

European Law and Standards Affecting Avalanche Beacons

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ABSTRACT: In the past two years, new directives issued by the European Government have led to a change in the legal status of avalanche beacons and to an overhaul of the European standard EN 300 718 for avalanche beacons. The standard will be harmonized throughout Europe and also provide some technical improvements.

1. Harmonization

European standards that have been adopted by all member countries following the procedures as laid down in Directive 98/34/EC ("laying down a procedure for the provision of information in the field of technical standards and regulations") are called "harmonized" standards. Once a harmonized standard exists, all national standards regarding the same product must be withdrawn.

Standard requirements that are compulsory are termed "technical regulations". Products that do conform to these technical regulations may be distributed freely within the European Community, and no member country may restrict their sale or use.

The decision on whether to accept a product, which does not meet some of the non-compulsory requirements as set down in a standard, is left to the consumer.

2. The RTTE Directive

In March of 1999, the EC has issued a new directive 1999/5/EC "on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity" (the "RTTE Directive"). This directive states that any equipment falling under its scope (and avalanche beacons definitely do !) must fulfil some "essential requirements" in order to be allowed to be put on the market and freely circulate within the EC. These essential requirements are the ones affecting

- Health and safety of the user Art. 3.1 a
- Electromagnetic compatibility Art. 3.1 b
- Effective use of the radio spectrum Art. 3.2

The essential requirements are compulsory for any equipment (Art. 3.2 for radio equipment only). In addition, article 3.3 of the directive states that, for certain types of equipment, requirements covering other domains such as interoperability, privacy, access to emergency services etc. may be declared to be essential. Such extension of the essential requirement areas requires an explicit decision by the EC Commission.

Requirements that are not covered by one of the articles 3.1, 3.2 and possibly 3.3 of the RTTE directive cannot be compulsory. They may be part of a standard, but they do not constitute part of a technical regulation.

3. Application of Art. 3.3 of the RTTE Directive to Avalanche Beacons

In March of 2000, ICAR, the International Commission for Alpine Rescue, has issued a recommendation requesting that avalanche beacons be subject to article 3.3 e (devices providing access to rescue services) of the RTTE directive and that the relevant parts of the avalanche beacon standard ETS 300 718 be compulsory for application. ICAR considered requirements regarding compatibility and interoperability and a minimum performance in terms of range, reliability and robustness to be essential for access to rescue services.

The European Commission has charged its Committee for "Telecommunications, Conformity and Market Surveillance" (TCAM) with investigating individual classes of devices for the applicability of extended requirements. The findings of TCAM form the base of an eventual EC decision. The secretary of TCAM, after a hearing with interested parties in Vienna on June 20, 2000, has come to the conclusion that

- avalanche beacons do provide access to rescue services
- the essential requirements should be extended to requirements affecting compatibility, robustness and reliability

ICAR then asked all of its member organizations from countries that are represented in TCAM to contact the head of their national delegation and inform him about the importance of this matter to the members of their organization. As a result, on Sept. 25, TCAM has adopted a draft Commission Decision that states that

- Avalanche beacons shall be designed so as to be able to interwork, within their capabilities, with new beacons as well as with the installed base of beacons, which was approved under national approval regulations based on ETS 300 718.
- Avalanche beacons shall be so constructed as to ensure correct functioning after having been exposed to an avalanche and continue to function when being submerged for a longer period in snow following the avalanche.

This draft will now be forwarded to the European Commission for formal approval.

4. Impact on EN 300 718

ETSI, the European Telecommunications Standards Institute, has been put in charge by the European Commission to re-edit all of its standards in order to comply with the RTTE directive. Re-edit in practice means structuring the requirements into three groups:

- requirements that are compulsory by Art. 3.1 and 3.2 of the RTTE directive.
- requirements that are compulsory by Art. 3.3 of the RTTE directive
- other, non-compulsory requirements

The deadline for drafting a new EN 300 718 was set for the end of September 2000. A working group was established in June, representing user associations, manufacturers and other interested parties. Since there was little time, the working group decided concentrate on adapting the standard to the new formal requirements. The technical contents were not modified except for items that were not disputed or that were obviously wrong. As a result, there is a new draft EN 300 718 which must now go through all the formal approval procedures as per directive 98/34/EC in order to be "harmonized" (have you ever read "Atlas Shrugged" by Ayn Rand ?). The document is structured into three parts:

- Part 1 contains all the requirements, compulsory and non-compulsory
- Part 2 itemizes the requirements that are compulsory under Art. 3.1 and 3.2 of the RTTE directive
- Part 3 itemizes the requirements that are compulsory under Art. 3.3 e of the RTTE directive

The important technical modifications are:

- The weight limit has been removed. This was considered a feature that the market will take care of anyway.
- All references to beacons operating at 2.275 kHz have been removed. Such beacons are not standardized any more. 15 years ago, the DIN standard provided the base for the transition to single frequency 457 kHz beacons. This transition is now considered to be complete.
- The receiver requirements have been adapted to also accommodate beacons with an optical user interface. Otherwise, beacons with an optical display only would not be able to meet the requirements as per Art. 3.3 e.
- The requirement for the operating time on one set of batteries has been set to 200 hours of transmission at +10° C and one hour of receiving at -10° C. This is more demanding than in the original version of EN 300 718, but it better reflects the user requirements.
- The extreme operating temperatures have been set to -20° C / +45° C. Operation down to -30° C was considered too demanding.
- The period of the carrier keying has been changed from 900 ms ± 400 ms to 1000 ms ± 300 ms. Shorter periods make it more difficult to detect multiple burials since they would increase the probability of overlapping signals. Most beacons today operate with a period of about 1000 ms.

- The transmitter frequency tolerance was reduced from ± 100 Hz to ± 80 Hz. This improves the compatibility among beacons from different manufacturers and allows for receivers with better performance. Today's technology permits implementation without an additional cost penalty.

5. Formalities

The old European standard EN 282 (1991) as well as the corresponding German national standard DIN EN 282 (1991) have now been formally withdrawn by resolution CEN/TC 126 (Paris 3 2000-04). They should not be referenced any more.

The abbreviation in the standard name has officially been changed from ETS (European Telecommunications Standard) to EN (European Norm). So the correct reference to the standard for avalanche beacons is now EN 300 718.

6. Conclusion

Standardization work is quite a demanding task. Working group members must be technically well qualified and they do spend a lot of time for the task, even if email has eliminated much travelling. We do hope that the current revision will serve all interested parties well for some years to come.

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