The Radio Equipment Directive
(and what it means to GNSS)

Dominic HAYES
European Commission

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The Radio Equipment Directive

- "DIRECTIVE 2014/53/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL"
- Collective work of EU member state frequency regulators
- Adopted by the European Parliament and the European Council
- Came into force 13 June 2016

Who, What, When, Where, How?

• You (manufacturers)
• Your equipment
• Now
• The EU
• Essential Requirements
What is a Directive?

• A legal act of the European Union
• It requires member states to do something, but doesn’t specify how
• Subtle difference to a "European Regulation" which is a direct legal act
• Directives are required to be transposed into national law
• Directives set **essential requirements** to be satisfied before goods are sold in the EU such as: safety and health, and electromagnetic compatibility
Why Should I Care?

- Previously Directives (R&TTE and EMC) addressed only radio transmitters
- The Radio Equipment Directive (RED) covers safety and health, electromagnetic compatibility, but now also includes "efficient use of the radio spectrum" for all equipment including receivers – GNSS receivers!
- Any GNSS receiver sold in the EU must comply with the essential requirements of the RED
The Essential Requirements

Article 3.2

- "Radio equipment shall be so constructed that it both effectively uses and supports the efficient use of radio spectrum in order to avoid harmful interference"

- It is usual to develop a European Norm (EN) to specify essential requirements

- Note: it is not the only way to demonstrate compliance – a "notified body" can make their own judgement (not done yet for GNSS)
Draft European Norm "EN 303 413"

- **GNSS receivers; Radio equipment operating in 1164 MHz to 1300 MHz and 1559 MHz to 1610 MHz**
- Being developed by the European Telecommunications Standards Institute (ETSI)
  - Technical Committee for Satellite Earth Stations TC-SES
  - Composed of interested industry players, eg Sony, Thales, Hughes Network Systems, GPSIA, and some regulators
- Defines technical requirements and test specifications
- Aims to be finalised by June 2017
Key point - defines:

- Adjacent frequency signal power level:
  - -105dBm/MHz below 1559MHz
  - -105dBm/MHz above 1610MHz
  - -75dBm/MHz below 1164MHz
  - -85dBm/MHz above 1300MHz

⇒ shall not degrade $C/N_0$ by more than 1dB

Don't shoot the messenger!
Transitional Arrangements

- Until June 2017, new GNSS products placed on the market can alternatively be certified according to the existing applicable Directives, e.g., R&TTE and EMC Directives.

- After June 2017, the RED will apply for new certifications in addition to other applicable Directives (e.g., EMC, LVD).

- Provided it is certified (CE marked, either R&TTE before 6/2017 or RED post 6/2017) equipment can be sold in the EU.
What Can Manufacturers Do?

- Get involved
  - ETSI (www.etsi.org) help draft or steer the EN
  - REDCA (RED Compliance Association www.redca.eu) learn more about what you need to do to comply