Common Education Data Standards

NCES STATS-DC Summer Data Conference

Bethesda, MD | July 27 – 29, 2011

Data Mapping: Step One in CEDS Adoption

Today's Agenda

❖ **Welcome and Introductions**

❖ **Overview of AITF**

       Purpose and Scope

       Levels of Adoption

❖ **Data Mapping**

       Methodology

       Implementation Example: Illinois

❖ **PESC and SIF Mapping**

       Alignment to CEDS

       Next Steps in Implementation

❖ **Questions/Comments**

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OVERVIEW OF THE ADOPTION AND IMPLEMENTATION TASK FORCE (AITF)

Purpose and Scope

- Drive awareness of CEDS

- Promote voluntary adoption of CEDS elements

- Provide documentation and tools to
  - Schools
  - Districts
  - Postsecondary institutions
  - States
  - Policymakers
  - Researchers
  - Vendors

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Purpose and Scope

- Advocate voluntary adoption

- Develop and implement adoption plans

- Capture feedback

- Provide support to implementers

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Who we are

- State and federal education agencies

- Districts and schools

- Institutions of higher education

- Researchers

- Trade associations

- Vendors

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Getting Involved

- Tier 1
  - Meets weekly on Thursday at 1:00 pm Eastern via webex
    - Primary working group

- Tier 2
  - Monthly forums on the first Thursday of every month at 1:00 pm Eastern
    - Adoption and implementation resource

  Please contact Kimberly Rhodes at Kimberlyr@ccsso.org if you interested in becoming either a tier 1 or 2 member.

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Adoption Defined

An organization (schools, districts, postsecondary institutions, states, researchers, and the vendor community) is considered to have adopted the CEDS standards when they have met one of the levels defined below. Data standards are critical to the interoperability necessary to ensure continuous improvement across all sectors of the education enterprise. It should not be implied that an organization must change their current physical data systems to adopt CEDS.

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Adoption Defined

Lets break it down....

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Adoption Defined

An organization
- schools,
- districts,
- postsecondary institutions,
- states,
- researchers, and
- the vendor community

is considered to have adopted the CEDS standards when they have met one of the levels (of adoption)

Data standards are critical to the interoperability necessary to ensure continuous improvement across all sectors of the education enterprise.

It should not be implied that an organization must change their current physical data systems to adopt CEDS.

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Adoption Levels

- **<u>Level 1 – Acknowledgement & Recognition:</u>** The organization has analyzed and acknowledges that the CEDS is vital to optimizing the ability for state/district/postsecondary institution student information systems to share, compare, and analyze these elements. However, there are legislative or other barriers that need to be overcome in order to make the formal decision to accept the data definitions, terminology, relationships, and code sets for a core subset of data elements.

- **<u>Level 2 – Agreement and Acceptance</u>**: The organization has made a formal decision to accept the data definitions, terminology, relationships, and code sets for a core subset of data elements commonly used by and among state/district/postsecondary institution student information systems. This acceptance will be reflected by either adoption of or mapping to the CEDS. The subset of data elements will vary based on the data being shared, compared, and/or analyzed in Level 5.

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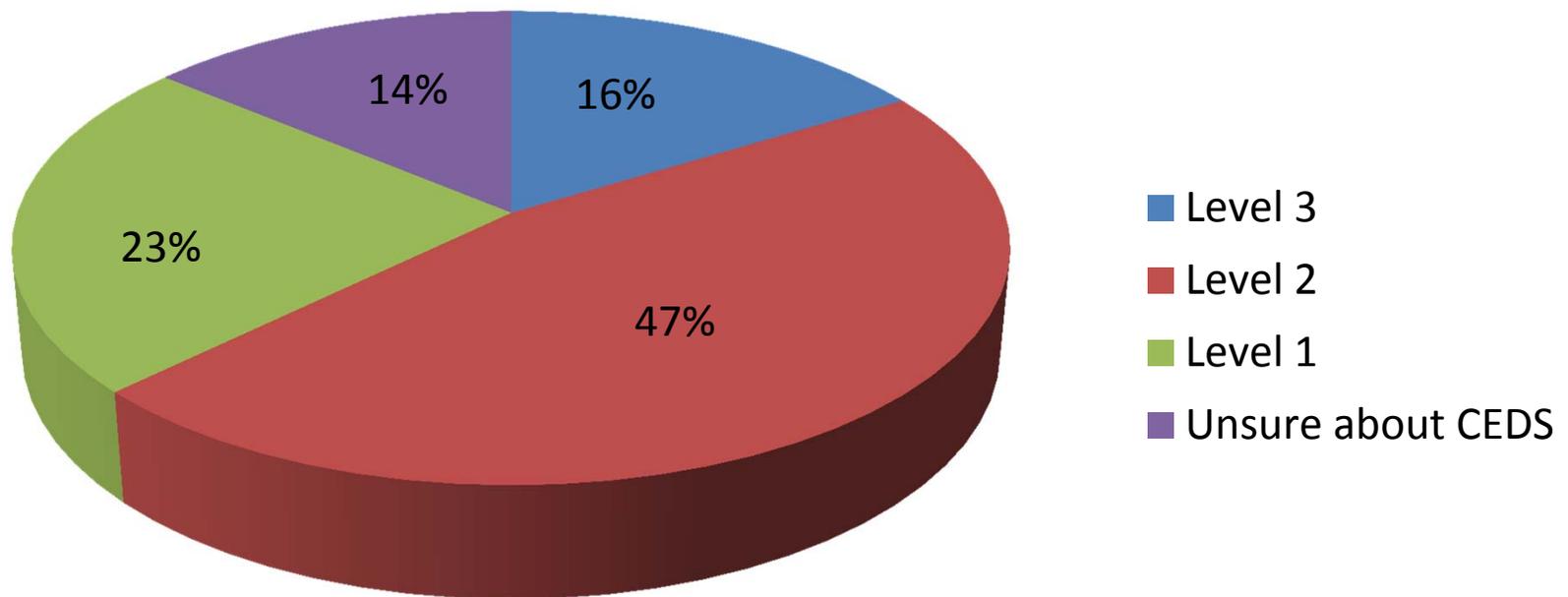Standards

Adoption Levels

- **<u>Level 3 – Technically Documented:</u>** The organization has mapped to and can publish technical documents with metadata* that includes, the data definitions, terminology and code sets for a core subset of data elements commonly used by states in their P-20 SLDSs. The subset of data elements will vary based on the data being shared, compared, and/or analyzed in Level 5.

In common usage, metadata stores data about the structure, context and meaning of raw data, and computers use it to help organize and interpret data, turning it into meaningful information

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Adoption Levels

- **Level 4 – <u>Ready to Exchange</u>**: Has stored and/or has the capability to represent, the data definitions, terminology, relationships, and code sets for a core subset of data elements commonly used by state/district/postsecondary institution student information systems and enables these systems to share, compare, and analyze these elements.

- **Level 5 – <u>Operational</u>**: The organization is operationally sharing, comparing, and analyzing data with at least one stakeholder partner using CEDS.

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Adoption & Implementation Update

Pie chart segments:
- 16% Level 3
- 47% Level 2
- 23% Level 1
- 14% Unsure about CEDS

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DATA MAPPING FOR CEDS ADOPTION AND IMPLEMENTATION

States Mapped to Core

Legend:
- Green — Mapped in 2nd Phase
- Yellow — Mapped in 1st Phase

Status of States Mapped to Core

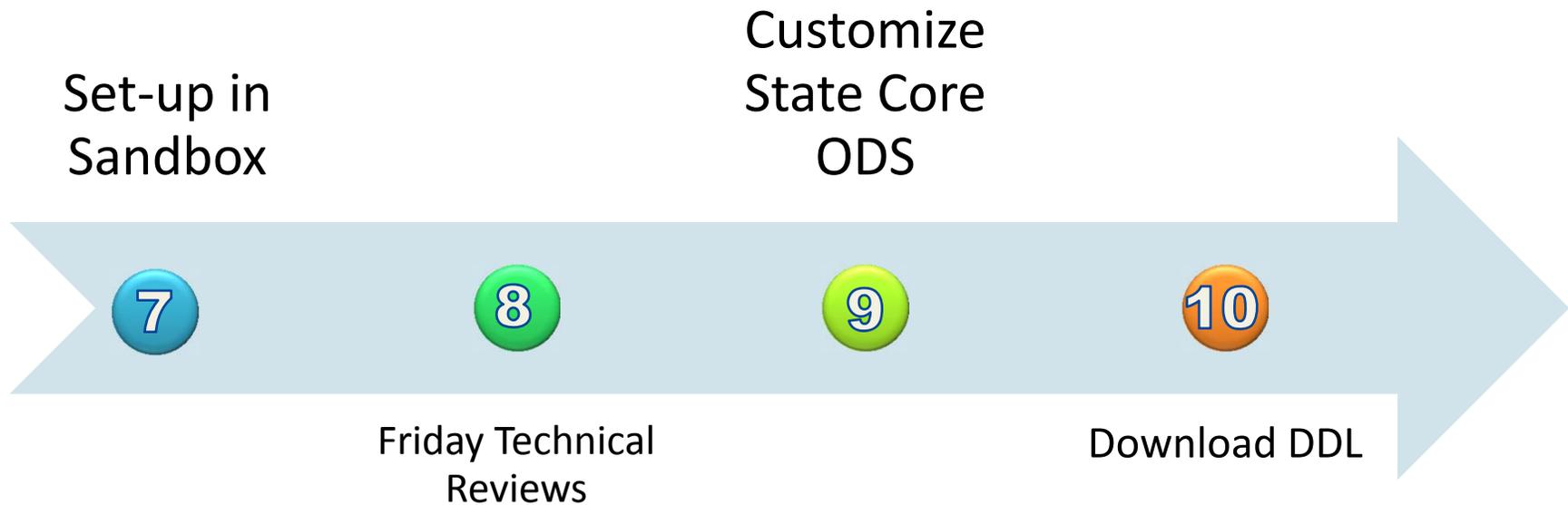|	AR	IL	UT	MI	WY	ND	CA	NJ	WA	VA	IA	KS	NC	OR	RI	AZ	KY	AK
Map Status	M	M	M	M	M	M	M	M	M	M	M	IP	IP	IP	IP	IP	IP	IP
Contact	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Discovery	x	x	x	x	x	x	x	x	x	x	x	x	x	-	x	-	x	x
Mapping (Data Mapper)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Mapping (Agency Expert)	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		
Map & Gap	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
Final Presentation	x	x	x	x	x	x	x	x	x	x	x	s						
Sandbox	s	x	x															
Technical Calls	x	x	x	x	x	x												

17

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Data Mapping Methodology

✓ "It doesn't exist if it's not written down."

✓ "No homework."

- Get the artifact, map, or review live on WebEx.

✓ 10 Steps to CEDS Mapping

- Compare a new element with an existing list.
- If it is a new name for a comparable thing, map it.
- If it is not comparable to an existing thing, add it.

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Metadata Map & Gap

Contact

Mapping
- Data Mapper

Map and Gap Analysis

1 2 3 4 5 6

Discovery
- 1 Hour with State Team

Mapping
- 1-5 Hours with Agency Expert

Final Presentation
- 1 Hour with State Team

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State Core ODS Review

Set-up in
Sandbox

Customize
State Core
ODS

7 8 9 10

Friday Technical
Reviews

Download DDL

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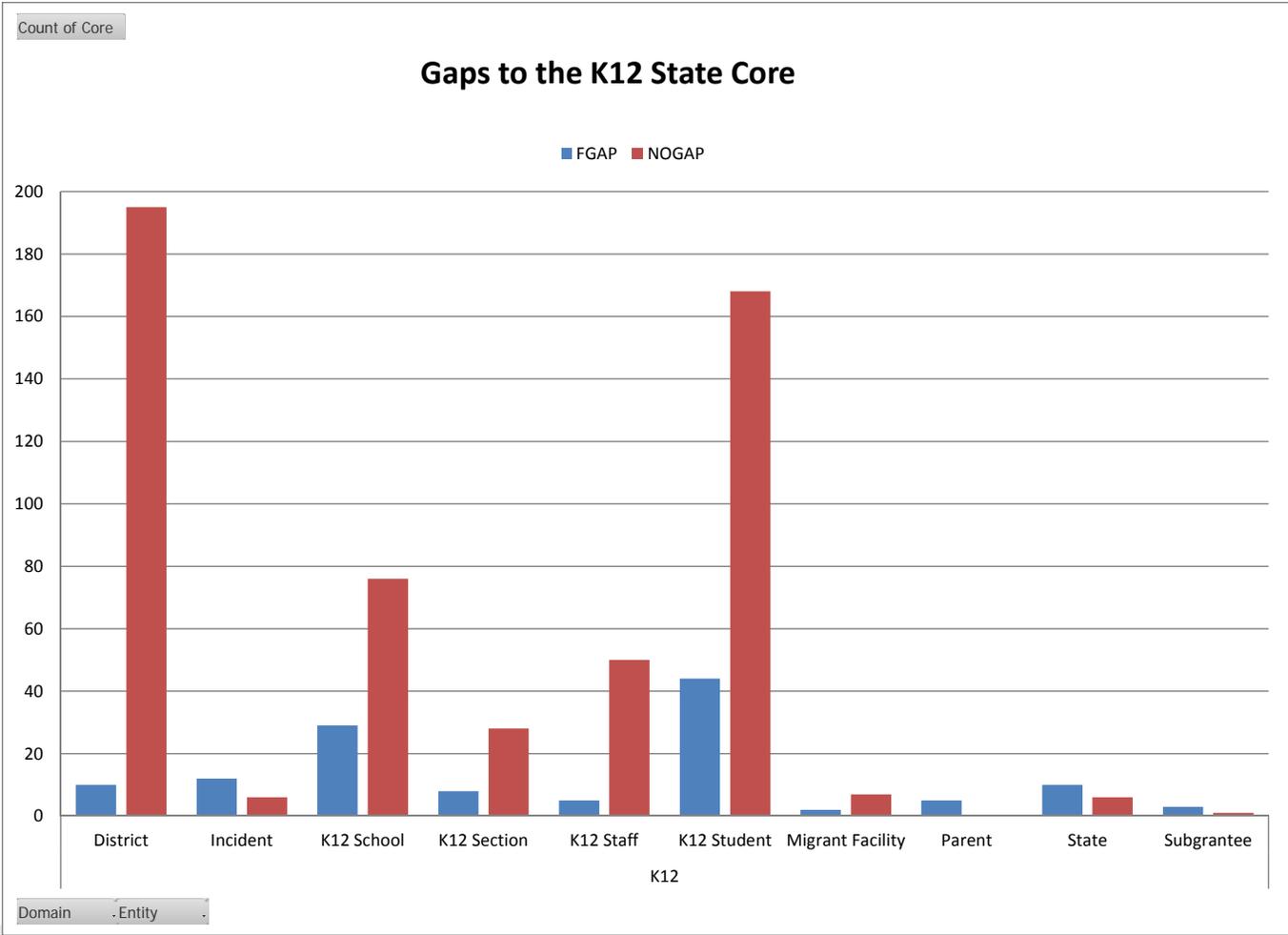**E**ducation
Data
Standards
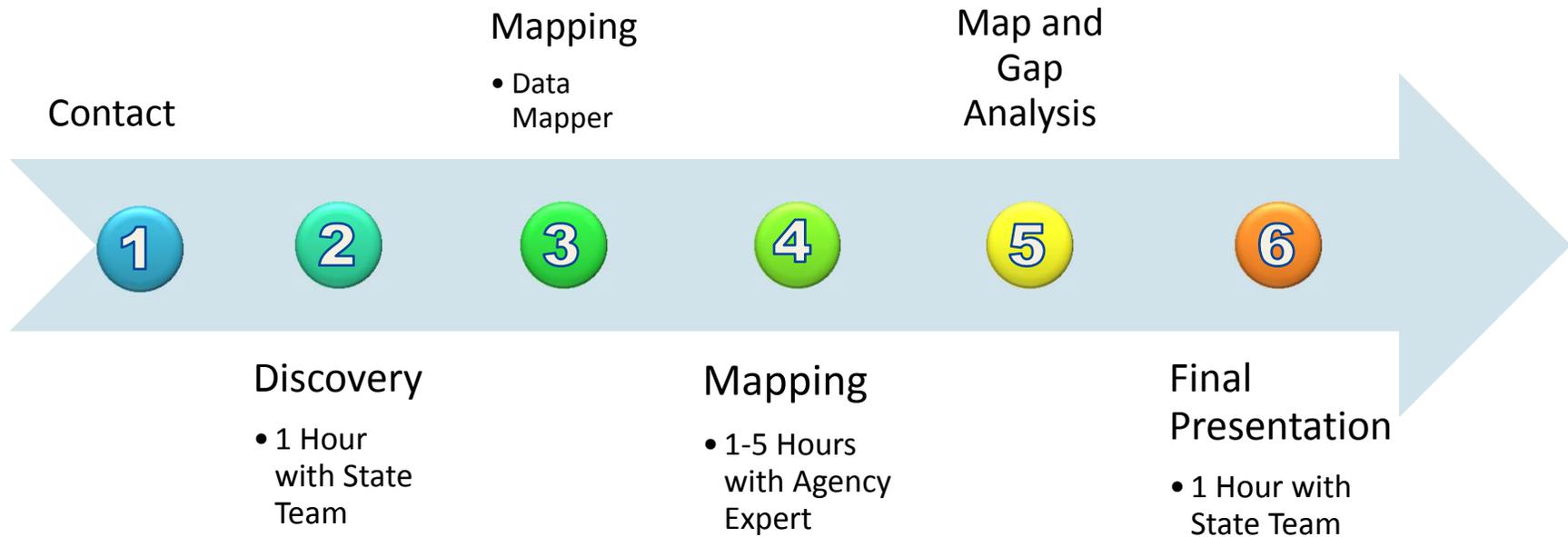
SEA Involvement in Mapping

- Metadata Map & Gap
  - 1 hour Discovery Webex
    - Larger state team
  - 1 hour mapping validation (occurs 2-5 times)
    - SEA expert(s)
  - 1 hour Final Presentation Webex
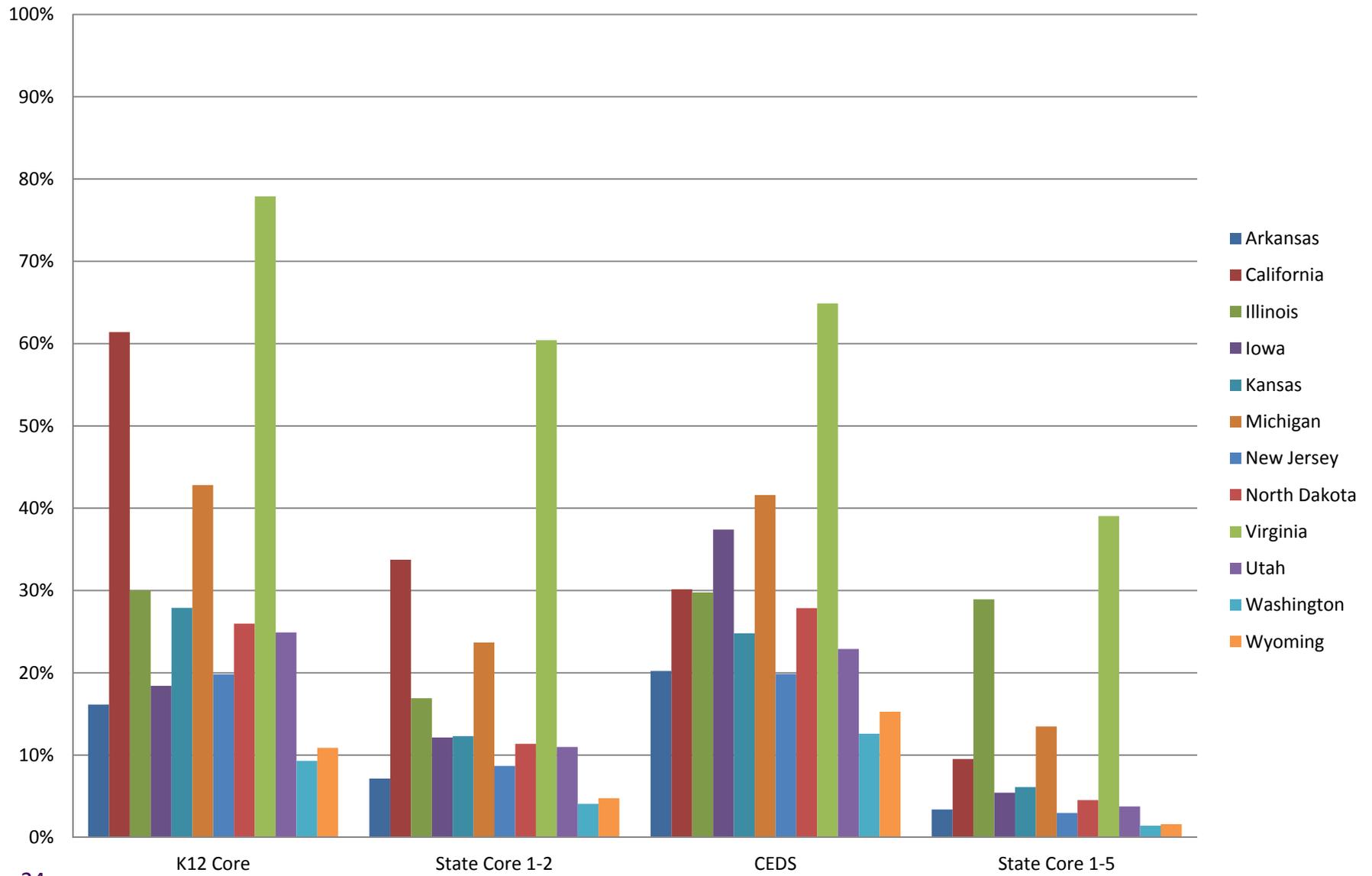   - Larger state team

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Data Mapping

Do mai	New ID	Entity	Attribute Category / Table	Attribute / Field Display Name	Data Type	Option Set / Disp	Definition	AR	CA	Recommendation	Notes	Field #	Public Name	Entity	Attribute	Definition	Codeset	Field Type	Max Length	Validation	Required	Rep y
K12	300	K12 Student		Identity Local Identifier	VarChar(	1-50	A unique			NO GAP		1.09	Local	Student	Student	A unique	CS		15-Jan		Y	Stu
K12	301	K12 Student		Identity Social Security Number	Char(9)	9	The nine-			DGAP												
K12	302	K12 Student		Identity First Name	VarChar(	1-60	The full			NO GAP		1.10	Student	Student	Student	#########	CS		30-Jan	May only	Y	Stu
K12	303	K12 Student		Identity Last Name	VarChar(	1-60	The full			NO GAP		1.12	Student	Student	Student	#########	CS		19-Feb	May only	Y	Stu
K12	304	K12 Student		Identity Middle Name	VarChar(	1-60	A full			NO GAP		1.11	Student	Student	Student	#########	CS		30-Jan	May only	N	Stu
K12	305	K12 Student		Identity Generation Code	VarChar(	1-8	An			NO GAP		1.13	Student	Student	Student	#########	See Code	CS		3-Jan		N	Stu
K12	306	K12 Student		Identity Personal Title	VarChar(	1-8	An			DGAP												
K12	307	K12 Student		Identity Second Last Name	VarChar(	1-30	If			DGAP	Second											
K12	308	K12 Student		Identity Other Name	VarChar(	1-30	Previous,			NO GAP		1.16		Student A	Student A	Student L	An alternative last/	CS		19-Feb	1) May on	N	Stu
K12	309	K12 Student		Demographic Sex	VarChar(	Male,F	The			NO GAP		1.18	Student	Student	Gender	#########	See Code	CS		1-Jan	Student	Y	Stu
K12	310	K12 Student		Demographic Birthdate	Char(8)	MM-	The			NO GAP		1.17	Student	Student	Student	The	DT		8-Jan	#########	Y	
K12	311	K12 Student		Demographic Years Over Age for Grade	Char(1)	1	The			DGAP												
K12	312	K12 Student		Demographic Race Reporting Group	VarChar(	Hispan	The			DGAP												
K12	313	K12 Student		Demographic Hispanic	VarChar	Hispan	An			NO GAP		2.24	Student	Student	Student	#########	CS		1-Jan	If Student	If Student	Stu
K12	314	K12 Student		Demographic American Indian	VarChar	Americ	A person			NO GAP		2.26	Student	Student	Race	A coded	See Code	CS		3-Jan	If Student	If Student	Stu
K12	315	K12 Student		Demographic Asian	VarChar	Asian,	A person			NO GAP		2.27	Student	Student	Race	A coded	See Code	CS		3-Jan	If Student	N	Stu
K12	316	K12 Student		Demographic Black	VarChar	Black,	A person			NO GAP		2.28	Student	Student	Race	A coded	See Code	CS		3-Jan	If Student	N	Stu
K12	317	K12 Student		Demographic Pacific Islander	VarChar	Pacific	A person			NO GAP		2.29	Student	Student	Race	A coded	See Code	CS		3-Jan	If Student	N	Stu
K12	318	K12 Student		Demographic White	VarChar	White,	A person			NO GAP		2.30	Student	Student	Race	A coded	See Code	CS		3-Jan	If Student	N	Stu
K12	319	K12 Student		Demographic Economic Disadvantaged Status	VarChar(	Yes,No	An			NO GAP	Combinati											
K12	320	K12 Student		Demographic Home Language	VarChar(	1-3	The			NO GAP	CALPADS -	1.22	Primary	Student	Language	#########	See Code	CS		2-Jan		Y	Stu
K12	321	K12 Student		Demographic City of Birth	VarChar(	1-30	The			NO GAP		1.19	Student	Student	Student	The	CS		30-Jan	May only	N	Stu
K12	322	K12 Student		Demographic State of Birth	Char(2)	2	The						1-Jan	Student	Student	State Or	The		See Code	6-Jan	Student	N	
K12	323	K12 Student		Demographic Country of Birth	VarChar(	1-4	The			NO GAP		1.21	Student	Student	Country	A coded	See Code	CS		2-Jan	Student	Y	
K12	324	K12 Student		Demographic Family Size	VarChar(	1-4	The size			DGAP												
K12	325	K12 Student		Enrollment Student Status at Count Point in Time	VarChar(	Active	An			NO GAP		1.24	Enrollmen	Student	Enrollmen	A coded	See Code	CS		2-Jan		Y	Stu
K12	326	K12 Student		Enrollment Member School	VarChar(	1-7	A unique			NO GAP		1.05	School of	Student	ESI ID	A unique	CS		7-Jan	Must be a	Y	Stu
K12	327	K12 Student		Enrollment Member School Grade Entry Date	DateTim	MM-	The			NO GAP		1.23	Student	Student	Student	#########	DT		8-Jan	1) Must be	Y	Stu
K12	328	K12 Student		Enrollment Member School Grade Exit Date	DateTim	MM-	The			NO GAP		1.26	Student	Student	Withdraw	#########	DT		8-Jan	#########	N	Stu
K12	329	K12 Student		Enrollment Member LEA	VarChar(	1-5	A unique			NO GAP		1.04	Reporting	Student	ESI ID Lea	A unique	CS		7-Jan	Must	Y	Stu
K12	330	K12 Student		Enrollment Member LEA Entry Date	DateTim	MM-	The			NO GAP		1.23	Student	Student	Student	#########	DT		8-Jan	1) Must be	Y	Stu
K12	331	K12 Student		Enrollment Member LEA Exit Date	DateTim	MM-	The			NO GAP		1.26	Student	Student	Withdraw	#########	DT		8-Jan	#########	N	Stu
K12	332	K12 Student		Enrollment Member LEA Exit Type	VarChar(	Decea	The			NO GAP		1.27	Student	Student	Student	A coded	See Code	CS		4-Jan		N	Stu
K12	333	K12 Student		Enrollment School Identification System	VarChar(	######	A coding			DGAP												
K12	334	K12 Student		Enrollment LEA Identification System	VarChar(	######	A coding			DGAP												
K12	335	K12 Student		Enrollment Entry Grade Level	VarChar(	######	An			NO GAP		1.25	Grade	Student	Grade	#########	See Code	CS		2-Jan	Student	If SSID is	Stu
K12	336	K12 Student		Enrollment Retained from previous year	VarChar(	Yes,No	An			NO GAP	derived											
K12	337	K12 Student		Enrollment NGA Graduation Cohort Group	Char(4)	YYYY	The year			NO GAP		2.47	Student	Student	Student	#########			9-Jan		If Grade	Stu
K12	338	K12 Student		Enrollment Diploma or Credential Type	VarChar(	######	The type			NO GAP		1.28	Student	Student	School	A coded	See Code	CS		3-Jan	1) Student	If Student	Stu
K12	339	K12 Student		Enrollment Resident State	Char(2)	2	The			NO GAP		2.39	Residenti	Address	State Or	A coded	See Code	CS		6-Jan		If Primary	Add
K12	340	K12 Student		Enrollment Resident LEA	VarChar(	1-5	The			NO GAP		2.35	District of	Student	ESI ID	#########	CS		7-Jan	If	Stu
K12	341	K12 Student		Enrollment Resident School	VarChar(	1-3	The				not											
K12	342	K12 Student		Enrollment Address Type	VarChar(	Mailin	The type			DGAP												
K12	343	K12 Student		Enrollment Street Number and Name	VarChar(	1-30	The			NO GAP		2.36	Residenti	Address	Address	#########	CS		29-Feb		If Primary	Add
K12	344	K12 Student		Enrollment Apartment Room Suite Number	VarChar(	1-10	The			NO GAP		2.37	Residenti	Address	Address	#########	CS		29-Feb	N	Add
K12	345	K12 Student		Enrollment City	VarChar(	1-30	The			NO GAP		2.38	Residenti	Address	Address	The	CS		30-Jan		If Primary	Add
K12	346	K12 Student		Enrollment Name of County	VarChar(	1-30	The			NO GAP	based on											
K12	347	K12 Student		Enrollment State Abbreviation	VarChar(	1-2	The			NO GAP		2.39	Residenti	Address	State Or	A coded	See Code	CS		6-Jan		If Primary	Add
K12	348	K12 Student		Enrollment Postal Code	VarChar(	5-10	A			NO GAP		2.40	Residenti	Address	Address	#########	CS		10-Jan		If Primary	Add

Title Page | **Unified Data Maps** | Entities | Report Groups | Reports | ODS Tables | ODS Fields | ODS Reference List Values

Map & Gap

Gaps to the K12 State Core

States Mapped to the State Core
Percentage of Elements that Map*

CEDS Implementation Example: Illinois

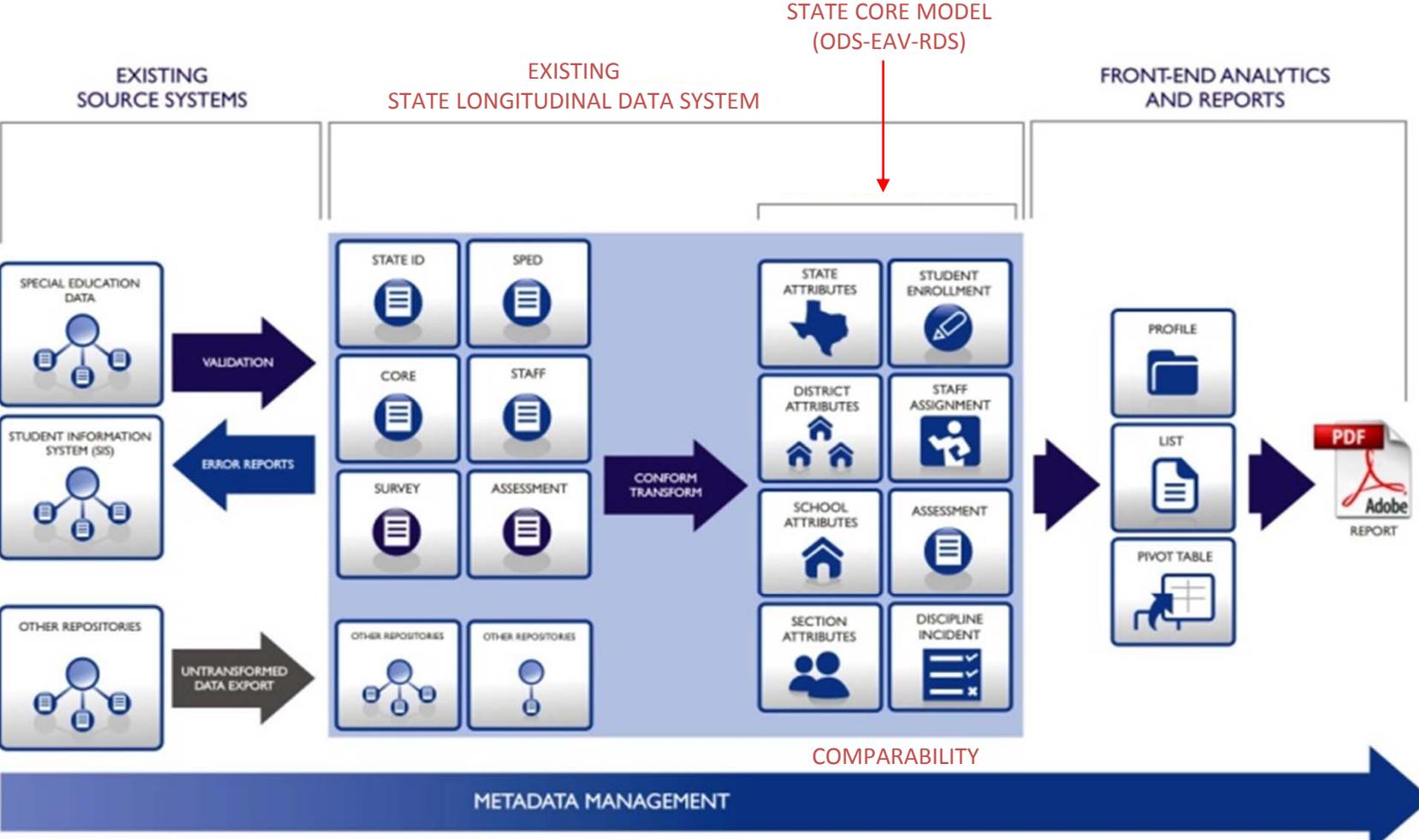# ISBE has implemented CEDS through adaption of CCSSO's State Core Model

Entity	Attribute Category / Table	Attribute / Field Display Name	Data Type	Option Set / Disp Val	Definition	G / or	C	Core	M an	R e	Justification	CEDS	CEDS Element Nam	CEDS Definition	CEDS Code Set	NEDM Code
K12 Student	Identity	State Unique Student Identifier	VarChar(	1-10	A unique	G		1			SLDS	D	Identifica	A unique	None	
K12 Student	Identity	State Student Identifier Type	VarChar(	######	A coding						MSIX	D	Identifica	A coding	#########	
K12 Student	Identity	Local Identifier	VarChar(	1-50	A unique	G		1			SLDS	N				
K12 Student	Identity	Social Security Number	Char(9)	9	The nine-	G		3			Perkins	N				
K12 Student	Identity	First Name	VarChar(	1-60	The full	G		1			SLDS	Y	First	The full	None	00996 -
K12 Student	Identity	Last Name	VarChar(	1-60	The full	G		1			SLDS	Y	Last/Surn	The full	None	00996 -
K12 Student	Identity	Middle Name	VarChar(	1-60	A full	G		2			SLDS	Y	Middle	A full	None	00996 -
K12 Student	Identity	Generation Code	VarChar(	1-8	An	G		3			SLDS	Y	Generati	An	None	
K12 Student	Identity	Personal Title	VarChar(	1-8	An	G		3			NEDM	Y	Personal	An	None	
K12 Student	Identity	Second Last Name	VarChar(	1-30	If	G		3			MSIX	N				
K12 Student	Identity	Other Name	VarChar(	1-30	Previous,	G		3				Y	Other	Previous,	None	
K12 Student	Demographic	Sex	VarChar(	Male,F	The	G		1	Y		EDEN	Y	Sex	The	Female	01631 -
K12 Student	Demographic	Birthdate	Char(8)	MM-	The	G		1			EDEN	Y	Birthdate	The	None	Date
K12 Student	Demographic	Years Over Age for Grade	Char(1)	1	The	D		3			Risk	N				
K12 Student	Demographic	Race Reporting Group	VarChar(	Hispan	The	D		2			EDEN	N	Race	#########	Yes, No	
K12 Student	Demographic	Hispanic	VarChar	Hispan	An	G		2			EDEN	Y	Hispanic	An	Yes, No	02304 -
K12 Student	Demographic	American Indian	VarChar	Americ	A person	G		2			EDEN	D	Race	#########	Yes, No	Yes,No
K12 Student	Demographic	Asian	VarChar	Asian,	A person	G		2			EDEN	D	Race	#########	Yes, No	
K12 Student	Demographic	Black	VarChar	Black,	A person	G		2			EDEN	D	Race	#########	Yes, No	Yes,No
K12 Student	Demographic	Pacific Islander	VarChar	Pacfic	A person	G		2			EDEN	D	Race	#########	Yes, No	Yes,No
K12 Student	Demographic	White	VarChar	White,	A person	G		2			EDEN	D	Race	#########	Yes, No	Yes,No
K12 Student	Demographic	Economic Disadvantaged Status	VarChar(	Yes,No	An	G		2			EDEN	Y	Economic	An	Yes	00002 -
K12 Student	Demographic	Home Language	VarChar(	1-3	The	G		2			EDEN	N				Any
K12 Student	Demographic	City of Birth	VarChar(	1-30	The name	G		3			SLDS	N				
K12 Student	Demographic	State of Birth	Char(2)	2	The	G		3			SLDS	N				3348 - AL
K12 Student	Demographic	Country of Birth	VarChar(	1-4	The	G		3			SLDS	Y	Country	The	There are	3402 - AS
K12 Student	Demographic	Family Size	VarChar(	1-4	The size			3				N				
K12 Student	Enrollment	Student Status at Count Point in Time	VarChar(	Active	An	D		2			EDEN	N				
K12 Student	Enrollment	Member School	VarChar(	1-7	A unique	G		1			EDEN	Y	Identifica	A unique	None	
K12 Student	Enrollment	Member School Grade Entry Date	DateTim	MM-	The	G		2			EDEN	D	Entry	The	None	Date
K12 Student	Enrollment	Member School Grade Exit Date	DateTim	MM-	The	G		2			EDEN	D	Exit/With	The	None	Date
K12 Student	Enrollment	Member LEA	VarChar(	1-5	A unique	G		1			EDEN	Y	Identifica	A unique	None	

Page / ODS Tables / ODS Fields / ODS Reference List Values / RDS Entities / Report Groups / Reports / **RDS Data Dictionary**

State Core provides a standard framework for CEDS SLDS Implementation.

	Common State Implementation Model		

Layer	Layer Type	Build	Description
1	LEA Source Transactional	Physical	
2	Interoperability Exchange File	Physical	
3	SLDS Validation ODS	Physical	
4	SEA Source Staging	Physical	Un-Transformed
5	ODS Staging Subjects	Logical	De-normalized view used for transformations
6	ODS	Physical	3rd Normal RDMS
7	RDS Snapshot View	Logical	De-normalized snapshot view
8	Analytic/Dimensional	Physical	OLAP Cube on Star Schema
9	Reporting Optimized DataMarts	Physical	De-Normalized and Indexed Snapshot
10	SLDS Exchange to National SLI	Physical	SIF

IL is using the State Core Model as the foundation for its Data Warehouse.

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State Core + SIF = Enterprise Education Bus + Master Data Management

LEA Sources
- SIS
- Others

ISBE DW
- **SIF Agent**

LEA Sources
- District Interface

Other Sources
- EC
- PS
- WF

State Core Model

Trust & Access Mgmt

SIF ZIS/ Broker

WSDL/ SOAP

Class Roster

Student Profile

Staff Profile

Destination: 8th grade Algebra

SPED IEP   DIFFERENTIATED INSTRUCTION   AFTER SCHOOL

98% Attendance   Current location: School   Elapsed time: 25 days   Proficient

Calculating route
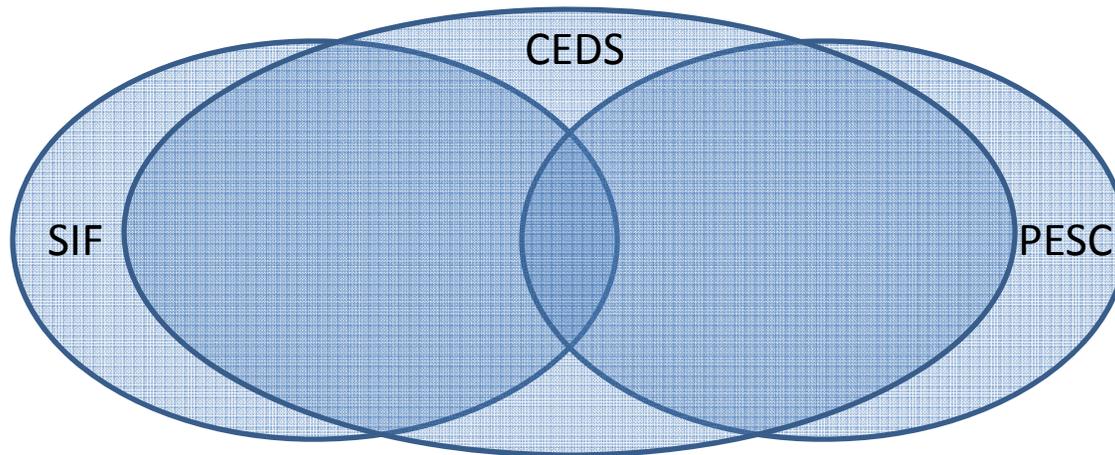
CCSSO

Learning Performance Management Apps

Assessment and Evaluation Data

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PESC AND SIF MAPPING TO CEDS
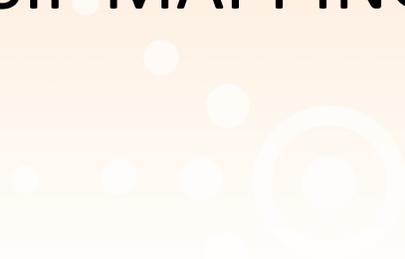
CEDS – SIF/PESC

SIF and PESC serve as field-based sources for CEDS.

SIF and PESC are also implementations of CEDS. So if you use SIF and PESC then you are implementing CEDS.

Current Alignment

- Use Cases
- Levels of Education
- Similar Elements
- Common Education Processes

*

SIF	Elements Mapped/CEDS Elements
K12Student	70/77
K12Staff	24/28

*

PESC	Elements Mapped/CEDS Elements
PSStudent	27/38
PSSection	15/18

* Selected examples. Mapping is still underway.

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Next Steps in Implementation

- Review, Validate, and Analyze mapping with PESC and SIF content experts

- Based on analysis, continue to develop implementation strategies

- Provide comments on Draft 1 and 2 of CEDS Version 2

- AITF to develop implementation guidelines and tools

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QUESTIONS/COMMENTS

For more information, please contact:

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Marci Giang
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202.312.6866

And visit our website at:
www.commoneddatastandards.org

To comment on CEDS, please visit:
http://nces.ed.gov/programs/ceds

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