The Integrated Energy and Communication Systems Architecture

Volume II:
Functional Requirements

Appendix A:
Stakeholder Engagement Process

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Appendix A – Stakeholder Engagement Process

A.1. Introduction

The IECSA Project will ultimately impact anyone who builds, maintains and manages energy systems, as well as those that regulate, manufacture products for, utilize, or otherwise consume energy from the future energy system. A closer examination of this list reveals that it appears to encompass nearly everyone on planet Earth. This should not be a surprise given the dependence of society on electric power and the pervasive nature of electric energy. Indeed, the breadth of the project spans the universe of energy and information technologies, while the classes of stakeholders are quite large and diverse with respect to areas of interest, depth and domains of expertise, and desire for involvement with the IECSA project.

The definition of a Stakeholder:

> *"An enterprise, organization, or individual having an interest or a stake in the outcome of the engineering of a system."* (EIA-632, Annex A)

Stakeholder engagement is critical to the overall success of the IECSA. The team must actively engage the stakeholder community. Not only is it vital to speak with the stakeholders to obtain qualitative input, but also it is equally crucial to communicate the progress, understanding and acceptance of the resulting architecture. This communication need entails on-going stakeholder interactions throughout the duration of the IECSA project.

In order to educate and extract the key information from this large and diverse stakeholder community, it is necessary to coordinate and organize multiple stakeholder engagement processes that are tailored to each group to elicit their specific requirements.

A.2. Stakeholder Engagement is Part of the Requirements Development Process

Stakeholder engagement is part of the systems engineering process for eliciting system requirements. Requirements are statements of functionality or capability that captures what the future system is required to perform. Requirements are a crucial element in the design of any information system or advanced automation system. Requirements are also one of the most challenging aspects of systems engineering since it requires input spanning a variety of stakeholder groups ranging from business policy makers and governance bodies to a variety of technical communities. The future architecture of the power system must simultaneously meet the needs of a wide variety of end-users. As such, the scope of IECSA poses significant challenges due to its enterprise-wide and industry-wide reach. In order to manage the complexity of these requirements, it is necessary to subdivide the space into different slices. Just as an architecture needs multiple views to completely specify the "system" under construction, so too a complete engagement plan must consider stakeholders grouped in different ways to assess how complete the feedback will be.

A.2.1   Different Types of Stakeholder Groups

The process encompasses ten categories of stakeholder communities (not necessarily orthogonal). Each of these communities will be addressed as part of an effort to be comprehensive in "breadth" over stakeholder groups.

Utilities: An electric utility is defined as any entity that generates, transmits, or distributes electric energy. Generally, we want to: illuminate all utility employees on the vision and value of IECSA; create buy-in of the concept with utility executives; and engage key employees (managers and technical leaders) in the process of developing present and future requirements of IECSA. Subsequently, utilities will need to commit small amounts of occasional manpower (phone calls,

technical review, or occasional workshops) in order to (a) contribute to the technical content of the IECSA, (b) provide oral or written input into the project, (c) review and comment on or edit various drafts, and (d) review and accept the technical requirements, or comment on changes required to make the IECSA product acceptable to them. Some issues that utilities can expand upon for the team include:

- o Forecasts for scaling and deployment of advanced levels of automation
- o Drivers coming from increased reliability including performance based ratemaking
- o Complexities arising from increased distributed computing security
- o Drivers and complexities arising from greater system integration across the enterprise
- o Drivers and complexities seen for connecting consumers to markets
- o Drivers and complexities seen for integrating legacy systems with migration to advanced automation systems
- o Pressures seen from scaling up automation systems but limiting human resources necessary to maintain them

Regulators and Auditors: Regulators and auditors have an interest in ensuring that power systems meet their reliability, performance, market, and financial obligations. They will need to ensure that the IECSA supports their requirements for oversight and audit trails. This group has specialization in overall administration of the applications. The purpose of this engagement is to assist regulatory commissions in understanding the nature and need for a project that develops an industry-wide architecture and the problems that arise from lack thereof. An additional purpose is also to gain acceptance of the technical and business concepts that open architectures offer. Commissioners and regulators can have a significant impact on the adoption of the overall architecture by industry. The current lack of infrastructure for restructuring is traceable to a lack of attention given to the technology necessary to advance the industry. Some issues that regulators and auditors can expand upon for the team include:

- o Visions of future energy industry business models
- o Trends or prospective policies on power system operations (i.e., security, etc.)
- o Status of economic drivers for industry change in regulation (i.e., RTP, PBR, Reliability indices SAIDI, CAIDI etc.)
- o Strategies for technology deployment, procurement or operation that are foreseeable for the industry
- o Functional requirements for future regulation and oversight of the industry that requires IECSA to implement

Vendors and Suppliers: Vendor stakeholders are interested in designing, building, integrating, and servicing products that would effectively become a part of the implementation of the IECSA. These individuals would be adopters of the architecture specifications and associated standards. As such, vendors provide a different view of the IECSA requirements – one clearly focused on the implementation and long term use of the architecture. The purpose of engagement with vendors is to gain acceptance of the project concepts from vendors and suppliers directly designing, building, and supplying equipment. Many vendors already participate in standards bodies and this project must be presented in the context of building upon existing standards development work. Such manufacturers are likely to have substantial technical input that must be sought as the technical requirements are being established. Some issues that vendors and suppliers can expand upon for the team include:

- o Advanced Automation
- o Communications, Networking, and Distributed Computing

RTOs / ISOs: Regional Transmission Organizations and Independent System Operators are responsible for the real-time dynamic operation of the electric power grid. The purpose of engagements with ISOs/RTOs is to gain acceptance of the concepts of the IECSA project. ISOs are system operators similar to utilities and they are using equipment that will be similar to utility operations. RTOs currently face many of the system integration issues that are at the heart of the

IECSA project. ISOs and RTOs availability to have substantial technical input regarding functionalities is critical, and must be integrated into the technical requirements that are being established.

Industry Groups: Industry groups include utility associations and organizations, customer representative groups, users groups, standards organizations, technology development associations, and other groups involved with energy and technologies. Meetings with industry group executives should occur early in the Stakeholder Engagement process to be effective. The purpose is to gain acceptance of the concepts from industry groups such as the Edison Electric Institute, NEMA, UCA Users Group, DNP Users Group, ModBUS Users Group, Solar Electric Power Association, Utility Wind Interest Group, Nuclear Energy Institute, NERC, GRI, APPA, ASHRAE, SEMI, 24/7 Group, etc. who represent important sectors of the energy, electric power, related and supporting industries. Such groups are likely to have substantial technical input, which must be sought before or as the technical requirements are being established. These groups also will play a large part in generating a favorable reception to the IECSA project concept by facilitating industry sector "buy-in".

Government Institutions: Government institutions are looking to the utility industry to develop its own solutions to the new demands of deregulation, security, and enabling technologies. The technologies should be founded upon existing standards and industry-at-large solutions where possible, but also through the development of architectures and roadmaps that address the unique requirements of energy systems. The governmental institutions need to feel comfortable that the IECSA will meet the societal obligations of a reliable and safe power infrastructure, the financial obligations of a fair and strictly managed electricity market, and the security obligations for a robust and flexible information infrastructure able to meet future challenges. Meetings with federal regulatory commissioners, directors, and managers should occur early in the Stakeholder Engagement. The goal of higher-level contacts is to educate people about the needs and issues of the national power grid as well as to gain acceptance of the concepts from influential Commissioners or agencies. With technical contacts, requirements for national security and safety are expected. Government organizations are likely to become a driving force for change and thus, once convinced of the need for an architecture, will push for national acceptance of the architecture. Some issues that government institutions can expand upon for the team include:
- o Visions for integrating systems on large scales
- o Requirements for securing critical infrastructures
- o Policies and requirements for integrating communications between energy systems and federal buildings
- o Procurement policies and Federal architectures that will need to integrate with IECSA
- o Visions of synergies between public infrastructures and government systems

End User Groups / Organizations: Direct end users of implementations of the IECSA include those whose jobs would be directly improved through implementation of the architecture including utilities operations, customers, energy services providers, and other users. These people are a source of functional requirements for end use applications. These individuals would include those benefiting indirectly from the IECSA infrastructure. Many energy consumers would fall into this category as well as building owners and consumers whose lives may be changed by rate structures and other concepts enabled by the IECSA. The purpose is to inform industry representatives of key groups of energy users of IECSA concepts and identify ways to solicit input to the requirements process from the end-users that they represent. These groups include: Energy Services Providers (ESPs), Large Commercial Customers, Large Industrial Customers, Small Industrial and Commercial Customers, and Urban/Suburban Residential Customers. Specific organizations that represent these generic groups must be identified. Such groups are likely to have useful input on how they would like to interact with a future electric power infrastructure from technical, business, and personal interaction points of view. Interest generated by end-users in the IECSA project is crucial to initiating demand for the advanced end-

user services that the IECSA can facilitate. This in turn results in vendors creating products to satisfy that demand.

Standards Bodies: The purpose of engagement with these groups is to gain acceptance and future standardization of the concepts. Engagement with standards groups such as the IEEE, IEC, ASHRAE, NIST, and others is planned. Such groups are likely to have substantial technical input that must be sought before or as the technical requirements are being established. These groups also will play a large part in generating a favorable reception to IECSA project concept by facilitating industry sector "buy-in". Since an ultimate goal is to standardize the IECSA work through one or more of these organizations, buy-in from these groups from the beginning is critical to the success of the project. Some issues that standards bodies and industry consortia can expand upon for the team include:

- o Drivers to harmonize standards in progress
- o Needs to address standards integration on enterprise and industry levels
- o Integration of standards initiatives and past work
- o Drivers and needs to establish interworkability testing and other formal methods of integration
- o Integration of architecture methods with standards development activities

Market Participants: Market participants, as part of the User Community, have unique communication requirements, reflecting their market-driven needs for timeliness, availability, and security of many different types of information. These requirements are not always met, particularly as the market environment, policies, and capabilities change over time. Some issues that market participants can expand upon for the team include:

- o Real-time data reporting requirements for system aggregators
- o Advanced automation and communication requirements

International Representation: The US accounts for only 25% of the world market in utility spending. As such, in order to obtain world-class manufacturer buy-in, IECSA need to appeal to the larger world market. Learning from the lessons of UCA, we can draw the conclusion that overall acceptance of the IECSA will come only after international acceptance. This will require that international concerns are addressed within the architecture – these concerns can often be quite different than US concerns. To that end it is important to engage international stakeholders from all categories earlier rather than later in the engagement process

A.2.2   Different Levels of Stakeholder Interest

The Stakeholder Engagement process encompasses at least four different levels of interest and participation from stakeholders. The strategy for dealing with diversity of interest is to have a balanced portfolio of engagement opportunities and venues. Some of the generic approaches in the assortment of stakeholder engagement strategies are outlined below, however the interactions will be tailored to each stakeholder as needed:

Strategic Stakeholders (individuals, typically executives, management, and decision makers, who will be making strategic decisions for a business or industry): One-on-one interviews of one to a few hours with key strategic stakeholders, in person or via teleconference/web cast meetings. These meetings will be designed to elicit future visions and strategic requirements that the IECSA project will need to address.

Active Technical Contributors (those who will have direct interaction with the IECSA processes): Workshops or discussion groups of 10-30 stakeholders. These stakeholders will represent different interest groups with different areas of expertise. Individuals will be invited to discuss their requirements with other workshop members, possibly in breakout sessions. These workshops will address domain-specific issues (e.g. market operations, transmission operations, etc.), cross-domain issues (e.g. security), future visions of the energy and technology industries, and on-going participation of these stakeholders in the IECSA process. Stakeholders in this category may be contacted outside of the workshop forums wherever possible to maintain the active relationship and to generate follow-up feedback.

Passive Technical Contributors (those stakeholders who may not be able participate as active attendees but have information to contribute): Where possible, this group will be converted to "Active Technical Contributors" by engaging in one-on-one interviews of one to a few hours with key technical personnel, in person or via teleconference/web cast meetings. These meetings will be designed to flesh out details of future power system operations. Also possible are web cast meetings of one to two hours each with small groups of stakeholders (1-5) with similar levels and areas of interest, to address specific domain issues or technologies.

Interested Reviewers – those stakeholders who need to have IECSA Project "awareness", but do not need to have on-going direct interaction during the project itself. The primary needs of Interested Stakeholders are based on education and eventual consensus on the IECSA architecture. It is envisioned that the engagement opportunity will consist of one-on-many presentations at different meetings, conferences, and groups. The purpose will be primarily to educate the stakeholders about the IECSA project, capture issues of interest to these stakeholders, and to elicit follow-on interactions with individuals expressing interest in more detailed participation, such as workshops and Web Casts.

A.2.3   Different Technologies and Applications

Within each of the ten categories there will be individuals with differing levels of interest. To the extent possible, the IECSA team wants to incorporate all of these combinations. However, limited resources (time, budget, team members, etc.) will necessarily force us to impose reasonable limitations on the selection. Therefore, it is important to realize that there must be a prioritization process that takes place when evaluating which individuals to incorporate into the process and to what extent they are engaged.

The IECSA team worked to outline the scope of the architecture and available technologies in Task 1 and Task 2. A methodology was put forth to evaluate and prioritize the potential future power system applications (enterprise activities) based on the architectural significance and constraints imposed by the functions.

It is critical to recognize that the primary goal of Task 3 is to elicit functional requirements for present and future power systems operations. The team recognizes that the prioritization of the enterprise activities must therefore drive the prioritization of the stakeholder engagement opportunities.

These prioritized lists will serve as a resource allocation function to enable the IECSA and CEIDS team members to develop specific implementation plans for these engagements. This approach provides some insurance for breadth of coverage while allowing flexibility to plan within this overall framework. Team resources of time, funding and coordination logistics will use this engagement framework as an overall roadmap for specific engagement planning.

This analysis driven approach will necessarily be a living process that evolves as the team learns more about the system under design. However, the team has established a first pass selection of the initial "cones" – which are broad areas of power system applications containing many functions selected by the IECSA team as representatively pushing the boundaries of the architecture. Therefore, these three initial "cones" will also form the focus for the technical engagement planning. If needed, additional cones will be identified and further stakeholder engagement planning will evolve as well.

A.3. Core Engagement Processes to Cover the Portfolio of Stakeholder Communities

A.3.1   General Strategy within the Identified Stakeholder Entities

Over the universe of stakeholders, a parallel course of engagement is planned that will be comprised consist of executive/manager and technical engagement. Executive engagements are intended to convey project relevance to their organization and open access to key technical people and documents useful to the project. The executive group can be prioritized into "critical" engagements and "general" engagements. "Critical" engagements would be those where the buy-in by that executive was deemed strategic to acceptance and eventual implementation of IECSA. These engagements would be handled by E2I/EPRI executives as well as IECSA team membersE2I/EPRI executives as well as IECSA team members would handle these engagements. The executive sessions will be developed with CEIDS management and tailored to the specific entity. The messages and approaches are presented in a series of templates that follow this introduction.   It is recognized, however, that broad executive presentation of the IECSA concept is desirable.   To meet this goal, it is proposed that public information and education activities be ramped up to boost discussion of IECSA at power industry events. "General" engagements are those where the buy-in is not deemed strategic to acceptance of IECSA but whose input is nonetheless vitally important nonetheless.

Small Group Engagements

The key engagement process is one that brings the team and participants to a small group engagement meeting, either physically or via web cast. Ideally, this small group meeting will follow analysis performed on stakeholder documents to be incorporated into the engagement meetings. This is the most crucial aspect and is critical to the overall success of the project. In general, getting time commitment from participants will be the single most difficult item. Key upper level contacts are crucial in this regard. It is important that the "Critical" engagements go well, and that the executive has buy-in and commits resources to the concept, but more importantly, stresses the need for active participation by technical people in these small group engagements.

Specific Strategies for Each Stakeholder Entity

A template will be developed that outlines a specific strategy for those entities that are targeted for engagement. Examples of these templates are generically outlined below. However, each identified entity will have a specifically developed strategy. A generic checklist for stakeholder engagements can be found in Appendix B.

A.3.2   Activities to Supplement the Core Engagement Processes

In addition to a structured approach to engage a cross section of key communities, the IECSA team is planning to supplement these core activities with additional techniques. The following are concepts for supplemental engagements.

Strategic One-on-One Interviews

The IECSA team will identify strategic stakeholders who wish to engage in one-on-one interviews to discuss strategic issues regarding the IECSA project. These strategic stakeholders will be identified from a draft list of stakeholders. In particular, the team will work with the CEIDS advisory group and E2I/EPRI management to identify these individuals.

Set of Key Stakeholder Workshops

Small-scale, technical workshops involving groups of key stakeholders hold significant promise in generating feedback and input as well as boosting awareness of the IECSA project. These workshops will require significant effort in terms of finding a host company, determining a location, date, and duration for the workshop, establishing a list of technical contributors to invite,

and handling workshop logistics. In addition, presentations need to be developed and tailored to the workshop audience.

It is anticipated that at least 2 workshops will initially be held in geographically different regions in major cities with convenient access (favorable air travel options). Tentatively, the times for these workshops are February and early March. Additional workshops would be planned for later stages of the IECSA project.
In particular, the IECSA team will:

- **Seek two host companies**, ideally from the CEIDS advisory group, and work with them to plan the workshops.
- **Finalize any "theme" for each workshop**, for instance, focusing one workshop more on Market Operations, Transmission Operations, and Generations domains and the other on Distribution Operations, DER, and Consumer Services, or, alternatively, focusing on regional issues based on the regional location of the workshop.
- **Select precise times and locations** for workshops, possibly dove-tailing the workshops with other meetings to limit the amount of travel required by some individuals.
- **Identify and contact prospective participants** to determine their interest level and availability to participate as Key Stakeholders in one of the workshops. *(If they are not able or interested in participating as a key stakeholder, the team will determine if they are interested in being a Strategic, Contributing, or Interested Stakeholder.)*
- **Prepare for Key Stakeholders Workshops**, providing at least one month's notice to prospective participants, preparing agendas, slides, and organization.

Contributing Web Cast Teleconferences

The IECSA team will develop on-line Web Cast teleconferences for Contributing Stakeholders through the Presentations and the www.iecsa.org web site. We will describe the on-going work and the needed inputs from stakeholders. We will then establish additional means of collecting these inputs by soliciting documents, verbal ideas, and future interactions to explore specific areas of interest.

List of Interested Stakeholder Meetings

In addition to the engagement opportunities described above, IECSA team members attending industry meetings will take opportunistic advantage of any planned venues by meeting with attendees online and/or offline at the pre-existing meetings and events. The intention here is to get exposure, and potentially make new acquaintances that may desire to become involved in more detailed engagements.

Stakeholder Documents

A key aspect of the stakeholder engagement and requirements gathering process is to review and extract requirements from existing documents that stakeholders may already possess. Such documents include procurement specifications, internal standards and practices, operational procedures, application notes, standards group working documents, etc. Documents such as these often contain well defined system requirements and supporting rationale that represent the work of many people in an organization gathered over a substantial period of time. Using these documents makes efficient use of a stakeholder's precious time by leveraging the investment they already made in producing these documents. In many cases, executive level contacts may be needed to clear the path for these documents to be released to the project team for review.

Baselining

Another key aspect of the stakeholder engagement and requirements gathering process is to assess the baseline of the industry. Baselining captures the "as-built" or "as-being-built" system "architectures" in use by stakeholders or end-user communities. This process will provide a baseline of status quo industry infrastructure applications. The hypothesis of the architecture project is that while the utilities are resourceful in patching systems together, the industry could benefit from more systematic and strategic approaches to advancing automation systems and information technology. Systems that are

patched together in piecemeal fashion may address a short-term tactical need but these approaches may not be part of a more prudent strategic pathway. Baselining should examine existing practices to determine the extent that architecture related practices including strategic planning and existing infrastructure/standards are being applied.

A.3.3 Information, Education, and Technology Transfer

Goals for Information, Education, and Technology Transfer

Publicity is a critical component to the stakeholder involvement process as well as to the overall success of the IECSA project. Publicity, essentially getting the word out, can educate, engage, and maintain the stakeholders and ensure participation and support.

Critical to the success of the Stakeholder Engagement Process as well as large-scale awareness and support of the architecture, are integrated information, education, and technology transfer activities. Providing accurate, timely information en mass to the various stakeholder groups can facilitate effective engagement as well as reinforce the perceived merits and benefits of the architecture process. This can aid in the engagement of individuals who may not be expected to provide input, but should be kept apprised of the goals, scope, and progress of the project. Additionally, this information/education component can constitute the bulk of the engagement of those stakeholders who will not be easy to engage in one on one or group settings. These include electricity consumers, equipment manufacturers not actively engaged, and various other groups who, due to the prioritization process, may not be contacted in the initial stages.

Key goals for the information, education, and technology transfer program include
- Educate audiences on what an architecture is and why it is needed
- Provide timely, accurate information on the development process and progress of the architecture to stakeholders and other interested parties
- Facilitate awareness of what the architecture is (and what it isn't)
- Facilitate stakeholder awareness, understanding, and buy in of the architecture
- Lay the groundwork for implementation of the architecture
- Bring to the table and discuss concerns and issues that audiences may have about the architecture
- Establish dialogue and facilitate public involvement in the development of the architecture on an (inter)national level and within the stakeholders
- Provide a consistent baseline message to all the stakeholders and the public

Key to the understanding of the information, education, and technology transfer program is the fact that it lays the basis for the stakeholder engagement process along with the development of the architecture itself. This is particularly important not just to build general awareness of the architecture, but also to provide a consistent message that all audiences – including the architecture development team itself – need to have in mind. Ongoing dissemination of information and education/tech transfer will also reinforce the stakeholder engagement process and maintain support for the process and end results.

Implementation Processes

There are a variety of mechanisms and components for an effective information, education, and technology transfer program. These include

IECSA Web site – already in existence, this site is a depository of press releases, white papers, background materials, Frequently Asked Questions (FAQs) and other content available outside the TWIKI collaboration mechanism. These materials are placed in a publicly accessible area (requires no user identification or password). The web site should be considered a central destination where all parties should be sent for more information. Getting the site listed with the major search engines is a key priority.

Brochure – Development of a short (two to four page) brochure explaining what IECSA is, how it works, its benefits, and how it will be implemented. This brochure will be distributed either in hard copy or electronically at conferences, meetings, workshops, presentations, and in person-to-person and group interactions.

Briefing Materials – These currently exist in the form of presentations. Hard or soft copies of these should be available for distribution to the media and to interested audiences.

White Papers – These can consist of "big think" and/or technical documents cleared for general release that can be included in press kits, posted up on the web site, and available at workshops, meetings, and presentations. The scope of these will change as the stakeholder engagement process progresses.

Specialized Fact Sheets – these could be developed and targeted towards the various stakeholder groups and explain how the architecture relates to them.

Press Releases – these will be developed in consultation with the E2I/EPRI media relations office and distributed through E2I/EPRI out to trade and general press.

Press Kits – these will consist of press releases, white papers, briefing materials, and any appropriate clippings/press mentions. This is material that can be used as background for reporters. These will be available for use by trade and general press.

Speakers Bureau – consisting of E2I/EPRI leadership and members of the IECSA team, this group is available to speak at trade shows, conferences, workshops, and society meetings. This can also include specialized events such as congressional testimony and NERC/FERC meetings/hearings.

Conference Presentations –presentations ranging from "big think" talks to technical papers would be given at industry conferences, organization meetings and other events. This not only addresses informational and education needs, but also facilitates technology transfer. This can include events specific to IECSA and certainly any EPRI conference or meeting. The IECSA team will work with E2I/EPRI to develop a list of targeted events.

Articles – as with conference presentations, these will be written either as "big think" pieces targeted towards high-level and general audiences and technical pieces oriented towards many of the stakeholders to be engaged. Targeted publications range from utility and communication industry trade press to "op-ed" pieces with bylines for senior E2I/EPRI management that could go into the Wall Street Journal or the New York Times. Initially, these would be pitched to the media by E2I/EPRI/the IECSA team. Eventually, it is anticipated that the media would invite these articles.

Workshops – covered in another part of this plan, workshops can not only aid in the identification of architecture requirements, but also facilitate the implementation of the architecture by the various stakeholder groups. A set of workshops oriented towards educating audiences about the completed architecture and implementation scenarios should be considered.

Although not a strategy for information or educational purposes, E2I/EPRI and the IECSA team should undertake monitoring of press mentions and related stories. This will facilitate determining the effectiveness of information/education activities and help to understand whether the media is conveying the appropriate message.

Working with the Media

Editors and writers with utility and communications industry trade publications (including web sites and information services) as well as general press (particularly business or technology oriented newspapers, magazines, and broad/web cast outlets) actually represent a group of

stakeholders. While they will not provide much input to the architecture, they should be engaged on a similar level as the other key stakeholders. Effective, positive coverage of the architecture and its benefits and progress can aid in the overall stakeholder engagement process and maintain a flow of information that keeps the stakeholders and general audiences interested in its progress and facilitate implementation. This is particularly important given the demographic and geographic diversity of the stakeholders. Also, media coverage can aid in reaching international stakeholders.

E2I/EPRI and the IECSA team should make working with the press a key facet of the stakeholder engagement program.

The information, publicity and technology transfer program is central to the stakeholder engagement process as well as the overall success of the IECSA project. Informing audiences about the goals, scope, and progress of the architecture development can educate, engage, and maintain the stakeholders and ensure their continuing participation and support. Additionally, there is a need to inform the public as a whole about the project to foster adoption and implementation of the architecture.

A.4. Implementation Plan

The Implementation Plan is a living document that identifies the individuals, the activities, and the time frames for the actual engagement of the stakeholders. This Implementation Plan will be updated over time as more details are determined and as new opportunities arise.

A.4.1 Key Technical Areas of Interest (AOI) Impacting the IECSA Architecture

The following sections cover the implementation plan for engaging stakeholders in three key Areas of Interest (AOI). These three AOIs cover many of the critical functions that have significant impact on a communications architecture, and therefore are considered the most important to address immediately. Some additional AOIs will most likely be identified as these key AOIs get underway:
1. Wide Area Measurement and Control Systems (WAMACS)
2. Distributed Energy Resources (DER) combined with Advanced Distribution Automation (ADA)
3. Consumer Market Activities and Real-Time Pricing (RTP)

The lists of potential stakeholders for each AOI are drawn from the master list of stakeholders. The "Type" column indicates whether the individual should be viewed as an Executive (E) or a Technical (T) stakeholder in the context of the specific AOI. In reality, some stakeholders may flexibly play both roles. For instance, some Executive stakeholders may actually be very competent technically as well, but for the initial set of engagements, we are particularly interested in their visionary outlook. Subsequently, we may also engage them for their technical information.

WAMACS Stakeholder Engagement Plan

A Wide Area Measurement And Control System (WAMACS) is an aggregation of synchronized measurements captured over a geographically large area or region of a power system. These measurements are typically presented in phasor format that are synchronized to absolute time via a GPS clock. Accurate timing, typically to the nearest microsecond, then provides time stamps for the captured data. Synchronized measurements typically include Positive Sequence Voltage and Current, Power, and Vars. The WAMACS system is the responsible for transmitting the resultant value to one or more calculation centers.

The WAMACS is also the real-time control structure that takes a system wide view of the electric power system, determines the dynamic state of the system, determines variance from desired

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states, and calculates optimal controls to bring the power system back to a stable, albeit curtailed, operating state.

1. Potential Stakeholders to be Engaged for WAMACS

From the list of stakeholders in Appendix A, the following are considered the key technical stakeholders to engage in the development of requirements for the WAMACS portion of IECSA. Most of these stakeholders are already actively involved in activities or projects related to WAMACS and some have proposed implementations to "close the loop" between measurement and control. Two of the stakeholders have been contacted and have expressed interest in participating at different levels in the WAMACS requirements gathering process.

Segment	Area	Type	Company
Government	WAMACS	T	Pacific Northwest National Laboratory
Industry Groups	WAMACS	T	VPI
Industry Groups	WAMACS	T	Cornell
Industry Groups	WAMACS	T	GE GRD
Industry Groups	WAMACS	T	Georgia Tech
Industry Groups	WAMACS	T	VPI
Regulator	WAMACS	E	North American Electric Reliability Council
Utility	WAMACS	T	American Electric Power
Utility	WAMACS	T	American Electric Power
Utility	WAMACS	T	Bonneville Power Authority
Utility	WAMACS	E	Electricite de France
Utility	WAMACS	E	New York Power Authority
Utility	WAMACS	T	Bonneville Power Authority
Vendor	WAMACS	T	ABB
Vendor	WAMACS	T	Arbiter
Vendor	WAMACS	T	GE GRD
Vendor	WAMACS	T	GE Multilin
Vendor	WAMACS	T	Macrodyne
Vendor	WAMACS	T	Schweitzer Engineering Laboratory

2. Implementation Plan for WAMACS

As there exists a diversified body of knowledge in the WAMACS area (i.e. – papers, standards, specification), the engagement plan for this group is focused on gathering this information through several methodologies as listed below:

Telephone Contact with Focus on:
- General debrief of project
- Request for existing customer requirement documents
- Interview for additional requirements
- Request for additional interested parties in the technical area of interest

Follow-up on-site meeting - Group brainstorming sessions

Personal experience has shown that putting a group of people together that are excited about a topic will typically result in new ideas and concepts in a technology area. To this end, an initial batch of three small, focused groups is proposed to flesh-out WAMACS requirements. Note that experience also dictates that contact with one group often times results in the identification of additional stakeholders. The team will evaluate the need for additional engagements based on the results of the earlier contacts.

Stakeholder Engagement Conference

During stakeholder engagement conferences, breakout groups will be created with a focus on WAMACS. The format of the engagement will be to present general information on the WAMACS concept (in particular, what has been gathered to date, and then solicit input, based on the Domain template, for additional features and functions.

DER/ADA Stakeholder Engagement Plan

The combination of Distributed Energy Resources (DER) and Advanced Distribution Automation (ADA) is one of the key areas that will impact future power system design and operation, and will have a significant influence on the development of the IECSA communication architecture. Therefore, engagement of the stakeholders in DER/ADA is critical to ensuring that not only current communication issues are taken into account, but that future communication needs are addressed as much as possible.

1. Potential Stakeholders to be Engaged for the DER/ADA Area of Interest

From the list of stakeholders in Appendix A, the following are considered the most important stakeholders to engage in the development of requirements for the energy and communications architecture. Most of these stakeholders are already actively involved in activities or projects related to distributed energy resources and/or advanced distribution automation. Many have already expressed interest in participating at different levels in the IECSA project. Within each stakeholder community, individual entries are listed in order of priority.

Segment	Area	Type	Company
End User	DER/ADA	E	DTE Energy Technologies
End User	DER/ADA	T	Connected Energy Corp
End User	DER/ADA	T	DTE Energy Technologies
End User	DER/ADA	T	Encorp
End User	DER/ADA	T	InfoUtility
Government	DER/ADA	E	National Renewable Energy Laboratory
Government	DER/ADA	E	U.S. Department of Energy, Office of Electric T&D
Government	DER/ADA	T	California Energy Commission
Government	DER/ADA	T	Lawrence Berkeley National Laboratory

Segment	Area	Type	Company
Government	DER/ADA	T	National Renewable Energy Laboratory
Government	DER/ADA	T	National Renewable Energy Laboratory
Government	DER/ADA	T	Pacific Northwest National Laboratory
Government	DER/ADA	T	Resource Dynamics
Government	DER/ADA	E	U.S. Department of Energy, Concurrent Technologies
Industry Groups	DER/ADA	E	American Wind Energy Association
Industry Groups	DER/ADA	E	CADER
Industry Groups	DER/ADA	E	Interstate Renewable Energy Council
Industry Groups	DER/ADA	E	American Gas Association
Industry Groups	DER/ADA	T	CITRIS
Industry Groups	DER/ADA	T	Electricity Storage Association
Industry Groups	DER/ADA	T	Gas Technology Institute
Industry Groups	DER/ADA	T	Georgia Tech
Industry Groups	DER/ADA	T	Georgia Tech
Industry Groups	DER/ADA	T	Massachusetts Technology Collaborative/Renewable Trust
Regulator	DER/ADA	E	CPUC
Standards	DER/ADA	T	IEC TC57 WG NWIP for DER
Standards/ International	DER/ADA	T	IEC TC57 WG3
Utility	DER/ADA		CPS San Antonio
Utility	DER/ADA	1	New York Power Authority
Utility	DER/ADA	E	Electricite de France
Utility	DER/ADA	E	Long Island Power Authority
Utility	DER/ADA	E	WE Energies
Utility	DER/ADA	T	Bonneville Power Authority
Utility/ International	DER/ADA	T	Electricite de France
Utility/ International	DER/ADA	T	Electricite de France
Utility	DER/ADA	T	Exelon
Utility	DER/ADA	T	Jacksonville
Utility	DER/ADA	T	Long Island Power Authority
Utility/ International	DER/ADA	T	Polish Power Grid Company
Utility	DER/ADA	T	Portland General
Utility	DER/ADA	T	Salt River Project
Utility	DER/ADA	T	TXU
Utility	DER/ADA	T	TXU/Oncor
Utility	DER/ADA	T	Xcel Energy
Vendor	DER/ADA	T	Capstone Microturbines
Vendor	DER/ADA	T	Caterpillar Power
Vendor	DER/ADA	T	Cooper Power
Vendor	DER/ADA	T	Cummins
Vendor	DER/ADA	T	Echelon
Vendor	DER/ADA	T	Echelon
Vendor	DER/ADA	T	EPRI-PEAC
Vendor	DER/ADA	T	H&L Instruments
Vendor	DER/ADA	T	Honeywell
Vendor	DER/ADA	T	KCAssociates
Vendor	DER/ADA	T	LiveData
Vendor	DER/ADA	T	Lockheed Martin
Vendor/ International	DER/ADA	T	NettedAutomation

Segment	Area	Type	Company
Vendor	DER/ADA	T	Omicron
Vendor	DER/ADA	T	Plug Power
Vendor	DER/ADA	T	Schneider Electric
Vendor	DER/ADA	T	SISCO
Vendor	DER/ADA	T	Tamarack
Vendor	DER/ADA	T	UTC Fuel Cells

2. Implementation Plan for DER/ADA Area of Interest

As mentioned above, most of these stakeholders have already been actively involved in different projects or activities, including the following:

1. E2I DER/ADA project to define DER object models based on DER and ADA requirements.
2. IEEE SCC21 development of a standard for interconnecting DER systems to the Area Electric Power System.
3. DOE-sponsored workshops on DER, covering technologies, policies, education, and other aspects of DER.
4. End user business activities as "Aggregators" or market traders of DER, which is a very new type of business model.
5. Utility response and upgrade of distribution facilities to meet the increased demands for installed DER systems.
6. Utility implementation of distribution automation as well as some aspects of advanced distribution automation (ADA).

Therefore, the proposed implementation plan for the DER/ADA area of interest will use those other activities as a springboard to engage these stakeholders. This implies that the engagement process will not start with a "blank piece of paper", but will start with prior work and drafts of the Domain Use Case scenarios, based on our prior work and on-going participation in these activities.

The implementation plan is as follows (with the expectation that details of the plan will be updated over time to take advantage of new developments and opportunities for interactions):

1. From September through January, the IECSA team will prepare draft functional requirements and Use Cases, using the Domain Template, to cover multiple sub-areas within the DER/ADA area of interest. The list of these draft functional requirements has already been reviewed by a broad mix of stakeholders in the E2I DER/ADA workshop of September 15-17, 2003.
2. By early October, the IECSA team will develop a specific plan for interacting with each of the stakeholders listed above, on a case-by-case basis.
   a. For the executive level of stakeholder, we will request E2I executives, either on their own or with an IECSA team member, to contact the stakeholder, present the IECSA vision and plan, and request the executive stakeholder to provide his vision and issues for DER/ADA.
   b. For technical stakeholders, we will first estimate their probable degree of interest and their possible ability to provide technical direction and information. Clearly this estimation may change as the engagement process proceeds with any set of stakeholders. We will then use this degree of interest measure to determine the next steps with them.
3. Starting in October, for technical stakeholders with a high degree of interest, we will contact them by phone and/or by email to determine who will be interested and able to become involved. We will offer the following options:
   a. Review, comment on, and add to selected sets of DER/ADA Use Cases, using email, phone conversations, Webex interactions, and some face-to-face interviews to provide them with the background and requirements for such review. We expect

some will be more interested and able to develop and/or review the high-level narratives (the English descriptions of the DER/ADA functions), while others may be more interested and able to review the step-by-step procedures and the communications details. They will also be asked to comment on and add to the proposed list of Use Cases. We will explicitly target the following types of stakeholders to participate at this level:

- Active participants in the IEEE SCC21 P1547.3 effort. Some of the work of this group is the development of Use Cases for DER.
- Active participants in the E2I DER/ADA project. There is a good mix of stakeholders in this project already. In addition, this project also needs to develop some Use Cases, and will be undertaking lab testing and field testing of DER object models in the near future, which will help validate the ADA requirements.
- End User aggregators of DER who have new types of business models that are still evolving, depending upon the directions taken by market rule makers and regulators. Their visions of the future of the DER business are very important in formulating the Use Cases.
- Industry groups actively trying to develop new market rules and paradigms, such as the California Energy Commission.

b. Participate in a locally held workshop or breakout session at their company. For this option, we expect to organize such sessions with some of the PAG members who have expressed direct interest in holding mini workshops at their facilities. We will expect some technology transfer efforts, plus some "roll up the sleeves" efforts in these workshops, with additional interactions and efforts after the workshops to complete the work.

c. Participate in regional technical workshops that cover more areas of interest. In these workshops, most of the interactions will be technology transfers and education, with the expectation that additional interactions may occur afterwards with some of the workshop participants.

4. In the past and over the next few months, we have and will also interact with other DER/ADA stakeholders in conferences, meetings, forums, and other activities where DER/ADA may or may not be the focus, but where these stakeholders are present.

5. During these stakeholder engagements, we will revise the draft Domain Use Cases until they are finalized enough to be formalized in the RM-ODP Architecture Template and UML diagrams. We expect iterations with stakeholders during this process as well, primarily with the stakeholders who are experts in UML modeling. For this stage, we will target the following types of stakeholders:

a. IEC TC57 WG members
b. IEEE SCC21 1547.3
c. Vendors actively involved in information modeling

Consumer/RTP Stakeholder Engagement Plan

Communications with consumer facilities and equipment opens a wide variety of opportunities to enhance consumer energy services, provide a variety of new value added services while enhancing the performance and operation of the nation's energy systems. Consumer end-use loads fundamentally drive the operation of the world's energy systems involving electric power and natural gas and the instantaneous demands placed on the energy supply and delivery infrastructures. For these reasons it is imperative that engagement of stakeholders involved in the functions associated with consumer oriented functions be taken into account.

Arguably one of the most important functions associated with the consumer interface is the real time pricing activity. The objective of the Real-Time Pricing Enterprise Activity is to permit customers to plan and modify their load and generation in response to price signals in "real-time" (operational timeframe which can range from seconds to days ahead), received from an Energy Services Provider who acts as an intermediary to the Market Operations. Customers can also

provide their forecasted loads and generation into the Market Operations (possibly through the ESP as an aggregator) as energy schedules and ancillary bids/offers.

The real-time pricing activity touches a large subset of the communication needs of the electric utility industry. It requires a series of communications and complex interactions to and from dozens of systems in various components of the power system.

1. Potential Stakeholders to be Engaged for the Consumer/RTP Area of Interest

RTP alone involves a variety of stakeholder types. Other consumer oriented functions such as power quality service contracts and direct load control involve still more stakeholder types. The following table lists those stakeholder roles involved in the RTP function:

Role	Description
Market Operations for RTP	Forecasts loads, determines optimal loads, and initiates process to determine tables of Base RTP values for the next hours and days
Energy Services Provider	Receives to base RTP tables and calculates customer-specific RTP tables
Customer BAS	Receives customer-specific RTP values and optimizes load and DER generation. Also submits energy schedules, ancillary services bids/offers, and implements load control in real time.
Transmission Operations	Provides power system configuration and real-time data to market operations
Distribution Operations	Provides real-time data to market operations and monitors (larger) DER devices
Distributed Energy Resources (DER)	Responds to scheduled generation due to RTP (and other factors)
External Overseers	Regulates and audits the RTP prices and procedures

From the list of stakeholders in Appendix A, the following fill the roles shown in the table above and are considered the most important stakeholders to engage in the development of requirements for the energy and communications architecture.

Segment	Type	Company
End User	T	Connected Energy Corp
End User	T	InfoUtility
End User	E	WalMart
End User	T	GE Appliances
End User	T	Alcoa
End User	T	INTEL
Government	E	National Renewable Energy Laboratory
Government	E	U.S. Department of Energy, Office of Electric T&D
Government	T	California Energy Commission
Government	T	National Renewable Energy Laboratory
Government	T	Pacific Northwest National Laboratory
Government	E	CEC/PIER
Government	T	New Hampshire PUC
Industry Groups	T	CITRIS
Industry Groups	T	CIEE
Market Participants		Electrotek Concepts
Market Participants	T	Con Edison Solutions
Utility	T	Florida power and Light

Segment	Type	Company
Utility	T	AEP
Utility	T	Bonneville Power Authority
Utility	T	Georgia Power
Utility	T	Southern California Edison
Utility	T	Con Edison Solutions
Utility	T	Kansas City Power and Light
RTO/ISO	T	CAL ISO
RTO/ISO	T	NY ISO
RTO/ISO	T	PJM Interconnection
Standards	T	ASHRAE - BACNET
Vendor	T	Silicon Energy / Itron
Vendor	T	RETX
Vendor	T	Clarus Energy
Vendor	T	ComVerge
Vendor	T	LoadShed.COM
Vendor	T	MeterSmart
Vendor	T	Honeywell

2. Implementation Plan for Consumer/RTP Area of Interest

The implementation plan is as follows (with the expectation that details of the plan will be updated over time to take advantage of new developments and opportunities for interactions):

1. From September through January, the IECSA team will prepare draft functional requirements and Use Cases, using the Domain Template, to cover multiple sub-areas within the Consumer/RTP area of interest. Significant work has already been done in the RTP area through the creation of an RTP Day-in-the-life scenario document.
2. By early October, the IECSA team will develop a specific plan for interacting with each of the stakeholders listed above, on a case-by-case basis.
   a. For the executive level of stakeholder, we will request E2I executives, either on their own or with an IECSA team member, to contact the stakeholder, present the IECSA vision and plan, and request the executive stakeholder to provide his vision and issues for real-time-pricing, other demand response related programs, and power quality/reliability based contracts.
   b. For technical stakeholders, we will first estimate their probable degree of interest and their possible ability to provide technical direction and information. Clearly this estimation may change as the engagement process proceeds with any set of stakeholders. We will then use this degree of interest measure to determine the next steps with them.
3. Starting in October, for technical stakeholders with a high degree of interest, we will contact them by phone and/or by email to determine who will be interested and able to become involved. We will offer the following options:
   a. Review, comment on, and add to selected sets of Consumer/RTP Use Cases, using email, phone conversations, Webex interactions, and some face-to-face interviews to provide them with the background and requirements for such review. We expect some will be more interested and able to develop and/or review the high-level narratives (the English descriptions of the Consumer/RTP), while others may be more interested and able to review the step-by-step procedures and the communications details. They will also be asked to comment on and add to the proposed list of Use Cases. We will explicitly target the following types of stakeholders to participate at this level:
      - RTOs, ISOs, and energy service providers that have specific requirements and processes in place for delivering real-time pricing data to customers. Specifically those entities that can provide or efficiently help write relevant use cases.

- Energy providers such as Con Edison Solutions who have new types of business models that are still evolving, depending upon the directions taken by market rule makers and regulators. Their visions of the future of the real-time pricing and other demand response related business are very important in formulating the Use Cases.
- Industry groups actively trying to develop new market rules, paradigms, and enabling systems, such as the CEC, PIER and CIEE in California.

b. Participate in a locally held workshop or breakout session at their company. For this option, we expect to organize such sessions with some of the PAG members who have expressed direct interest in holding mini workshops at their facilities. We will expect some technology transfer efforts, plus some "roll up the sleeves" efforts in these workshops, with additional interactions and efforts after the workshops to complete the work.

c. Participate in regional, technical workshops that cover more areas of interest. In these workshops, most of the interactions will be technology transfers and education, with the expectation that additional interactions may occur afterwards with some of the workshop participants.

4. In the past and over the next few months, we have and will also interact with other Consumer/RTP stakeholders in conferences, meetings, forums, and other activities where this interest area may or may not be the focus, but where these stakeholders are present.

5. During these stakeholder engagements, we will revise the draft Domain Use Cases until they are finalized enough to be formalized in the RM-ODP Architecture Template and UML diagrams. We expect iterations with stakeholders during this process as well, primarily with the stakeholders who are experts in UML modeling. For this stage, we will target the following types of stakeholders:

a. Utilities developing RTP delivery systems
b. Market operations stakeholders developing RTP calculation and delivery systems
c. Vendors actively involved in information modeling

A.4.2 Education and Technology Transfer

Executive Engagements

As identified earlier, executive engagement is critical to the ultimate success of the IECSA. The following table is a first pass list of executive engagements.

E2I/EPRI executives should handle the interviews with many of these executives, and therefore, it is requested that E2I/EPRI executives review this list, augment it as appropriate, and sign-up for particular engagements.

For some interviews with these executive levels, it may be appropriate for E2I/EPRI executives to involve IECSA Project Team members to provide additional background on the IECSA project and to identify the issues that need to be addressed during the interviews.

Members of the IECSA team could handle the interviews with some of these executives.

IECSA Workshops

It is expected that initially at least 2 workshops will be held in geographically diverse regions in major cities offering sufficient meeting facilities and convenient travel access. The targeted time frame for these workshops is February to March. To carry this out, the IECSA team will

1. Seek a host company for each workshop, possibly from the CEIDS advisory group and definitely from the priority list for each Area of Interest, and work with them in concert with E2I/EPRI to plan and carry out the workshop.

2. By January, finalize the theme for each workshop; ideally focusing the workshops on issues related to each interest cone or on issues relevant the regional location of the workshop.
3. By mid January, select precise times and locations for workshops, possibly dove-tailing the workshops with other meetings to limit the amount of travel required by participants.
4. By mid January, identify and contact prospective participants to determine their interest level and availability to participate in the workshops. If they cannot attend, perhaps they can recommend someone else in their organization that may be able to attend.
5. Book conference space and any needed accommodations.
6. Firm up details for any logistical concerns, i.e., catering.
7. Provide at least one month's notice to prospective participants, providing information on date, times, venue, accommodations, any travel logistics and registration procedures
8. Finalize agenda and prepare presentations and workshop handouts.
9. Hold the workshops
10. Conduct post-workshop follow-ups, evaluations and interviews with participants.

To date, planning has begun for a technical workshop for Electricite de France slated for February. Preliminary discussions are under way for another workshop in the United States, location to be determined.

Presentations at Stakeholder Meetings

Appendix B lists key meetings and conferences attended by IECSA team members where we presented and discussed the IECSA project.

Information, Education, and Technology Transfer

To a large extent, the infrastructure already exists to conduct information, education, and technology transfer activities. There are additional components that must be put in place or redirected to obtain the full benefit. These are already under way and will continue to operate after the architecture is developed to aid in implementation. Components and specific actions are outlined as follows. It is understood that all material must be cleared by E2I/EPRI for external release.

Web Site: The IECSA.org site had its front end redesigned to present both a public face to the project and the gateway to the team (Twiki) portion of the site. The site now has an area where the following can be posted:
- Press releases,
- Links or actual content of clippings and or press mentions (subject to copyright)
- Text of remarks made by E2I/EPRI leadership and IECSA team members
- White papers
- Appropriate background materials
- Frequently Asked Questions page
- Other content as deemed appropriate for posting

The site now functions as a central depository for these items as well as the major destination for stakeholders, media, and the general public to find more information on IECSA. The site is being listed with the major search engines and now has tags inserted to facilitate web searches.

Brochure: A three-page document with the contents of the IECSA project press release and the scenario found on the IECSA.org web site was put together and distributed at the IEEE/PES Transmission & Distribution Conference. In October, a new, more comprehensive brochure explaining in more detail the goals, scope, and process for the development of the architecture was put together and made available in both electronic and hard copy format for distribution at stakeholder engagement activities, events, and via the IECSA web site.

Briefing Materials: – Presentations on IECSA and the project progress have already been developed. A short form (nine slides) and long form (fifty slides) overview of IECSA were developed and made available in electronic format for members of the IECSA team, E2I/EPRI

members, stakeholders aiding in the engagement process, and members of the media. Hard copies can be produced as needed. These presentations are being continually revised to reflect project status.

White Papers: Work needs to begin soon on identifying topics for these, with a mix of "big picture" and specialized technical topics. Writing assignments will be made to members of the IECSA team and/or E2I/EPRI. Once completed and approved, these will be posted on the web site, included in press kits, and made available at stakeholder engagement activities, conferences, and events.

Fact Sheets: Efforts should begin soon to develop fact sheets describing how IECSA relates to the various stakeholder segments and also to the cones. These should be written by IECSA team members and once cleared for release, made available at stakeholder engagement activities, conferences, and events.

Press Releases: Beginning immediately, the IECSA team needs to work with E2I/EPRI, especially the EPRI Media Relations Department, to specify the process for issuing press releases and distributing them. E2I/EPRI utilizes PR NewsWire to distribute press releases. In addition, releases could also be sent directly to targeted media or contacts could be made to targeted media to pitch the press release.

Press Kits: Press kits consisting of current and historical press releases, white papers, presentations, and distributable clippings and press mentions will be assembled and made available to reporters.

Articles: Working with the E2I/EPRI Media Relations Department, the IECSA team will identify opportunities to pitch and contribute pieces ranging from "big picture" articles (including op-ed) and technical articles to publications including many of those listed above. These can be written directly by IECSA team members or under the byline of senior E2I/EPRI leaders. Initially, E2I/EPRI and the IECSA team will need to identify appropriate media contacts and pitch these. It is anticipated that eventually the media will contact E2I/EPRI inviting them to contribute these. Currently, three substantial contacts have been made with media:

- Sandy Smith spoke with Jim Paterson, a freelance writer working with the American Public Power Association and National Renewable Electric Cooperative Association internal publications about the IECSA project. Paterson writes features on industry web sites and is interested in profiling the IECSA web site.
- Sandy Smith pitched an article to Mel Olken, editor of IEEE Power & Energy. The article, to be written by Erich Gunther and Mark Adamiak, will focus on IECSA's scope, goals, and development process. The article will be developed during the summer of 2004.
- Erich Gunther and Sandy Smith contributed an article on IECSA to Power & Energy Continuity, a publication focusing on power industry issues from an international perspective. The article was published in March 2004.
- Erich Gunther and Sandy Smith contributed an article on IECSA to Electric Light & Power magazine. The article appeared in the May-June 2004 issue.

Speakers Bureau: A speakers bureau consisting of key E2I/EPRI leaders such as Kurt Yeager, Clark Gellings, and TJ Glauthier; other E2I/EPRI management and technical personnel, and members of the IECSA team will be assembled. The intent is to have these personnel available to speak at trade shows, conferences, stakeholder engagement events, and at hearings before regulatory and standards making organizations. E2I/EPRI and IECSA team personnel should actively identify speaking opportunities for these individuals to participate in. In addition, this predetermined group of individuals should also, as deemed appropriate, receive media training should a decision be made to make them available to the press for interviews. This particular activity should be coordinated by the E2I/EPRI Media Relations Department.

Conference Presentations: Utilizing the speakers' bureau as described above, presentations ranging from "big picture" talks to technical papers should be given at a variety of industry conferences and meetings. In addition, there will be specific stakeholder engagement events and EPRI meetings/conferences that would be appropriate venues. The IECSA team will work with E2I/EPRI to develop a comprehensive list.

IECSA Workshops: These are addressed in other parts of the implementation plan. Inviting members of the press to these events should be considered to facilitate the information/education/technology transfer process.

Concurrently with all of these activities, E2I/EPRI should conduct active monitoring of press mentions and coverage of IECSA. If it doesn't already, E2I/EPRI should engage a clipping service to monitor press and provide collection and summaries of press coverage. This should be made available not only within E2I/EPRI but also to the IECSA team.

A.5. Stakeholder Engagement Checklist-Summary

Each engagement with an individual or group will address the following areas:

A.5.1   Introduction

1.   Describe purpose and background of the IECSA project
2.   Relate who is on the project team
3.   Describe what IECSA is not
4.   Review of our terminology (domains, stakeholders, functions, federated services, etc.)
5.   Description of the project domains
6.   Description of federated services concept
7.   Describe why we are contacting the specific individual we are talking to
8.   Describe what we expect to learn from that individual

A.5.2   Key top level questions to ask in each engagement

1.   What domain areas do you or your staff has expertise in, and is willing and/or able to contribute?
2.   What specific functions in the attached list (provide list of task 1 functions) do you or your staff have expertise?
3.   Are there any key functions missing from the list that is important to you?
4.   What is your long-term vision for how the power system will be operated?
5.   What fundamental problems in your present area of responsibility could a comprehensive communications architecture help solve?

A.5.3   Function level questions to ask in each engagement

1.   Who/what are the key entities involved with this function (actors)?
2.   What are the bandwidth requirements today and what would you like to see tomorrow?
3.   What are the reliability/up-time requirements for this function?
4.   What is the overall perceived level of complexity of this function?
5.   How relevant is communications technology to successfully implementing this function?
6.   What are the key security issues associated with this function?
7.   How could distributed computing technology be applied to your problem / this function?
8.   What are the database management requirements for this function?
9.   How important are the legacy support issues for this function?
10. How many uniquely addressable devices are involved in supporting this function?
11. What are the key economic drivers associated with this function?
12. What are the key technical factors associated with the successful implementation of this function?
13. Are there any contracts or agreements associated with this function?

14. What internal documents and/or external standards / guidelines are relevant to this function?

A.5.4 Scenarios / Use Cases

Discuss function specific use cases and scenarios with stakeholder

A.5.5 Conclusion

1. What information we can/should we make available back to that individual and through what mechanism after the engagement.
2. Describe mechanism for follow up questions / input from either party.
3. Who else should we contact in the industry or at your company about this project / domain / function?
4. Do you think that this project will be useful to the industry?
5. If so, what is the primary benefit?
6. If not, what is the primary barrier to success?
7. What should we do to improve the stakeholder engagement process?