

Information, Communication and Cyber Security Roadmap Update for ICT Innovators Forum

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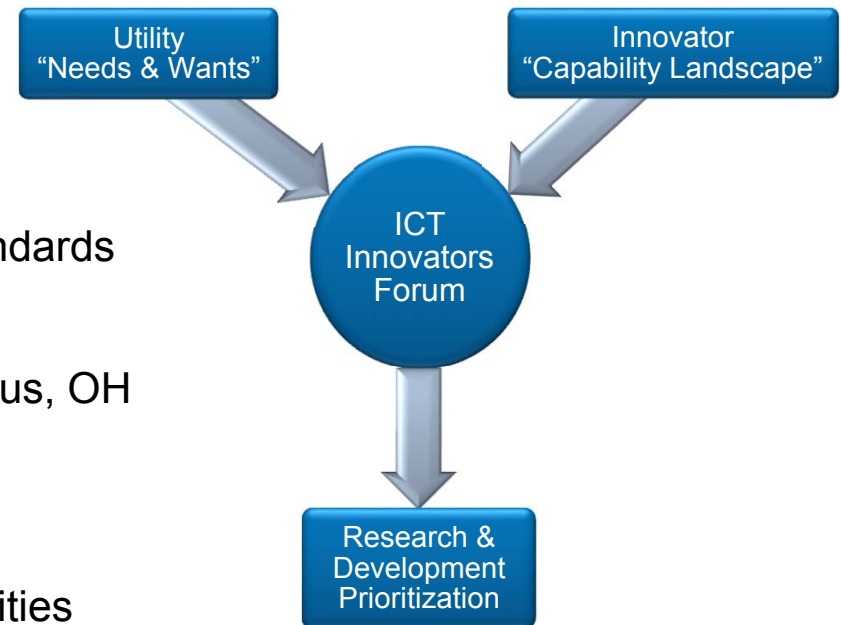
Agenda

- ICT Innovators Forum First-Year Process and Schedule
- Information, Communication and Cyber Security Roadmap Process Overview
- R&D Gaps Survey Overview
- Q&A
- Survey Open – TAKE SURVEY with remaining 30 minutes

The EPRI ICT Innovators Forum: Advancing Strategic R&D for the Grid

Approach – *New Program Coordinated w/ICT:*

- Annual utility “Needs and Wants” survey
- Annual “Capability Landscape” survey
- R&D Prioritization from Gap Analysis
 - Emphasis on open technologies and standards
- Annual Meeting at the EPRI PQ Meeting
 - 2015: June 24 hosted by AEP in Columbus, OH
 - Optional: Discounted Exhibitor Space
- Periodic Webcasts
- Identification of Collaborative R&D Opportunities



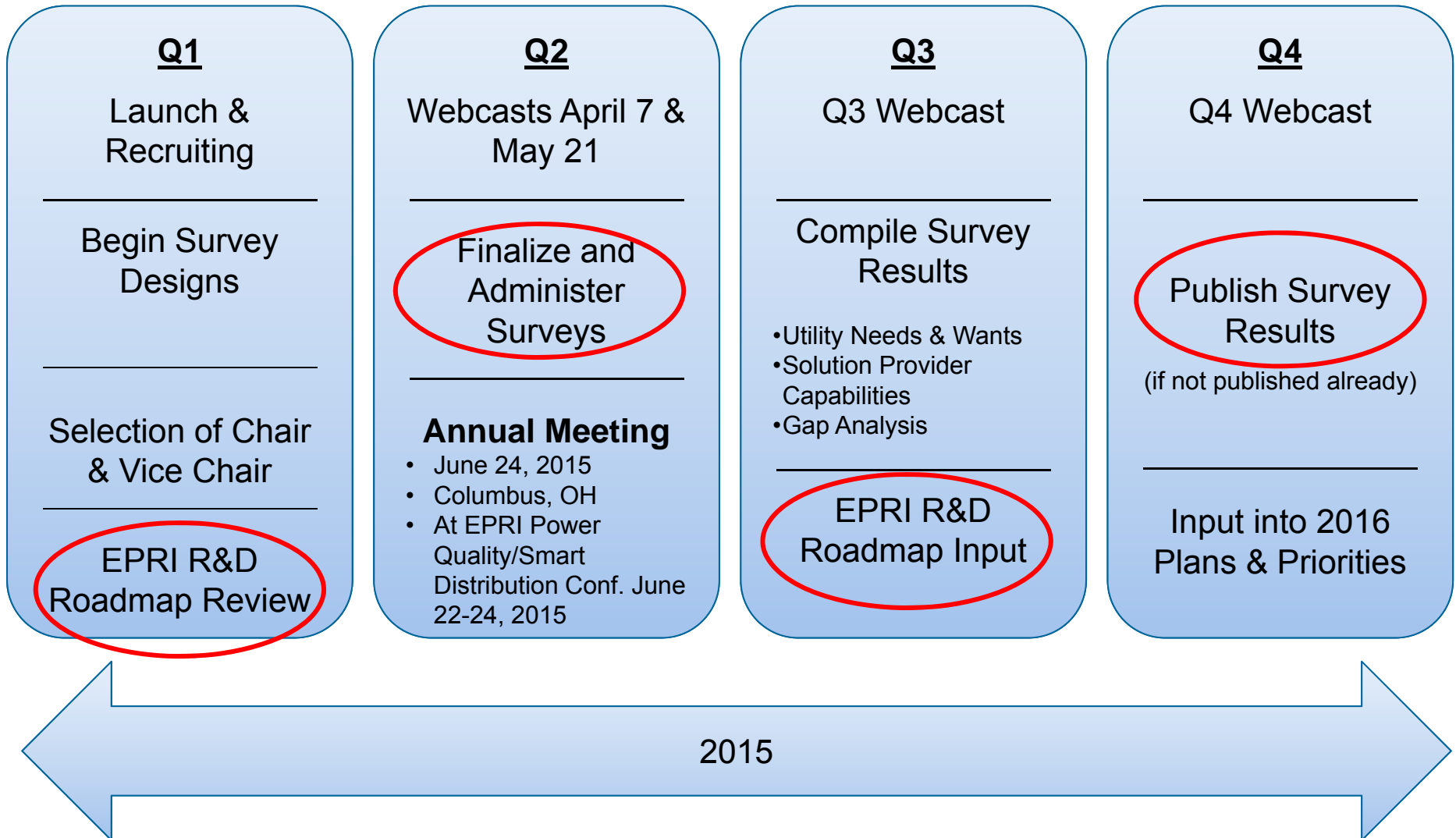
Result –

Accelerated Commercialization of ICT-related Research for the Electric Industry!

Key Success Criteria

- ***Solution Providers' Products Meet Utility Needs***
- ***Utilities Deploy Products Commercialized from EPRI R&D***

2015 Program Outline



EPRI ICCS Roadmap Goals

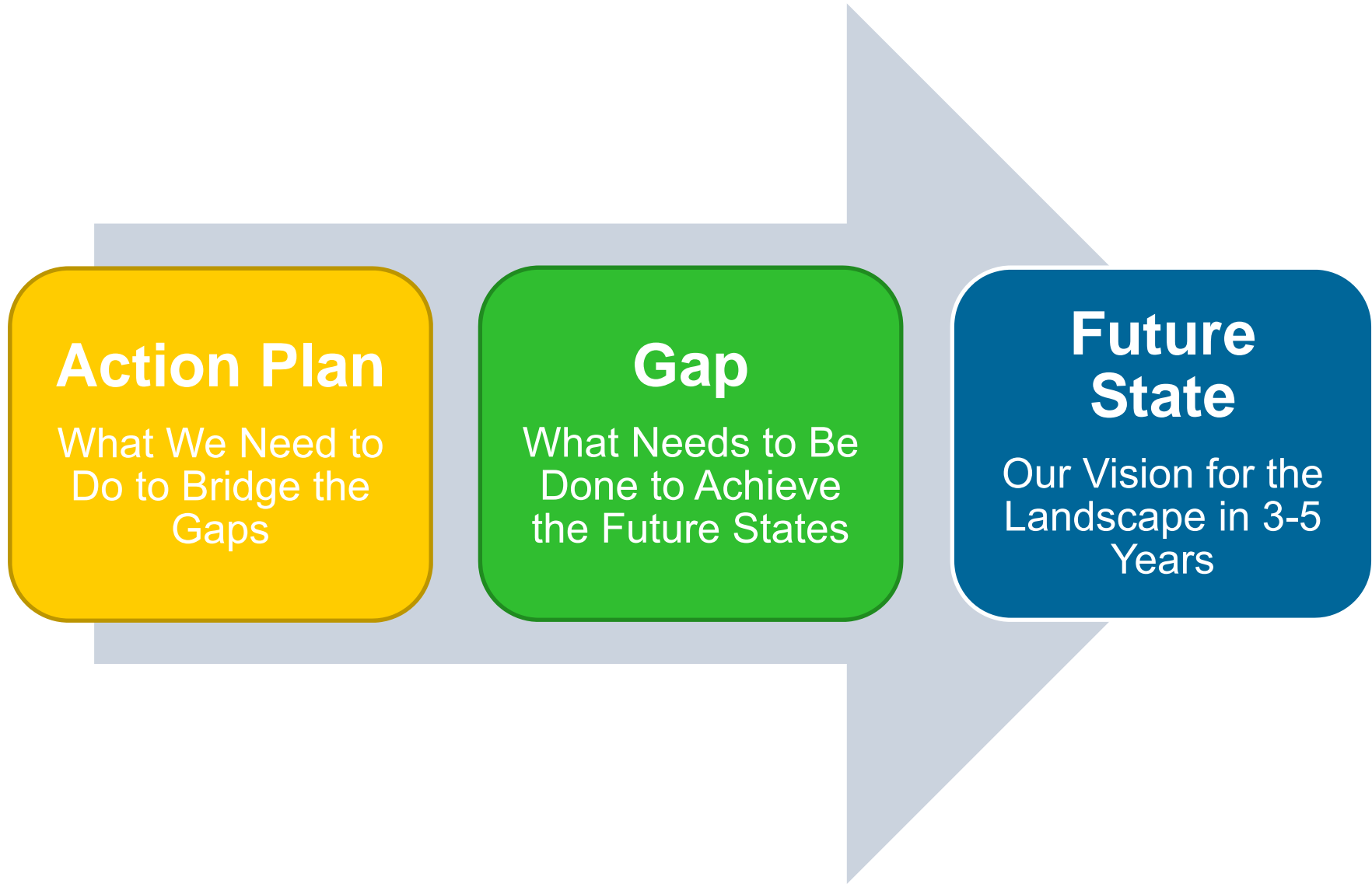
- Communicate ICCS Program direction to broad EPRI stakeholder audiences
 - Organize around relevant topics
 - Align with key R&D Priorities in Tx, Dx, and EU
 - Align with EPRI-wide initiatives (e.g., Research Imperatives)

- Support effective project set planning and execution within ICT and Cyber Security
 - Contain enough detail to support decision-making and tracking
 - Help to inform new project set directions

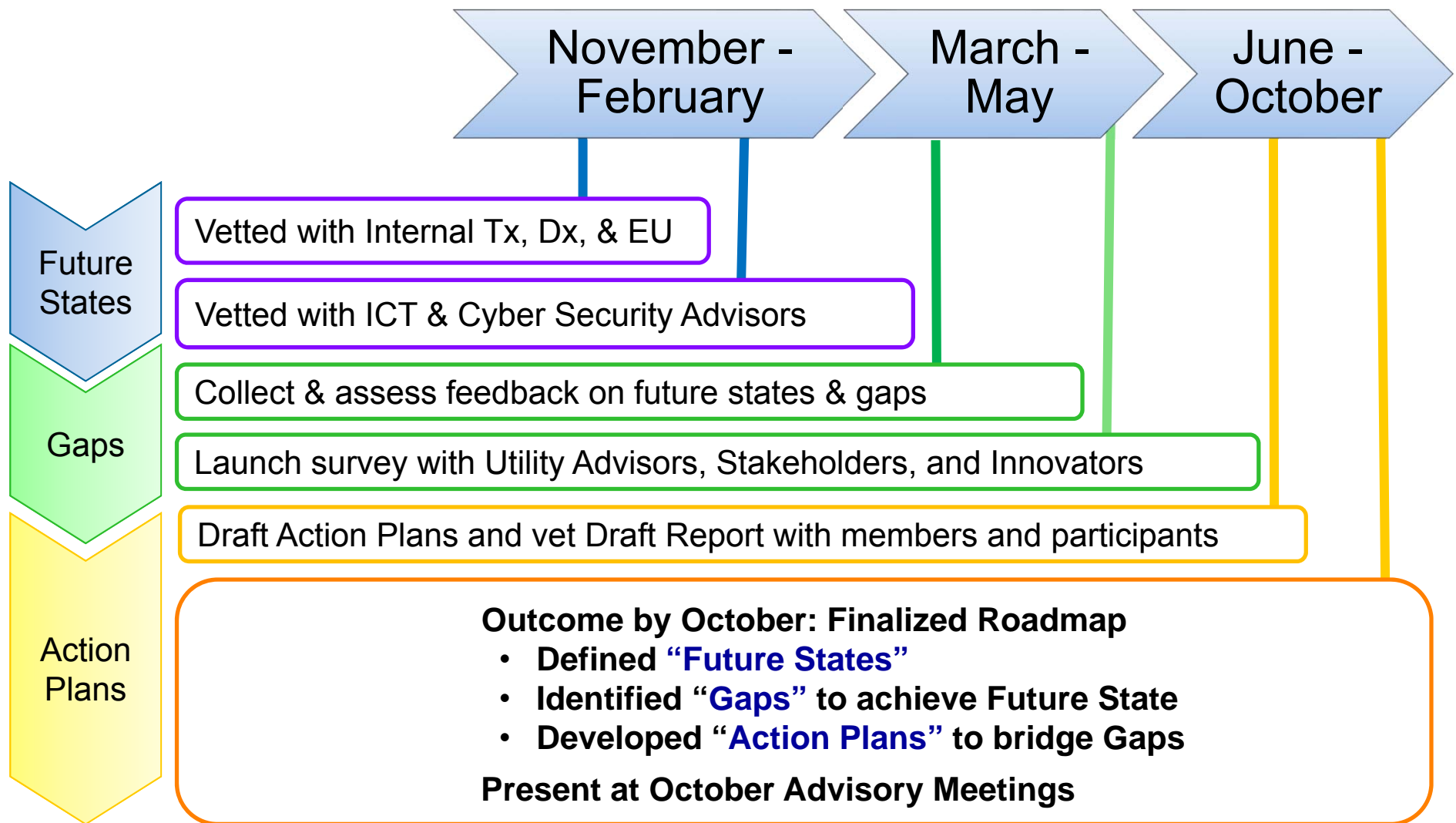
- Support ICT Innovators Forum Process

- Balance between **Detail** and **Big Picture**

Roadmap Development Approach



Roadmap Update



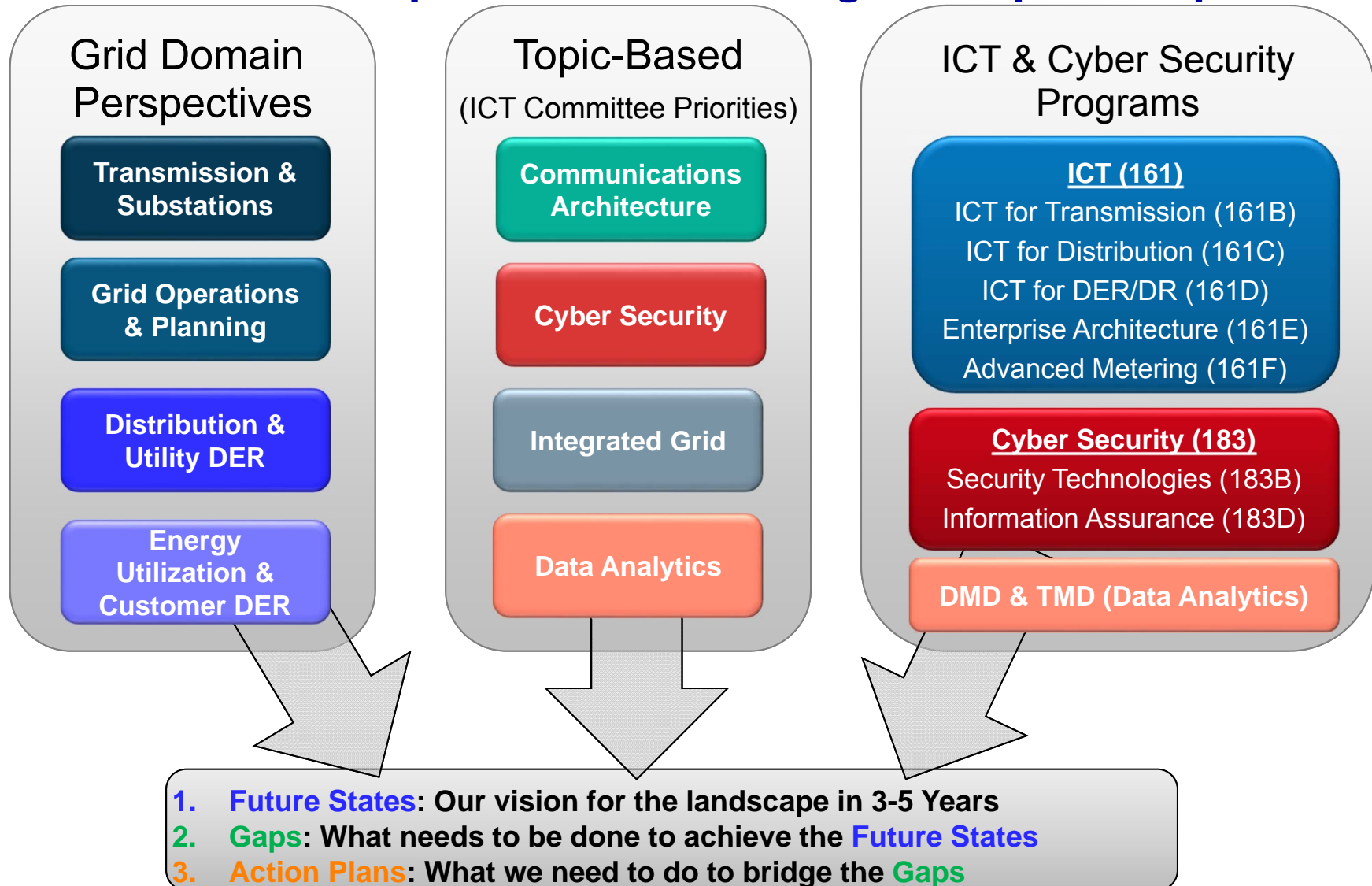
Industry Engagement - Grid 3.0 Leadership Committee

- Objective is to promote coordination and collaboration between organizations
- Held workshops in November and March to engage stakeholders
- Currently working to develop a roadmap to identify critical R&D activities
- The Grid 3.0 work complements EPRI's ICCS Roadmapping efforts by identifying ongoing work within other organizations and promoting collaboration



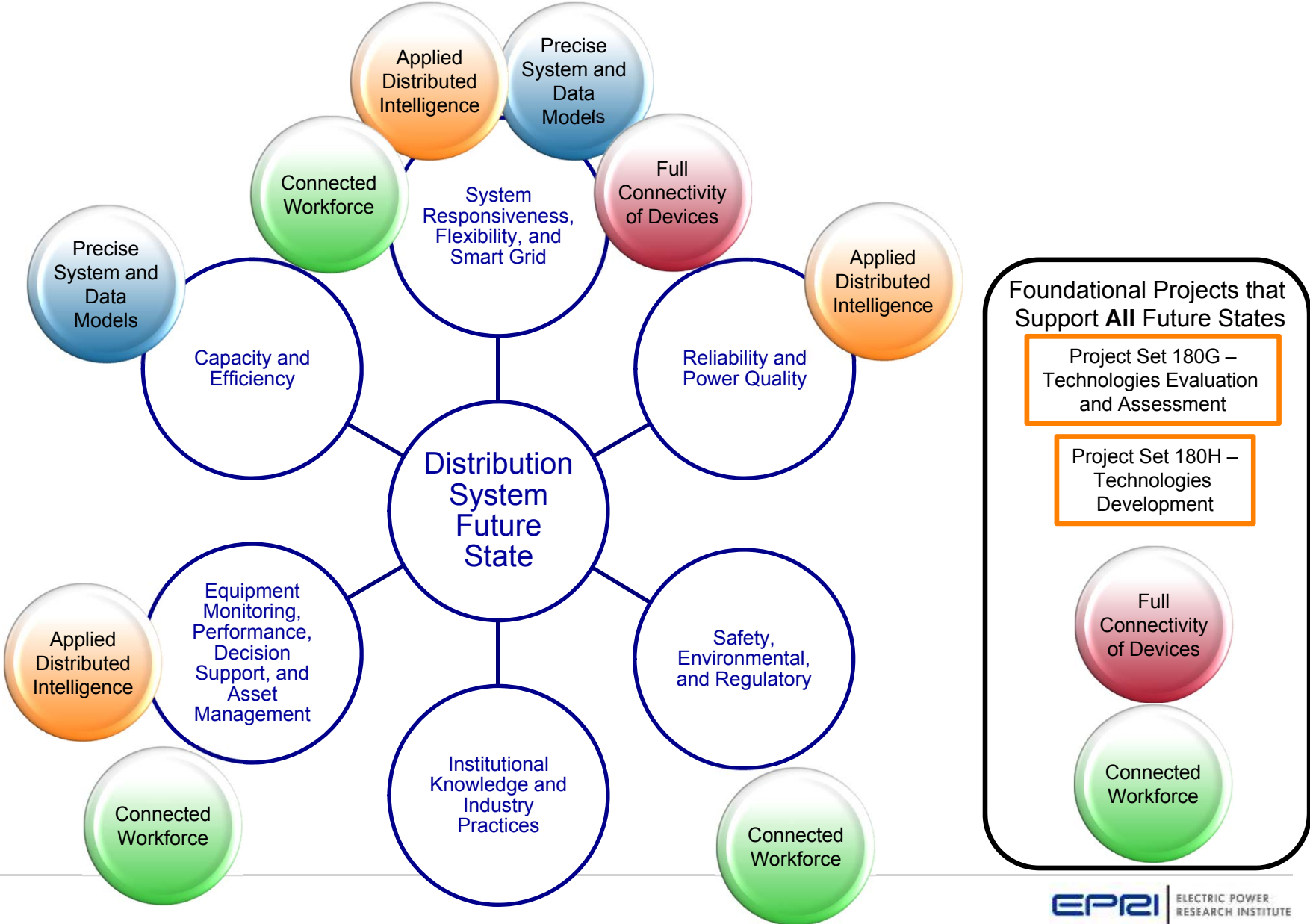
**EPRI's Don Von Dollen on Leadership Team – Aligning with our Roadmap
Several EPRI Staff Participating in Meetings**

Information, Communication and Cyber Security (ICCS) Future States & Gaps are Cross Cutting - Multiple Perspectives



Examples of Coordination Between ICT and Other Programs

Linkage of Distribution (180) and ICT for Distribution (161C)



Gap “Tagging”: Each Gap is Mapped Considering Three Categorizations

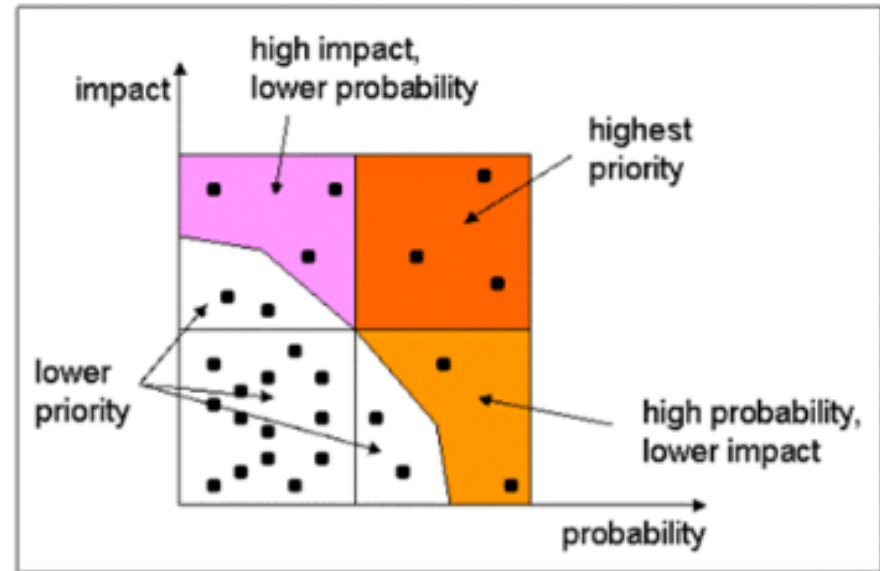
Gap Description	Grid Domains				ICT Committee Topics				ICCS Programs/Project Sets							
	Transmission	Grid Operations and Planning	Distribution & DER Integration	Energy Utilization	Communications Technologies	Integrated Grid	Data Analytics	Cyber Security	161B ICT for Transmission	161C ICT for Distribution	161D ICT for DER including DR	161E Enterprise Architecture & Int.	161F Advanced Metering Systems	183B Cyber Security Technologies	183D Security – Information Assurance	DMD and TMD (Data Analytics)
Gap W	X				X				X							
Gap X		X					X	X				X			X	X
Gap Y			X			X				X			X			
Gap Z				X		X					X			X		

Survey can be taken from any of these perspectives

Survey Approach

For each Gap, rate two factors:

- Probability of EPRI facilitating the bridging of this gap in 3-5 years
- Potential positive impact of bridging this gap



Example Questions on Gaps:

Assess the following gaps against the Future State: Connected Workforce

23. Addressing the limited accessibility of field workforce to near real time operational and device data

	Very Lo	Lo	Moderate	Hi	Very Hi
Probability of EPRI Facilitating the Bridging of this Gap in 3 years	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Potential Positive Impact by Bridging this Gap	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Three Perspectives for Taking the Survey

EPRI Information, Communication & Cyber Security Roadmap Survey

2. Survey Topics Selection



1. I would like to answer questions based on:

- My EPRI Membership** in Information and Communication Technology (ICT) Program (161), Cyber Security and Privacy Program (183) and/or DMD/TMD Data Analytic Initiative (Distribution/Transmission Modernization Demo)
- Research Topics:** Communications, Data Analytics, Cyber Security and/or Integrated Grid
- Grid Domains:** Transmission and Substations, Grid Operations and Planning, Distribution and/or Energy Utilization

Prev Next

By EPRI ICCS Membership	#
ICT for Transmission (161B)	13
ICT for Distribution (161C)	16
ICT for DER/DR (161D)	9
Enterprise Architecture (161E)	7
Advanced Metering (161F)	8
Cyber Security Technologies (183B)	10
Cyber Security Information Assurance (183D)	10
DMD/TMD Data Analytics	20

By Research Topic	#
Communications	29
Data Analytics	20
Cyber Security	20
Integrated Grid	18

By Grid Domain	#
Transmission & Substations	7
Grid Operations & Planning	19
Distribution	21
Energy Utilization	17

Option to skip any section

1. Would you like to rank R&D Gaps related to ICT for Transmission (161B)?

- Yes
- No

Prev Next

Survey Opens Right Now!

www.surveymonkey.com/s/EPRI_Roadmap

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EPRI Smart Distribution and Power Quality Conference & Expo

Discovering Innovations for the Future Grid

June 22-24, Columbus Ohio

Host Utility: American Electric Power

[Event and Registration Info \(Link\)](#)

More info, contact Jeff Stevenson: 865-218-8194, jstevenson@epri.com



Integrated Solutions for the Future Grid

Grid Resiliency • Integrated Grid • Integration of DER • Innovations in Microgrids
Distribution Systems • Communications & Security • Solution Providers

Power Quality

PQ Case Studies • Monitoring PQ • PQ and DER/Microgrids
Improving T&D PQ and Reliability • Issues with PQ • PQ Standards

Tutorials Monday Morning (June 22)

- ICT – CEA-2045
- Microgrids
- Power Quality

**ICT Innovators Forum Face-to-Face Meeting:
Afternoon of June 24th**

Questions?

If not, please use remaining time to Take the Survey!

www.surveymonkey.com/s/EPRI_Roadmap

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Together.... Shaping the Future of Electricity

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