



## Gap Analysis and Data Loading

ESP Solutions Group, Inc. (ESP) has experience in mapping data for database loading and further analysis that goes back more than 20 years. Practically every project the company has executed during those years involves the identification of how well the available data matches the desired analytical objectives, a process known as gap analysis. For loading data using the Ed-Fi API, using the Ed-Fi data loader, or using Extract/Transform/Load (ETL) for database transfer, the same detailed mapping of data elements is required.

ESP uses DataSpecs® to create the basic element mappings for vendors, and then extends it to identify any missing required elements. The result is an enhanced listing that eliminates any ambiguity for vendors regarding the expected layout. The example shown is for Ed-Fi API loading.

**Metadata**  
*Mapping is the process by which metadata for two different is correlated for interoperability. In the context of Ed-Fi, this means the mapping of metadata so that data content can be transferred using the Ed-Fi API.*

Source Repository	Source Table	Source Field	Standard Repository	Standard Table	Standard Field
codelibrary	District	City	Ed-Fi_ODS 5.3	edfi.EducationOrganizationAddress	City
codelibrary	District	County	Ed-Fi_ODS 5.3	edfi.EducationOrganizationAddress	NameOfCounty
codelibrary	District	DistrictCode	Ed-Fi_ODS 5.3	edfi.EducationOrganization	EducationOrganizationId
codelibrary	District	DistrictCode	Ed-Fi_ODS 5.3	edfi.EducationOrganization	EducationOrganizationId
codelibrary	District	DistrictCode	Ed-Fi_ODS 5.3	edfi.EducationOrganizationAddress	EducationOrganizationId
codelibrary	District	DistrictCode	Ed-Fi_ODS 5.3	edfi.EducationOrganizationCategory	EducationOrganizationId
codelibrary	District	DistrictCode	Ed-Fi_ODS 5.3	edfi.EducationOrganizationInstitutionTelephone	EducationOrganizationId
codelibrary	District	DistrictCode	Ed-Fi_ODS 5.3	edfi.LocalEducationAgency	LocalEducationAgencyId
codelibrary	District	DistrictName	Ed-Fi_ODS 5.3	edfi.EducationOrganization	NameOfInstitution
codelibrary	District	DistrictName	Ed-Fi_ODS 5.3	edfi.EducationOrganization	NameOfInstitution
codelibrary	District	DistrictShortName	Ed-Fi_ODS 5.3	edfi.EducationOrganization	ShortNameOfInstitution
DOE-ESchoolPlus	ATT_BOTTOMLINE	ATTENDANCE_CODE	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEvent	AttendanceEventCategoryDescriptorI
DOE-ESchoolPlus	ATT_BOTTOMLINE	ATTENDANCE_CODE	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEventClassPeriod	AttendanceEventCategoryDescriptorI
DOE-ESchoolPlus	ATT_BOTTOMLINE	ATTENDANCE_DATE	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEvent	EventDate
DOE-ESchoolPlus	ATT_BOTTOMLINE	ATTENDANCE_DATE	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEventClassPeriod	EventDate
DOE-ESchoolPlus	ATT_BOTTOMLINE	ATTENDANCE_PERIOD	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEventClassPeriod	ClassPeriodName
DOE-ESchoolPlus	ATT_BOTTOMLINE	SCHOOL_YEAR	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEvent	SchoolYear
DOE-ESchoolPlus	ATT_BOTTOMLINE	SCHOOL_YEAR	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEventClassPeriod	SchoolYear
DOE-ESchoolPlus	ATT_BOTTOMLINE	STUDENT_ID	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEvent	{student.studentUniqueId}
DOE-ESchoolPlus	ATT_CFG	PERIOD_TYPE	Ed-Fi_ODS 5.3	de.SchoolExtension	AttendanceConfigCategoryDescriptorI
DOE-ESchoolPlus	ATT_CODE	STATE_CODE_EQUIV	Ed-Fi_ODS 5.3	edfi.StudentSchoolAttendanceEvent	AttendanceEventCategoryDescriptorI
DOE-ESchoolPlus	ATT_PERIOD	ATT_PERIOD_ORDER	Ed-Fi_ODS 5.3	de.ClassPeriodExtension	AttendancePeriodOrder
DOE-ESchoolPlus	ATT_PERIOD	ATTENDANCE_PERIOD	Ed-Fi_ODS 5.3	edfi.ClassPeriod	OfficialAttendancePeriod
			Ed-Fi_ODS 5.3	edfi.ClassPeriod	SchoolId
			Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEvent	SchoolId
			Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEventClassPeriod	SchoolId
DOE-ESchoolPlus	ATT_PERIOD	DESCRIPTION	Ed-Fi_ODS 5.3	de.ClassPeriodExtension	Description
DOE-ESchoolPlus	ATT_PERIOD	END_TIME	Ed-Fi_ODS 5.3	edfi.ClassPeriodMeetingTime	EndTime
DOE-ESchoolPlus	ATT_PERIOD	PERIOD_VALUE	Ed-Fi_ODS 5.3	edfi.ClassPeriod	ClassPeriodName

Note that the mapping describes the eSchoolPlus vendor mapping information along with organizational data required from the district authoritative data. Note also the missing items near the bottom of the table. These are gaps in the mapping that should be resolved with the vendor before data loading is initiated.

### HOW DO I GET STARTED?

*ESP offers a unique approach to our Ed-Fi Product Suite. At no charge, ESP will allocate one week of services to implement a structured evaluation with customer stakeholders. The evaluation considers the full set of service requirements, hosting considerations, and an assessment of the viable and desired data content. The result of the evaluation is a product and service offering with one-year guaranteed fixed price.*

For more information on ESP Managed Service Products, please visit [www.espmsp.com](http://www.espmsp.com) or [www.espsolutionsgroup.com](http://www.espsolutionsgroup.com), call 512-879-5300, or email [info@espsg.com](mailto:info@espsg.com).



# Traceability Mapping Services

Source Repository	Source Table	Source Field	Standard Repository	Standard Table	Standard Field	Target Repository	Target Table	Target Field
codeLibrary	District	City	Ed-Fi_ODS 5.3	edfi.EducationOrganizationAddress	City			
codeLibrary	District	County	Ed-Fi_ODS 5.3	edfi.EducationOrganizationAddress	NameOfCounty			
codeLibrary	District	DistrictCode	Ed-Fi_ODS 5.3	edfi.EducationOrganization	EducationOrganizationId	iMartADW	DM1_COHORT_GROUP	COHORT_GROUP_DESC
codeLibrary	District	DistrictCode	Ed-Fi_ODS 5.3	edfi.EducationOrganization	EducationOrganizationId	iMartADW	DM1_ORGANIZATION	ORGANIZATION_ID
codeLibrary	District	DistrictCode	Ed-Fi_ODS 5.3	edfi.EducationOrganization	EducationOrganizationId			
codeLibrary	District	DistrictCode	Ed-Fi_ODS 5.3	edfi.EducationOrganizationCategory	EducationOrganizationId			
codeLibrary	District	DistrictCode	Ed-Fi_ODS 5.3	edfi.EducationOrganizationTelephone	EducationOrganizationId			
codeLibrary	District	DistrictCode	Ed-Fi_ODS 5.3	edfi.LocalEducationAgency	LocalEducationAgencyId			
codeLibrary	District	DistrictName	Ed-Fi_ODS 5.3	edfi.EducationOrganization	NameOfInstitution	iMartADW	DM1_ORGANIZATION	ORGANIZATION_NAME
codeLibrary	District	DistrictName	Ed-Fi_ODS 5.3	edfi.EducationOrganization	NameOfInstitution	iMartADW	FCT_COURSE_GRADE	COURSE_SITE_NAME
codeLibrary	District	DistrictShortName	Ed-Fi_ODS 5.3	edfi.EducationOrganization	ShortNameOfInstitution			
DOE-EschoolPlus	ATT_BOTTOMLINE	ATTENDANCE_CODE	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEvent	AttendanceEventCategoryDescriptorId			
DOE-EschoolPlus	ATT_BOTTOMLINE	ATTENDANCE_CODE	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEventClassPeriod	AttendanceEventCategoryDescriptorId			
DOE-EschoolPlus	ATT_BOTTOMLINE	ATTENDANCE_DATE	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEvent	EventDate			
DOE-EschoolPlus	ATT_BOTTOMLINE	ATTENDANCE_DATE	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEventClassPeriod	EventDate			
DOE-EschoolPlus	ATT_BOTTOMLINE	ATTENDANCE_PERIOD	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEventClassPeriod	ClassPeriodName			
DOE-EschoolPlus	ATT_BOTTOMLINE	SCHOOL_YEAR	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEvent	SchoolYear			
DOE-EschoolPlus	ATT_BOTTOMLINE	SCHOOL_YEAR	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEvent	SchoolYear			
DOE-EschoolPlus	ATT_BOTTOMLINE	STUDENT_ID	Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEvent	{student.studentUniqueId}			
DOE-EschoolPlus	ATT_CFG	PERIOD_TYPE	Ed-Fi_ODS 5.3	de.SchoolExtension	AttendanceConfigCategoryDescriptorId			
DOE-EschoolPlus	ATT_PERIOD	STATE_CODE_EQUIV	Ed-Fi_ODS 5.3	edfi.StudentSchoolAttendanceEvent	AttendanceEventCategoryDescriptorId			
DOE-EschoolPlus	ATT_PERIOD	ATT_PERIOD_ORDER	Ed-Fi_ODS 5.3	de.ClassPeriodExtension	AttendancePeriodOrder	iMartADW	DM1_PERIOD	PERIOD_CD_SORT_ORDER
DOE-EschoolPlus	ATT_PERIOD	ATTENDANCE_PERIOD	Ed-Fi_ODS 5.3	edfi.ClassPeriod	OfficialAttendancePeriod			
			Ed-Fi_ODS 5.3	edfi.ClassPeriod	SchoolId			
			Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEvent	SchoolId			
			Ed-Fi_ODS 5.3	edfi.StudentSectionAttendanceEventClassPeriod	SchoolId			
DOE-EschoolPlus	ATT_PERIOD	DESCRIPTION	Ed-Fi_ODS 5.3	de.ClassPeriodExtension	Description	iMartADW	DM1_PERIOD	PERIOD_DESC
DOE-EschoolPlus	ATT_PERIOD	END_TIME	Ed-Fi_ODS 5.3	edfi.ClassPeriodMeetingTime	EndTime	iMartADW	DM1_PERIOD	PERIOD_END_TIME
DOE-EschoolPlus	ATT_PERIOD	PERIOD_VALUE	Ed-Fi_ODS 5.3	edfi.ClassPeriod	ClassPeriodName	iMartADW	DM1_PERIOD	PERIOD_CD

A unique feature of ESPs mapping services is the ability to link mappings from source system to Ed-Fi repository and on to other repositories that are populated from Ed-Fi.

In this example, the previous mapping from eSchoolPlus to Ed-Fi v5.3 is extended to map the data elements from operational to longitudinal analysis systems. In this case, the longitudinal system is iMart.

While not all operational elements are transmitted to the longitudinal system, the result provides an important traceability of data content from source system to the operational use and then to the longitudinal system from which trend analysis and other temporal evaluations are performed.

This traceability allows users to see the “big picture.” Longitudinal analytics are enhanced when the sources of data and metrics are made transparent to stakeholders.