

Tizen, Security and The Internet of Things

Casey Schaufler

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- Security Dinosaur
- Smack Linux Security Module
- Manager Tizen and Linux Kernel Security



Tizen

- Linux based operating system
- Project of the Linux Foundation
- Lead by Samsung and Intel



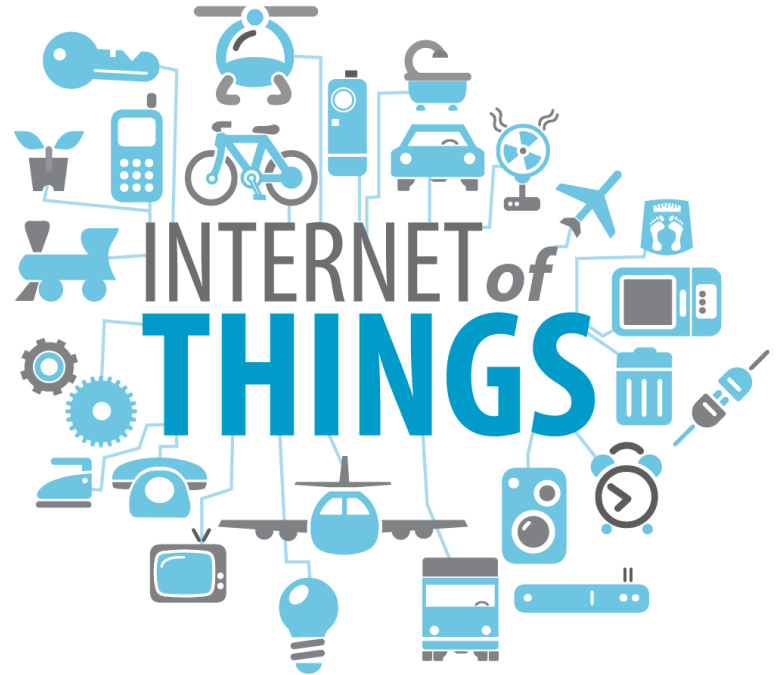
Security

- Does what it's supposed to
- Doesn't do anything else
- Know the difference



Internet of Things

- Collection of computing devices
- Heterogeneous
- Autonomous



Things

- Just want to perform their function
- Not primarily computers

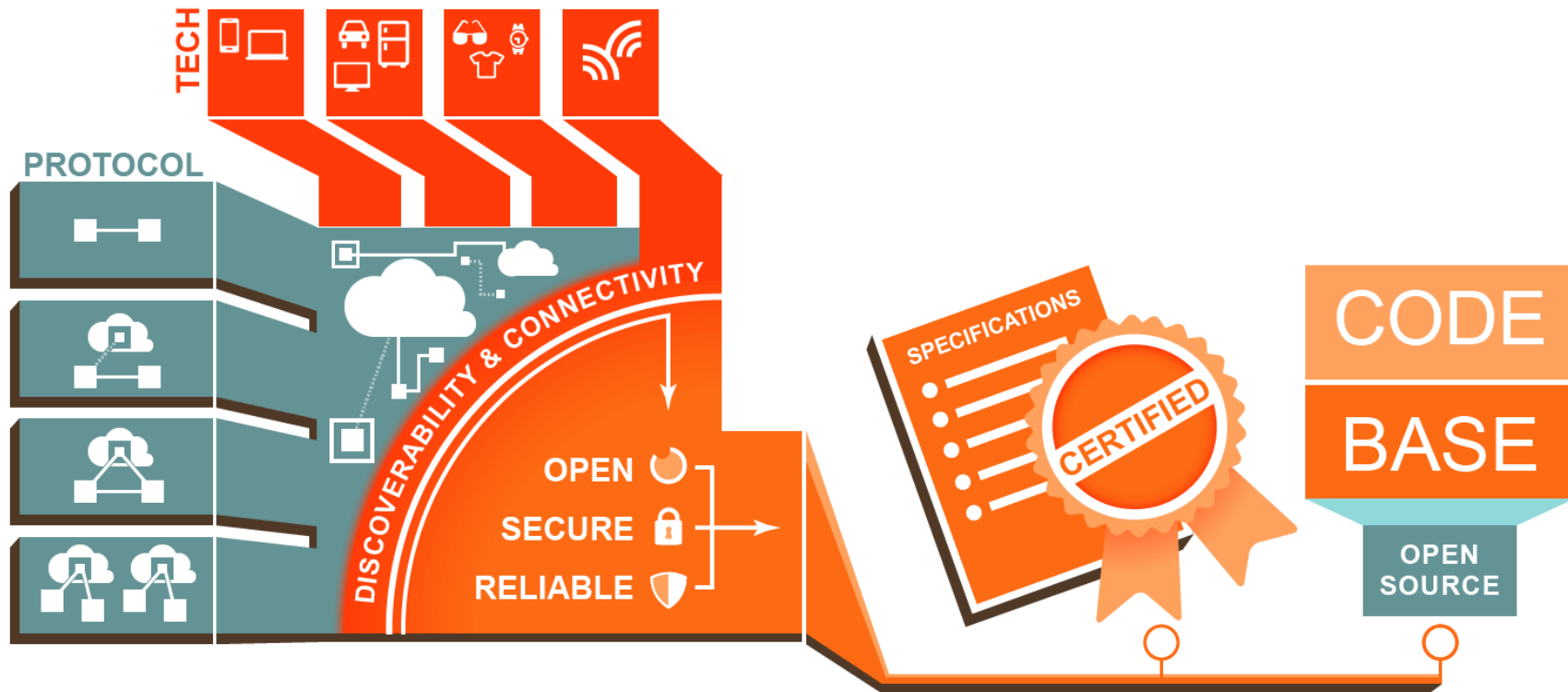


Things need to communicate

- Willing to talk to anyone
- Wide variety of “networks”
- Free from traditional administration



OPEN INTERCONNECT CONSORTIUM



How a Device Views the Internet of Things

- Wisdom
- Danger



Back To Tizen

- Linux distribution for devices
- Collection of profiles
- Common security base



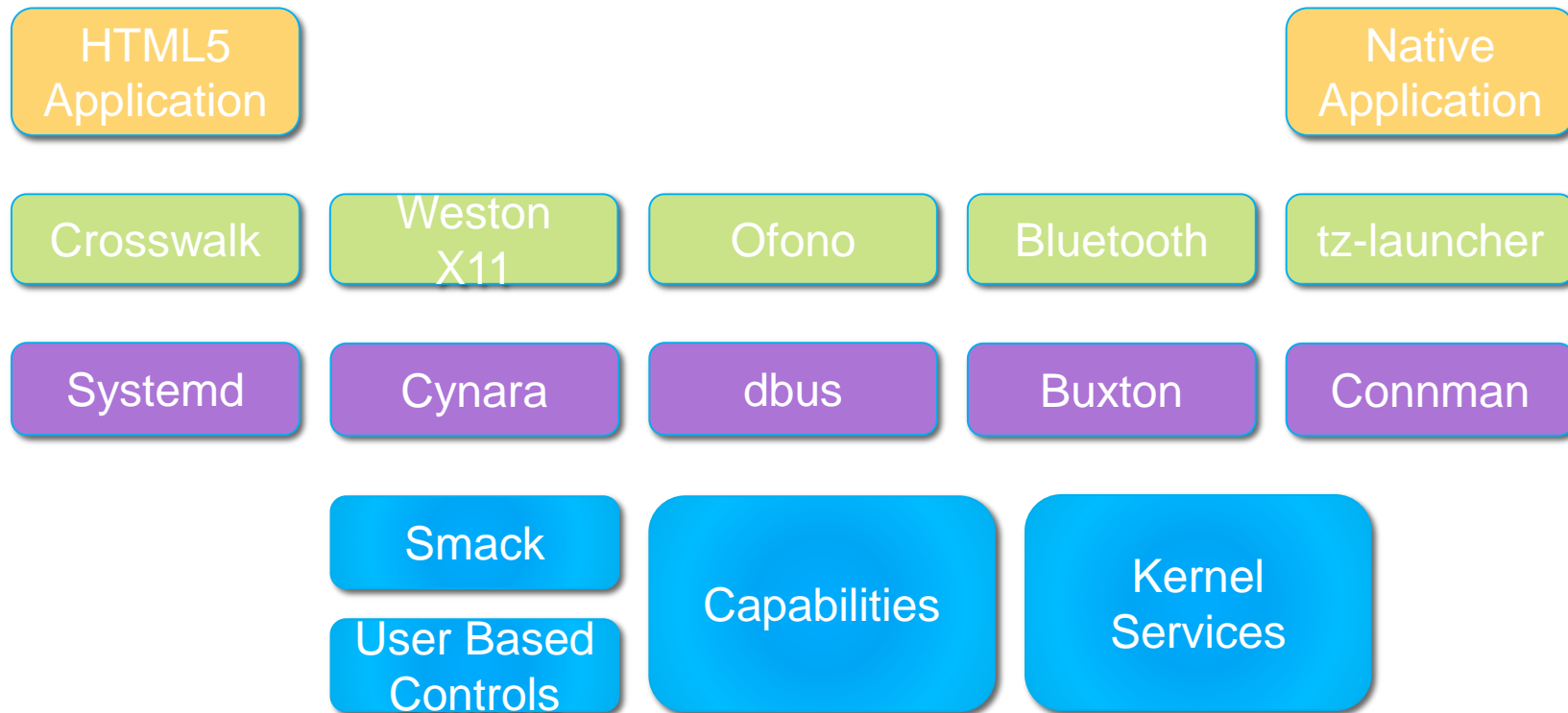
The OS of Everything

Tizen is the open-source operating system for all device areas.

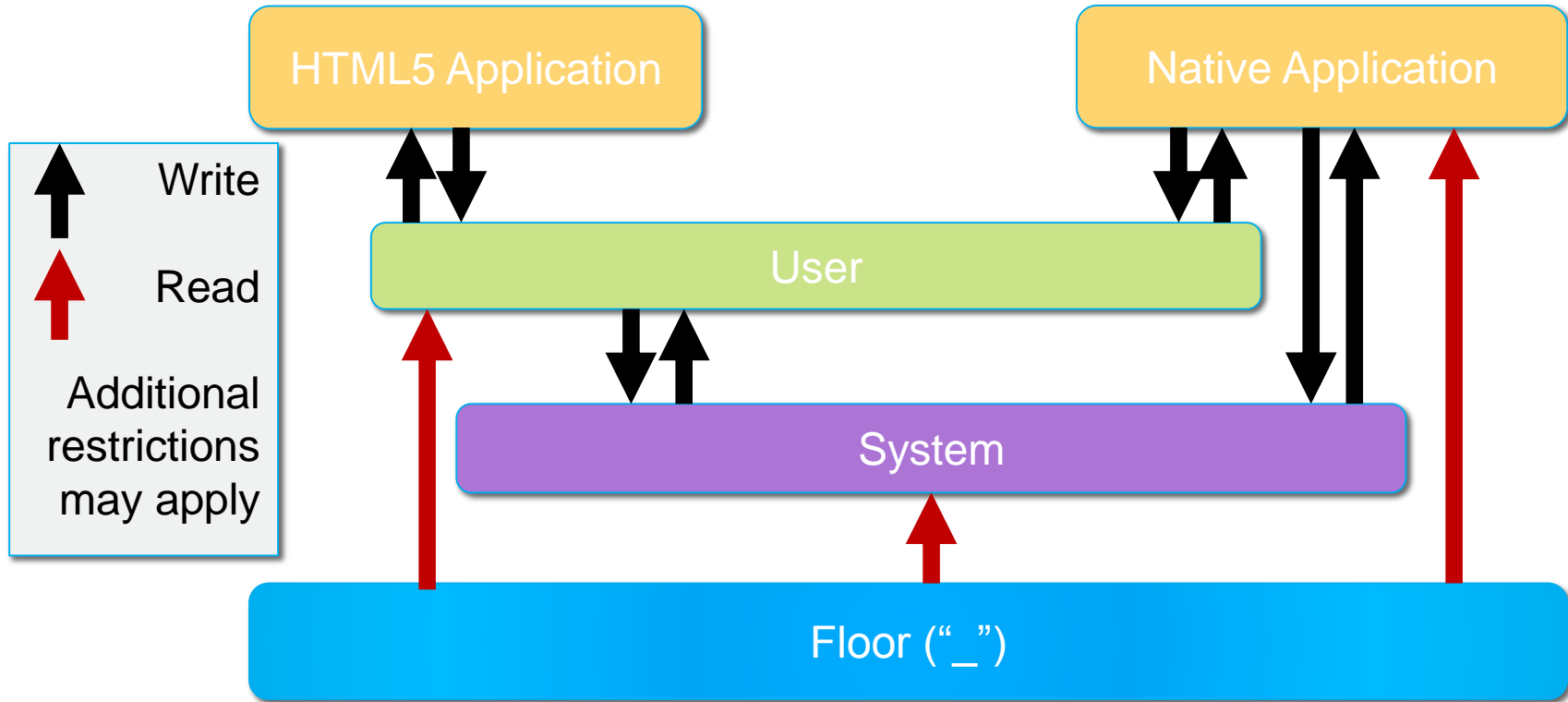
The graphic features four icons representing different device categories: a smartphone for Mobile, a smartwatch for Wearable, a steering wheel for In-Vehicle Infotainment, and a computer monitor for TV. Each icon is positioned above its respective category label.

Mobile Wearable In-Vehicle Infotainment TV

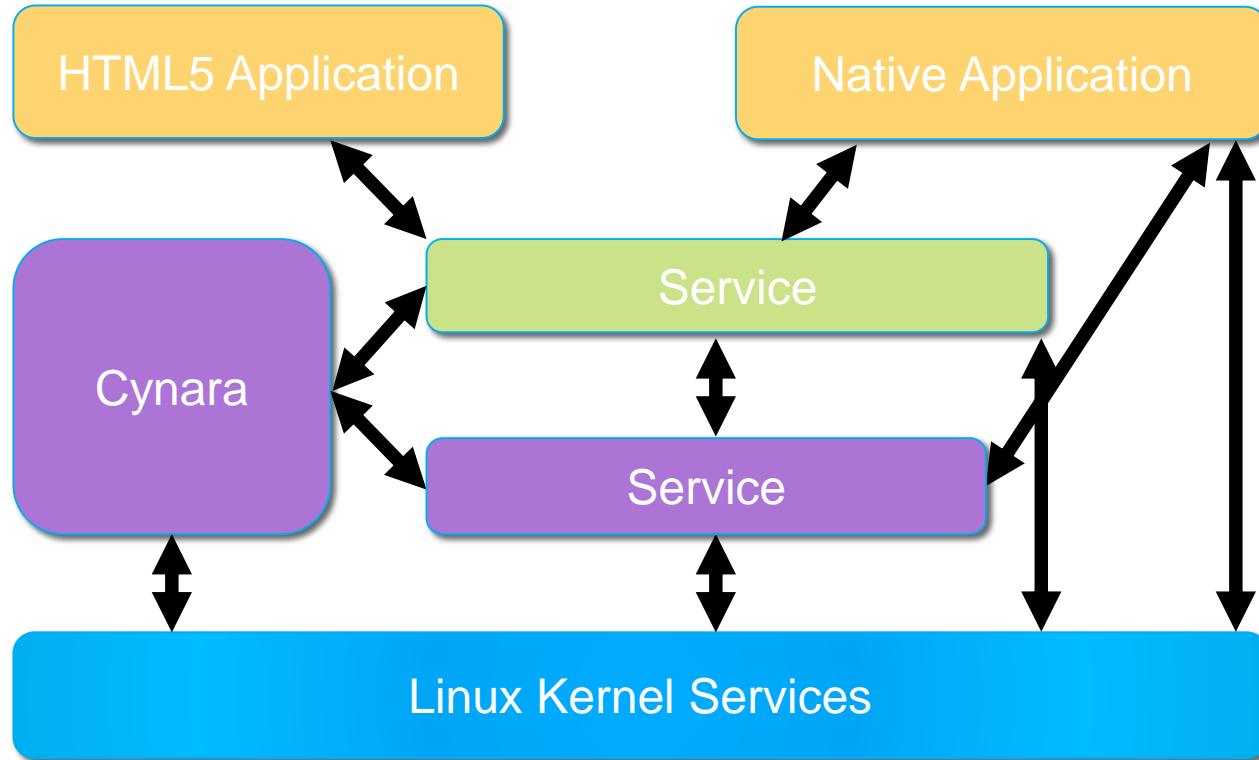
Tizen Security Basics



Tizen Three Domain Security



Tizen Application Privileges

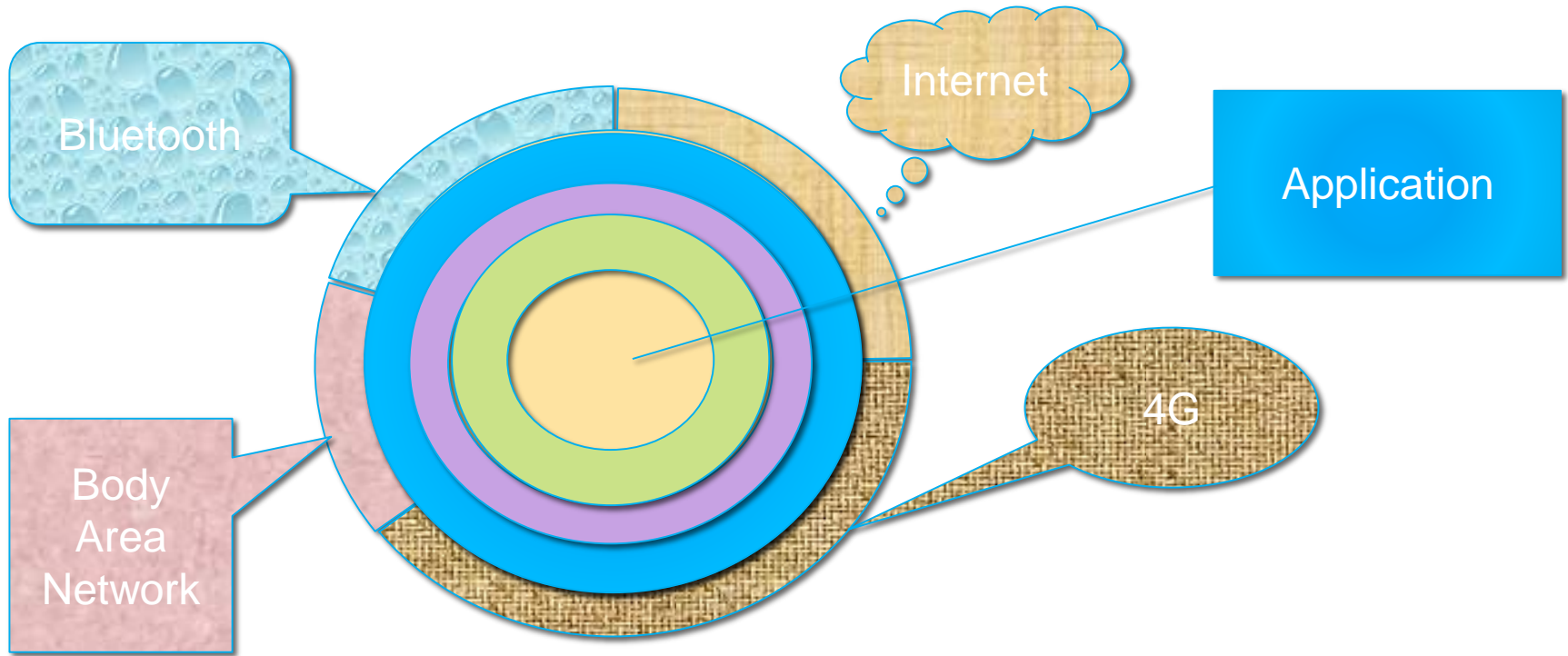


Application Privilege Attributes

- Name of the privilege
 - <http://tizen.org/privilege/vibrator>
- Smack label of requester
 - RaunchyRhinos
- UID of requestor
 - 5001
- Access permitted
 - r, rw, ...



Security Perimeter



Native Application Woes

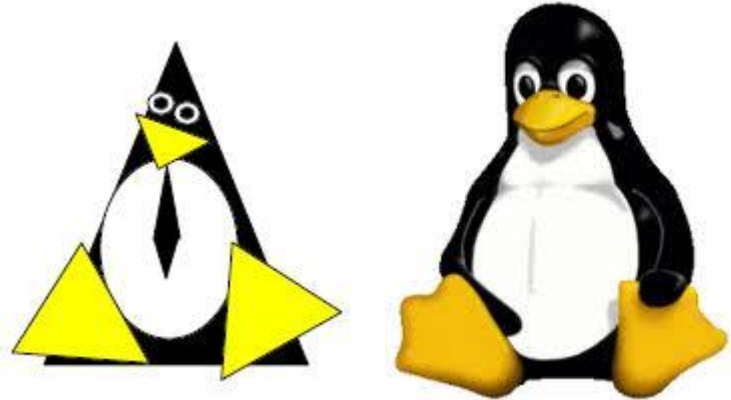
- Use kernel interfaces directly
- Avoid service based controls



more funny stuff at FUNNYASDUCK.NET

System Object Attributes

- Smack label
- UID
- GID
- Mode bits
- Smack access rules



Running Applications

- Unique Smack label per application
- Unique UID per user account
- Application launcher



