2nd May 2016

A view on Brexit

Laws, like sausages, cease to inspire respect in proportion as we know how they are made

- (mis)attributed to Otto von Bismarck

Tim Williams
Elmac Services

2nd May 2016

www.elmac.co.uk

Introduction

This paper is intended as a contribution to the Brexit debate, from the point of view of someone who has had a close view of the operation of one piece of EU legislation for over 25 years. That legislation is the Electromagnetic Compatibility Directive, and to a lesser extent the related Radio Equipment Directive; these Directives apply certain technical requirements to any item of electrical or electronic apparatus that is placed on the EU market. The general public has very little contact with them, other than seeing the CE Mark on products in the shops, but they have a large impact on companies making such products. It is part of this author's job to advise these companies on how to deal with the requirements.

Most of the coverage of the debate around Britain's exit from the EU has revolved around the economic impact and the effect on migration. This author's view on these aspects is not relevant to this article and it doesn't discuss them. The EU was set up originally to prevent the threat of another European war in the wake of the 1939-45 war, principally through enhancing trade links, and most would agree that it has succeeded in this. But in the way it has developed over the last few decades, it has demonstrated that it is no longer fit for purpose, and needs to be re-shaped or dismantled.

Why is it not fit for purpose?

This view has been formed over many years' experience of observing and advising on the EMC Directive. Eventually, it's become obvious that this legislation doesn't work. And there is no reason to think that it is a special case, or is unrepresentative of other EU legislation.

Legislation: the New Legislative Framework

The European Commission's activity in the last few years has been focussed on creating a "New Legislative Framework" (NLF). There are now 17 Directives that have been "re-cast" under the NLF. The reason for the re-casting is explained in a preliminary proposal document for the EMC Directive (COM(2011) 765):

> *Experience with the implementation of Union harmonisation legislation has shown – on a cross-sector scale - certain weaknesses and inconsistencies in the implementation and enforcement of this legislation, leading to*
>
> *– the presence of non-compliant or dangerous products on the market and consequently a certain lack of trust in CE marking*
>
> *– competitive disadvantages for economic operators complying with the legislation as opposed to those circumventing the rules*
>
> *– unequal treatment in the case of non-compliant products and distortion of competition amongst economic operators due to different enforcement practices*
>
> *– differing practices in the designation of conformity assessment bodies by national authorities*

– *problems with the quality of certain notified bodies*

The major changes are not technical; they re-define the concept of "economic operators" and spread the load of checking compliance, and they are much more prescriptive about Notified Bodies. The result is essentially saying "oh dear; people are ignoring our carefully crafted laws. So we'll draft a new set of laws, that'll fix the problem."

Market Surveillance

The quote above refers to "the presence of non-compliant or dangerous products on the market and consequently a certain lack of trust in CE marking". For the EMC Directive, a series of "market surveillance" campaigns have been run by the enforcement authorities of most of the EU countries on various product sectors since 2004. The reports of these campaigns make sobering reading. Abstracting the data from all of them results in the following table:

Campaign Year(s)	First: energy saving lamps 2004/2005	Second: power tools 2007/2008	Third: consumer electronics 2009/2010	Fourth: LED lights 2011	Fifth: switching power supplies 2012/2013	Sixth: solar panel inverters 2014
Failed RF emissions	23%	20%	28%	38%	44%	67%
Failed harmonics	23%	N/A	N/A	46%	N/A	N/A
Failed immunity	N/A	N/A	31%	9%	N/A	N/A
Incorrect DofC	10%	21%	20%	35%	26%	24%
No DofC	50%	16%	19%	25%	24%	25%
Overall combined non-compliance	N/A	50%	65%	83%	N/A	91%

Where it is possible to derive an overall figure, up to 91% of products have been found to be non-compliant with the legislation in one way or another. It's hardly surprising that there is a certain lack of trust in CE marking.

Incomprehension of the authors

It has become clearer over the years that the originators of the legislation don't understand either its purpose or its consequences. Why should they? They are bureaucrats, for whom the overarching need is "free movement of apparatus" within the EU borders. They do not feel that they have to understand the technical content. One small example of this is the announcement of the new "re-cast" Radio Equipment Directive (RED), which regulates all technical aspects of all types of radio products you can buy in Europe: from mobile phones and laptops with WiFi and Bluetooth, to satellite earth stations, to those credit-card-sized items which let you into your hotel bedroom (which are short-range radio devices). These technical aspects include use of the correct frequency and power level for the purpose, preventing interference to other radio apparatus, and controlling all conceivable safety hazards. It's a comprehensive set of requirements which manufacturers of such products have to spend considerable resources in satisfying. What did the press release announcing this legislation say?

> *The European Commission welcomed the green light of the European Parliament to open up the possibility for the introduction of a common charger for mobile phones and other portable devices...*

Not that a common charger is a bad idea, but it's probably the least significant of the features of this regulation. And its introduction is still only a "possibility" – the "Commission shall be empowered to

adopt delegated acts ... specifying which categories or classes of radio equipment are concerned..." (Article 3.3, RED) The delegated acts for this and other purposes have yet to be formulated: the authors of the RED haven't yet worked out how to deal with them.

Consequences: doesn't protect the spectrum

For many years the professional EMC community expected that the main purpose of the EMC Directive was to protect the radio spectrum from interference. How wrong we were: in fact, the purpose of all product-related Directives is **free movement of apparatus** within the EU. That is, they relate to the bureaucracy of "placing on the market". Any technical constraints – safety is one, EMC is another – have to be framed in this context. This is best illustrated by the saga of Power Line Telecoms (PLT). This author has written elsewhere (here and here) on the EC's approach to PLT, so here is a précis.

In 2001 the European Commission placed a mandate on the standard bodies ETSI and CENELEC (mandate M/313) to create a standard for the EMC of Telecommunications Networks. This was addressed by a Joint Working Group of the two bodies but the difficulty of finding agreement on a set of limits for radiated emissions from the network which would satisfy all participants, meant that the work on it eventually stalled. The Commission subsequently issued a Recommendation in April 2005 which included the following wording, making clear where their intention lay:

> *2. ... Member States should **remove any unjustified regulatory obstacles**, in particular from utility companies, on the deployment of broadband powerline communications systems and the provision of electronic communications services over such systems.*
>
> *3. Until standards to be used for gaining presumption of conformity for powerline communications systems have been harmonised under Directive 89/336/EEC, Member States **should consider as compliant with that Directive** a powerline communications system which is made up of equipment compliant with the Directive...*

But how could PLT modems be made compliant with the EMC Directive? There were at the time no standards specifically for such devices and no such device could actually meet the normally required standards – measurements showed emissions around 100 times greater than are allowed to any other electronic products. In fact, existing PLT modems then used the Technical Construction File route which implies that a Competent Body had issued a certificate of compliance with the essential requirements. Investigation showed that at least one TCF referred to a draft document which had subsequently been rejected and withdrawn by the standards committee.

In 2009 complaints against the actual emissions from PLT devices in the UK forced matters to a head. Ofcom published a series of statements which, in short, said that it believed that PLT modems did not breach the EMC Directive's essential requirements and that it would not be taking enforcement action against them. Its reasons included the statement that "the testing and analysis is complex and highly technical, for which reason there is uncertainty as to when products fail to meet essential requirements". More than anything, this statement shows the limits of understanding of the enforcement agencies and their legal advisers when faced with EU legislation that seems, to them, to be "complex and highly technical".

Consequences: unenforceable in practice

But there is a further, even more significant consequence of the focus on "placing on the market". This is that the EMC Directive has been found to be essentially unenforceable. In the UK, Ofcom has recently introduced the "Wireless Telegraphy (Control of Interference from Apparatus) Regulations 2016". These regulations will allow Ofcom, where necessary, to enforce the resolution of cases of interference between apparatus: a legal weapon which to date has had only a limited scope. When the EMC Directive was

introduced in 1996 it was expected that this would obviate the need for further regulation. But Ofcom's lawyers have discovered a fatal weakness:

> *Electrical and electronic apparatus and the capability to cause interference is regulated under the electronic compatibility ("EMC") regulatory regime* ***until the point apparatus is placed on the market or put into service*** *in the European Union. After that time (once it has reached the end-user), it is no longer subject to the undue interference requirement of this regulatory regime.*

This is because the EMC Directive, as with all New Approach EU Directives, is concerned with "placing on the market". Once the product is sold, the Directives no longer apply.

But: it's only possible to prove that a product is causing (or suffering) interference once the user starts using it. While it's in its packaging and waiting to be sold, it's not in operation. So this is a Catch-22 situation: you can only prove that a product is non-compliant with the requirements of the EMC Directive when the user has unpacked it and switched it on, but then it's not covered by the Directive. As Ofcom's lawyers know, there is no merit in pursuing a prosecution under a regulation where the prospect of conviction is so remote.

So Ofcom have had to introduce an extension to the WT Regulations to deal with this situation. And it's noteworthy that they have felt it necessary to say that "Ofcom considers that the Regulations do not infringe on the total harmonisation approach of the EMC and RTTE Directives and implementing regimes". In other words, there was a danger that if they did infringe, they could not have been adopted under the European rules.

Self-declaration for CE Marking

Compliance with these Directives is indicated by CE Marking. In the great majority of cases, the process for CE Marking is self-declaration: that is, the manufacturer of a product declares that his product complies with the legislation under his own responsibility, with no third-party oversight or certification. This approach is intended to "reduce the burden" of compliance on the manufacturer, for whom it has a number of unintended consequences.

In electronic products, it is often the case that the manufacturer of the final product buys in modules from other suppliers and uses them in his product. These modules – such as a power supply – are critical to his final statement of compliance (for EMC and safety, for instance) and so he must rely on the assurance that they are themselves compliant. But with CE Marking alone, he can't rely on that, because it's self declaration. And so to protect his position he has to go beyond looking at the CE Mark and demand extra documentation to support his own compliance statement. This is possible for high volume manufacturers whose suppliers will go the extra mile to get the business; but for small manufacturers who may only buy a few such modules a year, their leverage is minimal and they will often find it difficult to get the required assurance. Add to this the fact that in small volumes, the overhead involved in testing to prove compliance cannot be readily spread across the price of thousands of units, and it is clear that the "burden of compliance" is proportionately greater on small manufacturers than it is on the majors.

The European Commission know this – they have been advised of it enough times – but it seems that their interest is shaped by the persuasive power of the larger manufacturers, for whom the cost of compliance is a small overhead on their overall business.

Complexity

Another consequence is the burden simply of understanding what is required. Major manufacturers can and do employ full time compliance engineers whose job is to negotiate the maze of regulations within the EU, and to advise their design teams on the impact that achieving compliance will have on their

products. The European Commission have, wisely, dodged the responsibility of being specific about how to meet their regulations and have passed this over to the European standards agencies, with "mandates" to provide standards which will embody the essential requirements of their Directives. The compliance engineer then has to review the list of available standards – which, for the EMC Directive, runs to 21 pages and hundreds of entries, and changes every few months – to find which ones are applicable to their product. Most of these are based on international standards and therefore subject to copyright, and all have to be purchased – they are not available for free. And many of these standards themselves have upwards of 100 pages and are densely written, so that reading and understanding their requirements is a major task in itself. For any company that cannot afford the luxury of a full-time compliance engineer, this represents a significant barrier to compliance.

Another, simpler, indicator of the complexity of the legislation can be seen in the Directives themselves. The table below shows the progression of the EMC Directive through its three editions. Bear in mind that the second edition of the EMC Directive was conceived under the banner of "Simpler Legislation in the Internal Market", and the third edition came about through the New Legislative Framework, because the old legislative framework wasn't working.

Directive	No. of pages	Articles	Preamble† clauses
89/336/EEC	8	13	13
2004/108/EC	14	18	23
2014/30/EC	28	47	60

† The preamble explains why the Directive is necessary and how it should work

A vote of no confidence

Overall, the consequence of unenforceable, over-complicated and ineffective legislation is that one can have no confidence in the body that created it. Although this view is based on one small part of EU legislation, albeit one that has a considerable impact on an industry sector that is, we are told, an important engine of growth, there is every reason to believe that other examples have the same characteristics. Here are some other views:

> *"I did not understand then how the EU "worked". I still don't, except that now I see it depends on us not knowing. Much of its power rests on a deadly combination of mystification, officiousness and being so boring that most people just switch off." – Suzanne Moore, The Guardian 26th February*
>
> *"Prof Dalgleish says that from his experience of reviewing EU grant applications, he believes that political factors such as promoting collaboration are placed ahead of scientific excellence when awarding funds. "I have been an external referee reviewing grant applications to the EU Framework Programme, and come under extreme pressure to come up with a scientific rational to agree with what has already been decided by the bureaucrats," he claims." – BBC News, 27th February*
>
> *"Whilst the EU might be good for big multinationals, for smaller businesses it acts as a job destruction regulatory machine. Brussels hinders smaller businesses, particularly those firms who can't afford to lobby Brussels to curry favour. " - Matthew Elliot, Vote Leave, BBC News 25th March*
>
> *"The majority of CBI members want the UK to be in a reformed EU - changing it for the better, not just for the UK but for all member states... there are several areas where the EU needs to raise its game. Businesses want to see more trade deals, completion of the single market and less red tape." - Carolyn Fairbairn, CBI, BBC News 21st January*

The EU is not fit for purpose: what next?

The upshot of all this is a view that the EU's agencies are not fit for purpose. They should be dismantled, and a much slimmer body with targeted and effective purposes that are the minimum necessary to present a united European front on the world stage, where this is needed, put in its place. This author doesn't

mean to present a cut-and-dried position on Remain or Leave. In my opinion, the wrong question has been asked: it should have been, does the UK want to instigate a wholesale revision of the EU, and then we can ask, is that better done inside or out? You can argue that the UK has been inside for 40-odd years and the changes that have occurred have all been in the wrong direction, so that doesn't lead to a good prognosis. Should we leave and watch the EU crumble under its own weight from the outside, or remain and try to help salvage the European project from the inside? Whichever choice Britain makes, the legislative function of the EU has to be made fit for purpose if the Union is to stay relevant to its individual members.