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Smart Home Network Security Landscape and Solutions

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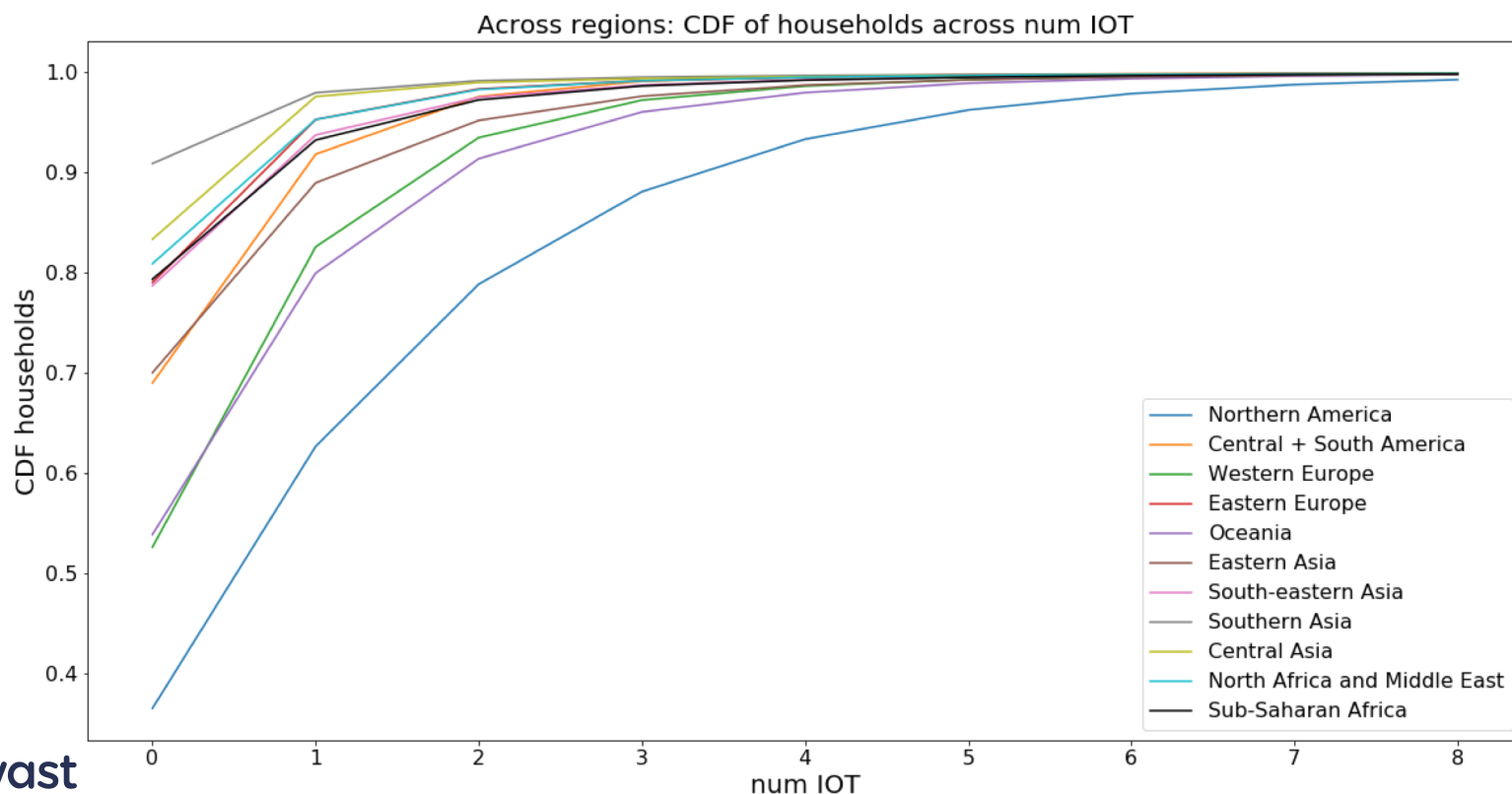
5G & The Vision of Smart Home Security

- 5G is the big enabler for Smart Home
 - Consumer IoT market >40% of IoT value chain
- **IoT Manufacturers are underspending in security**
 - Margins for consumer electronics as low as 6-9 %
 - Opens market for consumer IoT security
- Home networks need security upgrade
 - Traditional Antivirus & firewall are not enough
 - **Smart Home/IoT security is network-centric**





Distribution of IoT Devices Across Regions



Biggest IoT install base

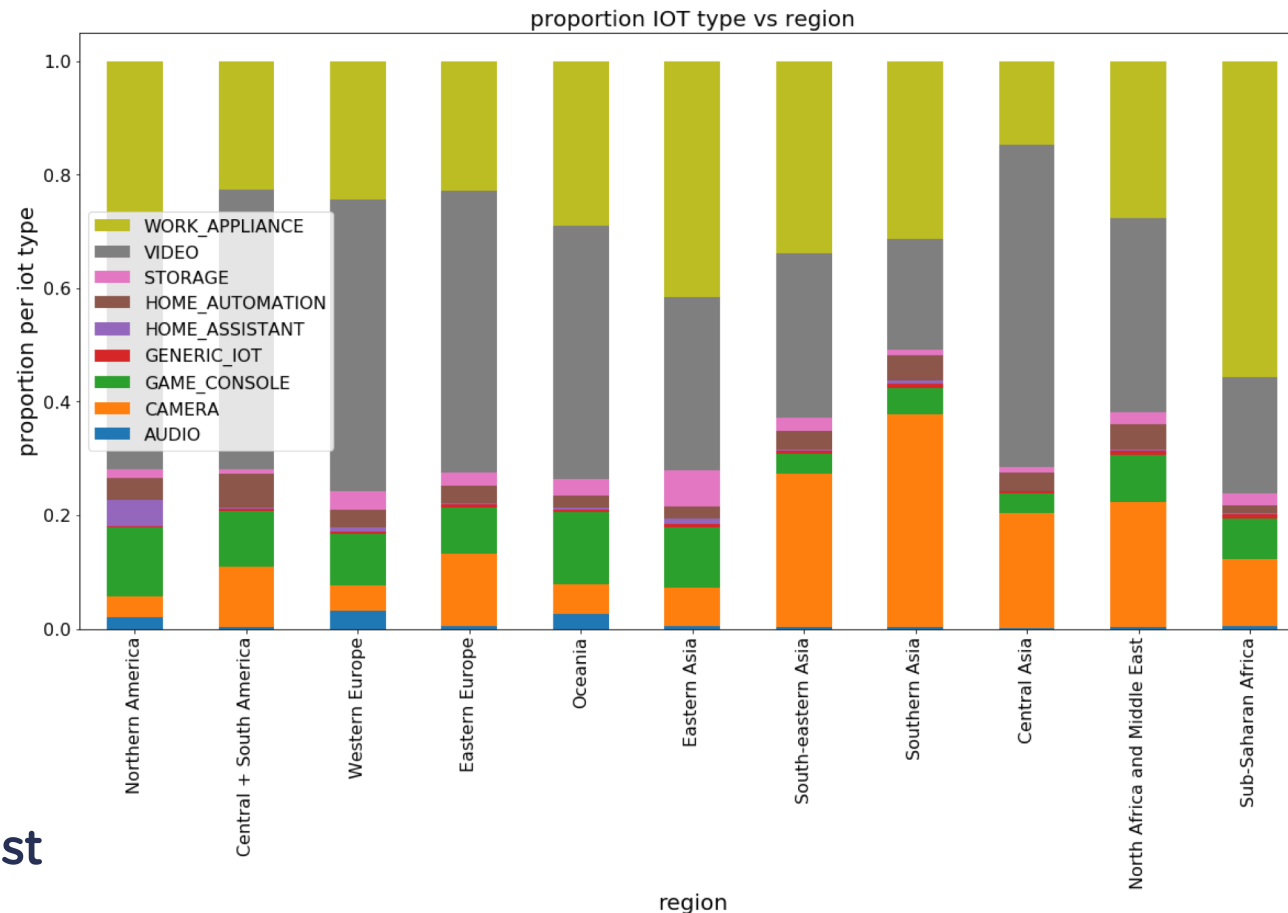
- N America
- Oceania
- W Europe

Lower number of IoT devices:

- S Asia
- Central Asia
- N Africa / Middle East
- E Europe.



IoT Device Types Across Regions



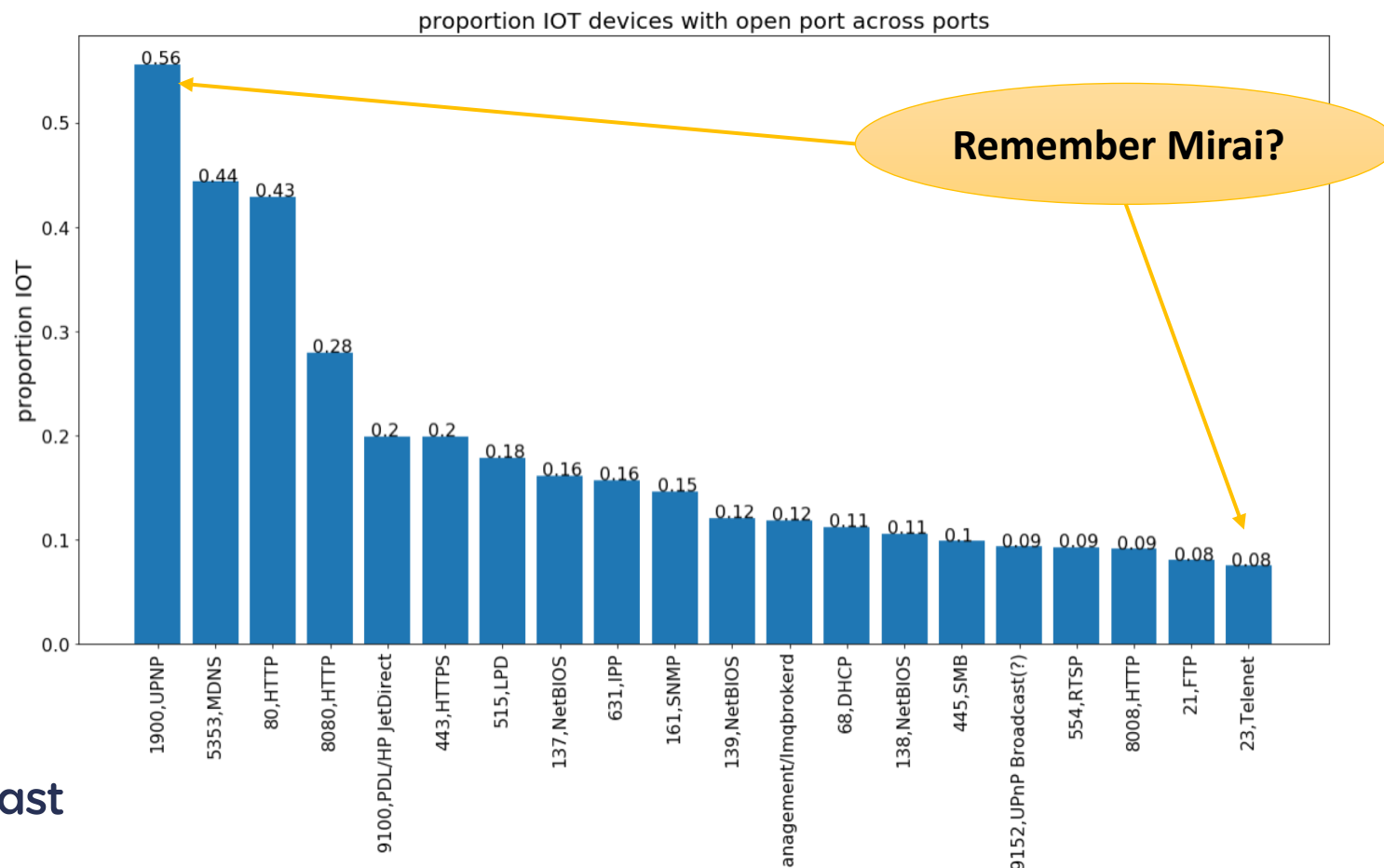
Highlights:

- Audio/Speaker devices prevalent in N. America, W Europe, Oceania
- Cameras got a high proportion in SE Asia, S Asia, N Africa / Middle East
- Home automation shows a solid penetration throughout all regions

<https://blog.avast.com/sennheiser-headsets-open-door-to-hackers>



Open Ports Across IoT Devices



Ranked list of ports

1. 1900, UPnP
2. 533, mDNS
3. 80, HTTP
4. 9100, JetDirect
5. 443, HTTPS
6. 515, LPD
7. 137, NetBIOS
8. 631, IPP

<https://blog.avast.com/hacker-creates-seven-new-variants-of-the-mirai-botnet>

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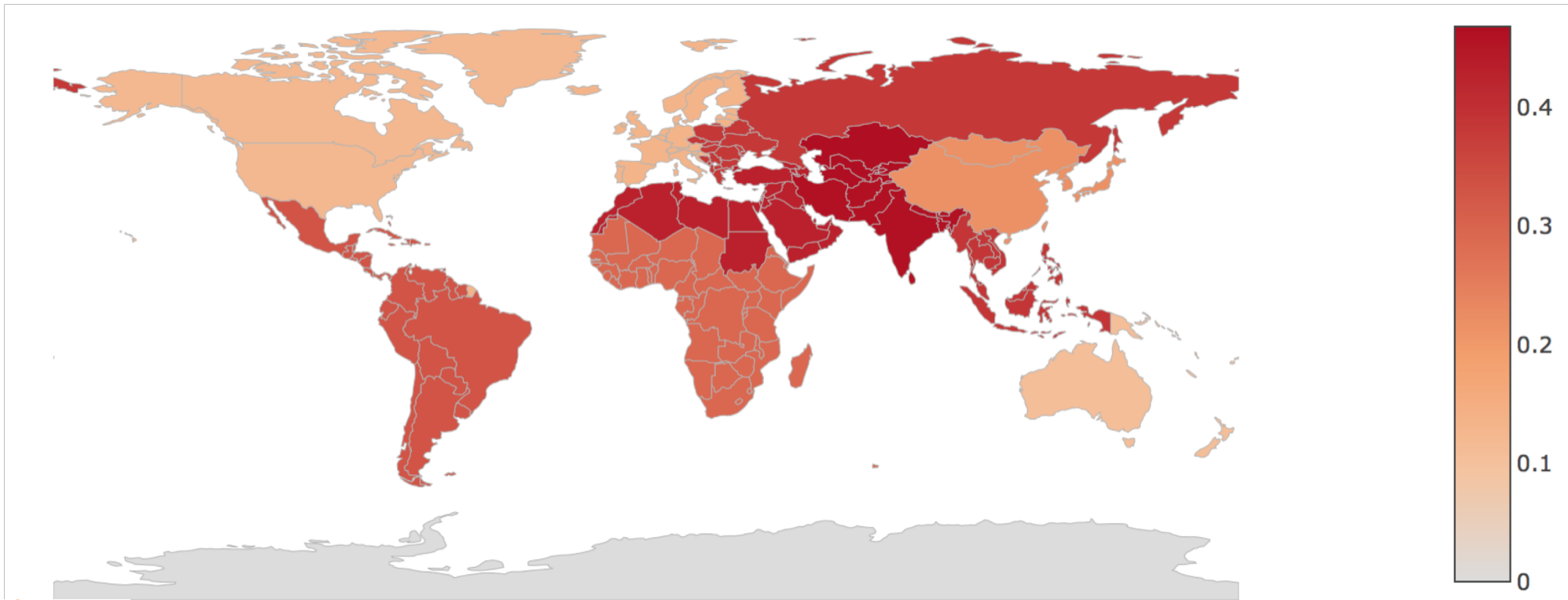


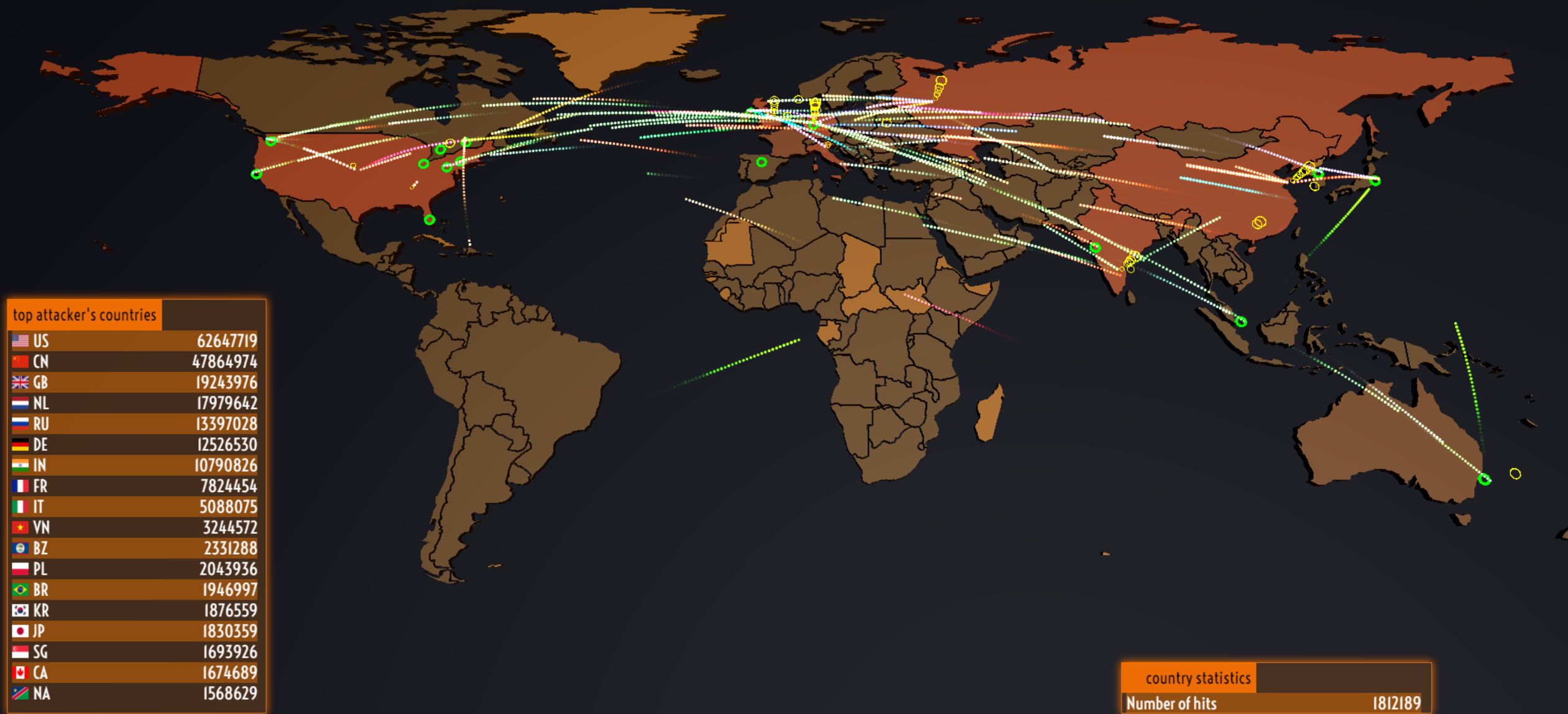
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Geographic distribution of vulnerable households







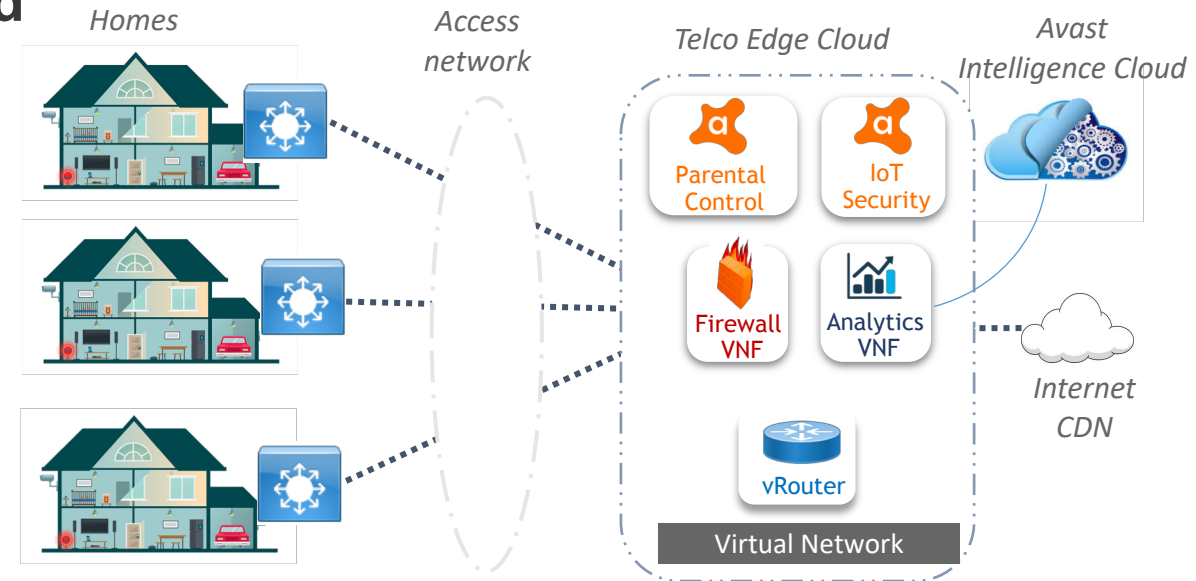
Edge cloud offers potential to secure IoT devices

- **Consumer security services in the edge cloud**

- Parental Control
- IoT Security

- **Build a closed-loop security system:**

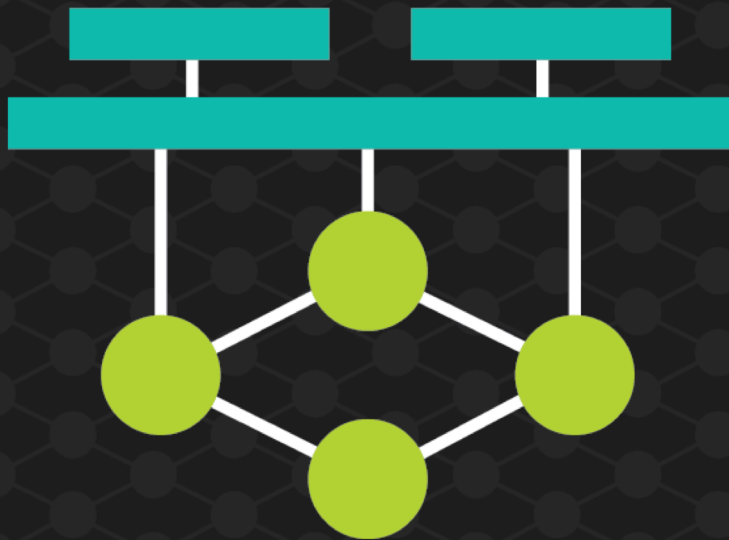
- Sense via modern network telemetry
- Control using Machine Learning & Big Data
- Act by interfacing with SDN/NFV platform



- **Secure the Smart Home on the Network**

<https://blog.avast.com/carriers-need-iot-protection>

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