

# Out With The New, In With The Old

## *The New Problems Faced By Land Mobile Radio (LMR) Manufacturers*

Sean Costall, Sr. Certifications Engineer  
Spark Institute, Calgary, AB, Canada

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### **Abstract**

Immediately after the narrowband conversion, LMR manufacturers are facing changes to the intrinsically safe certification standards. While measures are being undertaken to preserve the status quo, the fact is that things will never be the same for LMR.

### **New Standards Are Not The Same**

FM 3610:1988 is becoming part of history, and will never return. While this is undoubtedly rotten timing for LMR makers, the changes are already done, for better or worse.

In response, various groups such as the NPSTC have mounted a titanic (and, some say, heroic) effort to preserve as much of the status quo as possible. As a result, two new standards (FM 3640 and TIA 4950) have been drafted to retain as many of the old rules as possible.

However, even if they are successful, these new standards are still not the same as the original. Things have changed, and there is no going back.

Most of the efforts have focused on adopting and extending UL 913 5<sup>th</sup> Edition – a much newer standard than FM 3610:1988, and nowhere near as lenient. LMR manufacturers will face a long, uphill struggle to understand and apply “new” requirements, regardless of what standard they choose.

Agencies typically are of little help in these efforts. Their job is to certify, not design, and they are strictly limited in what they can offer. Those that do offer consultancy services usually do so only at ruinously high rates and with long lead times.

This means that even in the best case, LMR manufacturers face a more strict set of rules than has ever previously existed for their industry – and will do so with almost no help from their certification agency partners.

## A Standard is Not Just a Standard

A standard does not exist in isolation – it is applied according to the technical guidance and interpretations of the certifying authority. In other words, it is subject to *interpretation*.

Like weather in golf, interpretations are constantly changing and often lead to unforeseen consequences. In extreme cases they can completely change the certifications landscape, and rarely for the better.

A myriad of new interpretations have developed as a result of nearly twenty years of technical innovation, committee work and harmonization efforts. They are difficult to see or predict, and cannot be changed, challenged or avoided.

Projects that encounter the wrong interpretations will simply fail – and that risk has never been greater.

## Success Gives Rise to (Over)Confidence

It is a sad fact that many designs certified as little as five years ago would not pass again today. For designs certified more than ten years ago, the vast majority would not pass. As described above, both the standards and interpretations have changed in the interim.

Companies often rely on in-house expertise to rise to the challenge. But how well did your company really understand the process the first time? Was it clear to you how and why you passed? Or was it simply considered “black magic”, never to be understood?

If your last certification was some time ago, look around. Are those people even still at your company? Do they clearly recall what was done? Do they understand what the new changes truly mean? Have they ever, in fact, used the new standards?

The number one mistake made by manufacturers is to assume that what worked before will work again. This is the exception – not the rule. Relying on past success is undoubtedly the most certain way to failure.

## The Uncertainties of Choice

With the standards changes, LMR companies now face unprecedented choice. While FM has been the *de facto* agency, many other agencies can certify LMR products.

It is a fact, however, that agencies are not created equal. Despite oversight and harmonization, interpretations can vary significantly from agency to agency.

LMR manufacturers are in a tough position. It is obviously advantageous to choose an agency that will have the interpretations that are most suitable for LMR design.

However, without extensive experience with all of the candidate agencies, informed decision-making is simply not possible. This invites a long, uncertain and (potentially) expensive hunt for a new partner agency via wasteful trial-and-error approaches.

## **In Summary...**

While no effort has been spared, land mobile radio OEMs hoping that the new standards will save the day are going to be sorely disappointed.

Changes in both the standards and their interpretation will mean most legacy designs will fail. Companies relying on internal expertise will find that expertise dated, wanting or completely missing. Lack of experience with “newer” standards will cause many design and re-certification projects to come completely off the rails, with all that implies.

Either proactively or in desperation, companies may search for new agency partners by trial and error alone. Getting to market first will be reduced to a game of chance.

## **What You Can Do**

Only a strong understanding of the written and unwritten technical requirements can lead to designs that can be certified as intrinsically safe in today’s certification environment.

To reduce their risk, LMR companies will need strong support from those who have:

- an understanding of the challenges faced here and now by LMR manufacturers
- extensive experience with UL 913 5<sup>th</sup> Edition and similar standards
- wide experience with different certification agencies and their individual methods
- a strong understanding and knowledge of unwritten agency interpretations
- a proven track history of identifying and mitigating certification risks

Spark Institute consultants have all of this experience, and more. Putting our certifications knowledge and your product knowledge together is the best way of reducing your product development risks. Get your project on the path to success, today!



## About Spark Institute

Spark Institute is a full-service consultancy that specializes in intrinsically safe and hazardous locations design services. Our experience covers North American, ATEX, and IEC requirements.

### Design Consulting

Know what you want, but don't know how? Put our years of experience to work for you. We can design hazardous locations products to your specifications.

### Design Evaluation

Have an existing product, design, or concept? Spark Institute can help evaluate your design to the relevant standards to help ensure compliance. Take advantage of our experience to reduce your risks before making costly mistakes.

### Training Services

Good designers aren't born - they're trained. Our training courses will drastically shorten the learning curve for both new and experienced designers. Courses can be tailored to your product lines on request.

Contact us today at: [www.sparkinstitute.ca](http://www.sparkinstitute.ca)

