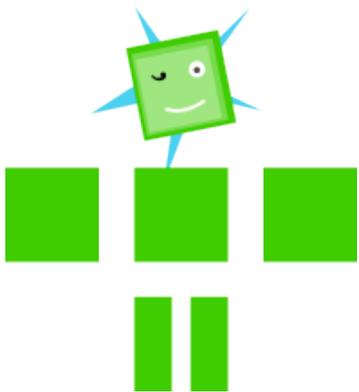


# RADIO LOCKDOWN DIRECTIVE

Major Threat for Free Software on Radio Devices



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# Agenda

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1. What is Radio Lockdown?
2. Why is it dangerous to us?
3. How can we fight it?
4. Discussion



# What is Radio Lockdown?

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- ▶ Radio Equipment Directive (2014/53/EU), Article 3(3)(i)
- ▶ In effect from June 2017

*Radio equipment [...] shall be so constructed that it complies with the following essential requirements:*

*[...]*

*supports certain features in order to ensure that **software can only be loaded** into the radio equipment where the **compliance of the combination of the radio equipment and software** has been demonstrated.*

- ▶ Signal frequencies, strength, certain features

# What is Radio Lockdown?

## Scenarios

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- ▶ Signature-based verification of software
  - ▶ Trustchains, “High Assurance Boot”
  - ▶ “Secure” Boot
  - ▶ Digital Restriction Management (DRM)
- ▶ “Cognitive Radio”: Real time communication with regulatory authority
  - ▶ Location-dependent
  - ▶ Individual and instant purchase of spectrum license

# Why is Radio Lockdown dangerous?

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- ▶ Affects all radio-capable devices
- ▶ Free Software initiatives (OpenWRT, Android ROMs, Freifunk, WiFi drivers...)
  - ▶ Problematic compliance assessment procedures, costs, bureaucrazy
- ▶ Free Software businesses
  - ▶ Competition issues, software for off-the-shelf hardware

# Why is Radio Lockdown dangerous?

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- ▶ Device security
  - ▶ Disable users to update their firmware
  - ▶ Usage of more secure/privacy-friendly software hindered
  - ▶ Just another attack vector
- ▶ Sustainability
  - ▶ No updates after hardware's End-of-Life
- ▶ Rather senseless
  - ▶ “Evil people” will circumvent
  - ▶ Only very few incidents of interfering devices

# Excursus: Where does it come from?

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- ▶ ETSI (European Telecommunications Standards Institute)
- ▶ Targeting Software Defined Radio (SDR)
  - ▶ Cheap chips, less signal frequency/strength limitations
  - ▶ 5G mobile networks
  - ▶ Weather radar interferences
- ▶ Similarities with FCC Router Lockdown

# How can we fight Radio Lockdown?

- ▶ Problem: Still too little background information (positions of industries, institutions, politics)
- ▶ Started with Joint Statement against Radio Lockdown (46 organisations and companies)



# How can we fight Radio Lockdown?

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- ▶ Delegated Acts can define affected classes of devices
- ▶ Application for EU Commission's Expert Group
  - ▶ Influence class definition
  - ▶ Gather information
- ▶ Building alliances with other sectors
  - ▶ Science, industry, civil society, amateur radio operators, community WiFi projects...



# Thanks! Now...

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- ▶ FSFE booth: building K, ground floor
- ▶ Sign joint statement
- ▶ Join mailing list
- ▶ Discuss!



## **More info and links:**

[fsfe.org/activities/radiodirective](https://fsfe.org/activities/radiodirective)  
[lists.fsfe.org](https://lists.fsfe.org) (radiodirective)

**Mail:** [max.mehl@fsfe.org](mailto:max.mehl@fsfe.org)  
**XMPP:** [max.mehl@jabber.fsfe.org](mailto:max.mehl@jabber.fsfe.org)  
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