OpenRail Designer - Low Voltage Assets
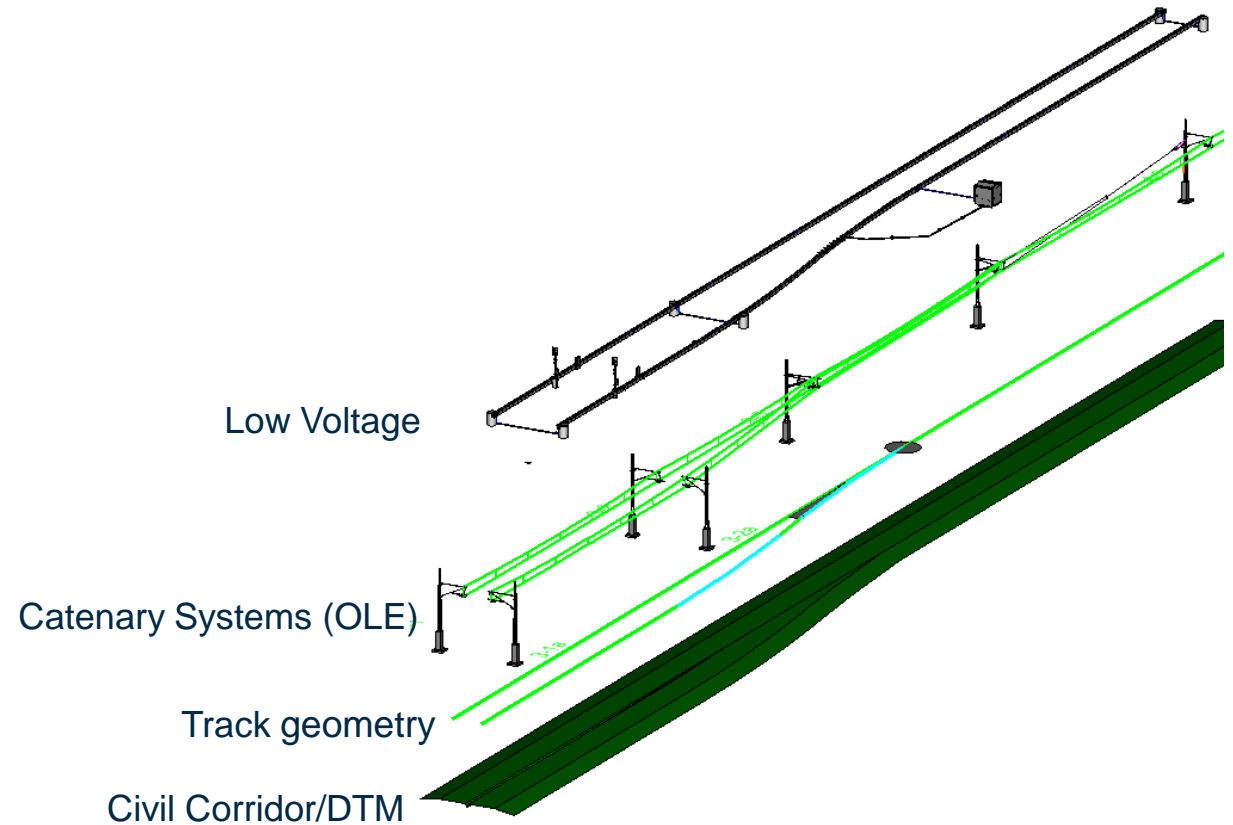[Signal / Telecom / Electrical / Trench]

Bentley Systems, Civil - Håkan Norling
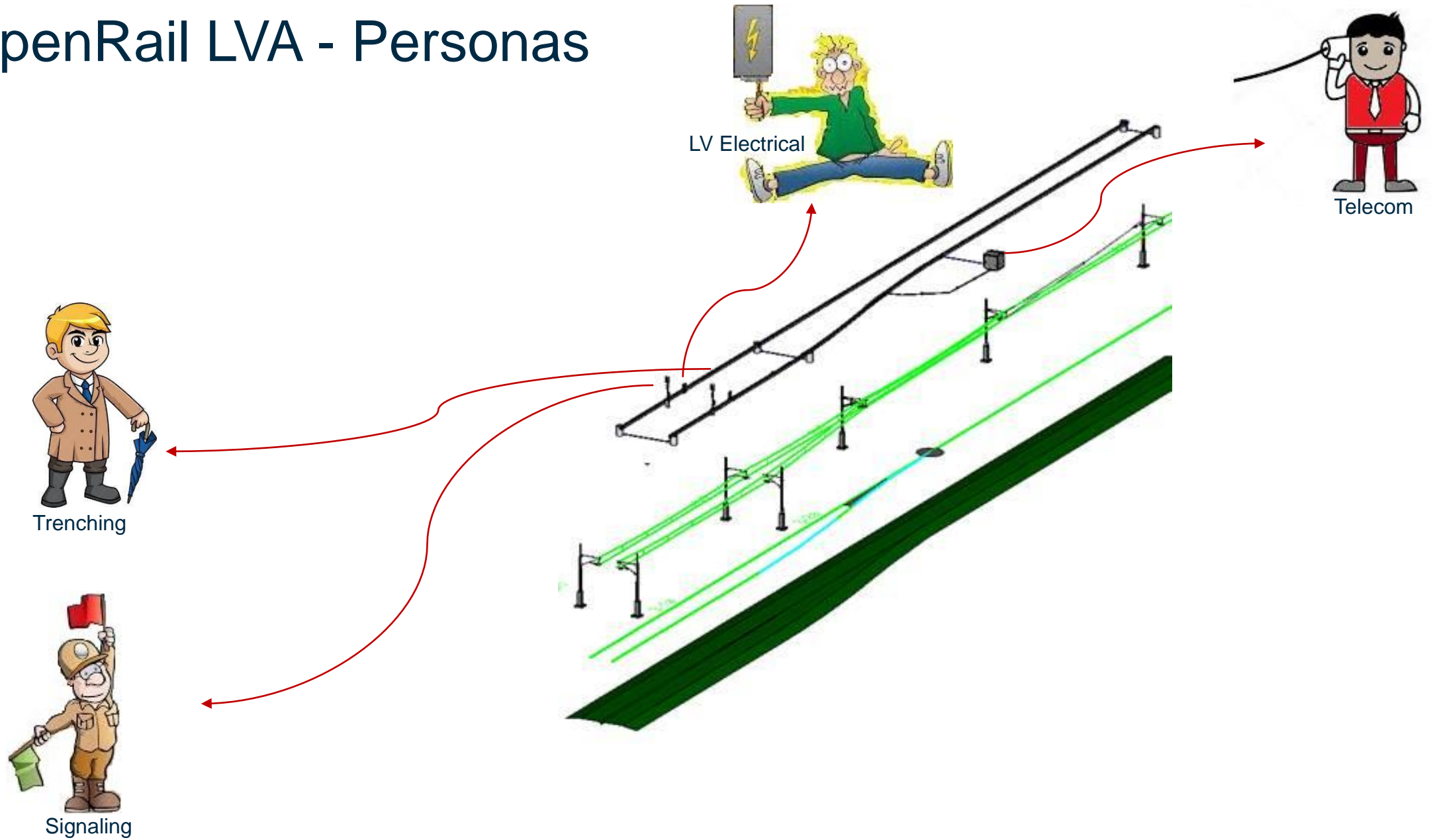
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Advancing Infrastructure

Overview, Rail Project

- **Low Voltage Assets (LVA)**
  - Signaling-, Electrical-, Telecom- objects, Trenches, Cables

- **Catenary System/OLE (*OpenRail Overhead Line Designer*)**
  - Utilize OLE structures for mounting LV/Signaling objects
  - Signal Sighting

- **Track geometry**
  - Track names, cant, station values, turnouts etc.

- **Civil Corridor/DTM (incl. reality data)**

Low Voltage

Catenary Systems (OLE)

Track geometry

Civil Corridor/DTM

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OpenRail LVA - Personas

LV Electrical

Telecom

Trenching

Signaling
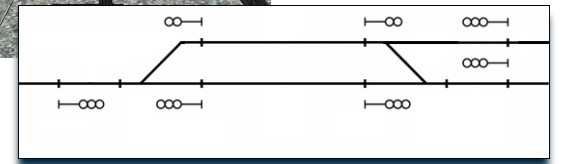
|

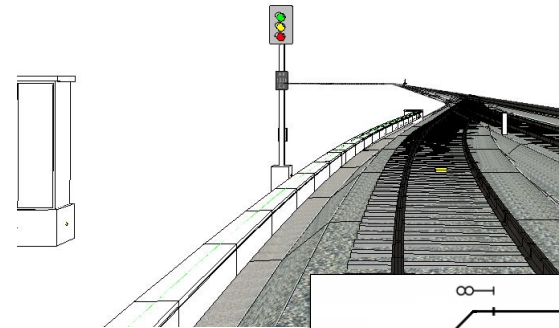Bentley®

OpenRail Low Voltage Assets/Signaling
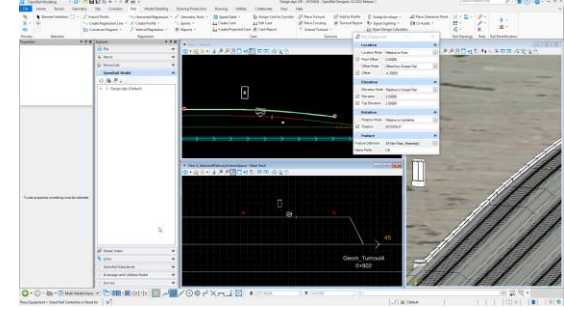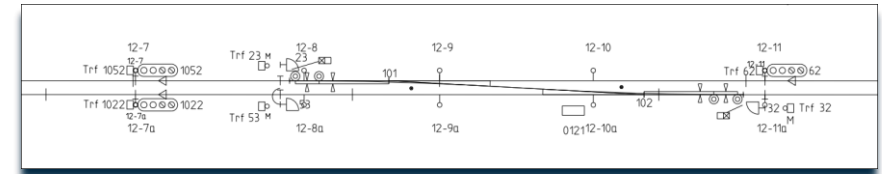

4 disciplines/personas,
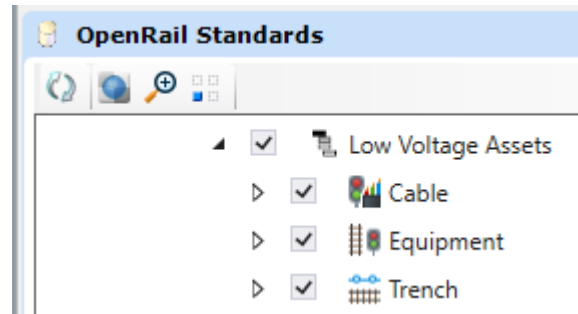
- Signaling
- LV Electrical
- Telecom
- Trenching

3 models,

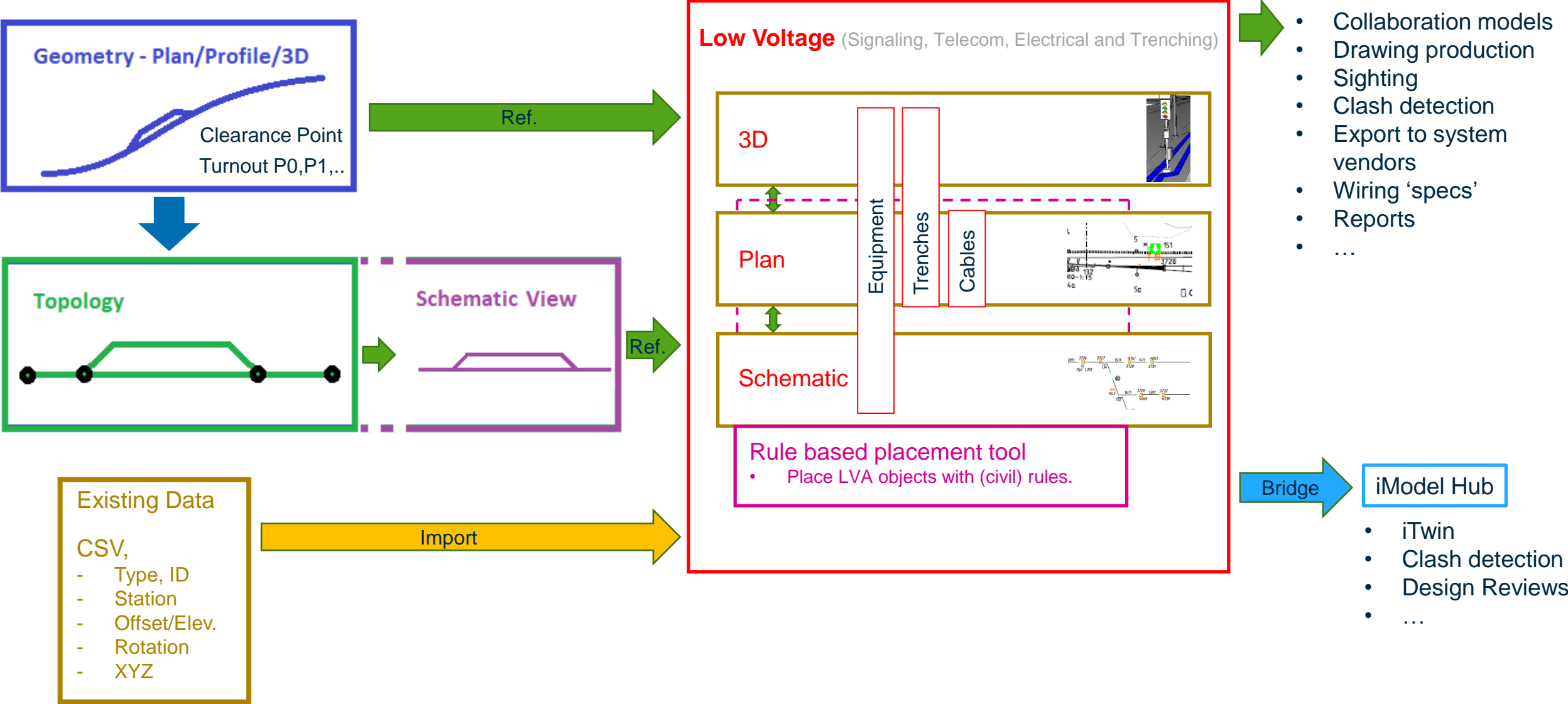- 2D Plan/Profile
- 3D
- Schematic
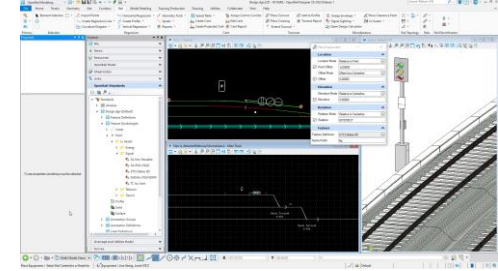

3 object types,

- Equipment
- Trenches
- Cables

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OpenRail Designer LVA configuration and architecture

OpenRail Designer – Schematic model

- ## A new model is introduced,
  - – Schematic model

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Topology/Schematic model - Federate project setup

Active design model

**Topology /
Schematic model**

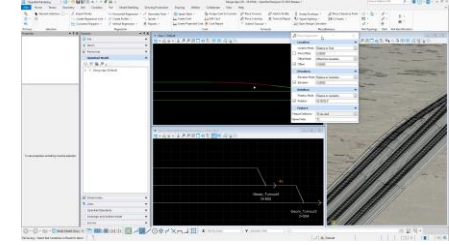Geometry model

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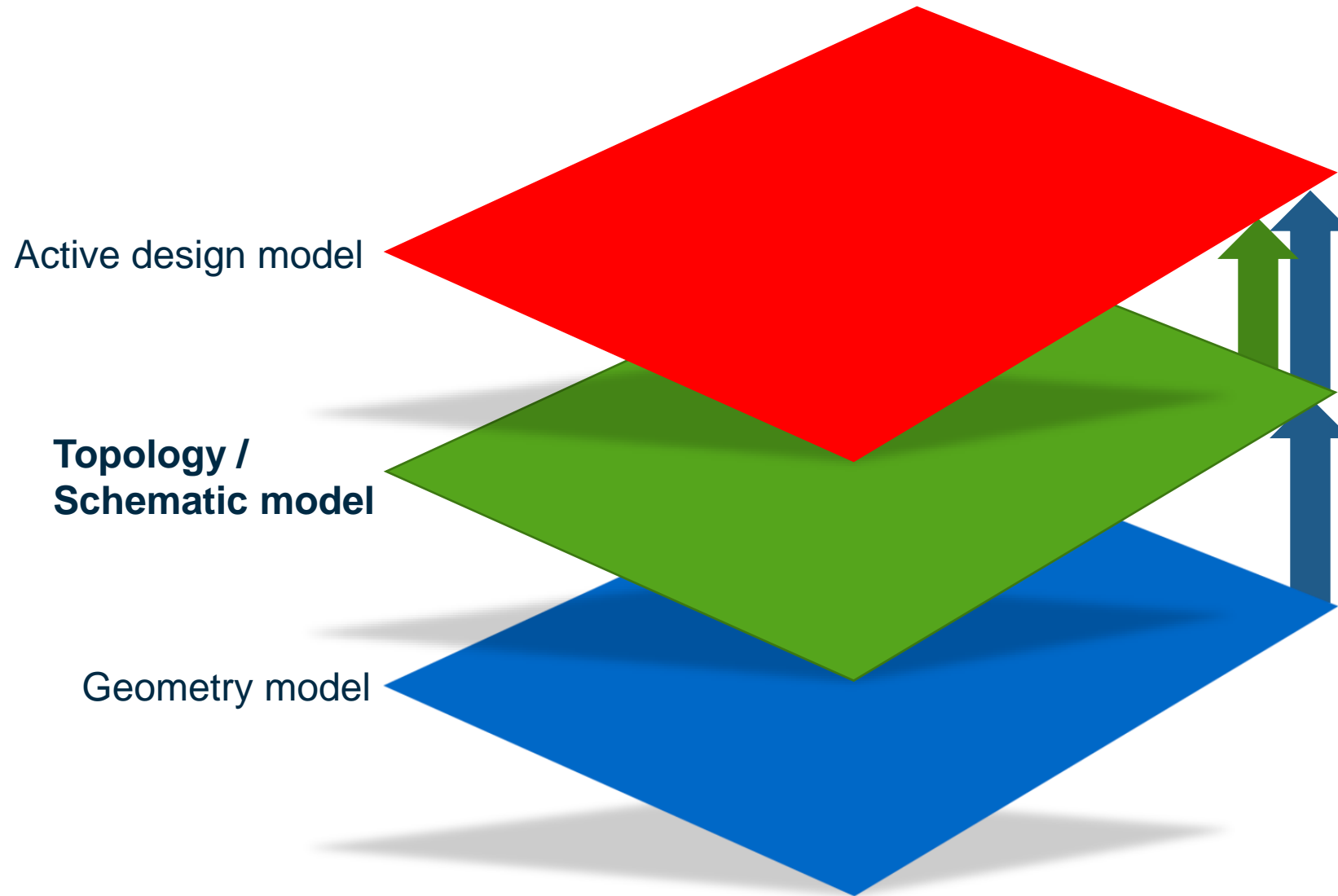
Schematic model – Drawing production

- Schematic model Edge is enabled for Drawing Production
  - Recognized by Named Boundaries

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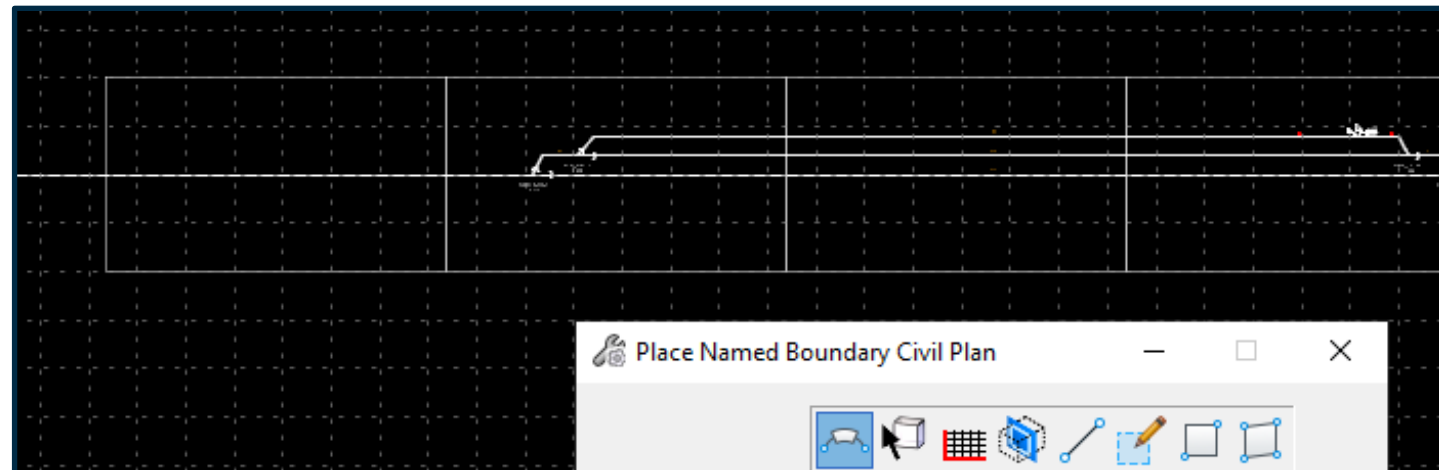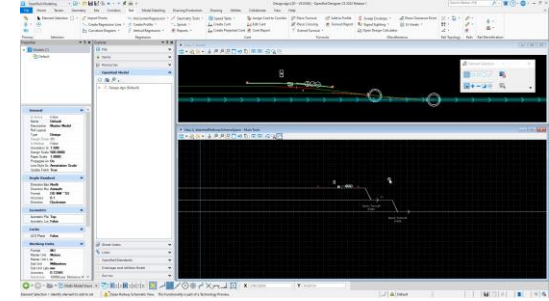
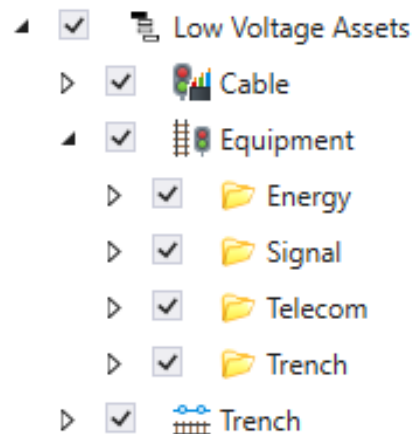# LVA - Equipment, Trenches and Cables

- **Equipment**
  - Point object
- **Trenches**
  - Linear object
- **Cables**
  - Connectivity object

- **Placement options,**
  - Location
    - Along centerline
    - Relative a point
    - Absolute
  - Offset
    - Centerline
    - Closest rail
  - Elevation,
    - Centerline
    - Closest rail
    - Terrain
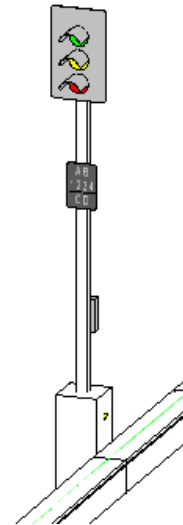   - Absolute
  - Rotation
    - Centerline
    - Absolute

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LVA – Equipment Assembly

- Two Elevations,
  - Base- and Top have separate Elevation
- Better accuracy when modeling the Equipment
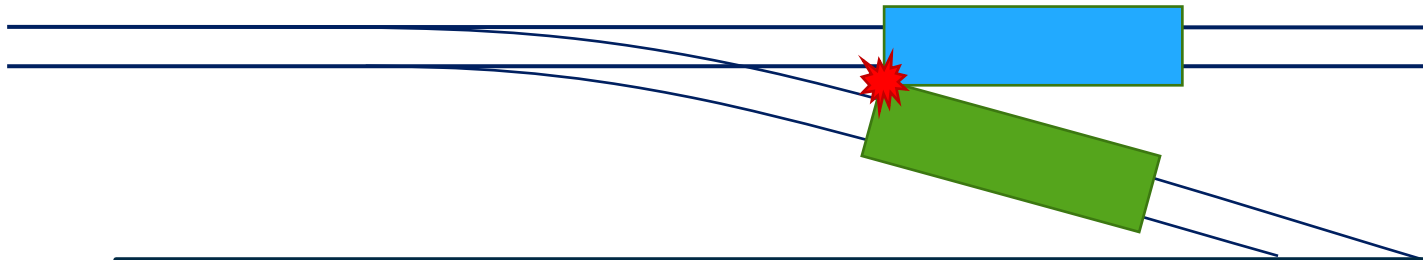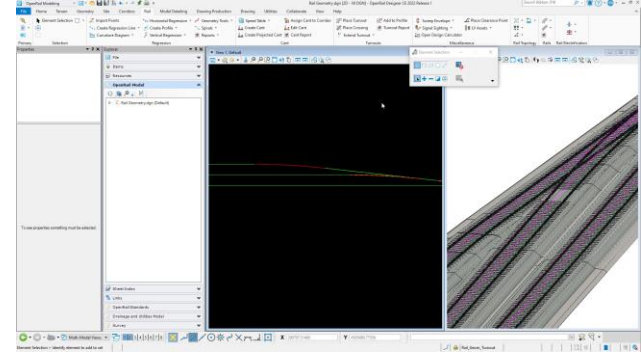
Top

Template

Base

LVA – Populate existing objects/survey points (import)
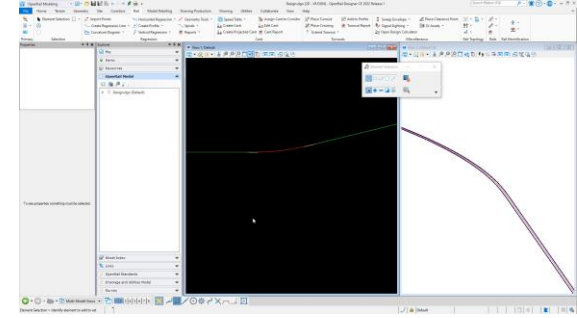
- LVA Equipment key-in command accepts arguments
    - This can be utilized with MicroStation Batch Process

- Arguments,
    - Feature Definition
    - Name/ID
    - Location data,
        - Linear referencing
        - XYZ coordinates

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New tool - Clearance Point

- Offset – offset ruled to two geometries
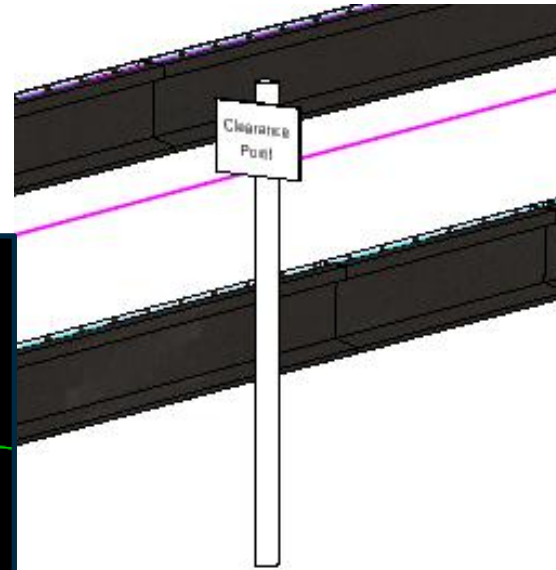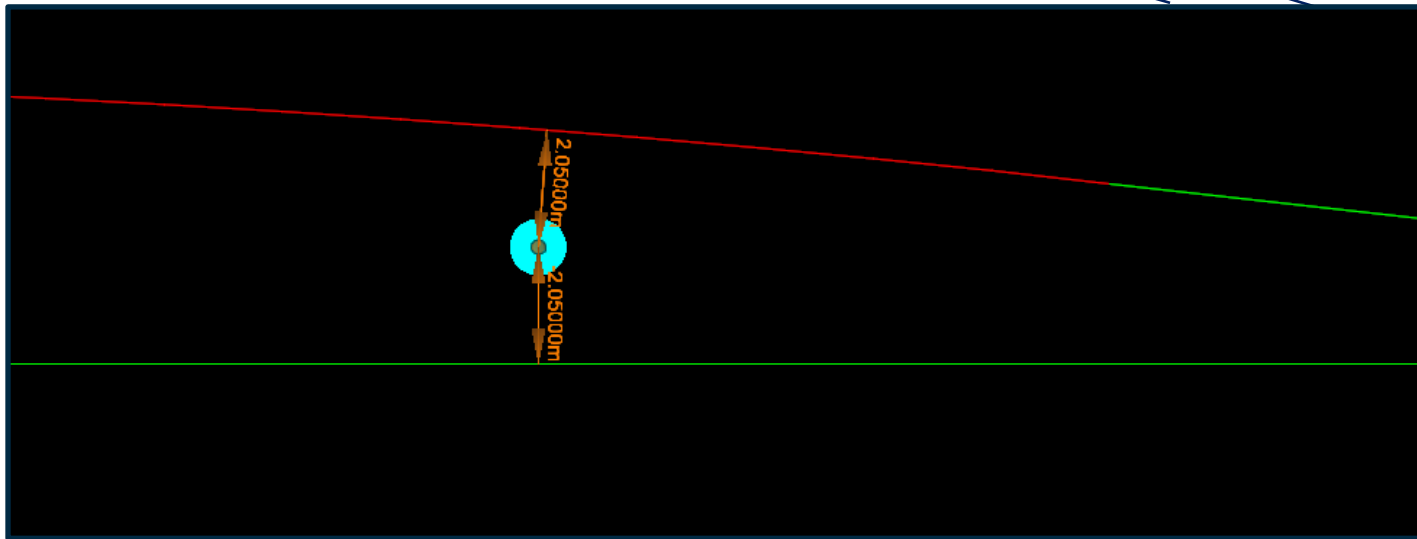
Ruled objects will update if geometry is changed

- User alert!
  - Geometry has changed and following Equipment are moved..

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