

Supplementary material A to the article “Environmental saving potentials of a smart home system from a life cycle perspective: How green is the smart home?”

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Supplementary material A contains information on the composition of the average smart home system (SHS) in Germany based on the survey.

Table A1 Devices (coverage and number) of the average SHS based on the online survey and related technical data (weight, load)

Component	Coverage [.]	No. of devices	Weight/ device [kg]	Load [W]			Reference
				WiFi ¹	other RF ¹	Stand by ²	
Radiator thermostat	1	3.97	0.14	1.77	1.77	1	Bosch: Thermostat AA
Humidity sensor	0.35	2.4	0.045	1.2	0.001	0.6	ABUS: Z-Wave Wassermelder
Door/window sensor	0.34	4.16	0.04	1.2	0.001	0.6	Bosch: Contact AA
Motion sensor	0.43	2.52	0.098	1.2	0.001	0.6	Bosch: Motion Detector
(Security) Camera	0.37	1.92	0.45	2	2	2 ³	Bosch: 360° Indoor Camera
Smoke detector	0.46	3.64	0.165	1.2	0.001	0.6	Bosch: Smoke Detector
Wireless intercom system	0.33	1.18	0.237	2	2	2 ³	Ring: Video Doorbell 2
Smart plug	0.49	2.84	0.155	1.2	0.001	0.6	Bosch: Smart Plug AA
Switch	0.30	1.63	0.063	1.2	0.001	0.6	Bosch: Universal Switch Flex
Control unit	0.73	1.1	0.19	6	6	/ ⁴	Bosch: Smart Home Controller

¹ according to IEA 4E (2019, p. 53)

² according to Friedli et al. (2016, p. 5)

³ no differences assumed, as data is inconsistent

⁴ 24h/day Network Active

Table A2 Smart home infrastructure in the average smart home according to the sample

Communication network	Coverage [%]	Control and management devices	Coverage [%]
WiFi	0.79	Mobile device (Smartphone/Tablet)	0.8
Other RF standards	0.35	Central HUB/ Gateway	0.38
Bluetooth	0.24	Computer/Laptop	0.32
Wired	0.14	Voice command device	0.25
Don't know	0.04	Don't know	0.01

Table A3 Average room temperature of smart home group and control group according to the sample in line with Kleinhüchelkotten (2016)

<i>Heating behaviour</i>	Smart home with smart heating system	Control group
		N = 375
Average room temperature M	19.43 °C	19.45 °C

References

Friedli M, Kaufmann L, Paganini F, Kyburz R (2016) Energy Efficiency of the Internet of Things. Technology and Energy Assessment Report prepared for IEA 4E EDNA. iHomeLab, Luzern

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