A decorative graphic on the left side of the slide consisting of two overlapping parallelograms. The front one is blue and the back one is a light green. They are positioned diagonally, with the blue one partially covering the green one.

How to Inform Consumers of their Devices' Privacy


A Survey of IoT Privacy and Security Labelling

Presentation by Alec Blanton and Eddie DeMars



Problem Space

- Consumers want devices that protect their privacy
- Consumers want this, but either do not want to read long Terms of Service or technical manifests, or may not have easy access to them
- Even if a Consumer reads these, they may not understand technical terms (e.g., SHA-1 vs SHA-2)









Security and Privacy Labels

- Show some level of information of the security and/or privacy about the specific device
- Allow consumers to quickly and easily compare two devices
- Range from a simple optional badge to a government mandated system with in-depth information

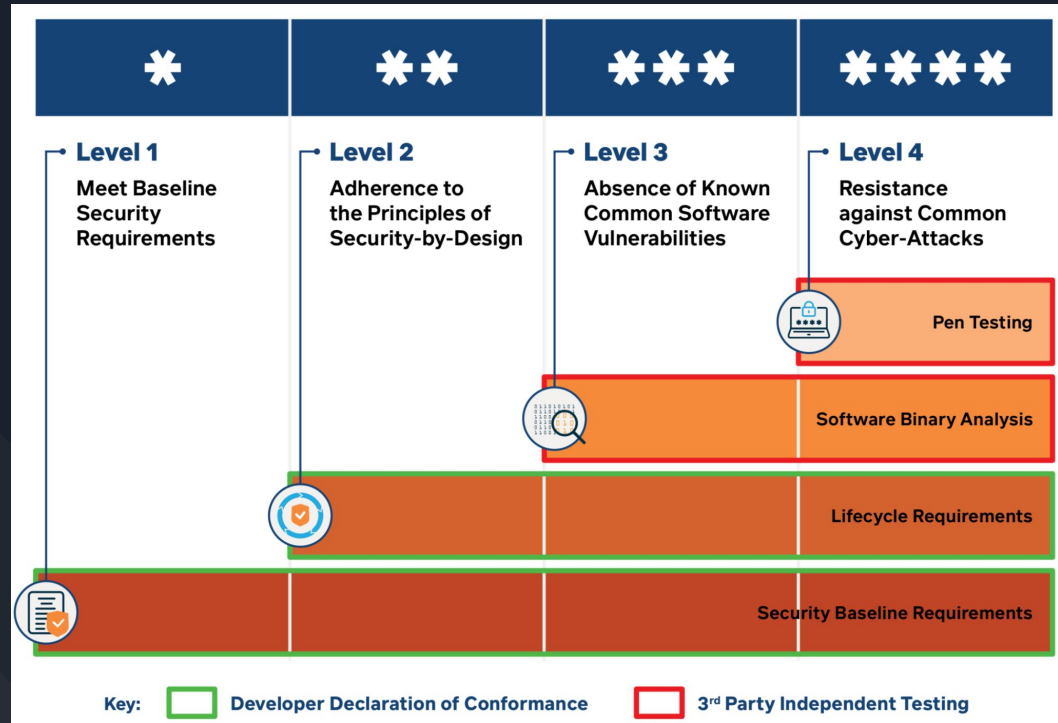
BSI Kitemark for Internet of Things devices¹



A Nutrition Label for Security²

Security & Privacy Overview					
Smart Device Co.					
Smart Video Doorbell NS200 Firmware version: 2.5.1 - updated on: 11/12/2020 The device was manufactured in: China					
Security Mechanisms	Security updates	Automatic - Available until at least 1/1/2022			
	Access control	Password - Factory default - User changeable, Multi-factor authentication, Multiple user accounts are allowed			
Data Practices	Sensor data collection	 Visual	 Audio	 Physiological	 Location
	Sensor type	Camera	Microphone		
	Purpose	Providing device functions	Providing device functions, Research		
	Data stored on device	Identified	No device storage		
	Data stored on cloud	Identified	Identified - Option to delete		
	Shared with	Manufacturer, Government	Manufacturer		
	Sold to	Not disclosed	Not sold		
	Other collected data	Motion, Account info, Payment info, Contact info, Device setup info, Device tech info, Device usage info			
Privacy policy	www.NS200.smartdeviceco.com/policy				
More Information	Detailed Security & Privacy Label: www.iotsecurityprivacy.org/featured/external/manufacturerv/SmartVideoDoorbell				
					
CMU IoT Security and Privacy Label CISPL 1.0 iotsecurityprivacy.org 					

Singaporean Rating Scale⁶





Simple Checklists Do Not Work⁴

- Often security best practices are viewed as a checklist
- Allows for an easy way to see how secure a system may be
- Checklists do not show the whole story
- Elements may satisfy requirements on a checklist but not actually contribute to security or privacy



Our Suggestions

- Government approved and mandated
- Requirements must be specific and be implemented to meaningfully impact privacy and security
- Simple rating scale on packaging with basic information
- QR code or url to more in-depth information (perhaps even including SBoM)



Conclusion

- Security and Privacy Labels are a critical way to ensure consumers can trust their products
- Many schema currently exist, most are optional
- More schema are on the way
- US Government set to publish security guidelines

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