

Understanding Ed-Fi and its Resources

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What makes MiDataHub Unique

Michigan Launch Pad

Sites that org can access:

- MiAdminConsole
- MiDataHub Cockpit
- MiDataHub Cockpit - QA
- MiDataHub Cockpit - ST
- MIEWIMS
- MIEWIMS - Staging

Additional Sites:

- #GoOpen Michigan
- EduPaths Professional Learning Catalog
- MAISA MAISA Events Portal
- Math Nation
- MI Math & Science Leadership Network
- Michigan Virtual
- MiServiceDesk
- SAS EVAAS

Michigan Data Hub > Anonymized Districts > MiDataHub Demo District

Agreements - Inventory - Reports - Utilities - MSDS - Features

Manage District: MiDataHub Demo District

Region: Michigan Data Hub
 ISD/Intermediate District Code: Anonymized Districts
 District: MiDataHub Demo District, Id: 983, Code: 900014
 District Type: LEA
 Address: ...
 URL: ...
 Current School Year: 2022-2023 (populated)
 SFTP Password: [input]
 Integration Server: HUB-ETL304
 District Status: Active

Submit Cancel

Manage Authorizations

Name	Email	Authorizations	Actions
Kevin Bullard	kevin.bullard@kresa.org	District Superintendent	Edit Delete
Kevin Bullard	kevinbullard@gmail.com	Technical Contact District Superintendent	Edit Delete
Windee Wagner	windee.wagner@kresa.org	Technical Contact	Edit Delete
Dirk Bradley	Dirk.bradly@kresa.org	Technical Contact	Edit Delete

Inbound Integrations (show all)

- Add Integration

Outbound Integrations (show all)

- Add Integration

API Integrations (show all)

- Student Information System: Infinite Campus 1
- Assessment System: L-Ready 1
- Assessment System: DRC Smarter Balanced Assessments 1
- Data Warehouse: Eidex Insights 1
- Educational Analytics: Extended Benchmark Studies 1
- Add Integration


1EdTech Certifications

Michigan Data Hub has 1 certifications for this product.

v6

Cockpit Application v6 has completed conformance testing for the following 1EdTech Standards ...

- ✔ **OneRoster 1.1**
 Certified on 2024-06-13 • Registration ...
OneRoster 1.1 Details:
 - REST Data Provider Rostering Core



MICHIGAN DataHub Management Portal

Home

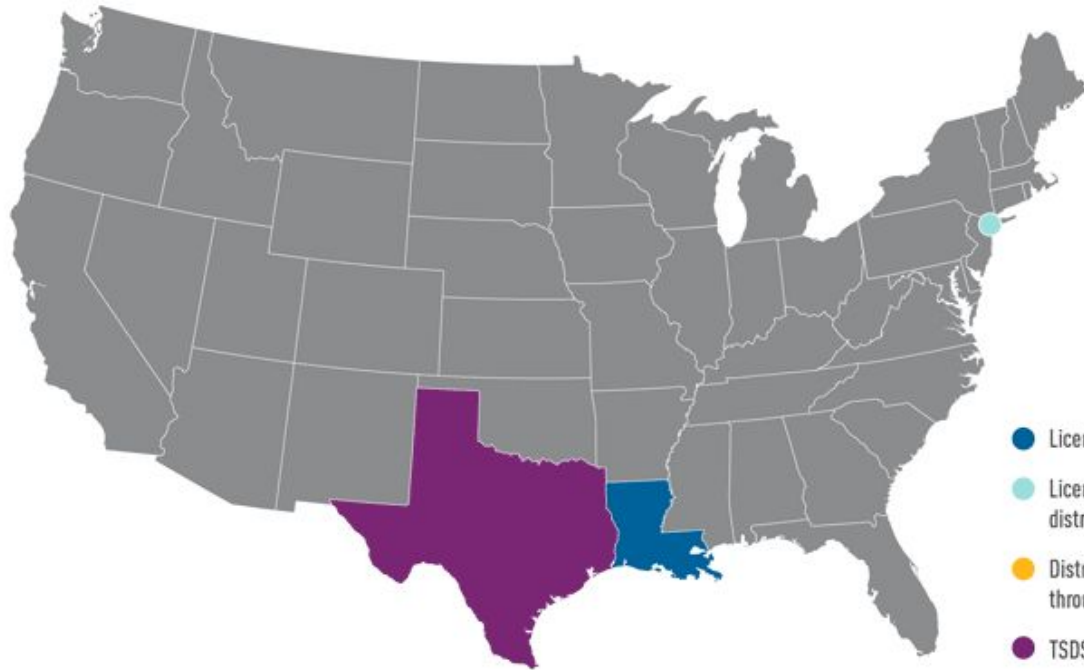
Profile

Operations Cockpit

Systems Add New

Read by Grade 3 Research	⚙️
Partnership District Email Access	⚙️
Benchmark Assessment Mandate Aggregation	⚙️
Partnership District Data Analysis	⚙️
Comprehensive Literacy Grant Evaluation	⚙️
Transitional Kindergarten Study	⚙️
Extended Benchmark Studies	⚙️

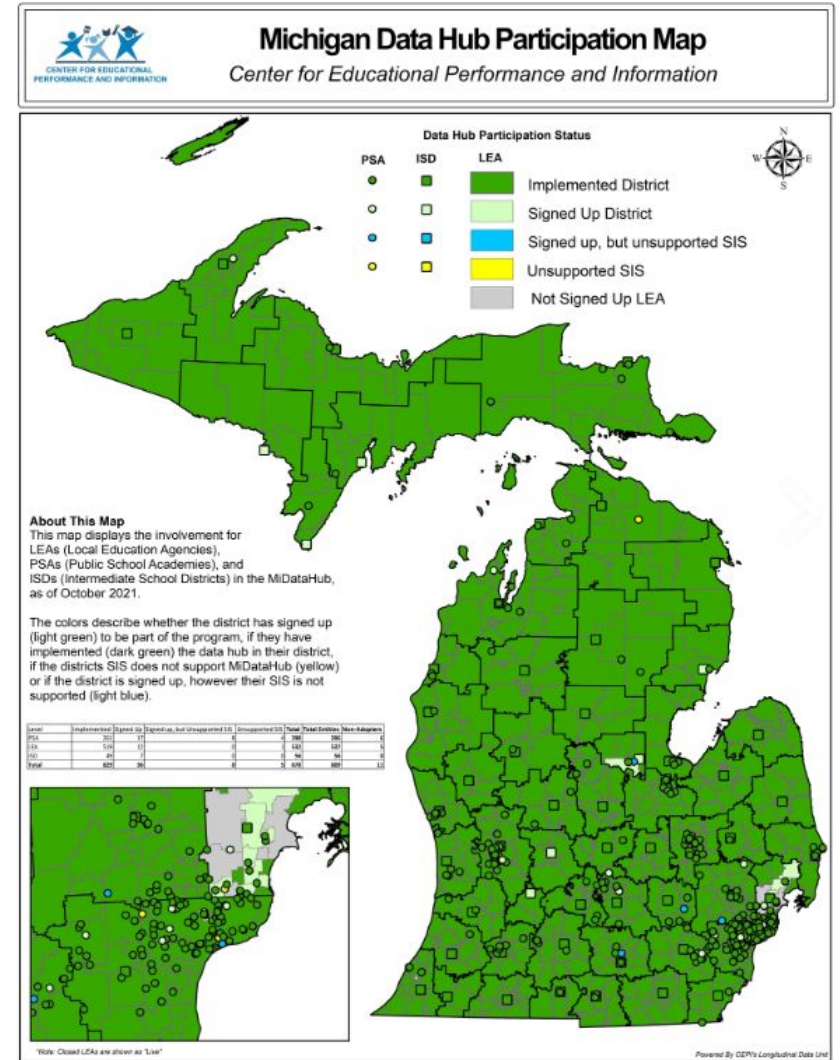
Beyond the Mitten



2011



MICHIGAN
DataHub



Ed-Fi Alliance

- Ed-Fi Data Standard
- Ed-Fi Technology Suite
- Ed-Fi Alliance Community



Michael & Susan Dell
FOUNDATION

Academy Course Catalog

Welcome to the Ed-Fi Academy Course Catalog!

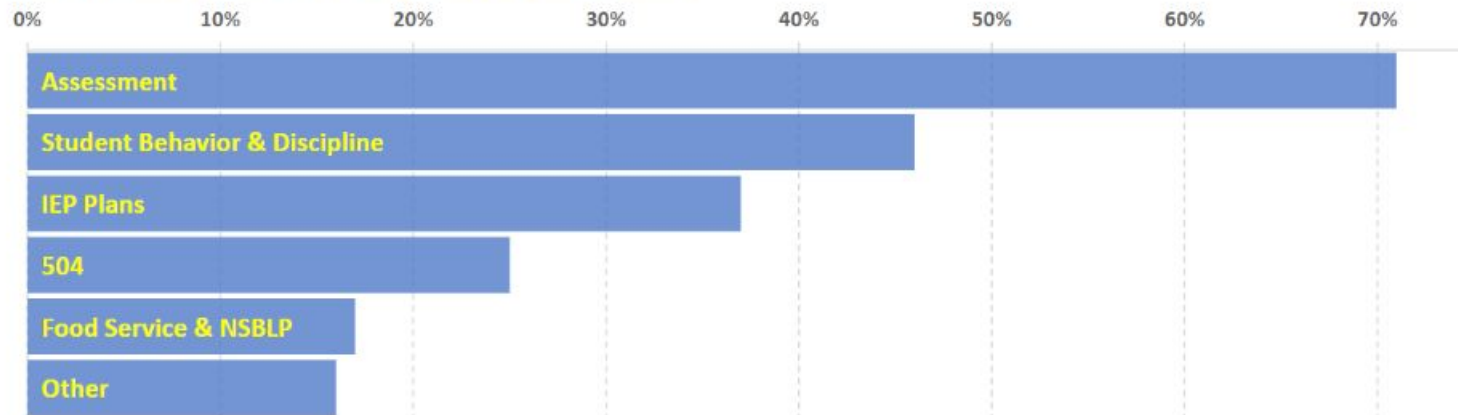
Contents

- Overview
- > General Information
- Ed-Fi 101 - Welcome to Ed-Fi
- Ed-Fi 102 - Introduction to the Ed-Fi Technology Suite
- Ed-Fi 1021 - Implementation Patterns
- Ed-Fi 103 - Introduction to EdTech Vendor Engagement
- Ed-Fi 104 - Introduction to Data Management
- Ed-Fi 131 - Introduction to the Implementation Capabilities Framework
- Ed-Fi 141 - Data Engineering Lifecycle
- Ed-Fi 142 - Publishing Your First Set of Data
- Ed-Fi 143 - The Dimensional Data Warehouse
- Ed-Fi 230 - From Essential Question to Visual Design
- Ed-Fi 231 - Advanced Implementation Capabilities Framework
- Ed-Fi 240 - Introduction to the Educator Preparation Data Model
- Ed-Fi 251 - Technology Providers Playbook
- Ed-Fi 2511 - Navigating Swagger UI
- Ed-Fi 252 - Overview of Data Provider Certification
- Ed-Fi 264 - LEA Support Model for ESAs
- Ed-Fi 271 - Large-Scale Ed-Fi ODS/API Deployments
- Ed-Fi 272 - Initial Technology Provider Engagement for SEAs and Collaboratives
- Ed-Fi 274 - LEA Support Model for SEAs
- Ed-Fi 3501 - Selecting an Ed-Fi Platform Mode
- Ed-Fi 3505 - Deploying A Local Instance of the Ed-Fi Platform
- > Course Pathways
- Academy Course Index

Ed-Fi Data Standards

- ❖ Generally CEDS Aligned
- ❖ [Data Standard Workgroup](#) (Community Driven)
- ❖ Diverse membership

Respondents Showed Interest on...



Others:

- Finance Data,
- College & Career, CTE,
- Professional Development
- School Choice
- Grade & Graduation Plan

* 63 Total Number of Respondents

Data Standard 4.0

Domain Reference Contents

View information about each domain:

- > [Alternative and Supplemental Services Domain](#)
- > [Assessment Domain](#)
- > [Bell Schedule Domain](#)
- > [Discipline Domain](#)
- > [Education Organization Domain](#)
- > [Educator Preparation Data Model Domain](#)
- > [Enrollment Domain](#)
- > [Finance Domain](#)
- > [Graduation Domain](#)
- > [Intervention Domain](#)
- > [School Calendar Domain](#)
- > [Staff Domain](#)
- > [Student Academic Record Domain](#)
- > [Student Attendance Domain](#)
- > [Student Cohort Domain](#)
- > [Student Identification and Demographics Domain](#)
- > [Survey Domain](#)
- > [Teaching and Learning Domain](#)

Intervention Domain - Overview



Owned by [Eric Jansson](#) ***
Aug 09, 2022 • 2 min read • [Legacy editor](#)

Key Entities

This domain contains:

- The InterventionPrescription entity, which describes an activity intended to address a specific problem or diagnosis. It identifies the kinds of students targeted and how the intervention should be delivered.
- The Intervention entity, which is a specific implementation of an instructional approach, outlined in an InterventionPrescription entity.
- A StudentInterventionAttendanceEvent entity which captures attendance and participation for interventions.
- A StudentInterventionAssociation entity, which links students to interventions in which they participate.
- Data about a formal InterventionStudy entity for an InterventionPrescription entity may also be associated with an InterventionPrescription.

Key Concepts

The key concepts include the following:

- The InterventionPrescription entity is a course of action designated by appropriate personnel to remedy an academic or behavioral issue, while the Intervention entity is the resulting action requiring participation by the student.
- The StudentInterventionAssociation entity captures data related to the student's participation in the entity, such as the effectiveness or dosage.
- Interventions can be tied to a Cohort entity, but only through the StudentInterventionAssociation entity.
- Interventions may be one-time actions or recurring actions over time. The StudentInterventionAttendanceEvent can be used to capture the record of a student's participation in an intervention.
- Dosage in the model
 - Prescribed time for an intervention is stored in Dosage elements. These may be a range of recommended time in minutes (e.g., MinDosage and MaxDosage in the Intervention and InterventionPrescription entities) or prescribed time in minutes for a particular student (e.g., Dosage in the StudentInterventionAssociation entity).
 - Actual time spent in an intervention is captured via the InterventionDuration element on the StudentInterventionAttendanceEvent entity.
- EducationContent metadata may be linked to InterventionPrescription entities and/or Intervention entities. The EducationContent entity includes descriptors for the Learning Resource Metadata Initiative (LRMI).



Enrollment Domain



Owned by [Eric Jansson](#) ***
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The Enrollment domain model supports cases in which a student is assumed to be withdrawn in the previous grade level and

- [Enrollment Domain - Overview](#)
- [Enrollment Domain - Model Diagrams](#)
- [Enrollment Domain - Entities, References, and Descriptors](#)
- [Enrollment Domain - Best Practices](#)

Data Standard 5.x

- ❖ Working through Data Standard 5 (see below)
- ❖ Data Standard 6 work on the horizon

Summer
~June-August

Early-access release(s): releases that highlight new features intended for the release in the next school year. i.e., a major version release in July 2023 would typically be targeting the 2024-25 school year

Winter
~Nov

Final platform release(s) intended for deployment in the following school year. i.e., a major release in November 2023 would be targeting the 2024-25 school year

Spring
~Feb-May

Non-breaking improvements to the releases intended for the following school year may be released. Users should consult the roadmap to understand if these improvements provide value and/or if the release should be picked up.

November 2023

May 2024

November 2024

Data Standard 5.0
TPDM Community 1.2

Data Standard 5.1

Data Standard 5.2

Student Program Evaluation
Special Education
Section model (breaking)

Student Health
Student Transportation
Crisis Event & Displaced Student

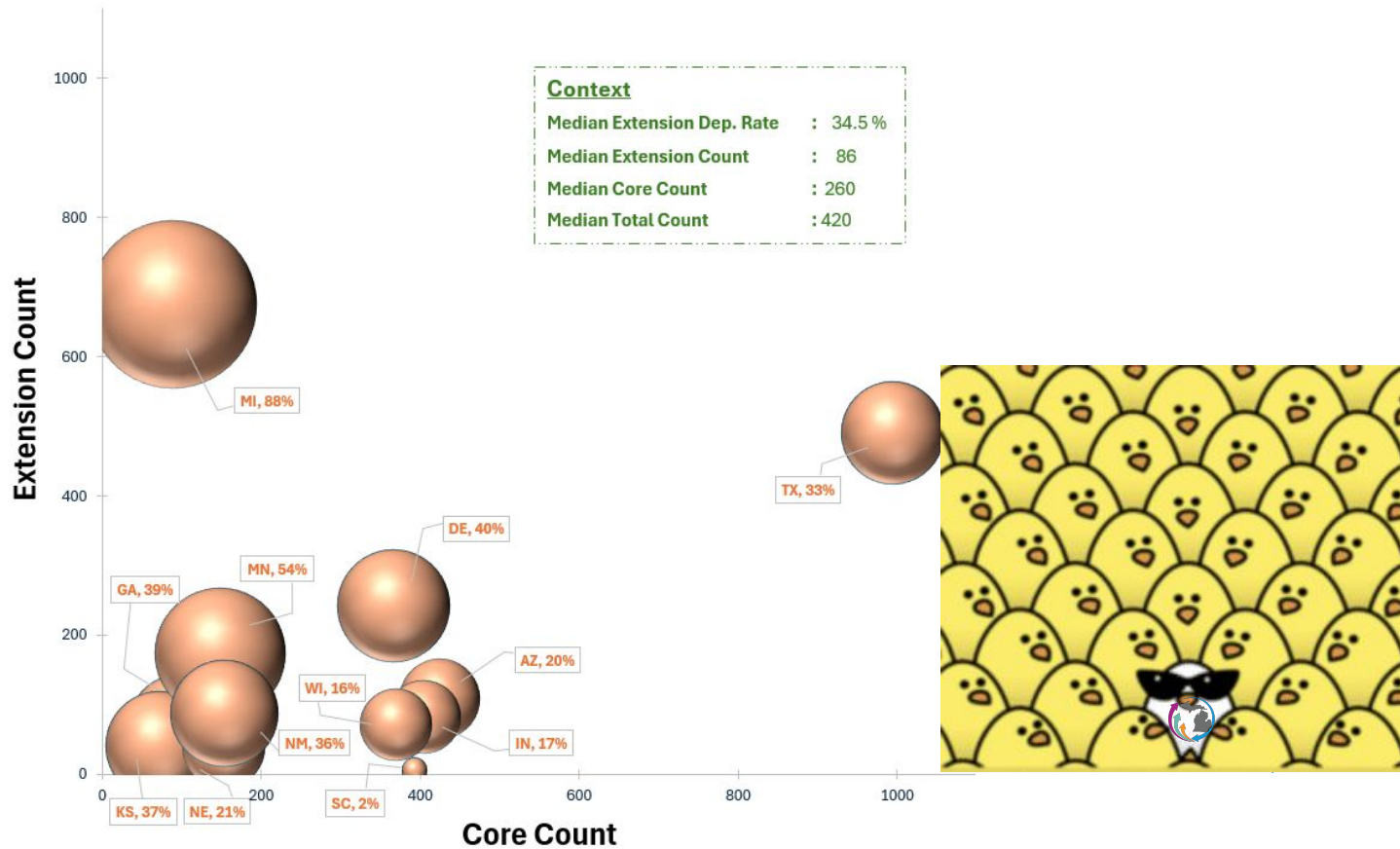
Assessment Registration
Assessment Accommodation
Shorten School Days
504 Plans
National School Lunch Program

Extensions

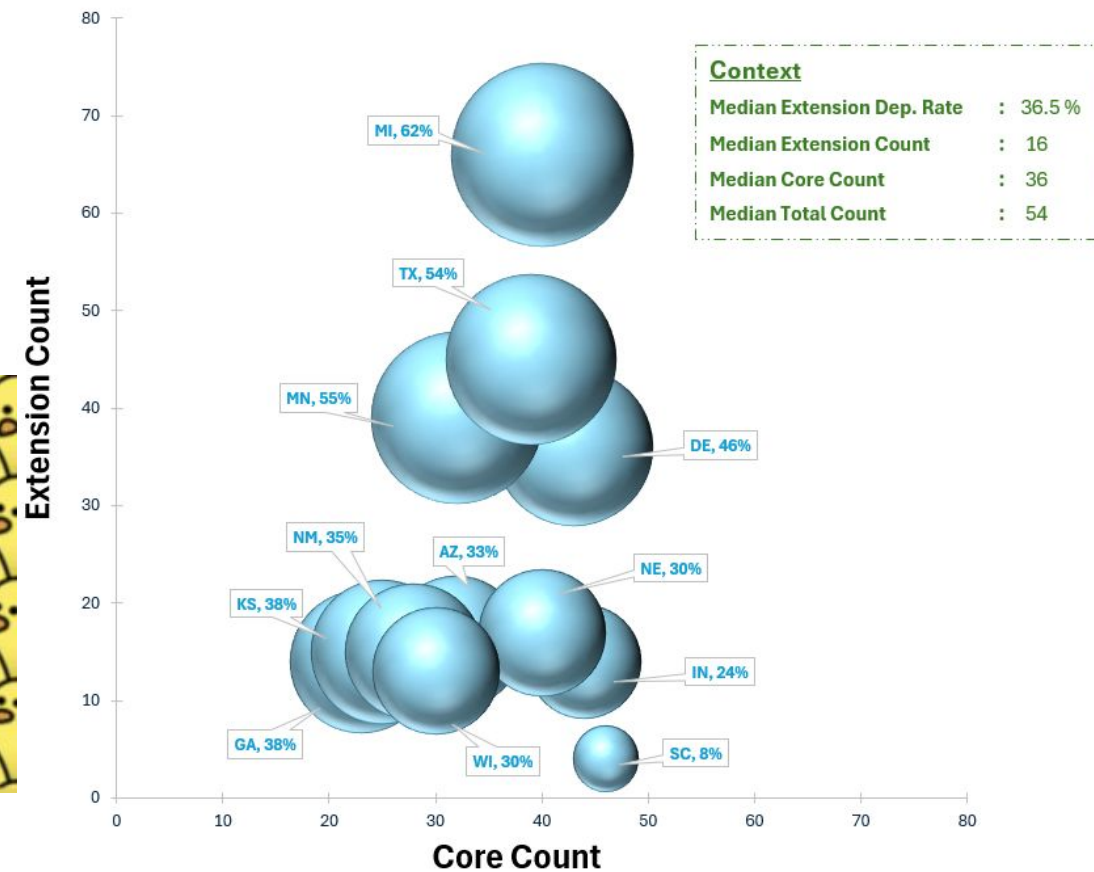
- ❖ High usage / reliance on extensions in Michigan
- ❖ Accommodating legislative needs / integrations (SWIS) / statewide projects



Extension Dependency Rate at Element Level



Extension Dependency Rate at Entity Level



Extensions Ex. 23g



- d. Defining a StudentInterventionAttendanceEvent - how often a student is in attendance for an intervention service
 - i. AttendanceEventCategoryDescriptor - would ask vendor to provide an Ed-Fi or MiDataHub namespace descriptor (Note, if we can record an absence event for when a student misses, then we can track scheduled sessions missed)
 - 1. In Attendance - the student attended the session
 - 2. Excused Absence/Unexcused Absence - The student missed the session due to school absence
 - 3. School Related Absence - The student was not tutored due to a holiday, teacher only day, etc.
 - ii. EventDate - indicates date of the attendance event
 - iii. InterventionReference - would reference to InterventionId
 - iv. StudentReference - would reference to StudentUniqueId
 - v. AttendanceEventReason - not required but could be used for short notes on attendance entry
 - vi. EducationalEnvironmentDescriptor - would help indicate location where intervention took place. May require an additional descriptor to indicate "In Person" or "Virtual".
 - vii. EventDuration - preferred but optional - amount of time in days (1 / 0.5 / 0.33)
 - viii. InterventionDuration - number of minutes student participated in this tutoring session.
- 6. Whether the assessments and interventions are implemented with fidelity. This portion of the report must include details on the total number of assessments and intervention fidelity checks completed and the range and mean of fidelity.
 - a. Extended Resource - InterventionFidelityCheck
 - i. InterventionReference (educationOrganizationId, interventionIdentificationCode)
 - ii. FidelityScore
 - iii. FidelityCheckDate
 - iv. What kind of tool?? - IS there a list
 - b. Extended Resource - InterventionAssessment - An assessment delivered to gauge student response to intervention
 - i. InterventionAssessmentIdentifier
 - ii. Description - Description of the assessment tool
 - c. Extended Resource - InterventionAssessmentFidelityCheck

interventionFidelityChecks (MI EXT) Indicates whether the assessments and interventions are implemented with fidelity.

GET /MI/interventionFidelityChecks Retrieves specific resources using the resource's property values (using the "Get" pattern).

POST /MI/interventionFidelityChecks Creates or updates resources based on the natural key values of the supplied resource.

The POST operation can be used to create or update resources. In database terms, this is often referred to as an "upsert" operation (insert + update). If the resource already exists, it will result in an error. The web service will identify whether the resource already exists based on the natural key values provided, and update the resource if it exists. If the resource does not exist, it will create and update except while updating natural key of a resource in which case PUT operation must be used.

Parameters

Name	Description
interventionFidelityCheck * required object (body)	The JSON representation of the "interventionFidelityCheck" resource to be created or updated. Example Value Model

```
mi_interventionFidelityCheck {
  id: string
  fidelityCheckDate*: string($date)
  x-Ed-Fi-isIdentity: true
  The fidelity check date.
  interventionReference*: edFi_interventionReference {
    educationOrganizationId*: > [...]
    interventionIdentificationCode*: > [...]
    link: link > {...}
  }
  fidelityScore: string
  maxLength: 35
  x-nullable: true
  The fidelity score of the Intervention.
  _etag: > [...]
}
```

Technology Roadmap

	24 - 25	25 - 26	26 - 27	27 - 28	28 - 29	29 - 30
ODS/API 5.4	✓	✗	✗	✗	✗	✗
ODS/API 6.2	✓	✓	✗	✗	✗	✗
ODS/API 7.x	✓	✓	✓	✓	✗	✗
DMS	🚧	👤	✓	✓	✓	✓

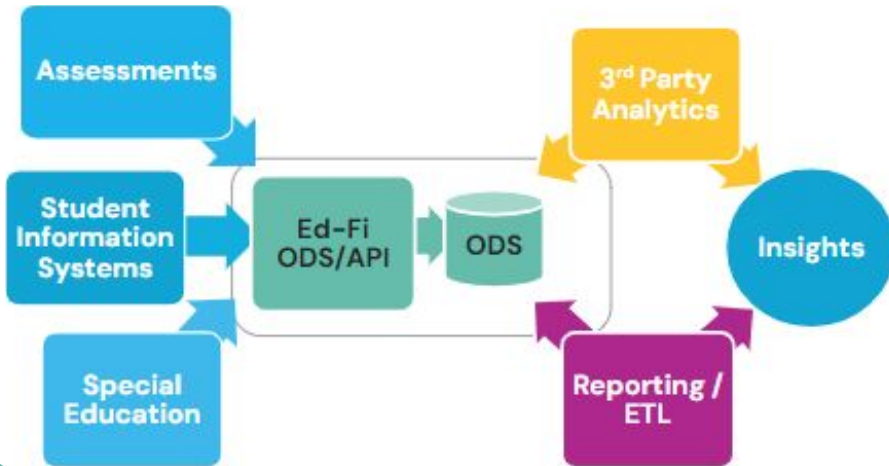
Milestone 0.2 – available
Milestone 0.3 – soon

Release Candidate –
aiming for Tech Congress

Pilot testing and
specialized use cases

School Year	2024 - 2025	2025 - 2026	2026 - 2027	2027 - 2028	2028 - 2029	2029 - 2030	2030 - 2031	2031 - 2032
DS 3.3	✓	✗	✗	✗	✗	✗	✗	✗
DS 4.0	✓	✓	✗	✗	✗	✗	✗	✗
DS 5.0	✓	✓	✓	✓	✗	✗	✗	✗
DS 6.0			✓	✓	✓	✓	✗	✗
DS 7.0					✓	✓	✓	✓

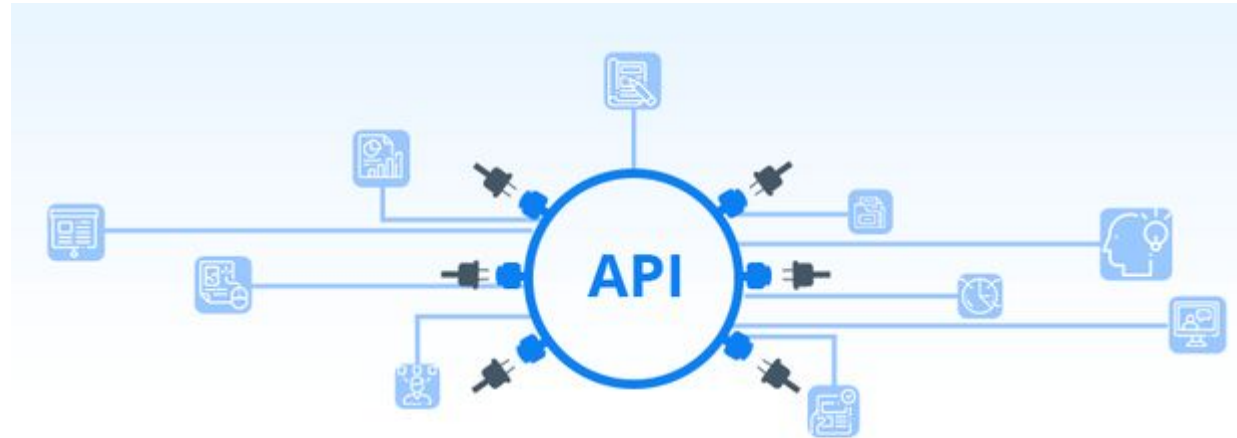
Existing Structure



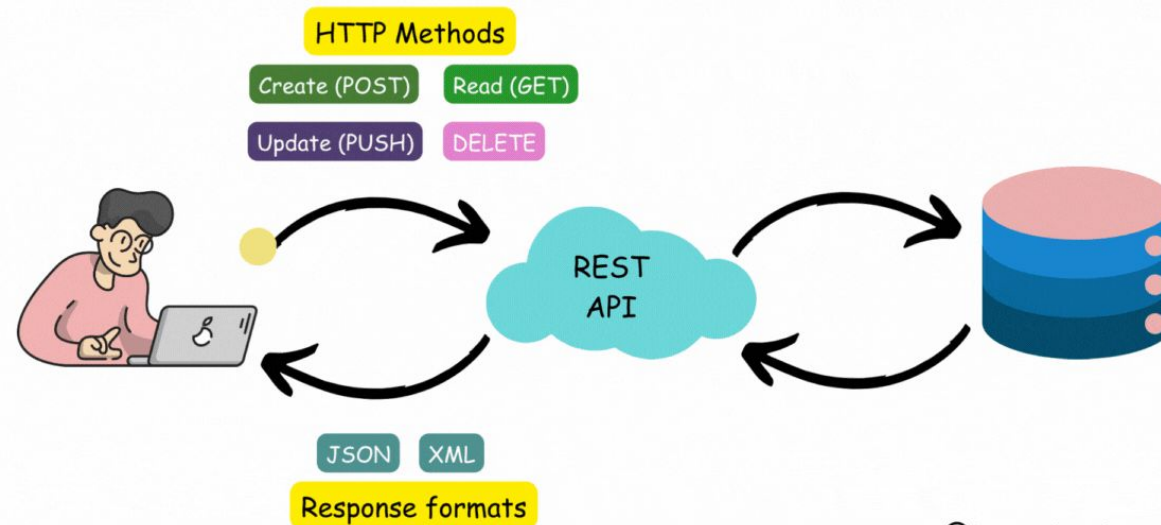
- Ed-Fi ODS/API works well in this ecosystem
- Code base originated 2011
- Barrier to innovation & scalability



Ed-Fi API



RESTful APIs



Swagger / Open API

Swagger Petstore

1.0.0 OAS3

This is a sample Petstore server. You can find out more about Swagger at <http://swagger.io> or on [#swagger](irc://freenode.net).

[Terms of service](#)

[Contact the developer](#)

[Apache 2.0](#)
















[Find out more about Swagger](#)

Servers

Authorize 

pet Everything about your Pets

Find out more: <http://swagger.io> ^

POST	/pet	Add a new pet to the store	  
PUT	/pet	Update an existing pet	  
GET	/pet/findByStatus	Finds Pets by status	  
GET	/pet/findByTags	Finds Pets by tags	  
GET	/pet/{petId}	Find pet by ID	  

API Requests

HTTP Methods

- GET** for retrieving
- POST** for creating
- PUT** for updating
- PATCH** for patching
- DELETE** for deleting

PROTOCOLS

Always use **HTTPS://** for API calls to ensure security and data privacy

VERSIONING

Version your API to manage changes and maintain backward compatibility.

SUB-DOMAIN

Use clear and consistent domain naming conventions. Subdomains (like **api**) are often used for API endpoints.

ENDPOINT

Use **nouns** to represent resources. Paths should be intuitive and follow RESTful principles.

GET **https://** **api.** **example.com** **/v1/** **users**
?age=25&gender=male&page=2&limit=10

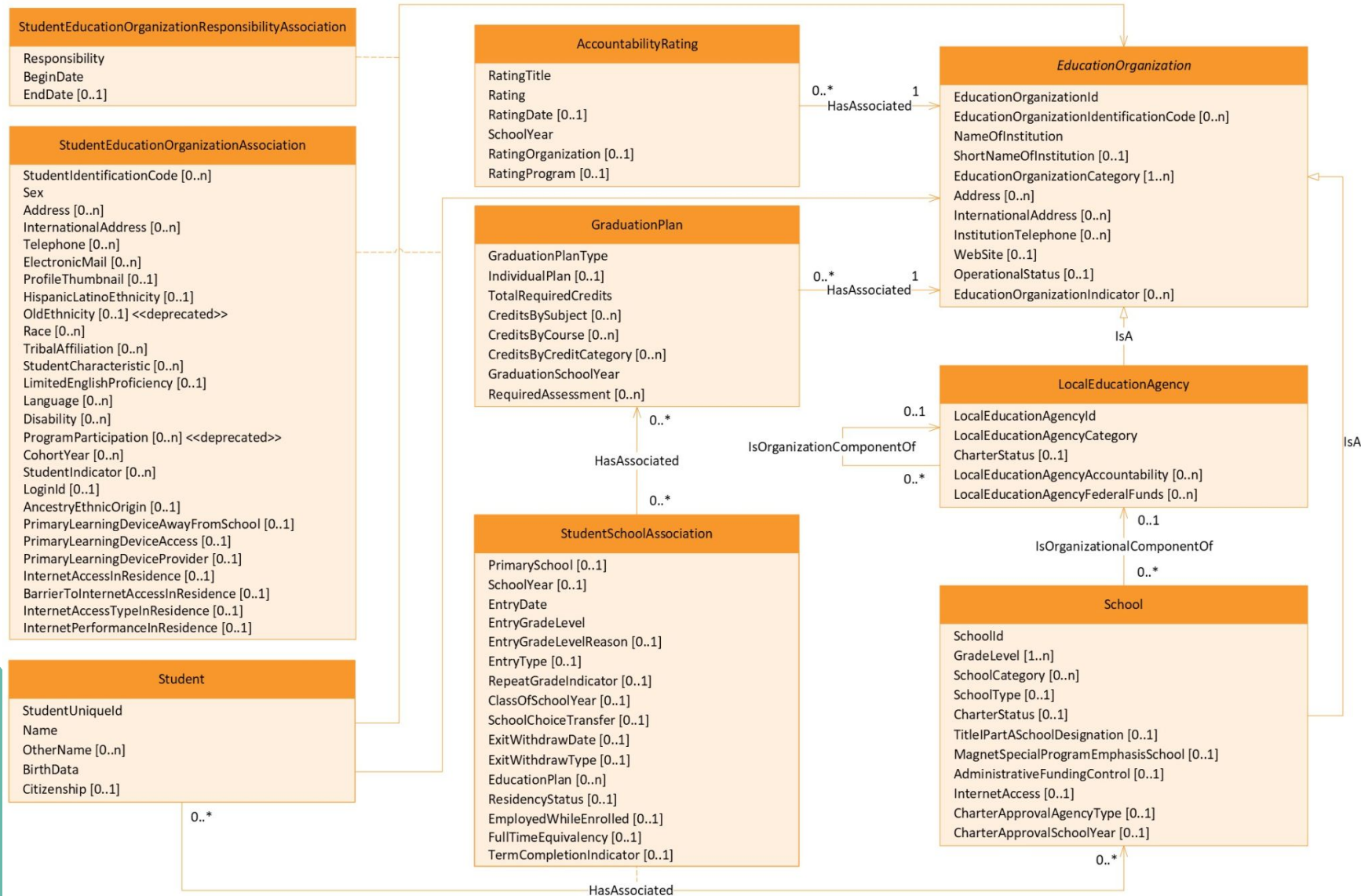
FILTERING

Divide large data sets into pages for manageable chunk retrieval.

PAGINATION

Specify criteria to retrieve relevant data subset; refine search results

Relational DB

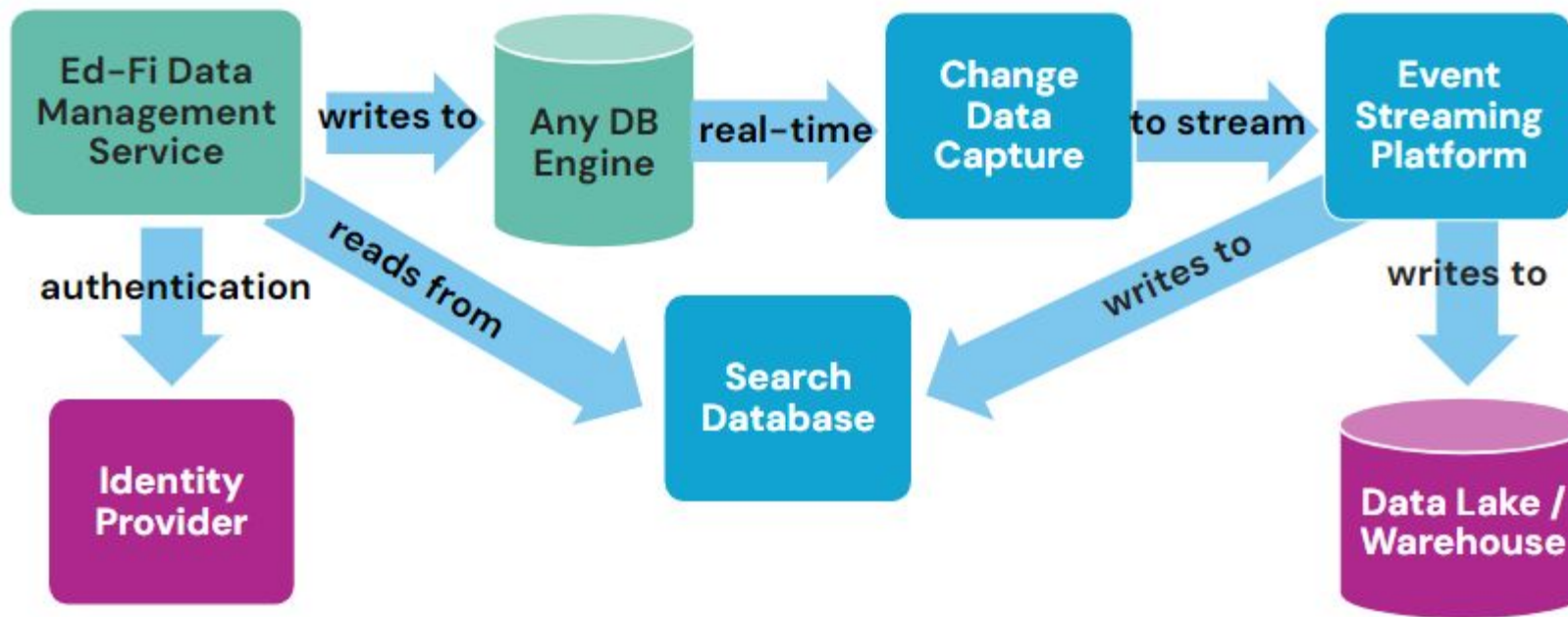


Future of Ed-Fi

- ❖ Project Tanager
- ❖ Target Release Schedule
 - Available in 2027
 - Dominant in 2029
- ❖ Simplify
 - Code base
 - Data structure
- ❖ Scalability and performance
- ❖ Enable streaming



Tanager Structure



Non-Relational DB

Really, three tables!

- **Documents** contains JSON
- **Aliases** handles inheritance problems
- **References** supports referential integrity

References			
Guid	parent_referential_id	PK,FK	Parent document with the reference, also clustered PK
tinyint	parent_partition_key	FK	Part of Aliases PK, derived from parent_referential_id
Guid	referenced_referential_id	PK,FK	Document being referenced, also PK
tinyint	referenced_partition_key	FK	Part of Aliases PK, derived from referenced_referential_id
tinyint	partition_key	PK	Partition key for this table, derived from parent_referential_id

2 FKs to Aliases per row, parent and referenced

Aliases			
Guid	referential_id	PK	Extracted or superclassed document identity, clustered
tinyint	partition_key	PK	Partition key for this table, derived from referential_id
Guid	actual_document_uuid	FK	Part of Documents PK
tinyint	actual_partition_key	FK	Part of Documents PK, derived from actual_document_uuid

2 rows with same FK to Documents if subclass, 1 row otherwise

Documents		
Guid	document_uuid	PK API resource id, clustered
tinyint	partition_key	PK Partition key for this table, derived from document_uuid
Guid	referential_id	Extracted document identity
string	project_name	Example: Ed-Fi (for DS)
string	resource_name	Example: Student
string	resource_version	Example: 5.0.0
JSON	edfi_doc	The document



I want to know more about...

- ❖ [Ed-Fi Academy](#) (trainings / videos)
- ❖ [Using the Ed-Fi API](#)
- ❖ [MiDataHub Swagger](#)
- ❖ [Common Education Data Standard](#)
- ❖ [Ed-Fi Data Standards and API Versions](#)
 - [Data Standard 4.0](#)

