

CASE STUDY

TÜV Italia-TÜV SÜD Group

by Inxpect



CASE STUDY

Certifying Safety Radar Equipment under the European Machinery Directive

Inxpect and TÜV Italia - TÜV SÜD Group started their collaboration in 2020, on a project which aimed to certify the “**Inxpect Safety Radar Equipment**” for safety uses under the European Machinery Directive. This was a big challenge since no harmonized standards for the radar technology have been released so far, although the standardization activities are progressing on that side, with the work on the IEC TS 61495-5.

TÜV Italia - TÜV SÜD Group was able to identify a set of standards that could be applied to define the requirements for Inxpect Safety Radar Equipment. The work was not easy and required a close collaboration between the notified body and Inxpect, mainly focused on understanding how to translate the requirements applied to devices similar to this new and emerging technology.

The innovative 3D safety sensors designed by Inxpect required the right mix of legacy standards and new normative works in order to be properly analyzed, verified and validated. With an EC Type examination certificate, the radar was certified with reference to Annex IV (19,21), and assessed to comply with the following:

- **SIL 2 (IEC 62061)**
- **PL d (ISO 13849)**
- **Performance Class D (IEC TS 62998-1)**
- **Type 3 ESPE (IEC 61496-1)**

On top of that, TÜV Italia - TÜV SÜD Group and Inxpect have used the IEC TS 61496-5 draft to verify that the requirements and tests were supported by the IEC experts with respect to safety radar matters.

The safety radar can be used in industrial automation applications operating under the machinery directive, covering risks up to PL d, category 3, according to ISO 13849, and SIL 2 according to IEC 62061. This includes most common applications, such as robotics applications, press-brake machinery, CNC machinery, AGVs.



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*Lorenzo Nava,
CTO of Inxpect*



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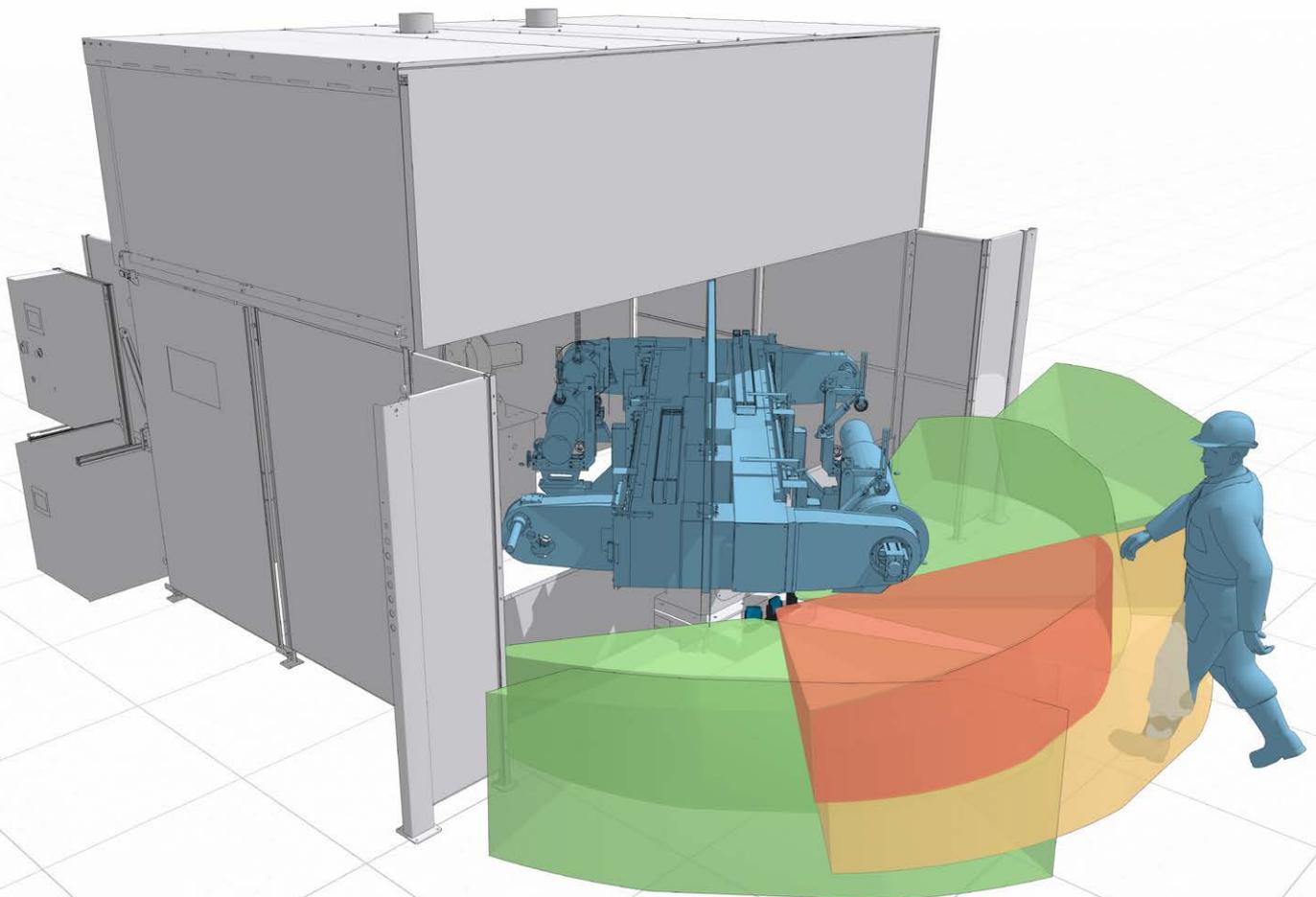
The partnership

“The support of TÜV Italia - TÜV SÜD Group, with its long experience on the qualification process and on standardization activities, was really important in order to complete the certification activities of Inxpect technology according to the schedule”, says **Lorenzo Nava**, CTO of Inxpect.

“The added value brought by the discussions and in-deep analysis of the critical aspects of Inxpect’s system, was the factor that pushed us to eventually design and implement a top-class product in terms of safety and performance. Together we were able to analyze and integrate the safety collaterals provided by the supplier of the radar IC, supporting us in the complete system analysis”.



Thanks to the many years of experience of TÜV Italia - TÜV SÜD Group technicians, it was possible to identify the reference standards to identify and overcome the state of the art, through calculations, analyzes and tests. The synergy established between a manufacturer of innovative safety components and a notified body has made it possible to increase skills, on the one hand, and specific knowledge, on the other.



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Inxpect S.p.A.

Founded in late 2015 by Luca Salgarelli as a spin-off of the R&D activities of TSec Srl and Superpartes S.p.A., Inxpect S.p.A. is a company that designs and manufactures smart radar sensors. The company has developed the first - and to date the only - radar systems in the world certified for industrial safety applications. Inxpect sensors are able to detect with certified safety the presence of operators in working areas of any machine or industrial robot, significantly increasing both the safety of operators and the productivity of the machines. The system is now proposed to the market by dozens of distributors and specialized integrators around the world, and it is in the product portfolio, as a brand label, of major companies operating in the field of automation and industrial safety. The company currently employs approximately 60 people (including 18 with a PhD), has headquarters, R&D and production in Italy (Brescia and Florence), part of the R&D in Israel (Haifa), two subsidiaries in Spain and Germany, and in 2020 had a turnover of 2.1 million euros.

www.inxpect.com



TÜV Italia - TÜV SÜD Group

TÜV SÜD's brand story started in 1865 when a fatal accident gave rise to an enduring legacy and spawned a global industry. Since then, we have grown to become a trusted partner of choice in safety, security and sustainability solutions. This Brand Center will provide you with useful information about the TÜV SÜD brand. We hope you are moved by our continuing commitment to inspiring trust, from the age of steam engines to today's hyper-connected world and beyond. The TÜV SÜD logo is a universally recognised symbol of quality and safety. It is based on a distinctive octagonal design that people instantly associate with the TÜV SÜD Group. The blue colour is taken from the Bavarian flag, reflecting our heritage of German engineering excellence. Whenever possible, our logo should be featured with our claim in a grey box known as the TÜV SÜD corporate area. TÜV SÜD in 1987 opened its first office in Italy, in Milan: this is how TÜV Italia was born. Today it is a reality that has a structure of over 650 employees and 400 collaborators, six operational offices throughout the country, in addition to the laboratories of Volpiano (TO) and Benevento of Bytest, and those of pH located in Tavarnelle Val di Pesa (FI).

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