Dominion's Journey with PI

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Business Driver – Data is an Asset

Relays and Meters

tMEDIC

Dynamic Ratings

Bushing Monitor

Battery Monitor

Cap Bank Impedance IED

Hathaway Recorder

Tap Changer Monitor

Gas Monitor
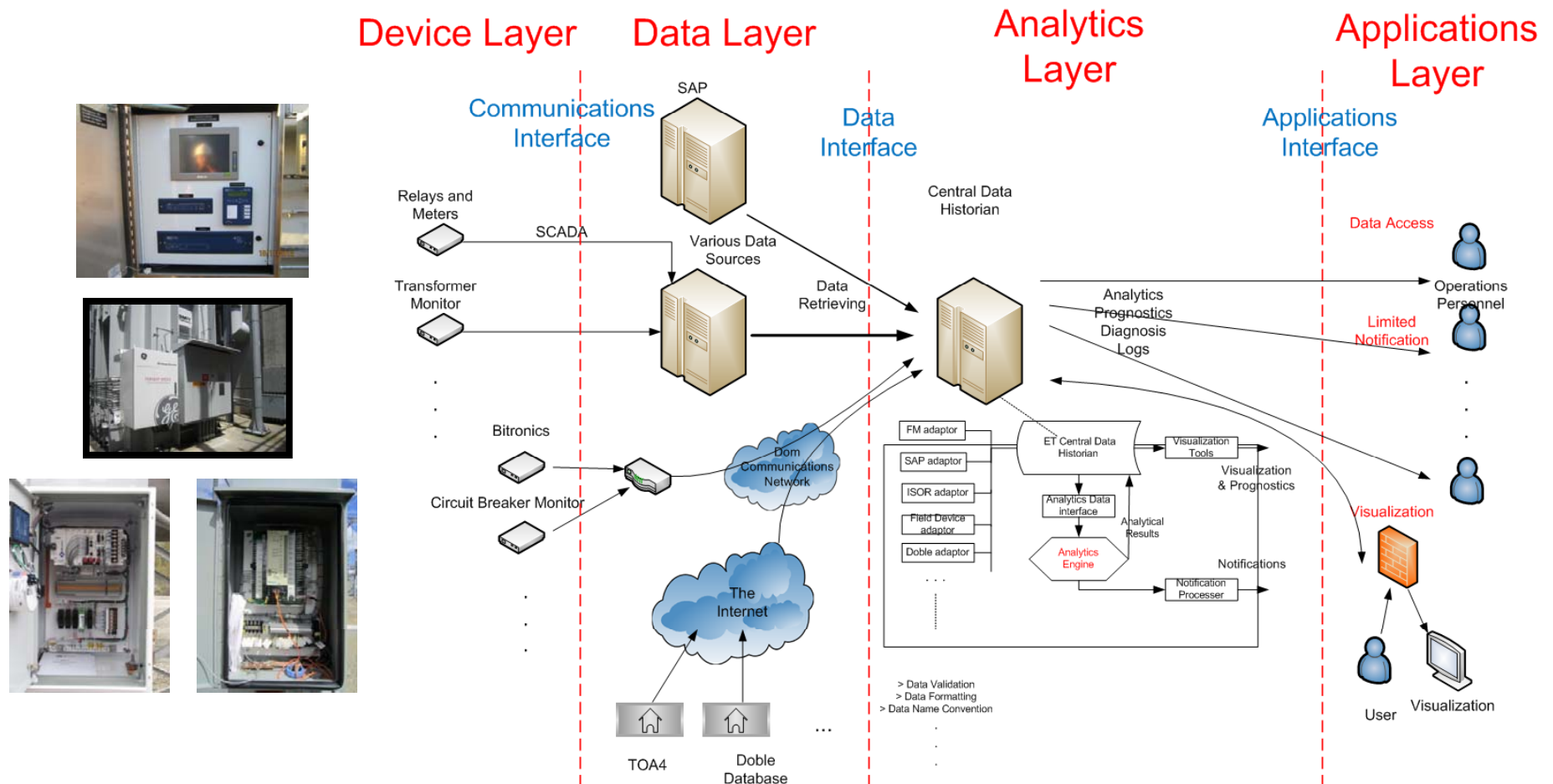
and many more…

Business Driver – Data Silos

EMS	AMI	OLCM	Lightning
DMS	MDM	GIS	Weather
PMU	Work Order Management	Construction Plans	Load Forecast
LIMS	Field Testing	Network Connectivity	DFR
Lab Results	Inspections	Line Impedance	Fault
EQ Nameplate	EQ Failure Record	Circuit Description	Short Circuit
EQ Ratings	SAP	One Line	Relay Settings
NMS	TRS	OMS	…

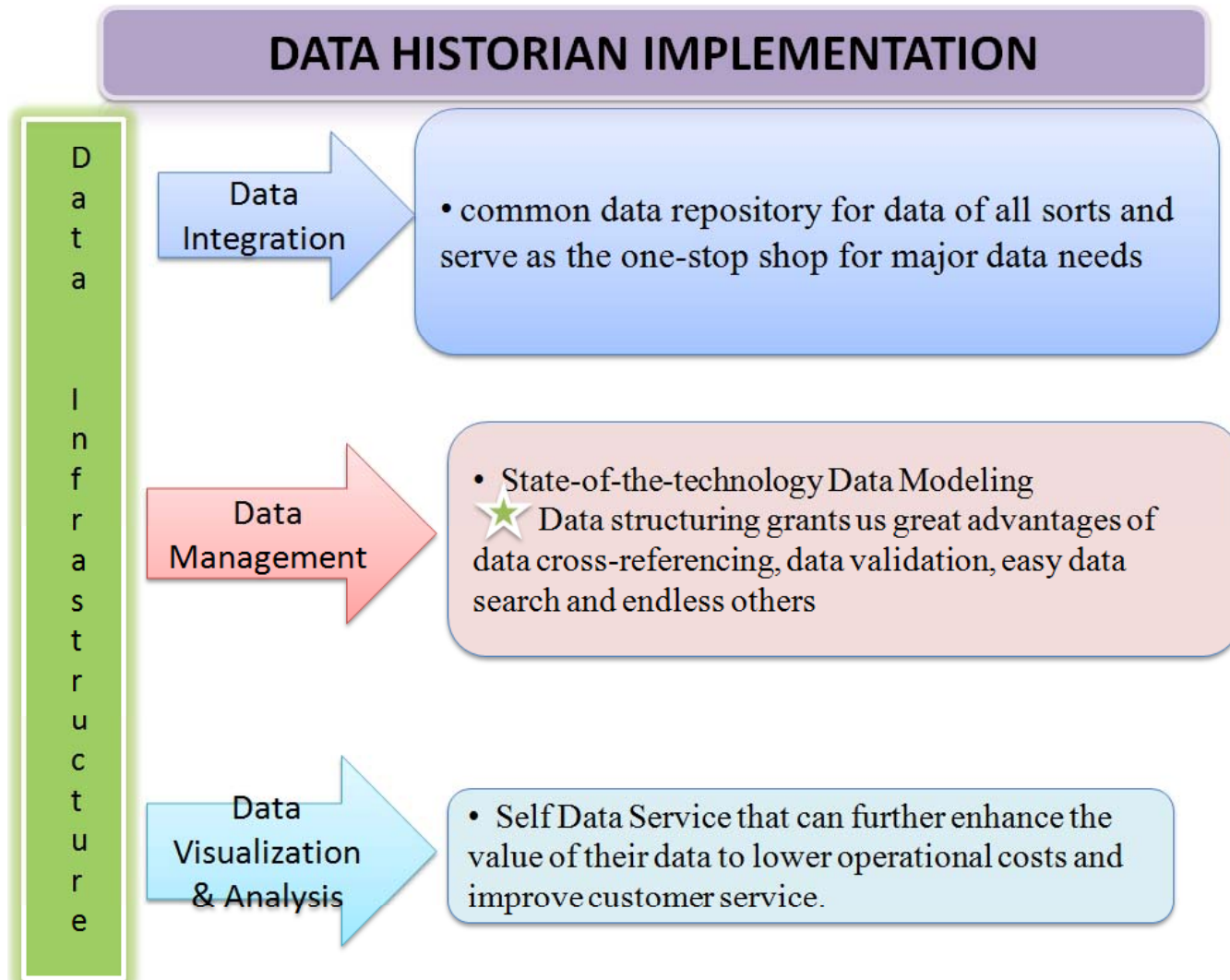# Previous Data Utilization Process
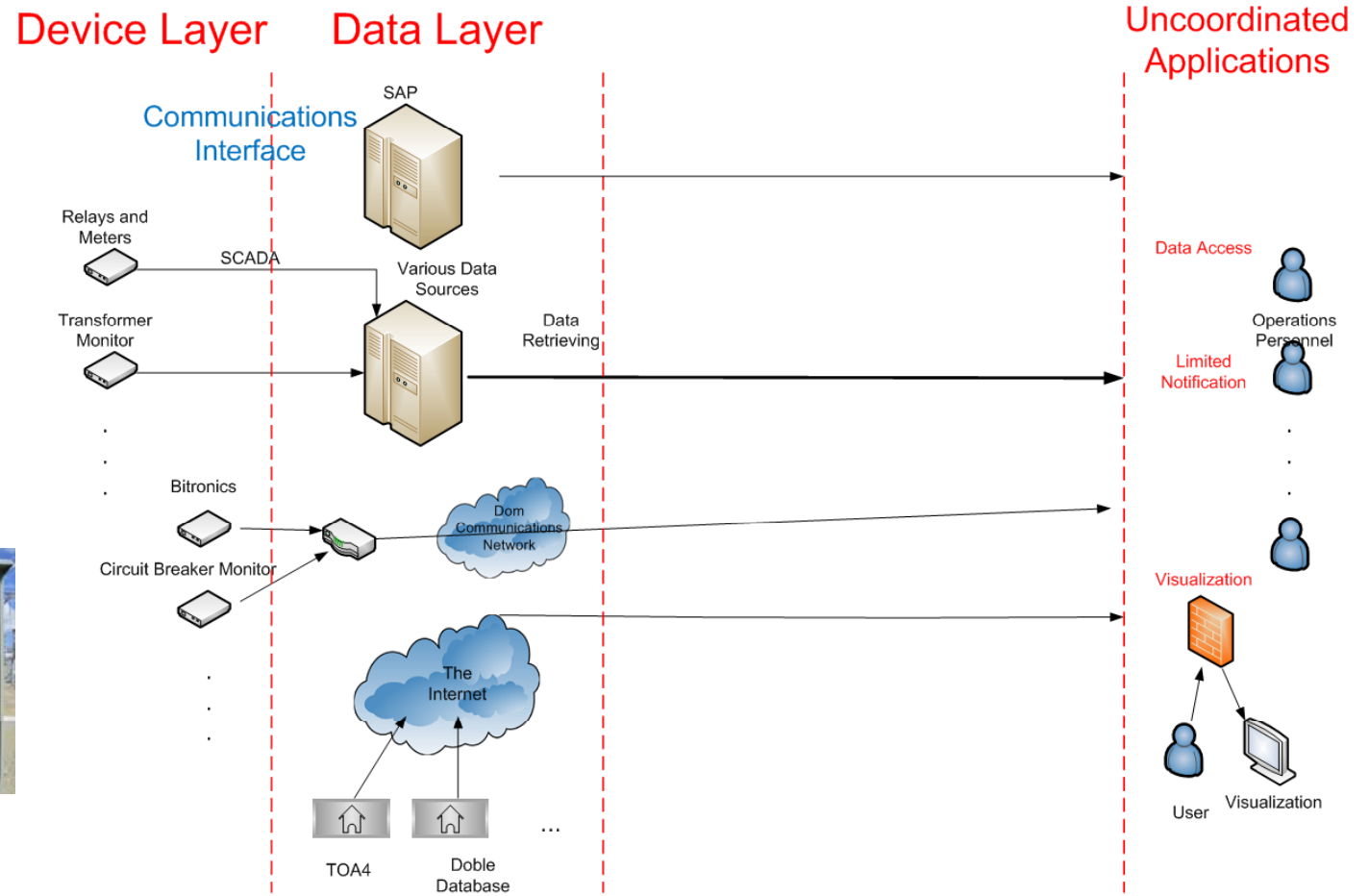
Data Flow Without PI

New Data Utilization Process
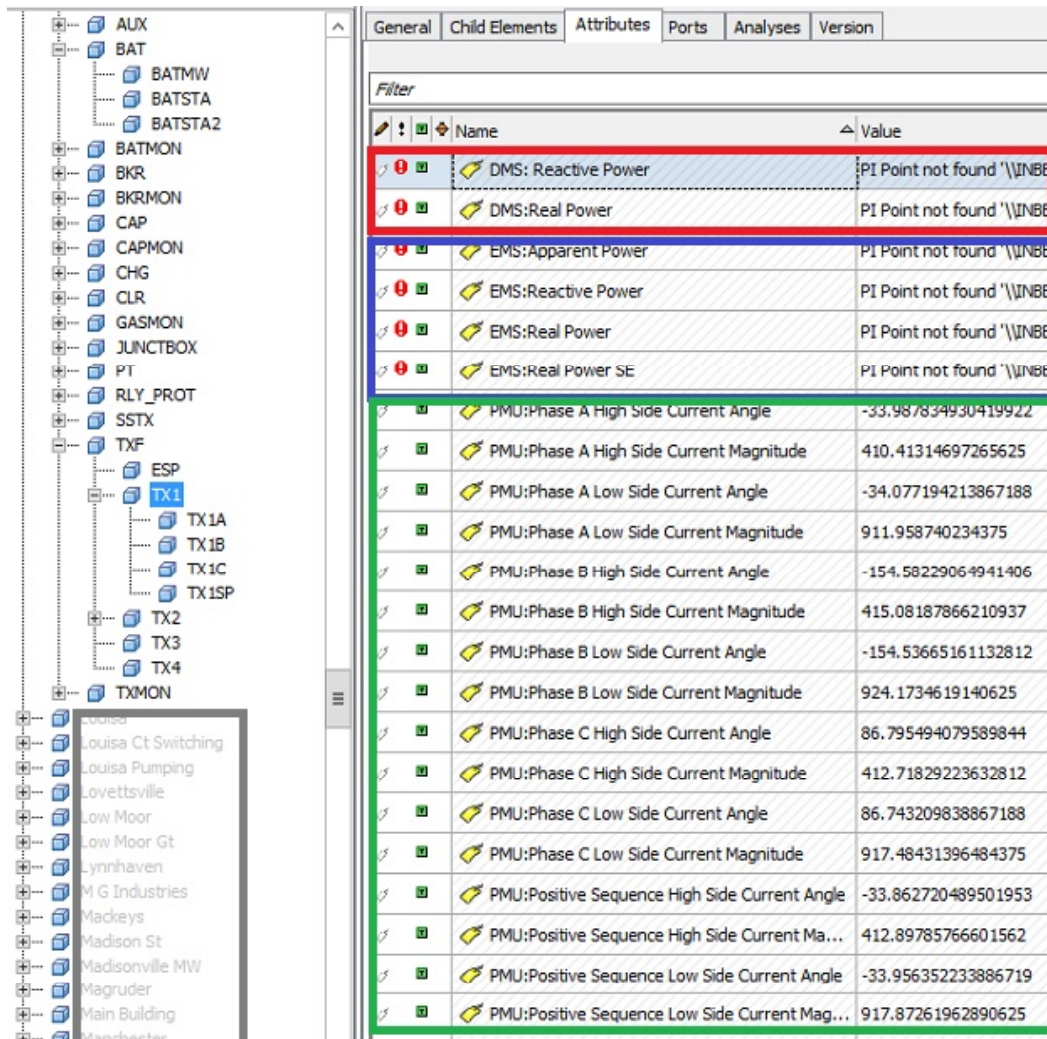
Data Flow With PI – Facilitate Automation and Data Analytics
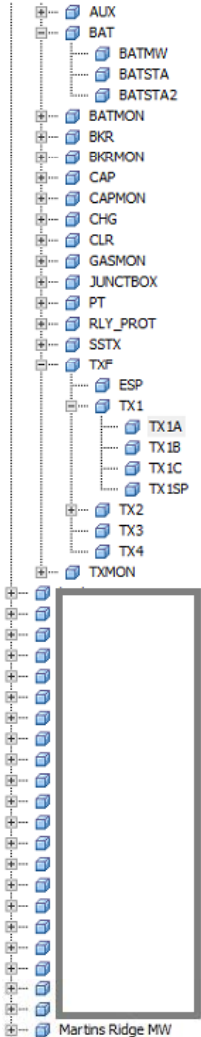
Project Goals and Objectives

DATA HISTORIAN IMPLEMENTATION

Data Infrastructure

Data Integration → • common data repository for data of all sorts and serve as the one-stop shop for major data needs

Data Management → • State-of-the-technology Data Modeling
⭐ Data structuring grants us great advantages of data cross-referencing, data validation, easy data search and endless others

Data Visualization & Analysis → • Self Data Service that can further enhance the value of their data to lower operational costs and improve customer service.

Data Aggregation - Transformer

Data Aggregation - Transformer

Data Aggregation – Naming Convention

VALLEY.IND.29312-1**SLOWCLS**
NANNA.IND.57502**SLO_CL_P1**
TWELFTHS.IND.H6T150**SLOWCLSE**
FENTRESS.IND.27122-1**SLOWCLO**
LANEXA.IND.2016T2024**SLCLS**
EVERETTS.IND.SR112_**SLCLOSE**

LAKEVIEW.IND.21362_**SLOWCLOS**
LAKEVIEW.IND.SR162_**SL_CLOSE**
ROVALLEY.IND.2012T2060**SCL**
THELMA.IND.213T232**SLOWCLS**
CHICKHOM.IND.2050T2075**SCLOS**

. . .

390 Variations

Breaker Slow Close

SLOWCLS

SLO_CL_P1

SLOWCLSE

SLOWCLO

SLCLS

SLCLOSE
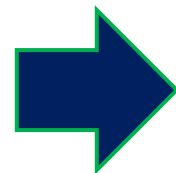
SLOWCLOS

SCL

SLOWCLS

SCLOS

…

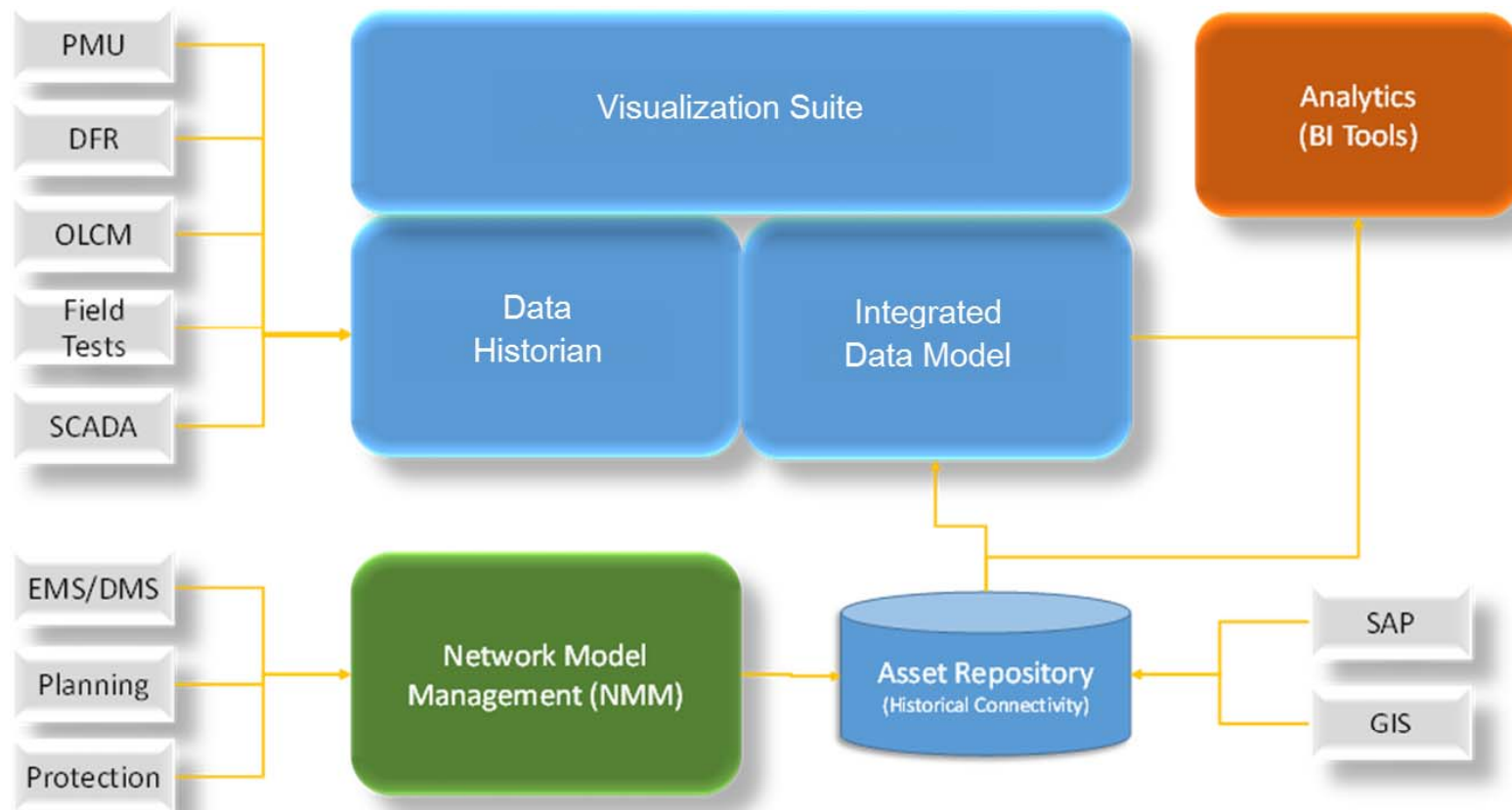**SCBR1.ClsTmAlm.stVal**

Slow Close

IEC 61850 Names with Dominion Extensions as the Enterprise Semantics Layer
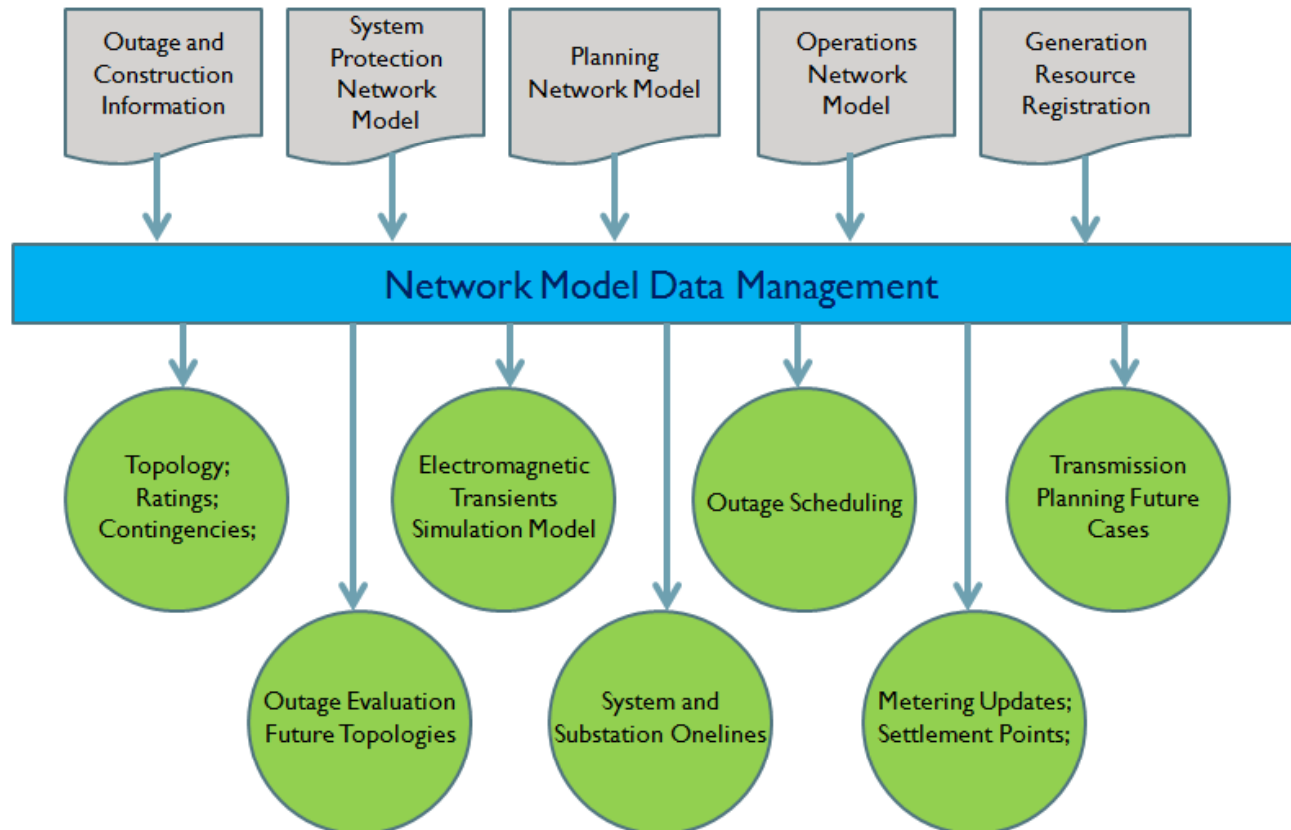
Application Specific Names
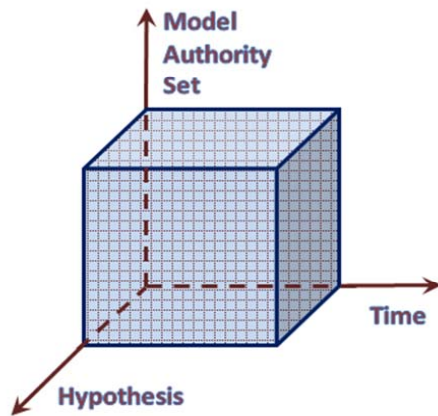
Integrated Data Model

Asset and Network Model Integrated Solution Architecture - Dominion

Integrated Data Model – Connectivity

- ▸ Full Automation instead of Emails and Prints
- ▸ Reduce Model Errors and Improve Compliance
- ▸ Sync-up Models and Propagate Data Changes Faster

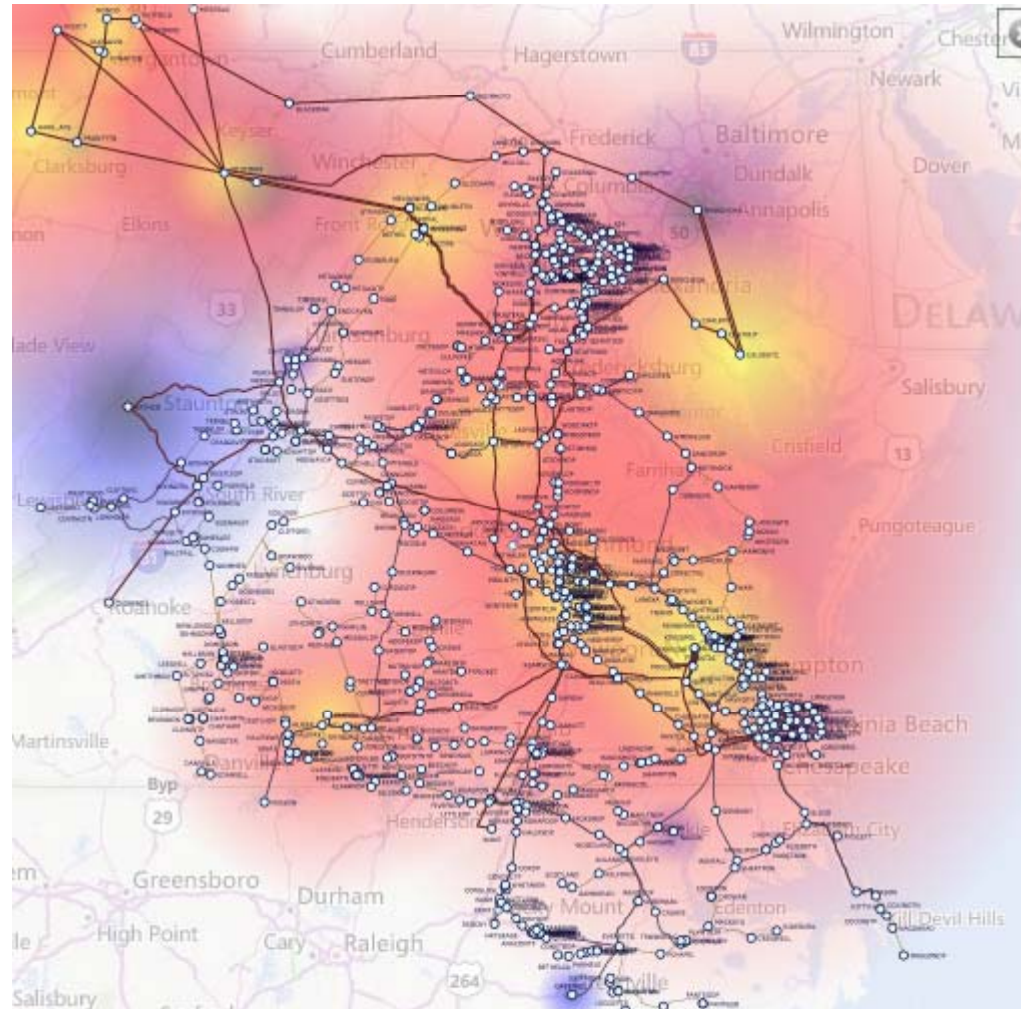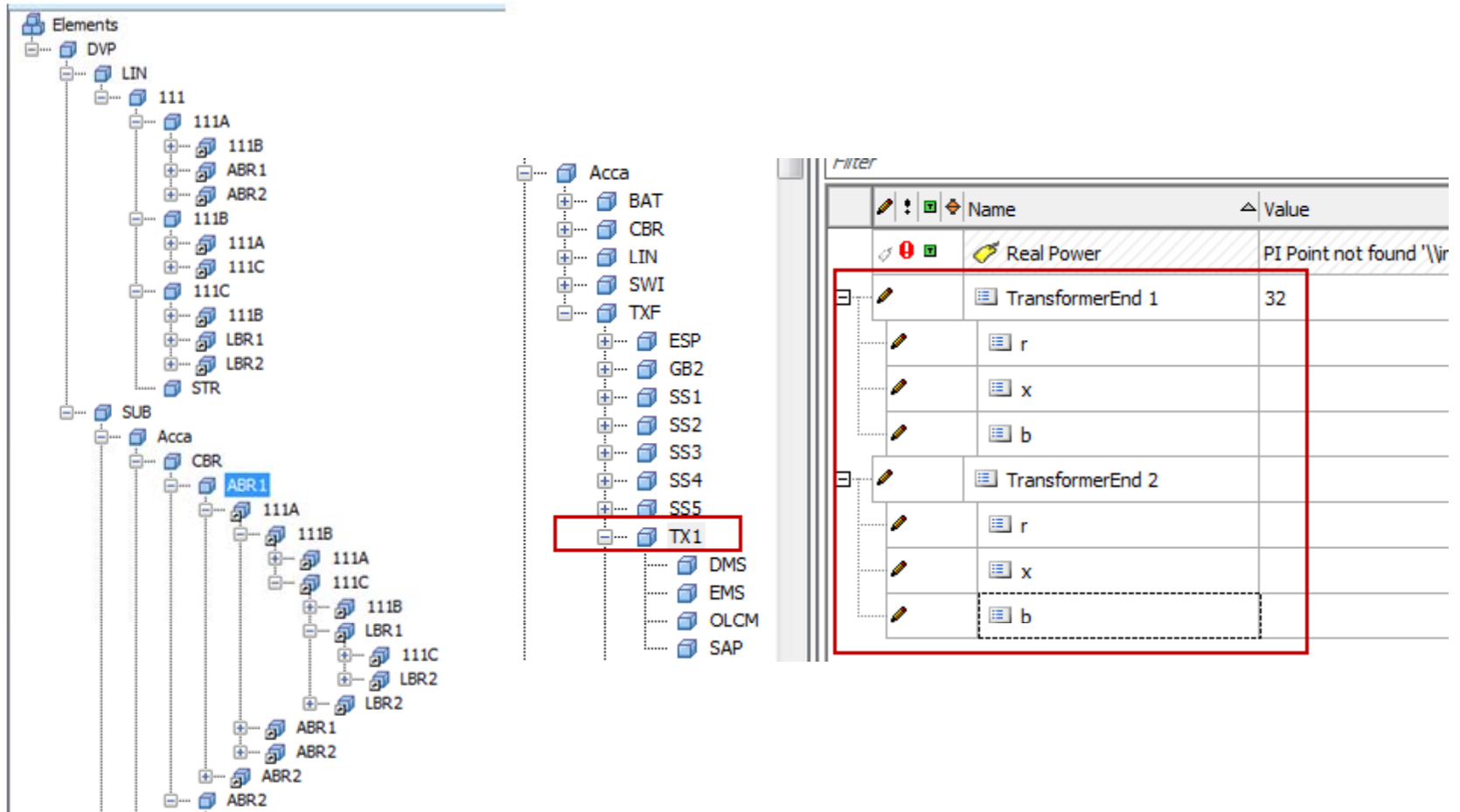# Integrated Data Model – NM Integration

I, Connectivity in PI

↓

II, Operational Model Validated

↓

III, Planning Aware

Integrated Data Model - Example
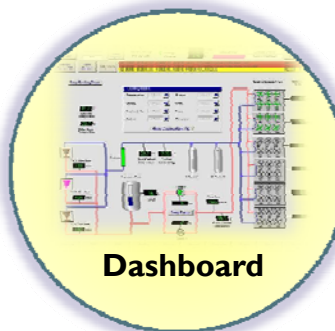
Advance Data Applications and Analytics

Optimal VAR Support
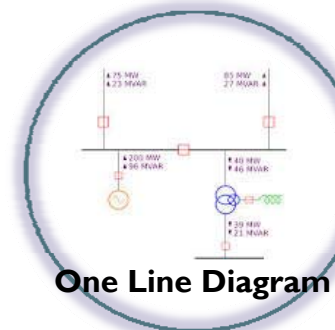
Geographical Data Visualization

Alarm and notification

Dashboard
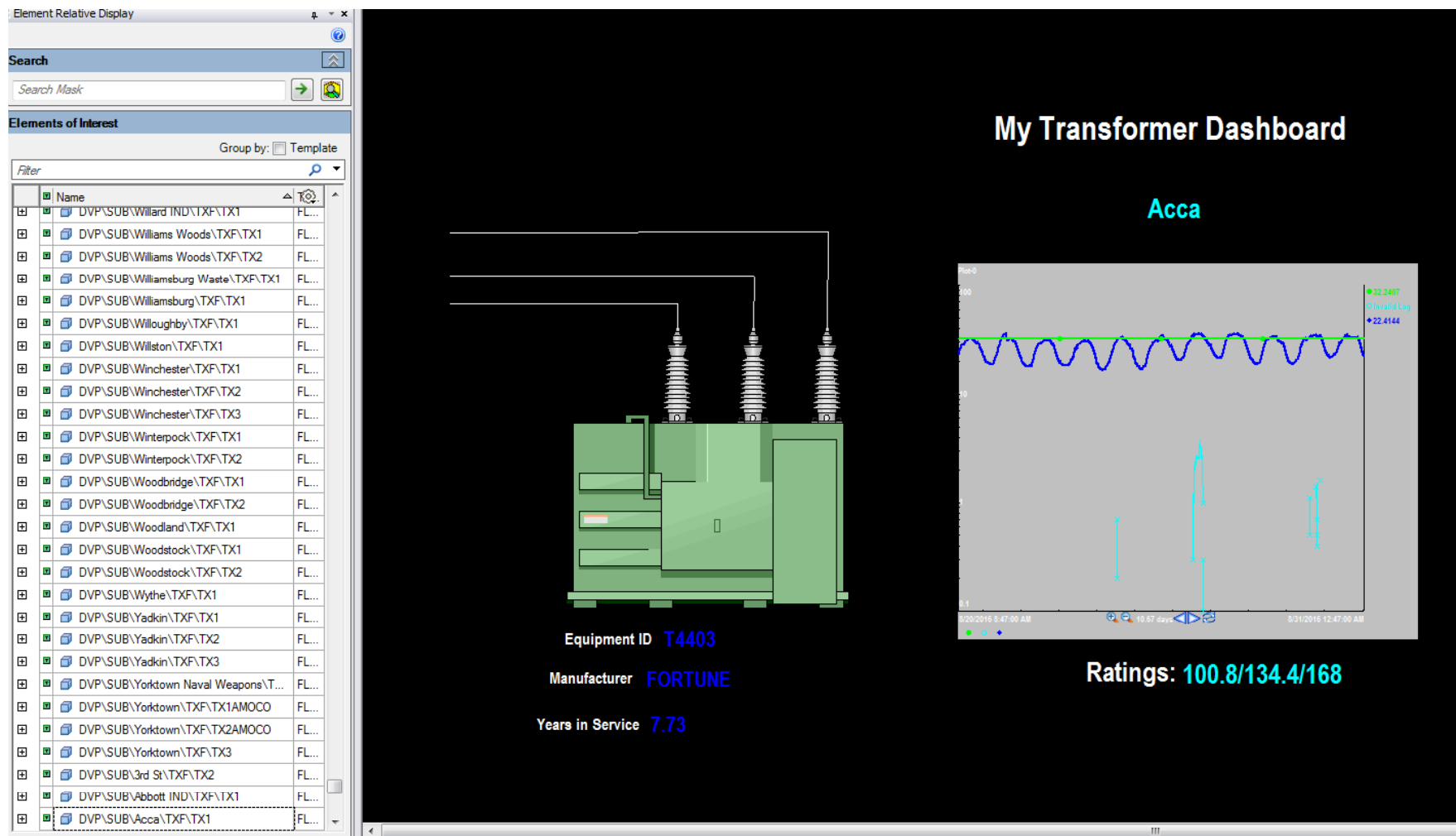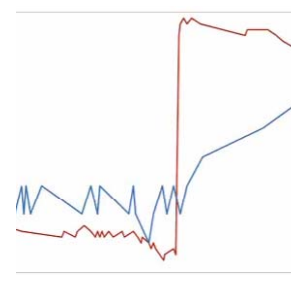
SOC

SOC Displays

Operational Report

One Line Diagram

Equipment Monitoring

Storm Center Support

Transformer Dashboard

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PI as Grid Data Portal

Questions?

Dominion®