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## Towards a More Complete View of Safety Risks

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**Abstract:** Risk assessment during product and process development is an established procedure within most branches nowadays. Not only the new ISO 9001 brings more attention to it, but also especially for safety risks underestimation can cost not only quite a lot of money but also the survival of companies. Within the paper we will show different approaches for technical risk assessment. It will be shown that the different branches had established different ways to address risks, invoked by regulation or by the product characteristics itself. Especially for complex mechatronic products, which are and will be more widely used in technical fields like electro mobility or autonomous driving, the technical risk assessment is driven by the approach of functional safety (e.g. see ISO 26262 for vehicles or ISO 61508 as a more general approach). The weakness of most approaches is that it focuses each time only on one technical domain - mostly the product development phase and only on the electrical parts of the system. Risks due to mechanical failures of the design or due to manufacturing failures are not included. We will explain an approach to overcome the narrow focused issues and to include manufacturing issues as well as design issues within different operational situations. Those combinatorial view is necessary due to the fact that severe risks are mostly a combination of multiple reasons.

*Keywords:* Failure Mode and Effect Analysis, Risk Analysis, Fault Tree Analysis