



PROPOSAL FOR A SMART DOOR LOCKING DEVICE STANDARD



“SECURITY OF RESIDENTIAL SMART DOOR LOCKING DEVICES”

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ARGE Executive

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Smart lock standard - Agenda

- **Background to ARGE**
- What is a “smart lock”?
- Market need for a smart lock standard
- Current European standards landscape
- ARGE standard outline
- ARGE standard proposal
- Next steps

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ARGE ARGE background

- **ARGE – The European Federation of Associations of Locks and Builders Hardware Manufacturers** is a pan-European trade association which represents building hardware manufacturers. (www.arge.org)
- **ARGE has 12 members** (which are National Trade Associations), covering more than 300 individual companies in Europe.

▪ Austria (FMTI – BGSB)	▪ Netherlands (VHS)
▪ Czech Republic (MEZA)	▪ Poland (ZPOB)
▪ Finland (Finnish National Committee for ARGE)	▪ Spain (AFACE)
▪ France (UNIQ)	▪ Sweden (SEM Group)
▪ Germany (FVSB)	▪ Switzerland (VSSB)
▪ Italy (ASSOFERMA)	▪ UK (DHF)

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ARGE ARGE background (cont.)

- Established in 1956, **ARGE has its work focus on:**
 - **European standardisation** (CEN/CENELEC)
 - **EU legislation** (Regulations, Directives)
 - **Providing service to its members**, e.g. by offering industry representative Environmental Product Declarations (EPD)
- **EU institutions and CEN**, as well as other stakeholders (e.g. the European Association of Window and Door Manufacturers) recognise ARGE as the representative of the European building hardware industry.
- ARGE is in regular contact and exchange with the **North American Builders Hardware Manufacturers Association (BHMA)**.

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Smart door locking device - definition

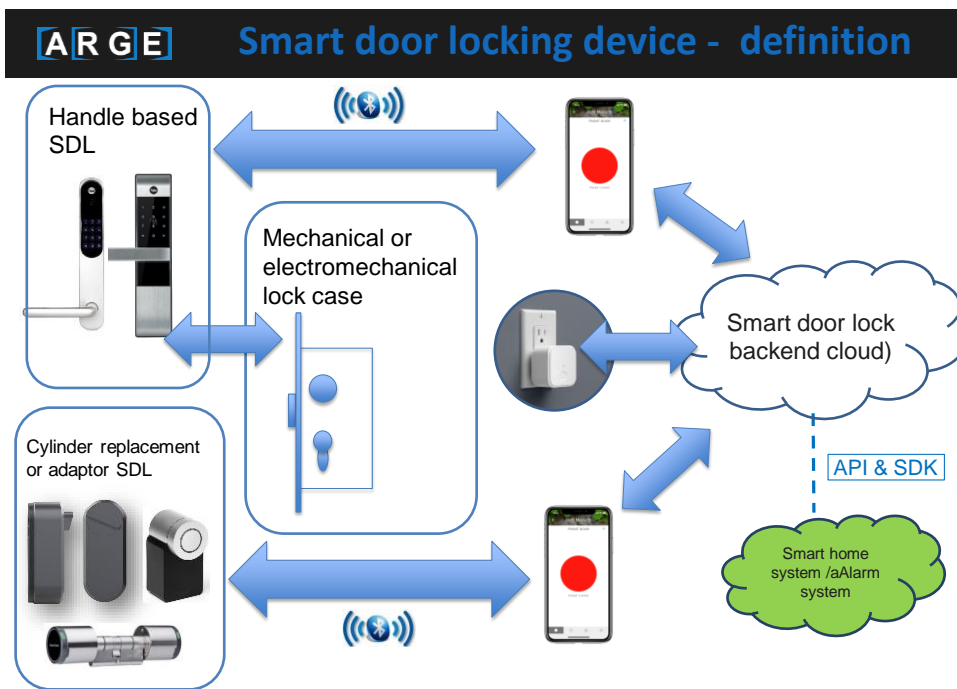
From Wikipedia:

A **smart lock** is an electromechanical **lock** which is designed to perform **locking** and unlocking operations on a **door** when it receives such instructions from an authorized device using a wireless protocol and a cryptographic key to execute the authorization process. ... **Smart locks** can be considered part of a **smart** home.

[Smart lock - Wikipedia](https://en.wikipedia.org/wiki/Smart_lock)

[https://en.wikipedia.org › wiki › Smart_lock](https://en.wikipedia.org/wiki/Smart_lock)

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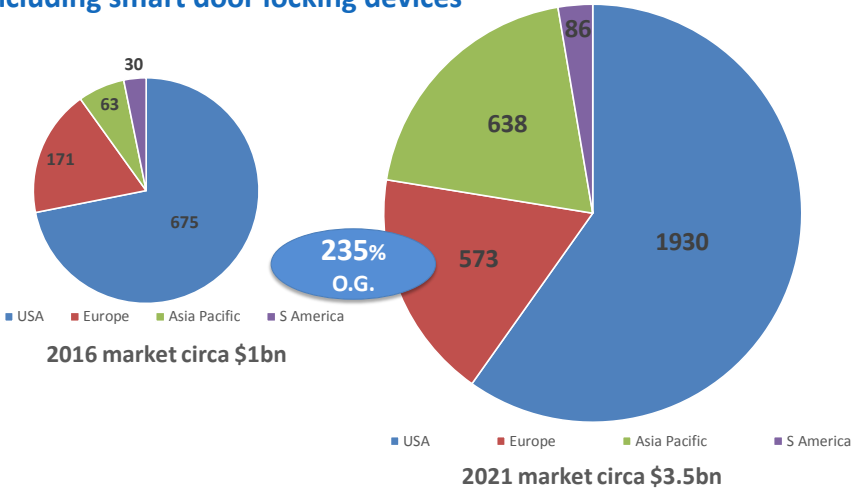
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ARGE

Growing market size

Cloud security spending
Including smart door locking devices




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ARGE

Growing market entrants


amazon




Sponsored :
Nuki Smart Lock 2.0 for UK oval cylinder smart door lock with door sensor | keyless access via iPhone & Android | Bluetooth S - smart home...
★★★★☆ (2) - 7
£199⁰⁰
Or £38.80/month for 5 months
prime FREE delivery by Tomorrow, Oct 10




Sponsored :
Zkteco Smart Door Lock, Fingerprint Lock- Bluetooth, Digital Touchscreen, [Remote Control] [Works with App] Keyless Automatic Locking for Home...
★★★★★ (2) - 1
£149⁹⁹
prime FREE delivery by Tomorrow, Oct 10
Only 7 left in stock.




Sponsored :
Zkteco Smart Door Lock- Bluetooth Fingerprint Locks, Remote Control + Spcs RFID Cards Digital Keyless Lock for Home/UA008 Left Handed...
★★★★☆ (2) - 8
£225⁰⁰
FREE Delivery by Sunday, Oct 18 for Prime members



Sponsored :
UltraLog ULS Fingerprint and Touchscreen Keyless Smart Lever Door Lock (Satin Nickel)
★★★★☆ (2) - 12
£122⁰⁰
prime FREE delivery by Tomorrow, Oct 10



Yale SD-L1000-CH Conexis L1 Smart Lock PVCu and Composite Doors, British Standard Approved, iOS and Android Compatible, Polished Chrome
★★★★★ (2) - 344
£148⁹⁹ £268.99
prime FREE delivery by Tomorrow, Oct 10



Yale YD-01-CON-NOMOD-CH Keyless Connected Ready Smart Door Lock, Chrome
★★★★★ (2) - 99
£79⁹⁹ £106.99
prime FREE delivery by Tomorrow, Oct 10
More buying choices
£74.48 (14 used & new offers)



PINWORLD Touchscreen Fingerprint Smart Lock Q202 Electronic Keyless Entry Door Mortise Lock with RFID Cards +Tuya App Remotely and...
★★★★★ (2) - 27
£139⁹⁹
prime FREE delivery by Tomorrow, Oct 10

SCREWFIX ring



Codelocks C1.451553 Electronic Digital Lock (set of 1)
★★★★★ (2) - 32
• Works with iOS & Android
• Compatible with Mifare Smart Cards
• Suitable for Timber Doors
CONTROL

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£299.99

Click & Collect

Deliver



Smart Bluetooth Doorlock



AVIA

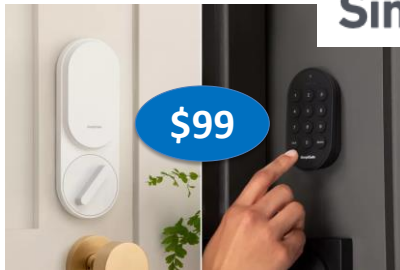


ULTION SMART



WAVE

ARGE Market drivers



SimpliSafe

Launched in the U.S.

Coming to Europe.....



Kubu

Windows and doors

Zero cost to OEM's

Low cost

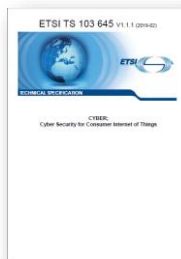
Easy to install

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ARGE Growing Government concerns



Oct 2018
Code of
Practice for IoT
consumer
devices



Feb 2019
Global Tech
Specification
Security of IoT
consumer
devices



Legislate for
cyber security
labelling 2020

- Unique password
- Vulnerability policy
- End of life policy for security updates

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ARGE No recognised smart lock standard

- No EN Standard exists
- 3 national existing quality marks (UK, SE, FR)
- Standard scope: to encompass mechanical and electromechanical locking performance combined with connectivity with credentials. Scope should cover:
 - Application across Europe
 - Residential end user markets
- Standard should provide a platform/basis for local quality marks
- It is also important to communicate to market about the connectivity security level (cyber security).



Smart lock
market being
restricted

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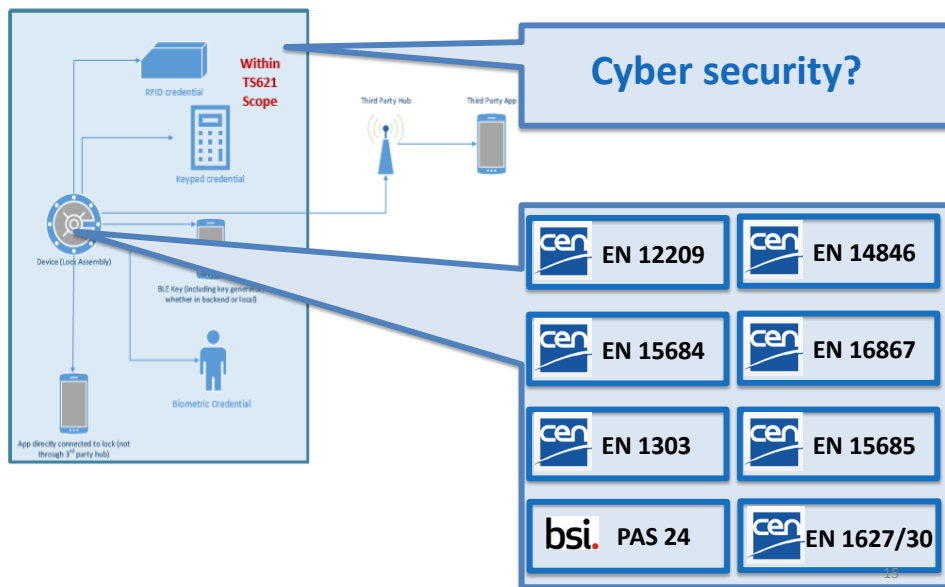
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Performance standards “gap”



Globals taking the initiative

New working group



Project Connected
Home over IP

Wider membership

IKEA

Legrand

SmartThings

Schneider Electric

Philips/Hue

Silicon Labs

Somfy

Texas Instruments

Wulian

...contributing to the
project

Objectives

- Increase compatibility between smart home devices
- Security focus
- Simplify development for manufacturers
- Create a new, unified connectivity protocol
- **Device certification** through IP-based networking technologies

New royalty-free
connectivity standard

Initial draft
late 2020



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Objectives of the standard

- To be a **European normative document** for all stakeholders
- To be a **trusted and sustainable platform** for assessing security of smart door locking devices (mechanical, electro-mechanical, credential related and cyber security)
- To **build consumer confidence** in smart door locking devices
- To be capable of **being adopted** by insurance companies, police and other authorities and organisations
- To contribute to the **prevention of burglary and cybercrime** attacks on smart homes
- To enable secure granting of home access to service providers

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Standard scope

- Security of **residential smart door locking** devices (both, single household and multi-residential)
 - Mechanical security, electro-mechanical security and credential related security (reference to existing EN standards)
 - Smart door lock device specific cyber security, e.g. software and firmware lifecycle management, vulnerability reporting (embracing ETSI Technical Specifications, e.g. TS 103 645 and TS 103 425)
- IoT smart door locking device which is **connected** – either permanently or temporarily – **to a network**, as e.g. Internet, home network, etc
- **Standardisation** document to be established **under an ESO** (European Standardisation Organisation)

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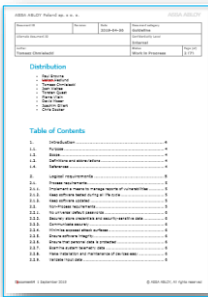
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- New ways to by-pass a connected device arise everyday
- It is very difficult to build a standard like our typical EN standards, including requirements, test methods, and a classification which could be consistent across Europe.
- The standard shouldn't help the hackers!
- It is impossible to 100% guarantee the smart lock is secure
- Local quality mark owners have their own penetration test, which is a secret black box.
- The different credentials in the market can use various communication protocols.

Need cyber
security expertise
and credibility

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- Core team established: product managers, IT security expert, anti-burglary engineers, standards specialists
- Objective and general principles defined
- First standard project drafted
- Liaison initiated with external organisations which could contribute: ETSI, ENISA, Riscure.



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Smart lock standard progress

- Based on the ETSI guide TS 103 645 V1.1.1 (2019-02) « Cyber Security for Consumer Internet of Things »
- 2 parts:
 - Requirements and tests for the smart lock:
 - passwords, data storage, secure communication, software integrity, personal data protection, ...
 - Process to maintain and update efficiently security performance:
 - Reports of vulnerabilities, software testing and updates during all life cycle, ...

.....reflect ETSI and DCMS guidelines

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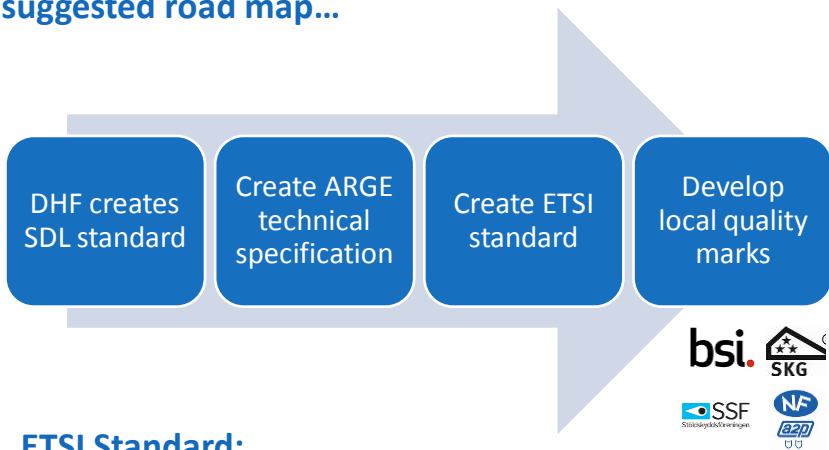
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ARGE Performance standard development

A suggested road map...



ETSI Standard:

“Security Of Residential Smart Door Locking Devices”

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