



LonMark International Standards and Program Update

AHR Expo 2011

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LONMARK assembles the pieces.

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What's New – Quick Snapshot

- ISO Standards Update
- Task Groups and New Profiles
 - Renewables and Energy Metering
 - Kitchen Equipment
 - Emergency Lighting, Outdoor Streetlighting
- System Services Initiative
 - Alarming, Scheduling, Trending profiles
- Quick Serve Restaurants Initiative
 - Driven by McDonalds
- Certification Programs
 - Certifying Products, People, and Companies
- Standards Roadmap
- Webinar – online education program

LonMark Committees

- Executive
- Finance
- Transition
- Vertical Markets
- Technical Advisory
- Technical Standards
- Marketing
- Credentialing
- Education, Certification, Membership and Credentialing
- European Affiliates
- EuroTAG – European Marketing
- Quick-Serve Restaurants
- Government & Lobbying
- Lighting Advisory
- NEW - End User Committee
 - Meeting today at 4:45 pm



LONMARK Task Group and Committee Updates

ISO Publication Status

- ISO/IEC 14908 1,2,3,4 – Publication delays
 - Appeals
 - Delays
 - Title/Scope change – general vs buildings
- Currently up for vote within committee
 - Final publication in March (tentative)

Task Groups

- **Automated Food Service**
- **BAS & HVAC**
- Fire & Smoke
- Network Tools
- Refrigeration
- Industrial
- **Lighting**
- Home
- Security & Access
- Semiconductor
- **Services (system level)**
- Sunblinds/Weather
- System Integration
- Elevator/Escalator
- Transportation
- **Utility/Energy**

BOLD are very active



LONMARK Profile Updates

- **Lighting Task Group**
 - Outdoor Luminair Controller profile; for streetlights – Complete!
- **Utility / Energy Task Group:**
 - Wind Turbine Generator profile - in draft form, 30-Day Review Cycle
 - Photovoltaic Generator profile - in draft form , 30-Day Review Cycle
 - Generator Set profile - revising/enhancing the existing profile
 - Electric-Source Transfer Switch - revising/enhancing the existing profile
 - Electric Metering and Demand-Response profiles – near complete
- **HVAC and Sunblinds:**
 - Global Solar Radiation Sensor profile – Passed TG vote
- The **US Army Corps of Engineers** is working on “strict” BAS profiles: first drafts now available for further review in the LonMark Member Forum. Focus: end-user satisfaction & fulfillment

General-Purpose Programmable Controllers

- Building-Automation Systems & Heating, Venting, Air-Conditioning Task Groups
 - In charge of working with Connectivity TG to make
 - Dynamic Programmable-Controller Profile (in development):
 - Interfaces change using network variables and configuration properties that change “on the fly” within the confines of the device structure.
 - Static Programmable-Controller Profile (Committee Approved):
 - Interfaces are reprogrammed or new code is created, then the new interface/code is downloaded into the device fully replacing the present device content.
 - New Profile Approved by Board January 2011
 - Both General Purpose Programmable Controller types must be handled

Higher Level Services

- LonMark Standard Services
 - New initiative – easier, more end-user friendly
 - Scheduling
 - Alarming
 - Trending
 - Overrides
 - Energy Demand Response and more
 - Aggressive schedule
 - Scheduling working group very active
 - Army Corps, Honeywell, Kenmark lead contributors

Quick Serve Restaurants Smart Kitchens Committee

- NAFEM – North American Food Equipment Manufacturers Association
- Develops standards for **Smart Kitchens**
- **Driven by McDonald's Corporation**
- LONMARK and NAFEM members working to implementing LONWORKS in kitchen equipment
- Developing Profile Mapping to NAFEM Data Protocol
- Members: McDonalds, YUM! Brands, Franke, Wendy's, Echelon, Engenuity, Emerson, ...

QSR Profiles

- Smart Kitchen Equipment
 - 26 Profiles in development
 - Handed over to LonMark in 2010
 - Ovens, Fryers, Holding Bins, Freezers, Ice Machines, etc

LONMARK Smart Grid Efforts

National Institute of Science and Technology

- **NIST Efforts to Define:**
 - B2G - Building-to-Grid*
 - I2G - Industrial-to-Grid
 - H2G - Home-to-Grid
 - V2G – Vehicle to Grid
 - T&D - Transmission & Distribution
 - Cyber Security*
- **NIST Contracted with EPRI to Develop Smart Grid Roadmap**
 - Standards and Interoperability
 - Short Time, Lots of Money
 - Workshops
 - *LONMARK Technical Staff Participation
 - **LonWorks Included in List of Open Standards for Smart Grid, v1.0**

Certification Programs

- **Certified Interoperable Products**
 - Products that have passed rigorous testing to meet LONMARK Interoperability
- **Certified Professional**
 - Individuals with knowledge of system integration
 - Passed a comprehensive test
- **Certified System Integrator**
 - Companies committed to LONMARK Open Systems
 - Pass a Peer-Review process

LONMARK Credentialing Programs

- **Certified Professionals (individuals)**
 - Current total Tests Given: 400+
 - 2009 Test Revision Project Completed – online now
 - Incorporates new questions, updates, removal of duplicates, etc
 - German Translation of new test complete and online
 - Spanish Translation of new test complete and online
 - Recertification process
 - Every 3 years
 - Online training and test
 - Available now!

LONMARK Credentialing Programs

- **LONMARK Certified Integrators (companies)**
 - Peer-Review program
 - Proficiency, commitment, experience
 - Provides Credibility and Confidence
- Launched in Q 4 2010
- Applications available now
- <http://www.lonmark.org/csi>



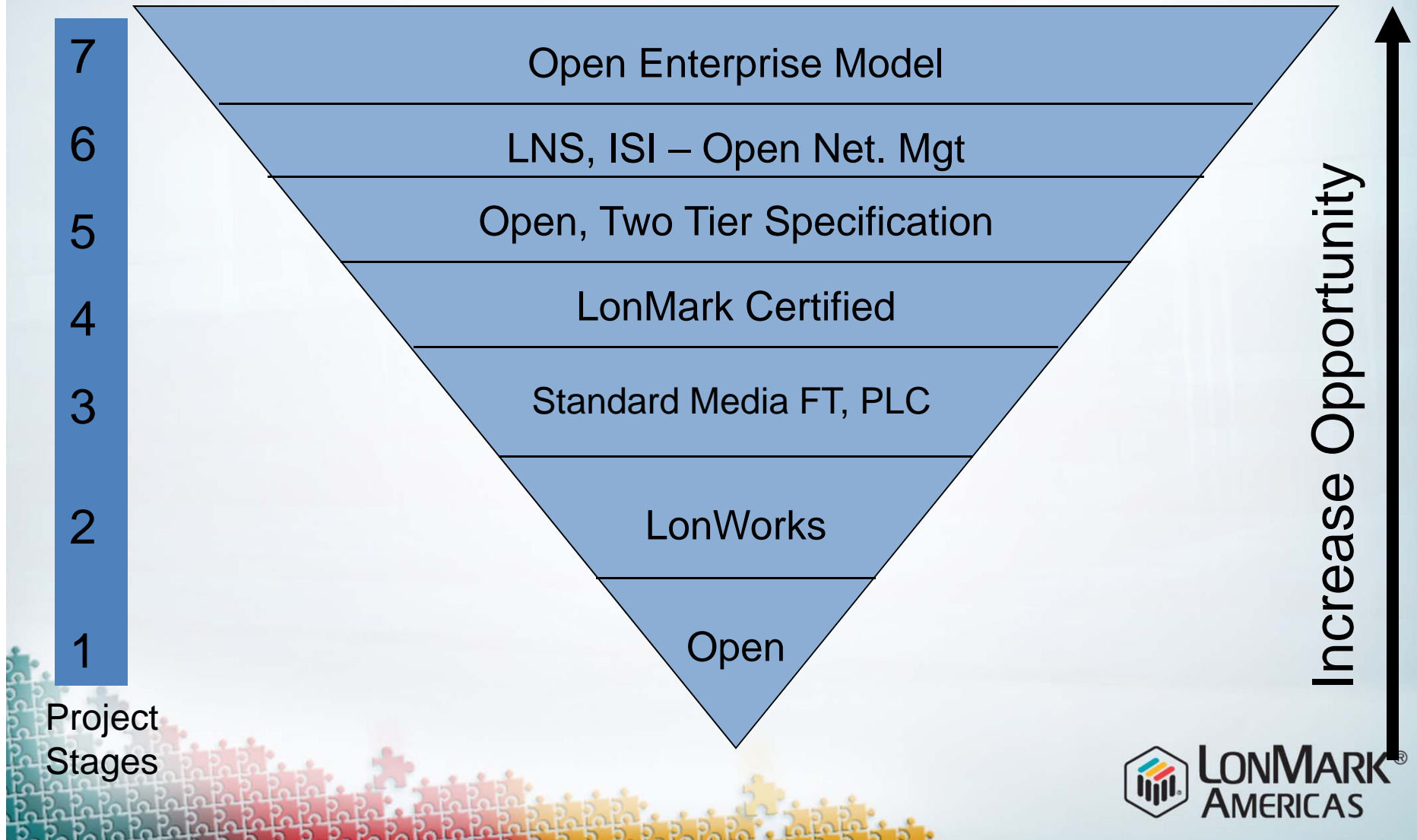
Vertical Market Focus

- Buildings (single) – BMS
- Campus (multiple) – EMS
- Enterprise systems
 - QSR
 - Energy metering
 - Demand Response
- Cities
 - Streetlighting
 - Emergency Lighting
- Renewables
 - Solar, Wind, Co-generation

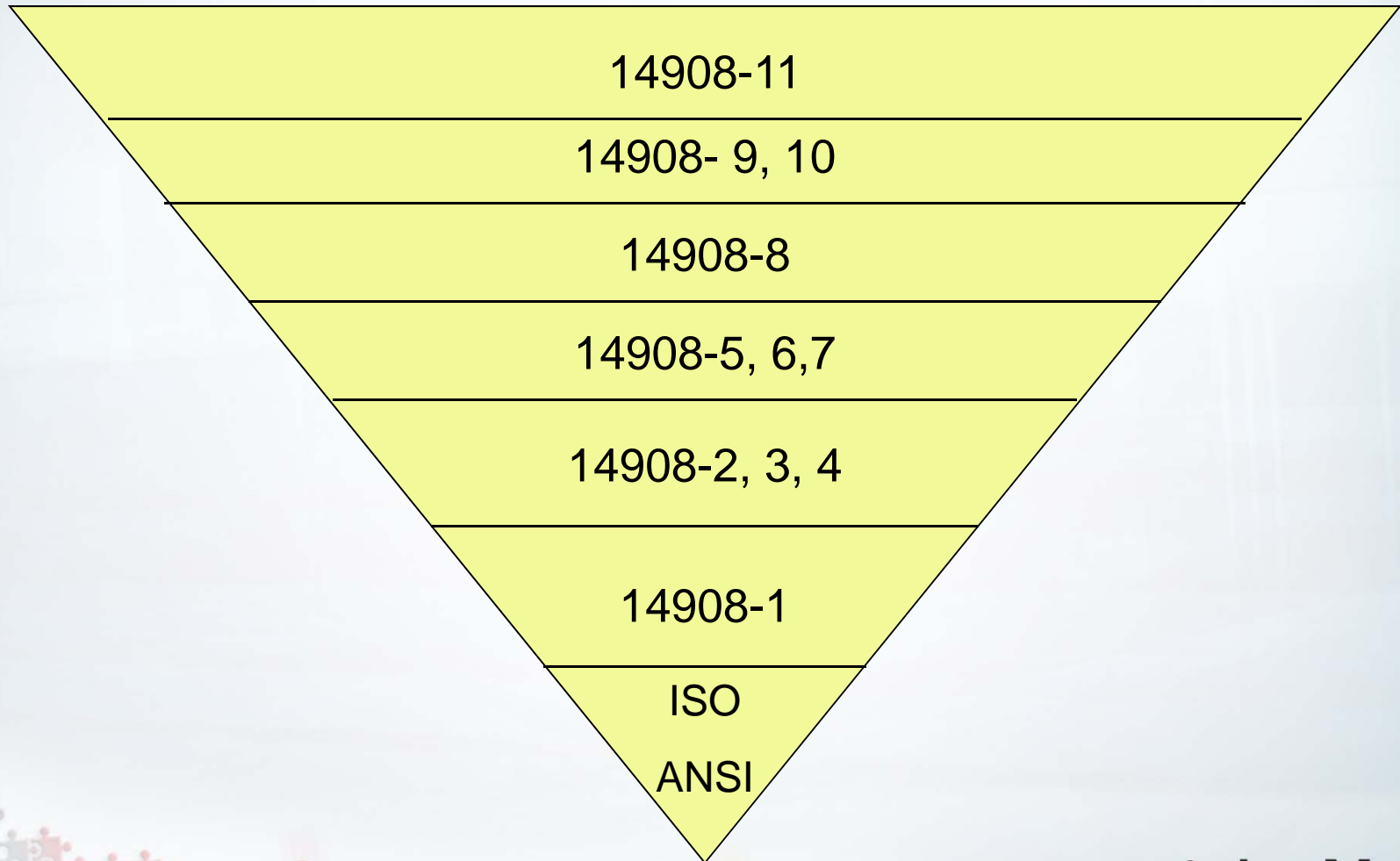
LONMARK Open Standards Roadmap

System Strategy

The 7 Stages



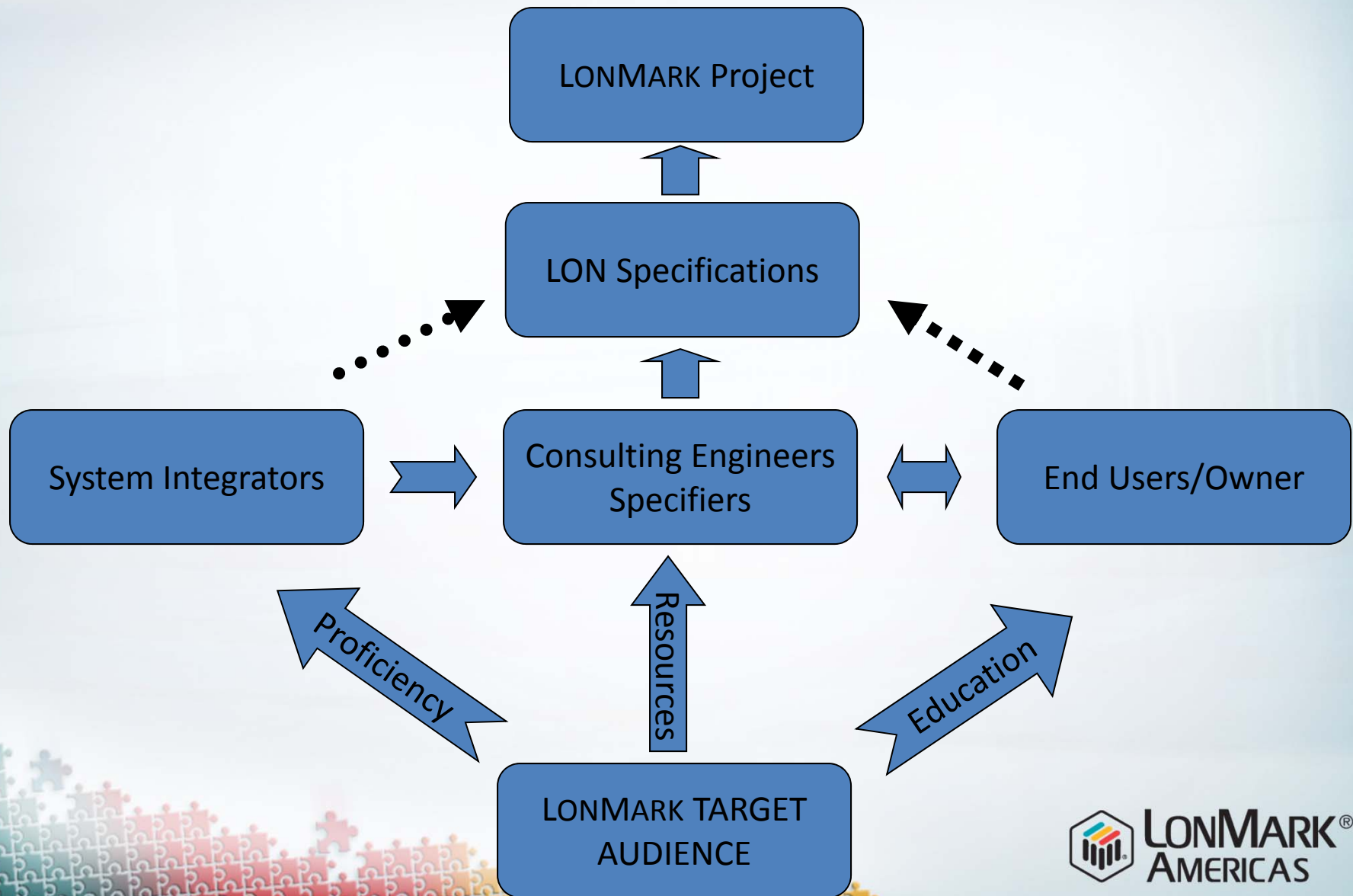
Standards Strategy



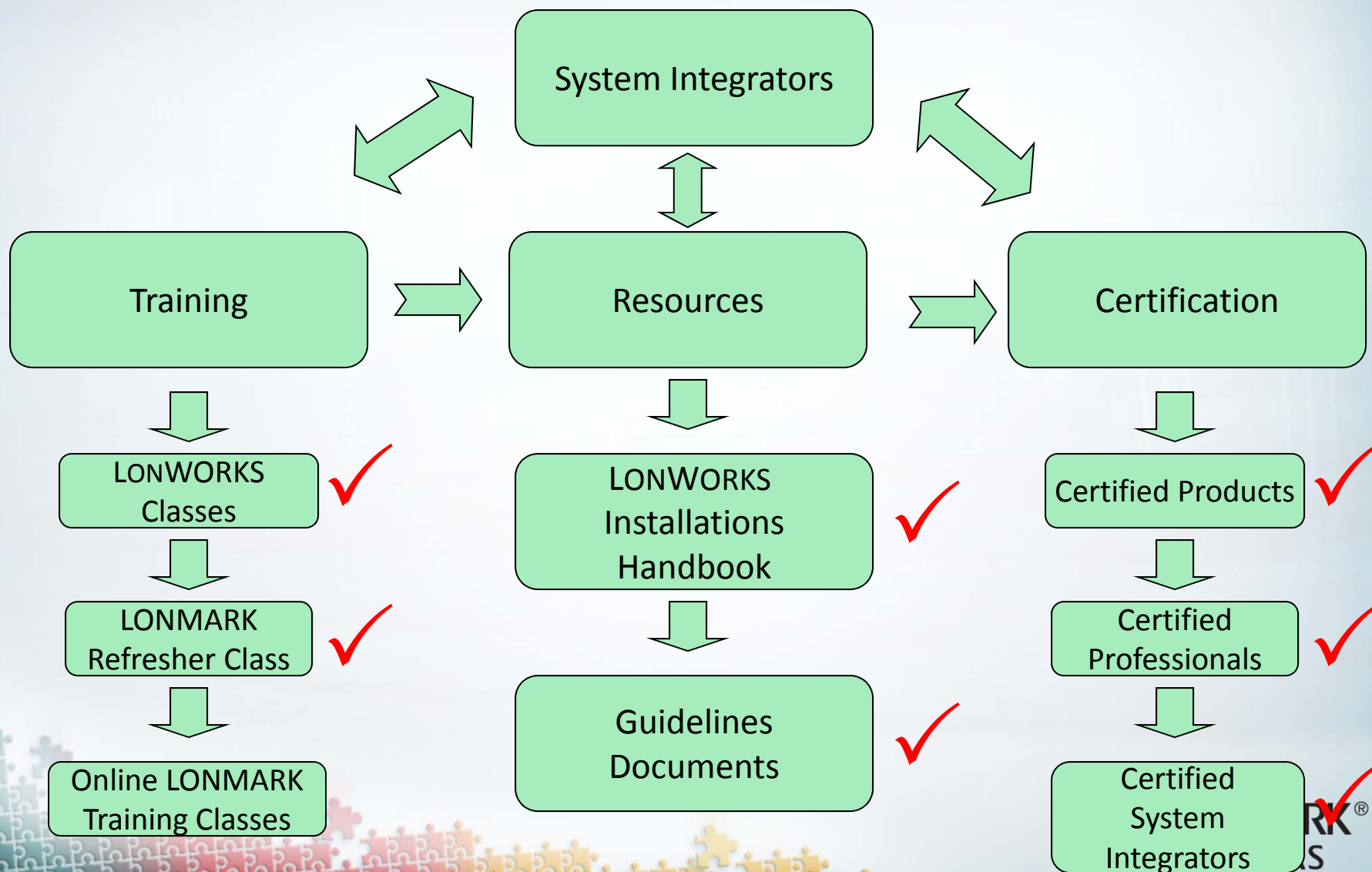
LonWorks System Standards Roadmap

#	Layer	Name	Status
11	Enterprise/Front End API	oBIX or LonMark Web Services, SOAP/XML	In discussion
10	Management	Open Network Management API	Echelon to propose an API – TBD
9	Self Installation	Interoperable Self Installation	ANSI standard in process
8	Guide Specification	Two-tier system specification	Working w/ASHRAE New work item at CEN
7	System Resources/Services	Scheduling, Alarming, Trending, Overrides, DR,...	New work item LMI Services Task Group
6	Device Resources/Services	Standard Variables, Config. Props, DRFs	EN Approved, awaiting final
5	Implementation Guidelines	LonMark Device Implementation Guidelines	EN Approved Submit to ISO after 1-4
4	IP Connectivity	IP-852 Routing/Tunneling	Awaiting publication
2, 3	Media	Free Topology, Powerline	Awaiting publication
1	Protocol	LonWorks	Awaiting publication

LONMARK Specification and Project Process Flow



LONMARK Integrator Support



LonMark International Ongoing Activity in Support of Open LonWorks Systems - Affiliate Name _____

Education/Training	Targets		Promotion	Targets		Technology/Standards	Targets		Adoption	Targets	
	LM	Local		LM	Local		LM	Local		LM	Local
Seminars - General/Technical			Press releases			LonMark Guidelines			Certification		
Workshops			White papers			Standards Bodies			Products		
Training - On-site			Market analysis			Government regulaitons/liaison			People		
Training - On-line			Comptitive analysis			IT/Enterprise interface LON/LAN/WAN			Companies		
Consulting			Case studies			Open Systems Model			Projects		
Resources			Articles			Devices			Testing Programs		
Books			Website			Infrastructure			Specificaitons		
Guides			Videos			Tools			Projects/Installations		
How to			Testimonials			Network Management			Applications		
Demonstrations			Social Media			GUI/Front Ends/User Interface			Verticle Markets		
Webinars			Documentation			Enterprise connectivity (oBIX)			BMS		
University Relations/Programs			Brochures			Task Groups			QSR		
Community meetings			Specifications			Committees			Street Lighting		
Conferences			Committees			Industry Relations			Indoor Lighting		
International			Research support			NIST			Metering		
Regional			Interviews			CABA			Smart Grid		
Local			Trade shows			Sunspec			Energy efficiency		
			Conferences			EUBAC			Successful Installations		
			Technical Papers			ASHRAE					
			Magazine			ISO/IEC					
			Newsletter			ANSI					
						CEN					
						OASIS/oBIX					
						IEEE					
						NAFEM					
						Zigbee					
						DALI					
						EU Norms					
						eMerge					
Goal: Improve overall knowledge			Goal: Expand market awareness			Goal: Enhance technology			Goal: Enhance market adoption		
End Users/Opner/Property Mgr			Press			More profiles			Usage of LonMark products		
Integrators			Media			Better integration			More open LonWorks projects		
Specifiers			Membership			Better open systems			More specifications		
Manufacturer			Market			More integration			Improve value for members		
Solution Provider (HW/SW)						More value			Expand into new markets		

A = High Priority
B = Medium Priority
C = Lower Priority
Blank = not a focus



Results

- [Results Spreadsheet](#)

Online Educational Classes (Webinar) Program

- Market and Technical Education
- [19 Topics Identified](#)
 - System Solutions
 - How-to
 - Market Segments
 - Technology implementation
 - Certification refresher class
 - Certification recertification training and test
 - Technology training