SMARTSTART

SECURE INTEROPERABILITY MADE EASY

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#1 REASON FOR RETURNS

Consumers #1 reason for return was: too hard to install.

From the Z-Wave Alliance/PlumChoice consumer survey:

According to this year's research, NFFRs remained the same year-over-year, with 13% of consumers reporting that they returned a connected or smart device in the past two years because they had difficulty installing or using it. Overall, 92% of consumers said that they're more loyal to brands that help them "purchase, install, use, connect, troubleshoot, secure and/or optimize the connected and smart devices or software" their connected and smart devices.

INSTALLATION MADE EASY

SmartStart pre-configuration enables:

- **Dramatic reduction in installation time** only electrical/physical mounting needed
- **Out-of-the-box success** with starter kits.
- **Uniform set-up across brands, applications and device types**
- **Zero installation errors** #1 source of user error removed
- **Easy support** eg. remote backend control

SMARTSTART GOAL

SmartStart pre-configuration promises to:

- **Remove installation difficulty** for mainstream users
- Give service providers **tools to increase productivity** and ROI, decrease costs
- Encourage the **shift from single device to whole home automation**
- Support end users with a **consistent quality of install, every time, every device**

SMARTSTART VIDEO

Link to SmartStart video

https://www.silabs.com/products/wireless/mesh-networking/z-wave/benefits/smartstart

DIY GAME CHANGER

SmartStart = Acceleration in retail

- **Out-of-the-box success** with starter kits.
- **No need to read manual** uniform setup process across devices in the ecosystem
- **Installation time reduced** only electrical/physical mounting needed
- **Zero installation errors** #1 source of user error removed
- **Easy support** with remote backend control

User error is driving attrition in the smart home.
More than 1/3 of smart home device owners experience problems…
Parks Associates

SERVICE PROVIDER CASE

- **Lower installation cost**
  - **Reduce installation time** Configuration of scenes, rules and scripts can be done at distribution center, or by installer ahead of time

- **Reduce Support Costs**
  - Reduce installation errors
  - Relation between gateway and CRM/ERP system at service provider backend
  - Traceable with unique device specific keys enabling easy management of install base
  - INIF guide exclusion/inclusion for devices already included → reduce errors with refurbished/reused devices.

DEVICES WITHOUT BUTTON/INTERFACE

- **Products without button/interfaces**
  Can now be installed without physical interaction.
  - Sensors, Bulbs, Etc.
  - Products in hard to reach places, eg. roof windows

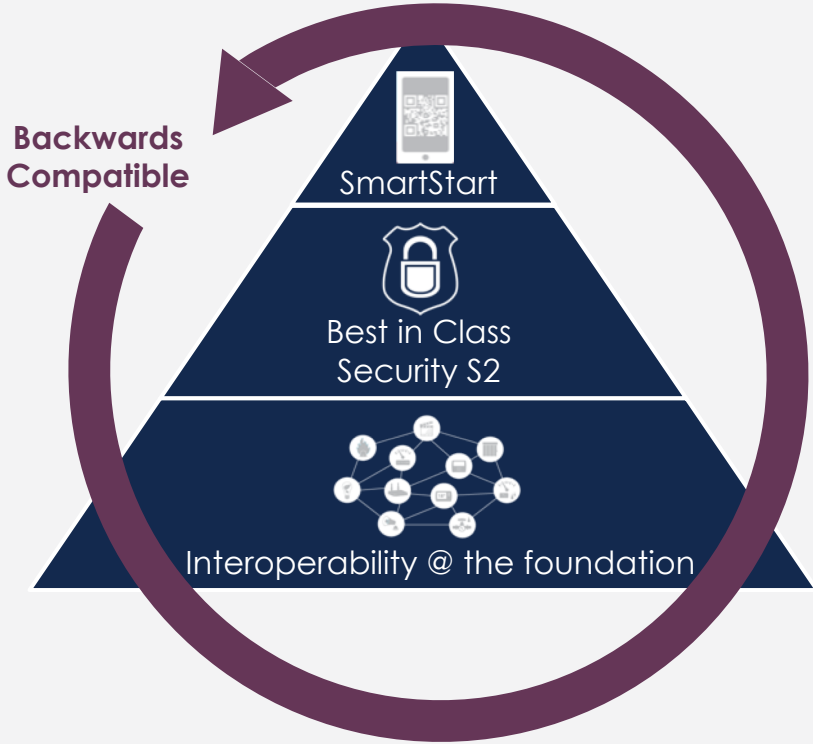
- **Easy identification of installed devices**

BUILD ON THE LEADING SMARTHOME TECHNOLOGY

SmartStart is possible due to Z-Wave's:

- **Best-in-class security S2**
  Un-hackable and power optimized end-to-end cross ecosystem security

- **Interoperability**
  All new Z-Wave devices are SmartStart certified and works with the worlds largest ecosystem of smart home products



BUILD ON S2 SECURITY
LOW POWER SECURE COMMUNICATION

Best-in-class end-to-end security from end device to cloud and back

- **Protection against**
  - **Hacks** and man-in-the-middle-attacks
  - **Inclusion of rogue nodes** in network
  - **Deciphering** of the network key
  - Sniff and replay of commands and **delay attacks**

- **due to**
  - **Out-of-band inclusion** with either QR or PIN codes
  - Elliptic Curve Diffie-Hellman **key exchange** mechanism
  - Strong **AES 128** encryption
  - Unique/**nonce** transmissions
  - **Jamming detection** with periodical heartbeats

SmartStart + S2

- **Energy efficient security & low latency**
  - 50% less energy than systems based on challenge-response communication due to single-frame mode

BACKWARDS COMPATIBLE

- SmartStart supports past configuration processes on both end-device and gateway, leaving no device behind

- Un-encrypted devices can be part of the network and coexcist with newer security devices.

HOW IT WORKS

The provisioning list - enabling the wireless setup to be prepared in the manufacturing/distribution phase

Pre-configure adding devices to gateway provisioning list before end user/installer receives product

New gateway

Provisioning list updated through backend when gateway is powered ON and online first time

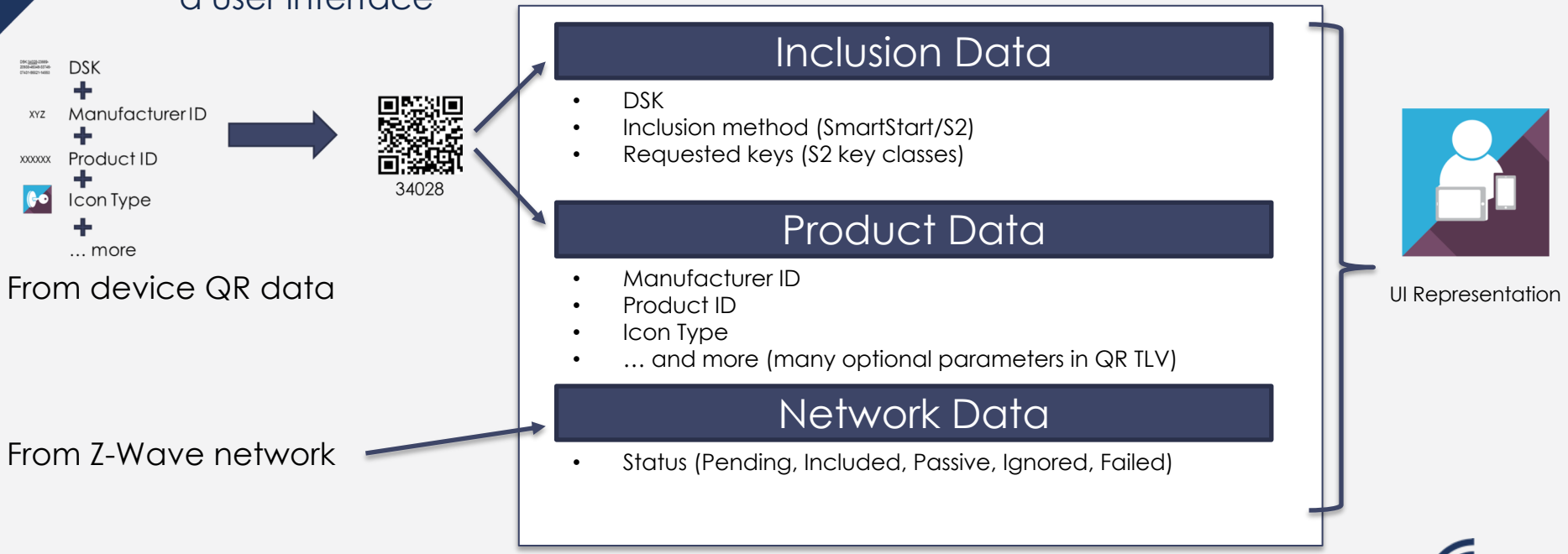
Devices on gateway provisioning list gets included automatically, when powered ON

SmartStart Gateway already installed

Easy add new devices by scanning QR code with smartphone - gets added to provisioning list through cloud/remote backend

PROVISIONING LIST

- Provisioning list information in ZIPGW stores QR data along with current state of each device in the network
- ZIPGW provides API's for storing devices and pulling out information for showing in a user interface



HOW TO DEVELOP SMARTSTART

End-devices

- Simply develop on 6.8x embedded SDK
  - Minimum time to market utilizing Z-Wave application framework
  - If product based already on S2, no new command classes needed.

Gateway

- Simply develop on *latest* controller SDK
  - Utilize Z-Wave-to-IP gateway (Z/IP GW) and Z-Ware middleware building blocks.
    Includes provisioning list capabilities:
    - Include device on provisioning list
    - manage devices on list
    - add new devices
    - classic inclusion

- Enable UI to show provisioning list and add via QR code w. smartphone camera or typing in device specific key.

- Remote entering of device specific key can also be included through backend

QR FORMAT

- Allows gateways to provide a good user experience prior to inclusion
- Can be used for both SmartStart and Non-SmartStart products

DSK:34028-23669-20938-46346-33746-07431-56821-14553 DSK

+

XYZ Manufacturer ID

+

XXXXXX Product ID

+

Icon Type

+

… more

34028

QR PRINT OPTIONS

On product
MANDATORY
5 or 40 digits

Inside the box
RECOMMENTED - but
MANDATORY if product
advertises only 5 digits

Outside of box
RECOMMENDED

PRODUCT PRINT OPTIONS

	S2_Unauthenticated	S2_Authenticated/S2_Access_Control	SmartStart_Unauthenticated	SmartStart_Authenticated/S2_Access_Control
On-Product DSK	N/A	Mandatory	N/A	Mandatory
On-Product QR code	N/A	Recommended	N/A	Mandatory
In-Box Leaflet	N/A	Recommended(1)	N/A	Conditional
Outside box label	N/A	Recommended(1)	N/A	Recommended

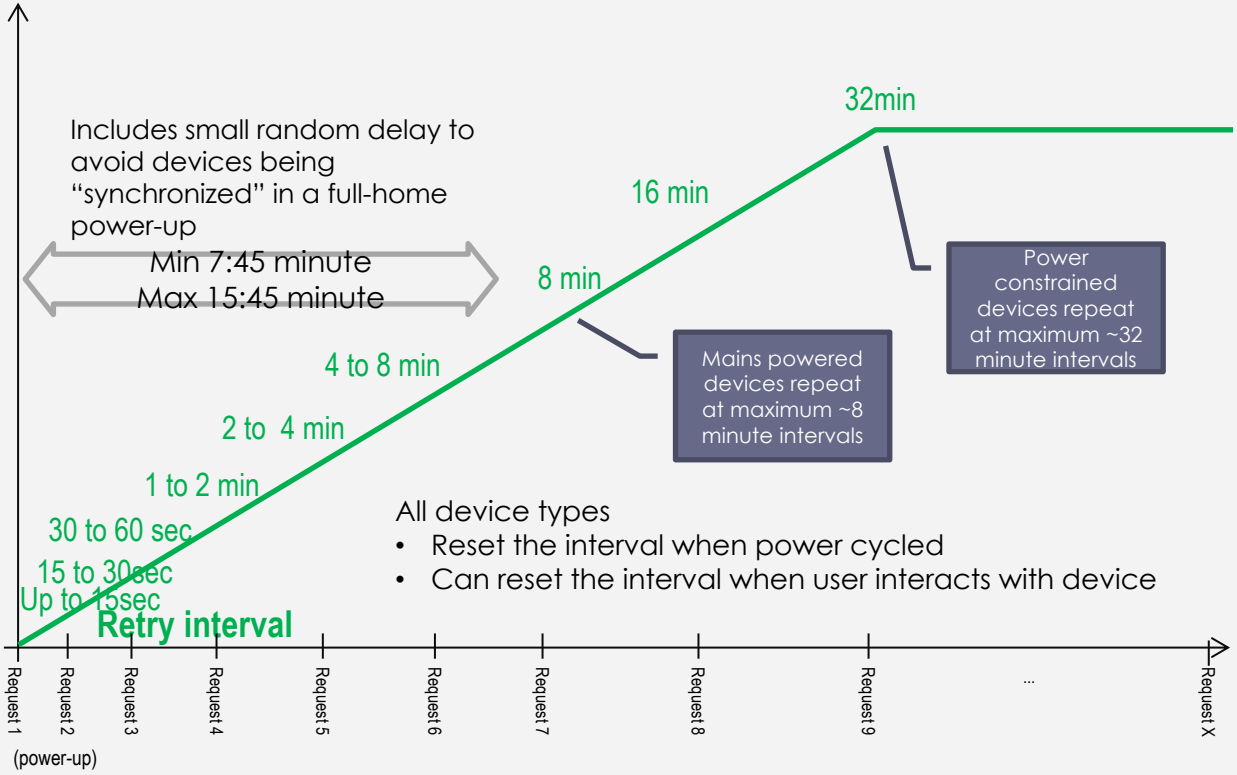
Not supported

1. Leaflet and box label for Non-SmartStart products still relevant for controllers that can instruct user to activate inclusion

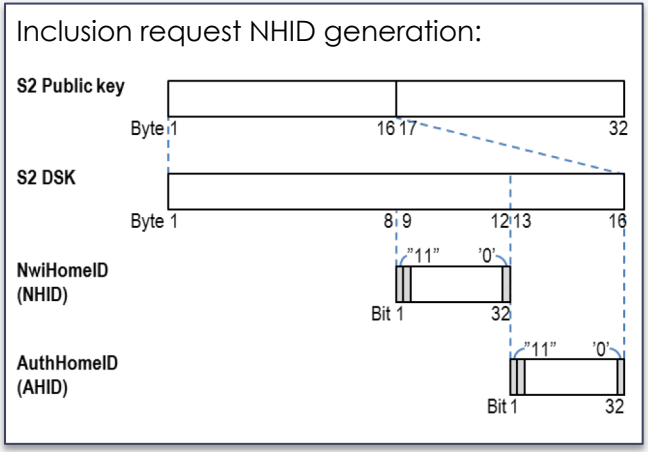
INCLUSION TIMING

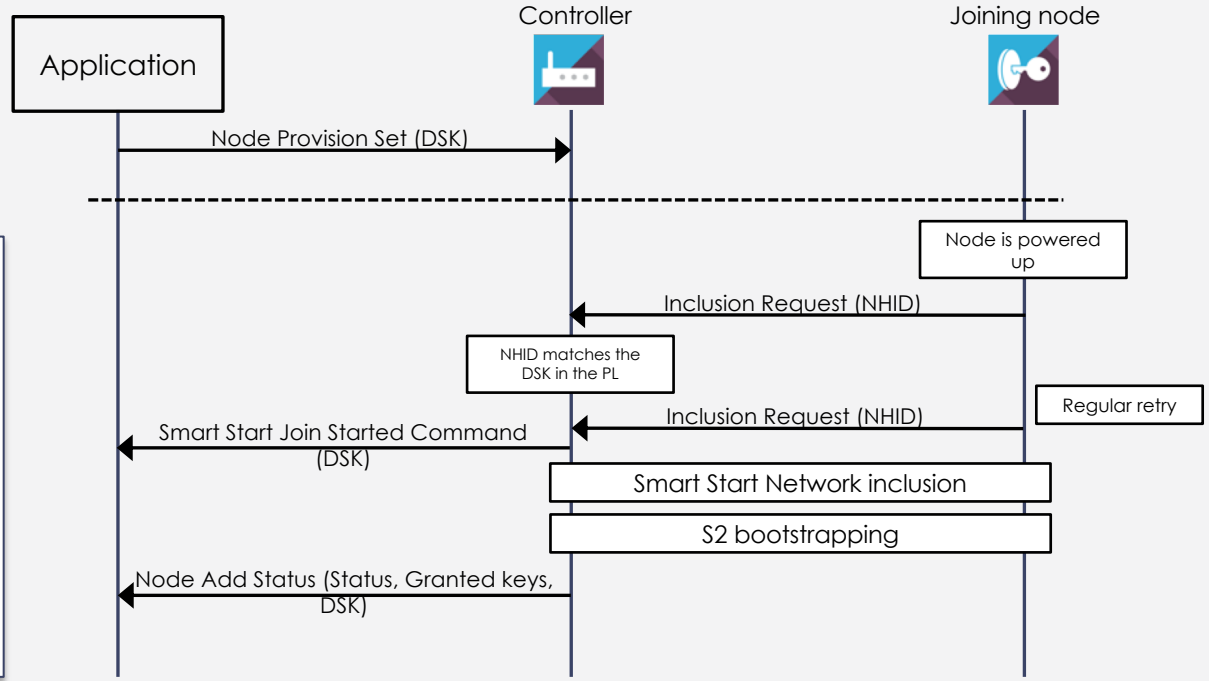
SmartStart inclusion use two inclusion requests

This allows battery devices to sleep while the gateway matches the request against the provisioning list



NODE ADD FRAME FLOW





PRODUCTION W. SMART START

What do you need to do as a:

- **End-device manufacturer:**
  - Generate and manage device specific keys
  - Establish capability of printing QR codes
    - If small space avail. the minimum req. is that DSK is avail. on package. QR/DSK on leaflet or on box and on product.
- **Distribution center:**
  - Logistical system for scanning and managing device specific keys on end-devices
- **Service provider/gateway manufacturer**:
  - Backend system for creating and updating gateway provisioning list
  - Smartphone app and UI capable of photographing QR codes or web UI capable receiving user-entered device specific keys.

THANK YOU

SMARTSTART DEMO