Radio Equipment Directive, 2014/53/EU

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Abstract
This article provides an introduction to the recently published Radio Equipment Directive (RED). It looks briefly at the history of the requirements, the changes in the product and regulatory landscape and looks at what it means to equipment manufacturers.

History
The current Radio and Telecommunications Terminal Equipment (R&TTE) Directive, 1999/5/EC entered into force over fourteen years ago on the 7th April 2000.

Before this Telecommunications Terminal Equipment had been covered by earlier directive 98/12/EC which co-ordinated the requirements of the original 91/263/EEC and 93/97/EEC directives. Radio equipment on the other hand was covered by a fragmented and non-aligned set of national approvals requirements. Technical requirements were becoming increasing aligned through the efforts of CEPT and ETSI, which reduced or eliminated the need for re-testing, but individual country approval was still needed.

The R&TTE Directive simplified the process and allowed manufacturers of radio equipment to place product on the market across Europe after demonstrating compliance with all Essential Requirement of EMC, safety and Radio Spectrum Use.

Whilst the number of different radio devices placed on the European market since 2000 has not been directly tracked, the number could be considered to be similar to that placed on the US market which is tracked by the FCC . This shows a near five-fold increase from 3000 in 1999 to nearly 15000 in 2012 and still growing at 12% p.a.

A number of issues that have arisen with the proliferation of radio devices have been address through updates to standards, but increased concerns over non-compliant products and other requirements from the New Legislative Framework required the R&TTE directive to be revised.

Development of RED
Initial activity began back in 2007. Due to increasing concern regarding non-compliant equipment being placed on the market, a number of Market Surveillance Authorities (MSA's) were pushing for the implementation of a mandatory registration system of all equipment. This caused a great deal of discussion and contributed to the long gestation period.

Registration databases are common in other countries, such as USA and Canada, but they have one body responsible to one economic area – who would (be trusted to) run an EU wide scheme? Furthermore management of the data is non-trivial; the FCC database was 660 GB in 2009, and probably double that now.

The EU Commission sent an initial proposal to the European Parliament in 2012. A second, non-sequential, draft was created before a final "compromise" text was created earlier this year.

This text was adopted at its first reading by the EU parliament on 13th March, by the EU council on 14th April and published as directive 2014/53/EU on 22nd May 2014.

Whilst there are many similarities between the R&TTE Directive and RED, there are a number of differences, which are discussed further below. One of the differences is the removal from scope of Telecommunication Terminal Equipment, hence the shortened name "Radio Equipment Directive".

Objectives
The European Commission sees four main objectives in the development of the RED:

- To reinforce the obligations of economic operators, and to improve the legal tools available to Market Surveillance Authorities (MSAs) in order to improve their efficiency, in particular regarding traceability
- To clarify and simplify certain provisions-including the scope-in order to facilitate the application of the Directive
- To modify or suppress a number of administrative obligations which create burden but bring in only limited value-added
- To insert certain requirements aiming at facilitating the use of radio equipment (e.g. possibility to issue delegated acts for interoperability)

Scope
The RED no longer applies to "Telecommunication Terminal" equipment such as wired telephones, fax machines and ADSL modems which will now be covered by the EMC and LV Directives.

The scope of the RED has been widened to include:

- "Radio determination" equipment such as radars and RFID devices. These devices were considered to be in scope as per formal interpretation of the R&TTE Directive , but scope is now clearer reducing scope for non-compliant products.
- "Sound and TV broadcast receivers" – these were excluded under R&TTE, but will now be covered for not only radio spectrum performance but possible subject to additional safety requirements as there is no low voltage level exclusion under R&TTE/RED.

- "Receiver performance" – whilst this was covered in a number of ETSI product standards, its importance in an increasingly congested radio spectrum has made it part of the directive.
- "Devices operating below 9 kHz" – the lower frequency limit of R&TTE was 9 kHz, but that has been removed. That will create some work for both ETSI to create standards and for European Communications Office (ECO) to define frequency allocations.

Essential Requirements

Two new requirements of note.

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.

Article 3.3(a) radio equipment interworks with accessories, in particular with common chargers;

It should be noted that article 3.3 requirements were in the R&TTE directive, but there are only a handful of Harmonised Standards prescribing requirements and these are mostly for radios used to support safety of life at sea.

If one read the press release that accompanied the R&TTE Directive one might think that common chargers were the most important part of the Directive!

Additional requirements due to NLF and market surveillance

The New Legislative Framework (NLF) comprising EU Decision 768/20080/EC and Regulation 765/2008/EC came into force in 2010 to provide assistance with dealing with non-compliant products and to try and level the playing field for manufacturers of compliant products.

The requirements on all economic operators in the supply chain (manufacturers, authorised representatives, importers and distributors) are those set out in Decision 768/2008/EC and are similar to those in the revised 2014 versions of the Low Voltage and EMC Directives. These are discussed in more detail in articles 10 thru 13 of the directive.

The RED takes things a step further in Article 5 which contains a provision to require a registration scheme for products deemed to have a low level of compliance. It's worth noting that the UK voted against the inclusion of a registration scheme and no such scheme is currently being implemented.

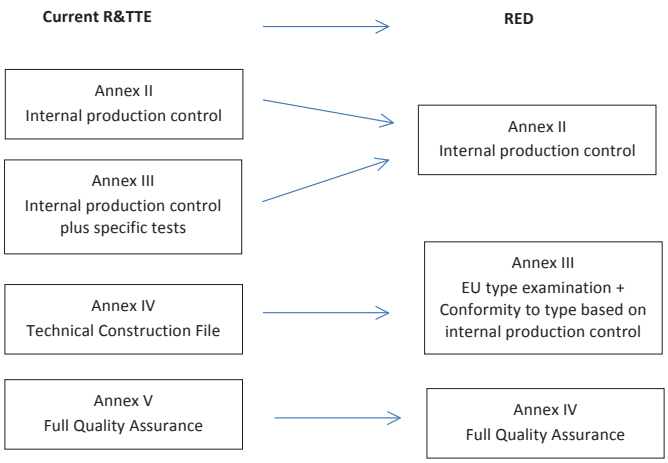
Now defining, and determining, "low levels of compliance" could make an article all of its own, as this covers a wide range of issues from otherwise compliant products having CE marks that are 0.25 mm too small through jammers which are illegal and non-compliant on multiple fronts.

Simplification of market entry

- Whilst not currently permitted, the use of Electronic labelling will be investigated and allowed where appropriate – for example on equipment with an integral screen such as a mobile phone.
- Class 2 devices which use non-harmonised frequency bands, or have other restrictions on being put into service, no longer require Notification to each member state before product is placed on the market. The alert mark (!) will also no longer need to be affixed.

Routes to compliance

The conformity assessment process is revised under the RED:



What is next?

There's quite a lot to be done, but for manufacturers of products currently under the R&TTE directive, there's little to be done for a while.

Firstly, and perhaps most importantly, "calm down dear, it's only a Directive". A Directive has no legal standing until it has been implemented into National Legislation. A Directive should not be altered by the member state whilst being implemented, but this has to be done, and in the UK this takes the form of a Statutory Instrument. Manufacturers cannot declare compliance against the RED until it has been implemented into the national law of at least one member state – it doesn't matter which one.

Notified Bodies need to be created for the RED. Discussions as to how this will be done are ongoing but one suggestion is that all existing NBs should be transferred "en masse" on a single date and then their competence against RED checked afterwards. This is to prevent market distortion and unfair advantage that could arise should NB changeover occur piecemeal.

The RED imposes additional requirements on information to be provided to the user such as labels and instructions, but it's worth waiting to see whether more detailed guidance is provided in these areas before working on them.

Possible Delegated & Implementing Acts

- Chargers: Delegated Act– Article 3(3)(a)
- SDR: Delegated Act– Article 3(3)(i)
- Access to Galileo: Delegated Act– Article 3(3)(g)
- Information on restrictions: Implementing Act – Article 10(10)

Standards development

A certain amount of Standards development work is required, though some of it is dependent on which acts come into being.

- Scope Article 2(1)(a)

- Receiver Performance Article 3(2)
- Chargers Article 3(3)(a)
- Software Defined Radio (SDR) Article 3(3)(i)
- Access to Galileo Article 3(3)(g)

Manufacturers of Sound and TV receivers need to be aware that their products will be moving into scope and will need to comply with Radio Spectrum requirements. In the absence of a new product specific standard, which is likely to be developed, the standard that would most likely apply is ETSI EN 300 220-2 V2.4.1, which contains requirements for Receiver Spurious Emissions and Receiver Blocking.

Timescales and things to monitor

When	What
Now to 13th June 2014	Commission will consider the preparation of the delegated and implementing acts detailed above.
24th Nov 2014	Proposed date of Commission workshop focussing on issues relating to legal transposition into national law, the outcome of which should be a number of Frequently Asked Questions and/or informal transposition guidelines.
Q2 2015	Possible 2nd Commission workshop if required. Start of activity to draw up Guidelines on the application of the Directive
12 June 2016	All equipment within scope of RED placed on the market, or put into service, for the 1st time must comply with the RED. All equipment currently on the market may continue to be placed on the market in accordance with existing rules for R&TTE or LVD+EMCD as appropriate
13 June 2017	All equipment within scope of RED must comply with RED. All equipment previously compliant with R&TTE directive, but out of scope of RED, must be compliant with EMC Directive and LVD if applicable.

About

Sulis Consultants is an independent CE marking and Product Approvals consultancy based in Hampshire and specialising in helping manufacturers comply with the requirements of R&TTE, EMC, LV and RoHS Directives as well as radio certification for North America.

Charlie Blackham is a Chartered Engineer who has been working in the field of product approvals and CE marking for over 20 years. After working for several manufacturers as Approvals Manager, Charlie set up Sulis Consultants in 2005 to offer advice and assistance to a wide range of clients. A former Notified Body technical expert, Charlie has helped clients CE mark a wide range of radio products operating from 1 MHz to 78 GHz and can be contacted on charlie@sulisconsultants.com or via www.sulisconsultants.com

(i) http://transition.fcc.gov/bureaus/oet/ea/presentations/files/apr13/3a-Equipment-Authorization-Overview-041013-RD-.pdf

(ii) http://ec.europa.eu/enterprise/sectors/rtte/documents/interpretation_en.htm

(iii) http://europa.eu/rapid/press-release_IP-14-261_en.htm