



# FOSH

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# Motivations



- 'Equation Group' attacked 'high value targets'
- Hardware Freedom Day, 17 January
- You are not totally Free with Free Software

# Agenda



- What's Open Design?
- All about FOSH
- Licenses
- Hardware Freedom Day
- IOT and open source hardware

# Openness



“... Openness, in short, is more than a commercial and cultural issue. It's a matter of survival. Systemic challenges such as climate change, or resource depletion - these 'problems of moral bankruptcy' - cannot be solved using same techniques that caused them in the first place. Open research, open governance and open design are preconditions for the continuous, collaborative, social mode of enquiry and action that are needed.”

Bas van Abel, Lucas Evers & Peter Troxler & Roel Klaassen (2014)

# Whats Open Design?



“Open design is the development of physical products, machines and systems through use of publicly shared design information. Open design involves the making of both free and open-source software (FOSS) as well as open-source hardware.”

Open collaborative design, advic (2013)



VIA OpenBook

Bug Labs open source hardware

# FOSH



“Open-source hardware (OSH) consists of physical artifacts of technology designed and offered by the open design movement.”

Alicia Gibb (2015)



open hardware



# FOSH



- FOSH means Information about the hardware is easily discerned so that others can make it
  - ▶ mechanical drawings, schematics, bills of material, PCB layout data, HDL source code and integrated circuit layout data
  - ▶ software that drives the hardware

Freedomdefined (2015)

# FOSH



- Freedom 0: The freedom to use the device for any purpose
- Freedom 1: The Freedom to study how the device works and change it to make it to do what you wish. access to the complete design is precondition to this.
- freedom 2: Redistribute the device and/or design (remanufacture).
- Freedom 3: The freedom to improve the device and/or design and release your improvements (and modified versions in general) to public, so that the whole community benefits. Access to the complete design is precondition to this.



# Licenses



- free and open-source software licenses
  - ▶ LGPL
  - ▶ CopyLeft
  - ▶ MIT license
- Open Hardware License
  - ▶ Balloon Open Hardware License: Balloon Project
  - ▶ Hardware Design Public License: by Graham Seaman
  - ▶ TAPR Open Hardware License: drafted by attorney John Ackermann, reviewed Bruce Perens and Eric S. Raymond

# Certifications



- Respects Your Freedom



# H-node.org



“Aims at the construction of a hardware database in order to identify what devices work with a fully free operating system”

## List Of Archives:

- ✓ LibrePlanet Freest Hardware Page
- ✓ gNewSense Laptop Guide
- ✓ LibrePlanet Italia - progetti hardware database

# Hardware Freedom Day



- For some Open Hardware is a logical evolution of the Free Software philosophy applied to physical stuff
- Initiated in 2012 on 20 April by the Digital Freedom Foundation
- 21 January has been chosen as Hardware Freedom Day



# HFD'S Objectives



- To celebrate Hardware freedom and the people making this vibrant community
- To foster a general understanding of hardware freedom, and encourage adoption of open hardware
- To create greater opportunities by encouraging people to learn to use and hack "their stuff" and share their knowledge about it
- To be inclusive of organizations and individuals that share our Vision
- To be pragmatic, transparent, and responsible as an organisation

# HFD'S Activities



- Workshops on various kinds of Open Hardware
- Open Hacking competitions
- Demonstrations of Open Hardware projects
- Introduction of new projects in Open Hardware
- Talks





# IOT and FOSH



- Beagle Board
- Flutter
- Netduino
- Arduino
  - ▶ Arduino Yún
  - ▶ SODAQ
  - ▶ UDOO

# Resources



- ✓ Open collaborative design, AdCiv. 2010-07-29. Retrieved 2013-06-16
- ✓ Open Design Now: Why Design Cannot Remain Exclusive, By Bas van Abel, Lucas Evers, Peter Troxler, Roel Klaassen
- ✓ <http://www.reuters.com>
- ✓ [wikipedia.com](http://wikipedia.com)
- ✓ [freedomdefined.org](http://freedomdefined.org)
- ✓ [www.fsf.org](http://www.fsf.org)

# Any Question?



**“... We can't write free software to run the hardware without knowing how to operate it...”**

Richard Stallman