

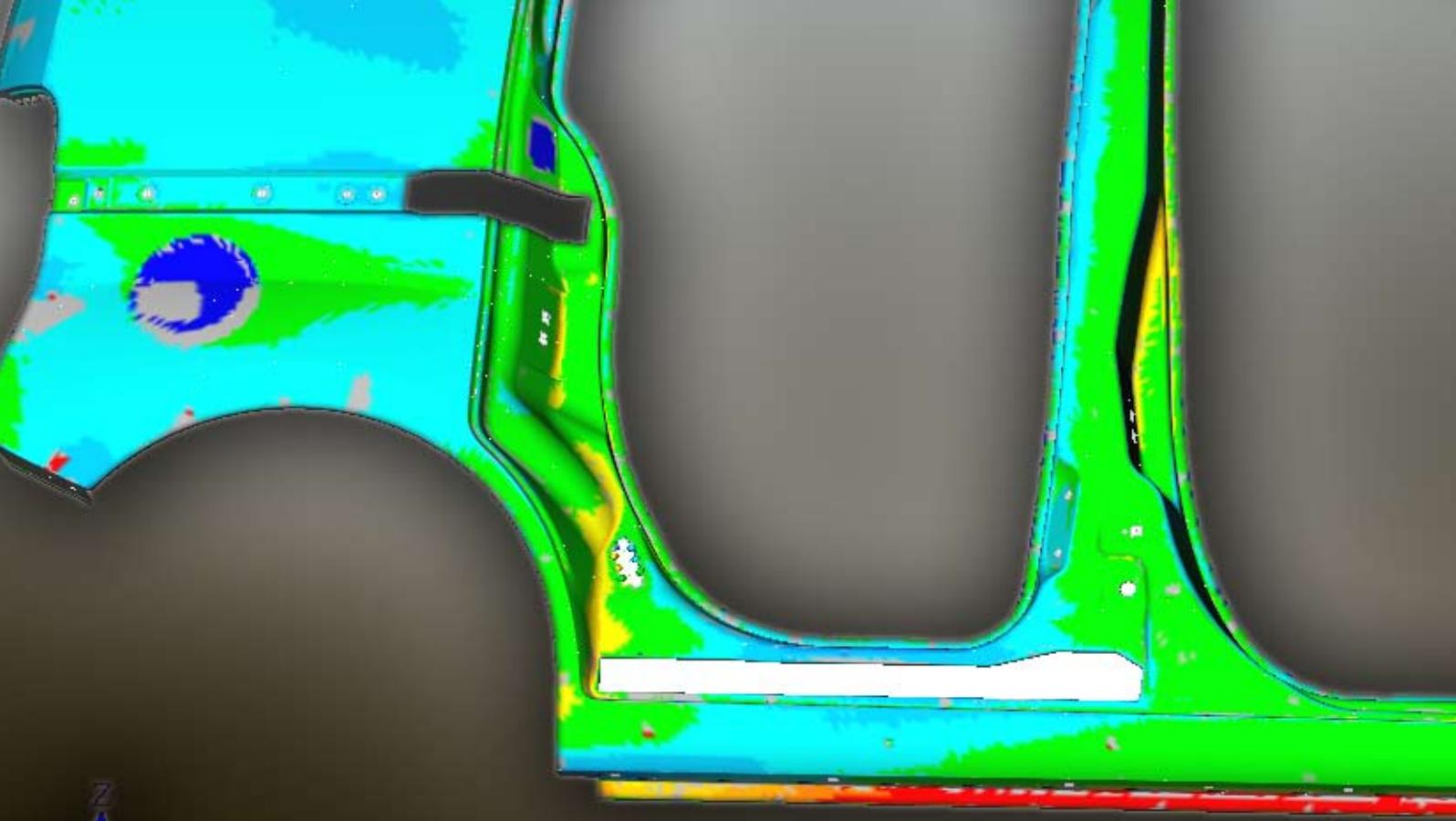


CogniTens
Beyond Any Measure

Case Study Tofas Bursa
Turkey's leading automotive
OEM innovates in 3D inspection



 **HEXAGON**
METROLOGY



Bodyside 3D inspection during die tryout analysing surface and trim edges

Tofas, founded as a joint venture between Koc Group and Fiat Auto, has been breaking new grounds in Turkey's automotive industry for the past 40 years. With 5 brands currently represented, Tofas is one of the leading automotive companies in Turkey. Tofas carries out marketing and sales activities for Fiat, Alfa Romeo, Lancia, Maserati and Ferrari brands under its name and company FerMas which is owned by Tofas. Except for Italy, Turkey is the only country where Fiat's all 5 brands are represented by a single company.

Tofas produces Doblo, Linea, Albea Sole, Palio Sole and Minicargo models in its factory in Bursa, Turkey. While having a current annual production capacity of 250,000, Tofas is now extending its capacity to 360,000, with investments of 550 million € for Linea model and new Minicargo vehicle produced for Fiat and the PSA Group. Tofas relies on its experienced staff and leverages self developed technology for producing and exporting final products and spare parts to global markets.



TOFAŞ TÜRK OTOMOBİL FABRİKASI A.Ş.

Leading the way in die machining and tryout

After a detailed evaluation and with the support of Redoks Engineering, Tofas selected CogniTens Optigo 200 RE system to support dimensional evaluation, reverse engineering and quality control in the demanding environment of the Tofas automotive shop floor. Tofas Tool & Die plant management selected the CogniTens solution following an extensive process. As part of this, Tofas engineers benchmarked all key optical measurement systems and 3D digitalization technologies and their suitability to support full dimensional measurement of castings, machined dies, stamped parts and other complex parts and tools.

The Optigo system was implemented in the Tofas manufacturing and assembly complex in Bursa and used to support the Tool and Die plant operations. This sub-plant is considered one of the most sophisticated throughout the global Fiat Auto group and was recognized as the group's innovation center for die technology and best practices.

White Light technology for the die shop

Based on patented 3D optical technology, the Optigo based solution is designed to withstand the fluctuating environmental conditions

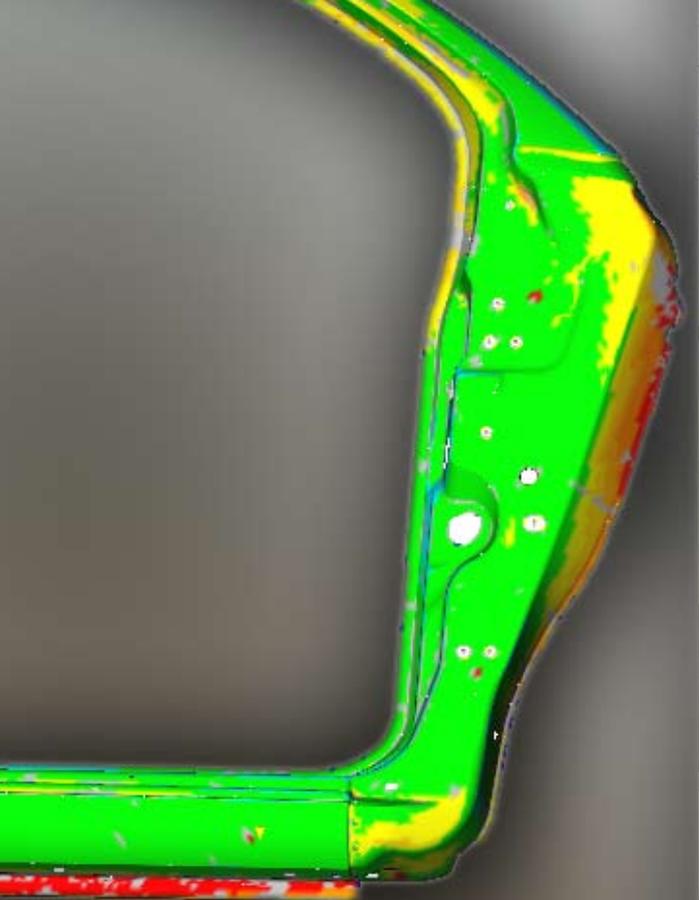
of the Tofas shop floor, allowing to measure tools and parts of interest directly in their manufacturing location. Optigo is a portable system which offers powerful yet easy to use software to guide the operator from program definition through measurement to real-time results analysis and reporting.

"Optigo proved to be the most suitable solution for our needs providing us with fast, reliable and comprehensive measurement results to support a variety of daily die shop applications", Said Mr. Erkan Polat, Tofas Die Production Manager. "This was a major step forward in our plan to implement the most sophisticated industrial systems and support Tofas' objectives to accelerate new product introductions while surpassing the industry's highest quality standards".

Extending CMM probing to 3D Optical Inspection

Tofas is a valued customer of the Hexagon Metrology group for over 20 years with diversified install base of CMM machines used throughout the operations and now expanding their use to optical measurement products by CogniTens.

Tofas have been using their Optigo system to provide highly reliable full surface, edge, common features and cross section measurements



for small to large objects such as die casting arriving from foundry and stamped sheet metal panels from die tryout. The system ability to move across the die shop and withstand the working conditions turned it into a valuable tool for a variety of quality and engineering applications.

Ramping up capacity and quality

Striving to strengthen its dominant market position Tofas is making considerable investments in extending its production capacity while improving quality. Advanced technologies and processes are expected to contribute to its plan to reach over 350 thousands vehicle within a few years.

Based on Tofas estimations, the Optigo system is delivering value to several ongoing die shop operations including:

- Considerable reduction in die machining and rework times by digitizing die casts
- Fewer and shorter quality iterations required to reach a productive die set
- Faster problem resolution by fully analyzing part quality in 3D.

www.tofas.com.tr

Tofas factory in Bursa, Turkey

CogniTens

CogniTens is the leading provider of 3D optical measurement solutions for industrial applications. CogniTens dimensional measurement systems help improve engineering and manufacturing processes in automotive and other manufacturing industries.

Based on innovations in 3D non-contact measurement technology, CogniTens solutions help increase efficiency during critical stages of preproduction, launch, ramp up and mass production.

CogniTens provides tools and processes for capturing, analyzing and distributing highly meaningful dimensional metrology information to support different industrial engineering activities such as tooling, part production, assembly, quality and process control.

CogniTens, founded in 1995 is today part of Hexagon Metrology group, the world's largest measurement technologies company.

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