Post Conference Update

Working Group 705 has been created for Lighting Systems. Please consider joining!



Track 2 : Technical Track



Haystack 4.0 and Lighting Systems Jeremy Yon

Current, Powered by GE



mart Data. Smart Devices. Smart Buildings. Smart Business.



ONE Jer : TWO Perspectives

avstack Connect

PART 1: Industry

Sharing insights from ANSI C137 efforts

American National Standards Institute Lighting Systems Committee Jeremy's perspective – not official statement <u>Note the background</u>

PART 2: My Company

Sharing more specifics from Current Powered by GE

Note the background

current



Starting at the Beginning ANSI C137









Photos by Mikito Tateisi, Vadym Lebedych, Junior Ferreira on Unsplash

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ANSI C137 Data Modeling – Initial Work



- Over 15 lighting models/ protocols
- Over 30 logical device types
- Over 20 functions

9 Essential Points of Interoperability

Key Elements



9 Essential Points of Interoperability

- I. Individual Occ Sensor State –
- II. Room or Area Occ State
- III. Individual Sensor Illuminance Level
- IV. Room or Area Illuminance Level
- V. Zone Control Level
- VI. Load Control Level
- VII. Preset Select
- VIII. Set DR Mode
- IX. Energy Use

Individual Devices Zone/Area/Room Occupancy Illuminance **Output Level Setpoint Change Demand Response Energy Measurement** 6



...it's All About the VOCAB!

phScience: WG649

- illuminance
- luminance
- luminous flux
- luminous intensity
- (discussion @ horticulture)

<u>phlot</u>

- Occupancy
- Demand Response
- Partitioning
- Scenes/Presets
- Energy Measurement
- Dimming/Levels

Over 30 Terms Identified for Consideration



Lighting: An ideal platform for IoT in Buildings

Havstack Connect

LED Lighting Systems offer... -Pervasive coverage -"Bird's-eye view" of space -Power to lighting devices -Cost effective deployment -Natural integration to BMS -Corporate capital budgeting



Location/Organization Markers



red = new
green=existing type/tag

Lighting-zone-space use:

- Can be associated/nested with any building level
- Can define a physical region
- Can define a region of control
- Can define a collection of distributed points/spaces
- There are NO constraints to physical realities





Data Representation

red = new
green=existing type/tag

	Value Represented	Units	Variability
[no tag]	MEASURED	Default Units	Varies over Time
calc	CALCULATED	Default Units	Varies over Time
raw	UNCORRECTED	Unitless	Varies over Time
config static fixed	CONSTANT (not changing)		Set One Time
sp	Adjustable CONSTANT		Manually Changed





Data Grouping

red = new
green=existing type/tag



Interest in Individuals and Collective

- [no tag] = represents a single entity
- aggregated-calc = combination of multiple entities with calculation

Example: Room Occupancy based on multiple sensors





May 13-15, 2019

Physical Relationships

- equip = equipment
 - comm = physical communication element such as a radio
 - xxx-[physicalDevice or physicalSensor or ??] = a physical device
 - luminaire
 - lightsource
 - driver
 - meter = equipment to meter
 - elec-meter
 - flow-meter
 - occupancy-meter
 - optical-meter
 - Illuminance-optical-meter
 - thermal-meter



red = new green=existing type/tag

Can be a subtype or supertype





Final Thoughts







Track 2 : Technical Track



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