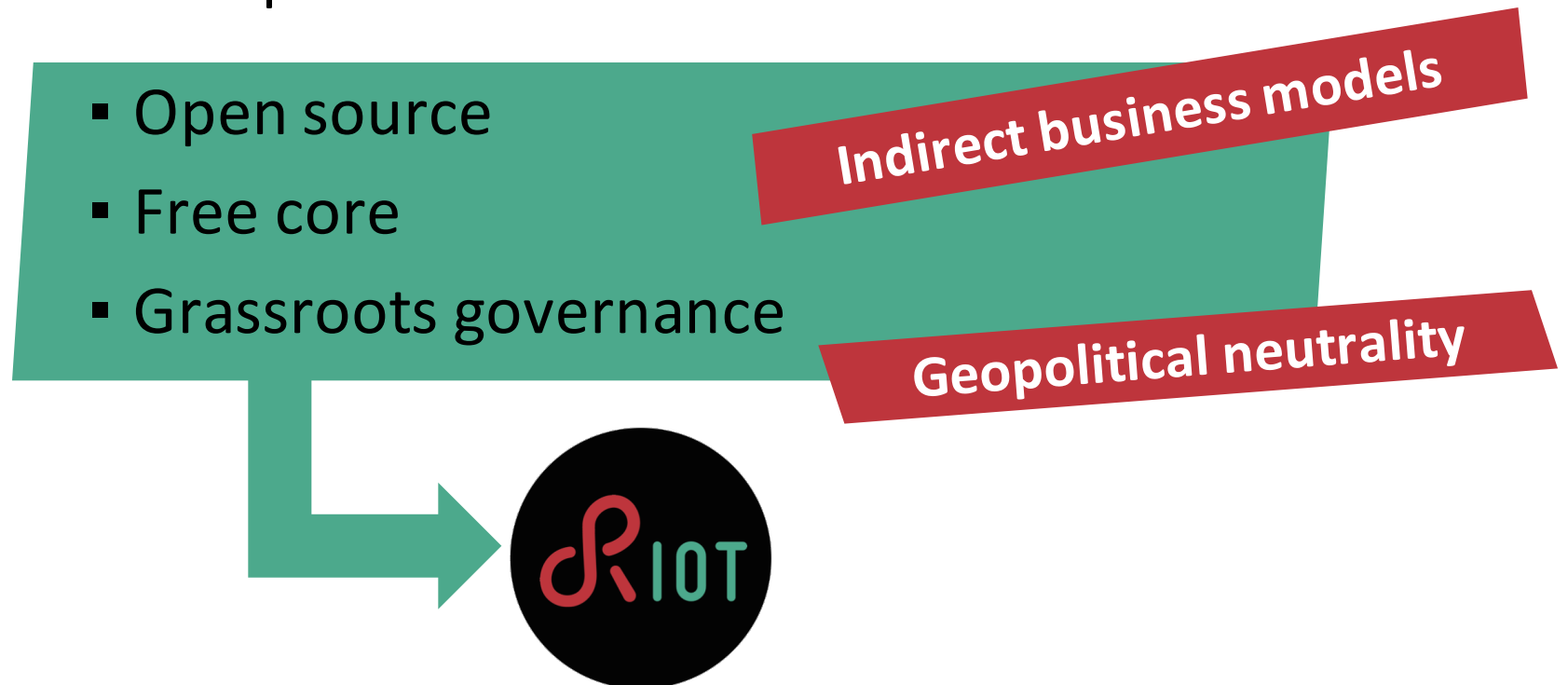




What is RIOT?

- ✓ An operating system for IoT devices too small for Linux
- ✓ A free, open source software platform
- ✓ A community of developers



Since Summit 2016: RIOT's year in numbers

150+ contributors worldwide

- +35% since RIOT Summit 2016
- From industry, academia, makers

110 boards supported

- +80% since RIOT Summit 2016
- New radios, new MCUs, new sensors, new actuators

3000+ commits merged and 4 releases

- Many new features including file systems, .js interpreter, new protocols...
- 10^7 automated continuous integration tests over the last 100 days

1st products shipping with RIOT

- Hamilton IoT (USA), Unwired Device (Russia), and others?

The context: a lot of traction

Projections for IoT

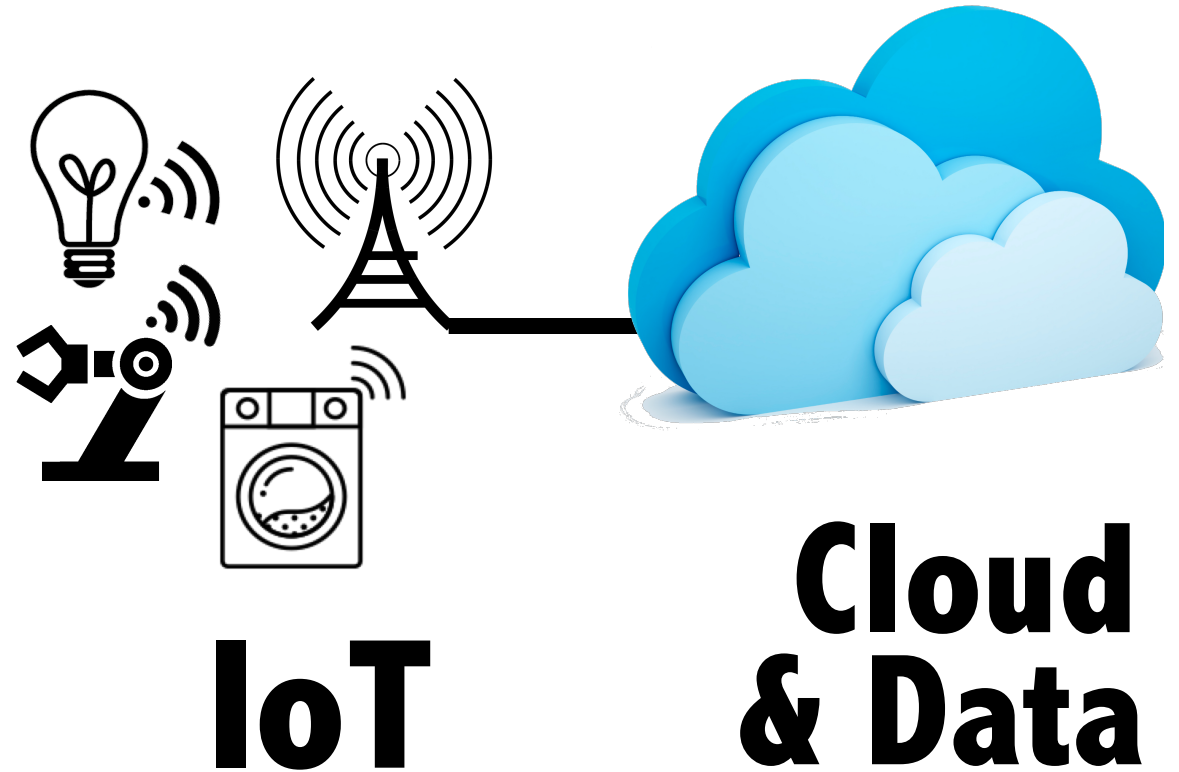
- 10^{18} bytes of data monthly
- 10^{10} new devices

➔ *Huge traction, major impact*

Low-end IoT devices

- cost will be ~1€ per device
- 10^3 less energy than Raspberry Pi

➔ *Still a bona fide Internet host!*



The context: a lot of tension

Increasing threats to (cyber)security & privacy

- ✓ cybercrime
- ✓ state-driven cyber wars & surveillance

Long(er) lifetime for products

- ✓ EU parliament (& others) fight planned obsolescence
- ✓ Embedded devices are difficult to access

**IoT end-users expect to remain
in control and expect security**



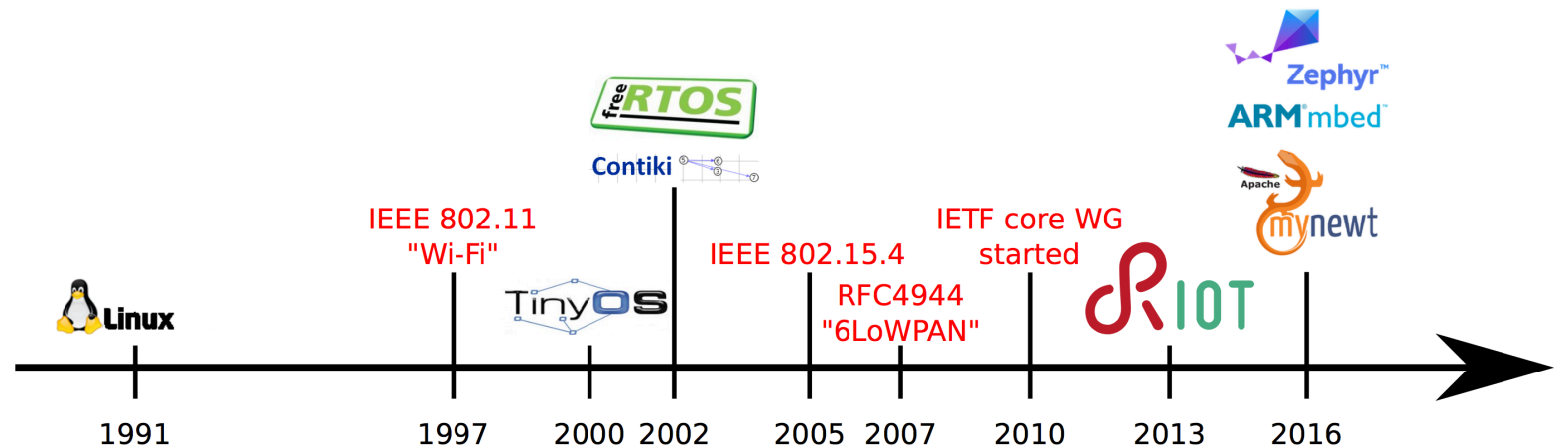
Control? You don't control what you can't program

On usual machines: software platform e.g. **Linux**

- provides programmability & full control for developers & users

On low-end IoT devices that can't run Linux?

- open-source IoT operating systems
- **RIOT** is the alternative with a Linux-like license & a grassroots community

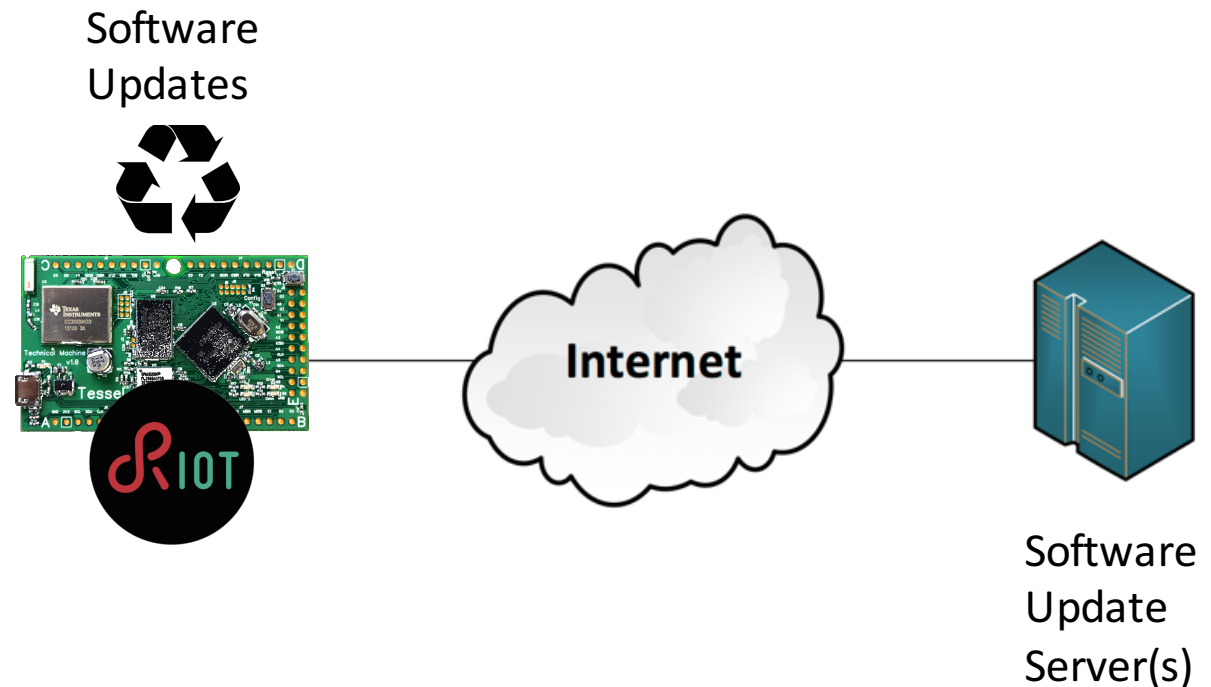


Secure? You can't secure what you can't update

On low-end IoT devices,
we need to combine:

- ✓ IoT software platform
- ✓ Secure & energy efficient protocols
- ✓ Next-generation crypto
- ✓ Proven software
(depending on criticality)

➔ **Software updates**



Excerpts from the RIOT Roadmap (work-in-progress)

[snip]

Step up security

- Software updates
- Next-gen crypto suites

Enhance automated test harness

- Nightly builds
- Hardware-in-the-loop

Extend support

- Hardware: more boards, radios, sensors, actuators
- Network: more protocols, MAC layers, stacks

[snip]

Enjoy the Summit!