

CCSSO

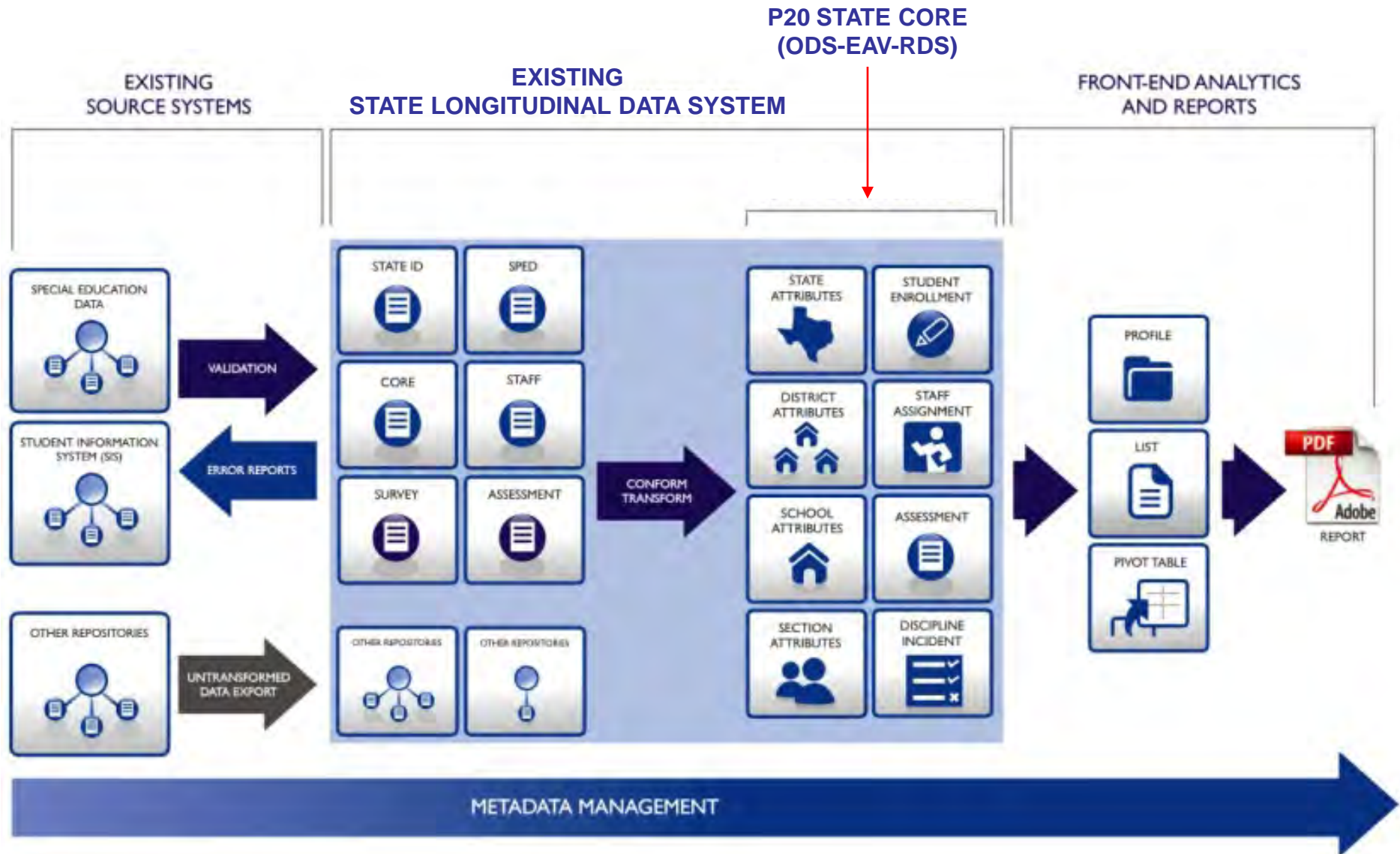


Council of Chief State School Officers

P20 State Core Logical Data Model

September, 2010

NEDM k12 State Core and CCSSO P20 State Core Model

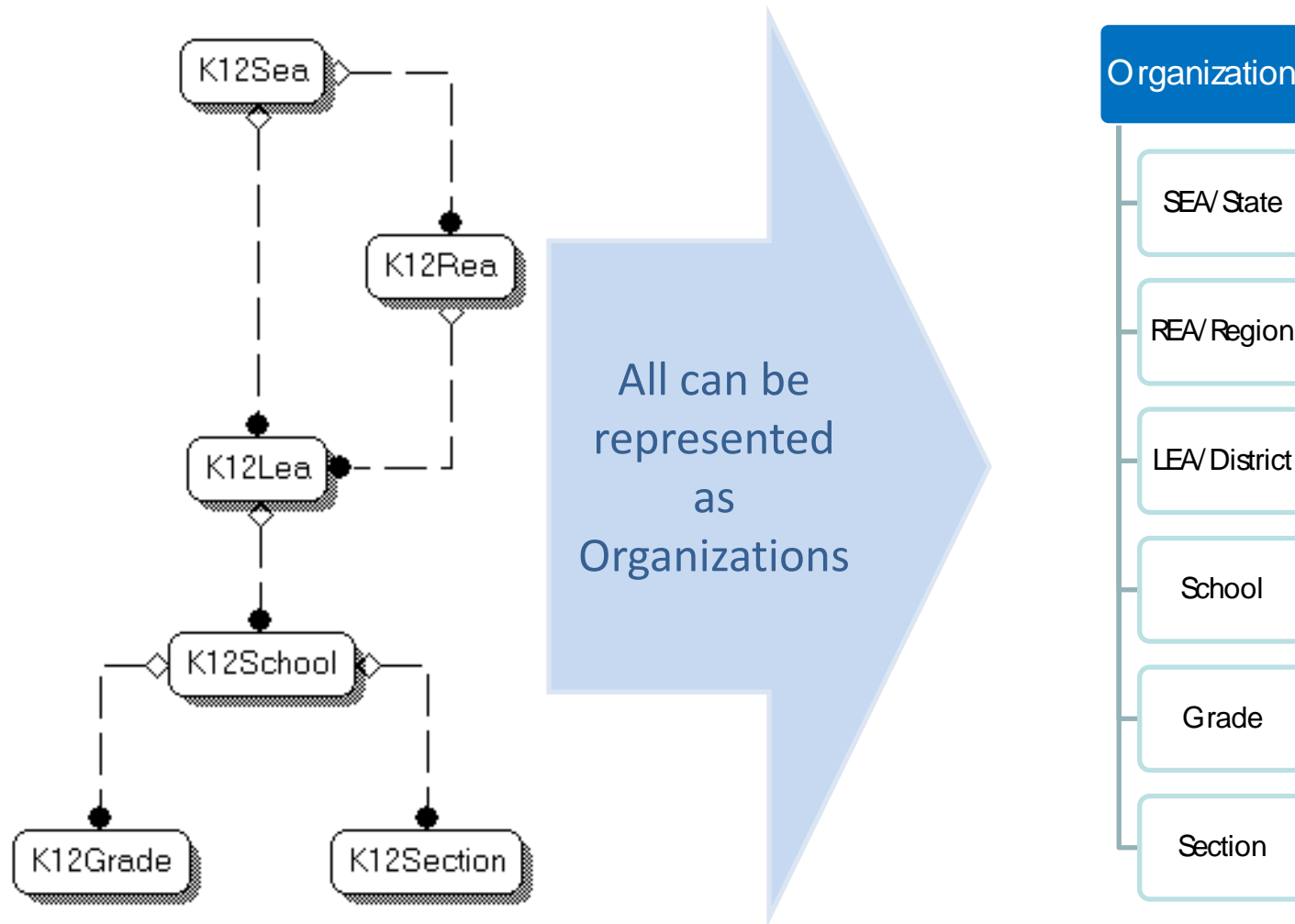


The P20 State Core Logical Data Model

- **Developed as part of** the Common Data Standards (CDS) adoption work with funding from the Gates Foundation
- **Based on** NCES handbook, NEDM v2.0, SIF v2.4, PESC, SHEEO State of State PS Data Systems report , and Common Data Standards v1.0
- **Includes** early childhood, elementary and secondary, post-secondary, and workforce data (aka P20) and detailed maps to all 657 files states are required to submit to USED
- **Designed to support** dropout early warning intervention systems (DEWIS), positive behavior intervention systems (PBIS) and response to intervention (RTI)
- **May be maintained** and governed as a model by a joint task force of SIFA and PESC on behalf of CCSSO and SHEEO and their member states (to be determined).
- **Intended for** SEAs and to help guide the relationships, business rules, and entity factoring validate state maps to views of a common P-20 SLDS model including:
 - source files with different and or non-existent **start and end dates**
 - complex relationships between **organizations**
 - people with multiple **roles** in multiple organizations including student-teacher linkage

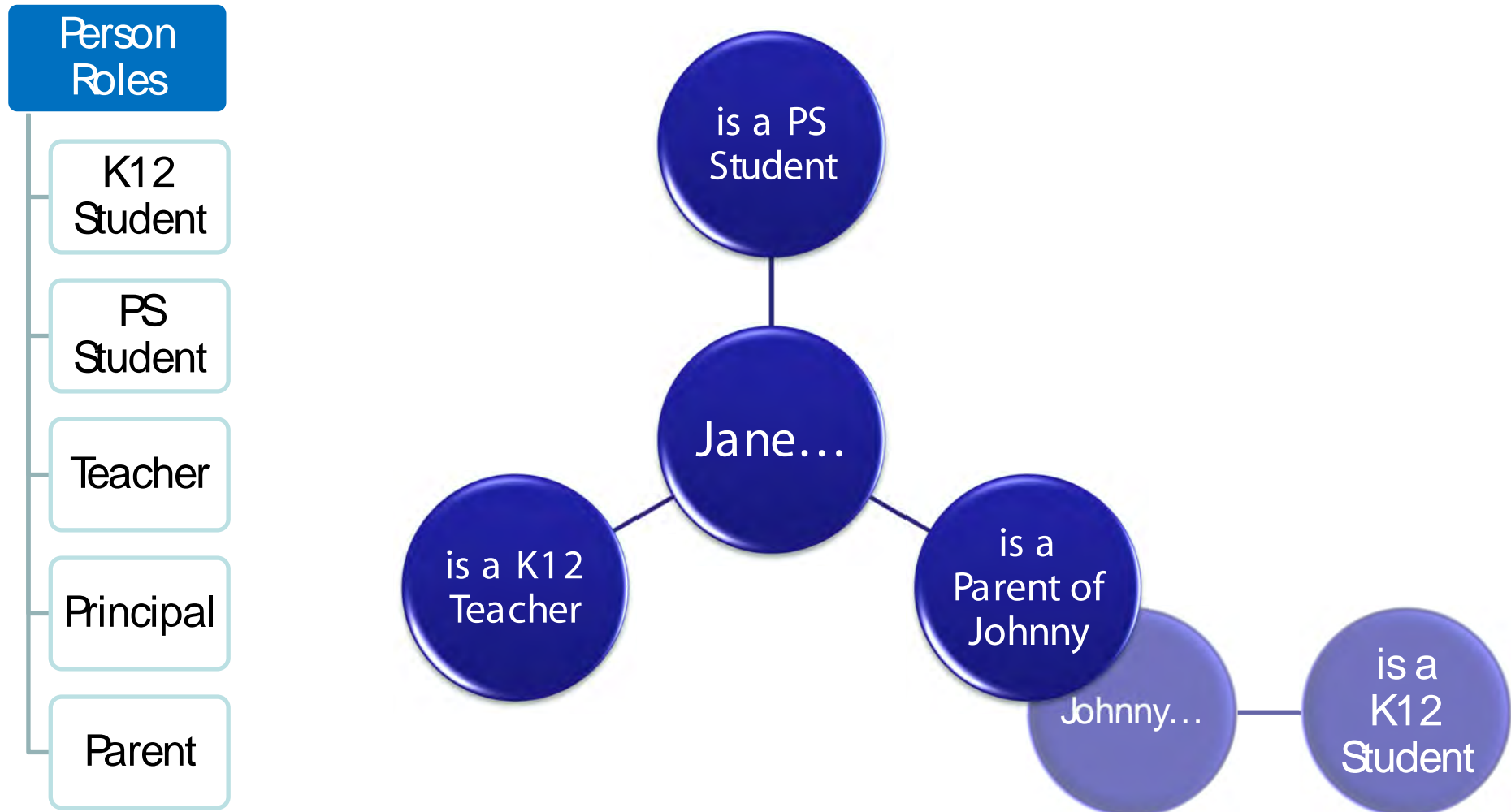
Directory - the core of the core, Org-Org Relationships

Each level of an educational system share common attributes, or data points, that allow us to represent all levels as 'Organizations' without losing the business relationship.



People and Roles, the Person – Org Relationship

Each person shares common attributes, or data points, that allow us to represent all levels as 'Persons.' Each Person has one or more 'roles.'



Operational Data Store

Organization

Person
Organization
Relationship

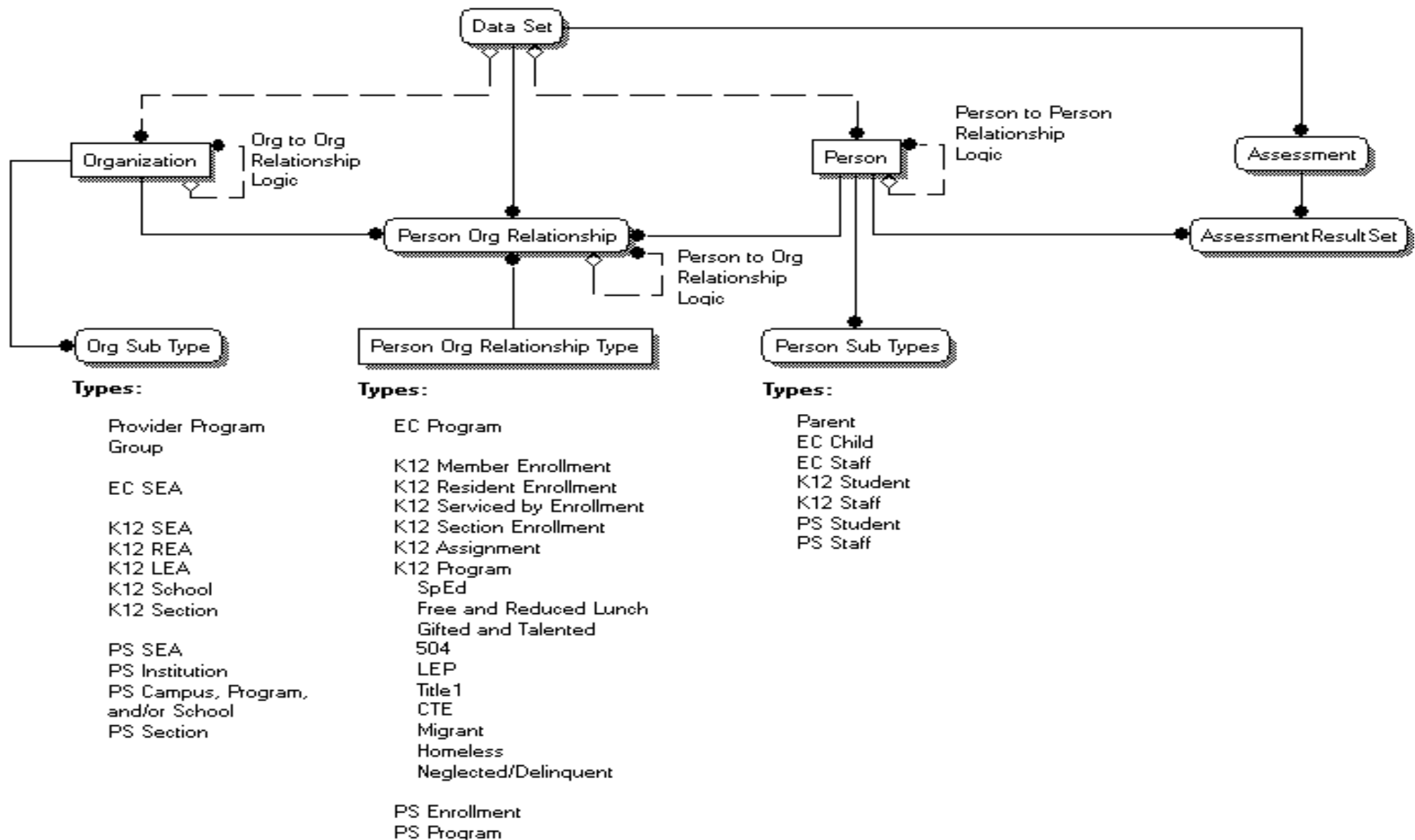
Person



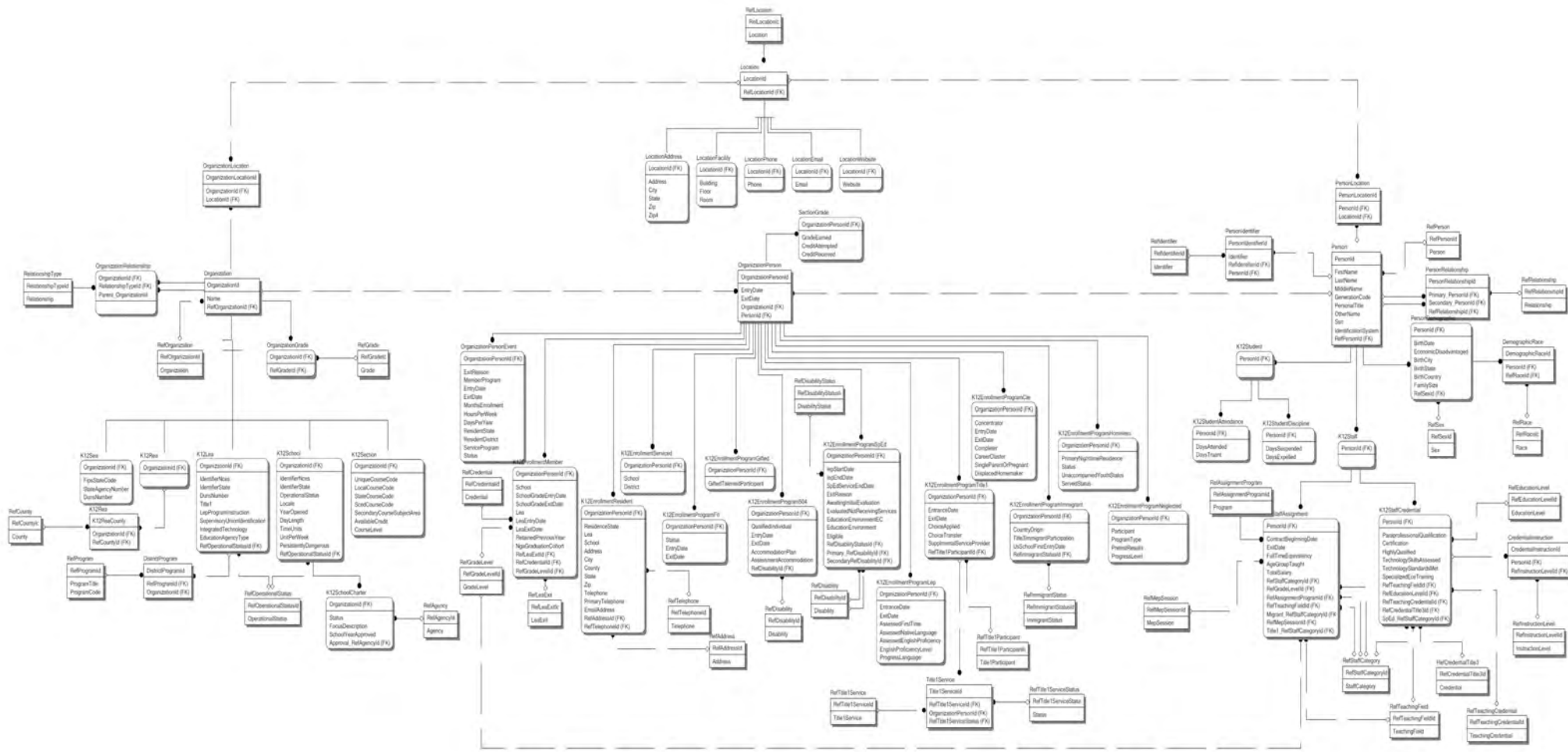
ODS: Operational Data Store

- ODS represents the **most current** data that the State has
- ODS includes the most current view of **some historical data** (such as prior assessment data and enrollment records)
- ODS is a **relational** database
- A “record” is **added** for each Person.Org Relationship change event in the system.
- Other updates to entity.attributes **edit** records in ODS and update in EAV

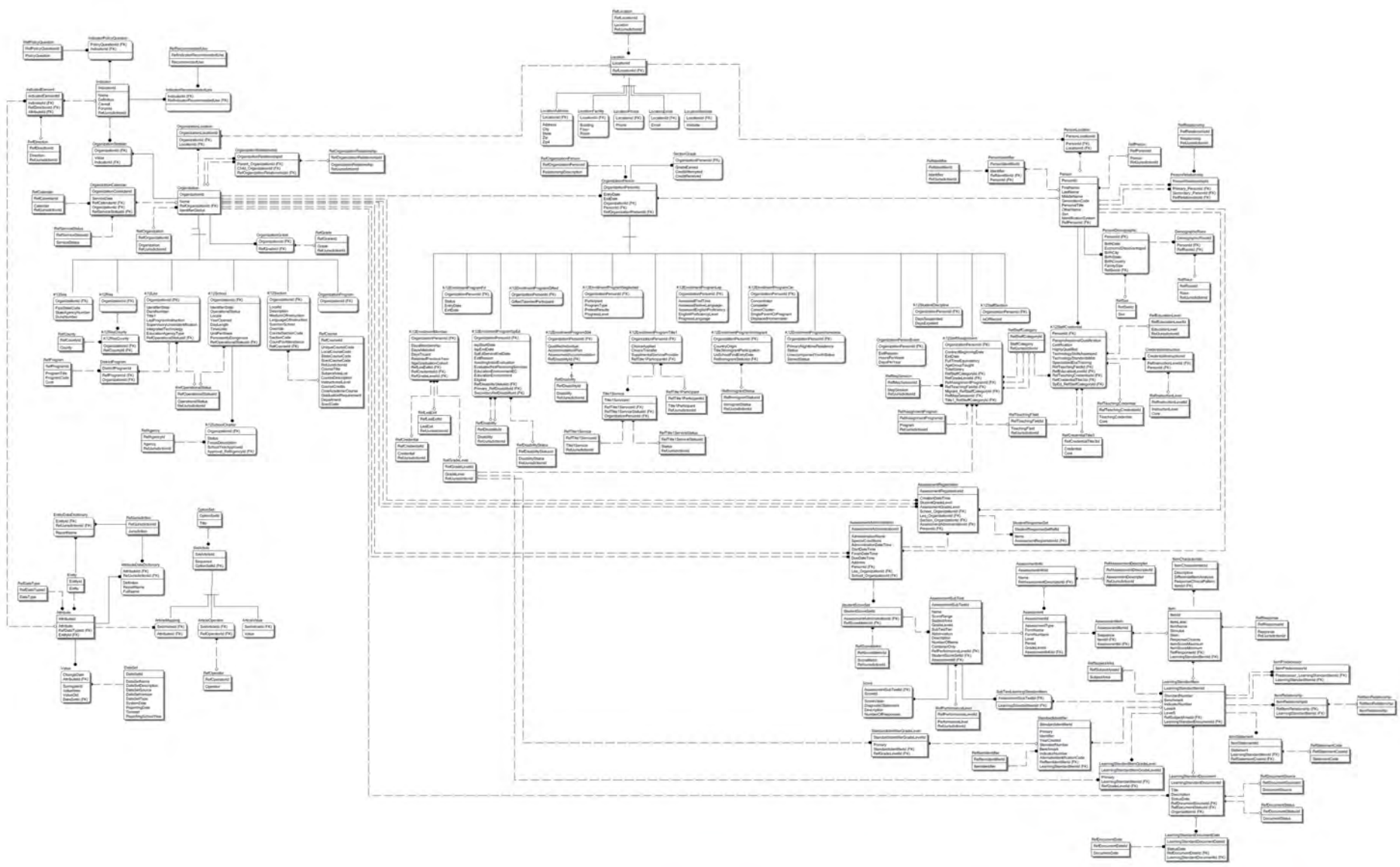
ODS – Conceptual Model



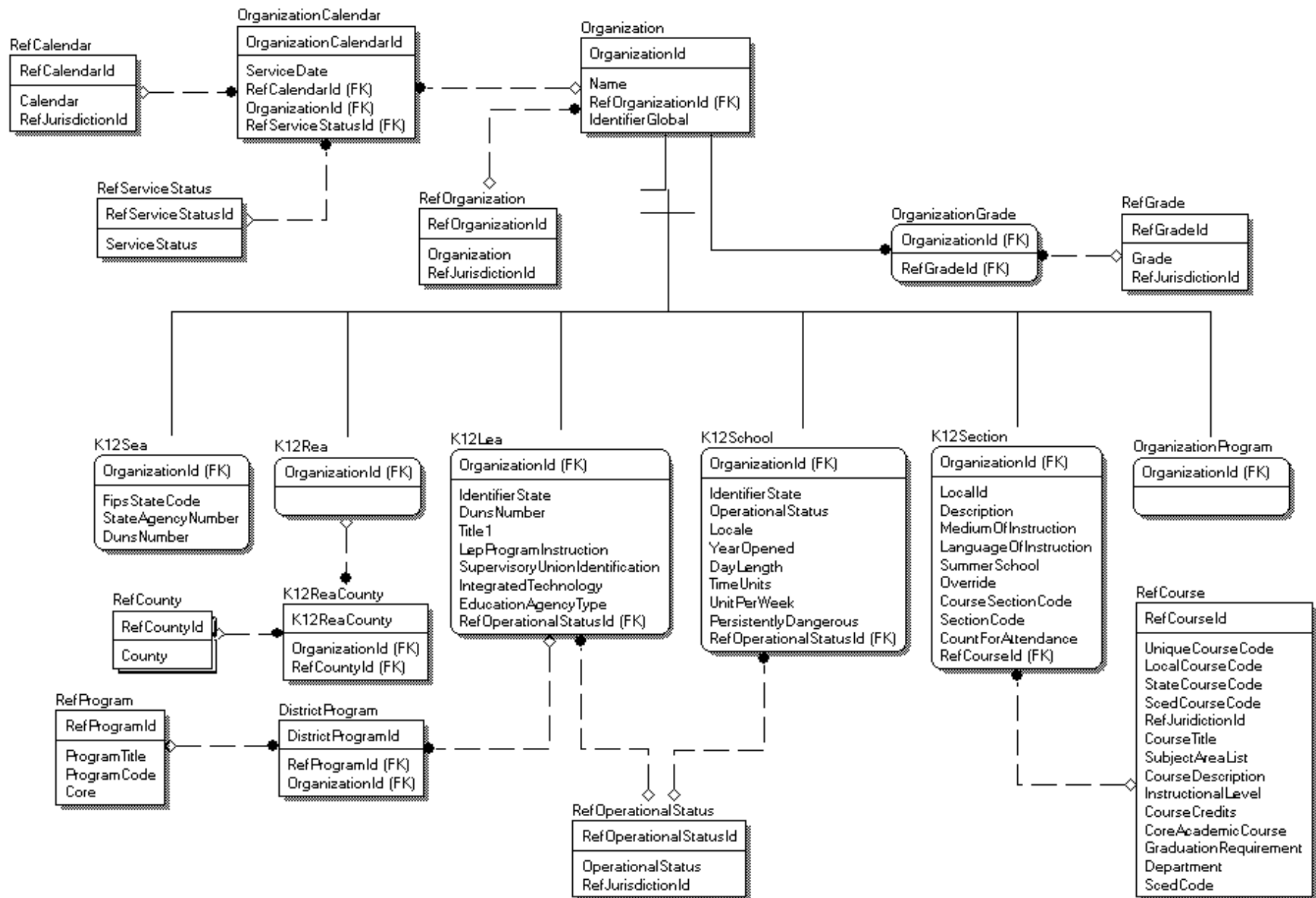
ODS – Physical View of Logical Model (Partial)



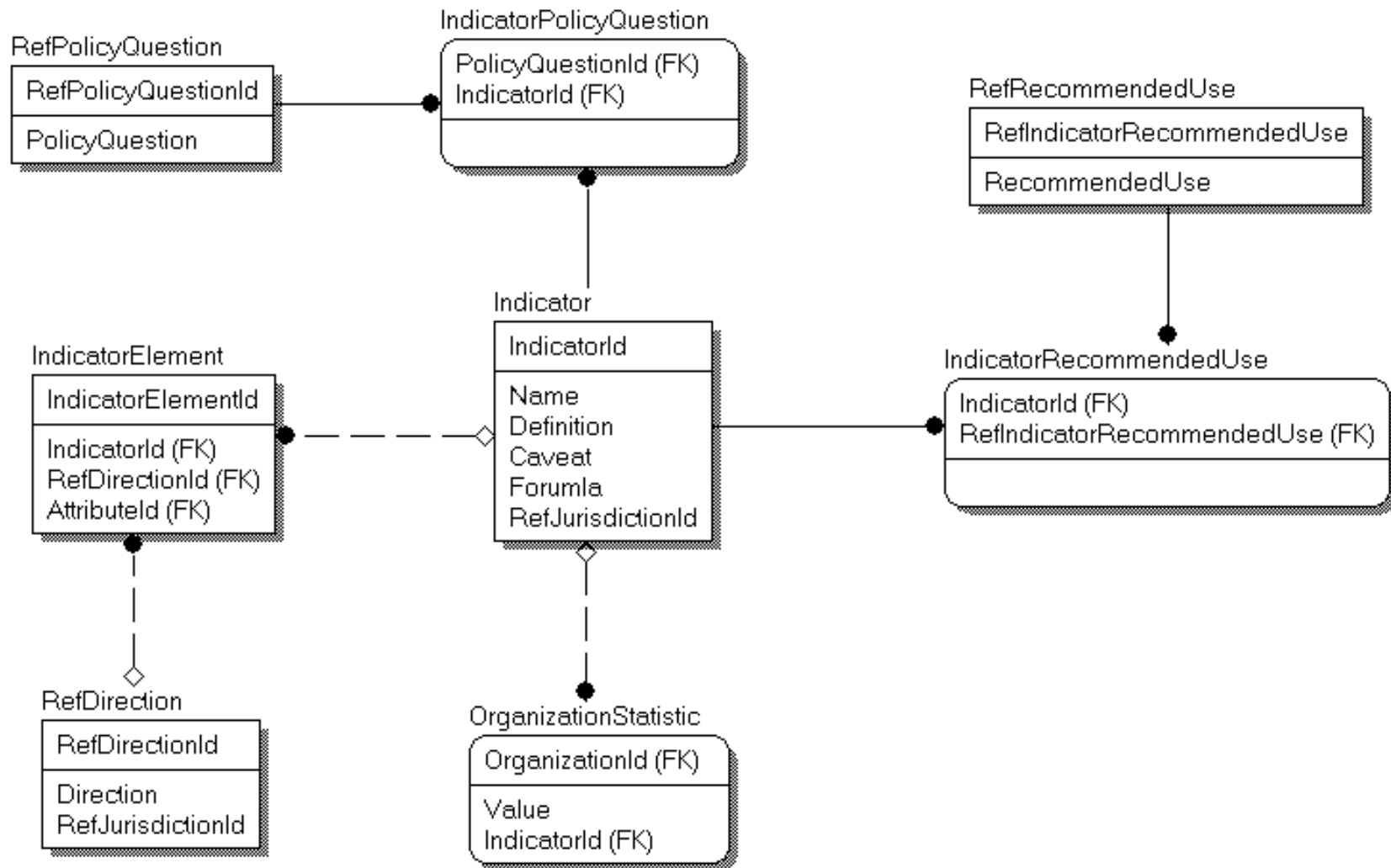
ODS – Physical View of Logical Model (Full)



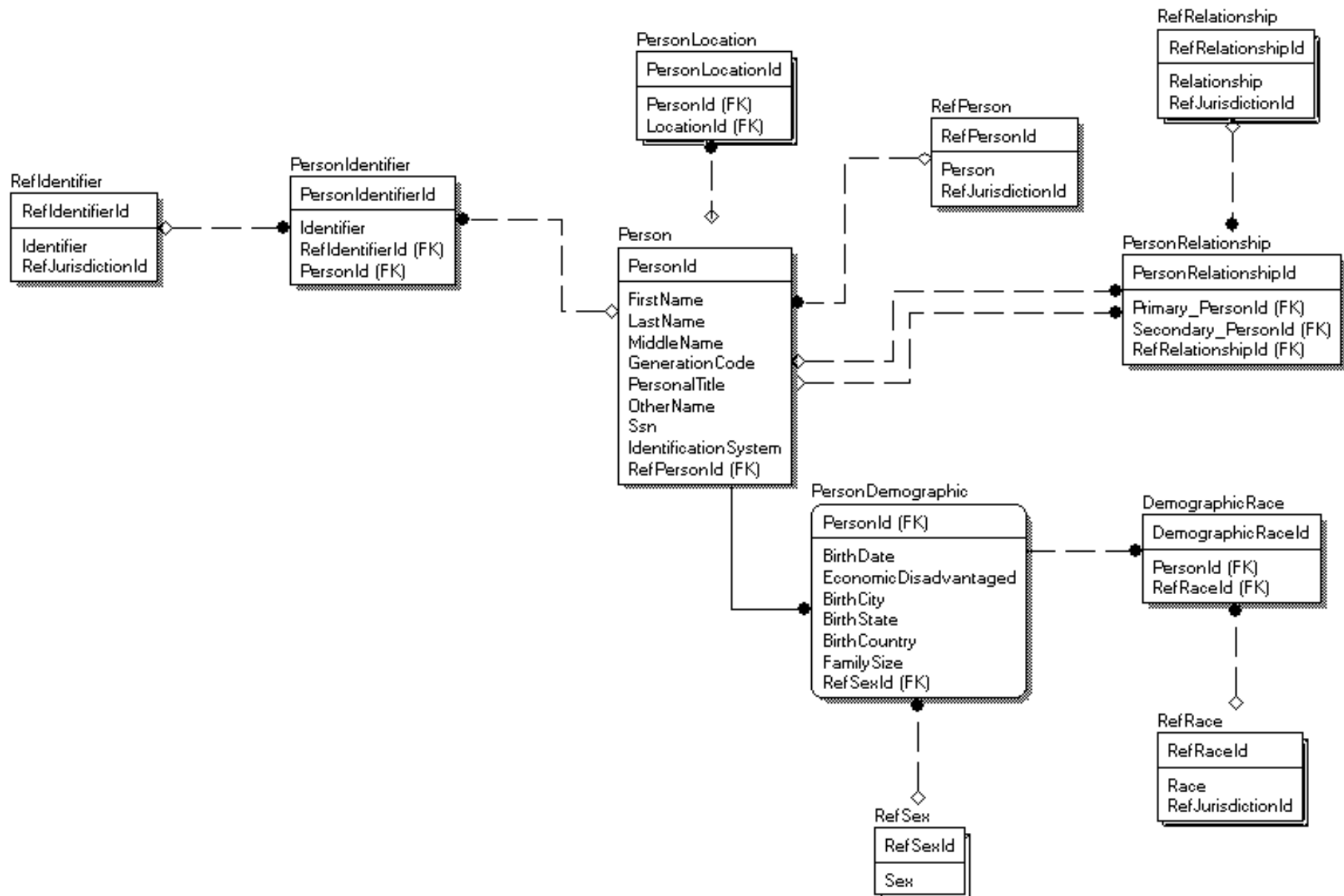
ODS – Organization



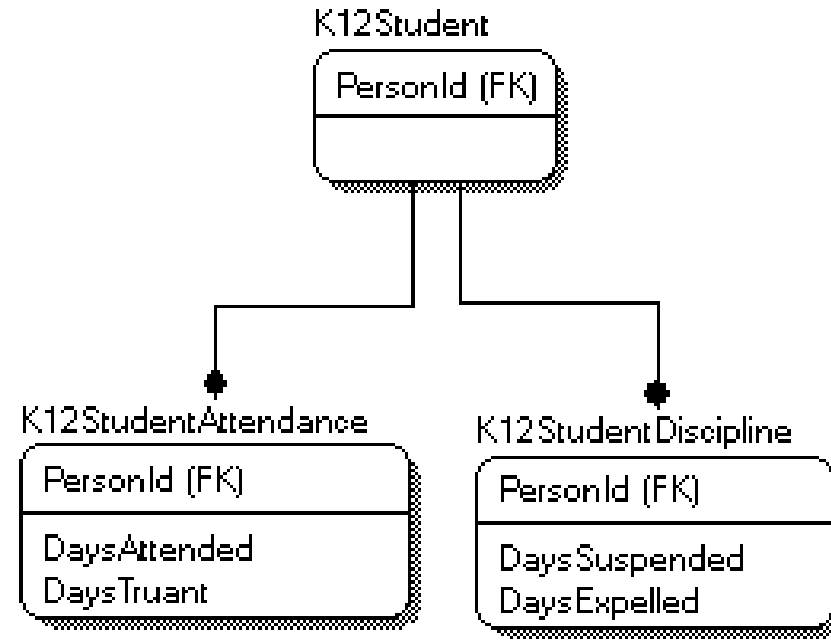
ODS – Organization Indicators and Statistics



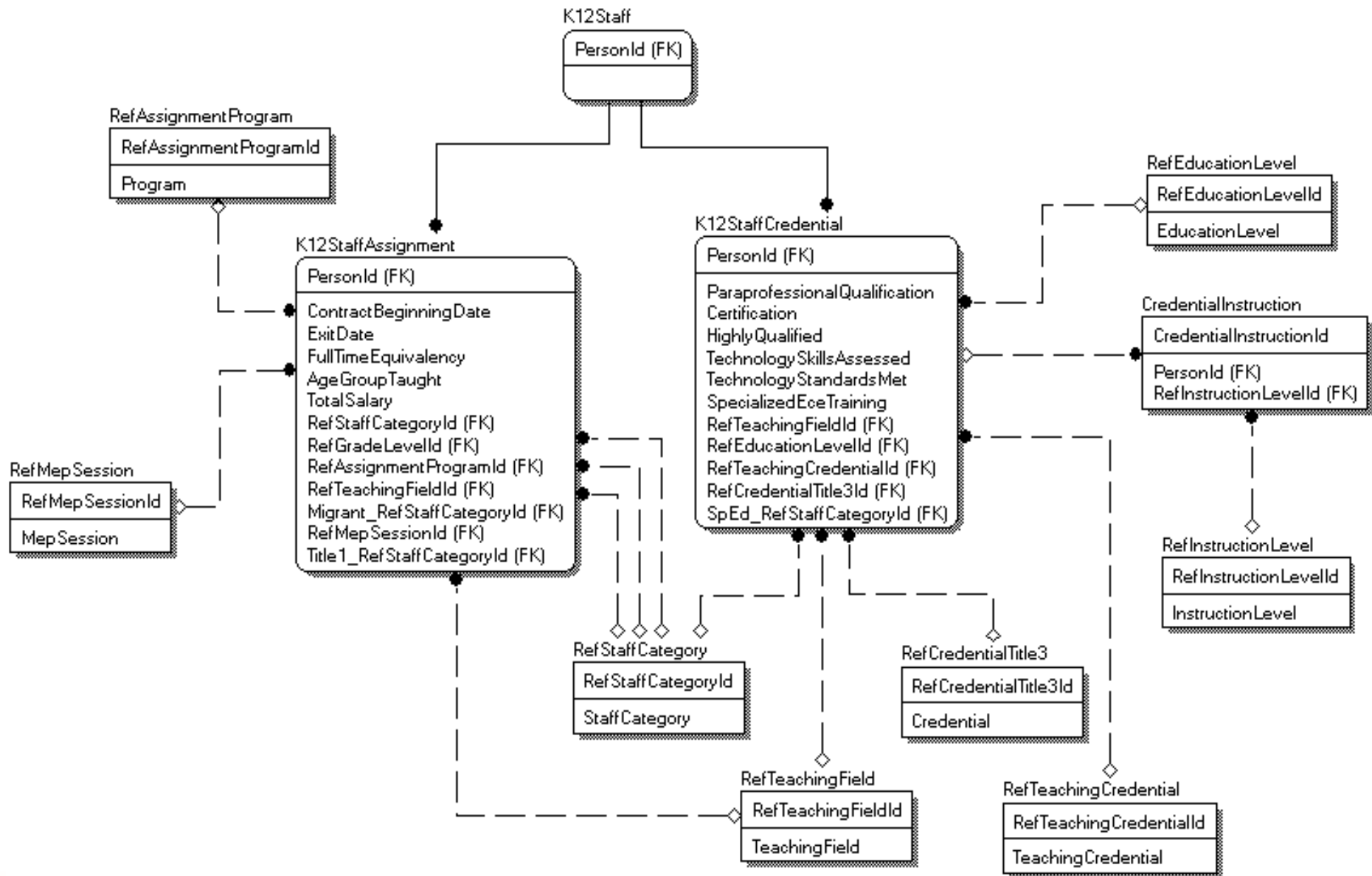
ODS – Person



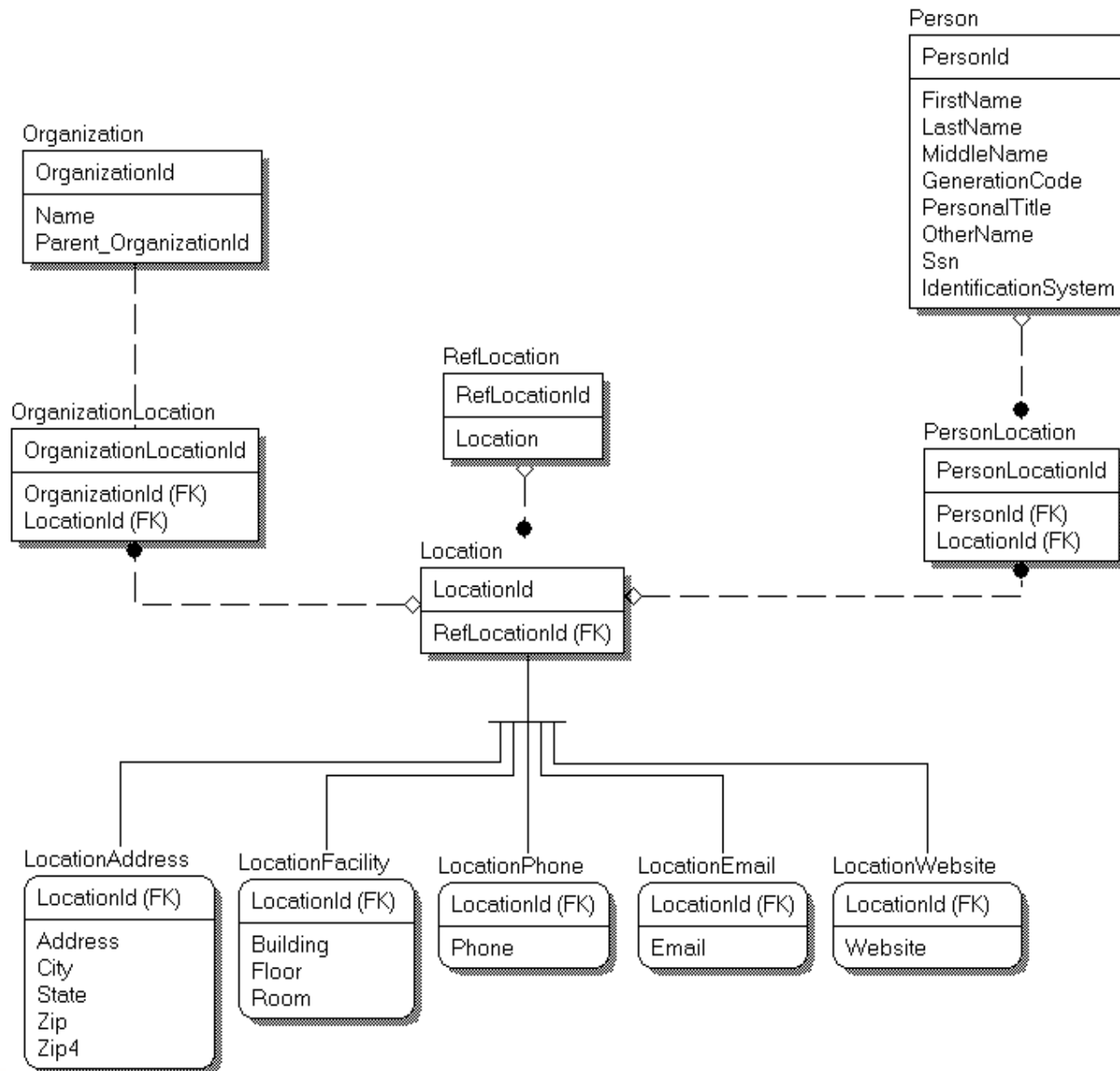
ODS – Person [K12 Student]



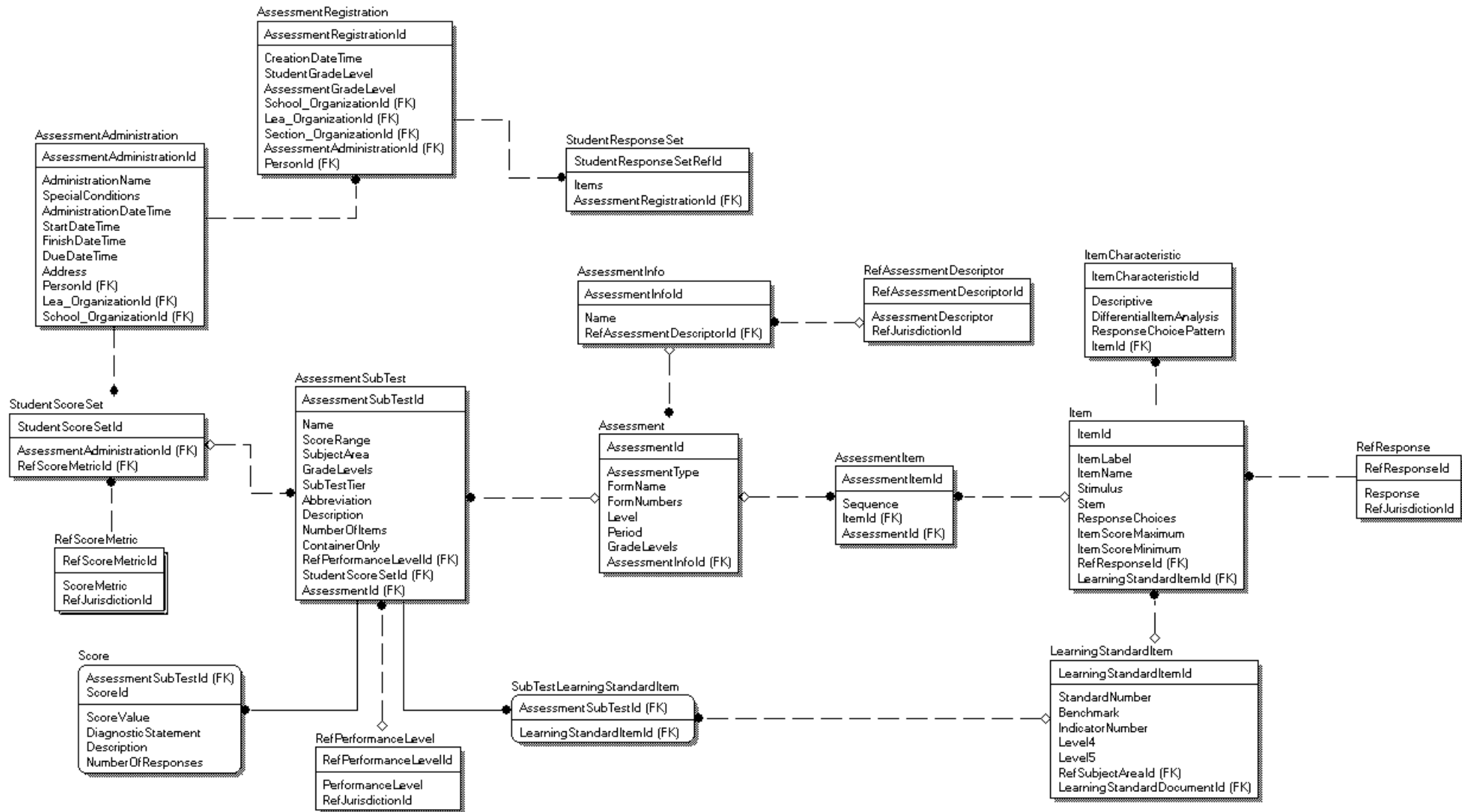
ODS – Person [K12 Staff]



ODS – Location



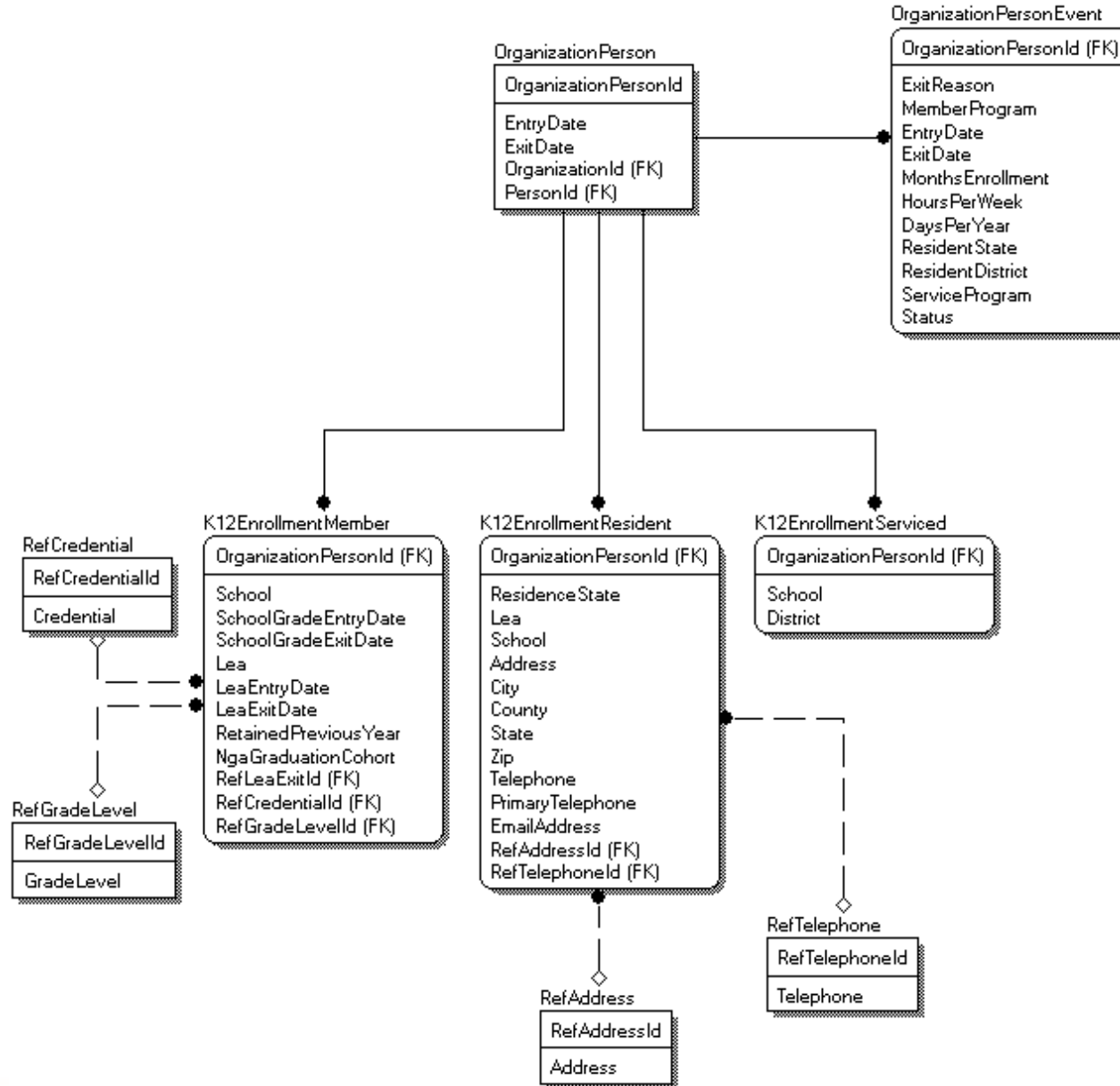
ODS – Assessment [K12 – SIF]



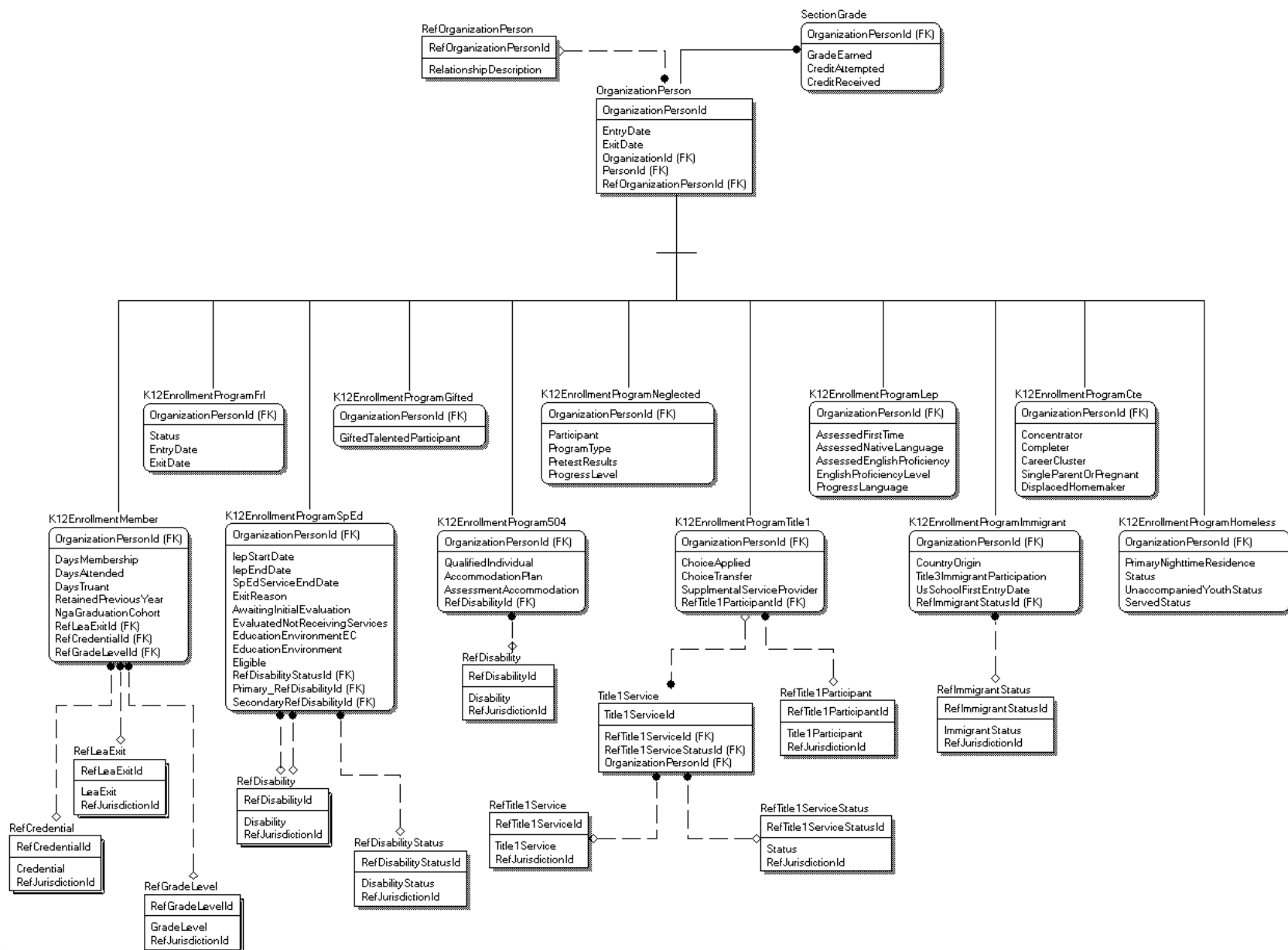
ODS – Learning Standards [K12-SIF]



ODS – Person-Org [K12 Student.Enrollment]



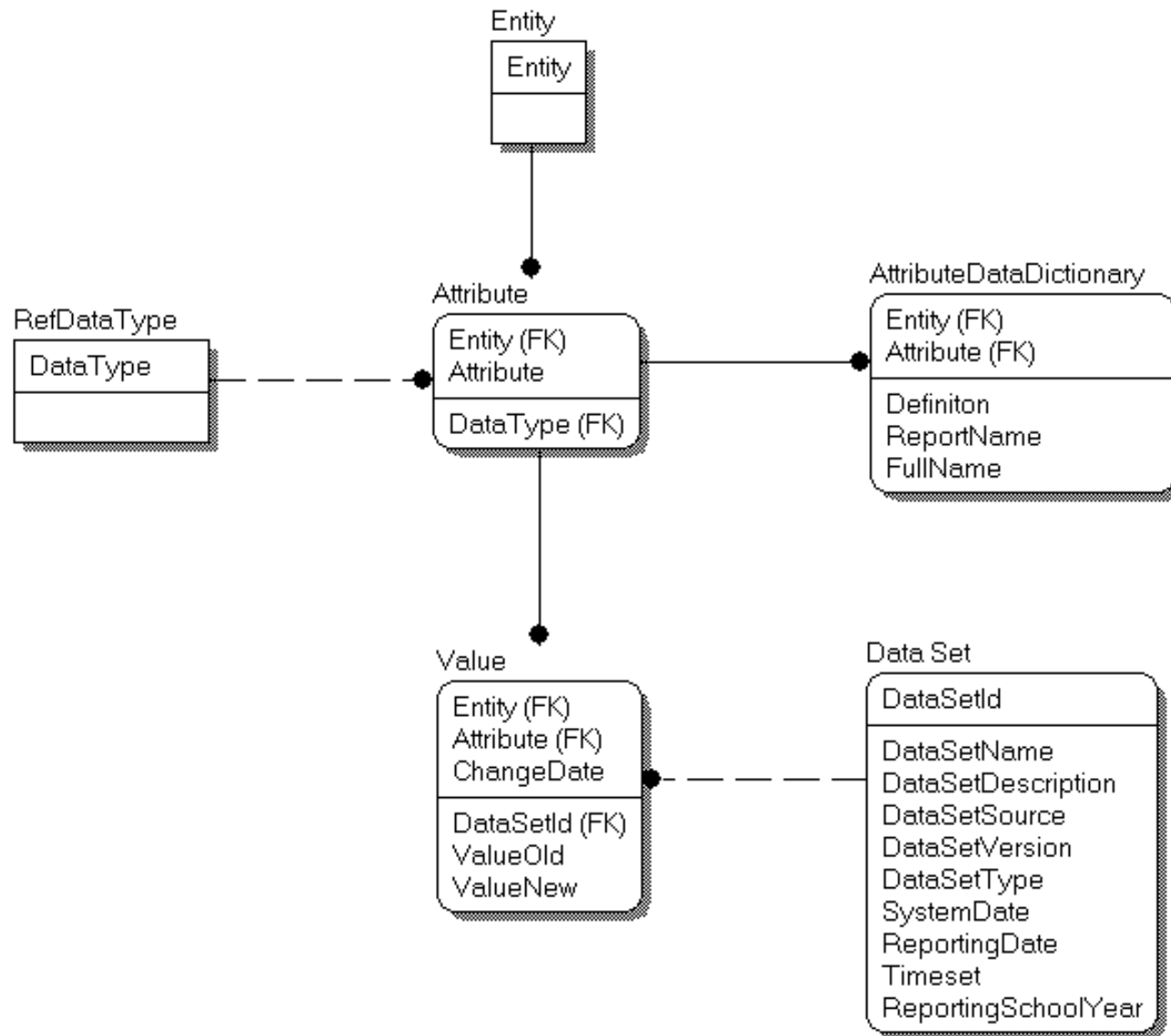
ODS – Person-Org [K12 Student.Program]



EAV: Entity Attribute Value

- EAV is the auditing schema for ODS
- All ODS data manipulation operations result in or are caused by an EAV record
- EAV is a “no edit” database. Records are added, not edited.
- A record is added for each change in Entity.Attribute value

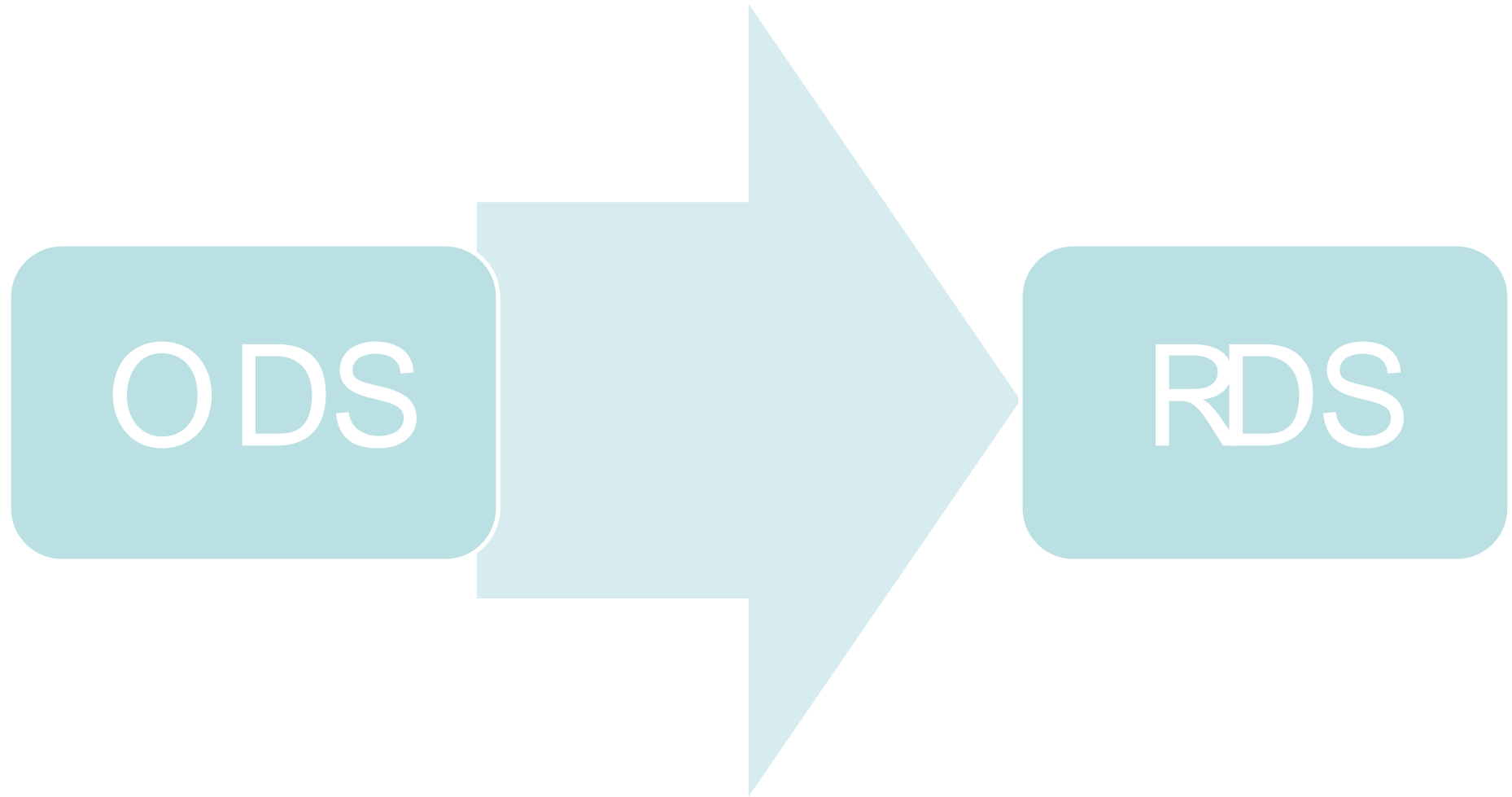
EAV: Logical Model



RDS: Reporting Data Store

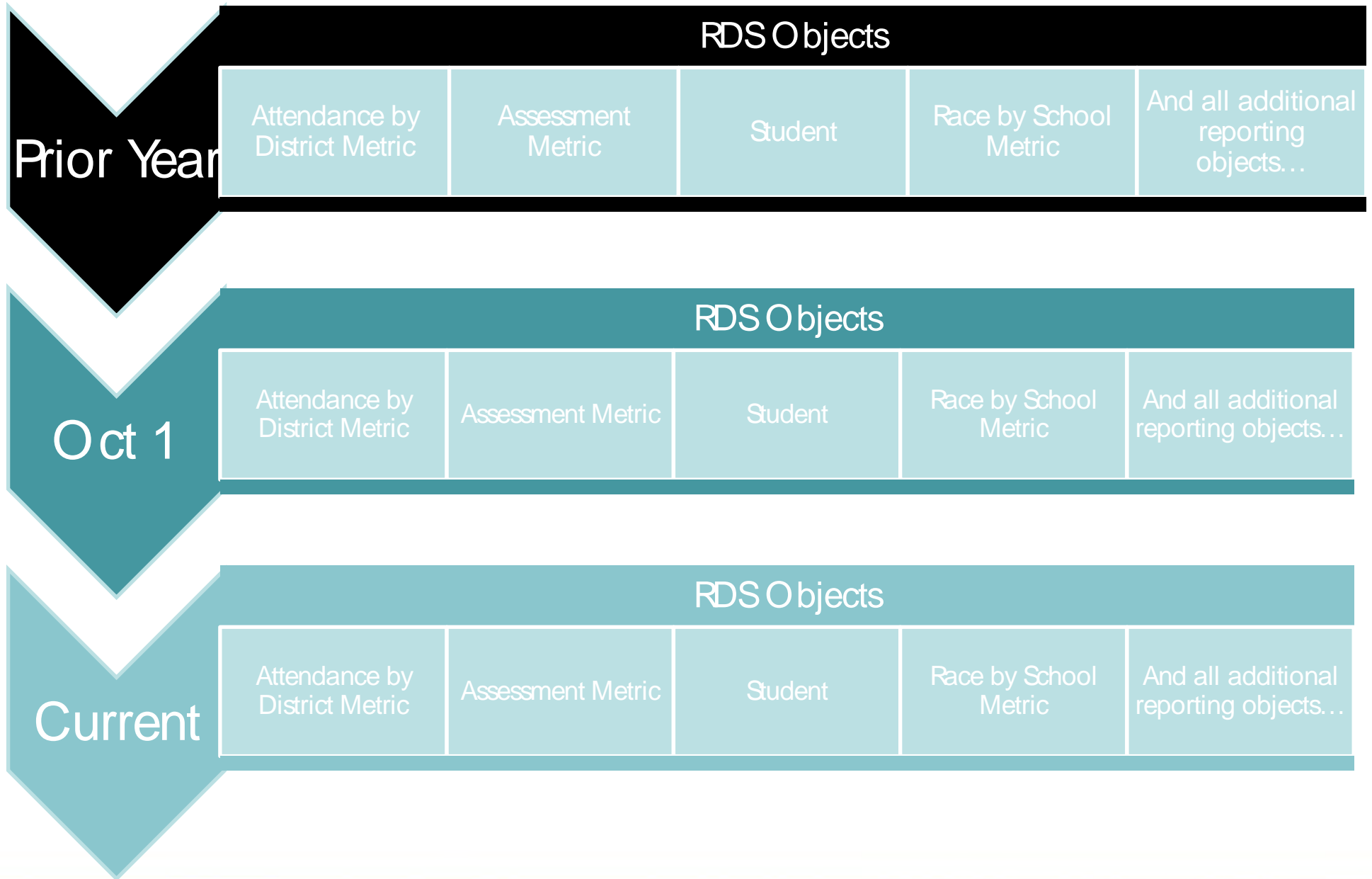
- The RDS is a view of the ODS **as of** a specific date
- The RDS can be an unchanging snapshot or can remain synchronized to changes in the ODS
- The RDS contains both granular and derived /aggregated attributes to support reporting
- The RDS is more of a “flat” “star schema” focused on facts of people and organization **as of** a specific dates

The ODS populates each RDS

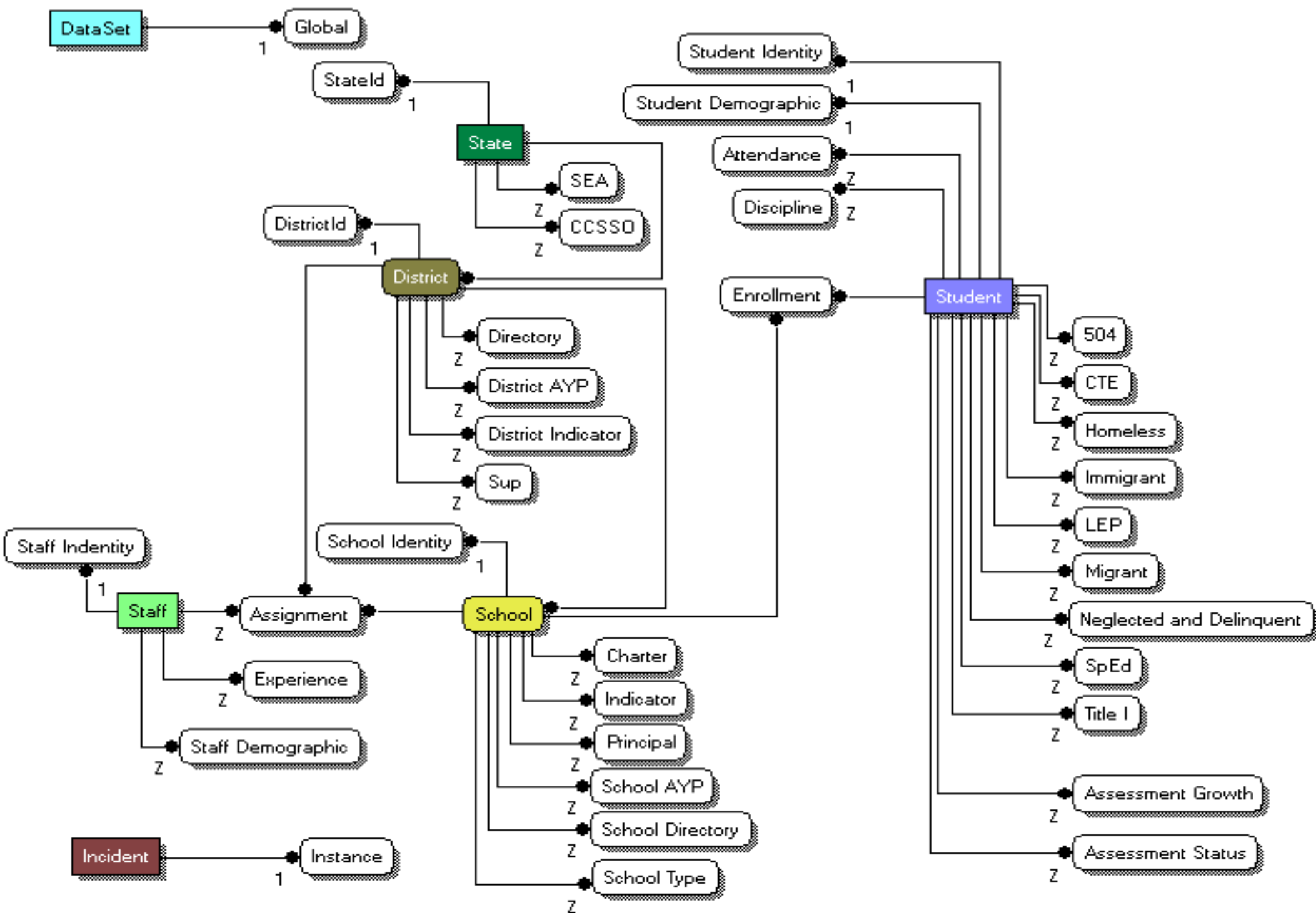


ODS data is transformed and copied into RDS, time-stamping the data to allow that dataset to represent a specific point in time.

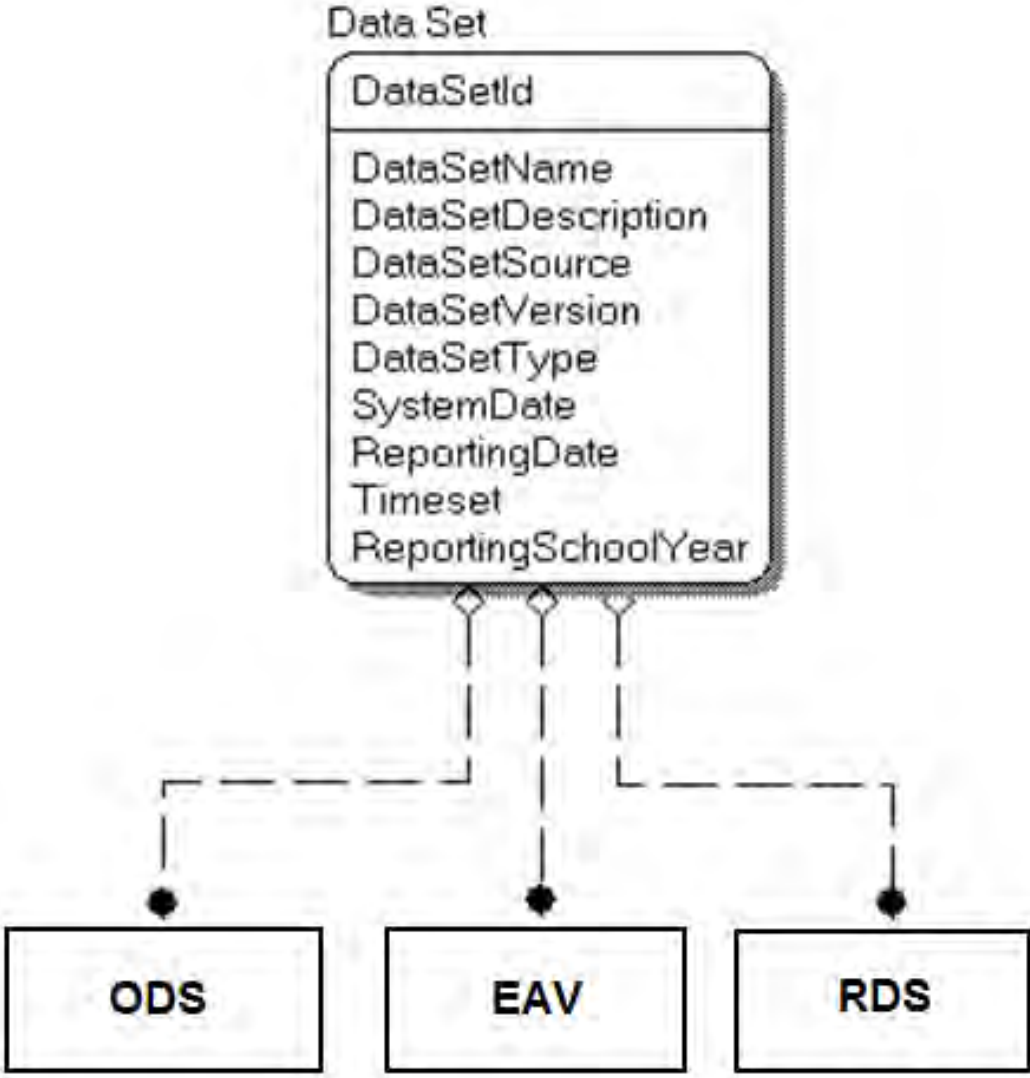
Each RDS represents a particular “As of” Date



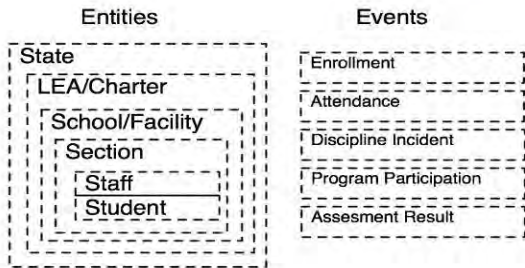
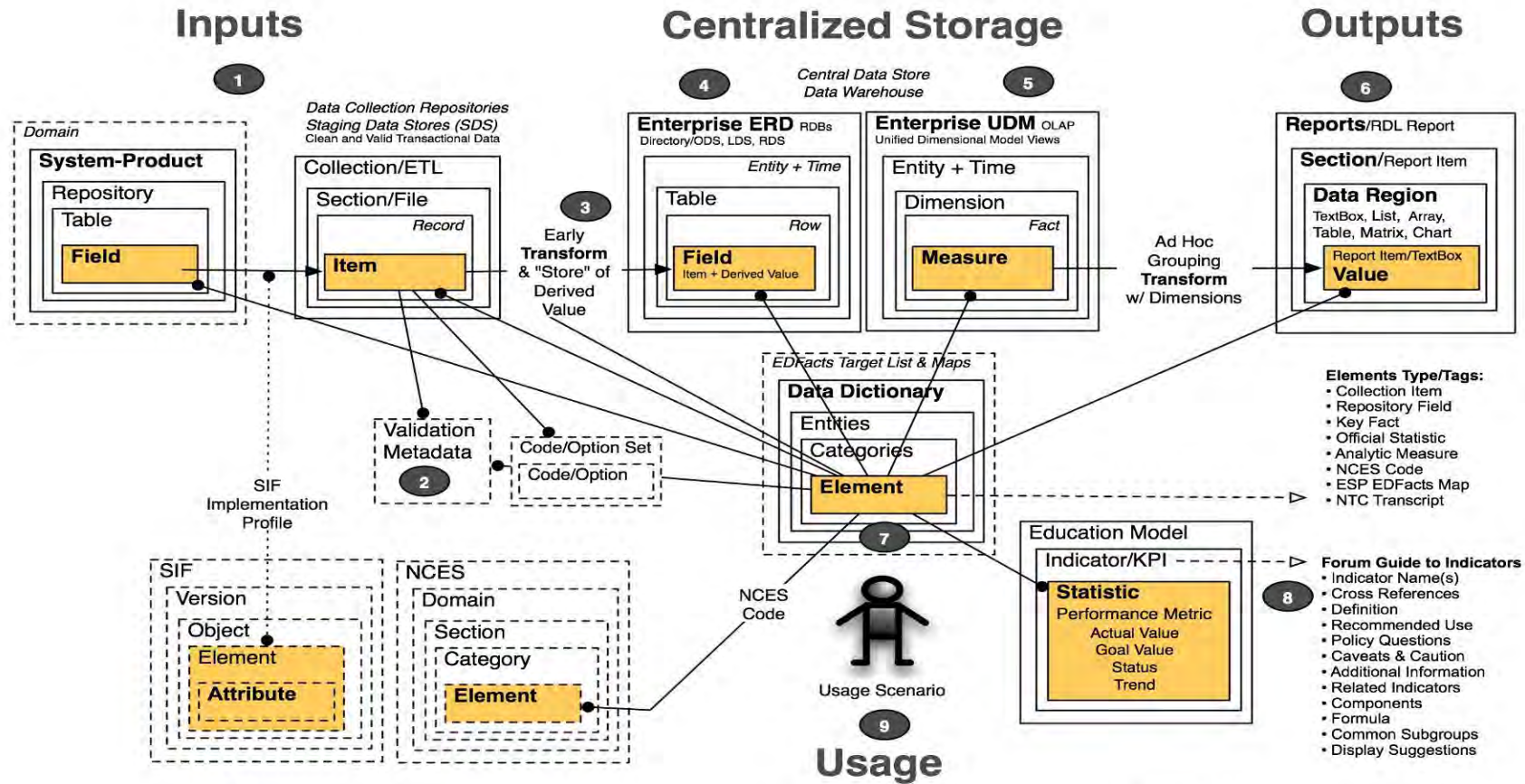
K12 Official Reporting Data Store (RDS) - Logical



Tying everything in the model together, “Data Set”.



The model is built on PCG's metadata methodology



Types of Grids

Matrix - Every cell is a similar type measure. Rows & columns are dimensions.

Dimension 3	Dimension 1	Dimension 1	Measure = Drop Out
Dimension 2	Measure	Measure	Dimension 1 = Gender
Dimension 2	Measure	Measure	Dimension 2 = Race
			Dimension 3 = District

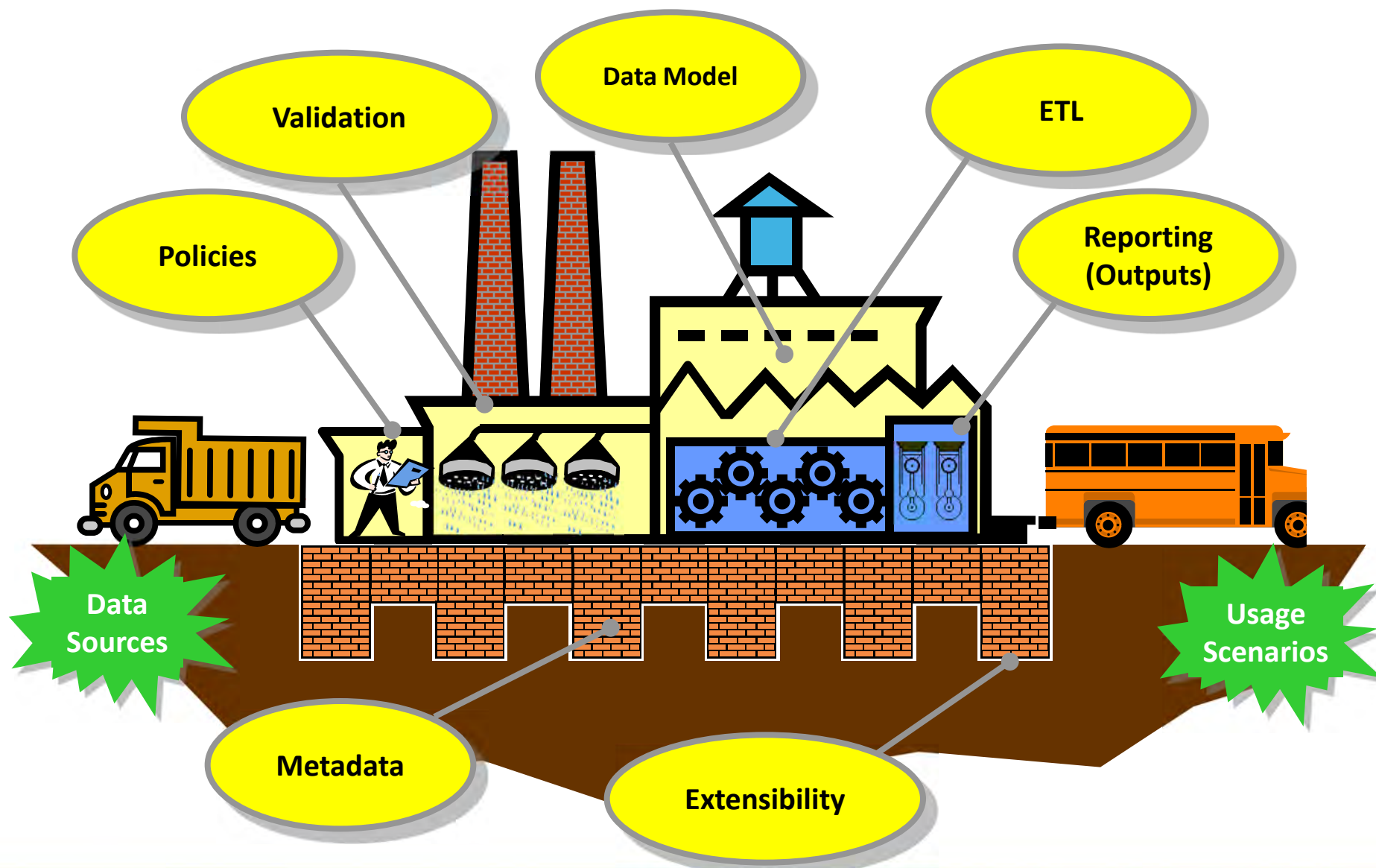
Table - Every row is a similar type record.

Table 1	Field 1	Field 2	Records = Students
Record 1	Field 1: Value	Field 2: Value	Fields = Attributes
Record 2	Field 1: Value	Field 2: Value	

Array/Spreadsheet - No organization of data other than X & Y Coordinates.

Row 1	Column 1	Column 2	X Coordinate	
Row 2	Cell 1:1	Cell 2:1	Y	Green
	Cell 1:2	Cell 2:2		Elephants
				Toyota

The model addresses the complete SLDS system cycle



Inman DW 2.0 – The Importance of Metadata

WITH NO METADATA



The orchestra with no conductor

WITH METADATA



The orchestra with a conductor