TIER Accomplishments by Thematic Grouping - October 10, 2017

Table of Contents

Introduction

This document provides the current state of the component portions of the TIER program and planned future activities. It draws from initial documentation of TIER program requirements (TIER Workshops / Thematic Groupings) and subsequent working group accomplishments. The ratings in parentheses at the end of each requirement were taken from TIER Thematic Requirements / Prioritized.

Items flagged "**[Must2018]**" have been identified by the component architects as being required to be completed before the end of 2018.

Solution Themes

Auditing Monitoring and Management

- 1 - Logging and all other forms of application Instrumentation for Policy and Performance monitoring and management **must** be rigorously implemented within all components of the solution. (3.83)

API and Registry	**Status**
Instrumentation of reference implementations **[Must2018]**	2018
Grouper	**Status**
Instrumentation of reference implementations	Complete
Attestation	Complete
All Components	**Status**
TIER Beacon	Complete

Community Documentation and Interaction

- 2 - Solution **must** enable the sharing of a common documentation repository as well as a place for school practitioners and service providers to go to find useful instructions, standards, practices and guidelines for building end-to-end services based on TIER components and default configurations. (2.58)

Program Management	**Status**
A protocol and working procedure for aggregating documentation has been defined by and for working group artifacts. There remain challenges in coalescing documentation due to the segregated nature of component development and teams. While efforts have been made to improve and document the artifact generation and maintenance process, a document stewardship process has been defined in Trust and Identity Document Stewardship for all work groups and development teams to evolve.	Ongoing
Grouper	**Status**
TIER Grouper Deployment Guide	Complete

- 3 - Solution extensions **must** be available in the form of a Marketplace or some other suitable means of presenting a catalog of available functionality, contributed by the community, for utilization by others. (2.33)

TIER Community Governance	Status
This was determined to be out of scope for initial funding and timing.	TBD

De/Provisioning

COmanage and MidPoint	Status
In addition to the specific Grouper activities mentioned below, COmanage and MidPoint provide provisioning and deprovision capabilities for the TIER suite. This area will, overall, be enhanced in 2018.	2018

- 4 - Events (such as admission, enrollment, new hire, etc.) **must** trigger lifecycle stage transitions, role changes, affiliation changes, etc. Those can then cause other events such as service eligibility. Lifecycle changes or affiliations all precipitate a need for provisioning wherein roles are mapped to services / entitlements. (4.75)

Grouper	Status
TIER Grouper Deployment Guide	Complete
Real time loader updates	Complete
PSPNG (Provisioning Service Provider - Next Generation) updates	Complete
Deprovisioning	2018
Expire dates in groups and other objects	2018

- 5 - The solution **must** support high level workflows between states. (4.25)

Grouper	Status
TIER Grouper Deployment Guide	Complete
Real time loader updates	Complete
PSPNG (Provisioning Service Provider - Next Generation) updates	Complete
Deprovisioning	2018
Expire dates in groups and other objects?	2018

- 6 - The solution **must** anticipate the possibility of conflicting roles in the case of multiple personae (4.67)

Grouper	Status
TIER Grouper Deployment Guide	Complete
Real time loader updates	Complete
Subject source diagnostics in UI	Complete

PSPNG (Provisioning Service Provider - Next Generation) updates	Complete
Deprovisioning	2018

- 7 - The solutions must take into consideration that conflicting grants of authority, eg, one source indicating a grant of access and another a denial of access, must be resolvable according to the needs of each application or service context. (2.17)

Grouper	Status
TIER Grouper Deployment Guide	Complete
Real time loader updates	Complete
PSPNG (Provisioning Service Provider - Next Generation) updates	Complete
Deprovisioning	2018

- 8 - The solutions **must** enable individuals to have multiple roles/affiliations/relationships/whatever with the institution, each with its own lifecycle and overlapping set of access privileges needed to undertake each role. Statefulness (persistence and preservation of state) must permeate the design goals of all solution components in order to correctly and efficiently manage their access over the course of these multiple lifecycles. (4.83)

Grouper	Status
TIER Grouper Deployment Guide	Complete
Real time loader updates	Complete
PSPNG (Provisioning Service Provider - Next Generation) updates	Complete
Deprovisioning	2018

Federation and Inter-Federation

- 9 - Inter-Federation and Federation needs **must** be held high in considerations when building core solutions and artifacts related to TIER. (4.92)

Federation Manager	Status
UI/UX improvements	2017
WCAG 2.0 compliance	2017
Workflow optimizations	2017
Automation of metadata signing	2018
Support for containerization of the Federation Manager	2018
Per-entity metadata distribution	2018
Adding data model elements to allow automated provisioning of users/roles/organizational elements into staging/QA environments, will also allow automated provisioning into potential use of the application in a TIER sandbox environment	2018
InCommon	**Status**
Join eduGAIN	Complete

INTEROPERABILITY

- 10 - The Solution **should** provide "other technology" interfaces to facilitate operation with non-NET+ solutions (campus ERP, non-NET+ vendors, etc.). (e.g., OAuth, SCIM, etc.). (3.08)

Grouper	**Status**
Real time loader updates	Complete
PSPNG (Provisioning Service Provider - Next Generation) updates	Complete
COmanage	**Status**
This is addressed by the TIER distribution of COmanage.	Complete
MidPoint	**Status**
This will be enhanced by the TIER distribution of MidPoint. In particular, MidPoint will provide a richer set of connectors to external systems.	2018

- 11 - Pre-built connectors for the most common of systems of record **should** be in the "core" TIER release. (3.00)

COmanage	**Status**
This is addressed by the TIER distribution of COmanage.	Complete
MidPoint	**Status**
This will be enhanced by the TIER distribution of MidPoint. In particular, MidPoint will provide a richer set of connectors to external systems.	2018

- 12 - A mechanism to augment the catalog of Core Connectors **must** be provided to the community for inter-institutional sharing and implementation. (3.58)

COmanage	**Status**
This is addressed by the TIER distribution of COmanage.	Complete
MidPoint	**Status**
This will be enhanced by the TIER distribution of MidPoint. In particular, MidPoint will provide a richer set of connectors to external systems.	2018

- 13 - An extensible Publish/Subscribe mechanism **must** be supported to enable near-real-time communication between dependent systems of record. (4.67)

Grouper	**Status**
Real time loader updates	Complete
PSPNG (Provisioning Service Provider - Next Generation) updates	Complete
COmanage	**Status**
This is addressed by the TIER distribution of COmanage.	Complete
MidPoint	**Status**
This will be enhanced by the TIER distribution of MidPoint. In particular, MidPoint will provide a richer set of connectors to external systems.	2018

- 14 - CommonAPP like Integration process **should** be devised for identity creation, etc. IdP (CommIT) integration not specifically mentioned but is also a clear need. (4.08)

COmanage	Status
The "CommonApp" integration (as prototyped in the CommIT functionality) has been deprecated and decommissioned due to lack of community sponsorship and funding. In its place stands a "community identity provider of last resort" in the form of UnitedID.	Complete
Internet2, in efforts to support greater community Working Group self-sufficiency, is implementing the COmanage component (ultimately backed by Shibboleth and Grouper). While this does not specifically address the CommonApp requirement, it addresses a need that takes CommonApp's place.	Complete

- 15 - Beyond WEB Only Authentication (e.g. ECP and CLI protocols) for authentication must be enabled as for Research/Collaborative computing (3.83)

Shibboleth	Status
ECP is enabled by default if the login mechanism is password-based.	Complete
This requirement (CLI) remains on the backlog of TIER features due to an expectation that other works in progress will sufficiently address the needs and, ultimately, become "connected" to the component ecosystem (through such offerings as Shibboleth extensions).	TBD

- 16 - The solution must enable smooth runtime integration / mapping between SAML and OpenID/OAuth Protected services (4.17) **[Must2018]**

Shibboleth	Status
Until sufficient funding (outside of the TIER program scope) is obtained for definition and inclusion in the work produced by the Shibboleth Consortium, this requirement is deemed to be satisfied (primarily) through solution/technology partnerships and gateway offerings such as Cirrus Identity.	TBD

Levels of Assurance (LoA)/MFA (Quality of Identity and Identification)

- 17 - The ability to promote and demote the Levels of Assurance of an identity over time **should** be implemented in the component suite. For example, having a higher Level of Assurance while student, then lower (social?) when alumni, and later yet higher again as grad student or employee. (3.42)

Grouper	Status
Real time loader updates	Complete
PSPNG (Provisioning Service Provider - Next Generation) updates	Complete

- 18 - Flexible Multi-Factor Authentication in Single-Signon **should** be enabled by default, with the ability to require Multi-Factor Authentication per-Service Provider and/or per-Individual (4.67)

InCommon	Status

InCommon's work on a federation Multi-Factor Authentication profile has been adopted by the international community via REFEDS.	Complete
Shibboleth Consortium	**Status**
The Shibboleth Consortium's support for Multi-Factor Authentication has been incorporated into the TIER suite.	Complete

Person Registry/Personae/Individuals

COmanage	**Status**
Requirements in this section are addressed by the TIER distribution of COmanage.	Complete
MidPoint	**Status**
Requirements in this section will be enhanced by the TIER distribution of MidPoint. In particular, MidPoint will provide a richer set of connectors to external systems.	2018

- 19 - De-Duplication **must** be a part of the Person Registry Service (Directory) (4.75)
- 20 - Identity Matching Logic **must** be a part of the Person Registry Service (Directory) (4.92) **[Must2018]**
- 21 - Institutionally Defined Metadata must be enabled in the Cloud-Based solution as well as the on-Premise solution. (4.58)
- 22 - Individuals must be able to support the association of various organization-external "identities" with their own identity. (Context: Self-Service) (4.25)
- 23 - Once instantiated, the persistence of identifiers of which (at least) one must extend beyond a lifetime (indefinitely), ie. must never be reused and must never be deleted once created. (2.75)
- 24 - The person registry service must have an attribute for the level of assurance associated with each linked account. (3.83)
- 25 - The person registry service **must** provide the ability to present a selected set or subset of attributes to a selected set of systems. (4.58)
- 26 - The solution **may** enable user to be in control of their personal data stores such that when relying parties are requesting access to those data, users should have fine-grained controls over what pieces of personal data are shared with such parties. (3.92)
- 73 - The solution must provide a method to administratively add and remove attributes and personal identifiers from all relevant components. (4.58)

Standards and Enforcement

- The program **must** assert and enforce:
    - 27 - Datagram Standards (4.33)
    - 28 - Policy Standards (4.67)
    - 29 - Terminology Standards (4.33)
    - 30 - Persistence (storage of data) standards (4.67)
    - 31 - Published / Stable APIs for ALL core components. (5.00)

API and Registry	**Status**
API Development Guidelines including API AuthNZ	2018

Grouper's new APIs for members, groups and memberships	Complete
Grouper new APIs for access management and Attribute-based Access Control	TBD
Entity Registry schema and APIs	2017[1]
Schema definition and extension mechanisms and practices	TBD
Identity Matching API and implementation	2018[2]
Event-driven messaging and an asynchronous integration architecture	2018
Provisioning tools, connectors and best practices	2018
Recommended approaches to integrating Systems of Record with an Entity Registry	2018

- 32 - Implementation, Integration with and Adoption of Community or Commercial Services which have adopted TIER program standards **should** be "trivial" to implement from a school's perspective as long as the school has implemented TIER and used the TIER default settings. (4.83)

API and Registry	**Status**
Integrated reference implementations of all of the above	2018
Full reference implementation with configuration files for the above (COmanage and midPoint; Grouper; Shibboleth; OpenLDAP; RabbitMQ; Kong; SCIM Library X)	2018
Instrumentation of reference implementations	2018
Client and Services management tools (from a simple client/service registry to a full-featured API Gateway)	2018
Registries development / installing and getting MidPoint configured. **[Must2018]**	2018
Federation Manager	**Status**
Support for containerization of the Federation Manager	2018
Adding data model elements to allow automated provisioning of users/roles/organizational elements into staging/QA environments, will also allow automated provisioning into potential use of the application in a TIER sandbox environment	2018
Grouper	**Status**
TIER Grouper Deployment Guide	Complete
Real time loader updates	Complete
TIER API	Complete
TIER packaging for Grouper[3]	2017
Messaging to WS integration	2018
Store some configuration in the database	2018

Research Organization Support

[1] Minimal schema is complete.
[2] API is complete.
[3] The appliance version is complete.

- 33 - COmanage **must** be included in the solution as a proper starting administration point for Research Organizations (Virtual Organizations) (3.25)

COmanage	Status
Milestone 2.0.0 release, including 1 patch release ● Organizational Identity Sources and Pipelines ● ORCID Integration ● LDAP Schema Plugins ● Services and Service Portal, and Service Tokens ● Population-Specific Provisioning ● Themes ● Message Templates ● Attribute Enumerations ● Identifier Validation ● Authentication Events	Complete
Milestone 3.1.0 release ● Cluster Management ● ID Match API Support **[Must2018]** ● Mailing List "Native Object" Support ● Enroller / Approver Attributes ● Credential Management ● Instrumentation and Logging ● Groups as Group Members	2017
Milestone 4.0.0 release ● Framework Migration **[Must2018]** ● Backwards incompatible changes, TBD	2018
Get COmanage available in Internet2 for the community **[Must2018]**	2018

- 34 - Authorization infrastructure **must** be constructed (or made available) that can be consumed by applications across both internal and external identities and services. (3.42)

COmanage and Shibboleth	Status
This is addressed by the TIER distributions of COmanage and Shibboleth.	Complete

Service Providers and Third Parties

- 35 - The program and related solutions **must** enable the service owners of federation-facing campus services to directly manage the controls and access by external identities such that service owners won't need campus federation gurus to manage their services. (3.33)

Federation Manager	Status
A series of enhancements are underway (initially within the InCommon Federation Manager) and in future increments, with some service providers, to enhance campus controls of their federation presence and context.	2018
MidPoint	**Status**
Outreach to Service Providers (Commercial offerings) continue, but will not have made much progress due to their labor intensity and the demand for cooperation from the Service Providers themselves. While some efforts to help bridge Identity context into service providers proceed within the API group	Ongoing

(following SCIM standards and MidPoint's provisioning facilities), much work will need to continue beyond the initial funding terminus of 2018.	

User Interface/User Experience (UI/UX)

- 36 - An end user Identity Console **must** be instantiated with the ability to update centrally owned attributes (e.g., names, numbers, some addresses, preferences, etc.) and be confident that the data will be reliably propagated to relying party systems (e.g., ERPs, directories, etc.). (4.67)

Federation Manager	**Status**
Workflow optimizations	2017
Grouper	**Status**
Grouper loader in UI	Complete

- 37 - User Interfaces **must** be created to ease the installation, implementation, administration and use of the most common tasks for all components. (e.g. the Lack of a User Interface should be a "fail" criterion for any critical feature or function.) (4.08)

Federation Manager	**Status**
UI/UX improvements	2017
WCAG 2.0 compliance	2017
Workflow optimizations	2017
Grouper	**Status**
Grouper loader in UI	Complete
Subject source diagnostics in UI	Complete
Improve GSH with groovy shell	Complete
UI accessibility improvements	Complete
Migrate old UIs to the new UI	2018
Configure subject sources via UI	2018
Rules in UI?	2018
Compare / migrate access in UI?	2018
COmanage	**Status**
This is addressed by the TIER distribution of COmanage.[4]	2017
MidPoint	**Status**
This will be enhanced by the TIER distribution of MidPoint. In particular, MidPoint will provide a richer set of connectors to external systems.	2018
Shibboleth	**Status**
Internet2 and Unicon have entered into a joint partnership to help develop a rudimentary framework and functionality to alleviate some pressures on campus staff. The initial requirements and functionality has been identified and work packages which drive toward the "open-beta" offering by the end of 2017 are underway.	2018

[4] The appliance version is complete.

- 38 - Password Reset capabilities **must** be standardized upon and deployed in the out of the box solutions, with sufficient flexibility to meet institutional business practices. (4.75)

API and Registry	Status
Password Reset functionality is problematic and *may* be explored in the 2018 timeframe and may be addressed through some peripheral "plug-in" or "extension" functionality to LDAP or other common stores. Password Reset is highly specific to the identity source and therefore cannot be standardized in the scope of the TIER Program. (This requirement is being deprecated in the scope of the TIER Program and will be placed on the "indefinite" backlog).	TBD

- 39 - A Person **may** have multiple personas that an organization may require them to "act in the role of", An easy way of switching personas should be constructed as a part of the final solution. (4.67)

API and Registry	Status
The notion of "Multiple Personnae" has been explored and the common solution to this requirement can be (partially) addressed through account-linking features of COmanage. While "act in the role of" is also a requirement of "impersonation," the complexity of this requirement, and time required to fully explore and resolve it now exceeds the scope of what can be reliably delivered in 2018. (This requirement is being deprecated in the scope of the TIER Program and will be placed on the "indefinite" backlog).	TBD

- 40 - "Constituent focused," self-service Interfaces **must** be included in the final solutions that dynamically and simply expresses what each constituent is authorized to manage about their own or others' attributes and access privileges. Key such constituencies: administrators supporting on-boarding processes, unit and group managers/leads, managing access to their groups' resources, service owners managing characteristics of federation access to their services, and individuals managing their credentials and privacy of their attributes. (4.42)

Consent	Status
Early definition work ● Convened discussion group around scalable privacy and consent ● Evaluated PrivacyLens UI effort from CMU ● Evaluated built-in IDPv3 consent mechanism ● Collected requirements from TIER user stories, discussion group members, third parties ● After analyzing fit-gap, concluded that there was sufficient need for a new effort to address wider consent needs than either incumbent ● Project initiation ○ Arranged to tap Marlena Erdos as lead architect for a new scalable consent mechanism ○ Arranged to contract development and architecture effort from Duke University, initially funded via the NSTIC grant	Complete
Initial and ongoing architecture and API definition work ● Detailed design criteria for a functional architecture for consent "as a service" ○ consent considered as a service unto itself, suitable for use by various other services (SAML, OAuth, arbitrary data exchangers) ○ dual-authority model -- both institutions (operators) and individuals (users) have stake in all consent decisions	Complete

○ natural federation -- has to work equally well for inter-organizational and intra-organizational federation scenarios ○ informed by design -- rich data about actors and artifacts must be collected, maintained and presented ○ extensive auditability ○ RESTish interfaces throughout, with an eye toward supporting mix-and-match implementations ○ variable granularity of consent -- from none to individual values ○ Evaluated UMA (Kantara-funded "User Managed Access" effort), OAuth2 and other possible entrants in the consent field ■ Collected extensive documentation on design criteria and design decisions in support of subsequent development effort ● Designed high-level architecture for CAR (Consent-informed Attribute Release) ○ COPSU [COnsent Policy Service for Users] ○ ARPSI [Attribute Release Policy Service for Institutions] ○ CARMA [Consent-informed Attribute Release MAnager]) ● Designed detailed i18n-capable data model and APIs for each of the three primary components of CAR ● Designed initial API for registration and informed content manipulation with i18n capability	
Initial implementation ● Developed first version of dockerized COPSU implementing the COPSU API (v1) ● Developed first version of dockerized ARPSI implementing the ARPSI API (v1) ● Developed first version of dockerized ICM (now CARMA) implementing the (v1) ● Developed integration interface for v3 Shibboleth IDP to use CAR to control attribute release ● Designed and developed initial implementation of "informed content" and "registration" APIs ● Deployed local development environment using clustered MySQL persistence engine and dockerized API and front-end modules at Duke ● Iterated UIs for CARMA intercept and self-service interfaces extensively with Duke UI/UX team, focusing on "informedness" and user understanding ● Deployed cloud-based CAR instance in TIER testbed for demonstration/testing purposes (Docker containers + AWS database back-end) ● Developed initial set of CLI tools for mining existing IDP attribute-filter.xml and SAML metadata aggregates for registration and informed content data ● Developed initial plan for roll-out of CAR for consent with v3 Shibboleth IDP in production at Duke ● Initiated design work toward operations management interfaces (admin and "super admin" interfaces) ● Evaluated fit-gap between CAR capabilities and GDPR [European Union "General Data Protection Regulation"] requirements, extended CARMA interface in support of GDPR specific needs (sensitive attributes).	Complete
Development of administration interfaces ● Add administrative UIs for operators to manipulate institutional policy information in the ARPSI and CARMA, iterating with UI/UX folks.	2018

● Add super-administrative UIs for system owners to manage deployment-wide configuration (servers, clustering/load balancing, keys, default settings) ● Refine deployment CLI tools to support more flexible and repeatable import of existing SAML information into CAR instance ● Refactor of existing informed content APIs to v1 API definitions as their documentation is completed	
Major refactoring/enhancements (to v2 APIs) ● Refactor COPSU API to v2 COPSU API (along with recoding of dependent interfaces) ● Refactor ARPSI API to v2 ARPSI API (along with recoding of dependent interfaces) ● Refactor ICM v1 API to CARMA v2 API (along with recoding of dependent interfaces) ● Reimplement i18n support with both server- and client-side locale selection support ● Refactor persistence strategy to fully support master/slave database replication model (for reliability esp. in geographically redundant configurations) ● Add plugins for additional authN mechanisms to API services (currently only providing Kerberos V and "null" plugins) ● Refactor API authZ implementation for more granular authZ ● Instrumentation - server-side (for TIER reporting and site-specific monitoring) and client-side (for user experience monitoring)	2018
Testing and validation ● Performance testing and benchmarking -- load curves, bottleneck analysis, etc. ● Interface security review and internal pentesting by Duke ITSO ● Chaos monkey testing for fault tolerance and reliability	2018
Duke production deployment ● Production physical plant deployment (sized based on performance testing and chaos monkey results) ● "Silent" transition to CAR-controlled attribute release in IDP v3 ● Enable key internal app for user consent (suggestion box); enable universal transparency (default to "showAgain=true" in UI) ● Enable SP-owner-driven CARMA policy adjustment to enable user consent for "optional" releases (internal federation)	2018
Packaging ● Negotiate packaging strategy with TIER packaging group (Existing code runs inside app servers inside Docker containers) ● Develop deployable packages and any required deployment scripts ● Develop deployer documentation based on packaging strategy ● Test packaged deployment in TIER testbed environment ● Re-deploy Duke production deployment using packaged installation	2018
Initial public release (to early adopters) **[Must2018]** ● Transition to TIER GitHub repository ● Transition to TIER Jira repository ● Publish documentation (including deployer documentation, super admin documentation, admin documentation, and developer documentation) ● Establish developer and user support lists, etc. ● Ongoing support and maintenance...	2018

Engagement and Campus Success

Contexts

Audiences for Engagement inside campuses

- 41 - Campus leadership (3.58)
- 42 - Registrars (3.33)
- 43 - Researchers (2.42)
- 44 - Other business partners internal to the institutions (2.50)
- 45 - Academic Medical Centers (2.33)
- 46 - VPs of Research (2.58)

Audiences for Program Stakeholders

- 47 - Smaller schools (2.42)
- 48 - Corporate Support Vendors (2.00)
- 49 - Corporate Service Provider (4.17)
- 50 - XSEDE, NSF, DoEd, Federal Agencies (4.08)
- 51 - Broad education including K12 (1.75)
- 52 - State Department of Instruction (1.17)
- 53 - Campus Stakeholder national organizations (AACRAO, NACUBO, etc) (2.25)

Campus Success Components

Basic Communications

- 54 - One-pager for general stakeholders (elevator speech) (4.83)

Community Outreach	Status
These communications, while not necessarily done in "one-pager" format, have been produced consistently throughout the life of the program and are available on the web. While this requirement has been addressed in many forms, the literal version of the requirement has been superseded in response to evolving community requests for other forms of communication: Newsletters, video, presentations, community meetings, etc.	Complete

- 55 - One-pager targeted for identified stakeholders (4.33)

Community Outreach	Status
Developed one pager for CIOs and what to do to prepare for TIER.	Complete

- 56 - Glossary (3.33)

Community Outreach	Status
Internet2 - Trust and Identity and NET+ Program Glossaries, a glossary of terms used by TIER was developed.	Complete

Community Engagement

- Enable community to work together on items of mutual interest (cohorts)

Community Outreach	Status
Established a TIER Adoption, Architecture, Discuss and Working Group email lists.	Complete

- Require CIO/IAM architects to work together to more fully understand the landscape of implementation

Community Outreach	Status
Developed one pager for CIOs and what to do to prepare for TIER including CIOS, Architects and Operations roles.	Complete

- Enable the sharing of current practices and success among participating campuses

Community Outreach	Status
Established the TIER Campus Success Program.	Complete
Published 18 issues of the TIER Newsletter (now the Trust and Identity Newsletter).	Ongoing
Presentation at Registrar meetings in July of 2016 and 2017.	Ongoing
American Association of Medical Colleges engaged the community during a Birds-of-a-Feather at TechEx 2016 about moving their services to InCommon Federation and enable federated access.	Complete

- Publish timeline of events, opportunities and major milestones

Community Outreach	Status
Published 6 TIER Quarterly Reports, published 18 monthly newsletters and presented roadmaps at Global Summit 2016, TechEx 2016, and Global Summit 2017.	Ongoing

Program Success Components

Governance

- 57 - Provide mechanisms for gathering ideas and suggestions from the broader community (2.50)

Program Planning	Status
Multiple presentations at Internet2 Global Summit and Technology Exchange meetings.	Ongoing
TIER Investor Meetings at Global Summit and Technology Exchange meetings.	Ongoing
Multiple IAM Online webinars.	Ongoing

- 58 - Provide mechanisms for gathering ideas and suggestions from the Investors (4.75)

Program Planning	Status
TIER Spring 2017 Mid-program Review Survey.	Complete
TIER Investor Meetings at Global Summit and Technology Exchange meetings.	Ongoing
Multiple IAM Online webinars.	Ongoing

- 59 - Publish open source policy statement (2.25)

Program Management	Status
Internet2's Intellectual Property Framework included guidance with no specifics addressing licensing models and contributions by community. An upcoming revision to the Intellectual Property Framework will impose the default such that ALL contributions, unless specifically identified, will be considered bound to the Apache License 2.0 (Apache-2.0) which is explained in "Plain English" at tldrlegal.com. The Open Source Initiative maintains the language on their web site.	2018

- 60 - Publish governance model and method for participating in decision process (4.08)

Program Management	Status
TIER Community Investor Council sends email with changes in direction/funding use and solicits feedback from Investors.	Ongoing

Adoption Assistance

Develop IAM Assessment Model

- 61 - Develop a complete IAM assessment tool, one comprehensive model that covers broad IAM topics. (2.42)

Program Education and Training	Status
Updated the IAM Assessment Tool and used it in the 3 TIER Workshops to gather information about readiness.	Complete

- 62 - Develop lightweight Assessment tool for each release, targeting the features supported for that functional set (4.00)

Program Education and Training	Status
It is the common practice of each development team to maintain and manage the "functional tests" required to validate their work.	Ongoing
The notion of an "Assessment" tool is considered (for the scope of this program) to be QUALITATIVE in nature and scope. It remains up to each implementer to evaluate suitability of the solution and its constituent features, against their own local needs.	TBD

- Assessment Delivery Method
  - 63 - PDF document (2.00)
  - 64 - Online form with automatic tally (3.50)
  - 65 - Consultant service for on-site assessment (2.67)

Program Education and Training	Status
This was determined to be out of scope for initial funding and timing.	TBD

Develop guidance for addressing gaps identified in IAM Assessment Model

- 66 - Develop overall guidance for broad IAM (2.08)

TIER Community Governance	Status
This was determined to be out of scope for initial funding and timing.	TBD

- 67 - Develop specific guidance for each release (2.42)

Documentation	Status
Developed release summaries for the two primary releases (Spring 2016 and 2017)	Ongoing

Readiness Education

- 68 - Workshop (1.83)

Program Education and Training	Status
Conducted Shibboleth Workshops	Ongoing
Grouper training at the 2017 Technology Exchange	2017
Docker training at the 2017 Technology Exchange	2017
Federated Identity Management for VOs workshop at 2016 Technology Exchange	Complete
Introductory training for the entire TIER suite	2018
Advanced training for TIER suite and its components	TBD

- 69 - Webinar (2.33)

Program Education and Training	Status
Multiple IAM Online webinars	Ongoing

70 - Deployment practice recommendations (2.83)
Support models

- 71 - Provide corporate consulting model (2.58)

Program Support	Status
A pilot of corporate support is part of the Campus Success Program	2018

- 72 - Provide peer/cohort model (3.08)

Program Support	Status
A pilot of peer/cohort support is part of the Campus Success Program	Ongoing

Other Must2018 Items from the Component Architects

The following items were not part of the original TIER program requirements, but were identified as such by the component architects, with completion by the end of 2018.

- Finalize component packaging **[Must2018]**
    - Grouper
    - COmanage
    - Shibboleth IdP
    - midPoint
    - Ancillary components (*e.g.*, OpenLDAP, MARIADB, satosa, mediawiki)
- 1st order proxy support in IdP **[Must2018] (SZ/SC: This is TBD given the non-determinism of Consortium Resources)**
- Get workbenches online and functioning **[Must2018]**
- Get packaging to completion **[Must2018]**
- Include ongoing releases from all components **[Must2018]**