

UISOL Software

Dean Moretton

11/16/2011

GRID |

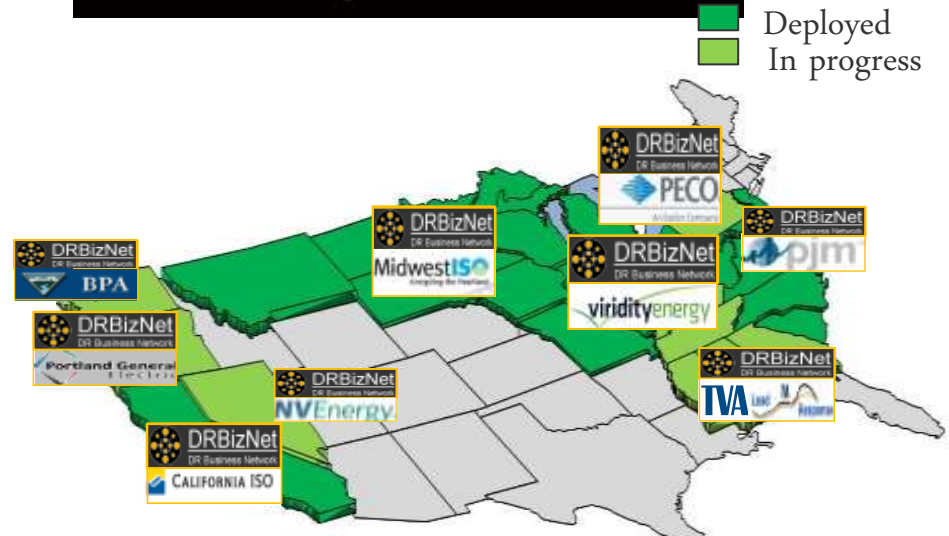
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DRBizNet Production Footprint

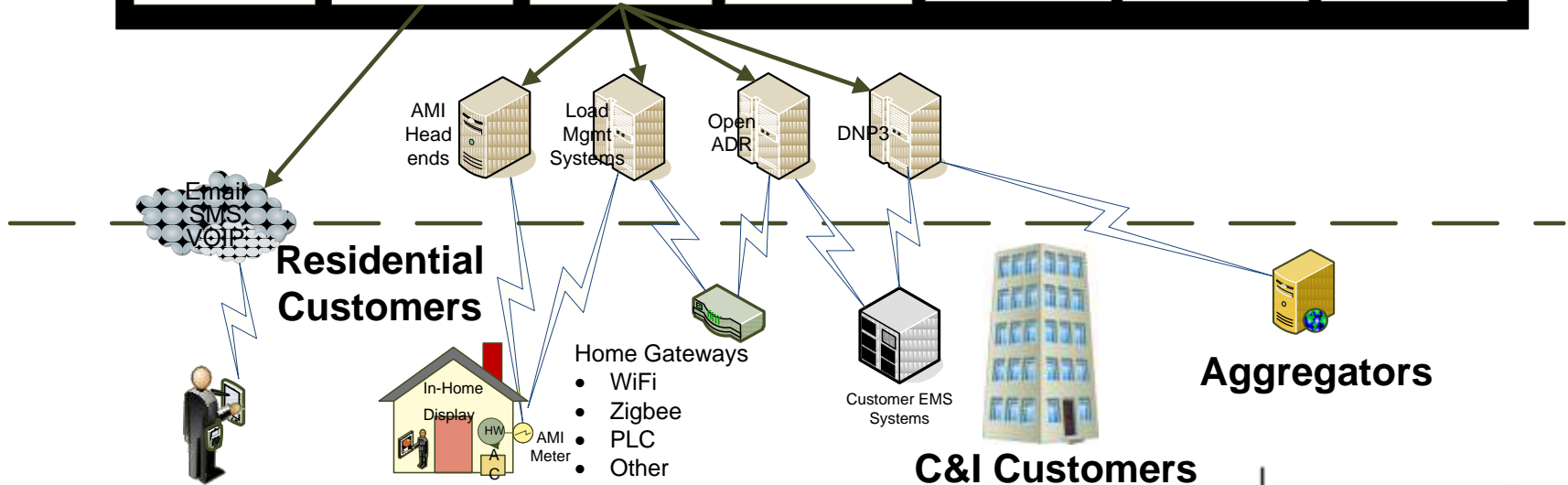
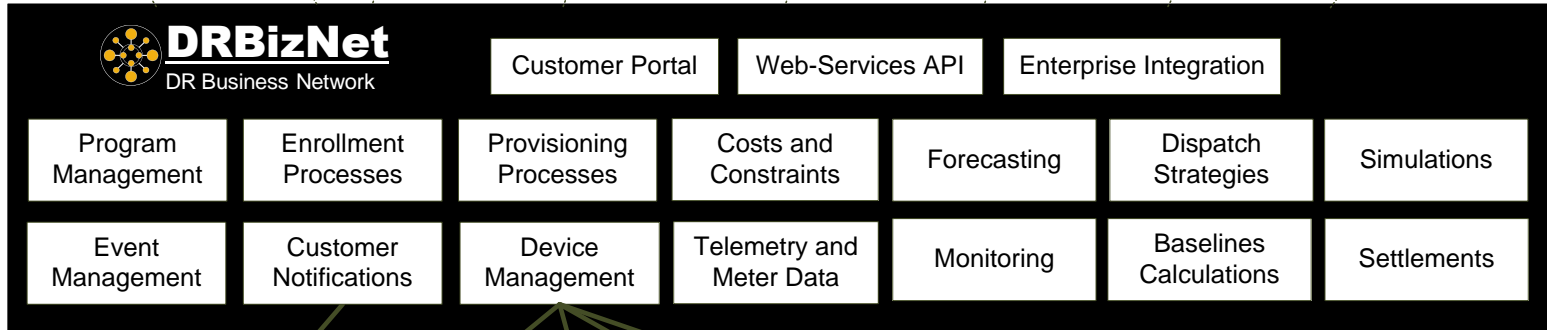
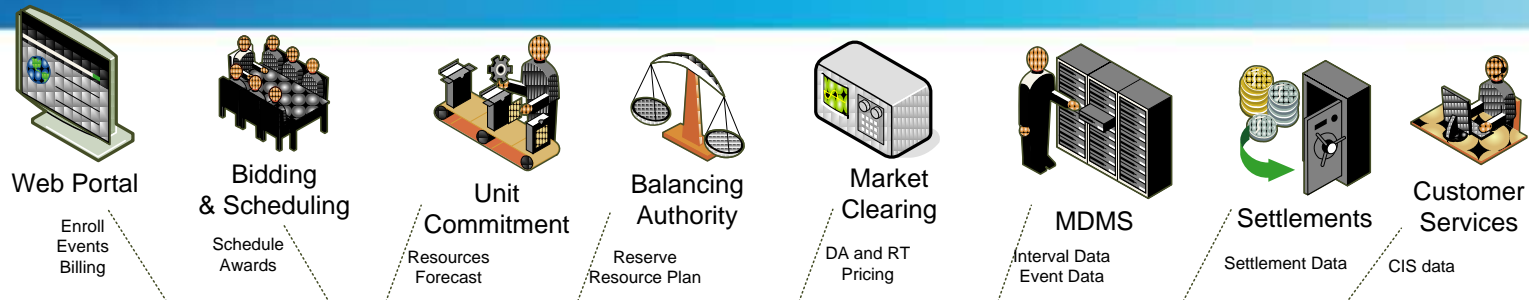
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UISOL award-winning *DRBizNet*® software serves as the largest production deployment of demand response management system (DRMS) in US

- 1M+ end customer loads
- 10+ GW of enrolled DR
- 750+ registered users
- 200+ companies in 27 states
- \$200M+ in settlements

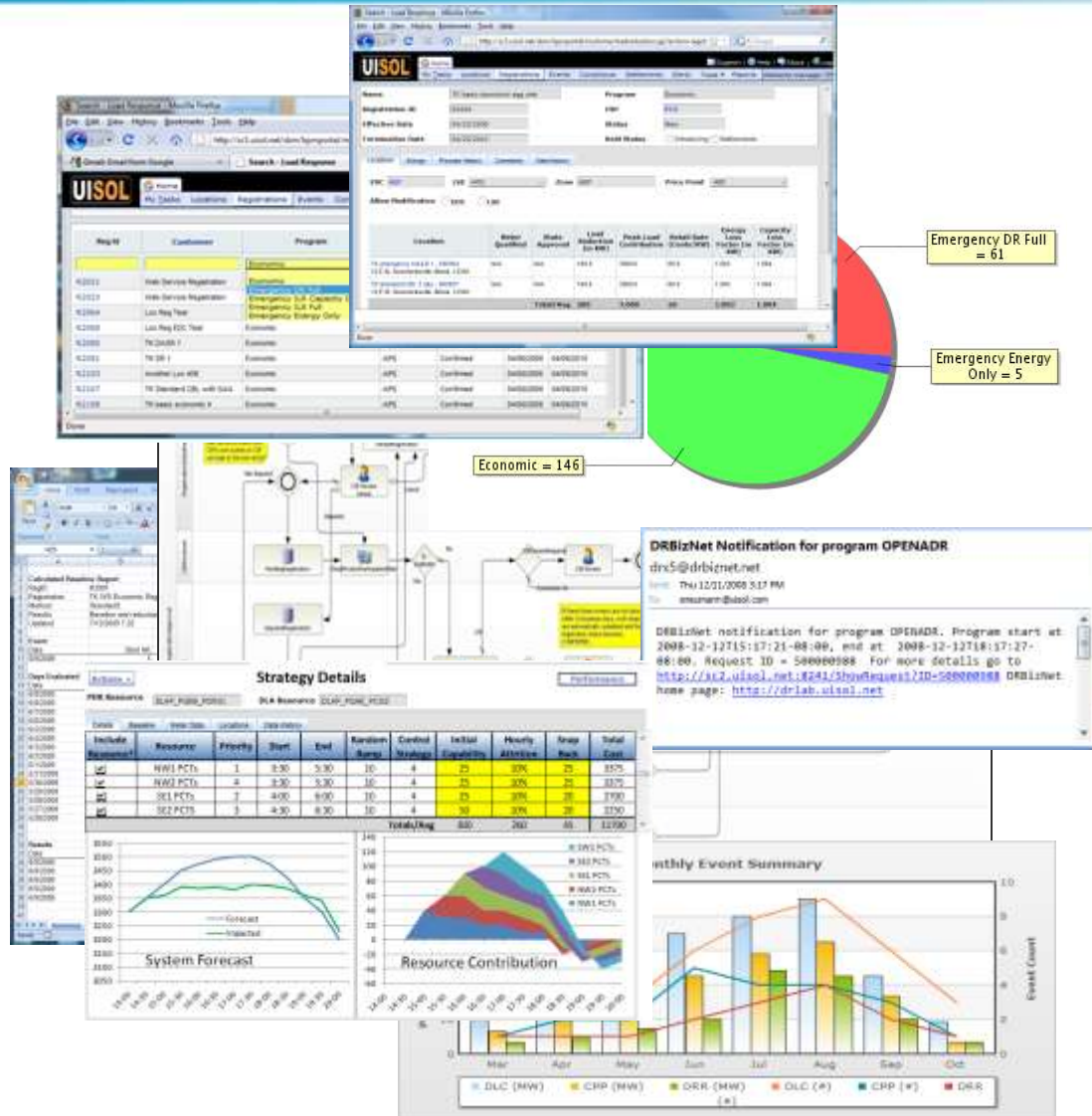


DRBizNet for utilities and suppliers



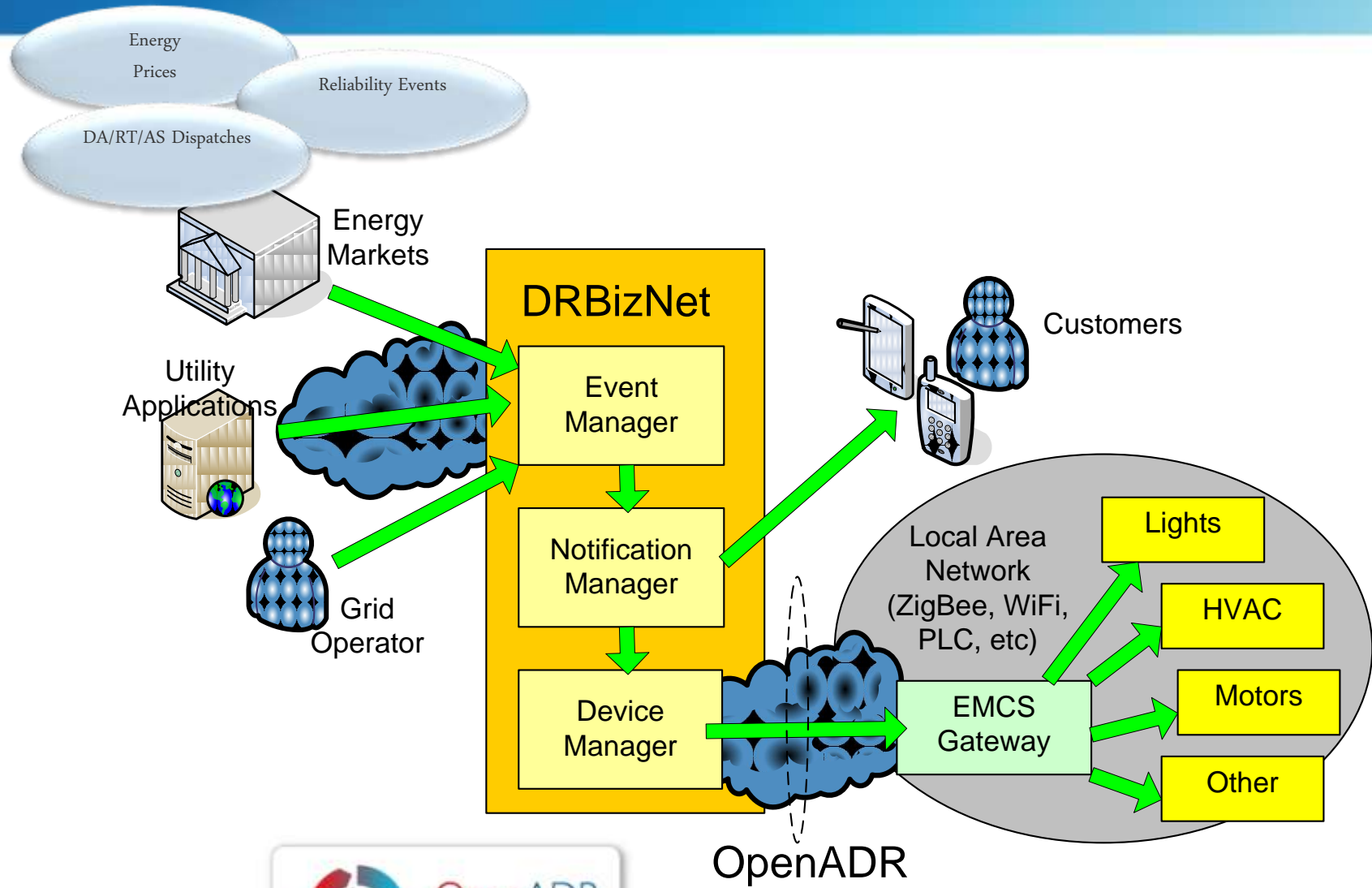
DRBizNet enables demand side resources to compete with central generation

- ✓ Manage entire resource portfolio and program enrollment lifecycle
- ✓ Energy, capacity, and ancillary services
- ✓ Capture site details and enrollment parameters
- ✓ Aggregate capacity into virtual power plants
- ✓ Disaggregate dispatches and handle site level communications
- ✓ Collect and store billing quality meter data
- ✓ Automate site level M&V and rollup performance calculations
- ✓ Site level settlements

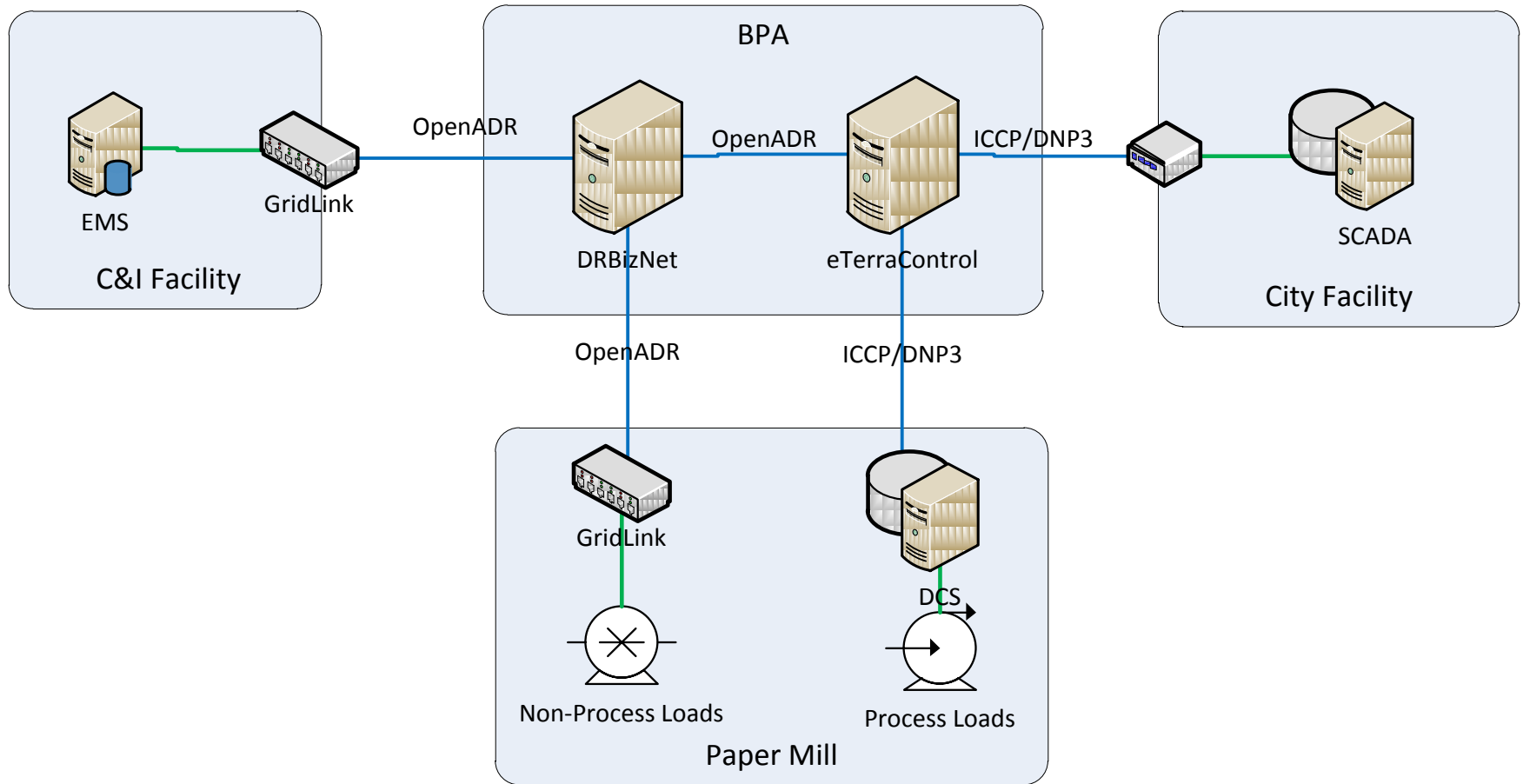


DRBizNet and OpenADR

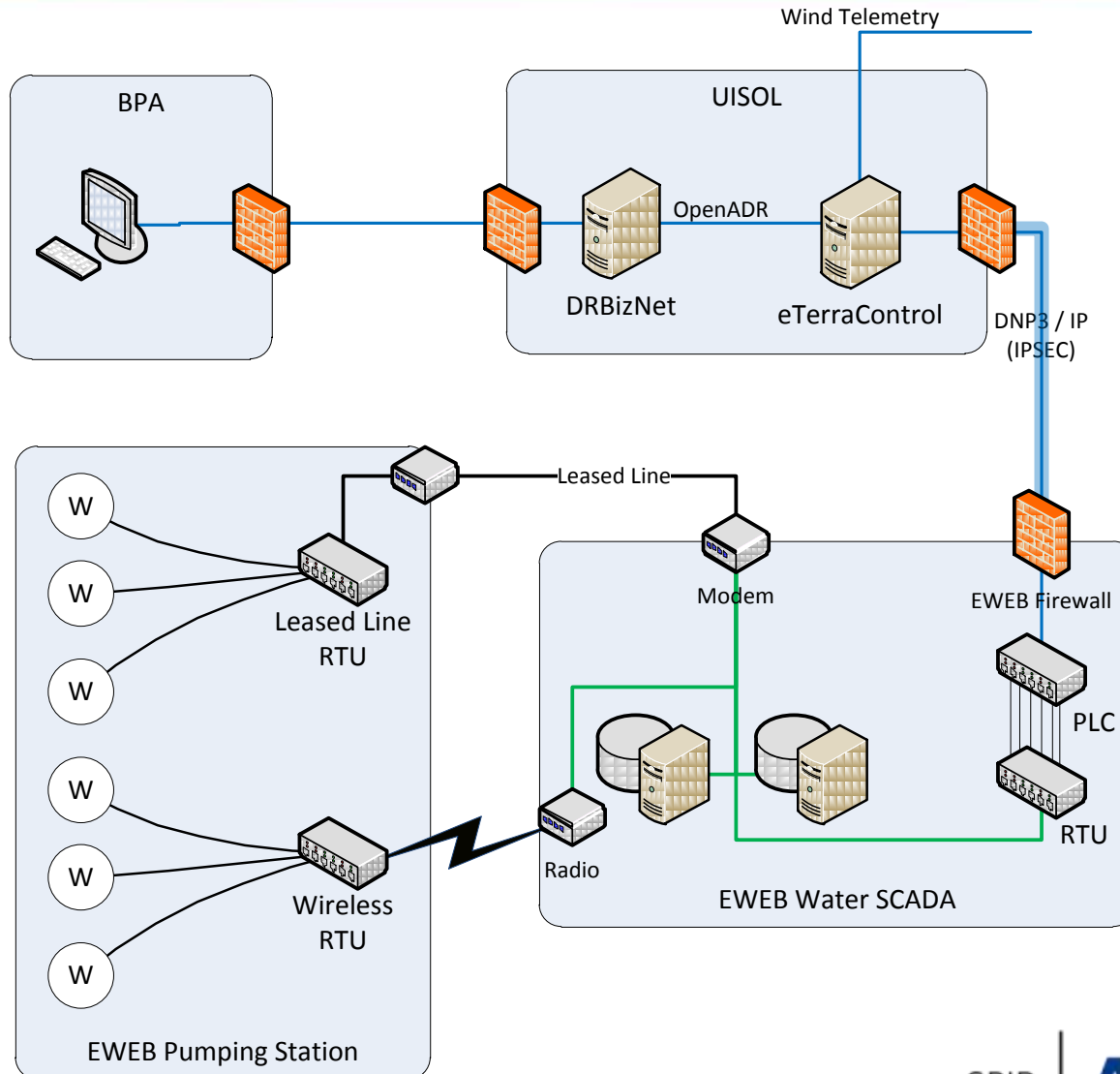
Integrating operations with end customer loads



DRBizNet BPA & Alstom Production



DRBizNet and Renewables



DRMS Benefits

- Jumpstart Demand Response business unit with production multi-vendor commercial application
- Allow flexibility in DR program rules and business processes
- Proven registration processes and interface
- Centralize DR operations including visibility into available capacity and reporting
- Creates a single point of DR event execution
- Out of the box support for measurement, verification, settlement, and billing processes
- Streamline integration with systems and personnel
- Extend life of existing investments in specific point solutions and inflexible legacy systems

UISOL Consulting

Dean Moretton

11/31/2011

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Smart Metering and Smart Grid

- Completed numerous smart grid strategy and roadmaps for utilities
- Currently involved in several smart metering and smart grid projects in US and Canada

Software Integration

Implemented business-to-business integration of the ISO/RTO, IOUs, Muni, Coops.

Defining, designing, implementing solutions in DMS, OMS, Pre-pay, Demand Response, BPI and ESB

Smart Grid Architecture & Roadmap

Assistance building a power marketing function ground up, upgrade processes and systems in preparation for the market redesign

Market integration clients: MTEMC, PG&E, XCEL, California Dept of Water, Empire District, Madison Gas & Electric

Distribution & Outage Management Improvement

Performed the Project Management, Architecture, and Quality Assurance roles in a business integration initiative that involved integration of several enterprise systems and roll-out of mobile outage management to 2,000+ field users

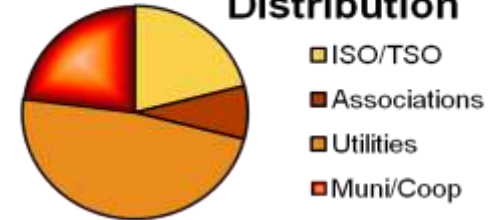
Providing 24x7 maintenance support for Kansas City Power and Light Outage Management System for over five years

Outage management roadmap for multiple municipal and IOU clients

Enterprise Service Bus Architecture and Consulting

- Many projects including Sempra, PJM Interconnection, Long Island Power Authority, BC Hydro (Canada), Transpower (New Zealand)

UISOL Customer Distribution



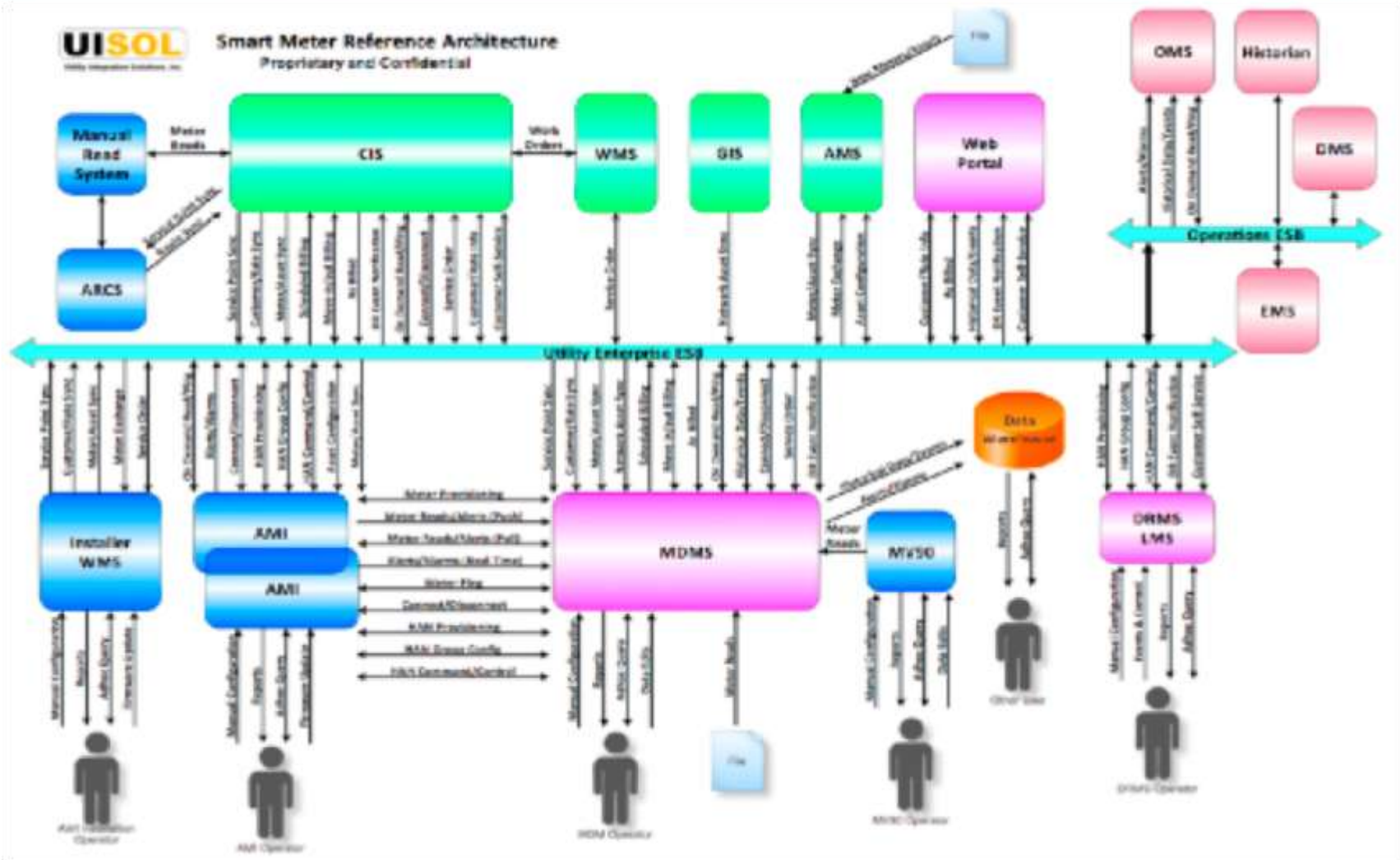
Smart Meter AMI/MDM

- UISOL's Senior Subject Matter Expert in our AMI/MDM vertical has direct experience in the planning, installation and operation of AMI systems at 5 utilities with more than 8 million meters, an evaluation pilot of AMI technologies and the project management for California's State Wide Pricing Pilot (SPP). Additionally, the Senior Subject Matter Expert has led the definition and implementation of MDMS for 6 utilities across 3 countries.
- UISOL created MDM and AMI marketplace snapshot for the NRECA. Collected data from 18 AMI/MDM vendors spanning 80 functional comparisons across power quality, AMI integration, data analytics, reporting, power quality, and system architecture.
- Directed Brunswick EMC through their implementation of a pre-payment option by harvesting data available from their AMI investment. This simplified their equipment deployment, consolidated operations, and streamlined processes.
- Developed MDM roadmap for Great River Energy & NB Energy in Canada.
- Led WPPI Energy's efforts to develop business case and select an MDM vendor.
- Helped Wabash Valley Power select MDM for measurement & verification, load analysis & forecasting, innovative power rate structures, interval data processing, and TOU.

Software Integration Experts

- For PJM Interconnection—the largest power pool in the world, UISOL implemented an integrations solution that is seamlessly connecting multiple enterprise applications for grid and market management, as well as web-services integration with over two hundred market participants.
- In the largest integration project in North America today, UISOL provided ERCOT integration architecture and design for their Nodal project that involved integration of 10 grid management systems, 400 information flows, several hundred web services, and high availability communication.
- Assisted Sempra utilities to establish their SOA based integration infrastructure to support their AMI initiatives.
- Built an integration platform for Long Island Power Authority (LIPA) that integrated with third party front office, mid office, and back office service provider applications to support Generation Management, Generation Bidding, Load Scheduling, Bi-lateral Energy Trading, Settlements, and financial system data.
- Assisted 6 utilities integrate PCI applications with their systems and to central power markets.

Smart Grid Roadmap & Architecture



Utility Industry Leadership

1. Ali Vojdani Chairman, Utility Integration Conference
2. John Wambaugh CS Week Executive Advisory Board
3. John Wambaugh Utilimetrics Board of Directors
4. Mark Day Chairman, Utilimetrics Conferences
5. Scott Coe IRC Board Consultant
6. Scott Coe NAESB Board Member
7. Scott Neumann US Technical Advisor IEC TC57
8. Scott Neumann Secretary CIGRE D2.24
9. Scott Neumann Co-leader IEC TC57 Smart grid Task Force
10. Terry Nielsen Board Member, Distributech
11. UISOL MultiSpeak National Test Agency

Interoperability Leadership

- UISOL is main author on International Standard for Metering Systems (IEC 61968-9).
- UISOL is a recognized authority in the area of Common Information Model (CIM)
 - UISOL provides CIM visual analyzer software *CIMvian* to the utility industry.
 - UISOL wrote the guide for EPRI on how to apply CIM in the distribution area
- UISOL has been the National Test Agent for MultiSpeak standards for the last five years. UISOL has tested the integration of many Smart Metering software with several OMS and CIS software.
- UISOL has developed a guidebook for utilities illustrating a set of integrations among AMI, MDMS, OMS, and GIS using the IEC 61968-9 CIM standard. Defining industry best practices and building foundation for inter-operability tests for distribution systems.
- UISOL helps ISO/RTO Council (IRC) develop standards for demand response measurement & verification standards at NAESB, application of communication standards at CIGRÉ, and Smart Grid standards for Demand Response comm.
- UISOL constructed the interoperability infrastructure for performing interoperability tests for IEC 61968-9 with co-funding from EPRI.
- Through LBNL, UISOL is building an open source software to support OpenADR price communication protocol for the industry.

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