

CGAP and the eRA Exchange

Connecting the Community

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Topics



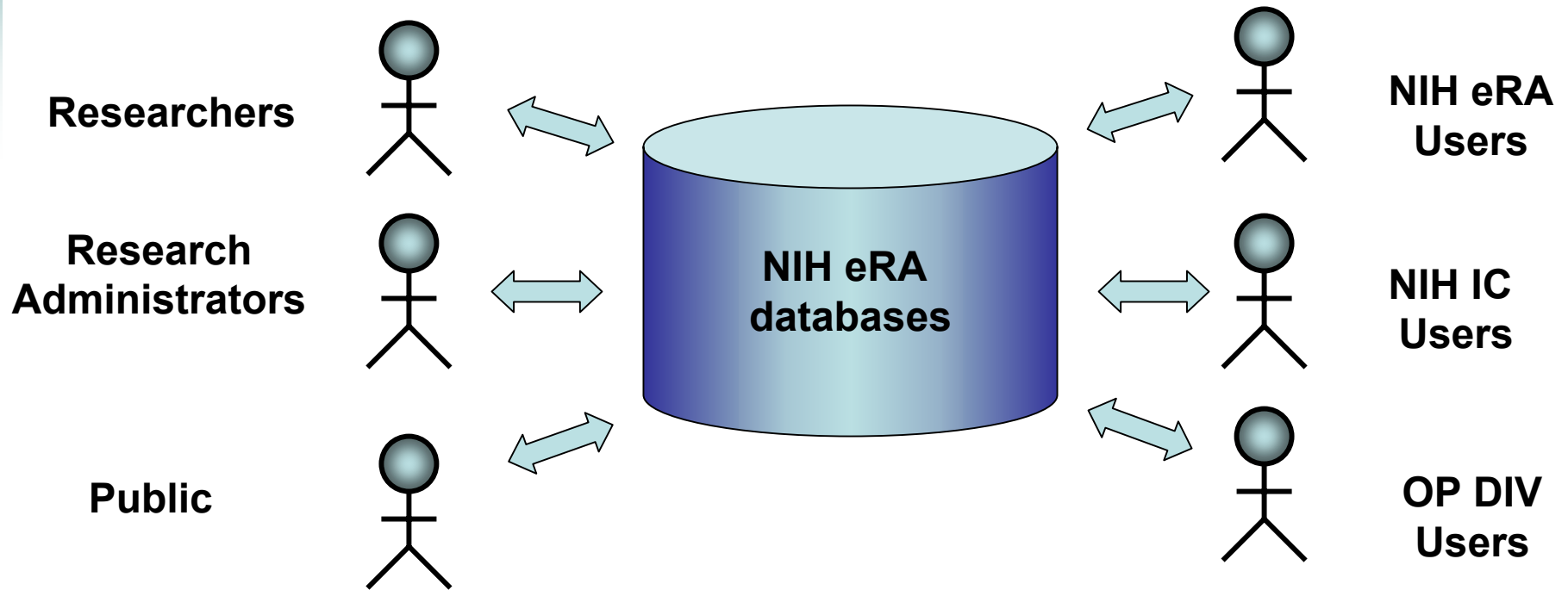
- CGAP update
- eRA Exchange standard and build out
- Transactions other than submissions
 - People information transactions
- Delegation through the exchanges

Competitive Grant Application Program CGAP

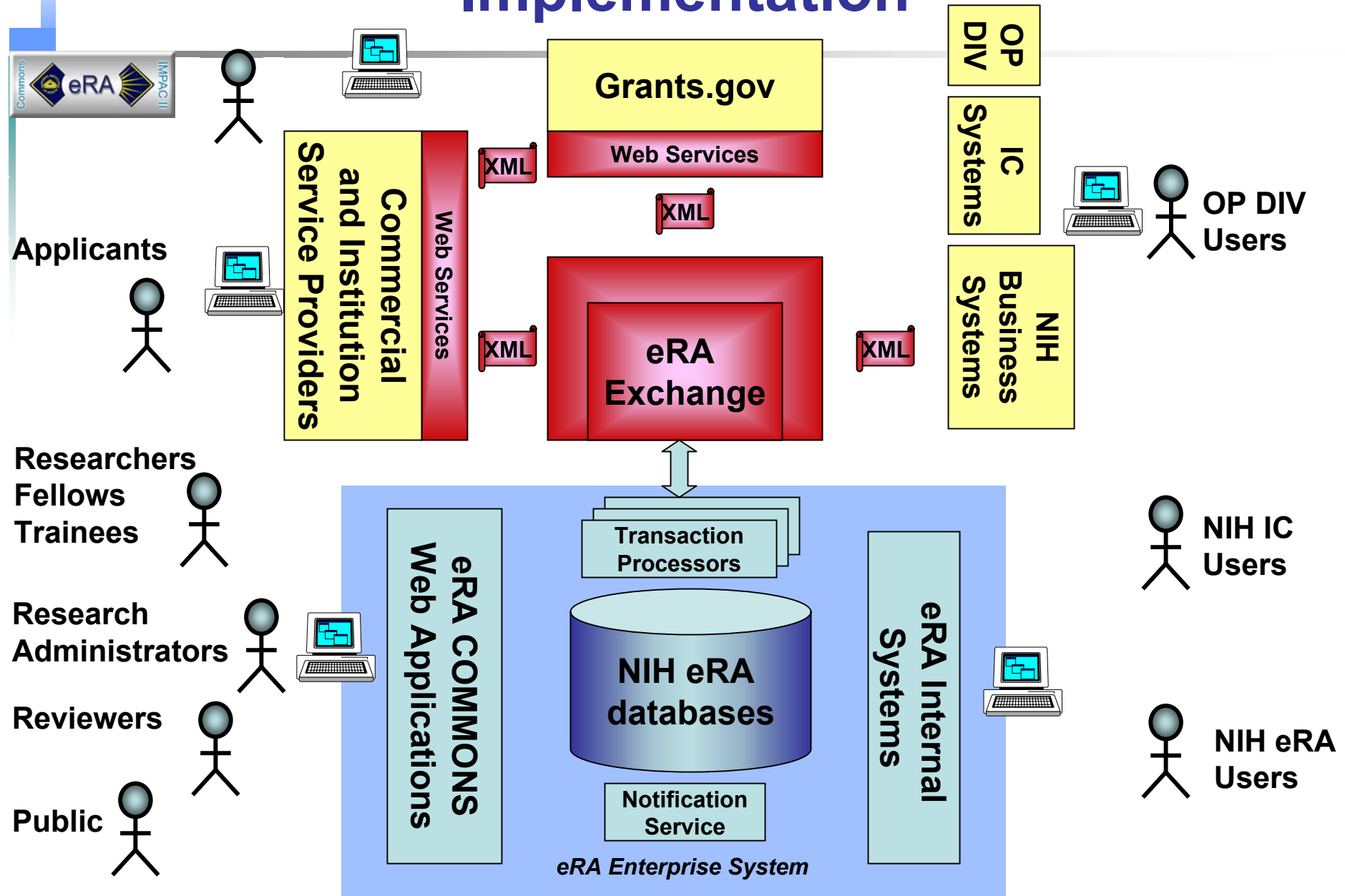


- Receipt of electronic grant applications in an XML stream with file attachments from:
 - Service providers
 - Grants.gov
 - Institutions
- Paperless processing of applications at NIH
- Outgoing responses to submissions, all downstream transactions for grants, other transactions
- System to system interface

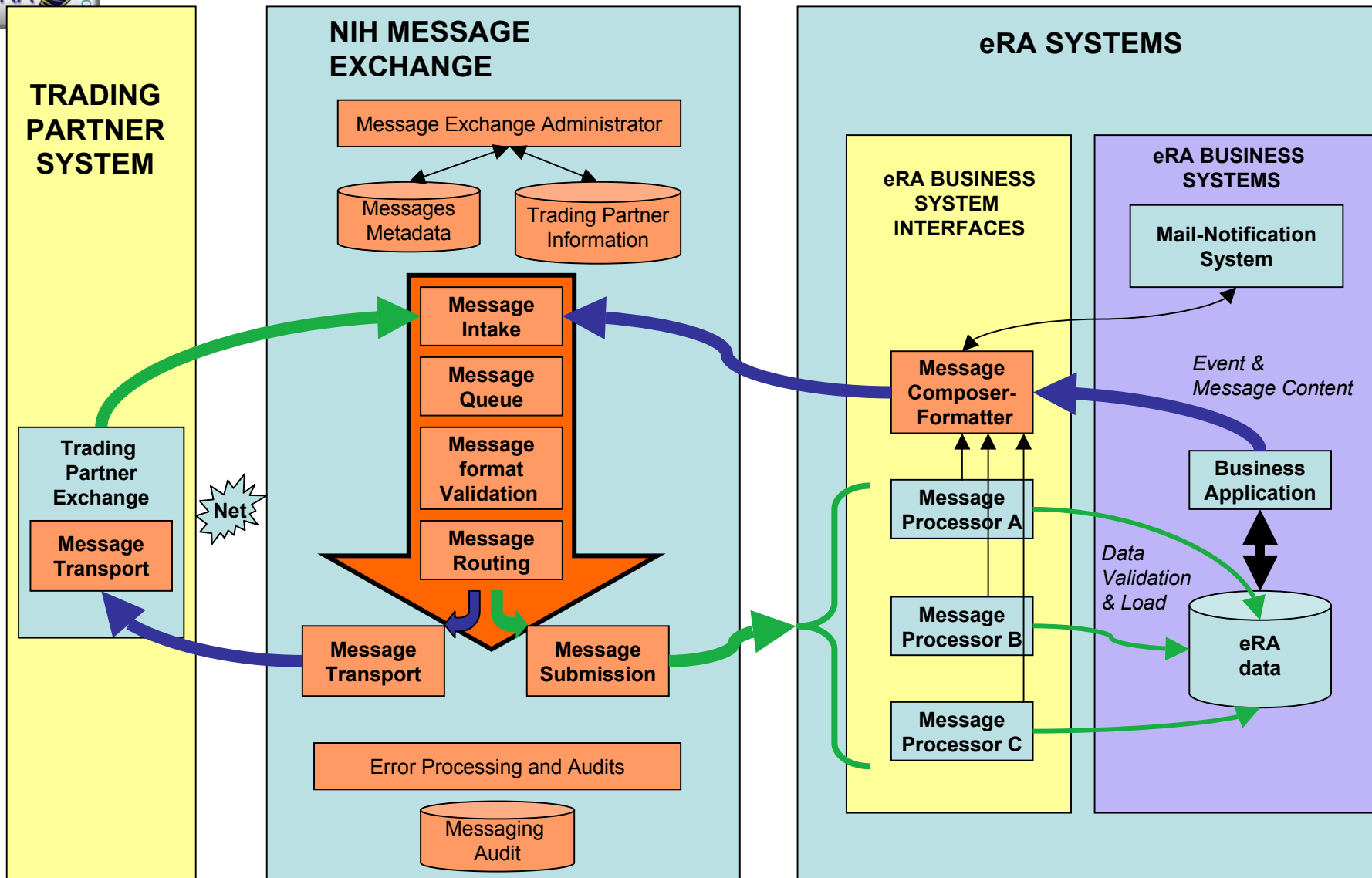
Vision: Shared information across the Community



Implementation



Functional Components of the Exchange



What was developed for October 2003



- Ability to process these message types:
 - Request for submission (Ticket)
 - 398 Grant application from service providers
 - 398 Grant application from Grants.gov (in progress)
 - Status requests
 - Status response
 - Error messages, validation messages
 - Reports, utilities
- A framework to process more message types
- A reference implementation for the “other = submitter side”
- A validation installation and site (but not a service)
- The NIH systems to process the e-apps up to Review
- Manual configurations for exchange partner set ups, security and transaction definitions
- A basic, limited, but functional exchange system

October 2003 Pilot Scope



- A limited number of applications
- Pre-recruited applicants
- Submitted through
 - Sponsored Service Providers
 - Grants.gov
- Individually monitored by eRA analysts
- Paper applications as backup when needed
- **No Risk to the PI**

October 2003 Application Criteria



- Applications requirements
 - R01 simple projects, no sub-projects
 - Modular budgets
 - Either type 1 (October 1) or type 2 (November 3)
 - PI and Key Personnel need Commons profile, DUNS number set up
- Applicants through grants.gov need
 - The NIH opportunity number
 - Registration with Grants.gov
 - Registration with CCR
 - And same as above

October 2003 Pilot Schedule



- **Issues:**
 - NIH receipt dates October 1 and November 3
 - NIH eRA enterprise system production release November 10
 - Grants.gov production release by October 31
 - State of readiness of Grants.gov, SBIR
- **Pilot Scenario:**
 - Receive applications on or before deadline October 1
 - Save the pieces, in particular the PDF attachments like the project plan
 - Process the applications electronically in the test environment until it passes all validation criteria
 - Re-submit validated applications in production November 10
 - Submit enough information to the NIH Receipt and Referral to make sure there is no impact on Review
 - Fall back to paper if there are issues
 - **No risk to the PI**

Participation Still Sought



- David Wright as the contact
 - Grants.gov submissions
 - Service Provider submissions
- Institutions for direct submissions
 - February submission cycle

Grants.gov Coordination



- Monthly management meetings with NIH
- More direct contact from NIH with integration contractor
- NIH will use the integration toolkit from Grants.gov
- Grants.gov will use same technology and approach to package the application files as NIH
 - SOAP with attachments (rather than inclusions)
 - Format – standard to be defined
 - (NIH uses ebXML as the basis for the message standards)
- Grants.gov 3 components for one application
 - Core+ - based on form 424 with DUNS
 - Research and Related – common to all research grants
 - Agency specific – NIH additional data elements

Short Term Goals: Build on what we have



- Pilot with live applications in October 2003
- Post-Pilot internal at NIH
 - Assess technology, make changes
 - Gear up for production deployment
 - Target February 2004 NIH submission date
 - “Operationalize” the system delivered
 - Major effort in NIH internal system upgrades, fault tolerance, test sites

Short Term Goals for External Community



- Gear up for February 2004
- Post Pilot with partners
 - Establish the exchange as a permanent feature
 - Add volume – more transactions, Institution participants
 - Add documentation, system, procedural “How to guides”
 - Add content
 - More application types (possibly)
 - More information to status request response?
 - Notice of Grant Award as a transaction
 - Validation web service to test application content
 - Infrastructure for external partner to test the exchange
 - Provide technical support for external partners
 - Post submission application corrections transactions

Benefits for the Participants



- One system for your users: **Yours**
 - No retyping into eRA (or even grants.gov)
 - Validation of applications before submission
 - Immediate confirmations of receipt and validation
 - All subsequent business transactions directly to your system
- Ability to initiate a query and retrieve your data from eRA as a transaction
 - No data discrepancies, no transcription errors
 - Presentation of information integrated into your system
- System to system notifications and updates
 - Automated upload of the award budget and terms (NGA)
 - Automated application status updates throughout the life cycle of the grant
 - Etc
- One system: Yours
 - Multiple outputs for submission for multiple agencies

Summary for CGAP



- A basic message receipt capability has been build
- Looking for more participants to expand the program
- Coordination with Grants.gov is on-going
- Increase the types of transactions to reap the benefits of the infrastructure
- The most difficult transaction is the application submission and that is build
- **WHAT IS NEXT ?**

From CGAP to Business to Government Exchange

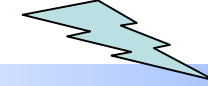


- The requirements for business transactions in an Exchange
- ebXML as a proposed standard
- Transactions other than applications
 - People information ?
- Support infrastructure for the Exchange community

The Transaction Flow



THE HAPPY PATH



Receipt

Message comes by recognized courier
I accept the Post mark and package
This company is an established customer
This person is an established customer
The company is using an established Form
Looks like they have the right information in the right places
My company acknowledges the receipt and agrees to process the transaction

Business workflow

I pass it on to the business person
The business person acts on the message
The business person sends a letter back

Exchange system

Accept message only from registered partners
The external exchange is trusted
Applicants are pre-registered
Only standard formats for the transactions
The transaction content is validated

The receipt message is sent and transaction is submitted to the business systems

Business systems

Transaction is loaded into the database
The business systems handles the workflow
The business system initiates the responses other than receipt acknowledgements

In the electronic world

Requirements



- Message standards
- Transmission protocols standards
- Agreement on actions and reactions for each transaction
- Registration of participants
- List of capabilities of each participants
- Agreed on rules for the **security** of the transaction (and overall system)
- Rules on how to make changes to the system, standards and technology
- A steering group for the overall system

ebXML Standard Components



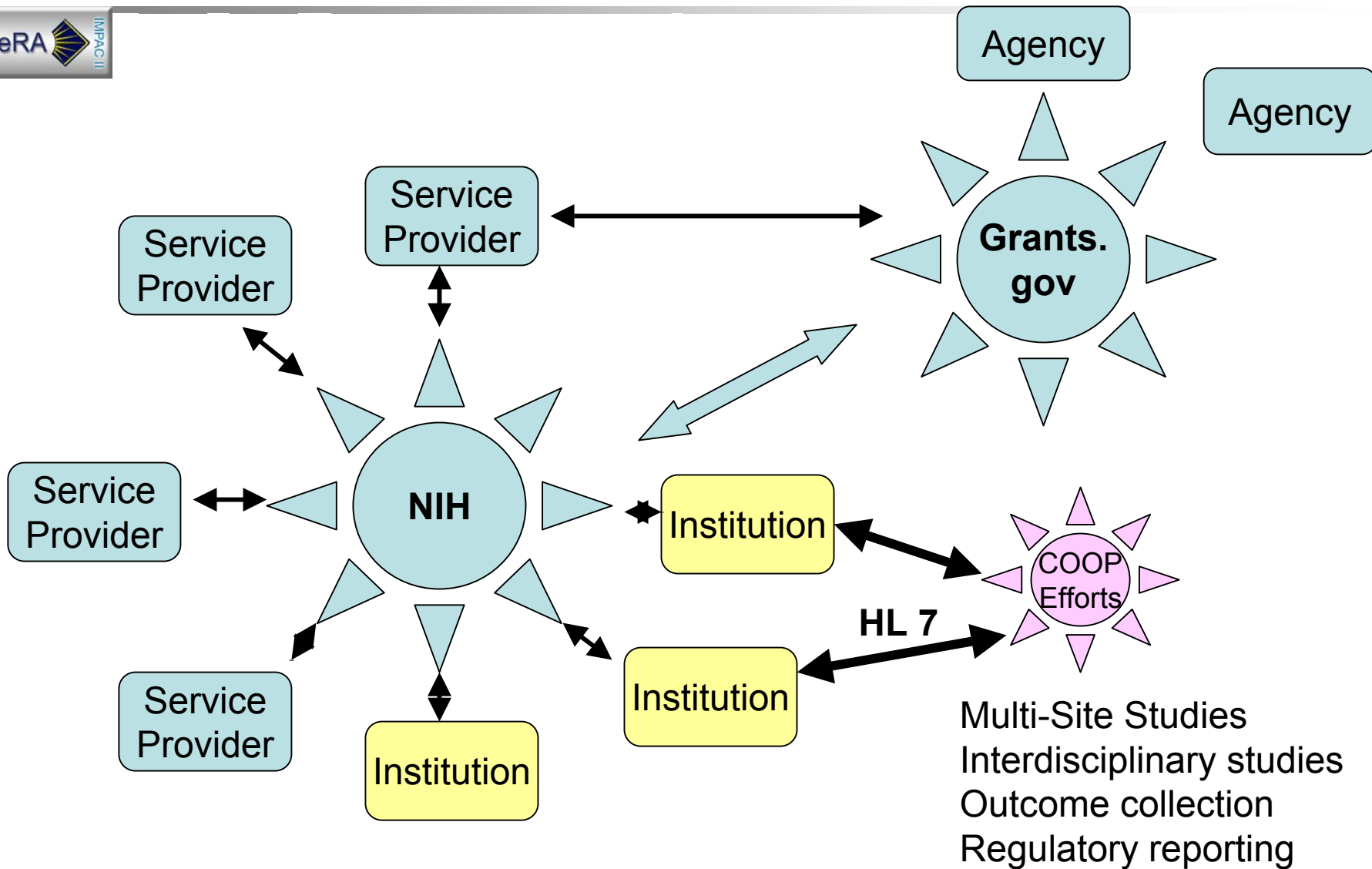
- Business Process (**B**usiness **P**rocess **S**pecification **S**chema)
- Business Document (**C**ore **C**omponents)
- Service Discovery
 - Registry (How to store, retrieve, find specifications)
 - Repository (Organization of the specifications)
- Partner and Trading information
 - Partner profiles (**C**ollaboration **P**rotocol **P**rofile)
 - Trading agreements (**C**ollaboration **P**rotocol **A**greement)
- Message Services (**M**essage **S**pecification)

How to apply ebXML to eRA? Bottoms up and as Needed



- **1) Start with messaging standards**
 - Already started (not totally conformant)
 - Continue using for all messages, error controls, security
- **2) Collaboration profiles and agreements**
 - **2.1 Record each participant capabilities**
 - For identification, security, certification and configuration management
 - **2.2 Collaboration Agreements**
 - Define the sequence of events expected for each transaction
 - Pre-define, not a constant discovery
 - Publish these schemas in a common place - registry
 - Standardize the approach for transacting with NIH
 - Automate the control and exchange maintenance at both ends
 - Automated version controls and testing
- **3) Registry and Repository**
 - Custom to start at NIH only
 - May be standardized and distributed later
- **Business process specifications**
 - Later, use technique as inspiration or guideline for method

Topology Migration



NIH-eRA Scenario: Intermediate Term

- A request from XYZ for participation in the Exchange is received by NIH
 - Likely to be e-mail, paper or phone or web-site – **Human initiated**
- NIH verifies the credentials of the requester and organization
 - Provides set up instructions – **Human Contact**
- XYZ manager provides exchange set up information to NIH
 - XYZ system staff retrieves from the NIH registry for transaction and trading agreement definitions, selects a transaction type, retrieves sample for certification (ex: a FSR)
 - XYZ system staff programs their system to process that transaction type,
- XYZ **system** submits a request to NIH exchange for a trading agreement to submit FSRs
 - NIH **system** validates the request and registers XYZ in the NIH Test environment
 - XYZ **system** successfully submits 3 sample FSR into the Test environment
 - NIH **system** tracks the attempts and successes, processes and responds to each attempt
 - NIH **system** certifies XYZ for the FSR transaction type in the production environment
 - XYZ **system** may certify that NIH Exchange is authorized to send FSR ack messages
 - NIH **system** registers the trading agreement as complete for XYZ and FSRs
 - NIH **system** sends out a completed trading agreement message for FSR to XYZ
- XYZ system submits an FSR transaction
 - NIH system checks credentials of sender, certification for message type and version of specification, processes FSR and sends out acknowledgements as per trading agreement

Human Set Up

Automated
Capability
Maintenance

Management Infrastructure



- Agreed on rules for the **security** of the transaction (and overall system)
 - Was a deferred problem for the Pilot (Account/Password solution)
 - Digital signatures problems to be addressed?
 - Delegation of authority through the exchange?
- Rules on how to make changes to the system, standards and technology
 - Configuration management procedures and version controls to be implemented
- A steering group for the overall system
 - Community standards require Community participation
 - Technical forums and participation could reduce costs
 - Reference Implementations provided by NIH, grants.gov
 - Open Source, distributable, shareable code

Feedback on Exchange Approach?

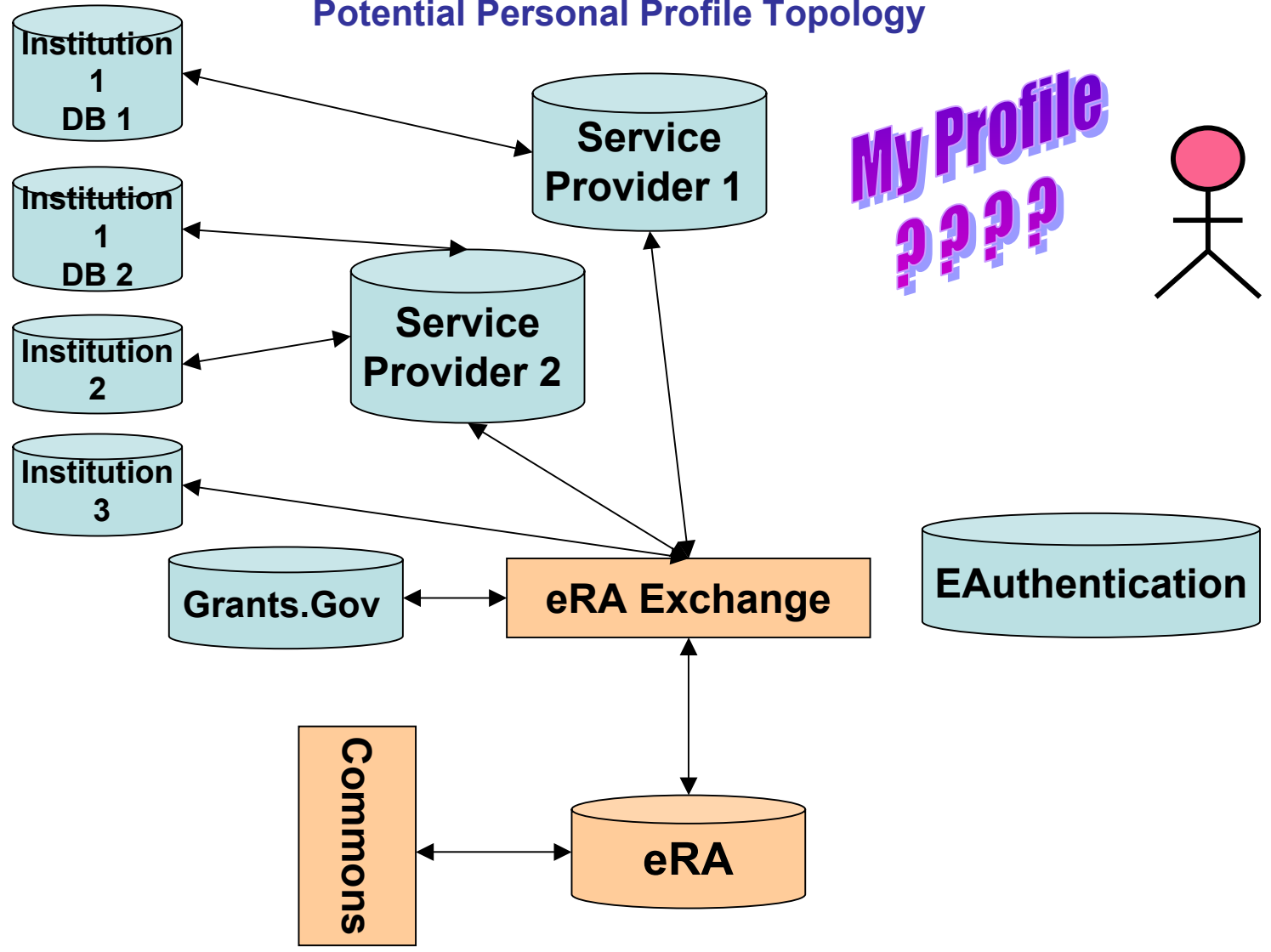


- Are the benefits visible?
- Is there consensus on the proposed standard (ebXML) ?
- Is the approach conducive to participation?
- How can NIH help to promote the penetration of the technology?
- Are there non administrative transactions that would be candidates for the Exchange
 - Clinical trials data (protocol submission, consents, AE, outcomes reporting?)
- Suggestions?

New Topic: People Profiles Transactions



Potential Personal Profile Topology



Person Profile and People Centric Transactions



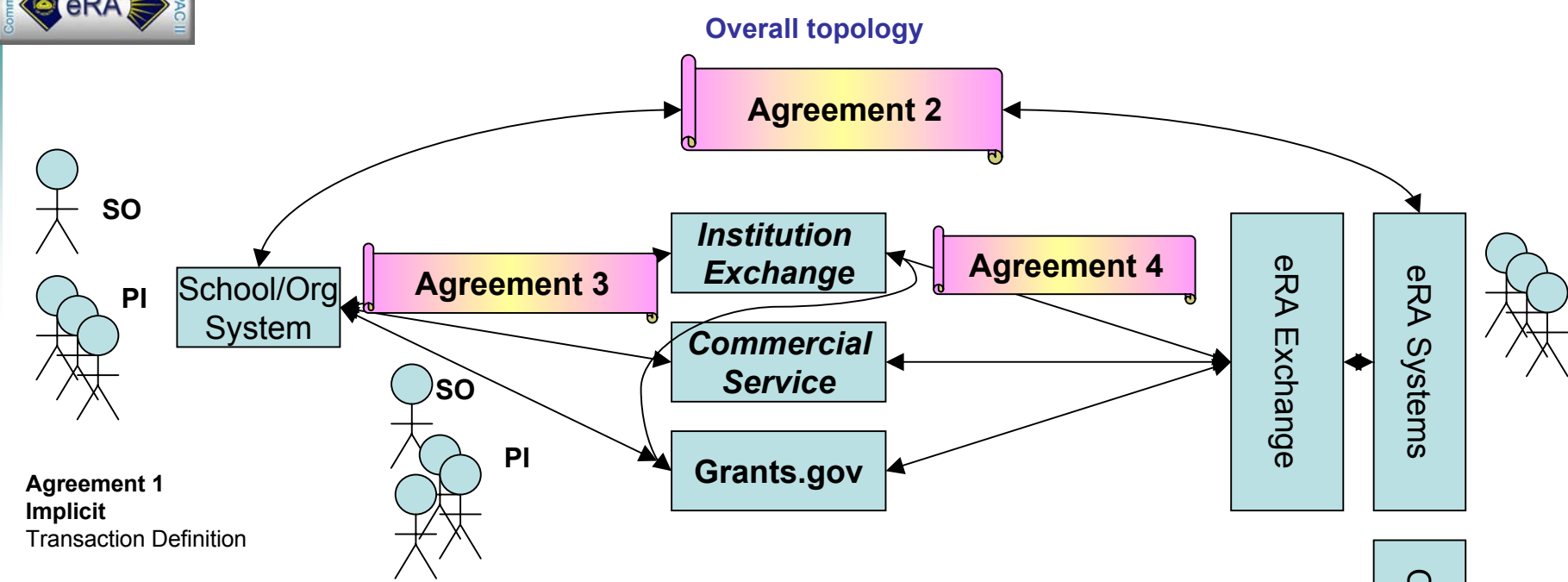
- Model 1: Central Repository
 - Commons Centric with Web user interface
 - Synchronous Web Services for system interface (API)
- Model 2: Multiple Repositories
 - Exchange model – Not NIH Centric
 - Standard Person Transaction to manage profiles
 - Propagation Models
 - Owner specifies to which repositories the profile needs to be propagated
 - All repositories in the exchange subscribe to the same distribution list and trading agreements: Automated propagation

Is this an Issue?



- How many Person Repositories are there?
- Is there a preferred model?
- How high on the priority list are people transactions as compared to other transactions:
 - Applications
 - FSR
 - Snaps
 - NGA

New topic: Delegation of Authority Via Exchange



Agreement 1
Implicit
Transaction Definition

Agreement 3
NOT VISIBLE TO eRA

Transmission Protocols used
Transactions types allowed
ID and location of machines
Routing – delivery agreement
Security agreement
Optional
E-Transaction types allowed
People allowed to transact
People allowed to approve transactions
Exchanges authorized

Agreement 4
VISIBLE TO eRA

Transmission Protocols used
Transactions types allowed
ID and location of machines
Routing agreement
Security agreement
OR
No separate Agreement 2 and
Terms of Agreement 2 or 3 included?

Agreement 2
Separate transaction?

E-Transaction types allowed
People allowed to transact
People allowed to approve transactions
Exchanges authorized

Delegation of Authority



- **Model 1: No Delegation to Broker**
 - School specifies who can do what in eRA
 - PI to SO relationship (for example)
 - Who can do which transaction
 - eRA verifies each transaction against eRA data, regardless of source
- **Model 2: Trusted Broker**
 - Agreement between eRA and Service Provider specifies that SP is responsible for all transactions
 - eRA accepts all valid transactions from this Service Provider
 - No workflow checks, just 2 signatures
 - Agreements between schools and SP are not visible to eRA
- **Model 3: Pass through**
 - Trading agreement between School and Service Provider is carried forward to agreement between SP and eRA
 - Each trading agreement for each transaction type between eRA and Service Provider specifies who can do what
 - School signed trading agreement at eRA?

Feedback



- Any thoughts on models?
- How to proceed with these issues?