A New Structure for the EU LVD Directive
The European Union New Legislative Framework and New Low Voltage Directive

Mark W. Maynard
Business Development Dept.
SIEMIC, Inc.
Milpitas, California, USA
mark.maynard@siemic.com

Abstract—Changes in the European Union legislative process over the past decade have resulted in common sets of definitions, requirements, roles and responsibilities that are finding their way into EU Directive updates. These changes have shaped the new EU Low Voltage Directive (LVD) 2014/35/EU, helping to ensure products within the scope of this directive are compliant prior to being placed into EU market countries, and remain in compliance throughout their life cycle. This new directive will fully repeal and replace the previous Low Voltage Directive 2006/95/EC on April 20, 2016, at which time all products entering the EU will be required to meet the new 2014/35/EU criteria.

Keywords—low voltage directive; LVD; European Union; EU; New Legislative Framework; NLF)

I. A NEW EU EMC DIRECTIVE AND APPROACH

The European Union (EU) Low Voltage Directive (LVD), 2006/95/EC, was originally adopted almost a decade ago by the European Commission (EC) [1]. Electronic technologies have undergone many changes since this time, so a major update to these critical safety requirements was warranted, to make sure that compliant products utilizing the latest technologies are safe for consumers and their environment, and are efficiently and quickly brought to the EU marketplaces, without undue or unnecessary regulatory hurdles.

Another EC regulatory effort, started by the EU member states around the year 2000, was initiated by a desire to institute better methods for making laws in the EU, by identifying all of the responsible parties involved in the whole lifecycle of products placed into the EU market, so specific roles and tasks could clearly be assigned to each party. Called the “New Legislative Framework” (NLF), it was implemented in 2008, and has been instrumental in driving and shaping the changes in recent EU Directives, including the new Radio Equipment Directive (RED) 2014/3/EU, the new Electromagnetic Compatibility (EMC) Directive 2014/30/EU, and the focus of this paper, the new Low Voltage Directive (LVD) 2014/30/EU [2], [3], [4].

There were also additional driving forces for these developments. Some of the other NLF drivers included the desire to widen the scope of covered products, the need to ensure electrical and electronic devices entering the EU are compliant and remain in compliance during the lifetime of the product, the need for more vigorous market surveillance techniques and activities, and the need for clarifying the responsibilities of the national regulators and compliance authorities [5].

These two efforts culminated in the release of a new Low Voltage Directive in the Spring of 2014, given the publication identifier 2014/35/EU, which will be fully replacing the LVD 2006/95/EC in April of 2016. It is imperative for manufacturers, product developers, and all other interested parties and affected stakeholders to start investigating and preparing for this change [4]. We’ll first look at the changes that have been made to the EU law-making processes and guidance under the NLF, then look at the new EU LVD, and how all of the different stakeholders will need to transition and adapt to the new regulatory landscape.

II. THE EU NEW LEGISLATIVE FRAMEWORK

A. Common Ground for a New Approach

Fifteen years ago the European Commission obtained agreement within the EU member states for a major initiative to carefully review and systematically update the regulations and previous decisions that established the existing legislative process. The results of these efforts came in 2008, with the adoption of two pieces of legislation.

Regulation 765/2008/EC, which set the requirements for accreditation and market surveillance related to marketing of products in the EU, also consolidated the meaning of the CE marking or labeling of products, and at the same time repealed and replaced the previous Regulation 339/93/EEC [6]. Then Decision 768/2008/EC added a specific structure, by establishing a common framework for the marketing of products in the EU, through the harmonization and consolidation of the various directives with common sets of definitions, conformity assessment procedures, conformity assessment bodies notification criteria, economic operator responsibilities, and rules for CE marking, while at the same time repealing and replacing the previous regulation Decision 93/465/EEC [7].

Together, these two legislated actions established a brand new EU legislative structure, which provided all of the necessary elements for a robust and comprehensive regulatory framework. Since these two pieces of legislation established a new framework, this led to the obvious naming of the “New Legislative Framework” [5].
B. New Legislative Framework Purposes and Accountability

One of the main purposes of the NLF is to make sure the definitions and responsibilities of the “economic operators” are clarified and standardized; “economic operators” being the selected terminology for commercial business stakeholders like manufacturers, authorized company representatives, distributors, and product importers. The NLF stresses the importance of the roles and responsibilities of the manufacturers and importers, as they are seen as the two groups being the most accountable for issues resulting from the placement of products into the EU, and also having the greatest influence and ability in making changes in their sales channel that serve their markets [8].

A second purpose is demonstrated by the wider measures incorporated into the NLF to track the entire product supply channel, emphasizing each of the economic operators in the total process, and their interrelationships with each other. One critical change is that the manufacturers and importers must provide much more information to their customers and other stakeholders that will help them to identify and locate each of these responsible parties [8].

Another NLF focus can be seen in the consideration given to the entire product life cycle, “from cradle to grave,” to enhance the market surveillance activities. This is being done to help prohibit non-compliant or risky products being placed in the EU. To support this, the responsibilities for all of the national authorities are clarified and defined, recognizing the variety of activities of the different groups, including regulatory authorities, notification authorities, national accreditation entities, market surveillance bodies, and importation agencies [9].

The entire market surveillance policy has been revised, to make it more comprehensive, and to place equal emphasis on both setting product requirements and market surveillance enforcement criteria. The market surveillance authorities are now not only required to check the conformity of a product according to its intended purpose, as defined by the manufacturer, but also under the conditions of use, which can be “reasonably foreseen,” meaning when such use could result from predictable human behavior, but with the assumption that the product will be used in accordance with the applicable laws [9].

An additional key change is that the legislative emphasis for EU market access. What is currently defined as “placing on the market” has changed in the NLF to the first “making available on the market” of a product in the EU. “Placed on the market” has changed in the NLF to the first “making available on the market” for sale. The NLF removes this ambiguity with the phrase “made available on the market,” which is defined as when it enters the EU. So whether a product is supplied for distribution, consumption, or use on the EU market in a commercial activity, or whether or not it is sold for payment or is given away for free no longer matters; if you bring it into an EU member state for whatever reason or purpose, it must be in conformity with a full technical construction file and CE Declaration of Conformity to the applicable EU Directives [10].

It should be noted that there are very limited exceptions for true “Research and Development” (R&D) products, but this category has been more restrictively defined in the NLF. These exceptions will be covered in more detail in the next section on the new LVD [4].

A very helpful EC publication covering these NLF topics is the “Blue Guide on the Implementation of EU Product Rules” that is also available for free download from the EC website referenced at the end of this paper [11].

III. The New LVD 2014/35/EU

Now we will take a look at the transition from LVD 2006/95/EC to the new LVD 2014/35/EU, and some of the important changes this will bring. While this paper is intended to share as much information as possible on the new requirements, the reader should also read the entire draft of the official version of 2014/35/EU, to fully understand the requirements in their entirety, as well as the interconnections within the Directive. Also, it is advisable to seek out expert advice and consultation from regulatory compliance professionals on the EU requirements, if there is a lack of familiarity with this product criteria and standards [4].

This directive will apply in all 28 European Union member states, the 4 European Free Trade Association (EFTA) member countries of Iceland, Liechtenstein, Norway, and Switzerland, as well as Turkey by means of a Mutual Recognition Agreement (MRA) between that country and the EU. There are several other non-EU countries that formally accept the CE mark where Harmonized Standards have been applied, but those are beyond the scope of this paper [12].

A. New Low Voltage Directive Implementation Timeline

One of the first questions asked when a new EU directive is published is “When do we have to change?” Unlike the new RED Directive, there will not be a transitional “grandfathering” period given in the new LVD. LVD 2014/35/EU will repeal and replace 2006/95/EC on April 20, 2016, without any transitional period. Any products that are placed on the EU market will have to comply with the new LVD. It should be noted that there are very limited exceptions for true “Research and Development” (R&D) products, but this category has been more restrictively defined in the NLF. These exceptions will be covered in more detail in the next section on the new LVD [4].

<table>
<thead>
<tr>
<th>Low Voltage Directive</th>
<th>Entered Into Force</th>
<th>Repeal Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006/95/EC</td>
<td>January 16, 2007</td>
<td>April 20, 2016</td>
<td>Products placed on the market prior to April 20, 2016 can continue under 2006/95/EC until April 20, 2016</td>
</tr>
<tr>
<td>2014/35/EU</td>
<td>April 18, 2014</td>
<td>TBD</td>
<td>All products placed on the market on April 20, 2016 or later must utilize Low Voltage Directive 2014/35/EU</td>
</tr>
</tbody>
</table>

Table 1: Low Voltage Directive (LVD) 2006/95/EC and LVD 2014/35/EU Transition Schedule
market in conformity with LVD 2006/95/EC can continue to be placed on the market until April 20, 2016. However, any products placed on the market on April 20, 2016 or later must be in conformity to LVD 2014/35/EU; this applies to all products, whether approved under the previous directive or not [4].

You may also note that the reference designators for the directives have changes, with “EU” being used instead of “EC”. This is another change driven by the NLF efforts, with only references to the European Union used in the new directives, and no longer referencing the European Commission [5].

The full title of the LVD is “Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits”. So let’s dive into the specifics, starting with Chapter I, after the first three-and-a-half pages of the preliminary “whereas” statements have laid out the legal framework for the EU member states [4].

B. A Walk Through the Topics and Contents

The general provisions in chapter 1 contain the scope of the directive, starting with the statement “The purpose of this Directive is to ensure that electrical equipment on the market fulfils the requirements providing for a high level of protection of health and safety of persons, and of domestic animals and property, while guaranteeing the functioning of the internal market.” The types of equipment covered are spelled out in the second paragraph criteria, “This Directive shall apply to electrical equipment designed for use with a voltage rating of between 50 and 1 000 V for alternating current and between 75 and 1 500 V for direct current” [4].

Products that are outside the scope are identified in Annex II of the LVD. This includes products such as:

- Electrical equipment used in explosive environments
- Electrical equipment for radiology and medical uses
- Electrical parts for goods and passenger elevators
- Electricity meters
- Plugs and socket outlets for domestic (home) use
- Electric fence controllers
- Radio-electrical interference
- Specialized electrical equipment used on ships, aircraft or trains, which comply with the safety provisions drawn up by international bodies in which the Member States participate.
- Custom built evaluation (R&D) kits destined for professionals to be used solely at research and development facilities for such purposes [4].

A special note should be made about these “R&D” evaluation kits. This is not intended to provide a quasi-legal loophole for products to enter the EU market that have not demonstrated conformity; in fact, the enforcement activities are being elevated to investigate claims for this exemption, and to verify that they are being used at a true “R&D” facility for true “R&D” purposes, and not just a manufacturing or engineering test site. In the previous EMC directive this was not strictly enforced, but that has now changed [4], [5].

Article 2 in the first chapter contains fourteen definitions, which includes eight new or updated definitions based on the New Legislative Framework. A few of the definitions are directly associated with LVD product compliance, as would be expected, but some of the most important new “NLF” definitions are to clearly identify and define all of the economic operators involved in the process of placing products onto the EU market, so clear roles, obligations, and responsibilities could be assigned, and the market surveillance agencies would be able to assign accountability when issues are found. All of the definitions in the directive should be closely studied by all of the identified “economic operator” groups, as there will be much more scrutiny and market surveillance activities associated with the different parties, and it will be vital to clearly understand what is required for each operator [4].

In Chapter 1, Article 3 we find the heading “Making available on the market and safety objectives” defined and scoped as “Electrical equipment may be made available on the Union market only if, having been constructed in accordance with good engineering practice in safety matters in force in the Union, it does not endanger the health and safety of persons and domestic animals, or property, when properly installed and maintained and used in applications for which it was made.” The last part on the equipment being “properly installed and maintained and used in applications for which it was made” is currently being interpreted as an expansion of the compliance requirements to extend for the entire life of the product, with the identified economic operators still responsible no matter how long the product remains in use in the EU [4]. How this will be evaluated and monitored for an undefined period of time is not yet known, but it is sure to drive a lot of discussion and review by the member states and stakeholders.

In the second chapter of the directive, which covers “Obligations of Economic Operators”, the specific roles, obligations, and responsibilities are assigned to the four key economic operators: manufacturers, authorized representatives for manufacturers, distributors, and importers. This includes the types and levels of accountability assigned by the market surveillance agencies when violations or other conformity issues are found. The manufacturers and importers have been identified as the two operators that are the most accountable for any conformity issues found in the EU, and their expanded roles spelled out in the LVD reflect this new level of responsibility [4].

Supporting this new level of accountability is an expanded requirement to provide more contact information for the economic operators. EU Member States will require the economic operators to include both website addresses and physical location postal addresses, in order to facilitate better communications between the member states, market surveillance authorities, economic operators, and consumers. The equipment must show the product identification numbers
and contact information for the responsible parties. A contact name and details must be supplied with each device, and also placed on the device, or in documentation if it is a small device. Importers must show similar information on the equipment or on the packaging; the supply chain must accept the legal responsibility for providing valid contact information [5], [8].

Another key change is the recognition of modern methods of selling products over the Internet, which is termed “online sales” or “distance selling”. All of the roles and responsibilities for the economic operators will still apply for distance selling. To support the required communication channels for consumers and the market surveillance authorities, the economic operators are highly encouraged to include the applicable website addresses, in addition to the physical postal mailing address provided [5], [8].

The conformity of equipment is covered in chapter 3 of the new Low Voltage Directive, with internal production controls and procedures covered in detail in Annex III. Information that concerns the continued conformity of the equipment will be reviewed, checking that specific precautions that must be taken when the device is assembled, installed, maintained, or used are included and valid, including technical documentation, CE marking, EU Declarations of Conformity (DOC) and the responsibilities of authorized representatives [4].

In chapter 4 we find the requirements and procedures for the EU market surveillance, controlling electrical equipment entering the EU market, and safeguarding the EU. This includes the requirements and obligations of notifying authorities and notified bodies, including information on applications, changes, operations, appeals, coordination, and notification procedures [4].

Chapter 5 covers EU committee procedures. These procedures include penalties for non-compliance, transitional provisions, transposition instructions for EU member states, repeal of the previous LVD 2006/95/EC, and the entry into force of the new LVD 2014/35/EU [5].

For any formal non-compliance, such as an incorrect CE mark, or a product that is missing manufacturer or importer details, the EU member states will require the relevant economic operator to correct the non-compliance. If the issue is not corrected, the member state must take all appropriate measures to restrict or prohibit the product being made available on the market, or they should ensure that it is recalled or withdrawn from the market. The member states have the authority to set the rules on penalties that are applicable to any national law violations by the economic operators, and they can take all necessary measures to ensure enforcement, including criminal penalties for serious infractions [5], [9].

The updated requirements for the CE Declaration of Conformity (DOC) are found in Annex IV. The product model name and identification numbers are required as before, but it must also include all of the expanded contact information, to support the traceability requirements. A photograph of the equipment can be included in the DOC, but it must be in color, and of high enough resolution to clearly identify the product.

One new welcome change is that all of the applicable directives and standards can be listed on one DOC for the product, although it may need to include multiple pages for all of the required listings for the relevant harmonized standards used, including the date of the standard, or references to the other technical specifications, including the date of the specification, in relation to which conformity is declared. When it is applicable, the notified body that performed the type examination and issued the certificate should also be identified and listed. Also, the DOC must be translated into the language or languages required by the member states for which the apparatus is placed or made available on the market [4].

One final note concerns the useful table found in Annex VI. It is the correlation table that lists the sections of the old LVD 2006/95/EC in the left column, with correlating sections in the new LVD 2014/35/EU in the right column. This reference makes it much easier to locate the changed information in the new Directive, if you have become very familiar with the structure and layout of the old Directive [4].

IV. NEXT STEPS

We’ve covered a lot of territory, but I’ve only provided a general overview of the impending changes with the new LVD 2014/35/EU. You should start now to comprehend all of the impacts this will have for your particular “economic operator” role, and start making your own transition plans and alerting your management of these coming requirements. The good news is you have over a year to get educated and prepared.

There is a wealth of information that can be found on the official European Commission (EC) website, including EU compliance publications, like free downloads of the EU Directives in PDF and HTML file formats, and Official Journal of the European Union (OJ-EU) documents [14]. As previously mentioned, a very helpful EC publication is “Blue Guide on the Implementation of EU Product Rules” that is also available for free download [11]. Two other official EU websites that are useful are the Official Journal of the EU website, and the official European Union website EUROPA [15], [16]. All of these resources and links to their websites can be found in the “References” section at the end of this paper.

ACKNOWLEDGMENT

I would like to acknowledge the contribution of materials and information provided by the European Commission at their official website, and the European Union official EUR-Lex website, which provides free access to the Official Journal of the EU, as well as EU laws, including directives, regulations, and decisions, which were rigorously studied, utilized, and referenced in this paper.

I would also like to give my appreciation to my colleagues at SIEMIC for their reviews and feedback on the draft versions of this paper.

And finally, I would like to thank my wife Lisa, whose constant support and proof-reading skills help make it all better.

REFERENCES

harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.


