RID Draft Update
Migrating to IODEF

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Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39-18
RID Updates

• Purpose
• RID and INCH
• Messaging Format Changes
  – Packet based to XML
• Define Extensions to IODEF Model
• Communication Mechanism for RID Documents
• Security Considerations
  – Consortiuems
  – Privacy
Real-time Inter-network Defense (RID)

- Trace Security Incidents to the Source
- Stop or Mitigate the Effects of an Attack or Security Incident
- Facilitate Communications between Network Providers
- Integrate with existing and future network components
  - Systems to trace traffic across a network
    - NetFlow, Hash Based IP Traceback, IP Marking, etc.
    - Intrusion Detection Systems
    - Network devices such as routers and firewalls
- Provide secure means to communicate RID messages
  - Consortiums agree upon use and abuse guidelines
  - Consortiums provide a key exchange method
    - Trusted PKI, certificate repository, cross certifications
RID and INCH

- RID is used to communicate security incident handling information between CSIRTs or NPs
- RID carries much of the same data as an IODEF document
- RID requires a few additional data elements
- Communication and proper transport of messages is in the RID specification
- RID is now reformatted to use the IODEF specification
  - Packet based format to IODEF document
- RID message types
  - Noted in a SOAP wrapper to an XML IODEF document
RID Extensions to IODEF

- **AdditionalData Class from IODEF used to define Extensions**
  - **IPPacket Class**
    - Allows hex packets to be stored in the RID message in a format that will be expected by the recipient of a RID message
    - Multiple packets may be sent in a single message
  - **NPPath Class**
    - Purpose is to identify the path of the trace and to avoid loops
  - **TraceStatus Class**
    - Method for providing approval status from upstream peer after a trace request is made
Communicating RID Messages

- **SOAP Messaging Wrapper and XML Security**
  - Method to transport messages
  - Provide integrity, authentication, authorization
  - XML digital signature, encryption, and public key infrastructure

- **Public Key Infrastructure**
  - Provided by consortiums linking network providers for RID messaging

- **Message Types**
  - Trace Request
  - Trace Authorization
  - Source Found
  - Relay Request

- **RID Systems Must Track the Requests by**
  - Incident Number
  - Packet Contents
  - Completion Status
Security Considerations

• **Consortiums**
  – Agreements between entities involved in RID peering
  – Provide a secure key exchange repository/system (PKI)
  – Peering agreements and policies between consortiums and across national boundaries or jurisdictions

• **System use guidelines**
  – Privacy considerations
  – Abuse policies
  – Use policies may vary across national network or consortium boundaries
    Automated method to allow enforcement of use agreements

• **RID server security policies**
  – Network based access controls
  – Hardened systems

• **Communication security considerations for the exchange of RID messages and the underlying protocols**
Summary

• Many updates from the previous version
  – Moved from packet based format to a solution based on IODEF documents
  – Extended the AdditionalData Class to accommodate the needs of RID messaging
  – Security will use XML Digital Signature and XML Encryption
  – PKI at the core of the security model, but provided by a consortium
  – Topology examples to address implementers questions
  – Extended information on system use and privacy considerations

• Near Future Update will include
  – SOAP wrapper and more information on XML Security
  – Further specifications on automating a flag for system use adherence guidelines
  – May include additional examples of other message types
  – Any suggested revisions or clarifications