

# LAUNCH EVENT

November 12, 2009

Hyatt Regency – Phoenix, Arizona

**ClimateTalk™**  

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**A L L I A N C E**

# Launch Event Activities

11:30 – 12:15

**ClimateTalk Alliance Vision**



**Geoff Godwin**, Division Vice President of Marketing



**Mike Ballard**, Manager, Home Appliance Solution Group

12:15 – 1:30

**Lunch**

1:30 – 2:00

**Media/Press Presentation**



**Geoff Godwin**, Division Vice President of Marketing

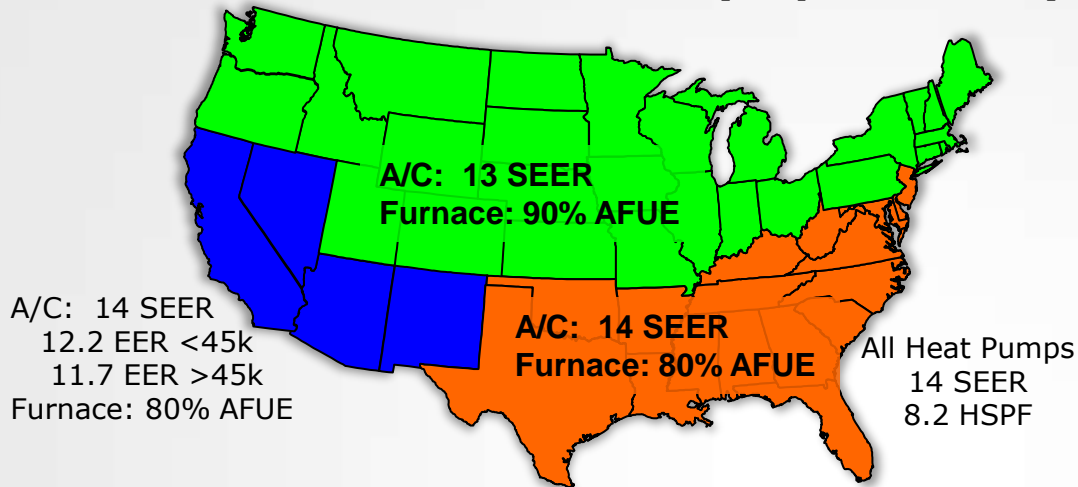


**Kelvin Kleman**, Engineering Manager Electronics & Controls

2:00 – 4:00

**Member Meeting**

## Federal Minimum Standards (Replacement) (Effective Jan 1, 2015)

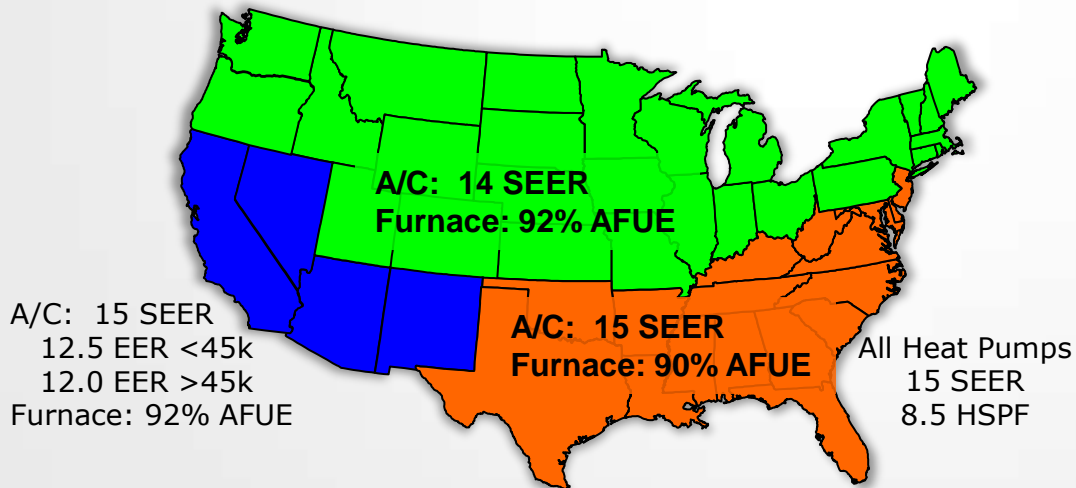


✓ Will drive the use of multi-staged, variable-speed equipment

✓ Projected to save homeowners \$13 billion

✓ Will save the US 3.7 quadrillion Btu of energy by 2030

## New Building Codes (Effective Jan 1, 2013)



**AHRI and ACEEE  
Have Reached  
Consensus**

## HVACR Workforce...

**Over 27,000 skilled workers are projected to retire annually**

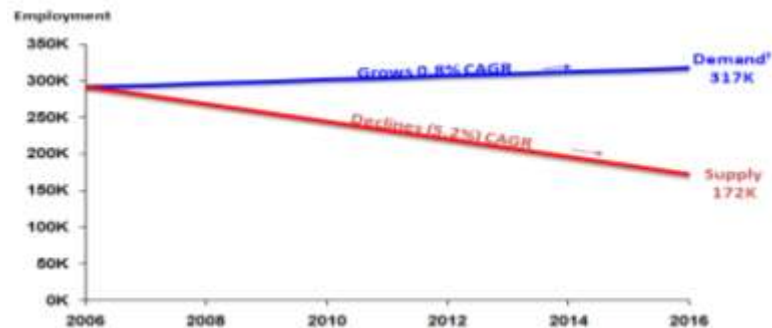
The Air Conditioning, Heating and Refrigeration NEWS and PHCC



**Only 15,000 trained technicians are entering the workforce annually.**

United States Department of Labor – Bureau of Labor Statistics

## HVACR Labor Shortage...

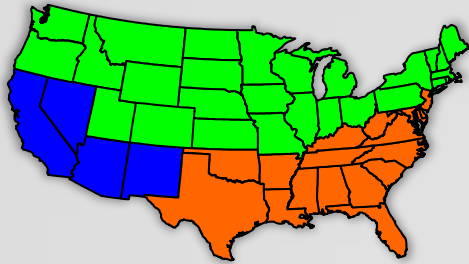


- 2010 market size for smart thermostats is forecasted at approximately 130,000 units and is expected to increase significantly in the next 5-10 years
  - On World Inc.'s Energy Smart Home report
- Cost conscious consumers are joining peak demand shedding programs offered by utilities



## **President Obama Announces \$3.4 Billion in Funding to Spur Smart Electric Grid**

Nov 6, 2009



Regional Standards



Qualified Technicians



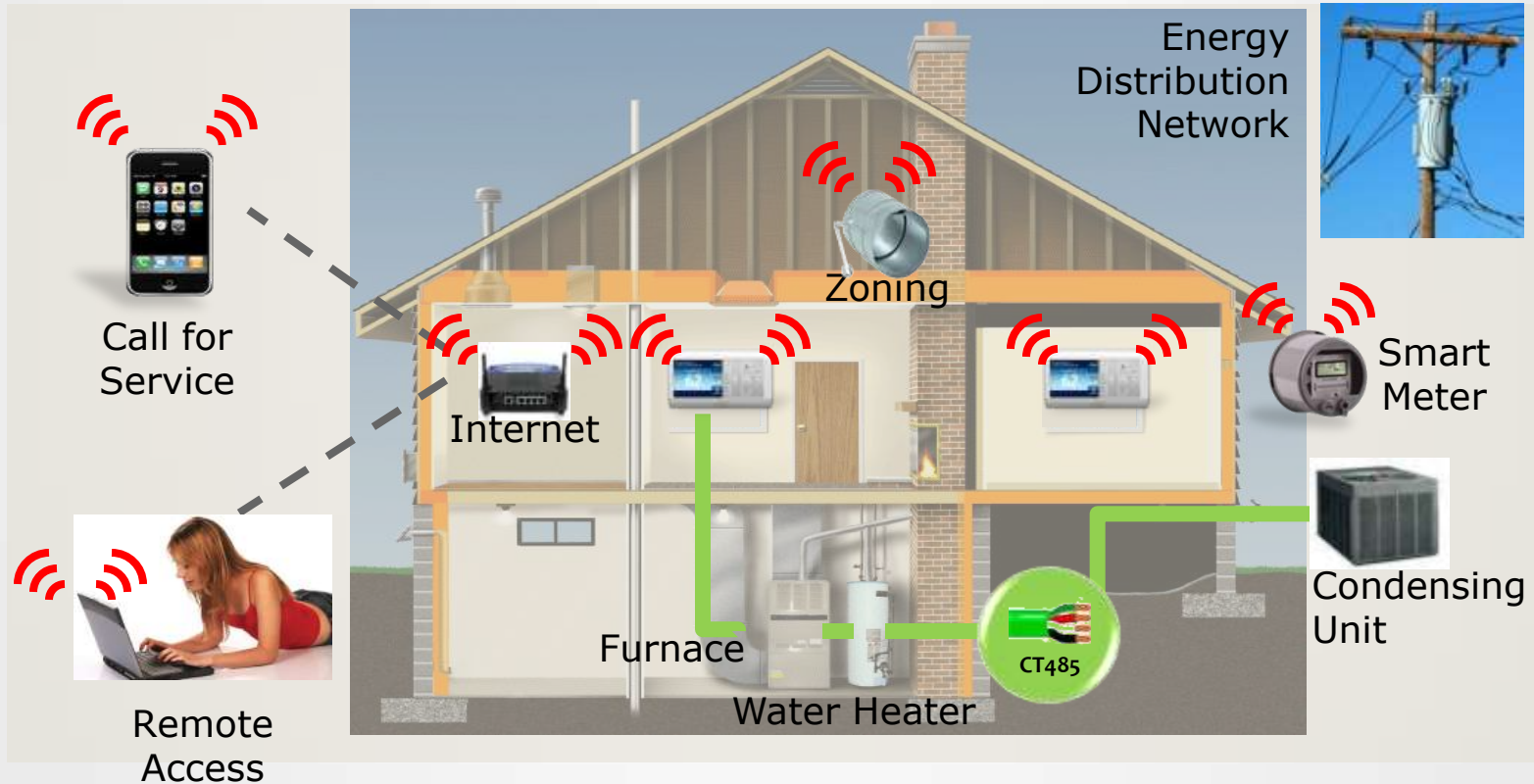
Smart Energy



## The HVAC Industry is Moving to Serial Communications

- ✓ Enables higher efficiency systems
- ✓ Reduces burden on contractors
- ✓ Improves overall comfort
- ✓ Enables Better Smart Energy Decisions

# Advancements in Technology Opening Doors to Information



## Standard US Outlet

- Power Company: Voltage and Frequency
- Outlet Manufacturer: Correct Proportions, Materials, Meeting all Safety Standards
- Plug Manufacturer: Correct Proportions, Materials, Current Capability



Collaboration  
Drives Adoption



## Evolving Smart Grid

- Heading towards Open Standards
- Interoperability Across Utilities; Municipalities
- IP Based Communication Networks

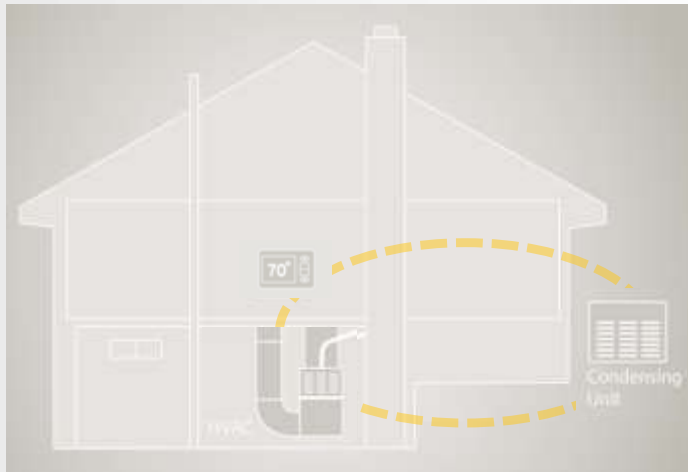
Open Standards Support  
New Technology  
Development

- **Interoperability**
  - The free exchange of information between components from different manufacturers
- **Interchangeability**
  - Without change in form, fit, or function
- **Compliance Testing**
  - To ensure expected operation

- Save in Development Costs/Time
  - Standards Completed
  - Hardware Conformance Completed
  - Faster Time to Market
- Customers Want Choices
  - More likely to choose a system with that is interoperable with other systems
- Sharing Best Practices
  - Will make the open system the best it can be

- Learn from Other's Mistakes
- Keep it Simple...
- Stick to Mission of the Standard
- If Leaders Lead; Others will Follow

Multiple Wired Protocols Being Developed  
 - Not interoperable with Each Other and No Path Defined for Common Wireless Platform or Smart Energy Interface



Fragmentation  
 Slowed Adoption  
 Customer Frustration

HVAC Systems	Wired Protocol
OEM 1	A
OEM 2	B
OEM 3	C
OEM 4	CT485
OEM 5	CT485
OEM 6	TBD
OEM 7	TBD

Closed, proprietary protocols

Open Protocol



Heat Pump  
Water Heater



Tankless  
Water Heater



Gas & Electric  
Water Heaters



Heating & Cooling



Solar Water Heating



Pool Heaters



Home Generators



## Overview of Rheem Manufacturing

- An opportunity to develop a solution that:
  - Adds value
  - Offers product differentiation
  - Responds to competitive moves and rumblings
  - Features diagnostics, smart systems
  - Simplifies complex systems
  - Provides easier installation and setup
  - Realizes benefits of a system vs. Standalone equipment



- System-wide communications

- What language do we want to speak?
- What's available?
- Who do we want to speak with?
- Future growth?
- Intellectual property?





- Closed / Proprietary Designs
- EnviraCom
- ModBus
- LonWorks
- BACnet
- ClimateTalk



- Closed / Proprietary Designs
  - OEM unique protocol
  - Development time table
  - Business overhead / development expenses
  - Interoperability concerns with other components



- Closed / Proprietary Designs
- EnviraCom
  - Documented protocol
  - Added product licensing node cost
  - Future application concerns



- Closed / Proprietary Designs
- EnviraCom
- ModBus
  - Manageable cost
  - Low functionality message sets for HVAC systems
  - Future application concerns
  - Currently used by Rheem in “control to control” commercial applications



- Closed / Proprietary Designs
- EnviraCom
- ModBus
- **LonWorks**
  - Documented protocol
  - Proprietary hardware required
  - Overhead costs & complexity
  - Features and capability focused on commercial applications



- Closed / Proprietary Designs
- EnviraCom
- ModBus
- LonWorks
- **BACnet**
  - Documented protocol
  - Features and capability focused on commercial applications
  - Cost of hardware and software overhead



- ClimateTalk
  - Documented open protocol
  - Lower development costs
  - Speed to market
  - Robust
  - Expandable and adaptable for future growth
  - Not single sourced (multiple suppliers)
  - Provision for OEM protocol for IP protection as well as differentiation

- Current products include:
  - Residential split systems
    - AC outdoor units
    - Heat pump outdoor units
    - AC / HP indoor air handlers
    - Gas furnaces
  - Geothermal heat pumps
  - Thermostats
  - 4 wire ECM motors



***Comfort Control<sup>2</sup> System™***



- Complex, high efficiency systems made easy for our customer
  - Installation ease
    - Self configuration
    - 4-wire
    - Protection against mis-wiring
    - Multiple point access to system information
  - Diagnostic messages & system optimization
    - System protects itself and provides fault tolerant operation
    - System operates as intended



- Results include
  - Excellent field experience
  - Customer acceptance
  - Exceeding product sales targets



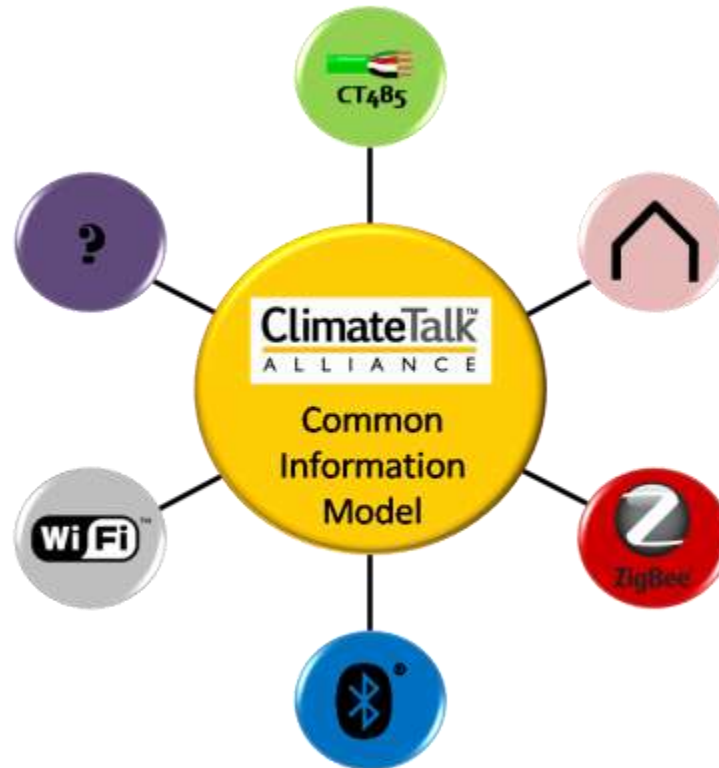


- Taking it to the next level with:
  - Enhanced diagnostics
  - Field commissioning and set up
  - Energy management
  - Smart grid interface
  - Wireless
  - Adding value to our products for our customers

Leadership role in the  
ClimateTalk Alliance  
to drive future solutions

# ClimateTalk Alliance Mission

*An organization committed to developing a common communication infrastructure for HVAC and Smart Energy devices, enabling the interoperability of diverse systems*



An Open Platform to Create  
Solutions in an Expanding Market

- Accelerate Adoption
  - Communications will be expedited and far more profitable for all parties if the industry can set forth a standard by which all members play.
- Create Value
  - In order to be successful a standard must have input from all the stakeholders to create something that is useful to everyone, not just a few groups.
- Collaborate
  - The ClimateTalk Alliance is being formed to provide a platform for industry leaders to collaborate in the development of these standards to prevent industry fragmentation and accelerate adoption.

- Formed in January, 2009 to ensure the collaboration on development of standard protocol for HVAC industry
  - CT485 wired protocol in production proving value proposition of adding communications into HVAC systems
- Expanded into future vision for interoperability across multiple mediums
  - Position alliance to address industry mega trends
- Now accepting members and forming working groups

- Industry

- Enable OEMs to meet regional efficiency requirements
- Reduced time to market
- Lower development costs
- Longevity and stability of standards



Increase Sales Of High Efficiency Products

- Homeowner

- Protects investment in high end equipment
- Optimizes system performance
- Provides diagnostic and operation information
- Foundation for remote access

Improved Efficiency And User Experience



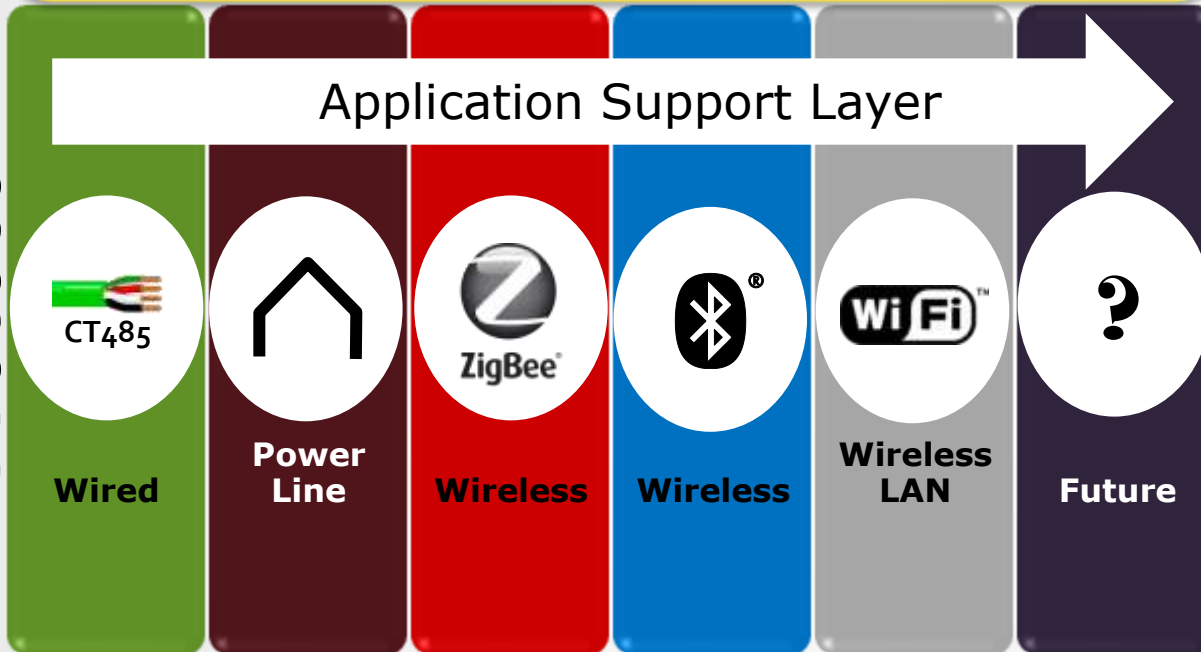
- Thermostats
- Furnace controls
- Unitary controls
- Water heaters
- Smart meters
- Electric heat sequencers
- Zone controls
- Solar panels
- Wind generators
- Lighting control
- Security systems

*The more devices that are on the network, the more the network can optimize the energy consumption and respond to a load shed command*

Residential & Light  
Commercial

Common Information Model

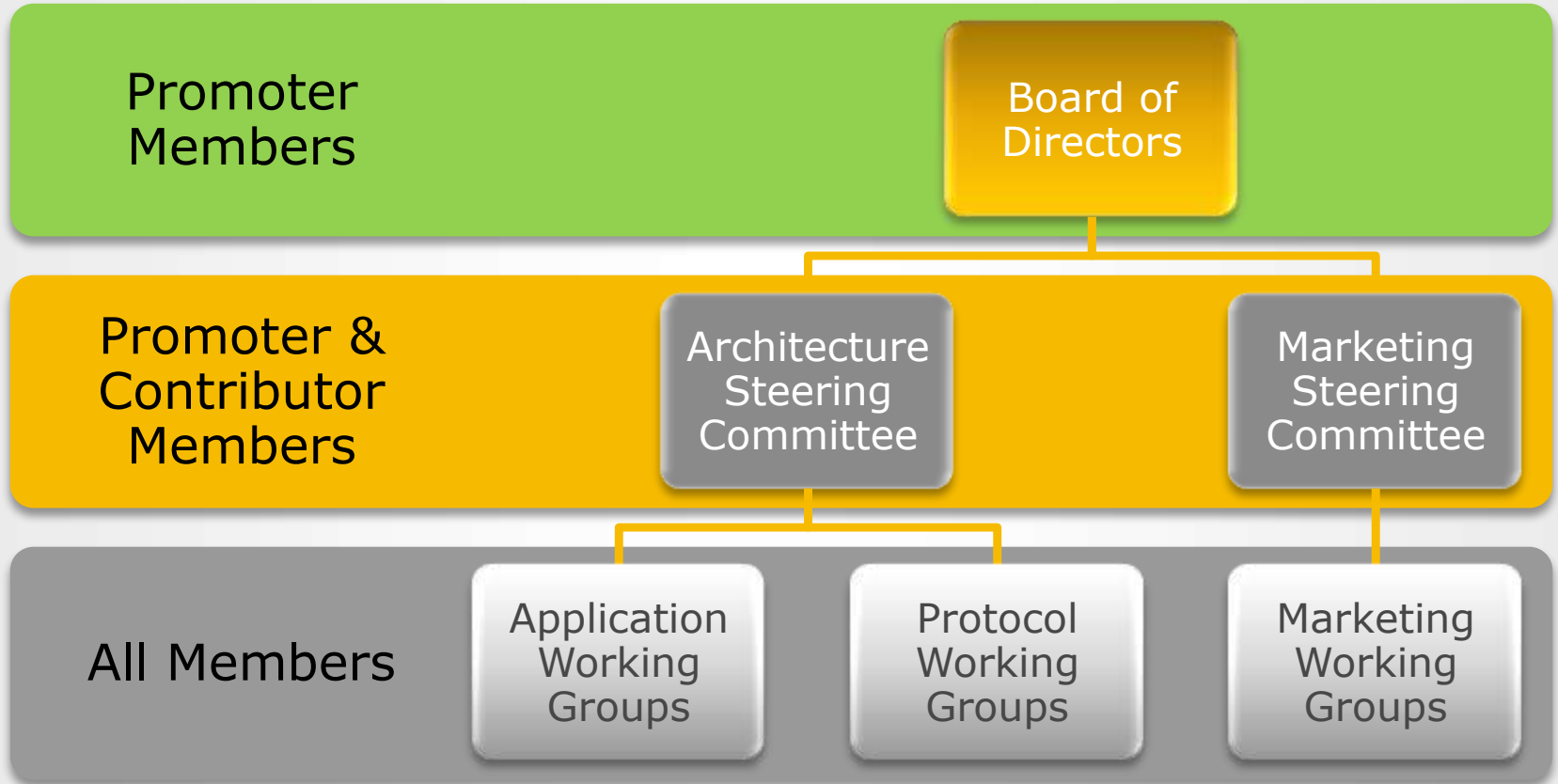
Protocol



- Lack of Open Solution in Marketplace
- Need for Simplicity in Integration
- Advancements in Communication Technology



# ClimateTalk Alliance Organization



## Member Benefits

- Common Membership Privileges
  - Rights to Use ClimateTalk Brand
  - Solutions Promotion / Visibility / Leverage
  - Certification Test Program
- Benefits That Vary By Tier
  - Promoter Member
    - Board Seat
    - Approval Required For All Changes to Specs or Bylaws
  - Contributor
    - Eligible for Participation / Chair in Committees
    - No Voting Privileges on Final Changes to Specs or Bylaws
  - Adopter
    - Protocol Licensee
    - Able to Sell Product Under ClimateTalk Brand

Member Benefits	Promoter	Contributor	Adopter
Seat on Board of Directors	√		
Candidate for Officer Position, Exec. Committee	√		
Approve Committees/Work Groups	√		
Approve New Board Members	√		
Vote in Officer Elections	√		
Final Approval of Alliance Specifications	√		
Pre-release access to documents	√	√	
Chair Work Groups	√	√	
Vote in Work Groups	√	√	
Approve Working Group Draft Specifications to 0.X	√	√	
Attend Annual Meetings, workshops, events	√	√	By Invitation
Participate in Work Groups	√	√	By Invitation
Propose Work Group Items	√	√	√
Access to "Members Only" web	√	√	√
Marketing Events and Press Releases	√	√	√
Receive Newsletter	√	√	√
Obtain Final Documents	√	√	√
Use Alliance Brand	√	√	√



Current Members

## Architecture Steering Committee

*Develop System Roadmap*

## Marketing Steering Committee

*Recruit Members & Promote Alliance*

### Application

*Define Use Cases*

### Protocol

*Ensure Interoperability*

### Conformance

*Develop Certification & Compliance Program*



- Recruiting Members
  - Membership drive
    - AHR - January 25-27
    - Booth # 1355
- Evolving Technology
  - Establish working groups to develop next applications
- Goals and Objectives
  - Certification program development



**Together – We Can Shape The Future**

## Better Communications *for* Better Customer Value

### Building An Ecosystem Of Interoperable HVAC /Smart Energy Devices Sharing A Common Communications Infrastructure

As technology continues to change almost daily, bringing new innovation and product improvement, system communication becomes an even more critical component for higher performance and customer satisfaction.

Username:

Password:

MEMBER LOGIN

GET MORE INFO

#### ABOUT CLIMATETALK™

Defines the application layer-level messages and the performance bounds to enable HVAC and SE applications to run seamlessly in the residential and light commercial environments.

- [Architectural Overview](#)
- [Members](#)
- [Products](#)

#### BENEFITS *of* JOINING THE ALLIANCE

Joining the Alliance provides stakeholders the ability to drive the future capabilities, ensures stability and drives competitive solutions

- [Access to specification](#)
- [Benefits Matrix](#)

#### ALLIANCE NEWS & EVENTS

##### Upcoming Events:

### CLIMATETALK LAUNCH EVENT

November 12, 2009

Phoenix, AZ

### CLIMATETALK MEMBERSHIP DRIVE

January 25-27, 2010

Orlando, FL