



# The Future of EMC Engineering

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## Compliance Engineering in the Future

Have you ever thought about the future and products that will need regulatory approval? Compliance includes more than just product safety and EMC. It may include software protocols or installation requirements unique to a facility or be country specific. Will reliability engineering become a subset of compliance or vice versa? What are we to do as a small group of engineering specialists that must now achieve compliance for any country individually because mutual recognition agreements do not exist? Do we have the manpower and bandwidth to even get the job done?

We must now be comfortable with requirements related to wireless communication protocols, RoHS, WEEE, REACH, Energy Star, ETSI, PTCRB, MIL-Standard, and many others described by acronyms we may know little about or have never heard of. What about European Directives not yet created for products that do not yet exist, or countries that are entering the compliance arena, mandating in-country testing? Will we still be performing certification to existing standards (i.e., IEC/CISPR/EN/FCC/UL/CSA) or will standards evolve into something more complex with new requirements covering a greater scope that we have never had to deal with?

Will our work in the future focus on component level approval or system level? Does it matter as long as the intent of achieving regulatory requirements is met? What types of products will need component versus system level certification especially if nanotechnology and optical communications is utilized?

Future products will probably be based on delivering content to users, if we consider the field of information technology one of the more important elements of our

life. We expect products to be physically smaller containing greater functionality at low cost, but what about reliability? Is it even possible to perform component testing on small assemblies? Should we be concerned more with radiated emissions causing harmful interference in an already broadband wireless environment or should we worry more about immunity by ensuring our product will continue to work within harsh electromagnetic environments? With intelligent transportation systems becoming a major element in our life, should we worry about component level testing or should we worry about their integration when installed in the vehicle communicating with other electrical systems? If an immunity event occurs in any one subsystem, a fatal disaster could occur.

The future is exciting. Embrace new technology with passion and never stop the process of continued education.

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