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Title
Demand Response Business Network (DRIbiznet): Overview

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California Demand Response Business Network

(DRBizNet)

Ali Vojdani

June 10, 2004

Project Team

- **UISOL**
  - **Ali Vojdani (*Project Manager*)**
  - **Scott Neumann**
- **Dynamic Networks**
  - **Eamonn McCormick**
- **Nexant**
  - **Dan Engel**
  - **Robert Hinkle**
- **Savvion**
  - **Omid Razavi**
- **TIBCO**
  - **Don Adams**

Utility Integration Solutions, Inc.

WWW.UISOL.COM

Mission: Improve utility performance through business processes integration and workflow automation

- **UISOL specializes in:**
  - **Utility business processes**
  - **Utility systems integration**
  - **Utility IT standards (e.g. CIM)**
- **UISOL integration software partners:**
  - **SAVVION**
  - **TIBCO**
- **UISOL customers in California include CAISO, CEC, PG&E, SVP, and WAPA**

UISOL Utility Integration Solutions, Inc. | Nexant | Dynamic Networks | SAVVION | pier

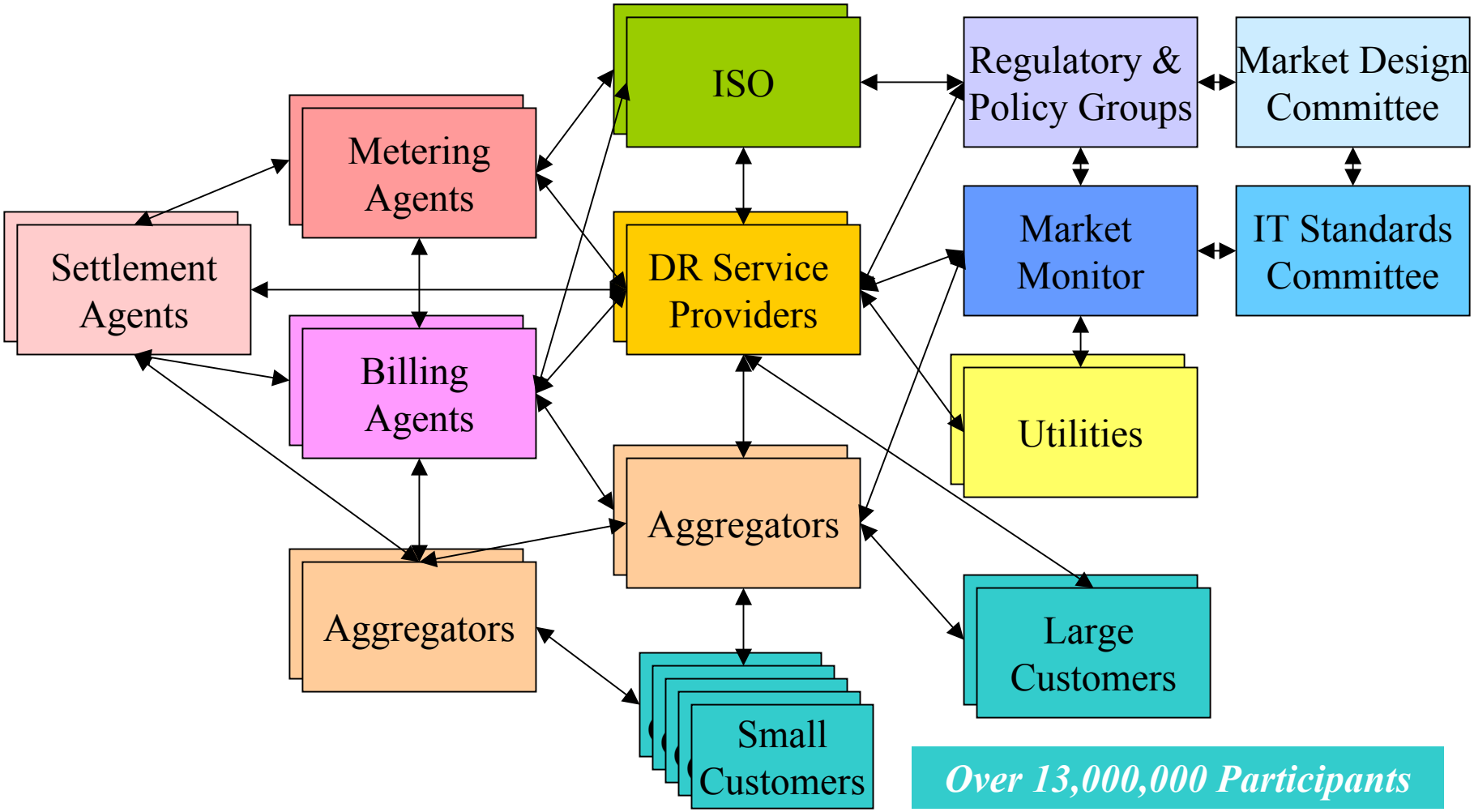
Agenda

2:00-2:05	Introduction	Gaymond Yee	5 minutes
2:05-2:25	DRBizNet Project Overview	Ali Vojdani	20 minutes
2:25-2:45	Assessment of the AS-IS State of DR Market in California	Dan Engel	20 minutes
2:45-3:05	Vision of the TO-BE State & the Benefits of DRBizNet	Dan Engel	20 minutes
3:05-3:15	Coffee Break		10 minutes
3:15-3:40	DRBizNet Business Architecture Requirements	Eamonn McCormick	25 minutes
3:40-4:15	Architecting the DRBizNet (Work in Progress)	Scott Neumann	35 minutes
4:15-4:30	QA & Wrap Up	Ali Vojdani & Gaymond Yee	15 minutes

Objectives

- **Enable a "10X10" improvement in today's DR systems integration technology by designing:**
  1. **A DR Real-Time Distributed Business Network (DRBizNet) architecture; and**
  2. **A roadmap for construction of DRBizNet in California.**
- **Time frame for completion of DRBizNet implementation could be ten (10) years out, but implementation planning needs to start soon.**

DR Value Network

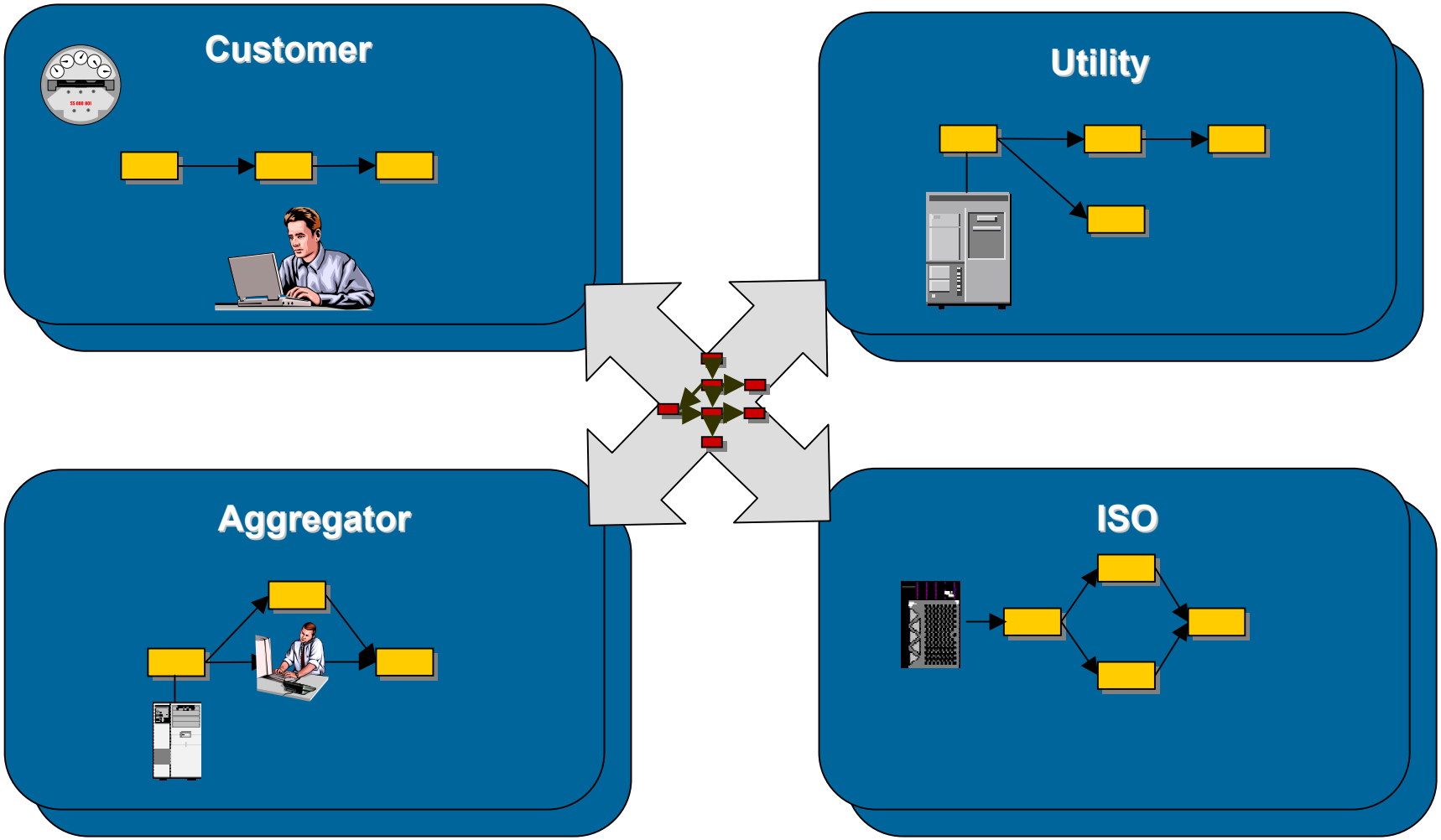


Motivation

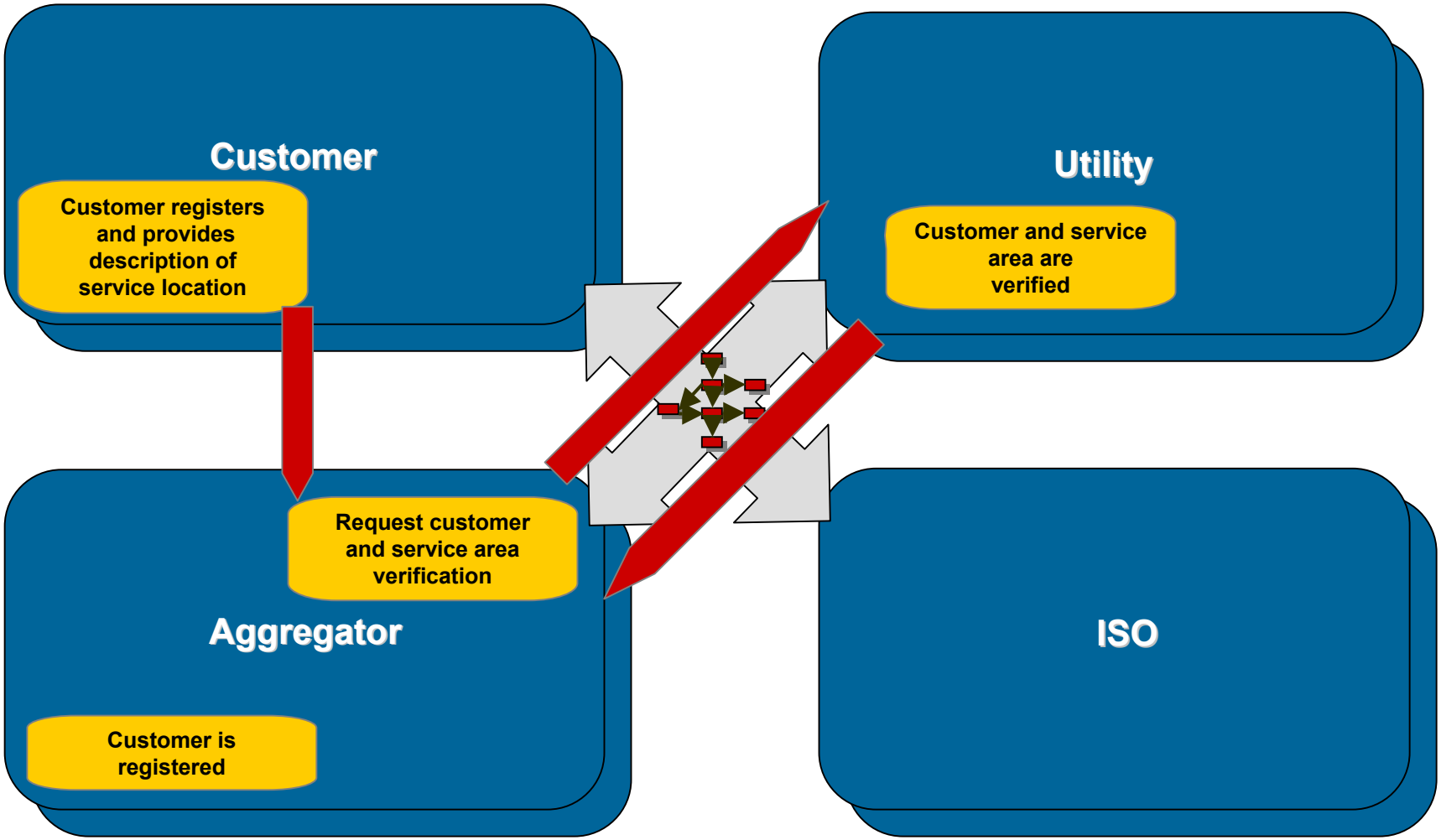
To achieve a significant level of DR, one needs:

1. **Real-time communication with the DR sources**
2. **Real-time coordination of business processes and workflow among DR entities**
3. **Communication and coordination standards**

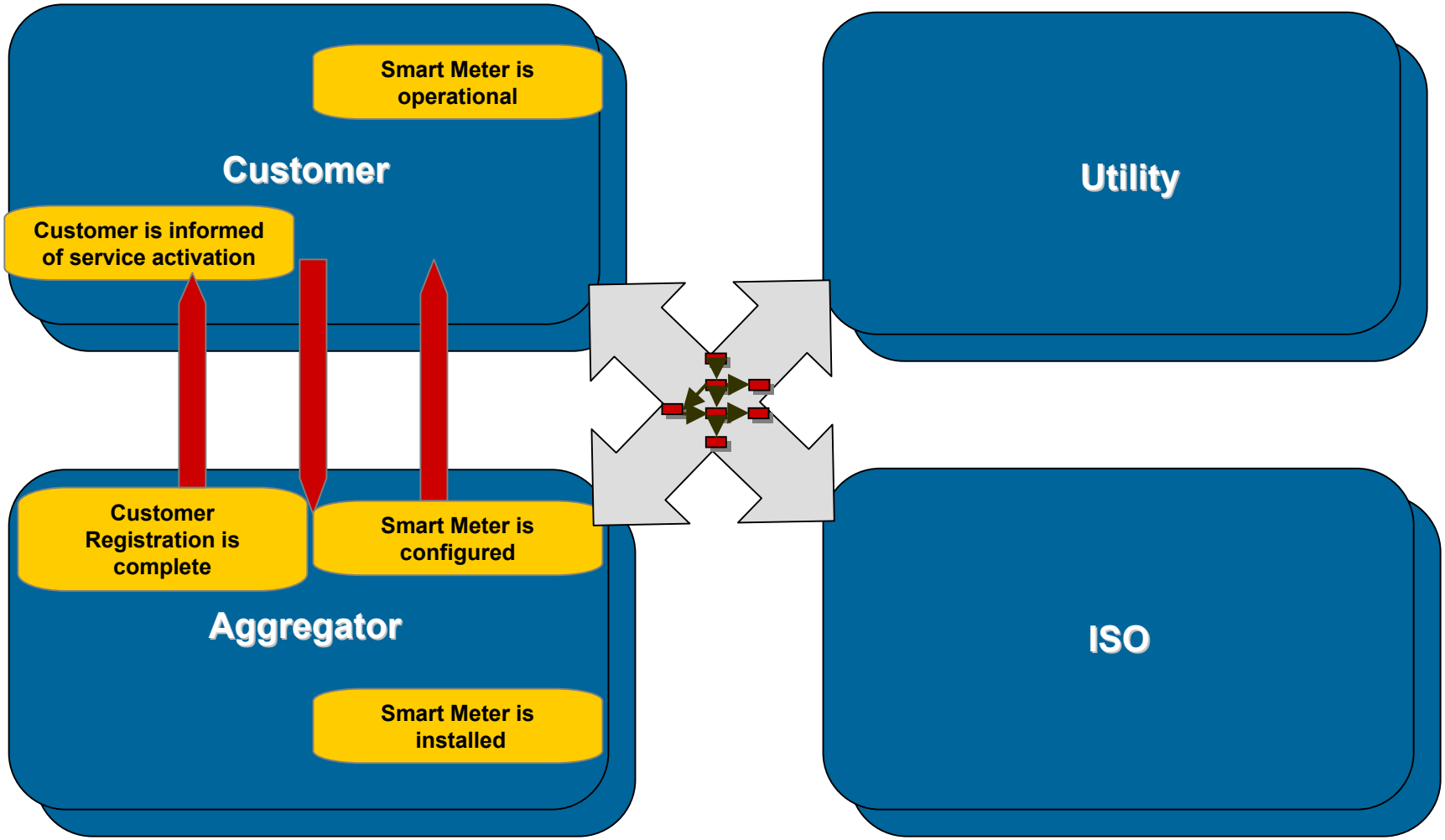
Business Process Integration/Workflow



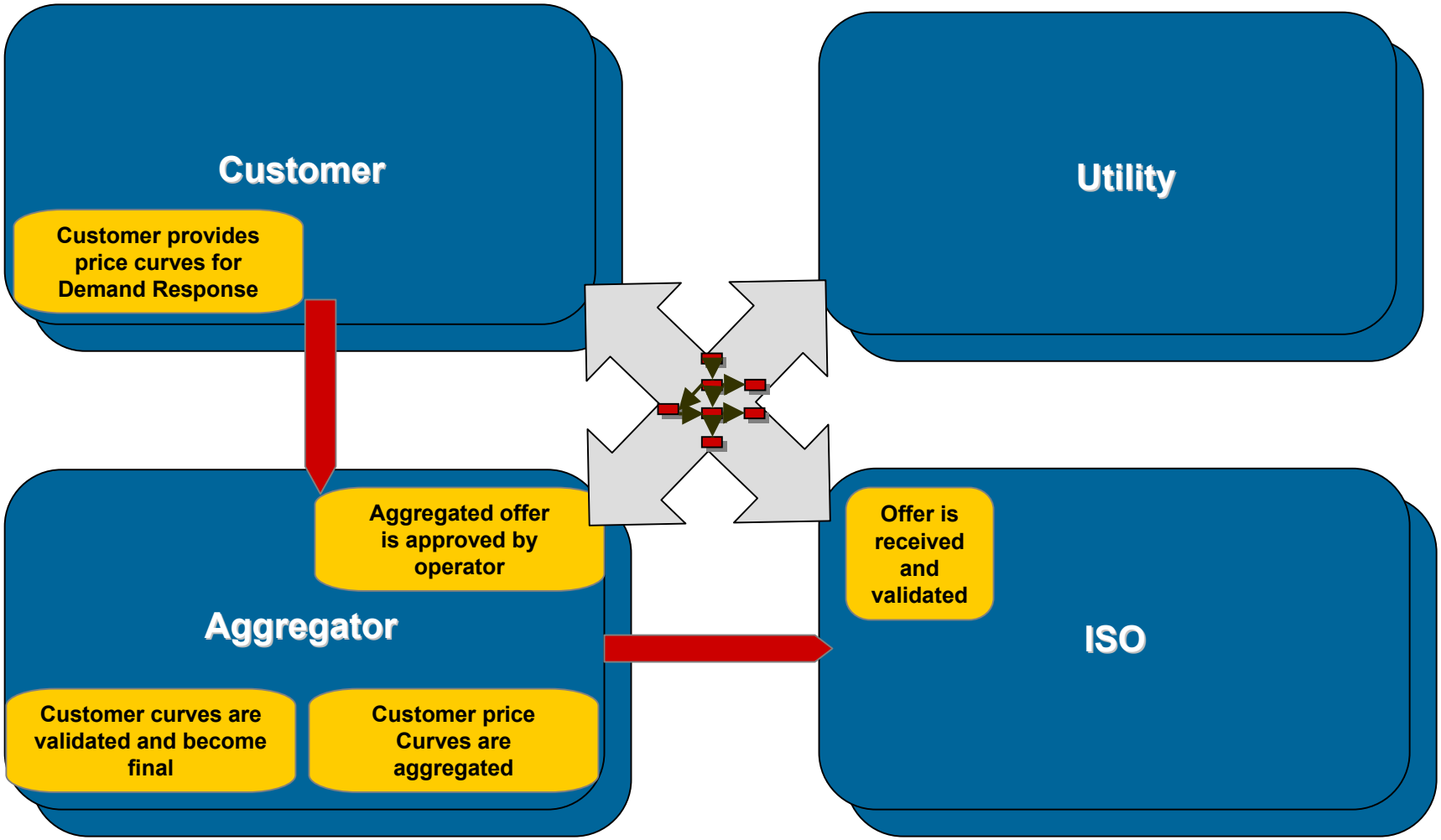
Example: Customer Registration



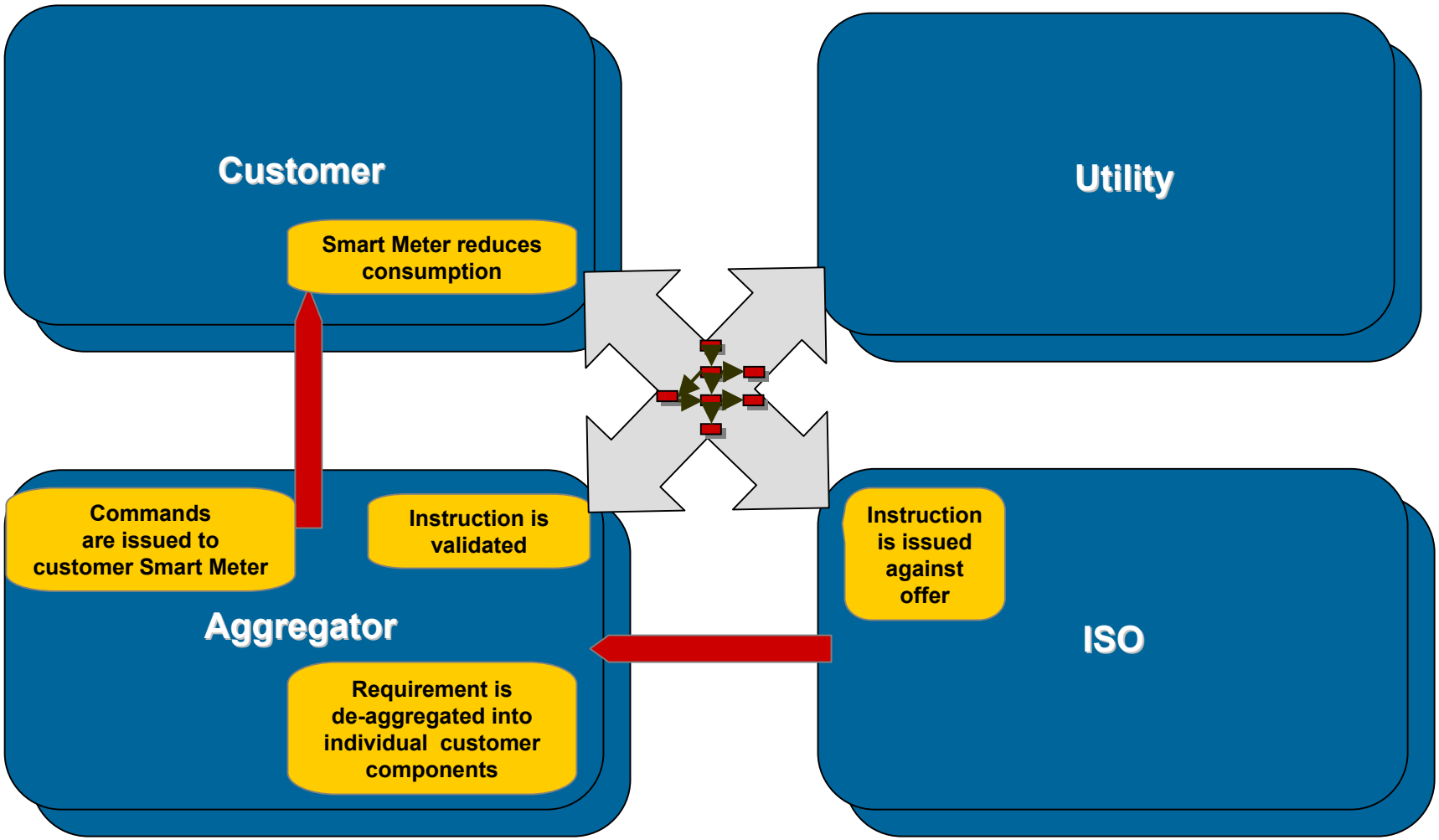
Example: Meter Installation



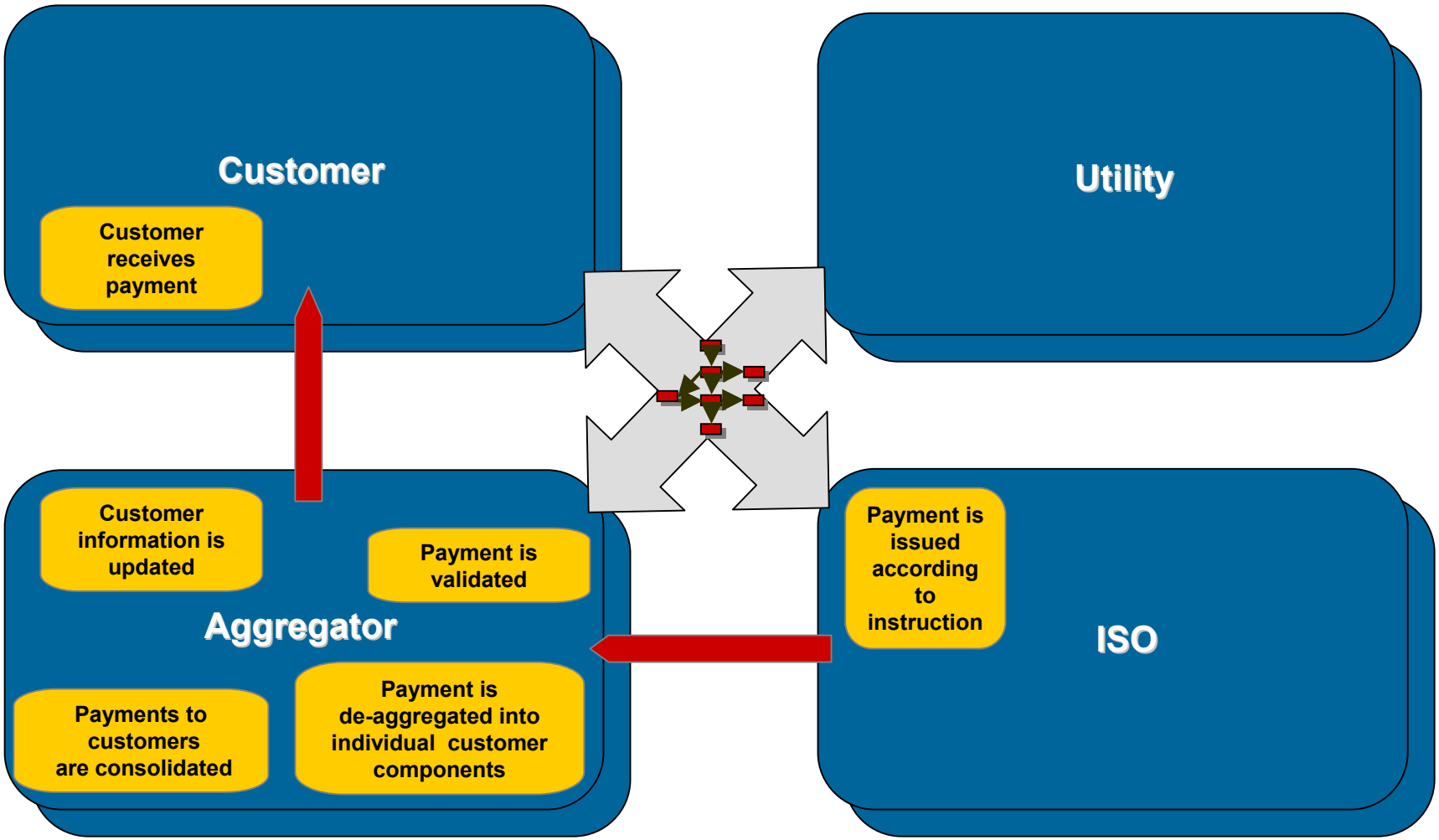
Example: Customer Price Curve Aggregation



Example: Dispatch



Example: Settlement



DRBizNet

- **DRBizNet is a real-time distributed business network needed to facilitate and maximize the DR in California**
- **DRBizNet will consist of a set of real-time communication and coordination components (services):**
  - **DR Registry**
  - **DR Web Services**
  - **DR Message Bus**
  - **DR Connector**
  - **DR Portal**
  - **DR Intelligent Agents**

Benefits

- **DRBizNet could drastically reduce California's total cost of ownership of the DR infrastructure, and can increase the magnitude of DR available in California.**
- **The sooner DRBizNet is architected, the less costly it will be to carry forward into the future the incompatible (legacy) DR systems that are being built.**

High-Level Requirements

- Efficient real-time communications
- Wide-area coordination
- Flexibility
- Cost minimization
- Speed of operation
- Multi-vendor interoperability
- Reliability
- Security
- Scalability

FACTS About DRBizNet

- **The intention of this project is NOT to recommend a huge central infrastructure that would compete with vendors.**
- **We are sensitive to the large investments already made in legacy DR systems in California.**
- **We are aware that several vendors have DR solutions based on real-time messaging technology; we are not reinventing the wheel.**
- **Distributed business process integration (e.g., wide-area workflow automation) is a relatively new technology.**

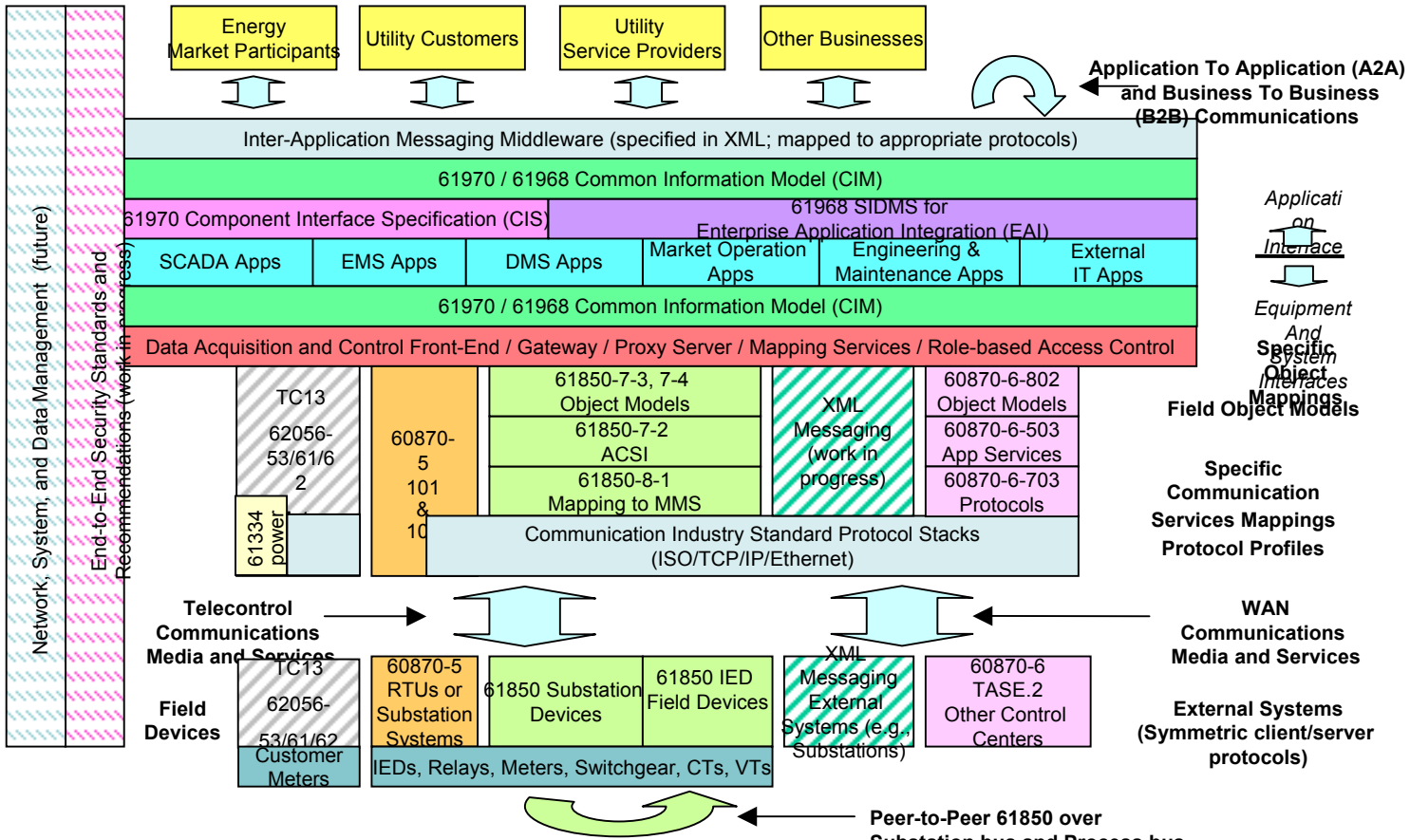
Challenges

- **Need for standard DR markets design**
- **Need for standard DR real-time communication and coordination Protocols**
- **Others issues noted in Task 4 Report**

Relevant Experiences

- **Utility Industry**
  - **Existing DR systems in California and elsewhere**
  - **Infrastructure supporting retail deregulation in California, Texas, Ontario, Victoria, …**
  - **Infrastructure supporting wholesale deregulation (e.g., e-Tag, OASIS, ISOs)**
  - **Utility industry standardization successes (e.g., ICCP, CIM)**
- **Other Industries**
  - **Straight-Through Processing (STP) in Financial industry**
  - **Newly proposed real-time communications and coordination solutions for Homeland Security**
  - **Procurement networks in retail industry**
  - **Integration solutions supporting HIPAA (Health Insurance Portability and Accountability Act)**

IEC TC57 Standards and Relationships



*Notes: 1) Solid colors correlate different parts of protocols within the architecture.
2) Non-solid patterns represent areas that are future work, or work in progress, or related work provided by another IEC TC.

Stakeholders

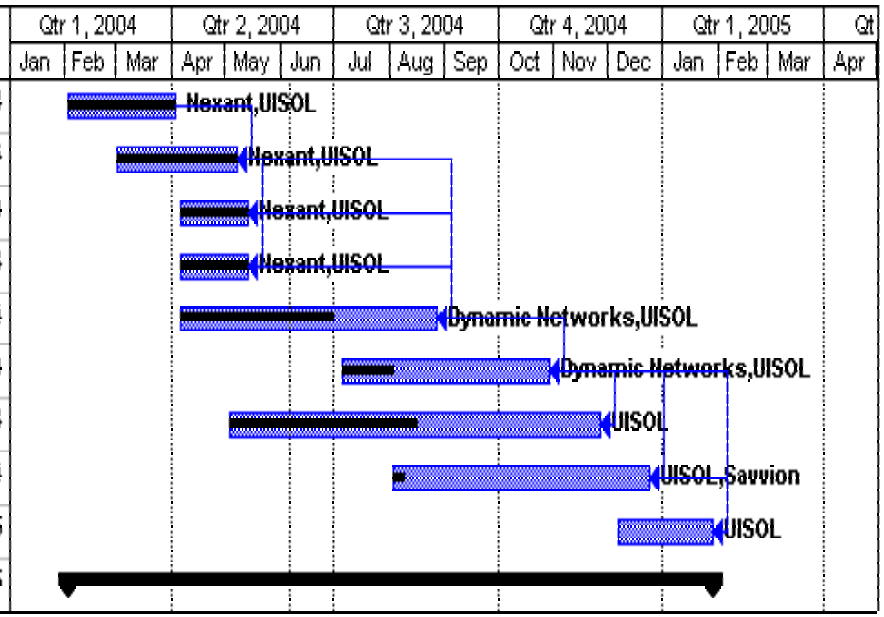
- State of California
- California Utilities
- Service providers
- Other DR network entities

Project Tasks

1. Assess the AS-IS State
2. Vision the TO-BE State
3. Catalogue Benefits of DRBizNet
4. Analyze the Gaps
5. Develop Business Architecture Requirements
6. Develop DRBizNet Architecture
7. Assess State-of-the-Art in Integration Technology
8. Demonstrate the Concepts through a Prototype
9. Develop an Implementation Roadmap
10. Document and Communicate R&D Results

Project Schedule & Status

ID	Task Name	Start	Finish
1	Assess the AS IS State (Task 1)	Mon 2/2/04	Fri 4/2/04
2	Vision the TO-BE State (Task 2)	Mon 3/1/04	Fri 5/7/04
3	Catalogue Benefits of DRBNet (Task 3)	Mon 4/5/04	Thu 5/13/04
4	Analyze the Gaps (Task 4)	Mon 4/5/04	Thu 5/13/04
5	Develop Business Architecture Requirements (Task 5)	Mon 4/5/04	Fri 8/27/04
6	Develop DRBNet Architecture (Task 6)	Mon 7/5/04	Fri 10/29/04
7	Assess State of the Art in Integration Technology (Task 7)	Mon 5/3/04	Fri 11/26/04
8	Demonstrate the Integration Concepts through a Prototype (Task 8)	Mon 8/2/04	Fri 12/24/04
9	Develop an Implementation Roadmap (Task 9)	Mon 12/6/04	Fri 1/28/05
10	**Document and Communicate R&D Results (Task 10)**	**Mon 2/2/04**	**Fri 1/28/05**



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More Information

- **Contact**

  Vojdani@UISOL.COM

- **Access DRBizNet Project Management Portal**

  http://DR.UISOL.COM

Wrap-Up

- **The objective of this project is to develop a high-level architecture and a roadmap for developing a real-time distributed business network in California for DR.**
- **DRBizNet could reduce total cost of ownership of DR infrastructure, and maximize DR in California.**
- **The project team has completed Tasks 1-4 of the project; other tasks are in progress.**
- **The project team will complete the remaining tasks by the 1/31/05. A final workshop is targeted for January of 2005.**
- **The tasks reports are available on the DRBizNet Project Management Portal at http://DR.UISOL.COM*.**

Send an e-mail to vojdani@uisol.com to register.

DRBizNet Implementation Priorities

	"TO-BE" ATTRIBUTES	Immediate	Mid-term	Long-term
Economic Elements	Low cost of participation		✓	
	Sufficient level of economic benefits	✓	✓	
IT Elements	Flexible DR Business Architecture	✓	✓	
	Highly Integrated IT Infrastructure for DR		✓	✓
Market Operations	Broad base of DR programs		✓	✓
	Consistency of DR program offerings	✓	✓	
	Use of DR as a reliable power resource		✓	✓
	Scalability of DR Programs		✓	✓
	High penetration across customer classes			✓
	Voluntary and default programs		✓	✓
	High level of customer awareness	✓	✓	
Policy Elements	Active market monitoring by regulators	✓	✓	✓
	Standardized market rules & regulations	✓	✓	
	Quality assurance for DR services		✓	✓

Next Steps

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