



Hazard Based Standard IEC 62368-1 to Replace IEC 60950-1 in 2020



Why IEC 60950-1 is Going Away

Gone are the days when a telephone was just a telephone, and a printer was just a printer. The technology around us has become increasingly *smart* with every year that passes. While the ubiquity of smart-gear in the modern world provides for innumerable conveniences to us in our everyday lives, it presents a significant challenge to the agencies responsible for policing product safety. These agencies create safety standards that product manufacturers must conform to if they wish to sell their products to certain markets within certain geographical regions, and they do so towards the ultimate goal of keeping people safe.

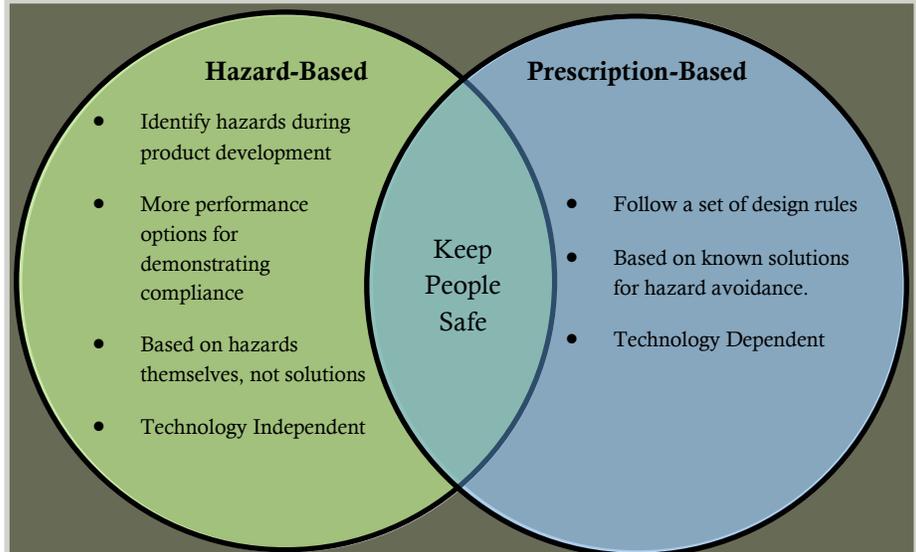
For many years, it was a trivial endeavor to identify what safety risks may be associated with particular pieces of equipment based on the construction of the device and the way that humans were meant to (or may reasonably) interact with it. For this reason, it has been common practice for agencies to specify independent standards for fairly narrow categories of equipment. However, the evolution of technology quickly shifts, blurs, or even eliminates the lines drawn between these categories. Twenty years ago, it was rather apparent that a telephone should be assessed under a safety standard that governs information technology equipment (IEC 60950-1), and that an MP3 player should be assessed under a standard governing audio and video equipment (IEC 60065). Now, in 2018, under which of these two categories should your cell phone be evaluated? The answer, as it turns out, is neither.

It is a common misconception that the new IEC 62368-1 standard is simply a merger of the two legacy standards IEC 60065, and IEC 60950-1. A true union of the two legacy standards would be littered with contradictions and would do nothing to counter the future blurring of the lines between IEC 62368-1 and some other standard. Accordingly, a new approach has been taken in the development of IEC 62368-1, an approach the Underwriters Laboratory (UL) refers to as Hazard-Based Standard Development. UL calls the old school of thought Prescriptive-Based.

Hazard-Based Safety Engineering

“ Principles of hazard based safety engineering involve the study of the sources and mechanisms of injury in order to best protect against it. This approach is used to support risk assessment, with various stages to identify, analyze and evaluate risk, and to reduce risk as needed. For example, hazard based safety engineering applied to product safety is based on the premise that various forms of injury occur when energy of sufficient magnitude and duration is imparted to a body part.”

- Thomas Lanzisero (UL)



Basic Structure of 62368-1 Hazard Assessment

In general, IEC 62368-1 identifies three classes of energy sources and three categories of people. A Class 1 energy source is capable of making perceivable contact with a person. A Class 2 energy source is capable of causing pain to a person, but not capable of causing an injury. Class 3 energy sources can cause injury or even death. People are broken up into the categories of ordinary, instructed, and skilled. IEC 62368-1 specifies the number and type of safeguards that must be in place between an energy source of a given class, and a person of a given category. These safeguards must then meet the stringent requirements set forth by the standard.

IEC 62368-1 Hazards

- Electric Shock
- Fire
- Hazardous Substances
- Mechanical Hazards
- Thermal
- Radiation



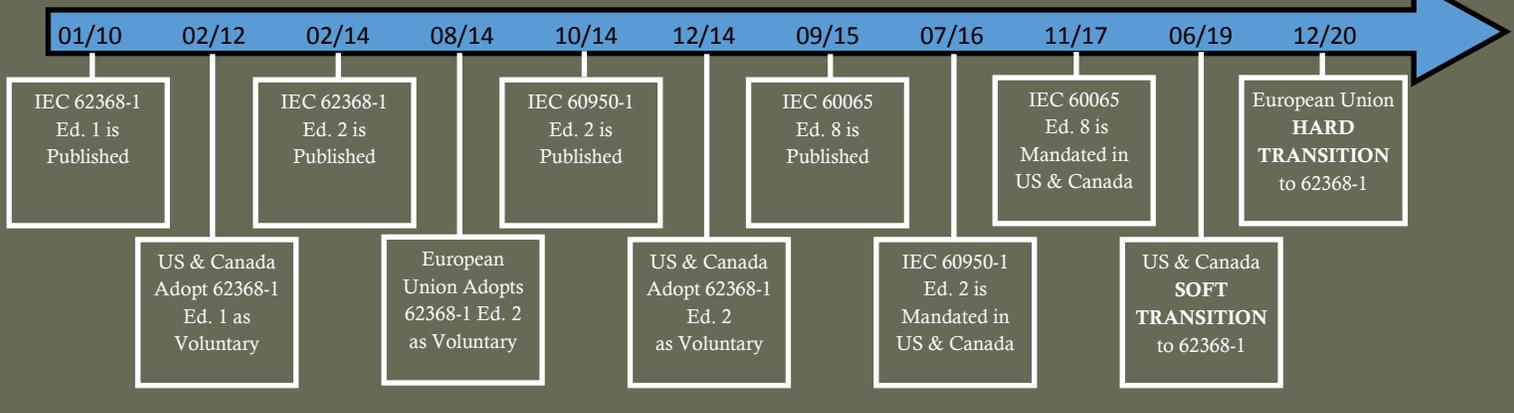
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Impact on Original Equipment Manufacturers

For perhaps the majority of products currently being developed in accordance with IEC 60950-1, the transition to IEC 62368-1 will feel more like a paperwork exercise than a complete redesign. Bear in mind that the actual requirements within IEC 62368-1 were derived from similar safety requirements in IEC 60950-1 and IEC 60065, the major difference lies within the methodology of meeting those requirements. The only foreseeable roadblocks are the very few areas wherein 60950-1 and 60065 contradicted one another, and mitigating any such roadblock *may* be as simple as a quick BOM change. Agencies such as UL actually report that the new standard is beneficial to OEM's, in that it allows more flexibility in the development of compliant products. It is important, however, for OEMs utilizing off-the-shelf power sources to ensure that those power sources meet the new standard by the end of 2020.

Timeline



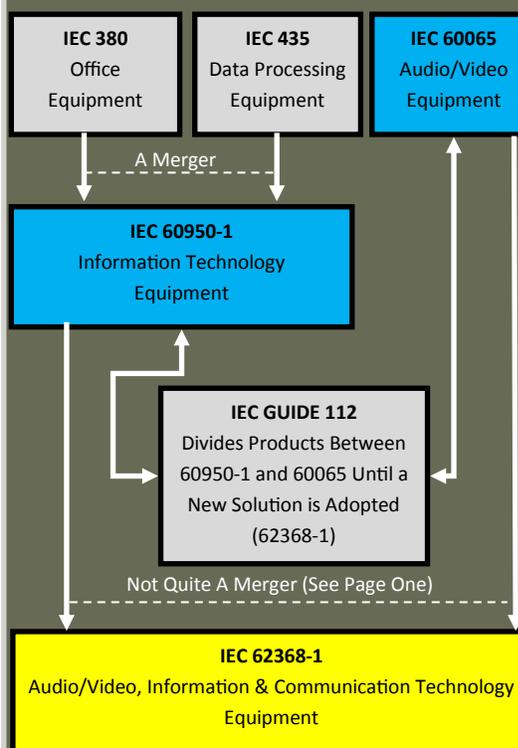
Hard vs. Soft Transition

On June 20, 2019 the United States and Canada will adopt a **soft transition** to UL 62368-1. This means that all **new** designs submitted for safety approval as audio/video or communications/IT devices will be required to comply with UL 62368-1 to be sold within the United States or Canada. Designs that are already certified under UL 60950-1, that do not undergo significant revision will be grandfathered in for the life of those particular products. No industry file review will be conducted for legacy products.

On December 20, 2020 the European Union will adopt a **hard transition** to EN 62368-1. This means that all products sold within the EU must be certified against EN 62368-1 before 12/20/2020 regardless of legacy status.

There is some murmur that the North American agencies may push back to 12/20 to coincide with the EU, but no official word on that just yet.

The Evolution of 62368-1



Our Commitment

Power Partners Incorporated is committed to maintaining product compliance with all applicable safety, EMC, and efficiency standards as they pertain to our customers needs.

We are committed also to participating in the distribution of knowledge regarding such standards through channels such as this technical bulletin.

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