University of Wisconsin – Madison
Program Charter – Interoperability Transformation Initiative

Program Name	Interoperability Transformation Initiative
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Program Sponsors*	Joe Tarter (Interim Director, AIS), TBD (Business Units Co-Program Sponsor(s))
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Program Scope	
Business Need/ Background	The purpose of Information Technology (IT) is to enable the work of the institution. Yet, the way IT is delivered at UW-Madison is often out of step with the needs of our constituents, inflexible, and expensive. This lack of alignment and overall strategy leads to challenges with integrating data across IT systems and business domains, costly and complex integration projects owing to lack of common data definitions and principles across enterprise systems, and difficulty engaging IT to solve business problems. It also results in inconsistent, impersonal experiences for end users and tremendous effort to bridge the gaps between our systems and services.
Program Goals	The Interoperability Transformation Initiative aims to modernize the ways we connect and manage our digital infrastructure and services, and to do so at pace and at scale. This transformation effort will enable us to access, exchange, and cooperatively use information across our complex organization to ensure that learners, faculty, staff, and community members are able to easily and securely use the systems and tools they need. By harnessing our data and infrastructure, we will enable more personalized experiences, appropriate security and privacy controls, and better ensure that information is accurate and up-to-date across the ecosystem. In order to accomplish this transformation, this program will address both foundational and infrastructural needs, emphasizing integration of operational data with authorized consuming systems (e.g. ERPs). Foundational needs focus on putting in place services, systems, decision making, and communications to sustain and evolve the effort in the long run. Infrastructural needs focus on the technology necessary to enable a solid interoperability framework.

In Scope/Out of Scope	**In Scope:**
	• Program - University partners have emphasized the importance of getting the user experience right and of putting in place services, systems, governance, and communication to sustain and evolve the effort in the long run.
	  ○ Interoperability Service Design and Practice - Adopt service design principles and practices to ensure that teams working on designing, building, supporting, and delivering interoperability projects work closely together to accurately understand the needs of constituents, design end-to-end solutions, and continue to evolve interoperability services.
	  ○ Organizational Change Management - The Interoperability Transformation Initiative will fundamentally change the way campus accesses, shares, and works with systems and data. Asking campus stakeholders and partners to move from the current state of operations to new ways of working and new systems will impact all users.
	  ○ Interoperability Service Management - Develop an Interoperability Service Management framework that will allow us to effectively make decisions about service lifecycle, create capacity to do interoperability projects, and engage campus.
	• Interoperability Framework - To enable the delivery of the recommended Interoperability Transformation Initiative outcomes provide user-facing services and underlying infrastructure
	  ○ Domain Driven Design and Enterprise Business Objects (EBOs)

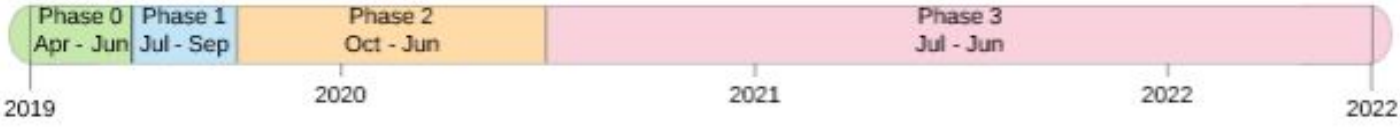
	■ Define business domains, in coordination with the Office of Data Management and Analytics Services (ODMAS). ■ Define enterprise business objects (EBOs) within business domains. ■ Transform data from authoritative systems into the EBO representation for each business domain. Encapsulate internal domain processes and business logic away from external domain interactions. Provide common functional interfaces for integrating with a domain that are consistent with the structure of other domains. ○ End-User Facing ■ Create both self-service and guided experiences for campus to easily integrate with data, supported by an integration team whose purpose is to facilitate engagements and advocate preferred patterns and access methods while meeting business needs. ■ Shift to an "identity first" and personalized approach, creating a digital profile with the UW that can be enriched with institutional roles, information, and preferences (e.g. preferred name) that evolves as people navigate our ecosystem over time. ■ Improve login experience to enable multimodal access methods, like social login, to better meet the diverse needs of all people engaging with the University. Incorporate appropriate secure access methods based on role and level of access (e.g. multi-factor authentication). ○ Integration Platform ■ Implement an integration platform that enables the expression of domain data using common standards and modern integration patterns and that enables the secure control of institutional data flow. ■ Promote API and event-based integrations over ETL-based integrations, where reasonable and cost-effective to do so. Where we need to support ETL-based integrations, remain consistent with EBOs expressed via API and event-based integrations even if ETL and API interfaces reside on different platforms. ■ Incorporate a developer portal into the integration platform that enables campus users to understand data models, test, and request production access to services exposed by the integration platform. ○ Identity and Access Management ■ Modernize our Identity and Access platform to enable integration across business domains of data to express institutional roles. ■ Create and curate institutional role definitions to enable role-based provisioning. ■ Develop a resource catalogue of institutional and departmental resources provisioned based on roles and ad-hoc requests. ● Administrative Transformation Program (ATP) ○ Coordinate with the ATP program in order to enable existing integrations to current HR and financial ERP systems (HRS & SFS) to use systems resulting from the Interoperability Transformation Initiative to connect to new ERP systems when acquired. **Out of Scope:** ● Transitioning existing university integrations to new platform. We will create the technical architecture to enable these new integrations to occur. ● Transitioning existing UW System integrations to new ERP platform. ● Defining and implementing an Analytics Program/Strategy at UW-Madison. ● Data governance. ● Defining or implementing a UW-Madison Master Data strategy.
Critical Success Factors	● Enable current HRS and SFS integrations to use new integration platform to assist in future migration to new HR and Financial system(s).
Program Assumptions	● Funding and staffing secured for the Initiative. ● Key University participation will be through several levels and methods. Key leadership will agree with processes and determine timelines for their areas to use the Interoperability platforms, technology services, and service principles. ● The decision-making process to prioritize work, eliminate services, and refine AIS staff capacity will be supported. ● Key stakeholders will prioritize university and system-wide needs over individual or department desires.
Program Constraints	● Staff will be available for both within and outside the direct program team. ● Timeline for interoperability integration from dependent projects (e.g. CRM, ATP).

Program Deliverables	**Phase 0** ● Framework Projects ○ F.0.1 - Refine initial set of service design principles ○ F.0.2 - Identify initial business domains ○ F.0.3 - Define deployment pipeline and infrastructure strategy ● Program ○ P.0.1 - Recommend AIS portfolio prioritization and changes ○ P.0.2 - Identify team and secure time ○ P.0.3 - Define initial training needs; identify and begin training staff ○ P.0.3 - Gain approval to move forward; secure funding **Phase 1** ● Framework Projects ○ F1.1 - Engage university in refining service design principles ○ F.1.2 - Develop MVP of Person and HR EBOs ○ F.1.3 - Build MVP of Integration Platform and Developer Portal ○ F1.4 - Build POC of provisioning environment ● Program ○ P.1.1 - Initiate AIS immediate recommendations ○ P.1.2 - Onboard program staff and HR domain integrators ○ P1.3 - Continue training **Phase 2** ● Framework Projects ○ F.2.1 - Complete HR and high-priority EBOs ○ F2.2. - Deploy Integration Platform and Developer Portal ○ F2.3 - Deploy and integrate provisioning components ○ F2.4 - Build MVP of improved Profile and MVP of improved Login process ● Program ○ P.2.1 - Onboard Finance domain integrators ○ P2.2 - Purchase and integrate DevOps tools ○ P2.3 - Initiate RFPs as determined ○ P2.4 - Establish Communities of practice **Phase 3** ● Framework Projects ○ F.3.1 - Enhance existing and continue to create more EBOs ○ F.3.2 - Build guided integration experience MVP ○ F.3.3 - Develop Role-based access API MVP ○ F.3.4 - Deploy profile and login processes ○ F.3.5 - Build and deploy self registration process ● Program ○ P3.1 - Sunset old infrastructure/shift operational personnel ○ P3.2 - Finalize RFPs/implement **Key**: - [F]ramework.[Phase].[Deliverable #] - [P]rogram.[Phase].[Deliverable #]

Initial Risks/Issues			
#	**Risk/Issue**	**Priority (SS, H, M, L)**	**Impact / Mitigation / Comments**
1	Staffing availability	H	Pending funding and staffing questions will need to resolve as soon as possible to meet our July 1 start date.
2	Scope has increased to include UW System's integrations with HR and financial ERP systems	H	Timeline/ Budget does not currently reflect increased scope. Implications to be determined

High-Level Milestones and Timeline

Does not include UW System scope expansion



High-Level Budget

Total: $8.9M (to be revised for each FY) - Funding not confirmed as of O5/24/2019 - and does not include UW System scope expansion

Key Area	Est. Costs FY19	Approved FY20	Requested FY21	Requested FY22
Licensing	$ -	$1,549,857	$1,549,857	$1,549,857
Staffing	$161,986	$ 858,095	$ 858,095	$ 858,095
Training	$ 58,169	$ 77,539	$ 77,539	$ 77,539
Other	$ 7,811	$ 75,000	$ 75,000	$ 75,000
Grand Total	$227,966	$2,560,491	$2,560,491	$2,560,491

Program Plans

The following plans will be addressed in separate documentation:

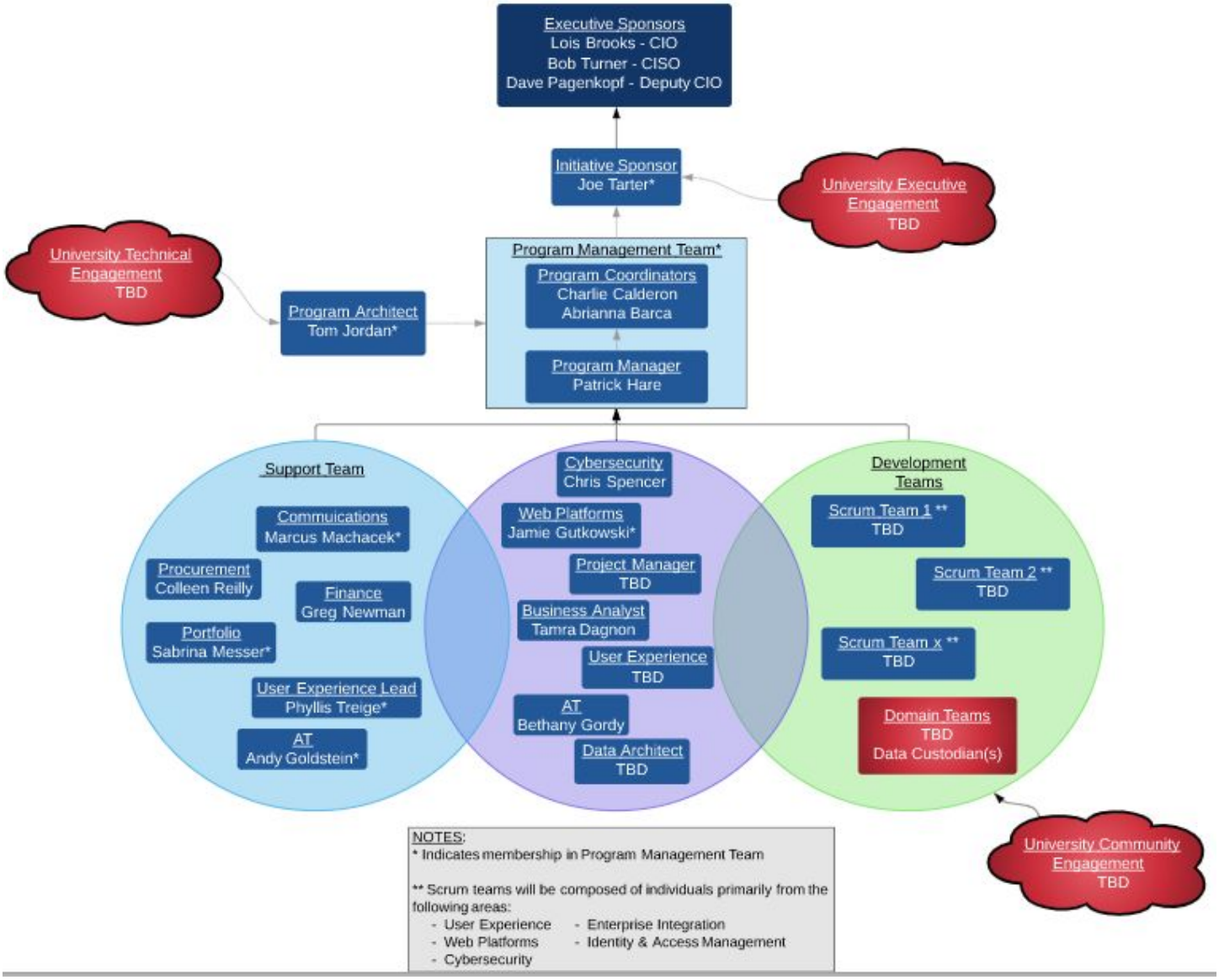
- Program Change Management Plan
- Organizational Change Management Plan *(to be developed prior to Phase 2)*
- Issue/Risk Management Plan
- Communications Plan *(in progress)*
- System Security Plan *(to be developed during Risk Management Framework process)*

High-Level Roles

Detailed in separate document - Interoperability Roles/Responsibilities *(in progress)*

Program Team Organization *(in progress)*

Team will operate using a combination of Agile/Scrum and DevOps methodologies.



Acronyms/Definitions	
Agile	Agile software development is an umbrella term for a set of frameworks and practices based on the values and principles expressed in the Manifesto for Agile Software Development and the 12 Principles behind it.[1]
AIS	Application Infrastructure Services
API	Application Program Interface
BI	Business Intelligence
BICoE	Business Intelligence Community of Experts
Business Domain	Refers to real-world aspects (e.g. Healthcare, Aviation, Finance, Military, Retail, etc). Domains are logical units of a business environment and can be identified as such. E.g.: Product groups; market segments; etc..
CIO	Chief Information Officer (https://it.wisc.edu/about/)
CISO	Chief Information Security Officer
DevOps	An enterprise software development phrase used to mean a type of agile relationship between development and IT operations. The goal of DevOps is to change and improve the relationship by advocating better communication and collaboration between these two business units.[2]
DoIT	Division of Information Technology (https://doitnet.doit.wisc.edu/)
Domain Driven Design	An approach to software development for complex needs by connecting the implementation to an evolving model. The premise of domain-driven design is the following: ● placing the project's primary focus on the core domain and domain logic; ● basing complex designs on a model of the domain; ● initiating a creative collaboration between technical and domain experts to iteratively refine a conceptual model that addresses particular domain problems.[3]
EBO	Enterprise Business Objects
ETL	Extract, Transform, Load
Framework	framework, or software framework, is a platform for developing software applications. It provides a foundation on which software developers can build programs for a specific platform.[4]
HRS	Human Resources System (https://uwservice.wisconsin.edu/)
IAM	Identity & Access Management
IMLG	Identity Management Leadership Group
Initiative	See Program
Integration Platform	Software which integrates different applications and services. It differentiates itself from the enterprise application integration[citation needed] which has a focus on supply chain management. It uses the idea of system integration to create an environment for engineers.[5]
Interoperability	The ability of different information systems, devices or applications to connect, in a coordinated manner, within and across organizational boundaries to access, exchange and cooperatively use data amongst stakeholders, with the goal of optimizing the health of individuals and populations.[6]
MVP	Minimum Viable Product. That version of a new product which allows a team to collect the maximum amount of validated learning about customers with the least effort.[7]
Multimodal	Multimodal interaction provides the user with multiple modes of interacting with a system. A multimodal interface provides several distinct tools for input and output of data. For example, a multimodal question answering system employs multiple modalities (such as text and photo) at both question (input) and answer (output) level.[8]
ODMAS	Office of Data Management and Analytic Services (https://data.wisc.edu/)
Organizational Change Management	Organizational change management (OCM) is a framework for managing the effect of new business processes, changes in organizational structure or cultural changes within an enterprise.[9]
Program	A group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually. Programs may contain elements of work outside of the scope of the discrete projects in the program. The Standard for Program Management—Second edition (PMI, 2008b, p. 312). For this effort, Program and Initiative are synonymous.
PMO	Project Management Office (http://www.doit.wisc.edu/services/project-management/)

[1] https://www.agilealliance.org/agile101/
[2] https://www.webopedia.com/TERM/D/devops_development_operations.html
[3] https://en.wikipedia.org/wiki/Domain-driven_design
[4] https://techterms.com/definition/framework
[5] https://en.wikipedia.org/wiki/Integration_platform
[6] https://www.himss.org/library/interoperability-standards/what-is-interoperability
[7] https://www.agilealliance.org/glossary/mvp/
[8] https://en.wikipedia.org/wiki/Multimodal_interaction
[9] https://searchcio.techtarget.com/definition/organizational-change-management-OCM

Program Change Management	A framework to manage timeline, scope or budget changes within a program
RMF	Risk Management Framework (https://it.wisc.edu/about/office-of-the-cio/cybersecurity/risk-management-framework/)
Scrum	Scrum is an Agile process framework used to manage product development and other knowledge work.[10]
Service Design	a process in which the designer focuses on creating optimal service experiences. This requires taking a holistic view of all the related actors, their interactions, and supporting materials and infrastructures.[11]
Service Management	A general term that describes a strategic approach to design, deliver, manage and improve the way businesses use information technology (IT).[12]
SFS	Shared Financial System (http://www.bussvc.wisc.edu/acct/sfs/)
SIS	Student Information System
SSO	Single Sign-On
SSP	System Security Plan
UWS	University of Wisconsin System (https://www.wisconsin.edu/)
VCFA	Vice Chancellor for Finance and Administration

[10] https://www.agilealliance.org/glossary/scrum/
[11] https://www.interaction-design.org/literature/topics/service-design
[12] https://searchitoperations.techtarget.com/definition/ITSM