

CHI Integrated Digital System (CHIIDS)

Draft Engineering Specification

Project: CHI Integrated Digital System

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1. Introduction

1.1 Overview

Every organization is responsible for effectively managing its information. A well-designed information system should reflect the philosophy and mission of its organization. The Center of Holistic Integration (CHI) has several core approaches that must guide the development of this information system — identifying integrative activities, seeking voluntary partners, promoting inclusivity, and fostering collaboration across as broad a range of stakeholders as possible. CHI supports participant's original goals through thoughtful alignment with CHI meta-projects and initiatives. CHI preserves participating project integrity while seeking and exploiting synergies between these projects, optimizing existing tools for collaboration rather than reinventing systems.

As a result, CHI's information systems must be optimized to support collaboration and project management within the parameters of meta-integrative projects. The **CHI Integrated Digital System (CHIIDS)** embodies this, providing a digital framework that fosters collaboration, preserves project goals, and efficiently uses existing systems, while at the same time providing the ability of external systems and processes to integrate with the core system.

The **CHI Integrated Digital System (CHIIDS)** is designed to support CHI's collaborative and inclusive mission through a well-structured digital framework. It is built around four core components: **Management, Communications, Storage, and Integration**.

- 1. Management:** task assignments, progress tracking, and resource allocation for meta projects, projects, and sub projects, as well as CHI administrative functions.
- 2. Communications:** systems used facilitates real-time collaboration and public engagement, ensuring that updates and information flow effectively between project teams and partners both internal and external to the CHI infrastructure.
- 3. Storage:** organizes and secures all project documentation and deliverables, including active files and archival data, as well as virtual environments and code implementations, ensuring easy retrieval and version control. Storage will support media for external communications and publication efforts, among others
- 4. Integration** Recognizes that the nature of CHI collaboration will inevitably require connecting with different systems both internal and external to City Tech. Integration allows CHIIDS to connect with external tools and collaborators, as well as additional team activities requiring additional resources. This support will enable smooth interactions with different platforms while maintaining project integrity.

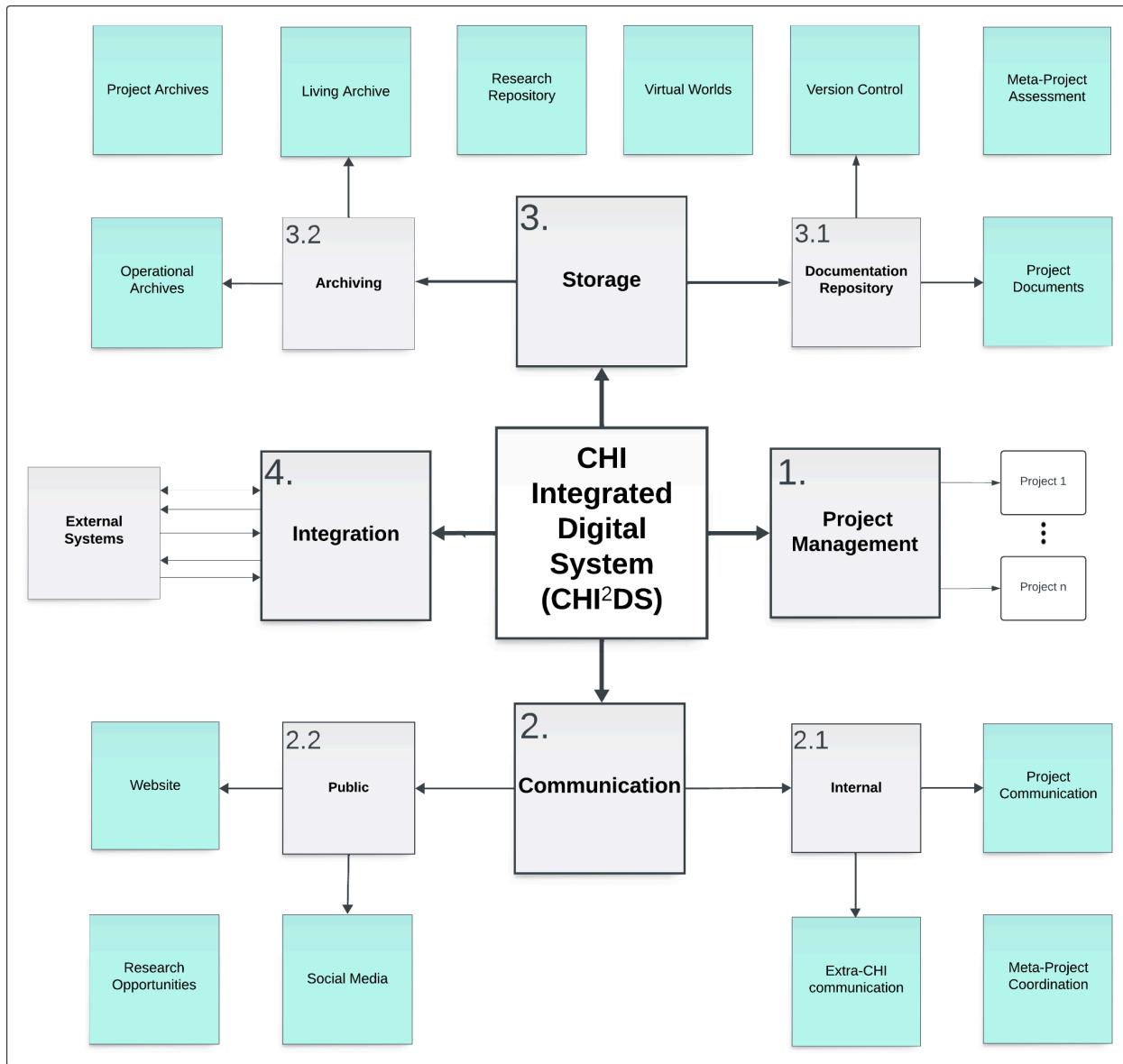
1.2 Design Considerations

The CHI Integrated Digital System (CHIIDS) is built to support the principles of Holistic Integration within the Center for Holistic Integration (CHI). Its design is guided by the need for maximum inclusivity, collaboration, and the integration of diverse participants and projects. CHIIDS must also align with the Balanced Blended Space (BBS) framework, which describes the interaction between virtual and physical environments. Additionally, the system must integrate smoothly with existing City Tech systems such as CIS and OpenLab, ensuring that CHIIDS can leverage institutional resources effectively.

Key design considerations include:

1. **Scalability:** CHIIDS must grow with CHI, accommodating more participants, projects, and data over time without sacrificing performance.
2. **Interoperability:** The system must seamlessly integrate with existing platforms and tools, including **City Tech systems**, ensuring flexibility and smooth workflow.
3. **User-Friendliness:** An intuitive interface will make the system accessible to a wide range of participants, minimizing the learning curve.
4. **Data Security and Privacy:** Robust security protocols must be in place to protect all data, particularly when dealing with multiple stakeholders and sensitive information.
5. **Adaptability:** CHIIDS must support a variety of interaction models, such as BBS and other frameworks, without requiring significant changes to the system's structure.
6. **Task Automation:** Automating routine tasks like project updates and data synchronization will improve efficiency and reduce manual effort for participants.
7. **Version Control:** The system should offer robust version control for both documents and code, ensuring that past iterations can be easily retrieved when needed.
8. **Real-Time Collaboration:** CHIIDS must facilitate real-time, low-latency collaboration across different locations and platforms to support seamless teamwork.
9. **Archiving and Documentation:** The system must ensure that all project data and communications are documented and archived for transparency and future reference.
10. **Accessibility and Inclusivity:** The system should accommodate users of all technical abilities and resources, ensuring that everyone can contribute meaningfully.
11. **Reuse of Existing Solutions:** CHIIDS should prioritize leveraging existing tools and systems to avoid reinventing solutions, minimizing development time and cost while maximizing integration.

1.3 CHIIDS Structural Diagram



2. System Components and Data Types

2.1 CHI System Setup and Organization

- **Data Type:** Organizational Structure Data
Description: Data related to the roles, teams, and project organization within CHI.
Includes: Team hierarchies, role descriptions, project lists.
 - **Data Type:** System Integration Documentation
Description: Documents outlining system integrations, API connections, and workflow

diagrams.

Includes: Technical documents, flowcharts, integration protocols.

- **Data Type:** Policies and Guidelines

Description: Organizational policies for system usage, access, and collaboration.

Includes: Data usage guidelines, security protocols, access control documentation.

2.2 Project Management Data

- **Data Type:** Task and Milestone Data

Description: Project-specific tasks, milestones, and timelines.

Includes: Task assignments, progress tracking, deadlines.

- **Data Type:** Resource Allocation Data

Description: Data related to project resources such as budgets and personnel.

Includes: Resource lists, availability tracking, and resource allocation schedules.

2.3. Research Opportunities Dataset

- **Data Type:** Research Opportunity Metadata

Description: Structured data for cataloging research opportunities.

Includes: Title, description, tags (modality, discipline), deadlines, eligibility criteria.

- **Data Type:** Application and Participation Data

Description: Application data for research opportunities.

Includes: Applicant details, project matching data, application status.

2.4. Documentation and Reports

- **Data Type:** Project Documentation

Description: Active project documentation and technical files.

Includes: Research notes, technical specs, multimedia files.

- **Data Type:** Progress Reports and Final Deliverables

Description: Reports tracking project progress and final outcomes.

Includes: Milestone reports, deliverables, project outcomes.

2.5. Media Data

- **Data Type:** Project Output and Media

Description: Outputs and materials produced from CHI projects, including multimedia elements such as video, audio, and images.

Includes: Final project media, project-related graphics, and materials used in the project lifecycle.

- **Data Type:** Living Archive Data

Description: Data and media contributions from participants under initiatives such as the CUNY Anti-Hate campaign, reflecting the evolving nature of these projects.

Includes: Stories, multimedia submissions, community contributions.

2.6. Version Control Data

- **Data Type:** Code Repositories and Version History
Description: Technical files requiring version control for development.
Includes: Code, pull requests, version history, issue tracking.

2.7. Archival Data

- **Data Type:** Completed Project Archives
Description: Archived data related to completed projects.
Includes: Final reports, archived documentation, multimedia files, virtual assets.
- **Data Type:** Historical Data and Metrics
Description: Data tracking historical project performance, outcomes, and engagement.
Includes: Metrics, historical reports, analytics.

2.8. Communication and Engagement Data

- **Data Type:** Internal Communication Data
 - Description: Communication logs and collaboration messages within the team.
 - Includes: Chat logs, meeting summaries, email records.
 - Example System: **Microsoft Teams** for real-time communication and **Discord** (if external collaboration is required).
- **Data Type:** Public Engagement Data
 - Description: Data related to public-facing communication and outreach efforts.
 - Includes: Website content, social media posts, user feedback, event participation.
 - Example System: **WordPress (OpenLab)** for public access and **Buffer** for social media management.

2.9. Data Storage and Backup

- **Data Type:** Active File Storage
 - Description: Current project files for active projects.
 - Includes: Ongoing documentation, multimedia files, reports, virtual environments
 - Example System: **OneDrive** for active file storage.
- **Data Type:** Backup Data
 - Description: Backup of critical project data for recovery.
 - Includes: Archived versions of active documents, backup copies of multimedia files.
 - Example System: **OneDrive** with automated backup protocols.

3. Tentative Subsystems

Note that these are tentative suggestions, but built around the existing systems that City tech hosts. CHIIDS is designed to accept documentation or cloud data from other sources as well.

Microsoft Teams

- **Purpose:** Task and project management, team collaboration, and real-time communication.
- **Data Supported:** Task data, milestone tracking, internal communication, and progress updates.

SharePoint

- **Purpose:** Document management, long-term storage, and database creation for research opportunities.
- **Data Supported:** Organizational data, project documentation, research metadata, archival data.

OneDrive

- **Purpose:** Active file storage and backup.
- **Data Supported:** Project files, multimedia, and long-term backups.

GitHub

- **Purpose:** Version control and technical documentation.
- **Data Supported:** Code repositories, version history, and issue tracking.

WordPress (OpenLab)

- **Purpose:** Public-facing website for sharing research opportunities, project outcomes, and event information.
- **Data Supported:** Public-facing research metadata, project outcomes, user engagement data.

Buffer

- **Purpose:** Social media management and scheduling for public-facing communications.
- **Data Supported:** Social media posts and engagement metrics.

4. Data Management Policies

- **Access Control:** SharePoint will manage access permissions for all data. Team members will have access based on their roles within CHI, with restricted access for sensitive data.
- **Version Control:** GitHub will handle all version control for code and technical documentation, while SharePoint will manage document version history for general files.
- **Archival Protocol:** Upon project completion, all relevant files will be archived in designated SharePoint folders and will be preserved with appropriate metadata for easy retrieval.
- **Backup and Recovery:** OneDrive will manage automated backups of critical files, ensuring data integrity and recovery capability.