



# **Green Button Download and Automated Data Exchange Conformance Suite**

**Project Launch Webcast**

5/29/2012

# Green Button

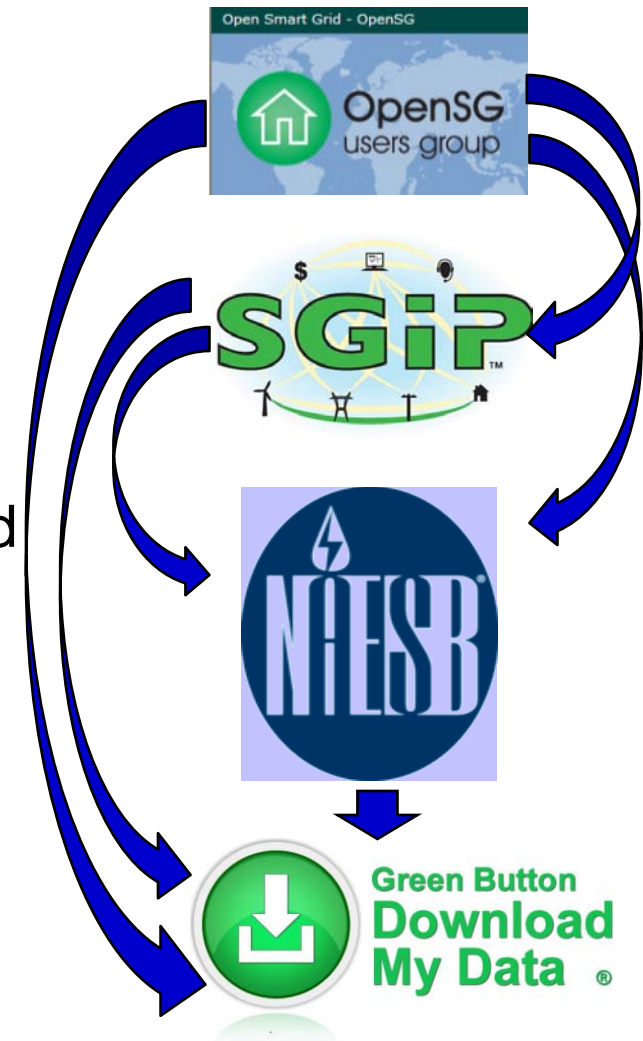
- Green Button is an industry-led effort to provide electricity customers with access to their energy usage data via a "Green Button" on electric utilities' websites.
- Green Button is
  - A policy
    - Whitehouse initiative
  - A brand
    - Green Button Logo implies specific capabilities
    - Interoperability standards and testing and certification ensure those expectations are met
  - A set of technologies and associated standards
    - Green Button Download My Data (ESPI data file)
    - Green Button Connect My Data (ESPI automated exchange)



# An overnight success ... years in the making

## OpenADE (Open Automated Data Exchange)

- Early requirements effort for securely sharing energy information with third parties
- NIST SGIP Priority Action Plan
  - Accelerates issue resolution and consensus development
- OpenADE / SGIP inputs to NAESB standard REQ21
  - Energy Services Provider Interface (ESPI)
  - Privacy: REQ22 Third Party Access to Smart-Meter-based Information
- Flexible file format basis for Green Button
  - initial implementation use a subset of ESPI and energy usage information.



# Green Button TimeLine

Many companies pushing Utilities for proprietary 3rd party interfaces

2008

2009

2010

2011

2012

OpenADE TF formed

OpenADE Reqs PAP10

NAESB PAP10 Standard Ratified

PAP10 Accepted to NIST CoS

US CTO Green Button Initiative

NAESB ESPI Standard Ratified

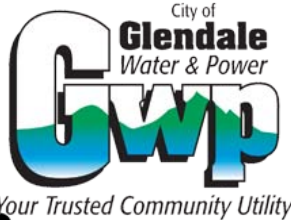
PG&E, SCE, SDG&E Implement

GB User and Conformance Development Group

## ADE Concept Meeting

Oracle	Oncor
Microsoft	Duke
Google	Reliant
Tendril	Consumers
GreenBox	Centerpoint
Control4	AEP
EnerNex	FPL
Xtensible	SCE
PG&E	Sempra

# Green Button Adopters



# Green Button Developers

- UCAIug represents a large user community (200 corporate members, >5000 affiliates) of utilities and product developers; key stakeholders in Green Button
- UCAIug is the home of the OpenADE working group that utilities and vendors created to develop original ADE requirements used to create ESPI
- Since September, >70 companies large and small have developed early Green Button (ESPI) compatible products, tools, and services based on first specifications
- Many of these early adopters are supplying Green Button-related technology to utilities
- OpenADE utility/vendor collaboration on testing and certification is now underway using volunteer resources



# Problem Statement

- Utilities committed to implementing Green Button reach 20 million customer accounts
- Customer feedback extremely positive because of the basic principal, simplicity, and ease of access
- Non-uniform deployment and unmet expectations will be detected and exploited by utility critics
- Non-interoperable implementations reduces the ability to capitalize on the app community and integrator tools – this will increase rather than decrease implementation cost
- **Need to act quickly!**



# Project Objective and Benefits

**This project will accelerate the development of a comprehensive conformance test suite for the standards that underlie Green Button**

- Accelerate the development of third party, value-added tools and service
- Accelerate the creation of an International Testing / Certification Authority
- Reduce utility implementation costs



# Why Be a Project Funder?

- **Project Funders:**

- Have early access to project findings and deliverables
- Have immediate access to experts in implementing project results
- Have a seat on the project Steering Committee
- Have a direct and active role in ensuring that your deployment is interoperable with the apps your customers choose
- Reduces business risk



# Approach

- Partner

- Test development vendor to accelerate test script development

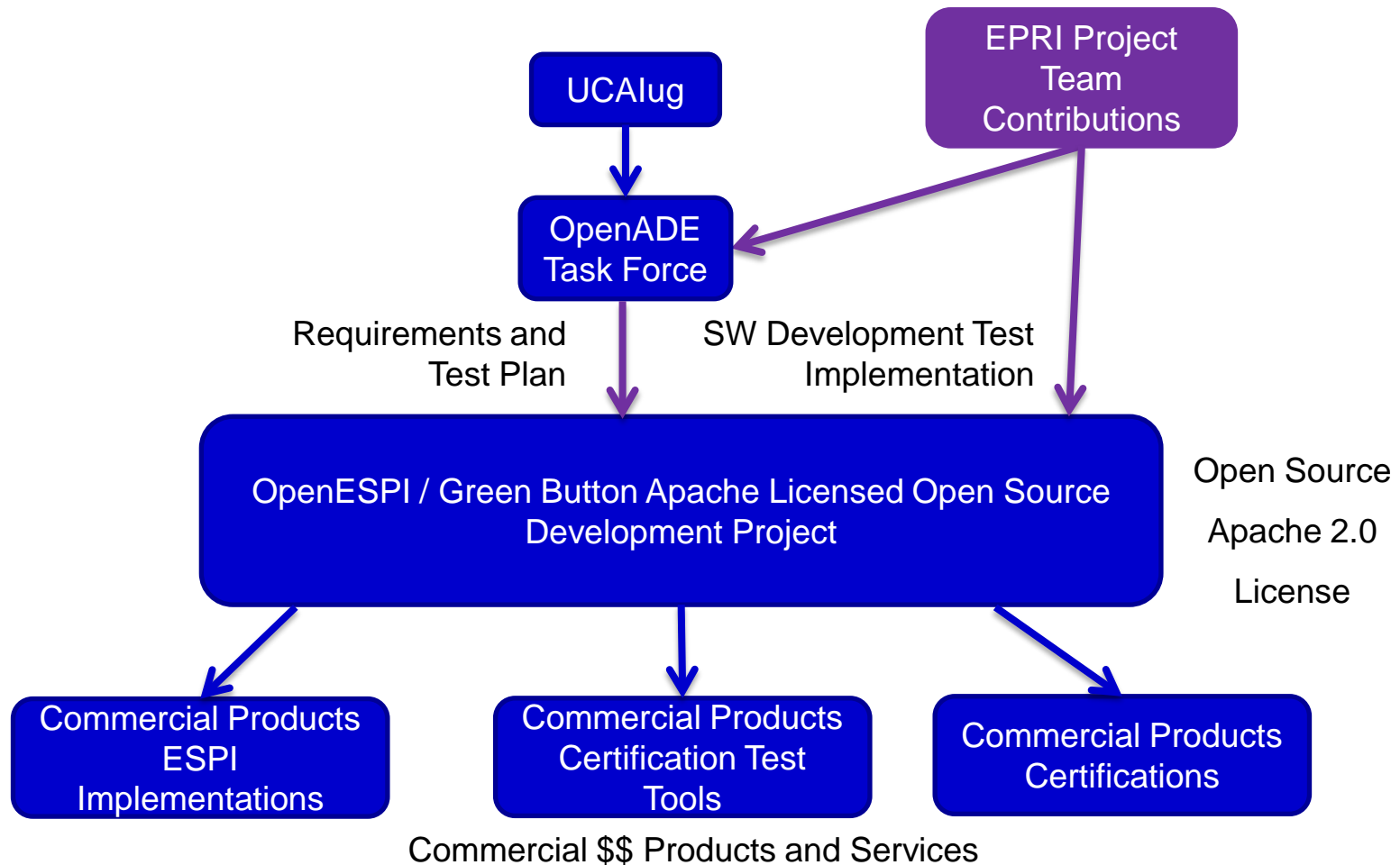
- Collaborate

- Working with and coordinating through
  - UCAIUG
  - SGIP

- Leverage

- Existing standard (NAESB Req 21)
- Requirements
- Test harness

# Organizational Relationships



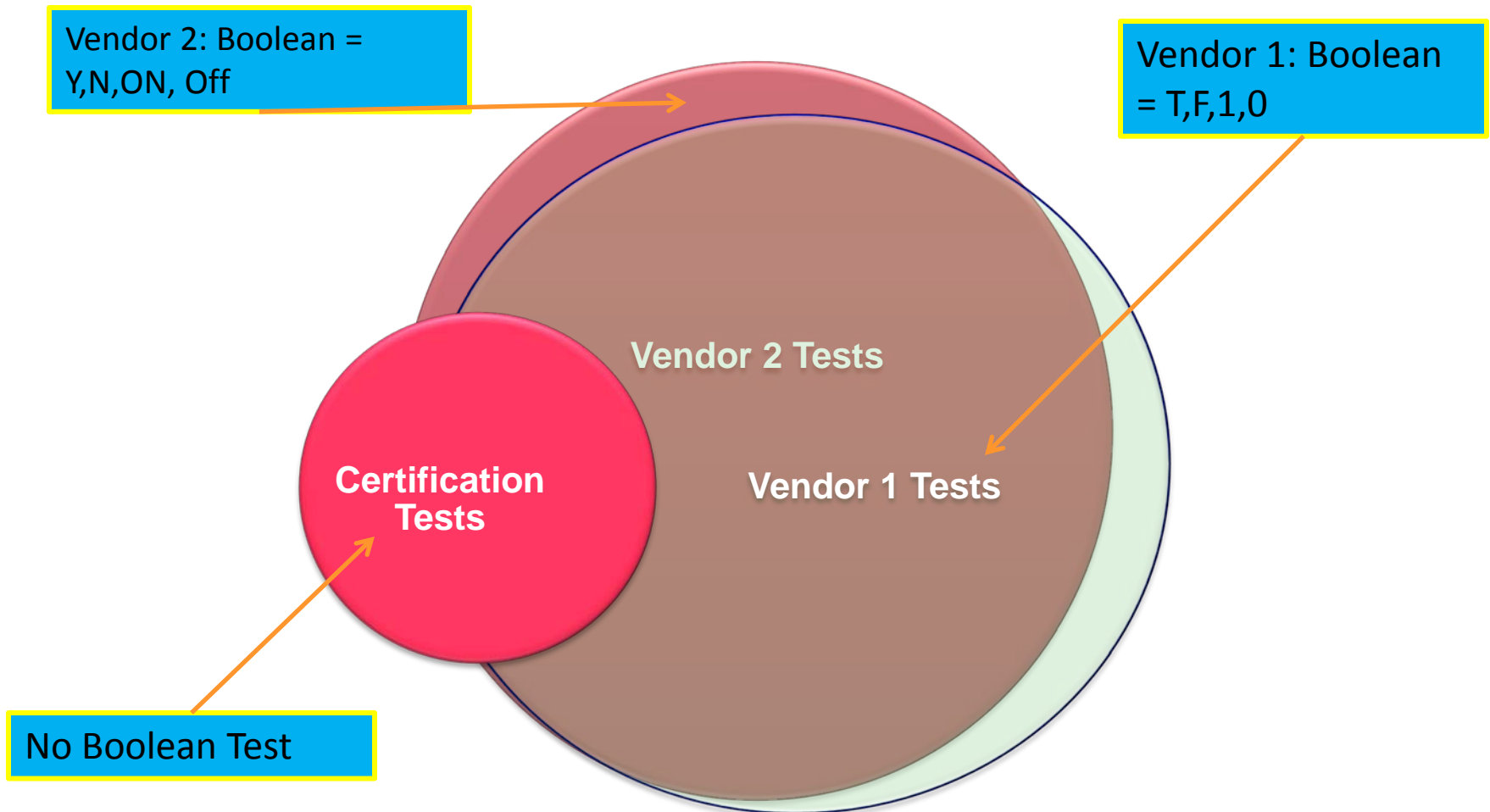


# OpenADE/ESPI Engineering Test Suite

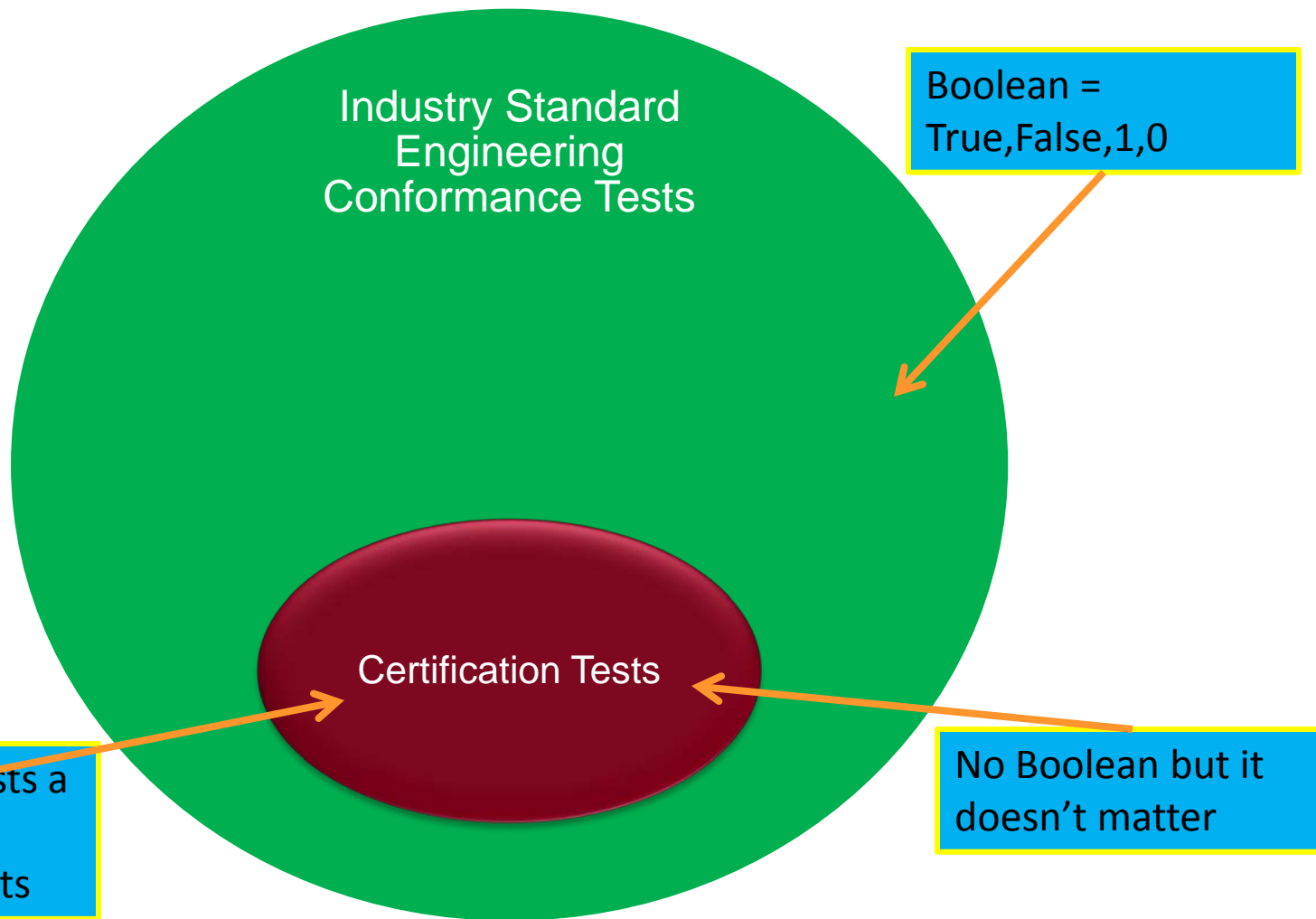
**QualityLogic**

**Smart Grid Test Solutions**

# Why Interoperability Problems Exist?



# Integrated Conformance Testing & Certifications



# Benefits of Integrated Model

Improved efficiency and effectiveness of industry interoperability:

- Certification preparation embedded in development process
- Certification process streamlined for vendors
  - Self-certification (with independent audit)
  - Preferential, accelerated certification
- Engineering feedback on certification tests will be earlier and broader, rapidly improving certification tests

Combination of standardized engineering tests and certification tests accelerate and best insure interoperability of products



# ESPI Engineering Test Suite

- Comprehensive set of ESPI engineering conformance test cases and tools
- Certification tests PLUS
  - More comprehensive than typical certification tests
- Subsets for certification
  - Green Button Download My Data (ESPI data file) Profile
  - Green Button Connect My Data (ESPI automated exchange) Profile
  - Others TBD
- Leverage/extend work of EPRI and UCA OpenADE Work Group

# Project Deliverables

- **ESPI conformance test specification**
  - Critical interpretation of the REQ.21 standard
  - Library of feature/functional test definitions
- **ESPI test harness**
  - Leverage and build upon existing EPRI test harness
- **ESPI test procedures and/or automated test scripts**
  - One or more subsets utilized by the UCA ITCA for specific certifications
  - Detailed documentation and structure for test cases and procedures
- **Support and maintenance**
  - Tech transfer to UCA and early implementers

# Benefits

- Confidence

- Vendors that comply with testing can deliver results

- Consistent

- Core requirements are met – not a “one off” or custom solution

- Competitive

- With conformance testing as lowest common denominator vendors compete on:
  - Price
  - Value-adds
  - Service

# Schedule / Cost

- Project will start as soon as adequate funding is secured
- Funders get:
  - Immediate access to Green Button/ESPI experts
  - Early releases
- Staged development as directed by funding sources / UCA
  - Early releases for implementers
  - Green button tests?
  - ESPI tests?
- Total Cost: \$400,000
  - Expected Funders: 10
  - Cost / Funder : \$40,000

# For More Information on this Project

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