



Data Driven Digital Transformation  
Its all about the data



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# Who is Xtensible?



# Xtensible Company Overview

- Exclusively for the utility industry since 1998
- Headquartered in Orlando, FL, USA.
- A leading provider of standards-based smart grid integration solutions and services to the utility industry.
- Thought leader in utility industry enterprise integration, data, analytics and information management
- Members of Xtensible team lead and participate in over 30 different smart-grid related standards efforts



# Xtensible Focus on the Utility

*Helping you understand, manage, integrate and use your data.*

Our Approach & Tools			Our Services <i>(Supporting Both Business and Technology)</i>				
Industry Standards (CIM)	TADA Service (Technical Analysis, Design & Assurance)	MD3i Methodology & Implementation	Project Management <i>(Business Process, Use Cases, Requirements, Implementation, Management)</i>				
			Business & Technology Consulting	Strategy & Architecture	System Integration	Enterprise Information Management	BI & Data Analytics
				Planning & Design Semantic Data Modeling and Management Implementation Assurance Management & Support Training			

# Xtensible Products and Tools



Manage the Model

1

2

Data Quality and Profile



Map and Transform

3

4

Gain Value Out of Data



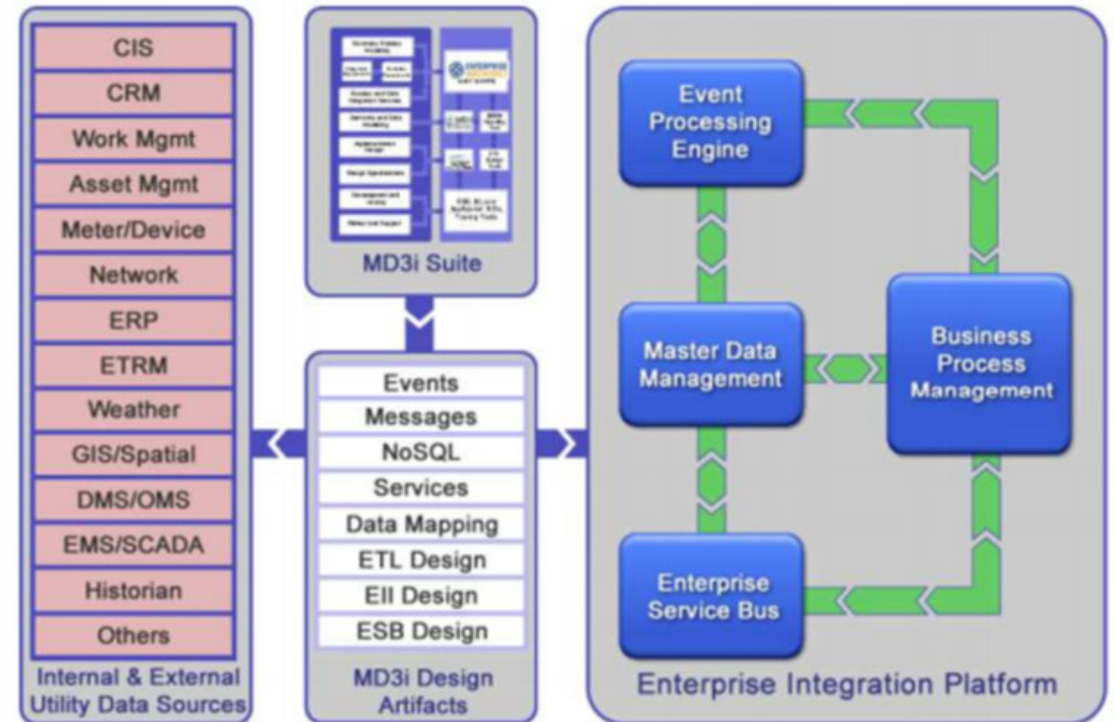
# MD3i EA Plug-in

- Allows to manage the reference model and ensure traceability
- Import the CIM – manage multiple versions
- Import other Models (e.g. Vendor, SID, etc.)
- Generate usable design architects



Manage the Model

1





# Data Health Index (DHI) Service

## Data Governance, Health and Profiling



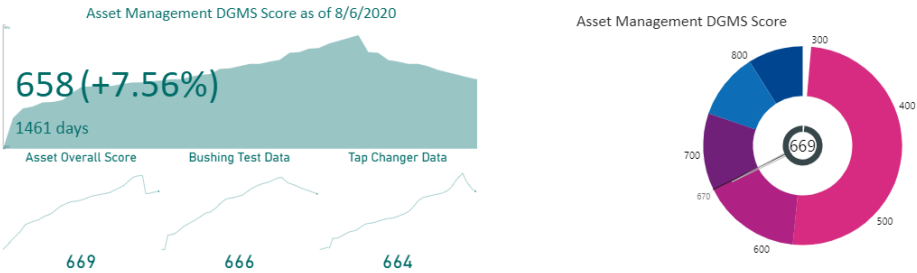
Data Quality and Profile



- Utilize components of the NIST Big Data Interoperability Framework

Xtensible SaskPower - Data Governance Monitoring Service Profile Report for Asset Master Data

### Asset Management Data Governance Score



Overview

Reproduction

Warnings 13

#### Dataset statistics

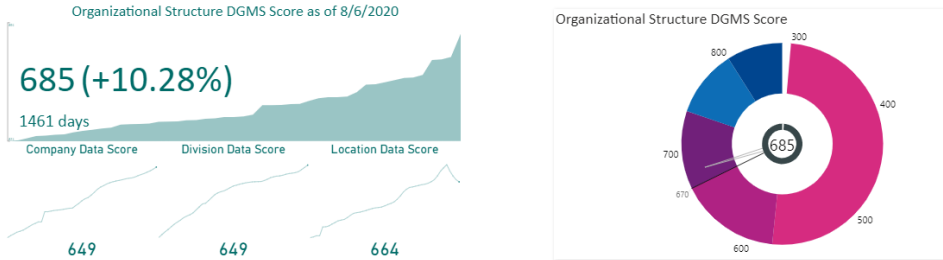
Number of variables	12
Number of observations	5014
Missing cells	2020
Missing cells (%)	3.4%
Duplicate rows	0
Duplicate rows (%)	0.0%
Total size in memory	3.4 MiB
Average record size in memory	706.8 B

#### Variable types

CAT  
NUM

Xtensible SaskPower - Data Governance Monitoring Service Profile Report for Organizational Structure Data

### Organizational Structure Data Governance Score



Overview

Reproduction

Warnings 3

#### Dataset statistics

Number of variables	3
Number of observations	553
Missing cells	0
Missing cells (%)	0.0%
Duplicate rows	27
Duplicate rows (%)	4.9%
Total size in memory	115.2 KiB
Average record size in memory	213.2 B

#### Variable types

CAT

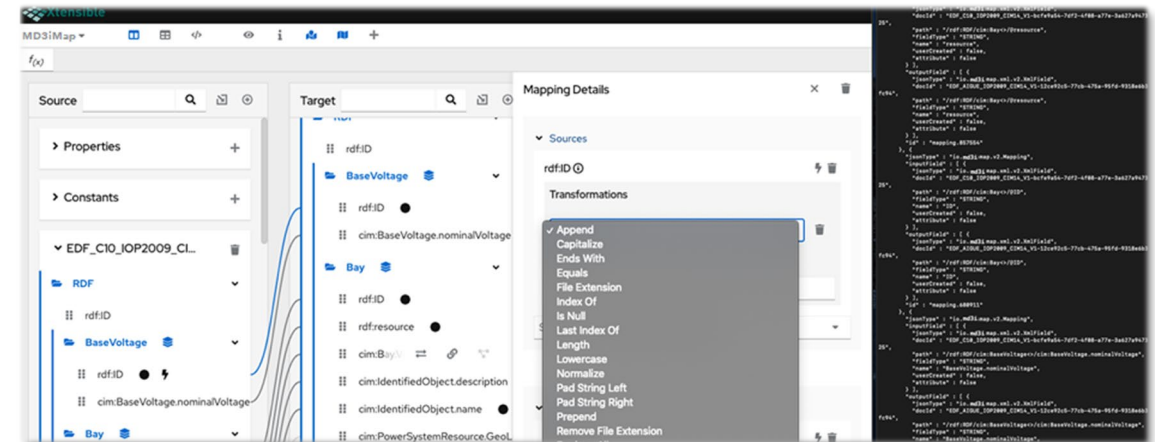
# MD3i Map – Beta Version

- Support automated mapping
- Mapping of target and source information stored in structure form
- Transformation definition and validation check
- Code generation
- Linage from target and source to semantic model



Map and Transform

3



# Xtensible Use Case Example



Gain Value Out of Data



# SCE – Southern California Edison

- 15 million people
- 180 incorporated cities
- 15 counties
- 50,000 square miles of service area
- 5,000 large businesses
- 280,000 small businesses
- 12,635 miles of transmission lines
- 91,375 miles of distribution lines (less Streetlight miles)
- 1,433,336 electric poles
- 720,800 distribution transformers
- 2,959 substation transformers



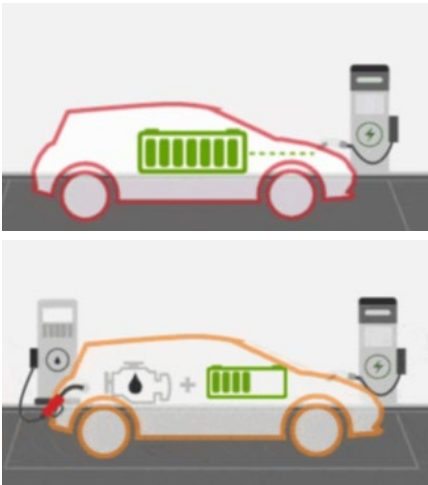
# SCE

- Related articles:
  - [Importance of effective Data Management in analytics](#)
  - [Importance of Data Modeling in Analytics and Beyond!](#)
- Presentations
  - DistribuTECH 2016, 2017, 2018, 2019 Conferences
  - IEC CIM User Group 2019 Conference
  - EPRI 2018 Grid Operations Conference

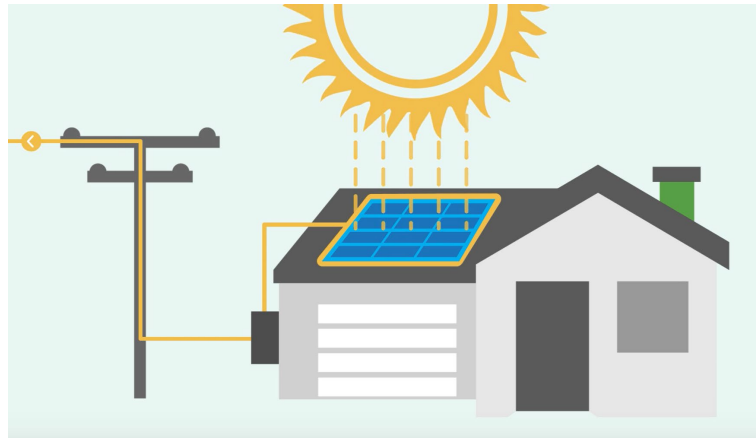


# SCE Grid Modernization – Focus on DER

## Electric Vehicles & Hybrid Electric Vehicles



## Energy Efficiency & Demand Response



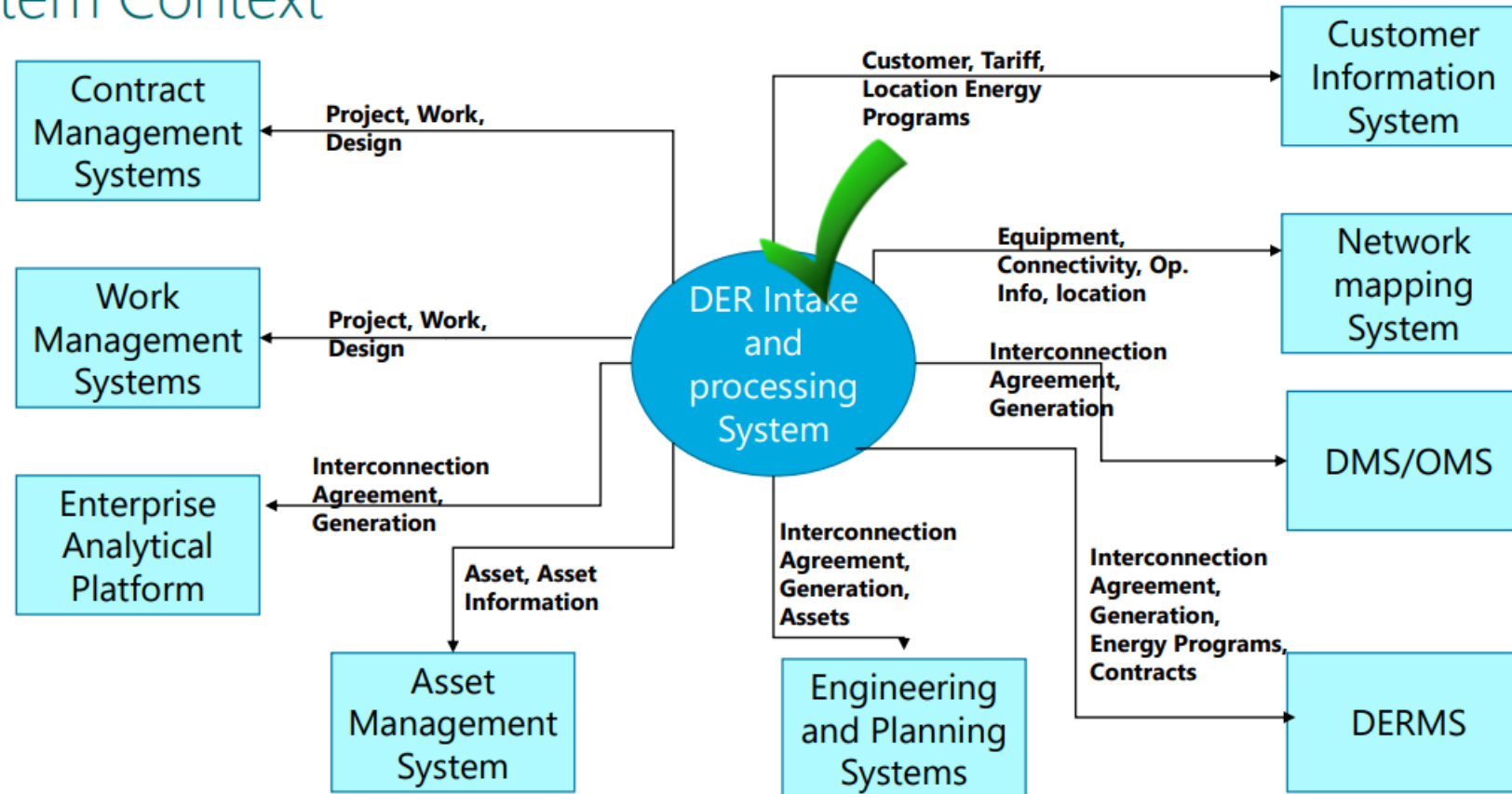
## Distributed Generation



## Distributed Energy Storage

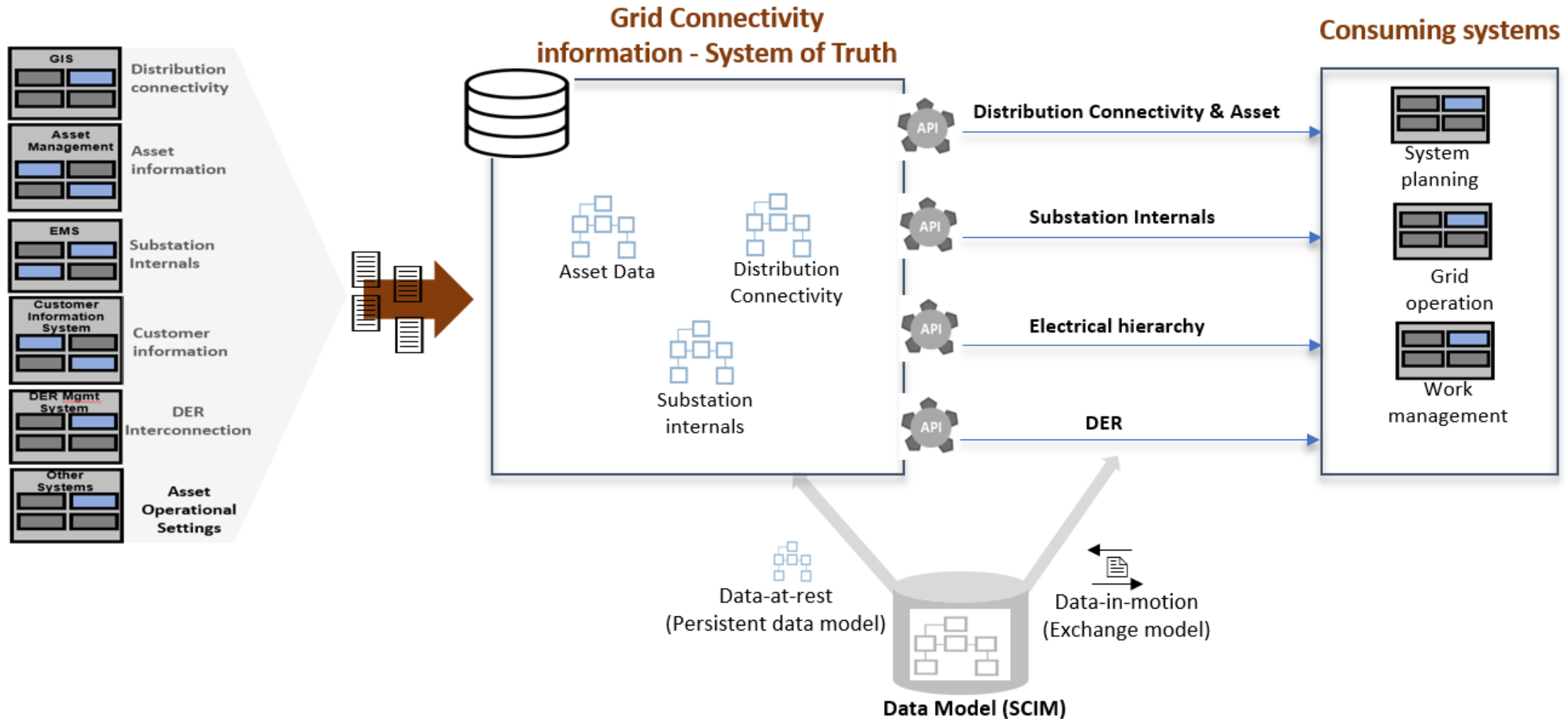
# SCE Grid Modernization

## System Context



Energy for What's Ahead®

# SCE Grid Modernization



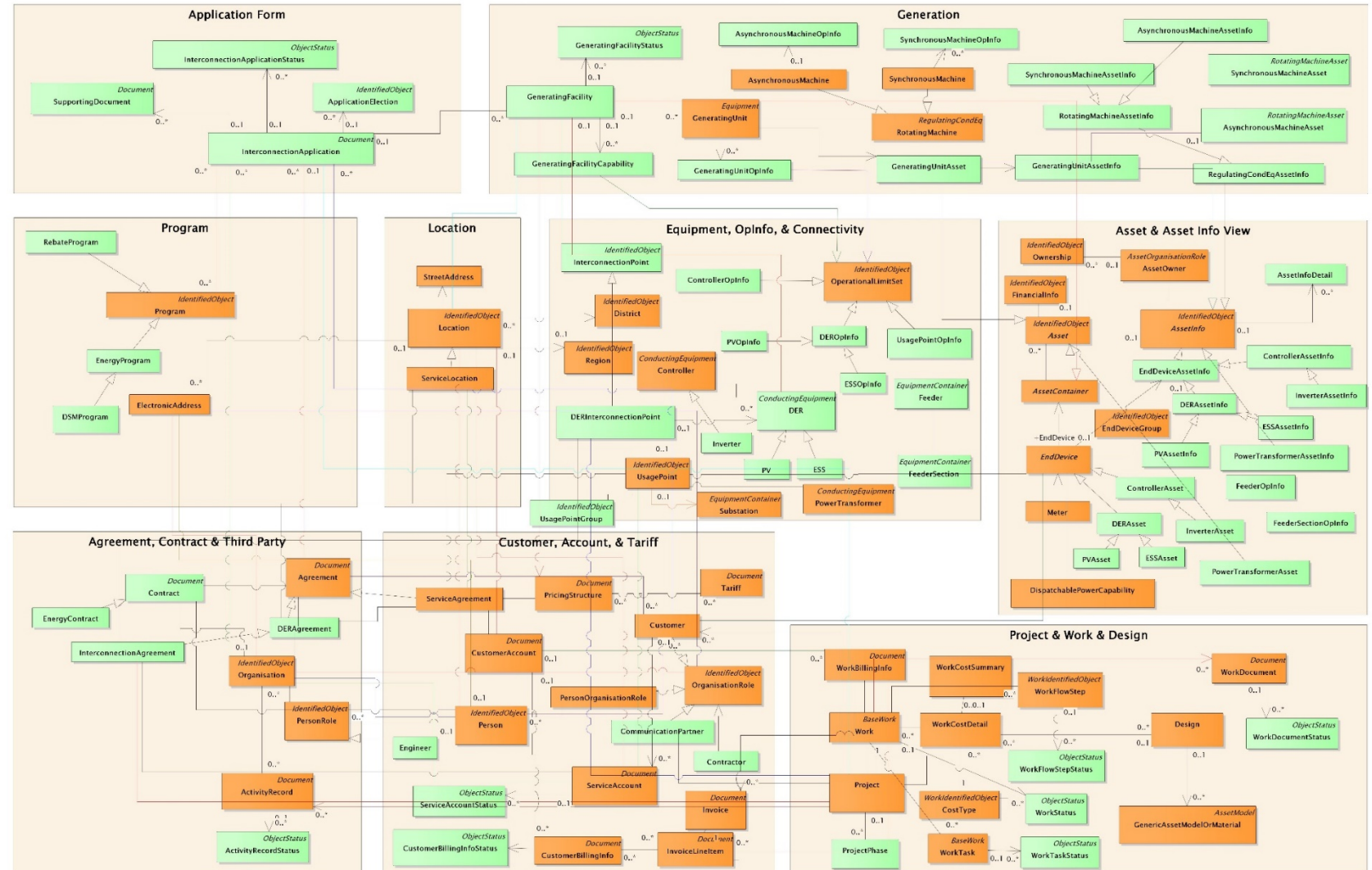


# SCE Information Model (SCIM)

class DER Version 8 - Entity Diagram (for CIM UC 2019-10)

## DER Logical Model (2019-02 Draft)

Legend  
SCIM Extension  
CIM Native



# Xtensible Services

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