

Resideo Technologies Inc.

Comments to proposed specification for ENERGY STAR SHEMS Draft 1 Specification - April 3, 2019, specifically the following two documents:

[ENERGY STAR SHEMS Draft 1 Version 1.0 Specification](#)
[ENERGY STAR SHEMS Draft Method to Determine Field Performance](#)

Submitted : May 3, 2019

Page	Line	Paragraph/ Figure/ Table	Comment type (Technical / Editorial)	Comment	Proposed Change
ENERGY STAR SHEMS Draft 1 Version 1.0 Specification					
1	14-17		Editorial	This includes but is not limited to 1) providing reliable vacancy detection linked to savings strategies that shut off or power down equipment when no one is home, 2) limiting standby power of connected devices, and 3) providing feedback to users about the energy impact of their settings.	IT is not clear if the three bullet points are mandatory for qualification OR if one of the bullet points is SUFFICIENT for qualification as a SHEMS.
1	15		Editorial	Instead of vacancy detection, it may be more beneficial to use the term occupancy detection. This will provide means to extend to level of occupation as well as zones of occupation within a home.	change to occupancy detection.
1	18-21		Editorial	The use of "exclusive to the extent it is the sole energy management service package" is unclear in purpose. What are the implications of a vendor offering products with energy savings, either SHEMS or non-SHEMS certified?	Need to add clarity around the words exclusive and solely. Did you mean to use those words?
1	35		Technical	With open APIs - the package should include eco systems of devices manufactured and sold separately by individual manufacturers. The SHEMS package should consist of the ability to coordinate multiple devices.	A SHEMS package should have the ability to control the minimum required devices but not necessarily include the devices. It is not clear with this definition if the following business model is possible: Business Model: Company A manufactures and markets Energy Star Certified Thermostats, Company B manufactures and markets a Plug and Company C manufactures Energy star certified bulbs. A completely independent company creates a SHEMS offering as a software service utilizing APIs from Company A, Company B and Company C. The question is what is being certified ? The service (which could be an app or a website?) - or the devices +service? How do addition of new devices (new smart plugs, new light bulbs and thermostats, but similar in functionality) that can be controlled by services affect the certification as SHEMS ?
2	42		Editorial	Add section number to section title for clarity.	"....all the device and service requirements identified in Section 4 Eligibility Criteria."
2	58		Editorial	A Hub, smart plug or smart power strip could be wired or wireless.	Remove "in addition to a wireless router"
3	82		Editorial	IFTT should be IFTTT	
3	87, 90, 92		Editorial	CT - used for connected thermostat and current transformer	abbreviate only one as CT to avoid confusion
3	102-103		Technical & Editorial	Why is it a hard requirement to have the optimization algorithms use predictive information about when occupancy is likely to change based on learning?	Make this an optional requirement "Optimization algorithms may also use predictive information about when occupancy is likely to change, based on learning." Or delete the sentence since the terms "Predictive information" or "learning" have not been defined in the specification.
3	120- 121		Technical & Editorial	Do we really want a soft trigger without user notification? Also, grammatical suggestion to "carry out the action." versus "carry on the action."	"This shall include a notification to the user that they can override but if ignored the system will carry out the action."
4	160-161		Editorial	Sentence needs clarity regarding SHEMS Energy Star Certification	"Only packages that meet the definition of SHEMS are eligible for SHEMS Energy Star certification."
5	173	Figure 2	Editorial	Remove "C" on the solar panel	
5	173	Figure 2	Editorial	This picture needs to depict the Additional Required Platform Capability of Section 4.2 A) Ability to connect to at least one water heater controller or connected water heater which is currently available on the market.	Not sure, but perhaps put inside the dotted line area with some indication that it is a SHEMS requirement? Or use an asterisk indicator with legend description below the figure and keep the picture as is?
5	173	Figure 2	Editorial	Need to identify the devices that require Energy Star certification in this picture	Perhaps identify with an asterisk and legend description below the figure.

6	207		Editorial	Occupancy detection should not solely rely or require persistent sensors/devices. Occupancy can be derived from transient sensors/devices or from hard triggers by user. (i.e., arming an alarm system)	edit to say at least one persistent or transient occupancy device
7	219-225		Technical	<p>c) to implement control algorithms to automatically modify the operation of the devices in the package to save energy while maintaining positive user experience based on occupancy information and machine learning of user insights, i.e. patterns, preferences and user input (soft trigger); and</p> <p>d) to identify and suggest energy savings events or actions to promote energy savings while maintaining positive user experience based on occupancy information and machine learning of user insights, i.e. patterns, preferences and user input (service-suggested trigger).</p>	<p>either one of (c) implicit trigger to (d) suggested trigger should be required but not both. Companies should be allowed to have only suggested triggers or only implicit triggers.</p> <p>Please note that the choice of whether a trigger is implicit or suggested is not being defined by this specification. So for example, the crossing of a geo-fence could be coded as a suggested trigger by one implementation (Company A) whereas the same geofence crossing maybe coded as implicit trigger by another company. This would most likely provide good information for advancing a suggested trigger to a soft trigger within a program but the cumulative data from multiple programs may not be comparable.</p> <p>The distinction between suggested vs implicit triggers should perhaps be left to implementor and having all three kinds of triggers should not be mandated by the SHEMS specification.</p>
7	226-228		Technical	D) Allow the end user to access information relevant to their energy consumption. Examples include but are not limited to real-time energy use data by device, package, platform or dwelling; daily, weekly, monthly or annual energy performance, comparison with previous periods or similar dwellings etc.	It is not clear what real-time means in this context. Also, it is not clear if device specific energy consumption information is a mandatory requirement. Make overall daily use data a requirement and other more detailed use data an optional recommended feature.
7	237		Editorial	persistent or transient occupancy	edit to say persistent or transient occupancy sensing
7	244-245		Editorial	Why is the water heater controller being a 'required' platform capability if it is an optional piece of SHEMS	Make this optional
7	246-247		Technical	The Additional Required Platform Capability of Section 4.2 : " B) Ability for users to enter a schedule of relative energy prices, and to manage energy use in the home so as to minimize energy costs according to that schedule " is difficult for users to input in case of tiered structures for utility pricing.	<p>Clarify that this is for (Time of Use) TOU utility rates only.</p> <p>Make this requirement optional.</p> <p>Demand Response and TOU pricing programs are an agreement between Utility company and the home owner to reduce the load. SHEMS is primarily a "energy management" function based on occupancy. While it is desirable for Home Owners to participate in TOU programs to save energy , this should be an optional offering for a SHEMS program.</p>
7	256-259		Technical	At least one of the following plug load control or monitoring offerings; One smart power strip; One or more smart plugs; or Home energy sub metering system.	Please clarify if an energy sub meter is sufficient without a connected smart plug or smart power strip. A submeter can only provide a measurement but will not be able to control plug loads on occupancy change.
8	273-289		Technical	Optional Encouraged Devices: Service providers are strongly encouraged to include additional products subject to the occupancy-based optimization control of the ENERGY STAR certified SHEMS package, in addition to the basic hardware and service requirements. Such products will be highlighted on the ENERGY STAR listing for the certified SHEMS. Examples include: • Connected water heater controller or ENERGY STAR Certified Connected Water Heater. ...	Add ENERGY STAR certified Energy Recovery Ventilators (ERV) and Dehumidifiers in the examples list
9	308-328		Technical	Grid Service Criteria is vague. It proposes that a API or interface document made available. However having such a interface does not mean utility DR programs can utilize it.	<p>Please clarify if a published API will meet the "Grid Service Criteria". If not, make the specification for DR more clear.</p> <p>Demand Response is an agreement between Utility company and the home owner to reduce the load. SHEMS is primarily a "energy management" function based on occupancy. While it is desirable for Home Owners to participate in demand response programs, companies should be able to offer a SHEMS package without being part of any demand response program from a utility.</p>
10	346		Editorial	Add clarity to type.	"...hours each week of each trigger type named..."
12	423-424		Technical	This requirement is unrealistic. How do you take the label off an already installed energy star system in a consumer's home?	Not sure how to do this other than versioning the SHEMS Energy Star Certification to match the specification. How is this done for other Energy Star labeled products? Like refrigerators?

ENERGY STAR SHEMS Draft Method to Determine Field Performance					
2	57		Editorial	There is no "Partner Commitments section of the Energy STAR Program Requirements for SHEMS."	Remove "Partner Commitments section of the"
2	71-72		Technical	As discussed at the SHEMS in-person meeting held at the Consumer Technology Association in Arlington, VA on April 12, 2019. The initial 6 months of SHEMS testing could be called a "Pre-Market Test Group" and shall consist of at least 30 home tests using similar performing devices as used in certified solution.	Add to the end of sentence on line 72 the following "... analysis of six-month period. The initial 6 month period of SHEMS testing may be a Pre-Market Test Group consisting of at least 30 individual homes using similar performing devices in certified solution."