC meeting, Dr. Henderson stated: "It will be important that we have something to report back in April. This doesn't have to be polished but should be a set of talking points to put before the GAC . . . . This administration is now moving fast: we need to get our agenda on the table as fast as we can. **So, I'm not looking for a final report in April, but you should think about your first set of recommendations you want on the table regarding funding for 2006.**"

6) The next GISWG meeting will be held in conjunction with the GXSTF during the week of February 21, most likely in Las Vegas, Nevada. A large part of the agenda will be a one-day workshop, featuring a private sector representative expert in each of the subcommittee content areas. GISWG members were encouraged to suggest speakers.

Having no further business and hearing no further questions, the GISWG meeting was adjourned.