CCSSO

Council of Chief State School Officers

# P20 State Core

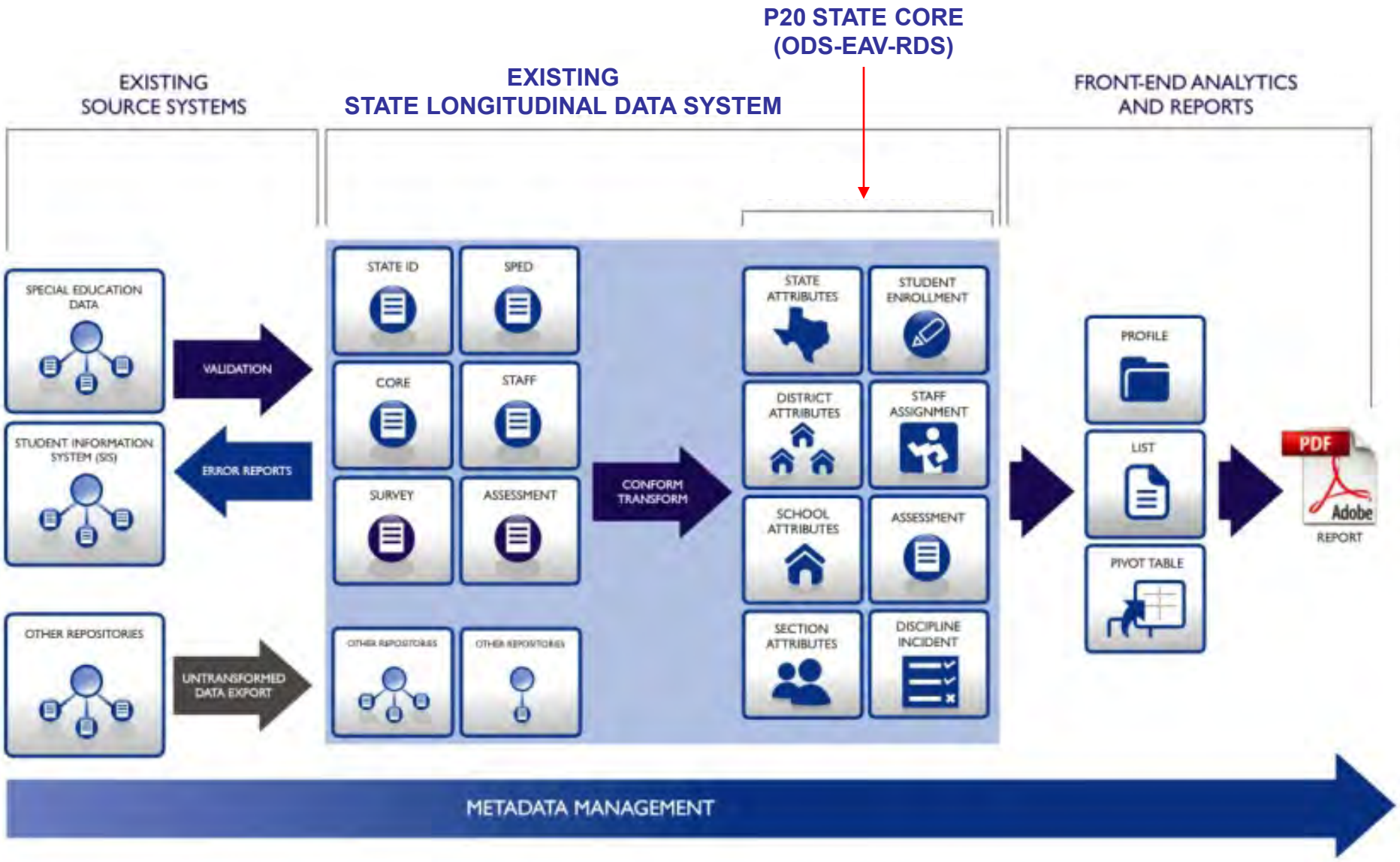
## Logical Data Model

**September, 2010**

PUBLIC CONSULTING GROUP

Public Focus. Proven Results. ™

# NEDM k12 State Core and CCSSO P20 State Core Model



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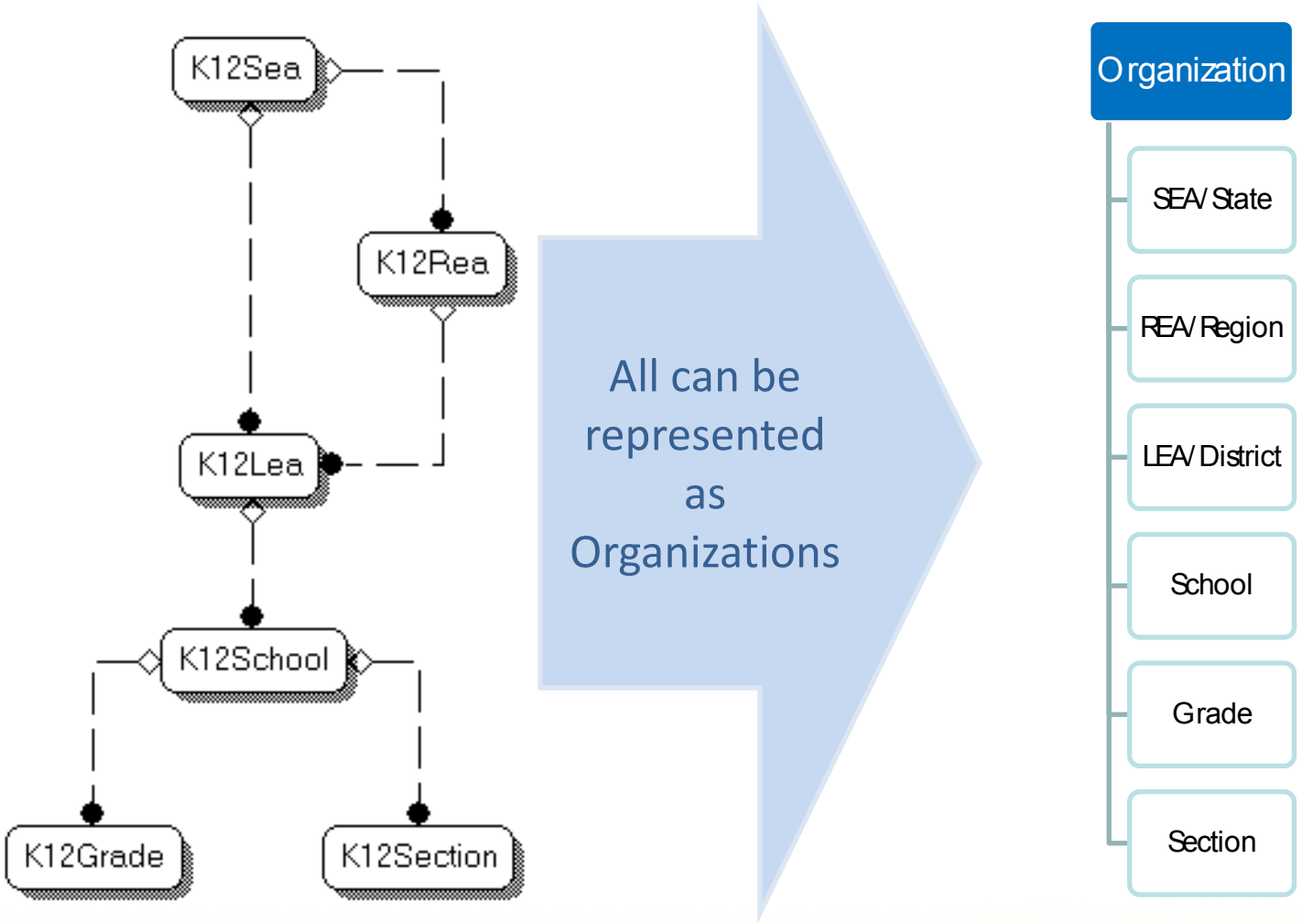
# The P20 State Core Logical Data Model

- **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

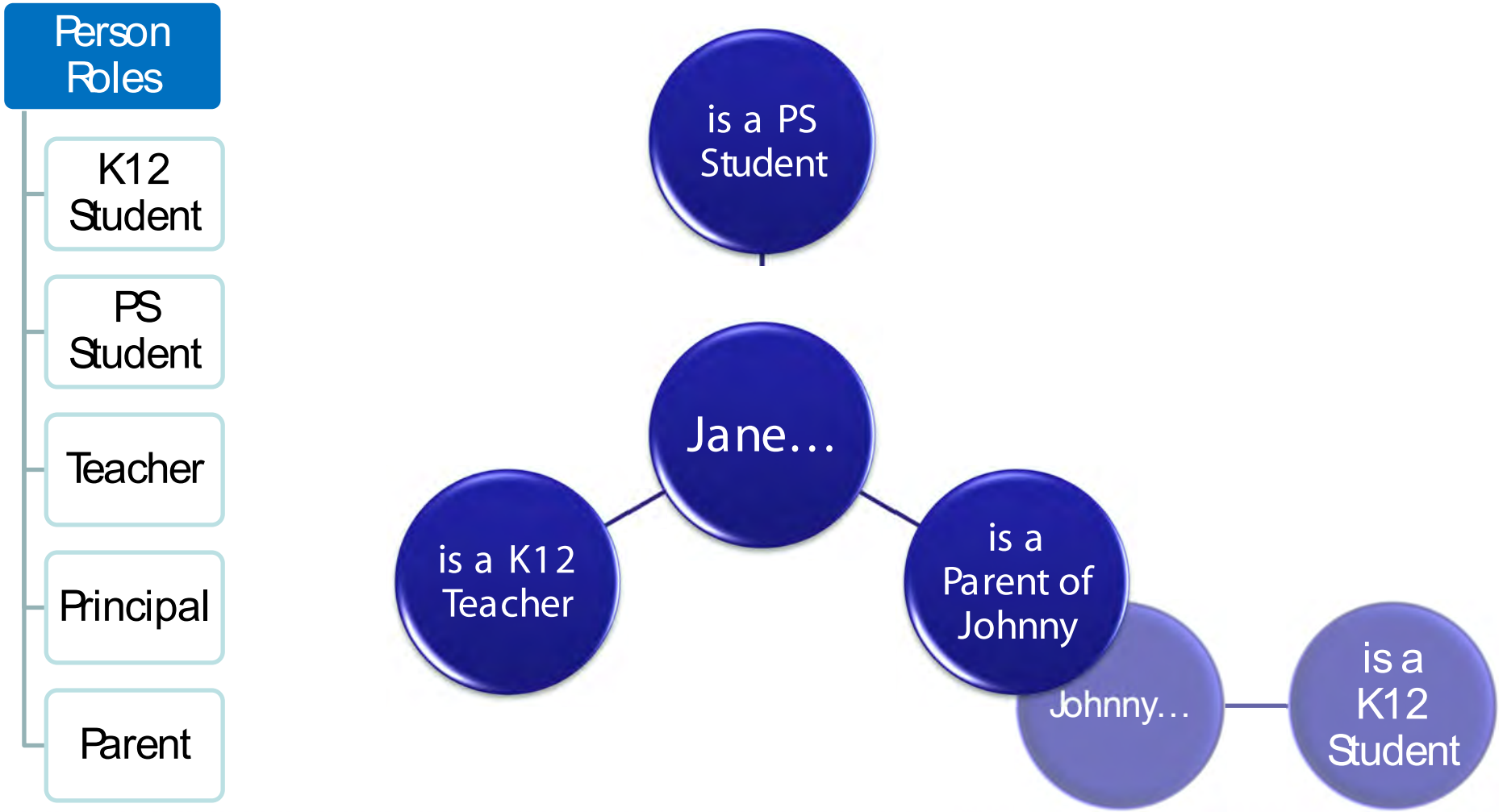
# Directory - the core of the core, Org-Org Relationships

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.

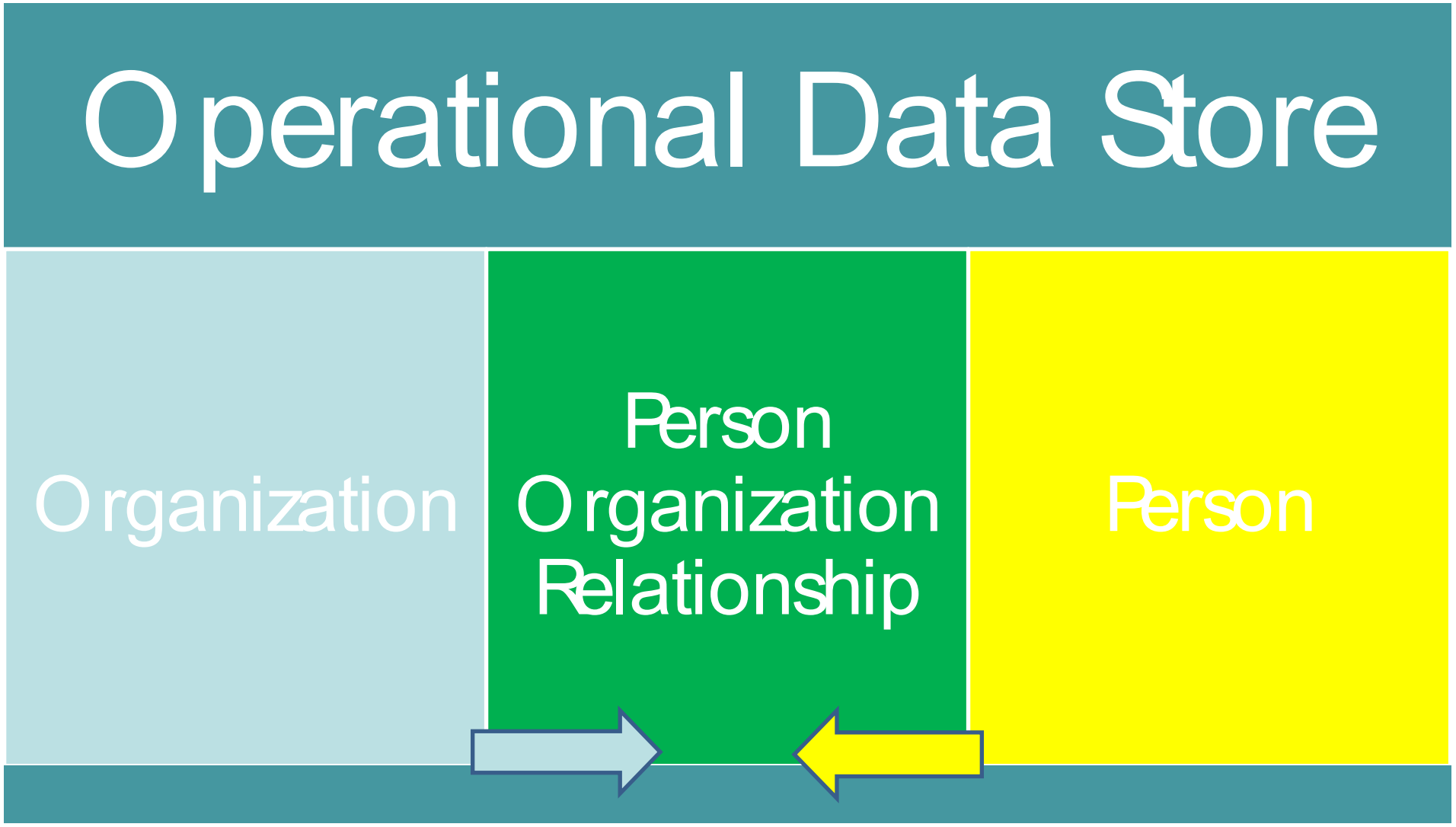


# People and Roles, the Person – Org Relationship

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



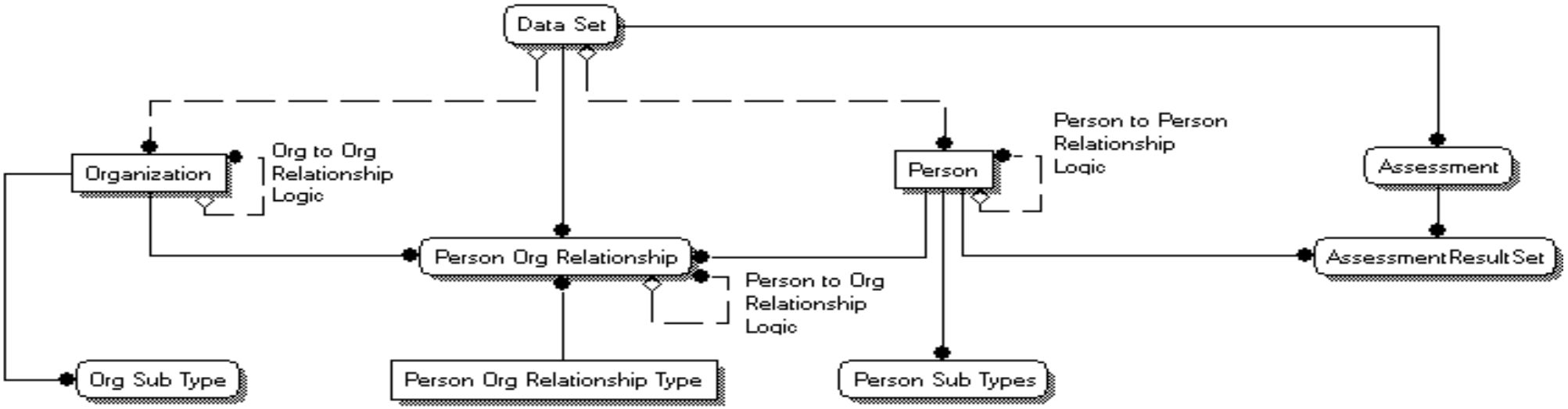
# The Person Organization Relationships



# 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




**Types:**

Provider Program Group

EC SEA

K12 SEA
K12 REA
K12 LEA
K12 School
K12 Section

PS SEA
PS Institution
PS Campus, Program, and/or School
PS Section

**Types:**

EC Program

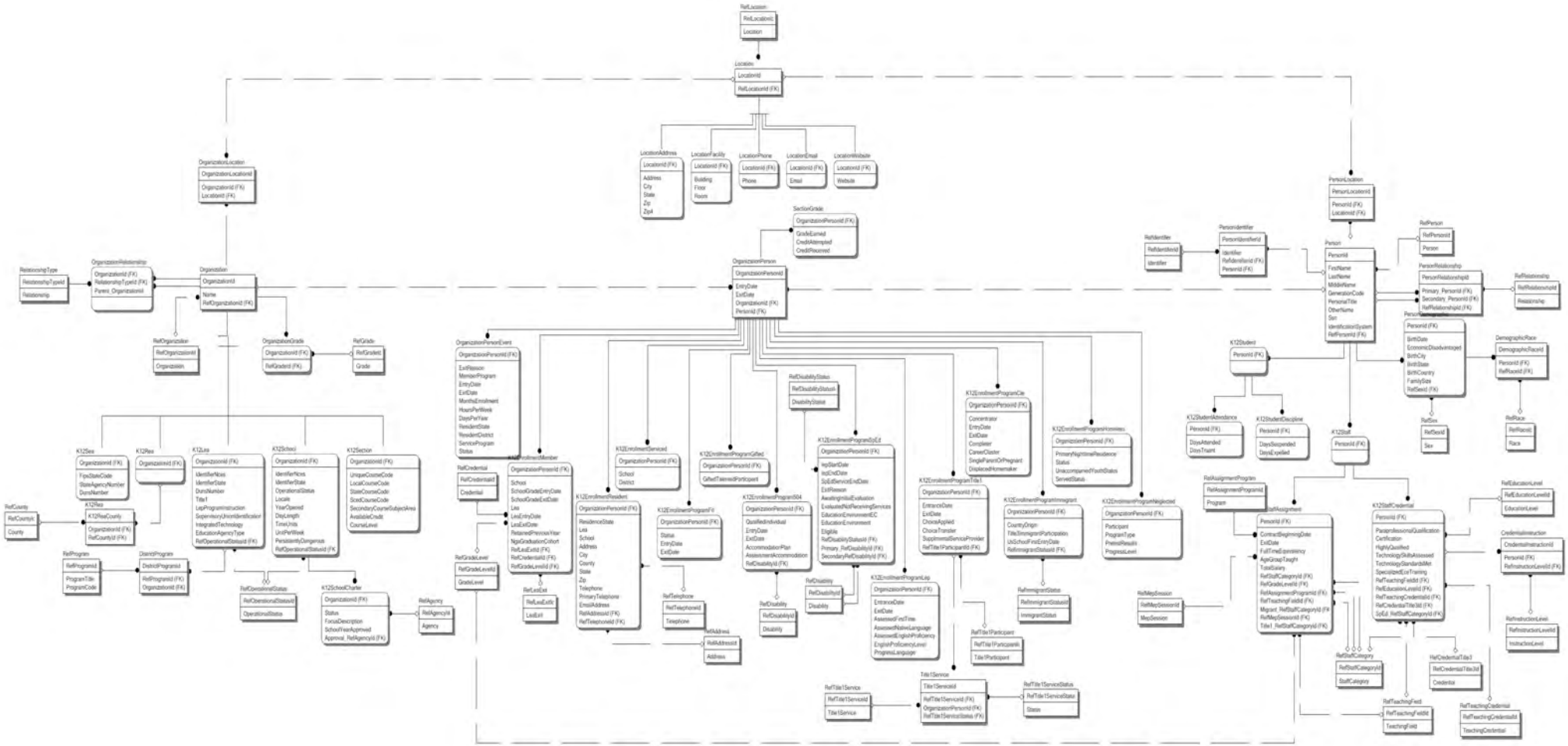
K12 Member Enrollment
K12 Resident Enrollment
K12 Serviced by Enrollment
K12 Section Enrollment
K12 Assignment
K12 Program
- SpEd
- Free and Reduced Lunch
- Gifted and Talented
- 504
- LEP
- Title1
- CTE
- Migrant
- Homeless
- Neglected/Delinquent

PS Enrollment
PS Program

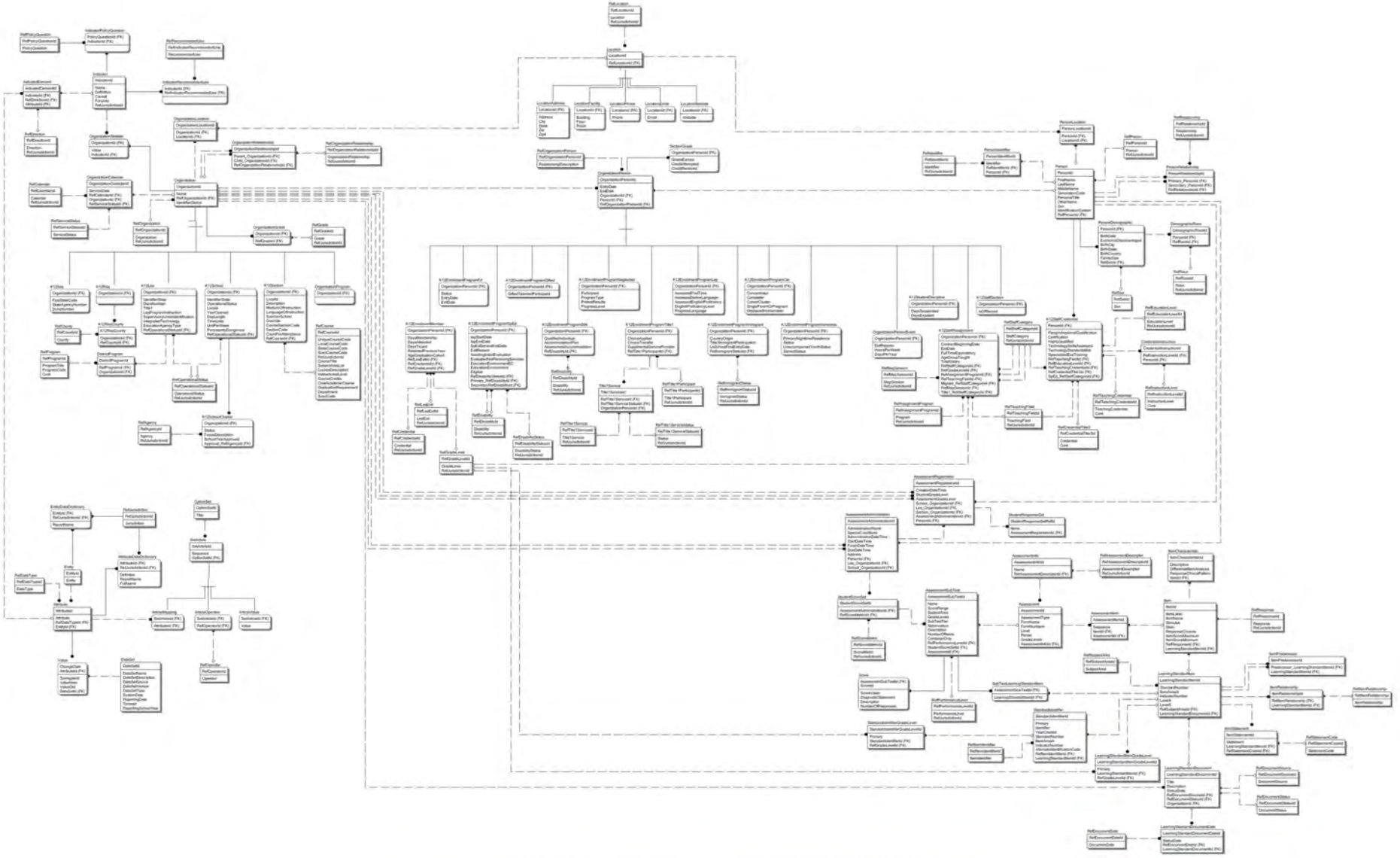
**Types:**

Parent
EC Child
EC Staff
K12 Student
K12 Staff
PS Student
PS Staff

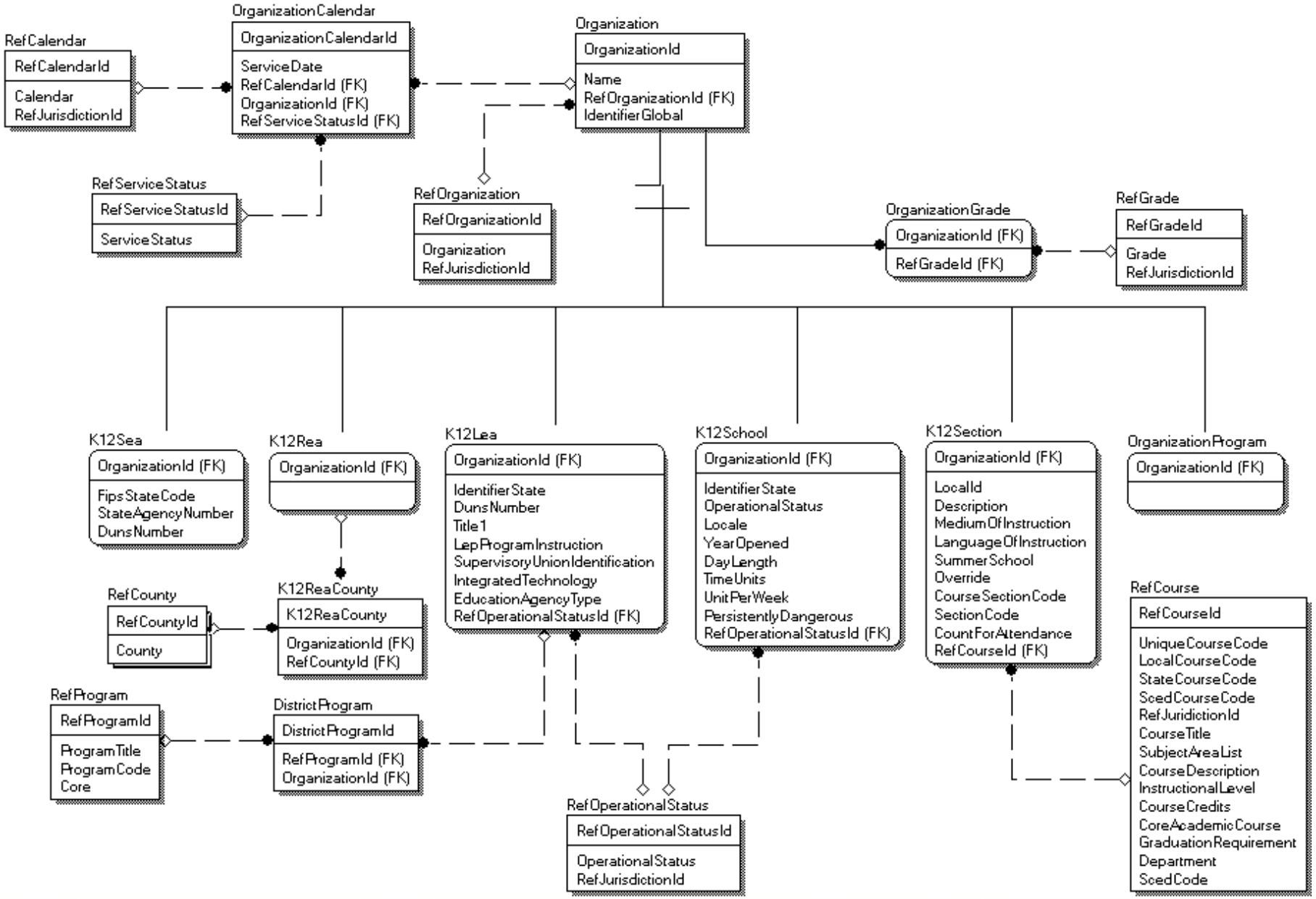
# ODS – Physical View of Logical Model (Partial)



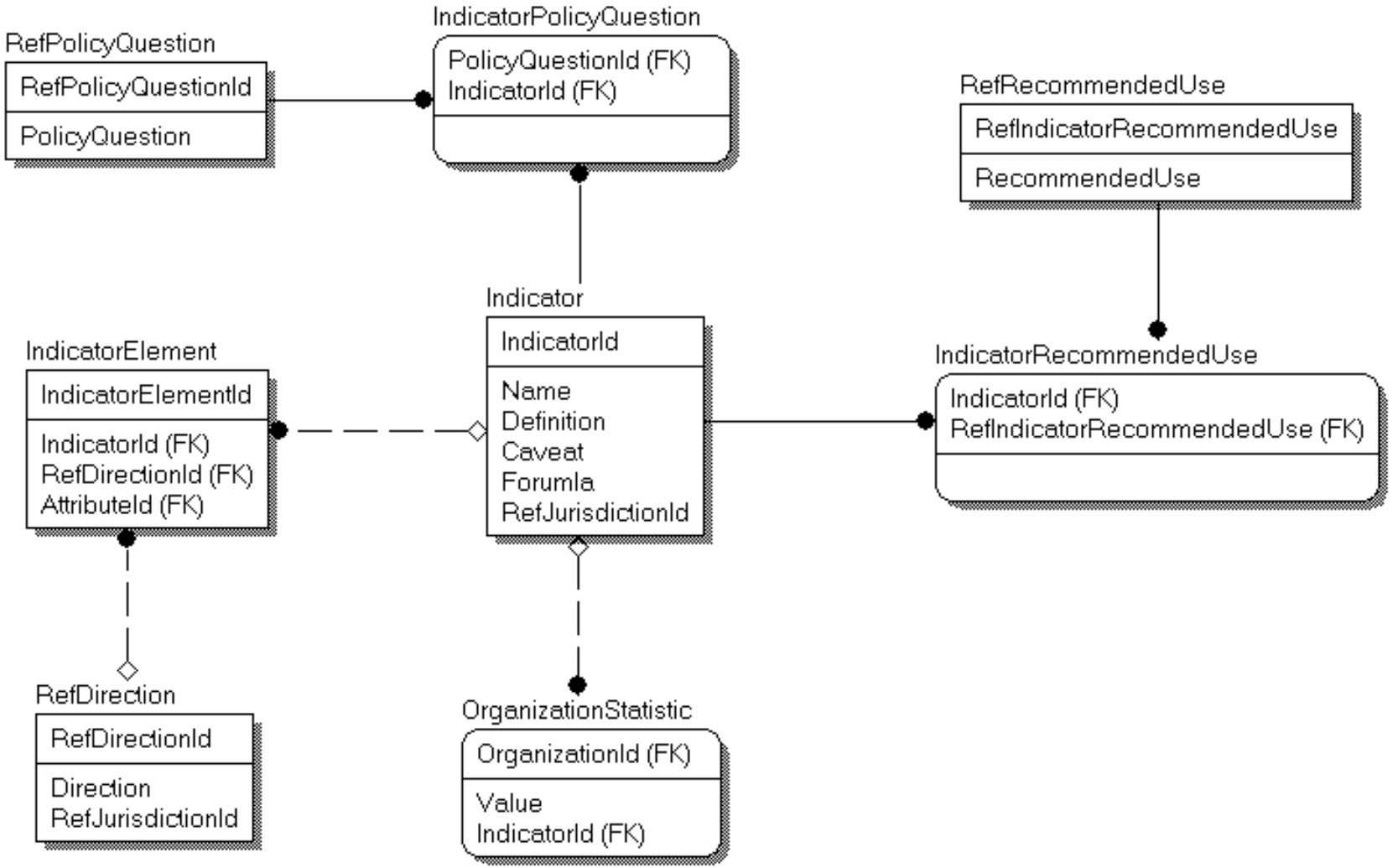
# ODS – Physical View of Logical Model (Full)



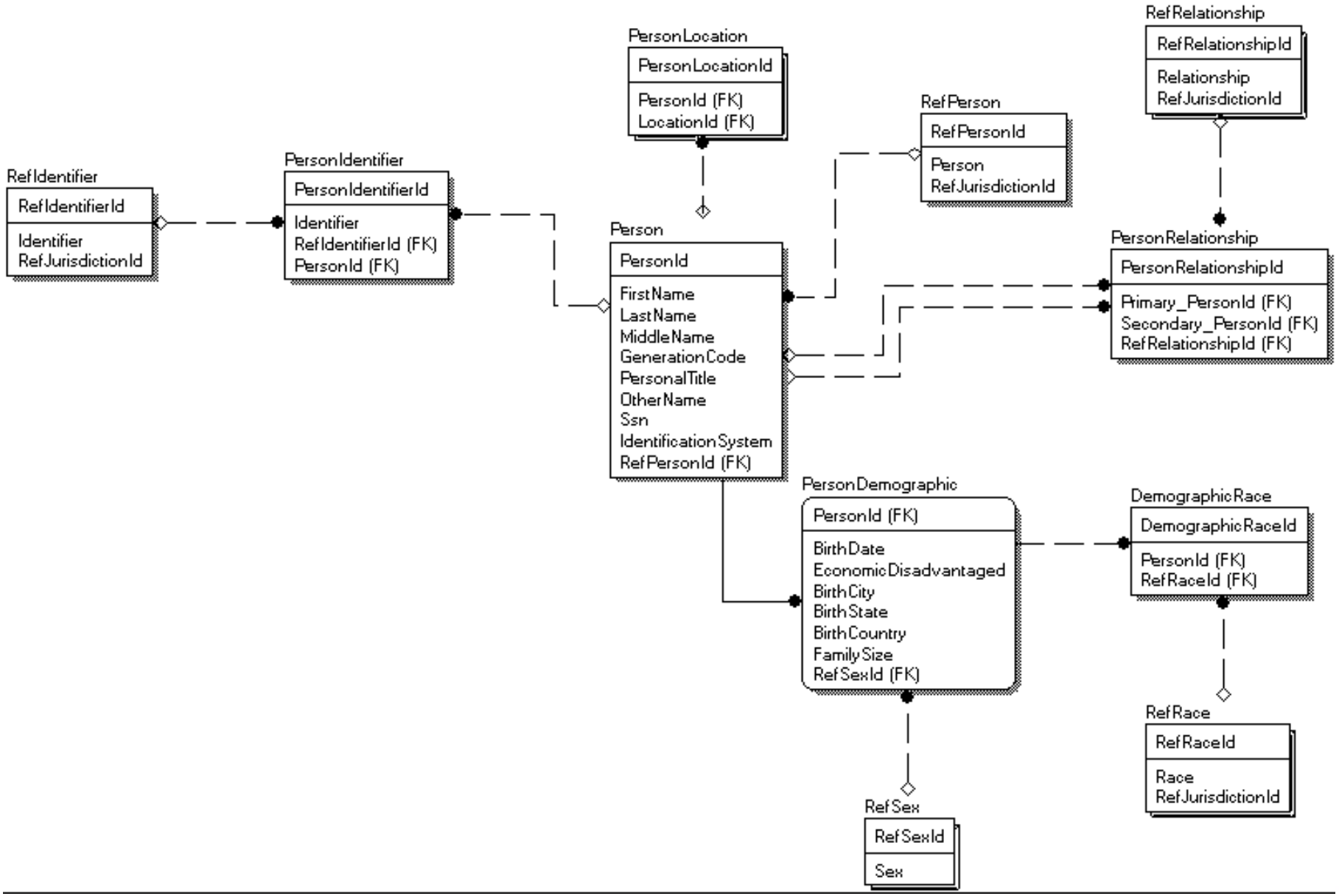
# ODS – Organization



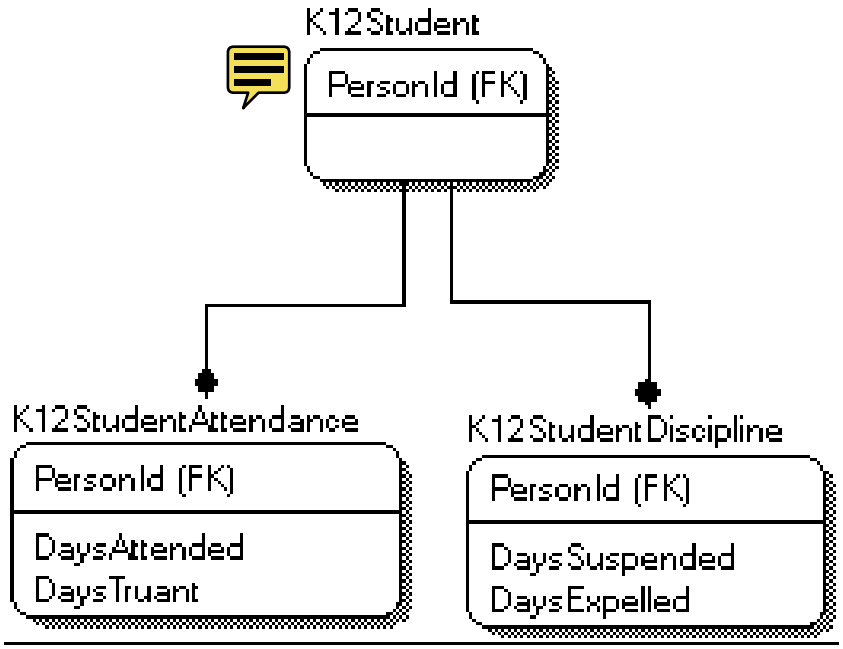
# ODS – Organization Indicators and Statistics



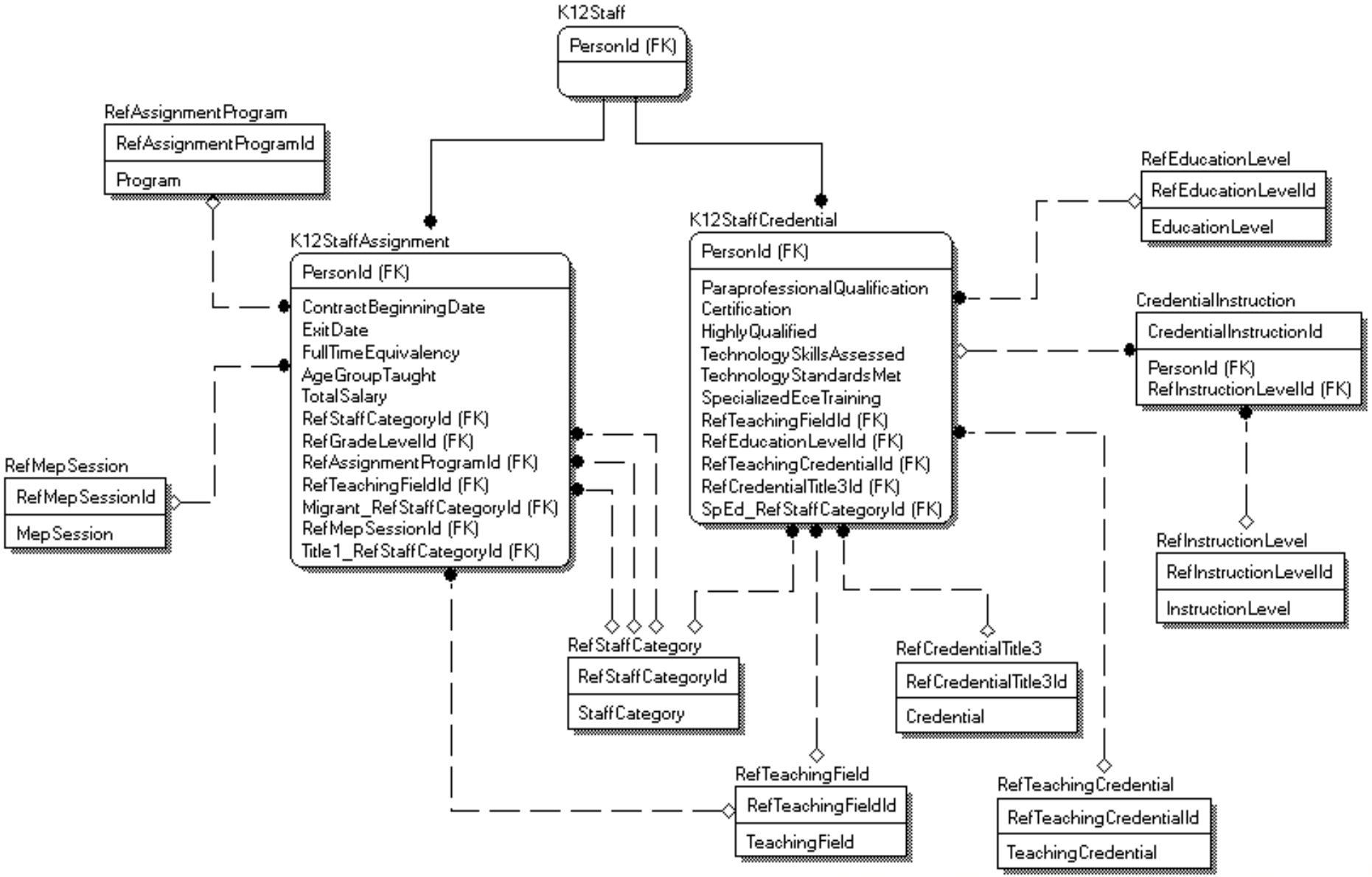
# ODS – Person



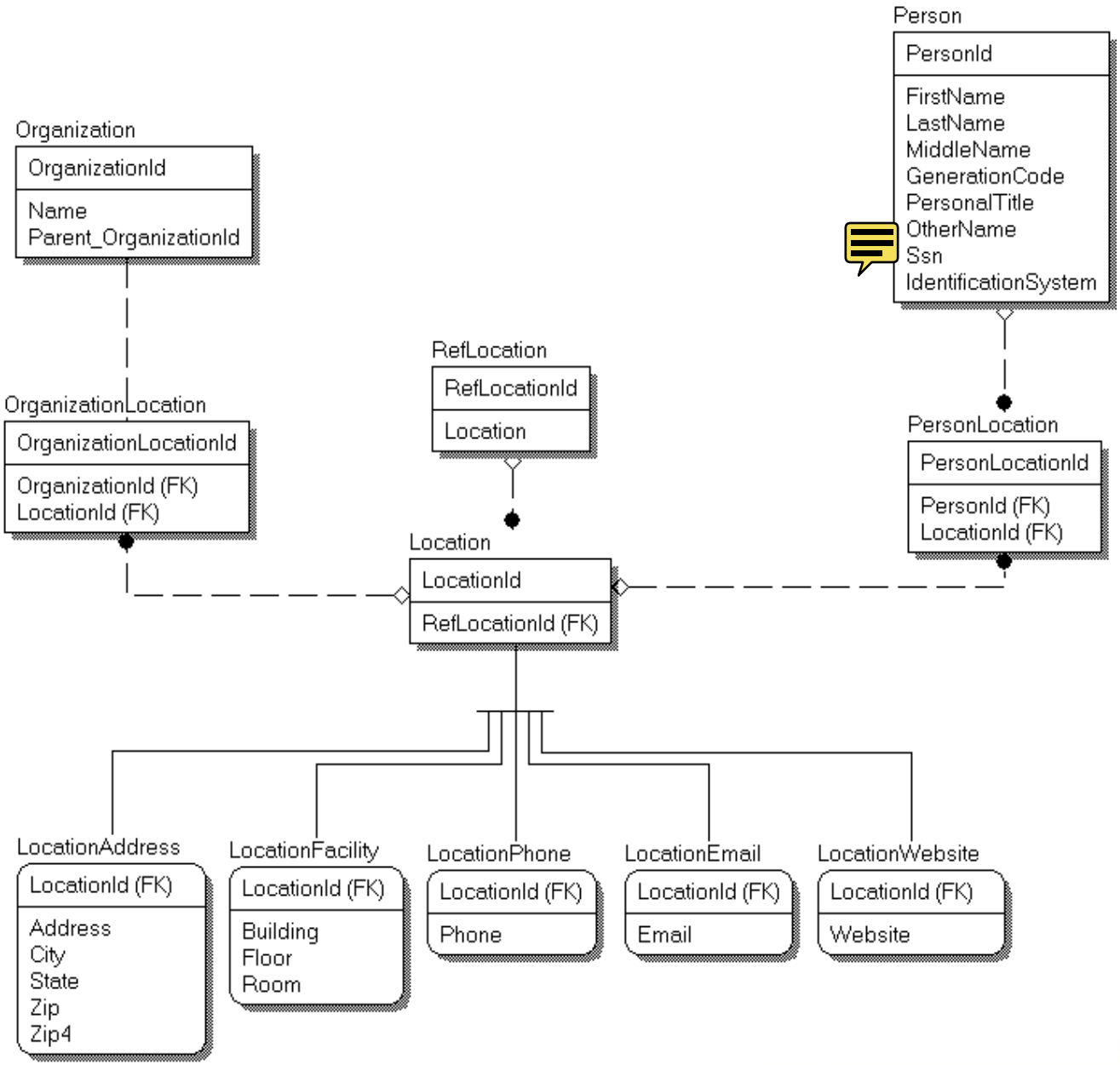
# ODS – Person [K12 Student]



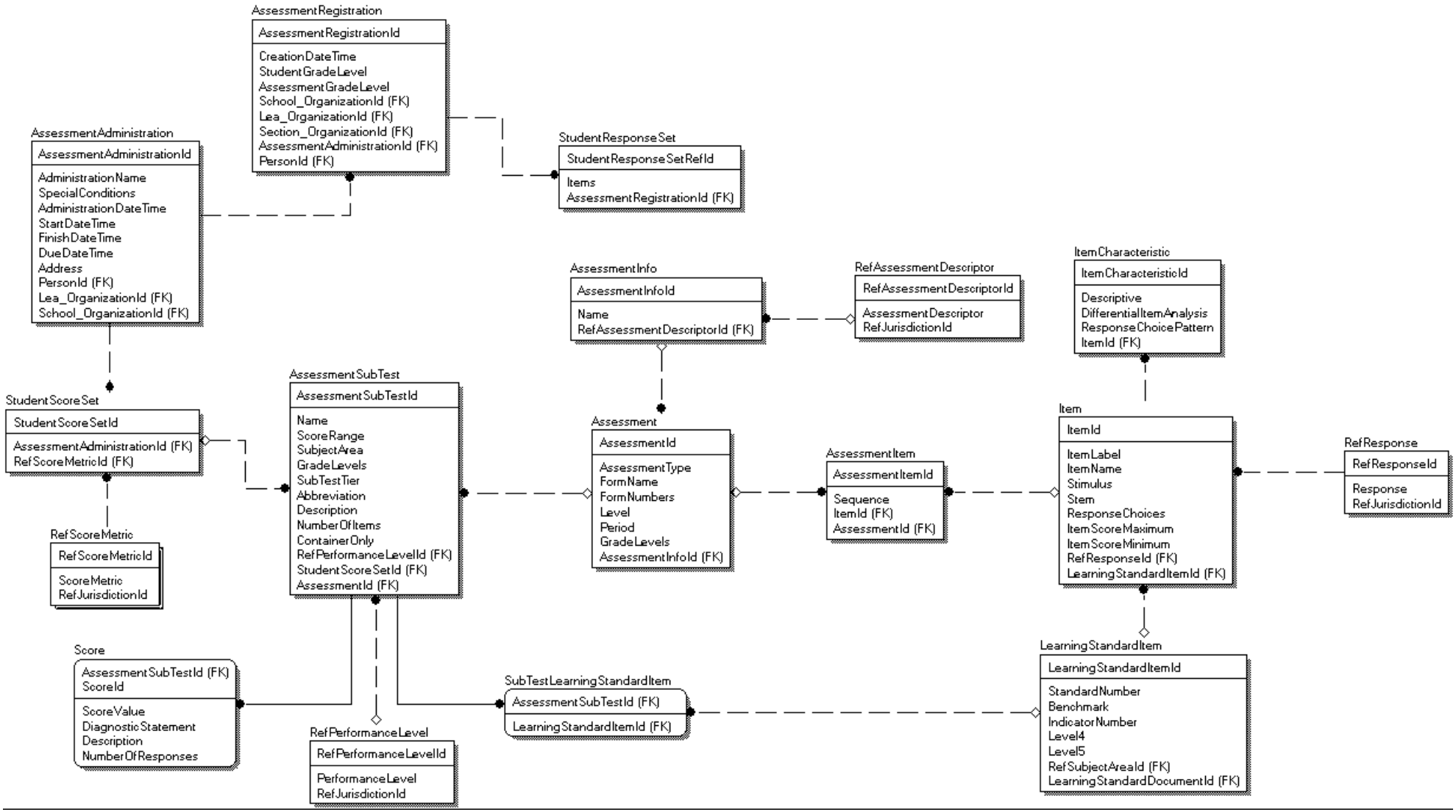
# ODS – Person [K12 Staff]



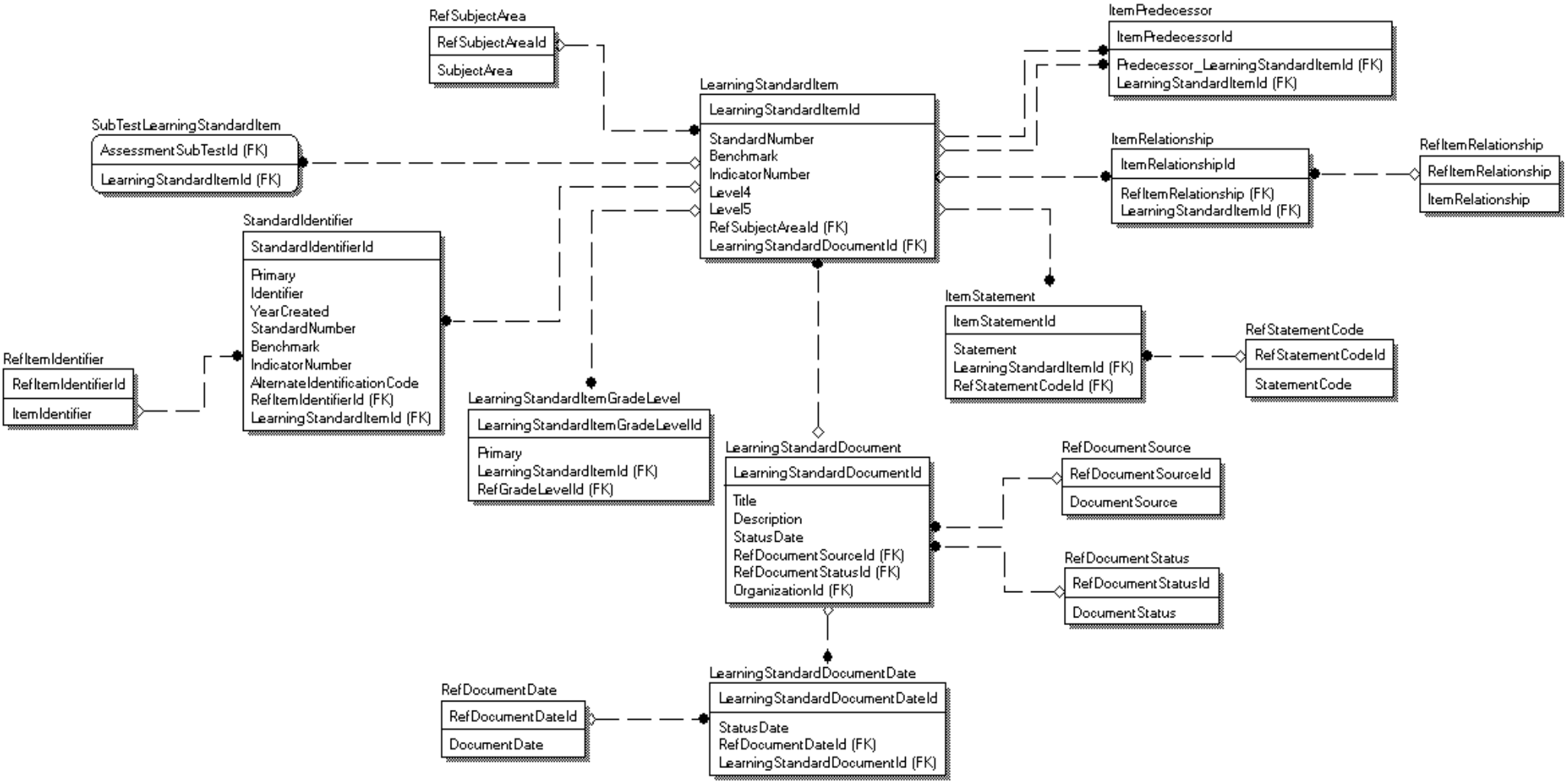
# ODS – Location



# ODS – Assessment [K12 – SIF]

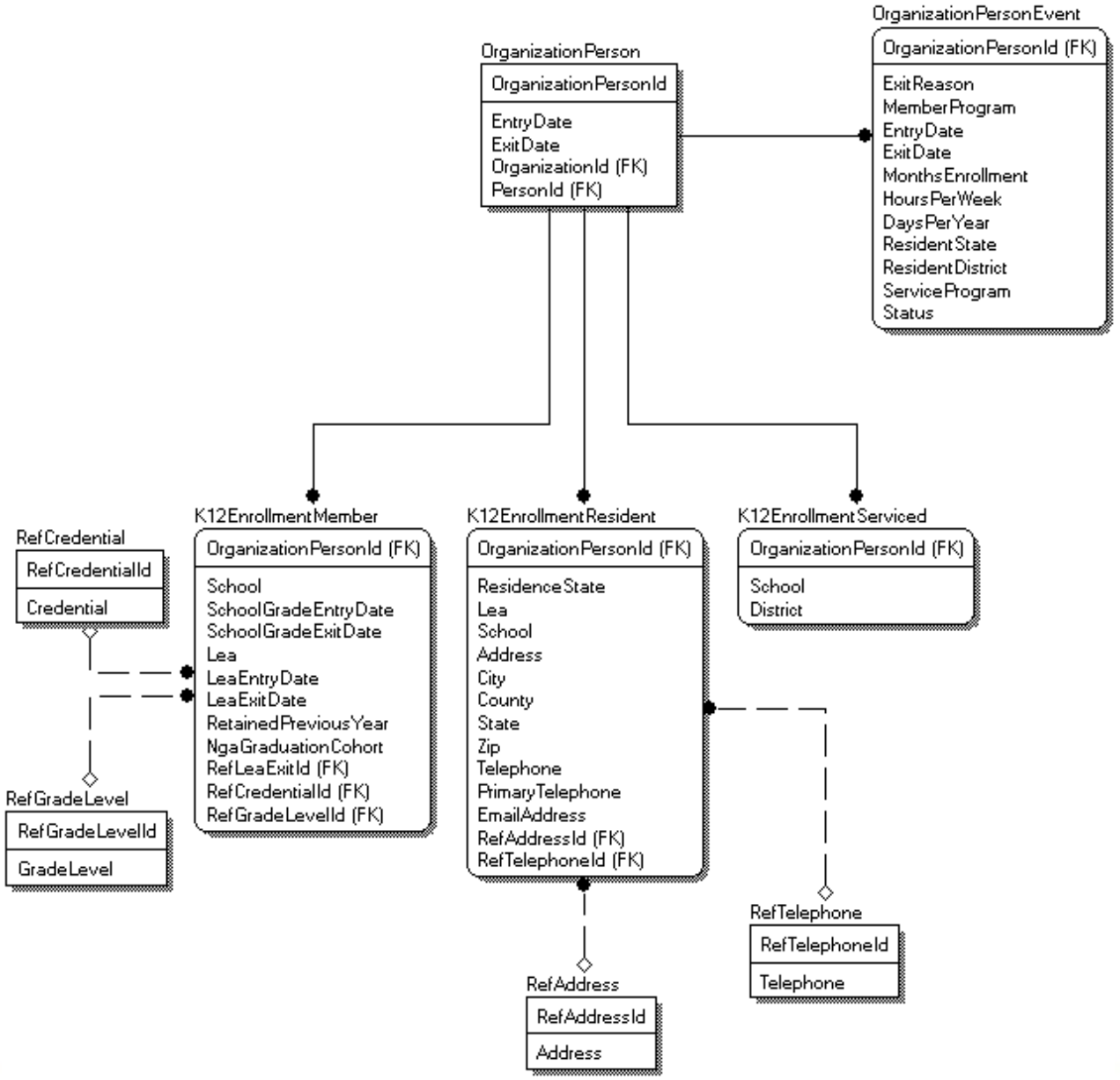


# ODS – Learning Standards [K12-SIF]

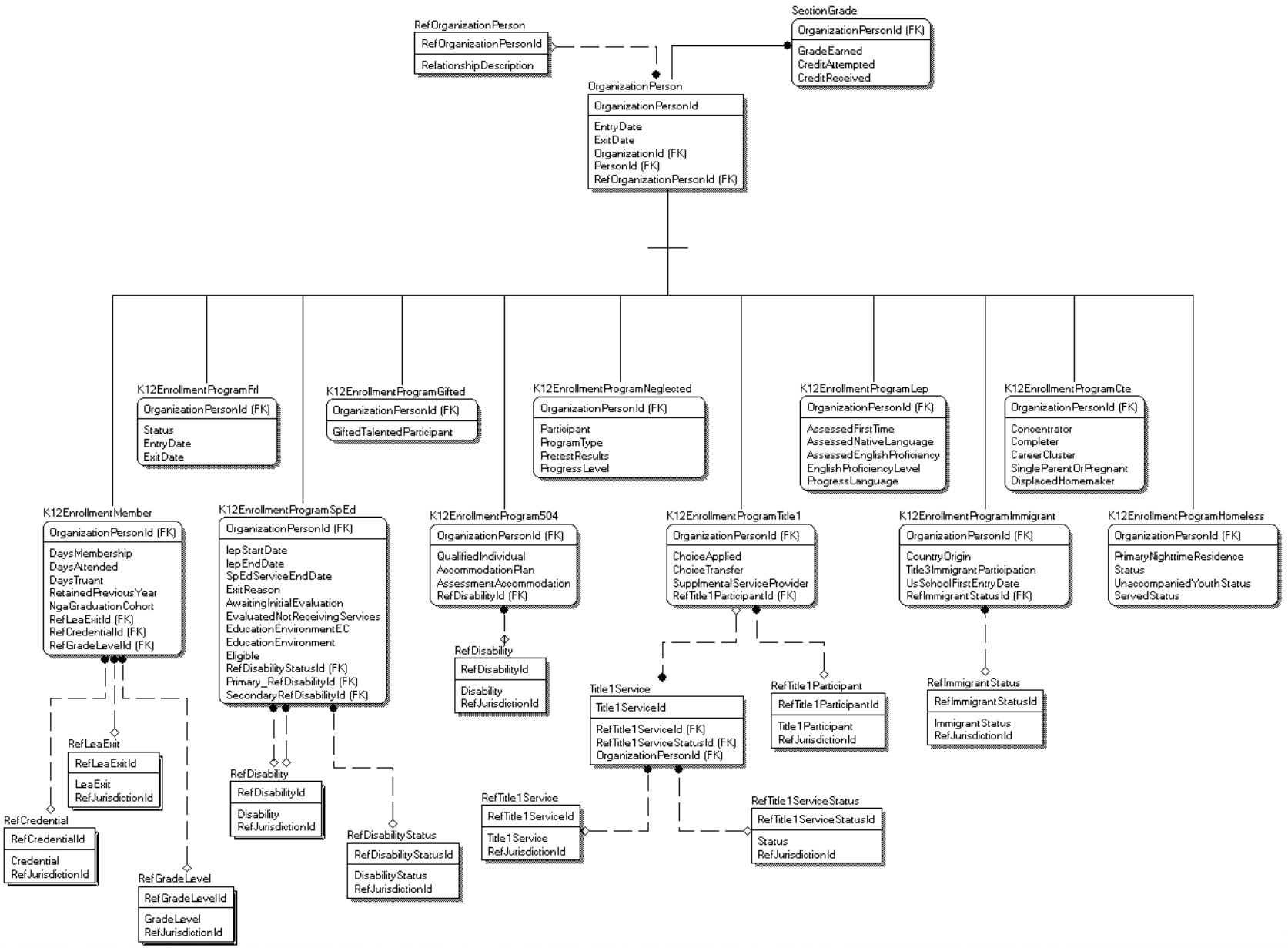


# ODS – Transcript [K12 SIF]

# ODS – Person-Org [K12 Student.Enrollment]



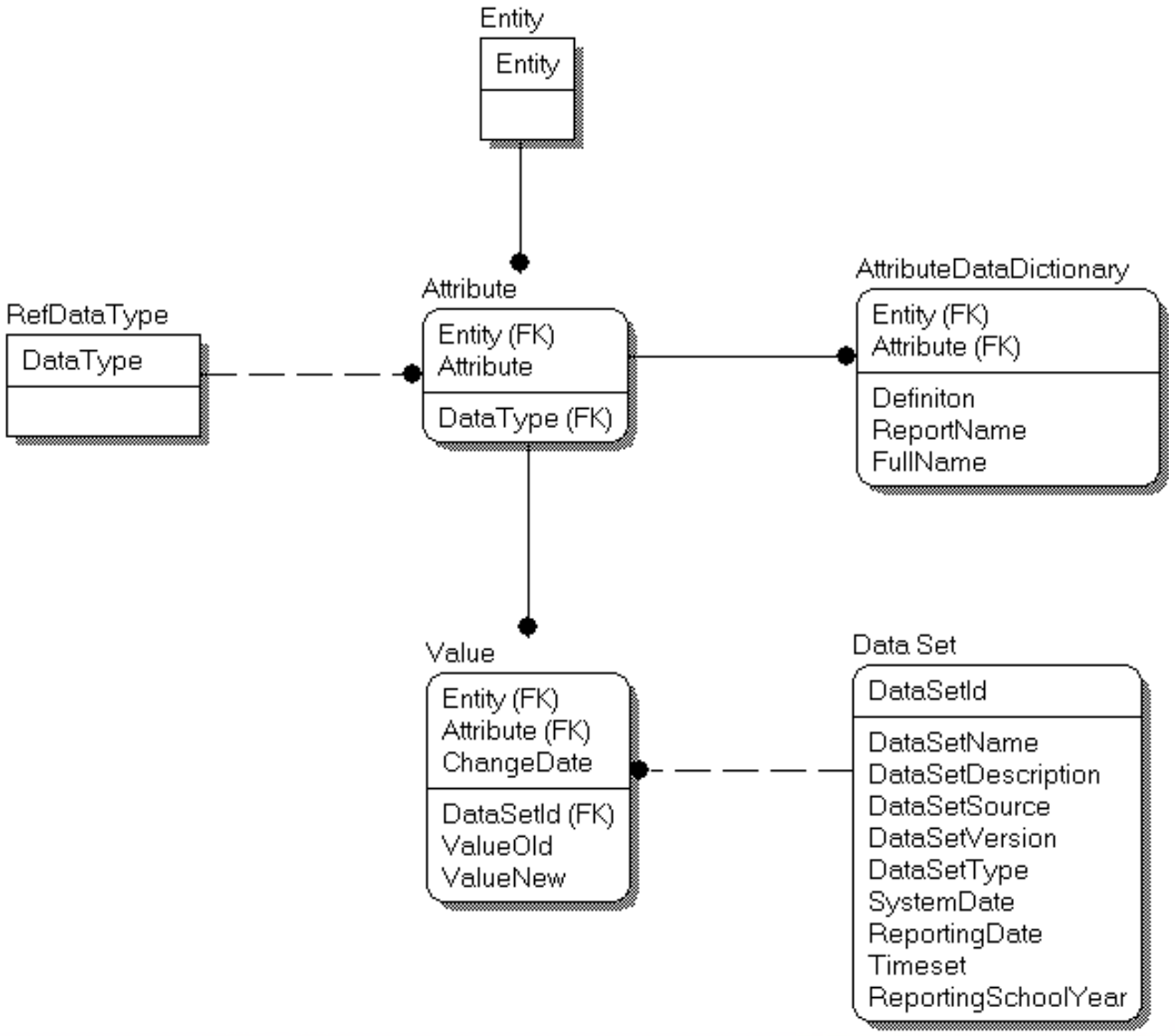
# ODS – Person-Org [K12 Student.Program]



# 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

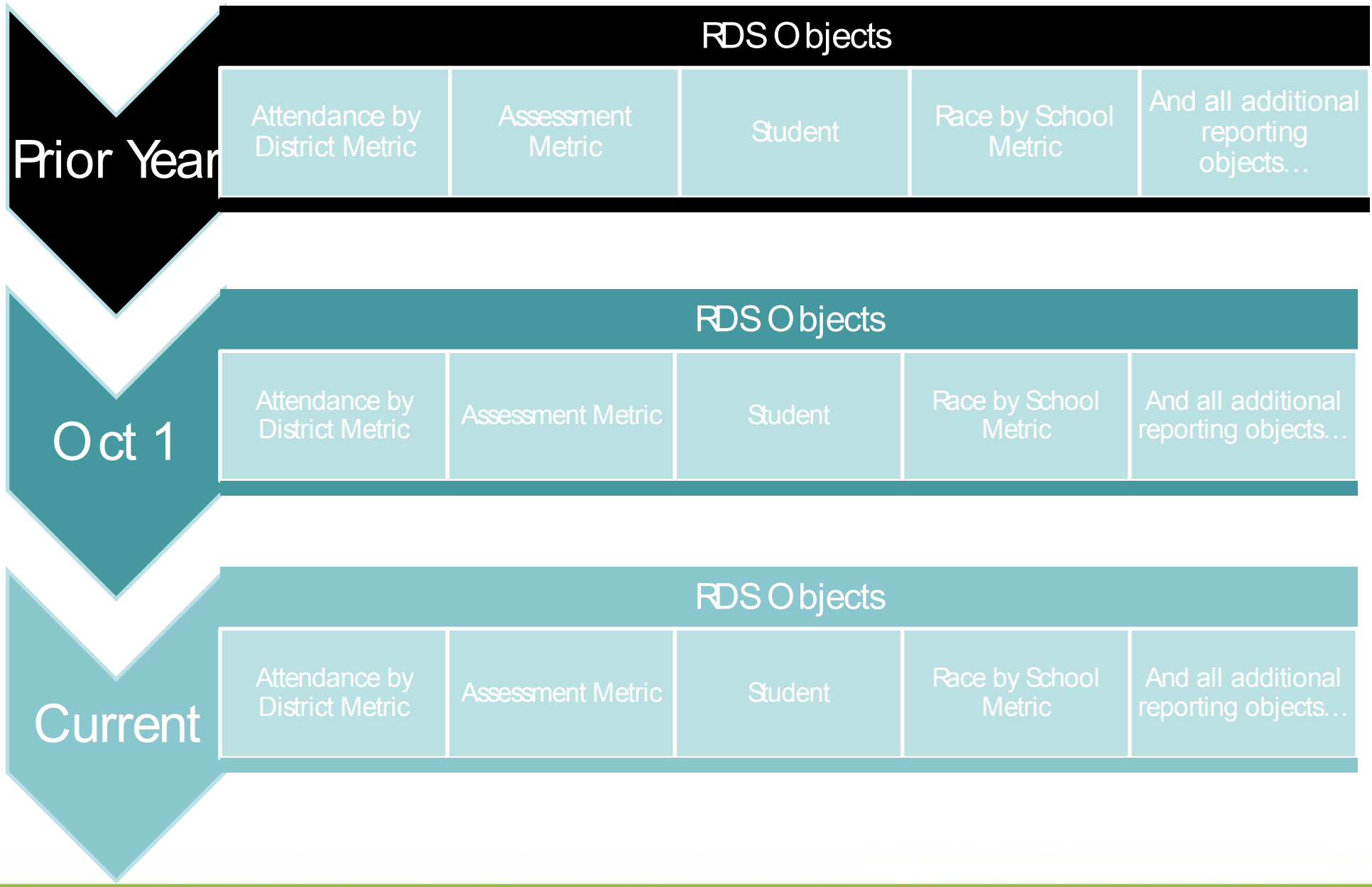
- The RDS is a view of the ODS **as of** a specific date
- The RDS can be an unchanging snapshot or can remain synchronized to changes in the ODS
- The RDS contains both granular and derived /aggregated attributes to support reporting
- The RDS is more of a “flat” “star schema” focused on facts of people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

# The ODS populates each RDS

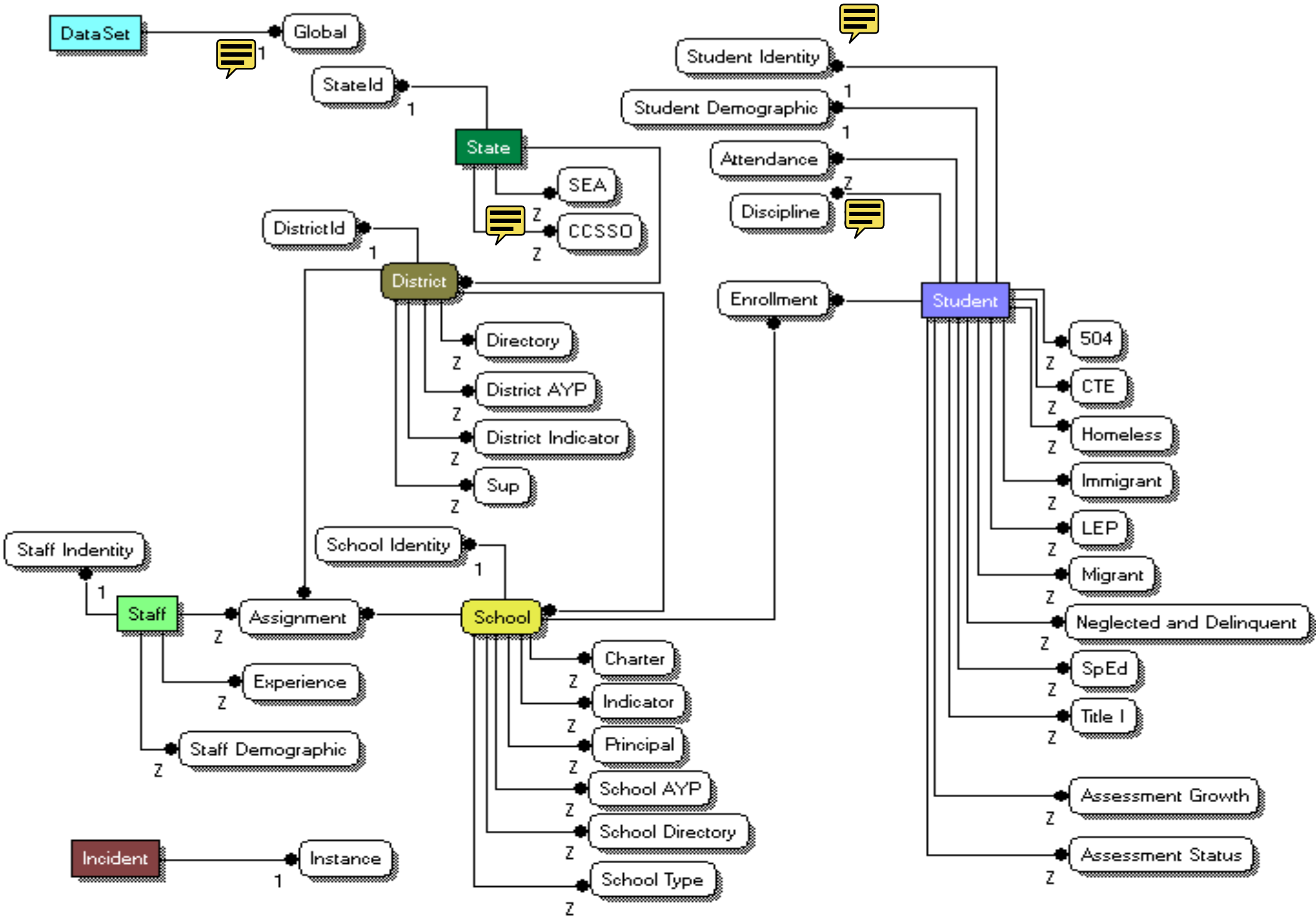



ODS data is transformed and copied into RDS, time-stamping the data to allow that dataset to represent a specific point in time.

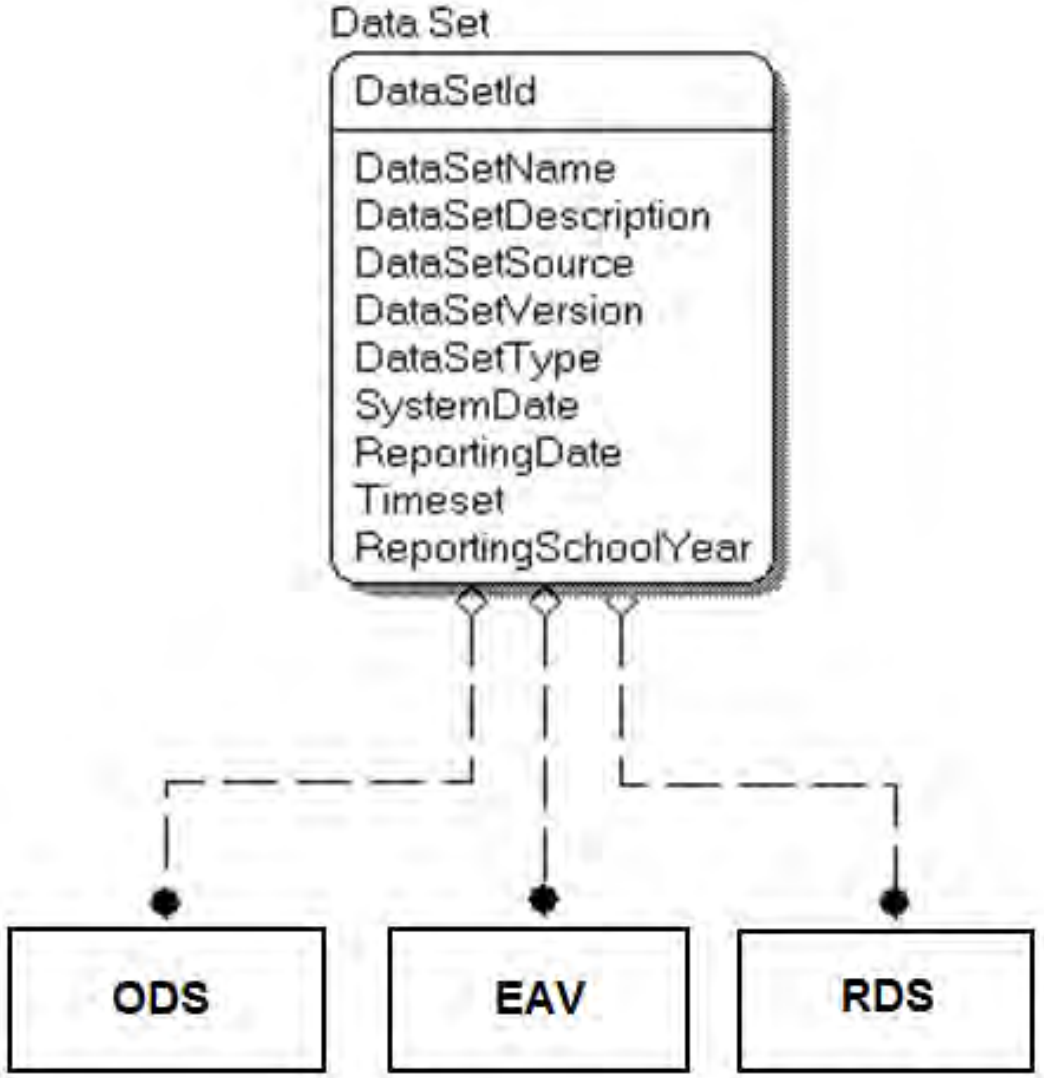
# Each RDS represents a particular “As of” Date



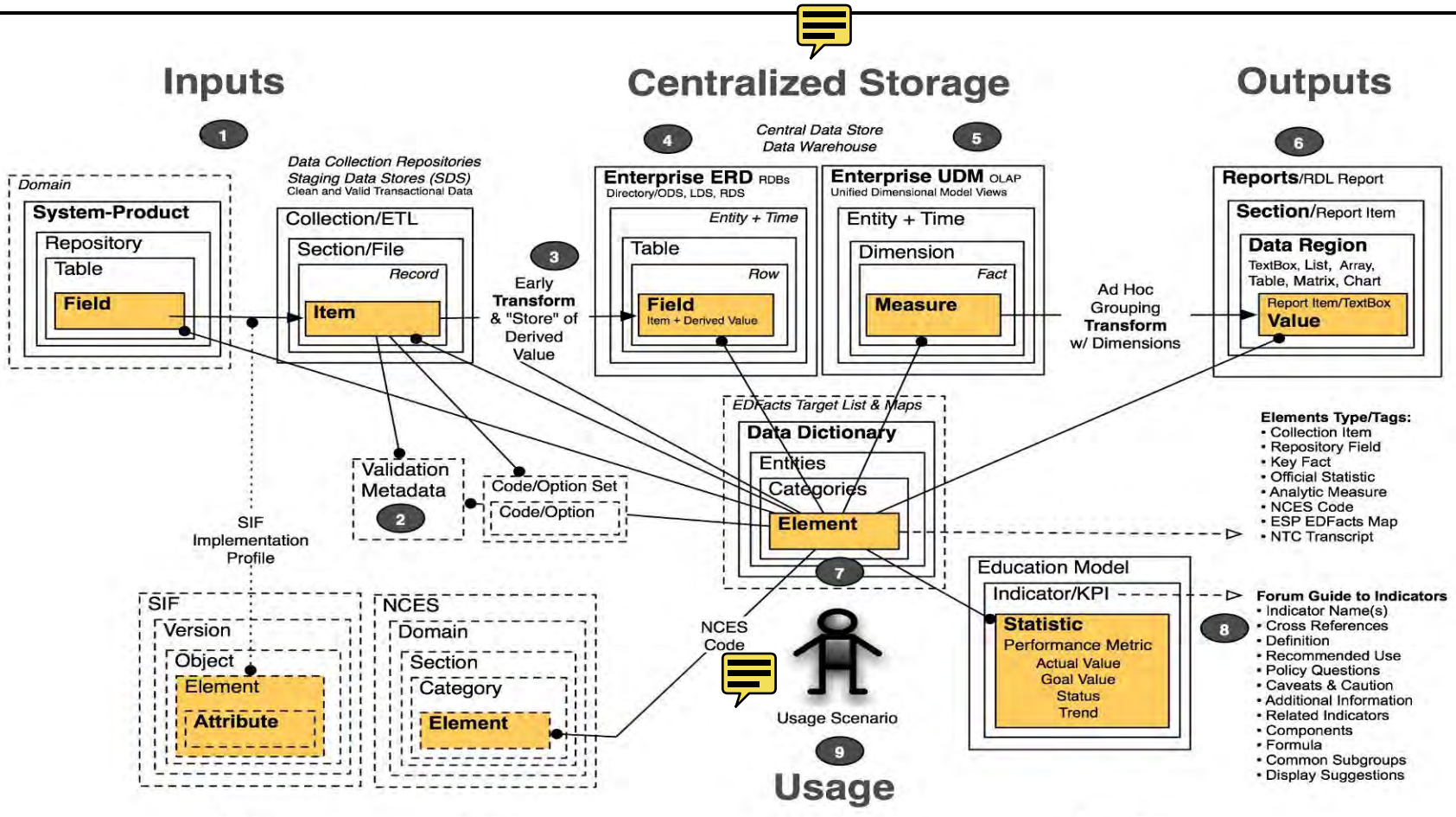
# K12 Official Reporting Data Store (RDS) - Logical



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



# The model is built on PCG's metadata methodology



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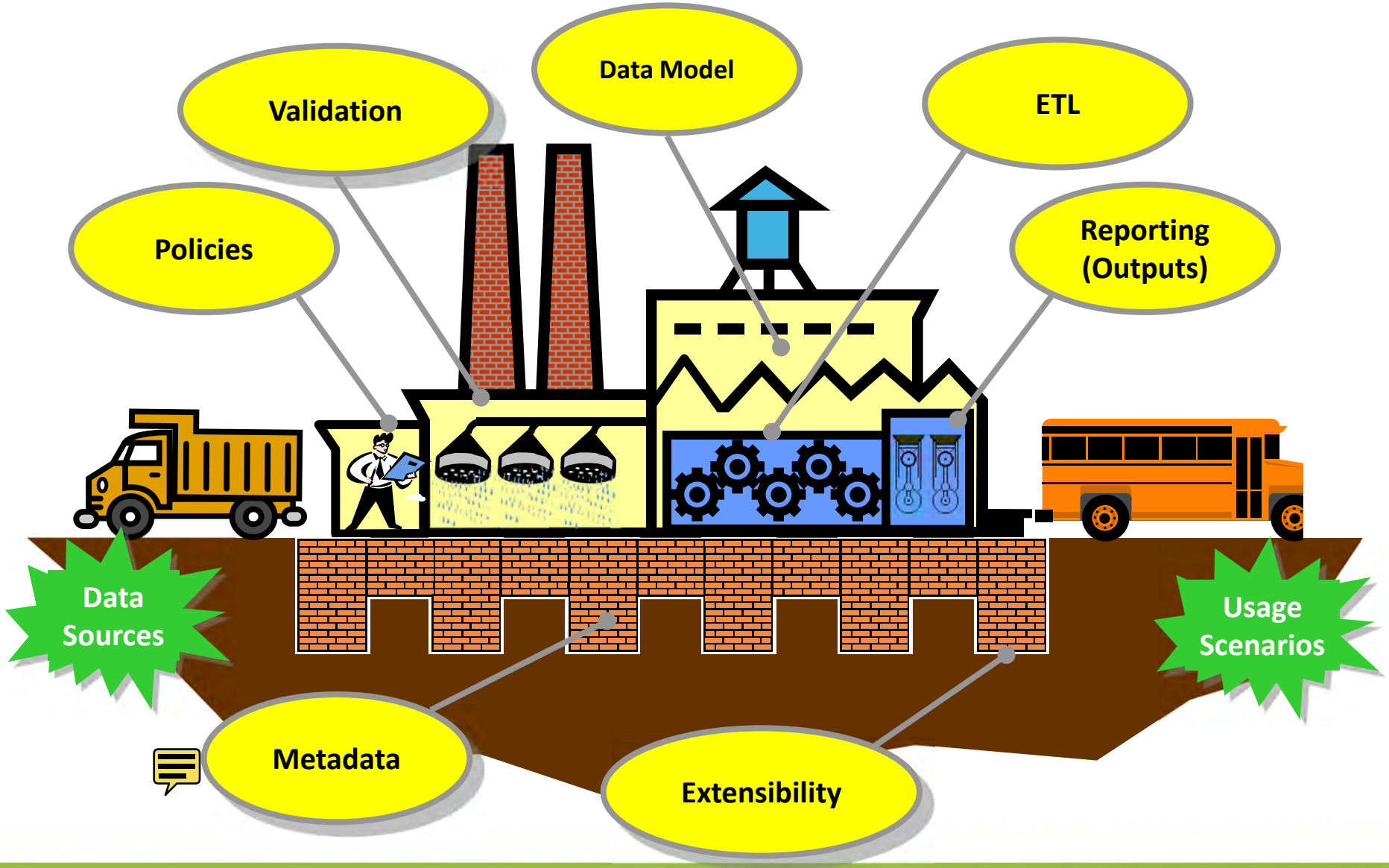
# The model addresses the complete SLDS system cycle



# Inman DW 2.0 – The Importance of Metadata


The orchestra with no conductor


The orchestra with a conductor