Trust and Identity in Education and Research: Identity for Everyone
Goals of Today’s Meeting

• TIER Quick Overview
• Program Status
• Work In Progress
• International Implications
• Campus Readiness
What is Trust and Identity in Education and Research (TIER)?
<table>
<thead>
<tr>
<th>T(rust)</th>
<th>A secure and privacy-preserving trust fabric for research and higher education, and their partners.</th>
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</thead>
<tbody>
<tr>
<td>I(dentity)</td>
<td>Management of individual principals, their authentication, authorization, and privileges within or across system and enterprise boundaries.</td>
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<tr>
<td>E(ducation)</td>
<td>Communities of students, teachers and scholars interacting on a global scale.</td>
</tr>
<tr>
<td>R(esearch)</td>
<td>An increasingly virtual, mobile and global research community.</td>
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</table>
What is Trust and Identity and Education and Research?
Summary: What is TIER all About?

✓ **Sustain components** that we've developed together.

✓ **Fill the gaps** by providing a set of integrated components that addresses IAM as a whole. *

✓ **Address community requirements** across the components.

* Includes Corporate and Community Partnerships
TIER vision

• We believe that identity will be a service
• We believe that it will be a cloud service with campus localization
• We believe that if we do not develop it we will have to accept that someone else will (this means social identities)
• We believe that effective collaboration with partners will be key (and that includes federal agencies)
• We know we are at least 3-5 years from achieving this vision
TIER Goal: Unified (& Scalable) Model

Secure Directory, Identity and Metadata Services

Single Signon and Identity Components

Registry Services

Workflow Services

Persistence and Replication

Automated Provisioning / Deprovisioning and Rules Enforcement

AuthN (Who)

Multi-Factor

AuthZ (What)

Multi-Level (Groups)

Federated Registry

Business Rules Engine / Grammar

Directory Search / Lookup

Network Objects (Files, Datasets, etc.)

People

Files / Datasets

Nodes

Persistence and Replicaon

Automated Provisioning / Deprovisioning and Rules Enforcement

Workflow Services
TIER Moves from Investor to Sustainable Model (Financials and Governance)
TCI and TCIC

Limited in Charter
  – Duration: 3 years
  – Scope: Initial Investment Oversight

The Need for Permanence
  – Funding (dues and fees)
  – Governance (Internet2 PAG model)

More to Explore

• With 2.5 Years Remaining ...
  – How should we think about new TCI members?
    • Replace as need arises?
    • More structured renewal?

Note: loss of time in onboarding (2 year appointment minimum)

• How do we start up a permanent governance structure?
**TIER Community Investor Council**

- Klara Jelinkova  
  Rice University (Chair)
- Dennis Cromwell  
  Indiana University
- Eric Denna  
  University of Maryland
- Tracy Futhey  
  Duke University
- Chris Holmes  
  Baylor University
- Ron Kraemer  
  University of Notre Dame
- Kevin Morooney  
  Penn State University
- John O’Keefe  
  Lafayette College
- Kelli Trosvig  
  University of Washington
- Melissa Woo  
  University of Oregon
- Shel Waggener  
  Internet2
Future Governance Structure

Internet 2 Board of Trustees

TIER Steering/Board

Service Development Steering Committee (SDSC)
InCommon Steering Committee (ICSC) *
External Relations Subcommittee (includes members from ICSD and SDSC)

* Rescoped InCommon Steering Focuses only on Federation
Membership and Early-Phase Funding Model

Internet2 Members

- Subscriptions & Access Fees
- Capital Calls
- Dues

Program Participants

Dynamically Scalable Operations

- Program Operational Acceleration
- Core Program Administration
- Host Organizational Capacity

Today: TCI & TCIC

Tomorrow: PAG Needed
# Current Committed Participants

<table>
<thead>
<tr>
<th>Institution Name</th>
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<tbody>
<tr>
<td>Baylor University</td>
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<tr>
<td>Boston University</td>
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<tr>
<td>CALTECH (California Institute of Technology)</td>
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<tr>
<td>Carnegie Mellon University</td>
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<tr>
<td>Case Western Reserve University</td>
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<tr>
<td>Clemson University</td>
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<td>Cornell University</td>
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<tr>
<td>Duke University</td>
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<tr>
<td>Harvard University</td>
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<tr>
<td>Indiana University</td>
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<tr>
<td>Lafayette College</td>
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<tr>
<td>Louisiana State University</td>
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<tr>
<td>MIT</td>
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<tr>
<td>New York University</td>
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<tr>
<td>Northwestern University</td>
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<td>Old Dominion University</td>
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<tr>
<td>Oregon State University</td>
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<tr>
<td>Pennsylvania State University, The</td>
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<tr>
<td>Purdue University - Main Campus</td>
</tr>
<tr>
<td>Rice University</td>
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<tr>
<td>Stanford University</td>
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<td>Tulane University</td>
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<td>University of Arizona</td>
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<td>University of California – Berkeley</td>
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<td>University of California – Merced</td>
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<td>University of Chicago</td>
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<tr>
<td>University of Florida</td>
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<tr>
<td>University of Hawaii</td>
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<tr>
<td>University of Illinois – Urbana Champaign</td>
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<tr>
<td>University of Iowa</td>
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<tr>
<td>University of Maryland – Baltimore County</td>
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<tr>
<td>University of Maryland – College Park</td>
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<tr>
<td>University of Michigan - Ann Arbor</td>
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<td>University of Missouri - Columbia</td>
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<td>University of Nebraska - Lincoln</td>
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<tr>
<td>University of North Carolina - Chapel Hill</td>
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<tr>
<td>University of Notre Dame</td>
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<tr>
<td>University of Pittsburgh - Pittsburgh Campus</td>
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<tr>
<td>University of Utah</td>
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<tr>
<td>University of Virginia</td>
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<tr>
<td>University of Washington</td>
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<tr>
<td>University of Wisconsin - Madison</td>
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<tr>
<td>Washington University in Saint Louis</td>
</tr>
<tr>
<td>Yale University</td>
</tr>
</tbody>
</table>
Program Status
Internet2 Program **Support**

**Community**
- Ann West (AVP Trust and Identity)

**Technology**
- Steve Zoppi (AVP Services Integration and Architecture)

**Sustainability**
- Community Engagement and Membership
Targeting …

2016 First Integrated Release

- Minimal Installation / Configuration User Interfaces
- Preliminary Requirements will be set for Scalable Consent

- **Objective:**
  Point In Time Consistency
Primary Focus for Release 1

- Container/Packaging
- APIs
- Initial Deployment
- Continuous Update Cycles
- Documentation

Community Identity Provider?
Scalable Consent?
Under Consideration for R2
Revised Program Timeline (Funding Driven)

Progress
Communities of Interest
Financial Tracking and Reporting
MOU Management
Community Forum (Online!)
Technical Requirements Revision
  – Dependencies Identified
  – Relationships Identified
Working Groups

Component Leadership In-Place and Roadmap Underway

First Two Corporate Partnerships
  • Unicon (ゝ)
    – Shibboleth
    – Grouper
  • Spherical Cow Group (ゝ)
    – COmanage

Complete
Pending
## Meaningful Impacts

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Impact</th>
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<tbody>
<tr>
<td>Communities of Interest</td>
<td>Form working groups quickly</td>
</tr>
<tr>
<td>Financial Tracking and Reporting</td>
<td>Report out on cash flow and project spend to the community</td>
</tr>
<tr>
<td>MOU Management</td>
<td>Bring in seed funding to support early stages of the program</td>
</tr>
<tr>
<td>Community Forum</td>
<td>Enable community input, discussion and decision making</td>
</tr>
<tr>
<td>Technical Requirements Revision</td>
<td>Finalize for TIER developers. Enable best coherent first release.</td>
</tr>
<tr>
<td>Working Groups</td>
<td>Develop key specifications per community requirements.</td>
</tr>
</tbody>
</table>
Sponsors of the Work

Community responsible for Higher-Education standards

Internet2 responsible for industry approaches

Currently convened under Internet2 (rather than TCIC) …

… but with connections to both and InCommon
Optimized Approach*: 

- Several Key working groups will be composed of Appointed Community Participants (Rather than having an “Open Call”) 
- Rationale: Expeditious movement using smaller, focused Teams 

- Open / Published
  - Charter / Chair / Participants
  - Forum
  - Summaries
  - Feedback and Vetting (Includes International Review) 

* Note that Community Adoption Working Group WILL be conducted as an “Open Call”
<table>
<thead>
<tr>
<th>Group A Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Structures and APIs (Keith Hazelton)</td>
<td>Participate in working groups related to exploration of Data Structures and APIs commonly supported, implemented and exchanged between ALL TIER and TIER-Related Components.</td>
</tr>
<tr>
<td>Packaging and Containerization (Jim Jokl)</td>
<td>Participate in working groups related to exploration of Packaging and Containerization practices and procedures commonly supported and implemented in ALL TIER Components.</td>
</tr>
<tr>
<td>Security &amp; Audit</td>
<td>Participate in working groups related to exploration of Security practices and procedures commonly supported and implemented in ALL TIER Components. (INCLUDES “3M” INSTRUMENTATION AND REPORTING)</td>
</tr>
<tr>
<td>User Acceptance</td>
<td>Participate in working groups related to exploration of User Acceptance practices and procedures commonly supported and implemented in ALL TIER Components. (INCLUDES TEST AUTOMATION AND USABILITY)</td>
</tr>
</tbody>
</table>
## Community Working Groups “Group B”

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>Participate in working groups related to exploration of Accessibility practices and procedures commonly supported and implemented in ALL TIER Components.</td>
</tr>
<tr>
<td>Defect &amp; Vulnerability Management</td>
<td>Participate in working groups related to exploration of Defect Management practices and procedures commonly supported and implemented in ALL TIER Components.</td>
</tr>
<tr>
<td>Document Management</td>
<td>Participate in working groups related to exploration of Document Management technologies, practices and procedures commonly supported and implemented in ALL TIER Components. (SHOULD THIS BE BOARDING GROUP “A”? )</td>
</tr>
<tr>
<td>Internationalization (I18N)</td>
<td>Participate in working groups related to exploration of Internationalization practices and procedures commonly supported and implemented in ALL TIER Components.</td>
</tr>
<tr>
<td>Partnerships and Third-Party Engagement</td>
<td>Participate in working groups related to exploration of Partnerships and Third-Party Engagement practices and procedures commonly supported and implemented in ALL TIER Components.</td>
</tr>
<tr>
<td>User Interface / User Experience</td>
<td>Participate in working groups related to exploration of User Interface / User Experiences practices and procedures commonly supported and implemented in ALL TIER Components.</td>
</tr>
</tbody>
</table>
“3M” Working Group Needed?

Instrumentation: Monitoring, Measuring, Managing

— Continuous, Meaningful feedback on how the community is utilizing the components
- Everywhere

Tune-In: tier-discussion@internet2.edu
Community Adoption Working Group Needed?

Community Adopter Coordination:

- Process Management
- Early Adopter Management
- Case Studies (Success/Failure Criteria Measurement) \{Continuous Improvement\}
- Training Required

Tune-In: tier-discussion@internet2.edu
Emerging Community Contribution

Soon Calling For:

Subject Matter Experts
Topic Owners

- Community Forum
- Mailing Lists (1st Responders)

Tune-In: tier-discussion@internet2.edu
Emerging Community Contribution

- Documentation {Authoring}, {Tagging}, {Writing} ...
- Automated Test Cases
- CI (Continuous Integration)

Tune-In: tier-discussion@internet2.edu
Tune-In: tier-architecture@internet2.edu
Emerging Community Contribution

Software Specialties

• **Logging and Instrumentation**: Error/Messages/Stats

• **Analytics**: Making “server-exhaust” More Useful

Tune-In: tier-architecture@internet2.edu
International Community Contribution

Software Opportunities and Realities

- Federation Operations Management
- Shared Features
- Shared Architectures and Data Structures
- Federation Interoperation: eduGAIN

Tune-In: tier-architecture@internet2.edu
Work in Progress
Launching the Program: Ad Hoc Architecture Strategy Group

Pulled requirements for the TIER Community Investor Council to prioritize
Tightened up the requirements once prioritized so they could be given to working groups
Spinning up the first working groups
Helping to define the TIER process and who does what
Launching the Program: Ad Hoc Architecture Strategy Group

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom Barton</td>
<td>University of Chicago</td>
</tr>
<tr>
<td>Paul Caskey</td>
<td>Internet2</td>
</tr>
<tr>
<td>Jacob Farmer</td>
<td>Indiana University</td>
</tr>
<tr>
<td>Keith Hazelton</td>
<td>University of Wisconsin-Madison</td>
</tr>
<tr>
<td>Jim Jokl</td>
<td>University of Virginia</td>
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<tr>
<td>Ken Klingenstein</td>
<td>Internet2</td>
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<tr>
<td>Nate Klingenstein</td>
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<tr>
<td>Nick Roy</td>
<td>Internet2</td>
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</tbody>
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TIER Prioritized Requirements

Requirements (Prioritized)


– Remember these?

– How do we bring these to a specification against which we can build?

All background materials:

– https://internet2.box.com/TIERInvestorBackgroundDocs
Confirming the Linkages ensures that we sequence solutions in the right order....
<table>
<thead>
<tr>
<th>TIER Component Architects</th>
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</thead>
<tbody>
<tr>
<td>Scott Cantor</td>
</tr>
<tr>
<td>Chris Hyzer</td>
</tr>
<tr>
<td>Benn Oshrin*</td>
</tr>
<tr>
<td>Ken Klingenstein</td>
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<tr>
<td>Nate Klingenstein</td>
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</tbody>
</table>

* Commercial partner
Staffing Progress and Priorities (First Wave)

1. Existing Contracts / Assignments (Renewed)
2. Grouper Dev Replacement (Done)
3. Sr. Technical Project Manager (Under Contract)
4. UI/UX Technology Lead (Recruiting)
5. UI/Front End Developer (Recruiting)
6. DEV/QA and Packaging Engineer (Recruiting)
7. Campus “Enablement” (Defining)
8. Information Architect (Next)
Campus Preparation
Release 1 is Important

It establishes…

• New and current baseline for all products
• Foundation for future (incremental) updates and enhancements
  – Simple upgrades using latest integration techniques
  – Simple deployment into a scalable environment
  – Releases are instrumented for continual feedback and improvement of the product (Anonymized data / Opt-In Data)
  – API: forward compatibility; abstracted plug-in point for commercial partner integration; framework for further inter-campus collaboration by establishing common points for provisioning and deprovisioning
  – Participate in shared-adoption cohorts
More Ways to Prepare:

• Upgrade to the current version of Grouper
• Upgrade to Shibboleth Identity Provider 3.x
• Familiarize yourself with TIER-API Framework
  – TIER Components will have public interfaces on these APIs and their successors
• Track the InCommon Federation Interoperability Group
  – Will impact your local systems
Help Us Improve and Grow

Thank you for participating in today’s session.

We’re very interested in your feedback. Please take a minute to fill out the session evaluation found within the conference mobile app, or the online agenda.
Thank You!
Trust and Identity in Education and Research: Identity for Everyone

Ron Kraemer, Notre Dame • Kevin Morooney, Penn State • Ann West, Internet2 • Steve Zoppi, Internet2