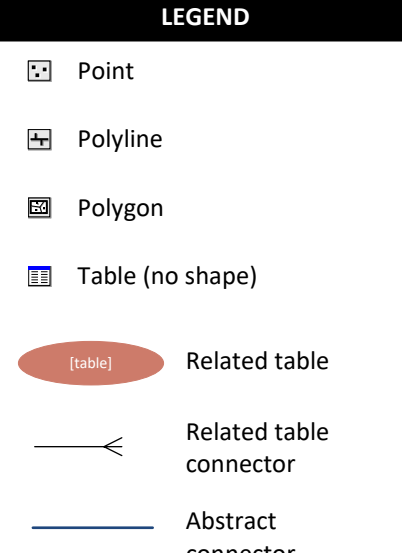


The Pipeline Open Data Standard (PODS) Conceptual Model 7

Start Here

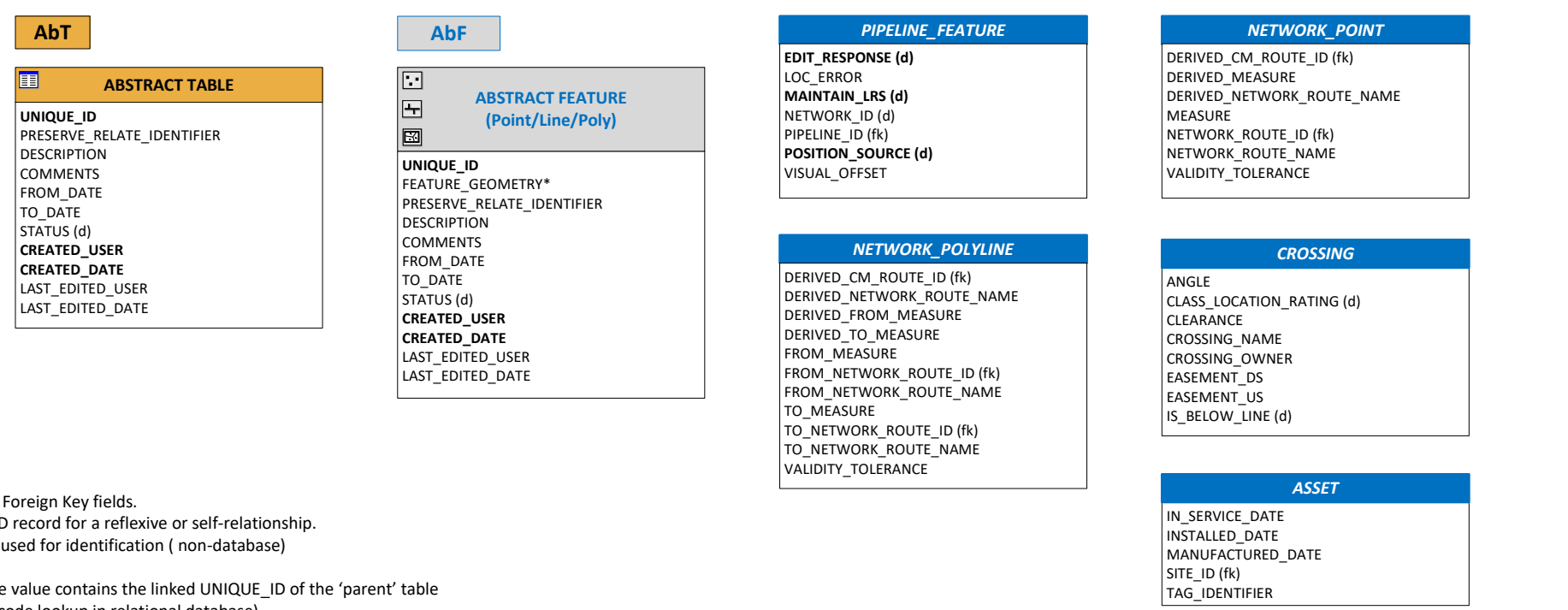


ABOUT THE MODEL
Attribute names ending in ID represent Primary Key or Foreign Key fields.
Attribute names ending in _RXF represent the parent ID record for a reflexive or self-relationship.
Attribute names ending in _IDENTIFIER indicate a field used for identification (non- database).
ID field name indicates a required field.
(FK) - Indicates a 'child' field of a relationship where the value contains the linked UNIQUE_ID of the 'parent' table
(C) - Indicates a list of coded values (ESRI domain or a code lookup in relational database)

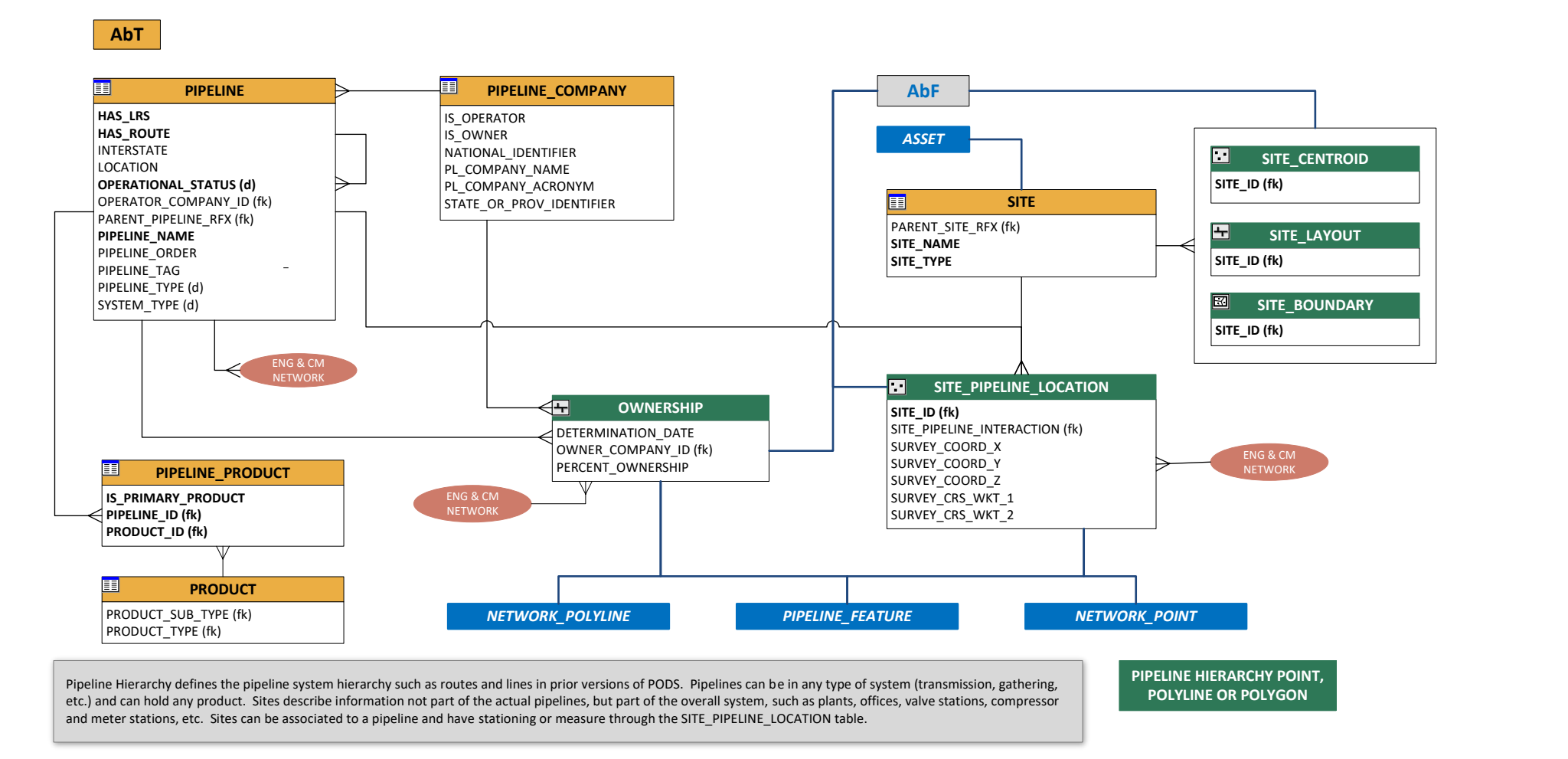
The boxes in this section represent abstract objects that are common across PODS tables and feature classes (tables that store geometry) where indicated in the diagram below. This allows the PODS model to show attributes (fields or columns) that are unique to each table or feature class and not have to duplicate the attributes in each one, thus saving space and complexity.

The **AbT** represents the **ABSTRACT TABLE** throughout the model. The **yellow** box indicates a table (non-spatial) anywhere in the diagram.
The **AbF** represents the **ABSTRACT FEATURE** throughout the model. *The **Abstract Feature** is a feature class in ESRI or spatial table in a relational database that stores geometry per the FEATURE_GEOMETRY field. Abstract features in the model are depicted in various colors throughout the diagram.

The **PIPELINE_FEATURE**, **NETWORK_POINT**, **NETWORK_POLYLINE**, **CROSSING** AND **ASSET** boxes depict common fields in PODS tables and feature classes. When these blue titled boxes are displayed throughout the diagram, this indicates the fields in the table are also represented in those tables. For example, the fields in the **PIPELINE_FEATURE** box below are also included anywhere in the diagram where **PIPELINE_FEATURE** box is referenced. The **ASSET** fields would be included in any asset table or feature class as indicated in the "Assets" section below.

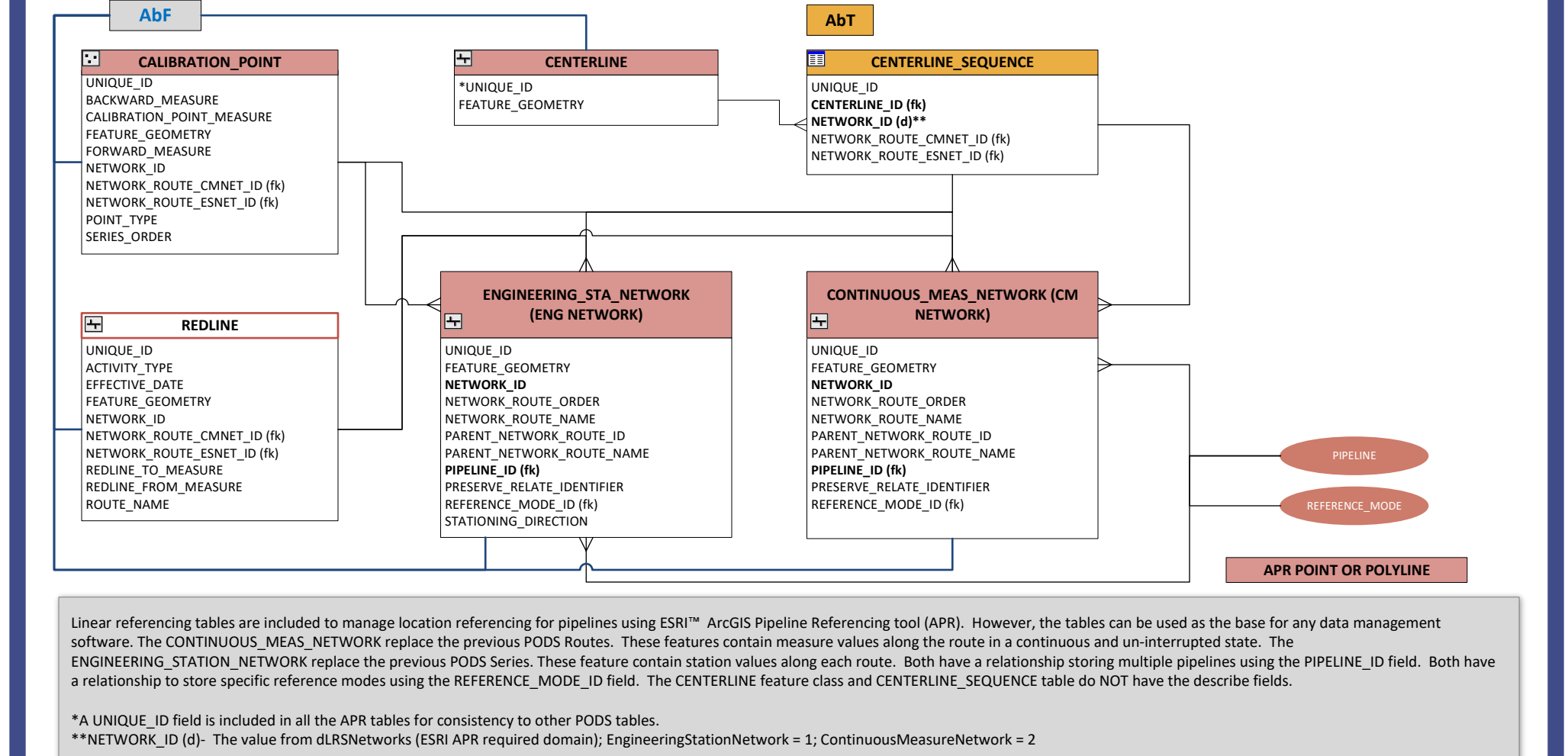


Pipeline Hierarchy



Pipeline hierarchy defines the pipeline system hierarchy such as routes and lines in prior versions of PODS. Pipelines can be in any type of system (transmission, gathering, etc.) and can hold any product. Sites describe information not part of the actual pipelines, but part of the overall system, such as plants, offices, valve stations, compressor and meter stations, etc. Sites can be associated to a pipeline and have stationing or measure through the SITE_PIPELINE_LOCATION table.

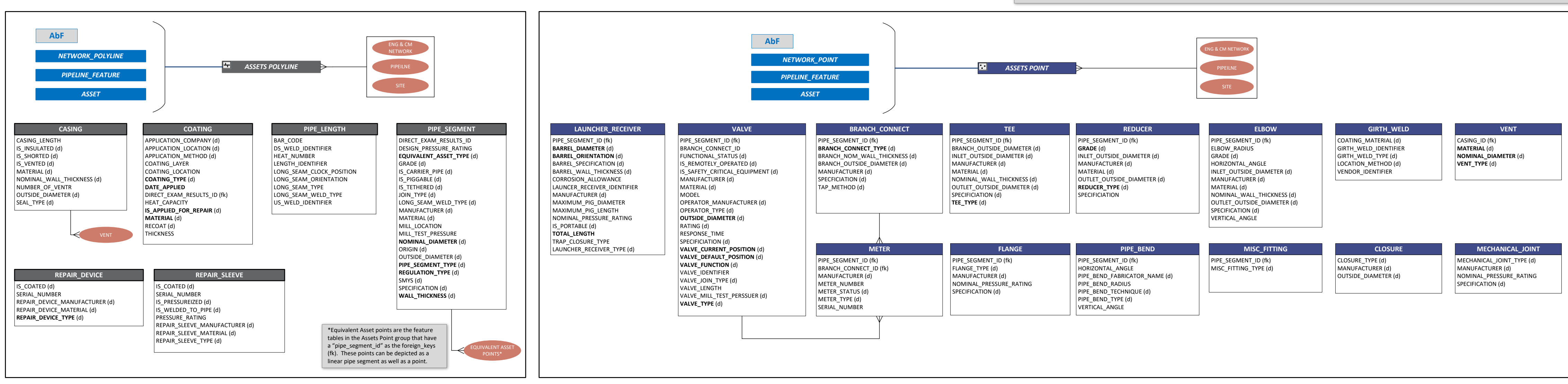
Linear Referencing (APR)



Linear referencing tables are included to manage location referencing for pipelines using ESRI's ArcGIS Pipeline Referencing tool (APR). However, the tables can be used as the base for any data management software. The **CONTINUOUS_MEAS_NETWORK** replace the previous **PODS** Routes. These features contain measure values along the route in a continuous and un-interrupted state. The **ENGINEERING_STATION_NETWORK** replace the previous **PODS** Series. These features contain station values along each route. Both have a relationship storing multiple pipelines using the **PIPELINE_ID** field. Both have a relationship to store specific reference modes using the **REFERENCE_MODE_ID** field. The **CENTERLINE** feature class and **CENTERLINE_SEQUENCE** table do NOT have the describe fields.

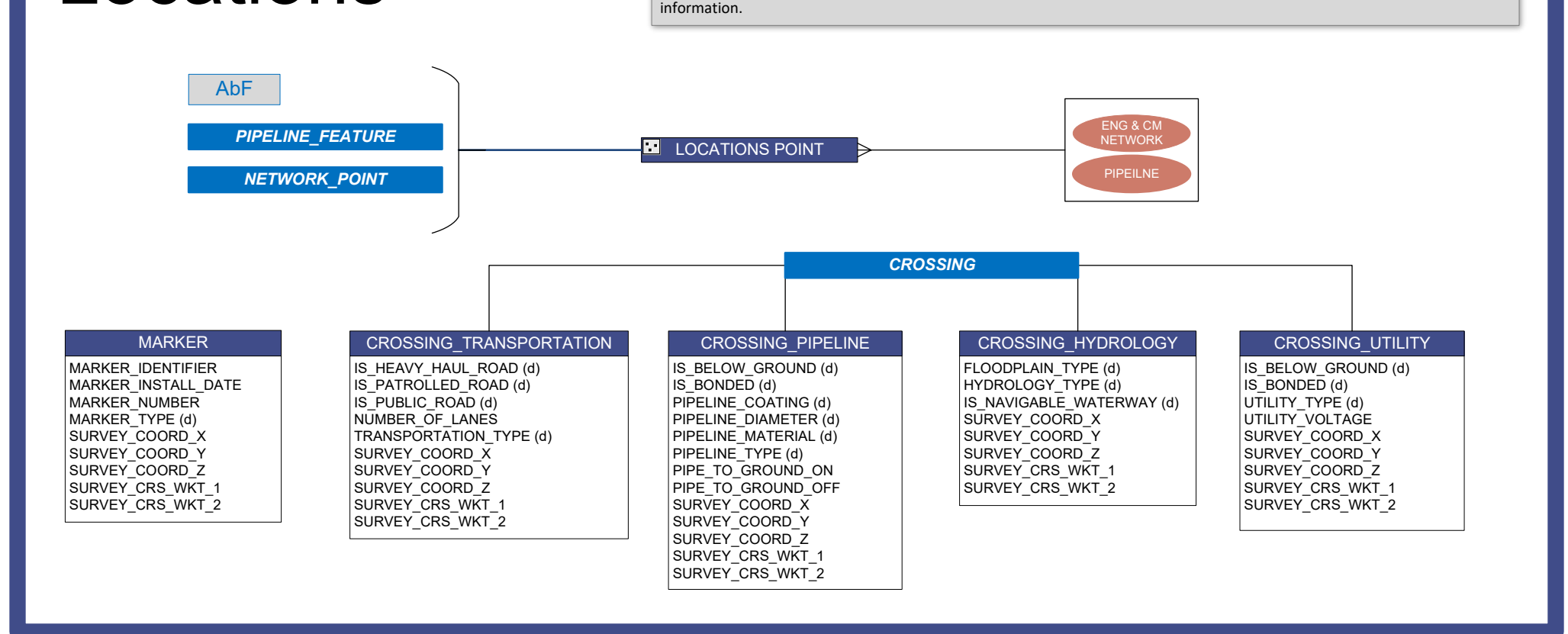
*A **UNIQUE_ID** field is included in all the APR tables for consistency to other PODS tables.
****NETWORK_ID** (C) - The value from **DRSNetworks** (ESRI APR required domain); **EngineeringStationNetwork = 1**; **ContinuousMeasureNetwork = 2**

Assets



Assets are appurtenances, installed components or devices on (points) or along (polyline) the pipeline system. Assets can belong to the pipeline or a site. They require regular maintenance and inspection, thus each asset contains fields that can link back to an Enterprise Resource Management (ERP) system.

Locations

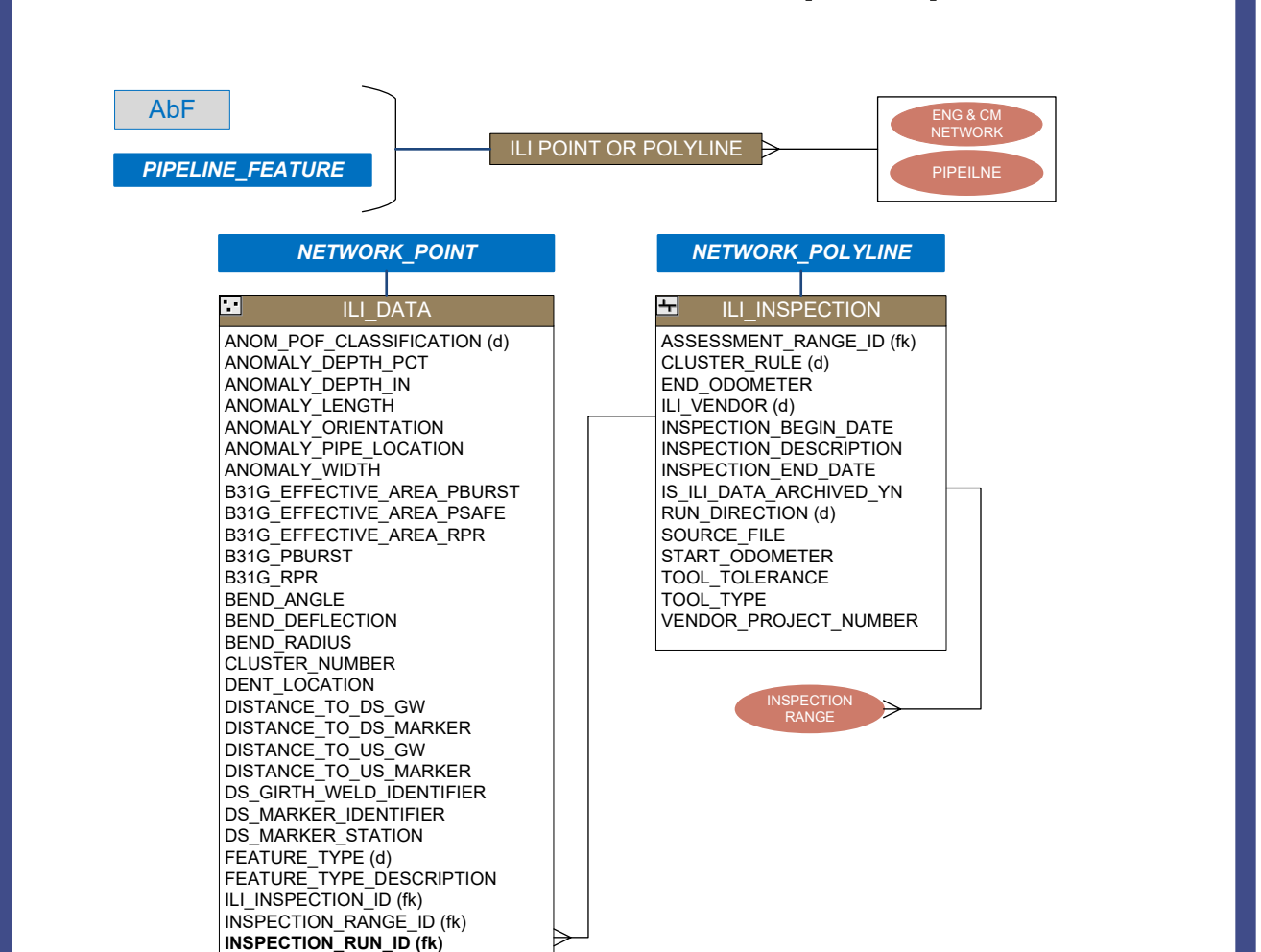


Locations represent a location on the pipeline and consist of markers or lines crossing the pipeline, such as third party pipelines or utility lines, hydrology (rivers, lakes, etc) or roads and highways. Location tables/feature classes allow for storing of survey information.

Learn more at [PODS.org](https://pods.org)

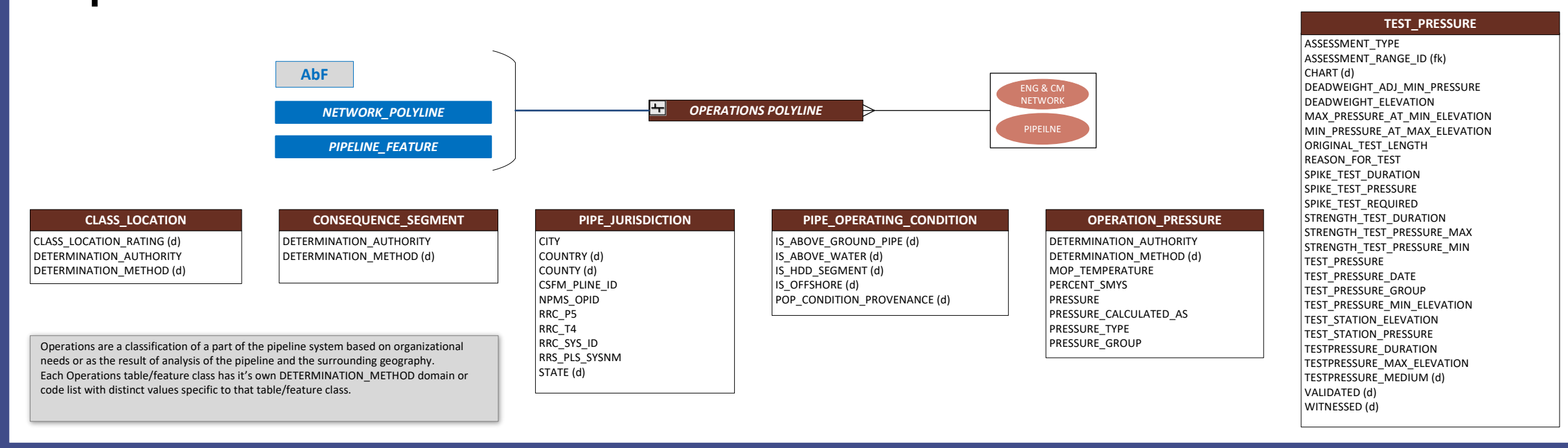


Inline Inspection (ILI)



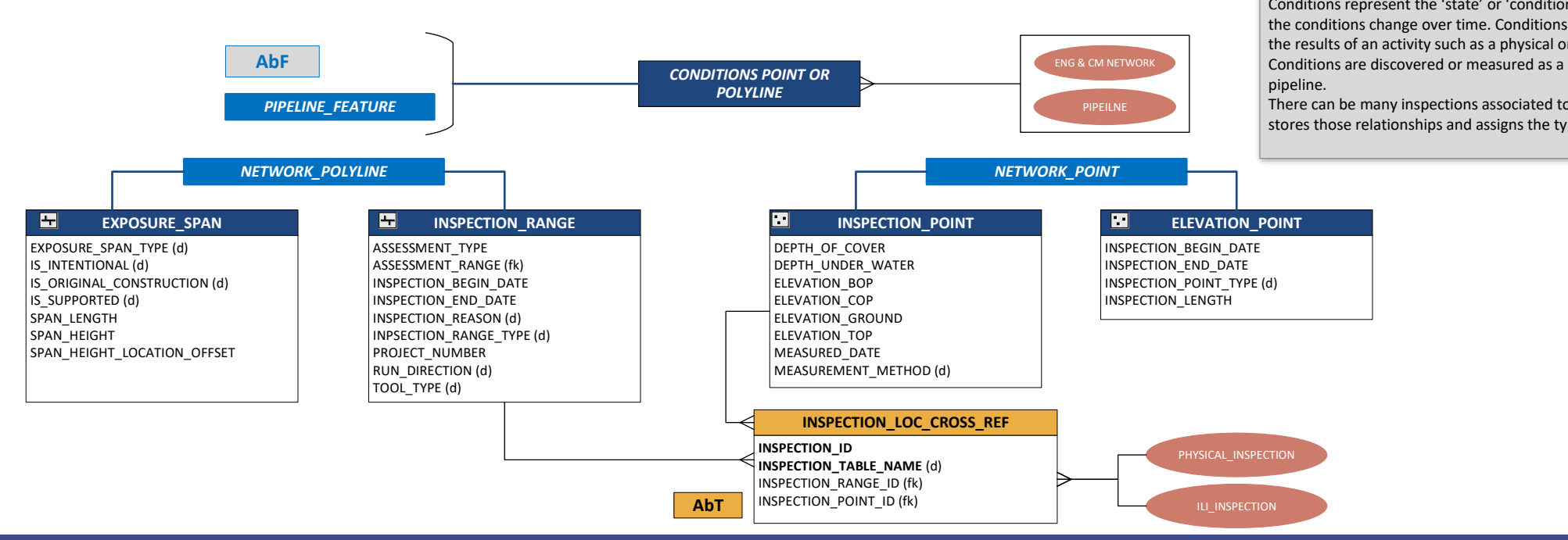
ILI contains inline inspection information from ILI tools and inspections. The inspection is related to the Inspection Range through the **INSPECTION_LOCATION_CROSS_REF** table in the "Conditions" section.

Operations



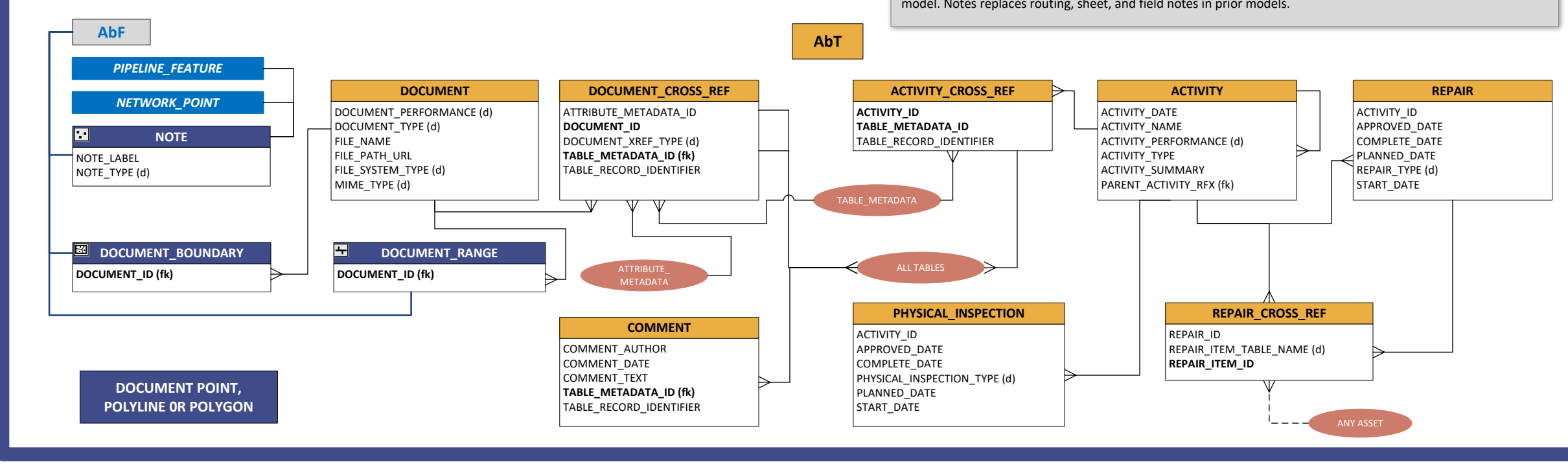
Operations are a classification of a part of the pipeline system based on organizational needs or as the result of analysis of the pipeline and the surrounding geography. Each Operations table/feature class has its own **DETERMINATION_METHOD** domain or code list with distinct values specific to that table/feature class.

Conditions



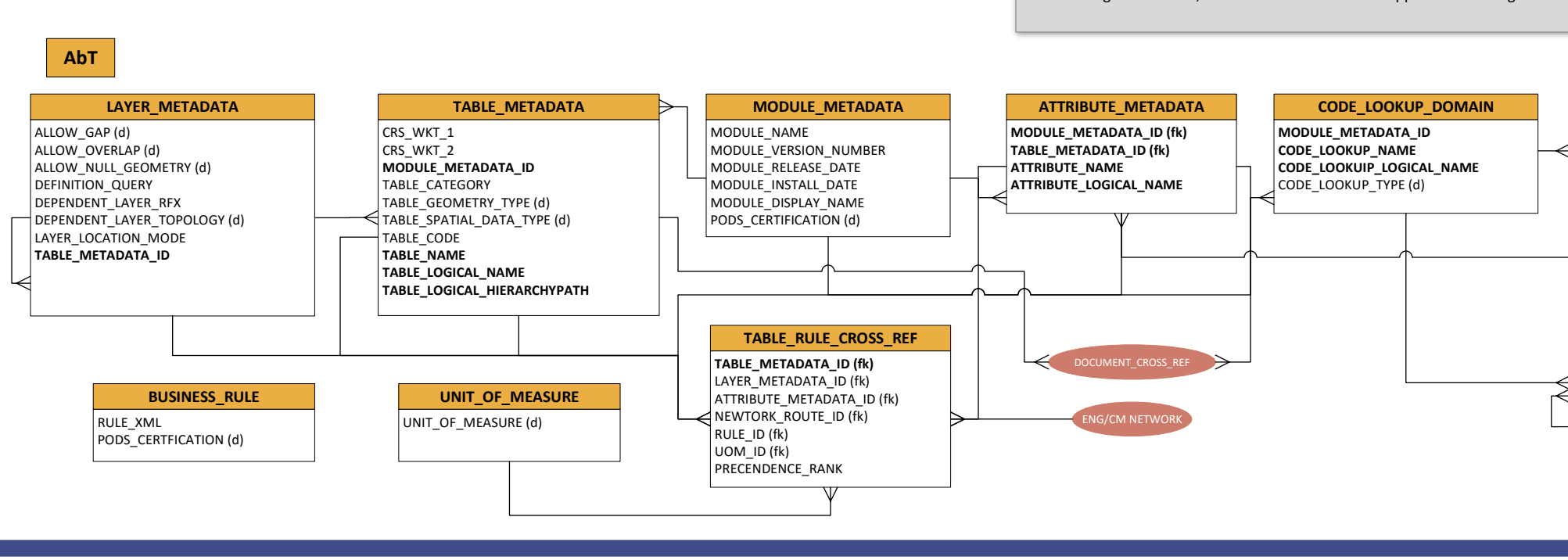
Conditions represent the 'state' or 'condition' of the pipeline and can record previous or historical states of the pipeline as the conditions change over time. Conditions also represent the results of an activity such as a physical or inline inspection. Conditions are discovered or measured as a result of an 'Activity', such as an inspection, that is performed on or along the pipeline. There can be many inspections associated to many point or polyline inspections. The **INSPECTION_LOC_CROSS_REF** table stores those relationships and assigns the type of inspection, a physical or ILI inspection.

Documents & Activities



The Documents allow for storing links to documents and the point and polygon boundary of those documents and comments along the pipeline linked to any objects in the model. Activities can include repairs or inspections. A repair can be done and stored for any asset. Notes can be used to store information describing any objects in the model. Notes replaces routing, sheet, and field notes in prior models.

Metadata Tables



Metadata tables are used to describe generic non-spatial elements and to capture or codify rules about the structure and content of the model. Metadata describes structure, behavior and content of tables, modules and layers and the model itself all. They are the key to managing data within a PODS 7.0 data model using a consistent, standard and documented approach adhering to safe operations and easing responses to governmental audits.