

Focus on **reducing complexity pays off** for paintshop operations

By: Ed Richardson

The days of paintshops consuming around 70% of electrical energy and 80% of heat energy used in vehicle production are numbered.

Advances in reducing power consumption and emissions were recognised at the “SURCAR International Awards” presented in Shanghai in September 2016. The SURCAR Shanghai Congress is the Asian Spin-off of SURCAR Cannes Congress, the world leading congress on Automotive Body Finishing since 1964.

It is the third year in a row that Geico Taikisha has won awards for innovation at SURCAR.

Geico’s J-Doc, a system for the management of all plant documentation, won the category “Startup and Commissioning”. Geico’s system for optimizing oven air flow won the category “Lean, Plant and Process design”. In the third category “Environmental footprint,” the Geico Dryspin Scrubber was given the award for the most innovative solution for the separation of paint overspray.

Automotive Industries (AI) asked Antonio Zaza, Executive Director Sales and Global Key Accounts at Geico Taikisha to explain what J-Doc is.

Zaza: It is basically a totally paperless electronic software system which is used to collect any type of information related to maintenance. By reading a barcode on a piece of equipment the technician can see all the information about that machine on a tablet. The information includes how to clean the piece of equipment, and how to maintain it. Videos showing how to disassemble the equipment can also be downloaded. There is also information on which third parties to use to make repairs where necessary.

Through the system the technician can also be in direct contact with any Geico expert anywhere in the world in real time. Previously they may have had to wait an hour or even a week for a reply or for the expert to fly out to the plant. We will be fitting a camera in glasses worn by the technician which allows the expert to view what the technician is seeing.

AI: What makes it award-winning technology?

Zaza: J-Doc is a simple concept which people have not thought about up to now. But, it is the kind of improvement which makes a real revolutionary difference in the maintenance of plant and equipment. The system addresses the challenge of collecting and analyzing detailed information on all pieces of equipment in the plant.

AI: Is this an example of “industrial humanism”?

Zaza: Industrial humanism is a goal for the far future. The objective is for people to manage a system without being close to it. We improve health and safety if we remove people from inside the system. J-Doc is one of the steps towards this bigger idea and vision at Geico.

AI: What is different about your award-winning oven?

Zaza: It is not physically different to other drying ovens. The design was born out of the Geico philosophy of reducing environmental pollution as much as possible. We started with the objective of linking the oven to the real conditions of production. There are always delays on the production line and ovens are seldom full all the time. Therefore, if there is no car inside the oven it automatically operates in at a different level. The approach includes monitoring the conditions inside the oven. Air is vented from an oven to prevent the build of solvent to the point where it can explode. We put a sensor inside which monitors the levels and controls the exhaust fans.

AI: How does it reduce emissions?

Zaza: Energy is saved when the exhaust works independently of the oven. The system also reduces the emission of solvents as they are extracted and used as fuel for the oven. In addition, we are able to reduce the supply of fresh air inside the oven, which means that less energy is being used to pump air into the booth.



The Geico Taikisha head offices in Milan, Italy.



LEFT: A paint booth fitted with the Dryspin Scrubber.

BELOW: Antonio Zaza, Executive Director Sales and Global Key Accounts at Geico Taikisha with Tim Hayes, the President of SURCAR International Committee Global Customer Director, Delegate of the Board, holding the three awards presented to Geico Taikisha at the conference.



Where the system has been installed we have reduced emissions by up to 40% - which translates directly into cost savings. Oven energy consumption represents around 30% of the total paint shop consumption, which costs on average around 15 million euro per year in Europe. This means OEMs can something around 1.5 – 2 million euros a year on energy costs.

AI: Please explain the Dryspin Scrubber technology.

Zaza: In even the most efficient paintshops 25 to 35% of the paint is lost through overspray. That paint has to go somewhere. We can't exhaust it straight into the atmosphere. The solution has been to use a wet scrubber where the exhaust air is filtered through water. But the water needs a huge tank, is smelly and is difficult to handle.

Limestone has proven to be a more manageable material. What we now have is a bed of limestone which cleans the air before it goes through other filters which remove 99,99% of the paint. Once the air is filtered it is recycled into the booth in order to retain the energy for conditioning the air within the system. With a water filter the processed air is simply released into the atmosphere, which means that you lose that energy. Using this system we can save over 60% on the energy costs for heating and cooling. There are also savings on the time required to bring the booth up to the right temperature, on maintenance and on the chemicals needed to treat the water.

AI: Can the system be retro-fitted?

Zaza: All our systems can be retro-fitted. If there is a minimum space of 4,7 meters below the grating we can move and adapt the components to fit the available space. By making the footprint of the

paintshop smaller there is also an immediate saving in energy because you reduce the amount of space that needs to be heated or cooled.

AI: All three awards are related to the environment in one way or another. How does Geico stay focused on the environment?

Zaza: Our culture is fully verticalized – all our people share the same vision. If we are honest about it, a paintshop is not a clean environment. Everybody working with paint has to be sensitive to its impact on people and the environment.

AI: How is the focus on the environment good for business for OEMs?

Zaza: Our guiding philosophy is that we strive for low energy, low emission and low investment – and good quality. If you start from the premise that everything has already been invented then you focus on improving technology, and on removing complexity. Everything is connected. If the technology is lean and simple then it uses less energy and the emissions are lower. For OEMs the advantage is that simple means lower investment costs.

AI: What new technology can we expect to see coming out of Geico?

Zaza: Geico has a target of Energy Independence Day on June 16, 2020, when we want to be able to deliver the first self-sufficient paintshop. Our next target is to protect people – and not only humanity as a whole by reducing energy and emissions. We have to protect the people who are using the equipment. By fully automating the operations people will not have to go near the equipment while it is working. The focus on reducing complexity is helping us to achieve this. **AI**