HOW THE DIRECTIVE AFFECTS RECONFIGURABLE RADIO SYSTEMS

53 Shades of RE-D: Six months to go – ETSI, Sophia Antipolis, December 1st, 2016

Dr. Markus Mueck, Chairman ETSI TC RRS & INTEL

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I. Relevant RED Articles
RED Article 3(3)(i)∗

- Article 3 - Essential requirements
- 3. Radio equipment within certain categories or classes shall be so constructed that it complies with the following essential requirements:
- (i) radio equipment 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.

∗Note that Article 3(3)(i) is currently not in force. Related ETSI RRS activities are based on the assumption that the article will be in force in the future.
General Observation on Article 3(3)(i)

• **Benefits**: Introducing software reconfiguration flexibility for future applications such as Internet-of-Things, Industrial Wireless Automation, 5G, etc. It will allow to flexibly tailor the equipment to a specific target application.

• **Advantages of the article**: The implementation of article 3(3)(i) will lead to clear responsibilities which is essential for developing the corresponding market and as a basis for Market Surveillance.

• **Difference to R&TTED framework**: RED Article 3(3)(i) leads to clearly identified responsibilities for the combination of radio equipment and software.
Observation

• “compliance of the combination of the radio equipment and software has been demonstrated”

THIS STATEMENT IS NOT LIMITED TO SDR TYPE OF EQUIPMENT OR SIMILAR. IT APPLIES TO ANY COMBINATION OF SW & HW AFFECTING COMPLIANCE OF THE EQUIPMENT TO THE ESSENTIAL REQUIREMENTS
Example

How to manage responsibility for "combination of the radio equipment and software"?
Opinion

1. We cannot leave Manufacturers alone with statements on responsibility and liability only.

2. We must clarify which requirements need to be met in future equipment to be „safe“*

*Note that this clarification needs to be available when Article 3(3)(i) enters into force.
II. Current Activities on Software Reconfiguration
ETSI RRS

Draft ETSI TS 103 449: Reconfigurable Radio Systems (RRS); Use Cases for Configurable Equipment Management

ETSI RRS works towards technical solutions enabling Manufacturers to meet RED Article 3(3)(i) requirements
ETSI TR 102 967 (V1.2.1): Reconfigurable Radio Systems (RRS); Use cases for dynamic equipment reconfiguration

Basic principles of „Software Reconfigurable“ Equipment are introduced

1. OEM develops RE platform
2. Test of RE platform for conformity
3. Issue Declaration of Conformity for RE platform
4. Offer of new RE and Software

*Note that TR 102 967 contains technical Use Cases (including but not limited to Europe) and – as any TR – does not contain normative requirements.*
ETSI RRS

ETSI EN 302 969 V1.2.1, Reconfigurable Radio Systems (RRS); Radio Reconfiguration related Requirements for Mobile Devices
ETSI EN 303 095 V1.2.1, Reconfigurable Radio Systems (RRS); Radio Reconfiguration related Architecture for Mobile Devices
ETSI EN 303 146-1,2,3,4 V1.2.1, Reconfigurable Radio Systems (RRS); Mobile Device Information Models and Protocols;
Part 1: Multiradio Interface (MURI)
Part 2: Reconfigurable Radio Frequency Interface (RRFI)
Part 3: Unified Radio Application Interface (URAI)
Part 4: Radio Programming Interface (RPI)
ETSI RRS

ETSI RRS has introduced an entire Mobile Device Reconfiguration ecosystem covering Technical, Security & Certification solutions.
The TCAM WG(10)20, SDR subgroup interim report is currently being prepared

The following draft conclusion is being discussed [selected items]

- Reconfigurable radio shall be covered by a generic definition.
- Only software affecting compliance of the radio equipment in which it is downloaded is to be taken into account.
- Article 3.3.i shall be applied to all equipment where the compliance to the essential requirements of the RED is influenced by software.
- Commission should mandate ETSI to develop Harmonized Standards on technical solutions to prevent “non-compliant” software from being loaded into the radio equipment.
EC EXPERT GROUP

ETSI RRS will collaborate closely with a future EC expert group on Software Reconfiguration
III. Next Steps & Conclusions
Next Steps & Conclusions

Next Steps

ETSI RRS will further develop deliverables enabling the introduction of Software Reconfiguration features to Radio Equipment.

ETSI RRS will support the TCAM SDR WG and future EC Expert Group on this matter.