

DNV Forum

2006

A managed road for the automotive industry



Special edition

Inside:

Industry voices on risk management,
certification and DNV

System certification:

“Nothing more than intelligent staff management”



“Ultimately, process-oriented certification is nothing more than intelligent staff management. In the course of our partnership with DNV, we have been able to successively increase the individual responsibilities of our employees,” says chief executive of BMW M GmbH, Ulrich Bruhnke.

TEXT > ISABEL RADWAN PHOTO > BMW

When Ulrich Bruhnke starts talking about his company’s hand-made M engines, it becomes immediately apparent that this is a man who has found his vocation. In the eyes of many a BMW enthusiast, professor Ulrich Bruhnke, chief executive of BMW M GmbH, has the most coveted job in the world. This is the man who presides over the fortunes of BMW’s sports cars. The nippy, top-end BMW M line, that has achieved cult status among its fans, is designed, developed and manufactured, in part manually, here at the Munich headquarters.

“We’re the inspiration team within the BMW group,” explains Bruhnke, not without pride. “Our development department is a think-tank in which the whiz kids with a real driving passion can let their hair down.”

QUALITY NEEDS TO BE MANAGED Although an enviable job in one of the most vibrant sectors in the world, creativity and dynamism must be balanced by discipline and quality controls. “Speed in our market often goes hand in hand with quality deficiencies,” Bruhnke continues. “BMW M GmbH stands for the best sports engines around the globe and for unconventional,

custom-made products. We are goldsmiths and high-performance sportsmen in one.” Not an easy task in a market as merciless and unforgiving of quality defects as the automotive sector. For this reason, the industry is turning increasingly to the objective assessment and monitoring of its performance by impartial experts such as DNV.

In 2002, BMW M GmbH hired DNV for the first time to assess the company’s performance according to the EN ISO 9001:2000 quality management system. “We are grateful for the methodical support and far-sightedness of DNV’s quality auditors,” says Bruhnke. “The auditors boost staff awareness of their work processes.”

BMW M GmbH has the motto “Creativity by design”, a goal which is supported by DNV’s auditors who analyse the work processes jointly with the staff, identifying responsibilities and highlighting potential bottlenecks.

THE LEARNING COMPANY “Companies that don’t learn sufficiently quickly will be chased by the market. It couldn’t be simpler,” says Bruhnke. “We regard our collaboration with DNV as a form of joint,





escorted learning. Ultimately, it is our customers who benefit at the end of this value-added chain. They are individuals who invest not only in the ultimate driving experience but also in their confidence in a world-class technology.”

This can only be assured in the long term by a management that takes a committed approach to anticipating risks and bottlenecks. Risk management is therefore commonplace at BMW M GmbH, with DNV’s auditors acting as a mirror that regularly reflects the staff potential for improvement. “If you’re going to spear-

head the market, you must also set the benchmarks,” Bruhnke continues. “For our staff, this collaborative venture is a sportsmanlike assessment of their abilities and potential.”

BMW M GmbH can look back on many years of measurable benefits for its staff from the collaboration with DNV. This is the best incentive to continue fervently along this path. Ultimately, a motivated workforce offers the best guarantee for quality. No one knows that better than Ulrich Bruhnke.

BMW M – CREATIVITY BY DESIGN

BMW M GmbH is synonymous with world-class sports engines and tailor-made production for aficionados. At BMW, M stands for exceptionally powerful engines. Vehicles of the legendary BMW M line started being manufactured in 1972.



ULRICH BRUHNKE

Professor **ULRICH BRUHNKE** became BMW M GmbH chief executive in December 2003. Under his management, the company launched the new BMW M5 and BMW M6 cars. The professor of vehicle technology is commonly regarded as one of the top managers in the automotive sector and is also an enthusiastic car fan in his spare time.



A standard for the road

Very few people speak passionately about standards, but after a lifetime in the automotive industry, Michael F. Brennan is one. He has seen for himself the benefits reaped by setting a high standard and sticking to it, “I believe the goal of common, standard systems is worth the price of the journey.” TEXT > ANDERS ØVREBERG PHOTO > ALLAN DAVEY/MASTERFILE

Managing Director for the International Automotive Oversight Bureau (IAOB), Michael F. Brennan, is one of the caretakers of the industry’s own standard designed to improve quality management. Called ISO/TS (Technical Specification) 16949, it was launched in 2000. It’s the first international quality management system standard for the entire automotive industry.

“The standard is based on the generic ISO 9001 standard, but has additional content targeted to increase the impact on the automotive industry. Quantifiable data confirms that the standard is improving

quality, but we don’t claim to have found the secret to success just yet,” says Brennan.

HIGHER DEMANDS FOR RE-QUALIFICATION

The ISO/TS standard, which replaced several national standards, is owned by the International Automotive Task Force (IATF). Five oversight bureaus, of which the IAOB represents North-America, have been created to function as accreditation bodies on its behalf. Together, they approve the certification bodies that may provide certification to customers.

“We now have 54 approved certification

bodies around the world, of which 24 are my responsibility as manager for the IAOB,” says Brennan.

In order to improve the implementation and quality of the standard, the five oversight offices have raised the bar for the certification auditors.

“Every third year the IATF requires that all certification body auditors go through a re-qualification process. Recently we enhanced the quality of the training and the demands significantly in order to improve quality and consistency among the auditors,” says Brennan.

This may lower the numbers of those who pass, but Brennan emphasises that raising the quality is the goal. “We now have 2,300 auditors for our ISO/TS certification scheme, while we believe that 1,500 would suffice at the anticipated volume of certificates. However, at the same time we have nowhere near enough local language auditors in countries such as China, India and Korea.”

CHINA... AGAIN. The automotive industry is competitive, and recent years have seen a consolidation among automakers as well as suppliers. The hunt for lower costs continues, and with financial problems in the US a move to the east is on.

“Automakers are moving as quickly as possible to countries with lower labour costs. China in particular is a behemoth. To have a local presence, we opened up an office in Beijing two months ago,” says Brennan, who has seen such shifts in the auto-industry before, mentioning Mexico. “Now that China has lower costs than Mexico, the industry is moving east instead of south.”

GROWING INTEREST IN ASIA. In the US, the big three auto makers GM, Ford, and DaimlerChrysler all require their first tier suppliers to be certified to the standard. Some of these first tier suppliers require this also from their suppliers. Large Asian auto manufacturers have yet to use the standard, but there are developments.

“Some of the Asian automakers are showing an interest. This seems to indicate that we are going in the right direction,” says Brennan.

While there can be difficulties with quality in lower cost countries, the results so far are positive.

“GM’s Chinese first-tier supplier is on par or better than its European counterparts. I’ve also experienced that other first-tier suppliers deliver good quality, but if we look to the second, third or fourth tiers we know there are still challenges to be faced,” says Brennan.

CONSISTENCY AND QUALITY. Consistency and high quality remain primary drivers in an industry looking to cut costs. The standard and the consistency it provides is an answer, believes Brennan.

“I’m confident that the standard and common systems benefit the industry and the end product. It’s still early days, and we will always look for ways to improve the way we implement the scheme of certification,” he says. He speaks with admiration about the Toyota model: “They follow the process almost religiously, and they only change it if somebody shows them something better, and then all of Toyota goes the same way. It’s truly phenomenal, and it’s something you just don’t see in western automakers. That is my little contribution to the auto industry; I’m passionate about the value of common standardised systems.”



MICHAEL F. BRENNAN

MICHAEL F. BRENNAN,
Managing Director for the International Automotive Oversight Bureau (IAOB).

Coming together over certification

Renesas, a cutting-edge manufacturer of semiconductor devices, was founded by Hitachi and Mitsubishi Electric in 2003. From the start, the company has actively used certification as a tool to unify and align the two former companies and create a new international network with efficient internal processes. TEXT > ANDERS ØVREBERG PHOTO > RENESAS



Microcomputers and memory chips are everywhere, even in places you wouldn't expect, like cars, TVs and cell phones. Wherever computing power is needed chips can be found. After the merger in 2003, Renesas has become a global leader in this market. Currently number five in the world, Renesas is firmly established as the number one semiconductor manufacturer in Japan.

"We mainly produce semiconductor components for the communications, automotive, and consumer industries. Basically the components can be used anywhere where there are needs for electronics," explains Hiroshi Sadohara, deputy general manager for the Quality Assurance division of the Renesas Technology Corporation.

Among Renesas' customers are international companies such as Sony, Canon, Toyota, IBM, HP, Siemens, and Dell.

MOTIVATION. With the merger in 2003 of the two semiconductor groups, newly formed Renesas had to deal with two company cultures, different internal processes, and even different technical terminology. This was a challenge they addressed immediately.

"Our motivation for going through with the certification process was based on the goal of unifying the two companies: Hitachi and Mitsubishi electric semiconductor groups. We found that using inter-

Wherever computing power is needed chips can be found.

national standards, such as ISO/TS 16949 on the automotive division and ISO 9001 for the other parts of the company, could help us in this process," says Hiroshi Sadohara.

ISO/TS (technical specification) 16949 is a comprehensive quality system standard for the automotive industry. ISO 9001 is a generic certification standard for quality management systems, applicable to companies in any industry.

FIRST STEPS. The first step on the road to certification was to find the right partner to work with to achieve certification to the international ISO 9001 and ISO/TS 16949 standards.

"We researched certification bodies and found out that only a few international certification bodies are present in Japan," says Hiroshi Sadohara. DNV brought its high reputation, competence and deep industry knowledge to the process.

ACHIEVEMENTS. The ISO/TS 16949 process began first, and Renesas achieved a joint certification for the entire company this year.

"The project was successful, as we achieved what we set out to do, and it has been carried further by our international

sites in for example Europe, where some have switched certification partners," explains Hiroshi Sadohara.

As a parallel project, the ISO 9001 certification process began.

"Here we have made several changes, but the biggest improvement for us has been to measure the Customer Satisfaction Index, which had not been done as thoroughly before. This is a demand of the ISO/TS process, and now every year we search all customer feedback and make improvements based on that. This has been very useful for us," says Hiroshi Sadohara.

A CLEARER POLICY. Another important improvement for Renesas was envisioned by the top management before the project began.

"Before we started we had many different policies in the quality area. The process of certification enabled us to create one single policy that is more clearly and more strongly formulated. We have also built our own Quality Assurance manual, based on the ISO and TS standards, which is actively used," says Hiroshi Sadohara.

ONE UNIFIED COMPANY. The plans for a continuous certification process are well estab-

lished in Renesas, and more sites are aligning themselves with the corporate certification policy during this year and next. "It is our policy to recommend how to proceed, but we don't ask our production sites forcefully," Hiroshi Sadohara explains.

As for the end result, Mr. Sadohara has little doubt that a unified company where everyone moves in the same direction is a clear benefit for Renesas.



MR. HIROSHI SADOHARA

"We are certain that our internal processes have improved after the implementation of certification in Renesas," concludes MR. HIROSHI SADOHARA, deputy general manager for the Quality Assurance division of the Renesas Technology Corporation.

! Facts about Renesas:

- > No. 5 out of more than 20 semiconductor manufacturers in the world.
- > No. 1 in Japan.
- > Employs about 26,000 people, of which 20,000, work in Japan.
- > In 2004 Renesas' revenue was close to 10 billion USD.

Hot-button issues in global quality

The hottest automotive quality topics in Europe right now: supply chain management and developing a forum for auditing the software design process.

TEXT > CARLA KALOGERIDIS PHOTO > ACTIONLINE



DNV executives from North America and Europe met with *Actionline* to discuss quality trends (l to r): Robert Djurovic, director of automotive services, North America; Henrik O. Madsen, COO DNV Certification; Yehuda Dror, Director of Operations, North and South America; and Michael Frölich, Global Industry Sector Manager, Automotive.

The automotive industry is growing more global by the hour, and industry leaders understand that the world's automotive challenges are *their* automotive challenges. Recently, *Actionline* had the opportunity to get an enlightening perspective from several European and North American quality executives from DNV Certification, who have their finger on the pulse of world quality trends.

SUPPLY CHAIN MANAGEMENT. “Managing requirements is the evolution of where a lot of quality work is going right now – whether it’s environmental, quality or legislative,” says Yehuda Dror, Director of Operations of DNV Certification in North and South America. “But, one of the hottest topics in the industry right now is supply chain management.”

DNV Certification is a global quality registrar, so it’s privy to a great deal of feedback from OEMs and suppliers around the world. “It’s not uncommon to hear OEMs say, ‘OK, all my suppliers are all registered to ISO 9000, but I’m still having problems,’” says Henrik O. Madsen, DNV’s

chief operating officer of certification globally.

“The reality is that certification alone doesn’t mean that everything magically falls into place. The supply chain and processes still need to be managed.”

The group agrees that organizations like AIAG and its counterparts in Europe – VDA (Germany), Galia (France) and Odette (Sweden) – have had positive impact on the global quality scene and will remain crucial to the industry’s efforts to progress. “The simple way of looking at AIAG is as an organization that gets everyone in the industry together to define the requirements,” says Michael Frölich, Global Industry Sector Manager, Automotive, DNV Certification. “But, the next focus will be on opening up the certification process to additional services, such as ratings and assessments. Many AIAG-type organizations around the world have working groups addressing this already, but coming up with the solutions and then deploying them to the industry is a challenge.”

“AIAG is that common ground where

suppliers and OEMs get together and OEMs say, ‘OK, here are my expectations. Now what can we do, how can we work this out?’” adds Robert Djurovic, DNV’s director of automotive services, North America. “The tighter the economy gets, the higher the expectations are, and that’s when the role of AIAG gets even more critical.”

STAGE SET FOR SOFTWARE AUDITING

While supply chain management is on everyone’s minds right now, the DNV group believes that in the quality arena, the auditing of software design processes represents the next great frontier.

Their prediction seems logical when you consider a few new facts:

- About 30–40 percent of the development cost in a car is software related.
- About 60 percent of all vehicle recalls globally are software related.
- A typical premium brand vehicle contains an average of 70–80 embedded software systems.

“The long and the short of it is, with the growing role of software in the vehicle, you

don’t want something software related to go bad when you’re driving down the road,” says Djurovic. “That’s why developing standards in software is becoming mission critical. There is so much more software embedded in the vehicle than ever before.”

Frölich says European automakers have already begun speaking out about this problem, realizing they’ve got to do something to get the situation under control by putting some standards in place for software. “The ABS system, ignition, navigation system – it’s all controlled by software,” Frölich points out. “The maturity of the software development process has not been fully reached, and yet, the vehicle systems controlled by software are crucial ones.” The German automakers, he says, have already decided to implement a new standard specifically for software that states the specific process of how software must be designed.

An AIAG work group confirms that the auditing of software design processes is an issue in North America as well. The work group leadership says that “it’s definitely



“THE TIGHTER THE ECONOMY GETS,
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Robert Djurovic



Henrik O. Madsen

Robert Djurovic

SEI addresses software challenges

The Software Engineering Institute (SEI) is a federally funded research and development center operated by Carnegie Mellon University and sponsored by the U.S. Department of Defense. The SEI objective is to provide leadership in software engineering and in the transition of new software engineering technology into practice.

SEI says the challenge for all companies and organizations engineering software-determined products and services is to deliver quality software – software that always works as specified and intended. The competitiveness of these organizations is directly related to their skills in developing quality software. SEI's mission is to be an effective integrator of technologies to ensure that software is the safest, most secure component of software-determined systems. Visit www.sei.cmu.edu for more information.

a global issue” and that “more than one major global automaker is interested in seeing the AIAG work group pursue this topic.”

Although the concept of auditing software seems harder to grasp than that of auditing hardware, Frölich says it's really not much different. “We can assess a company's software design process, just like any other process,” he says. “Despite the intangible nature of software, software design follows a very well established process and it is auditable. Nothing new needs to be invented. The schematics and so forth to assess the software is already there. Developing software is basically a project, and you have to ask the question, ‘How should this project be designed?’”

Frölich says most software designers are champions – a one-man, twoman show working 20 hours straight at a time. “They work under tremendous pressure. In most cases, they are running out of time and running out of money, and yet, they still have to get this car launched,” he says. “This entire process of software product development is what we can and should be auditing.

“It's already a requirement of ISO/TS 16949 that you must audit the design process, but, most auditors don't address the software design process because it's intangible. So, they end up assessing the hardware instead of the software.”

Frölich clarifies that specifically auditing the software design process is not currently part of ISO/TS 16949, nor is there any automotive standard yet for auditing the software design process. “No OEM has

gone public yet stating that they require such a standard,” he says. “So far, any auditing of software design has occurred mainly through bilateral agreements between an OEM and a specific supplier.”

As an example, Frölich says some OEMs have asked suppliers to follow the auditing guideline established by the Software Engineering Institute (SEI), a federally funded research and development center operated by Carnegie Mellon University and sponsored by the U.S. Department of Defense. (*Editor's note: see sidebar to the left. SEI also has a branch in Europe called SEI Europe.*) “The OEM might say directly to their supplier, you must audit your software design process up through SEI's Level 3, for example,” says Frölich.

In Europe, Frölich says DaimlerChrysler has begun sending in a thirdparty auditor to assess its suppliers' software design processes. “Audi and Volkswagen have a slightly different approach, but they are all trying to get the software design process under control.” All-in-all, Frölich says Ford Europe, Renault, DaimlerChrysler, Volkswagen and Audi – about 90 percent of the European automotive sector – are supporting a grassroots initiative to add software design to the list of processes that should be audited.

“This initiative in Europe has been launched by the premium brandsuppliers, because their vehicles contain much more software,” Frölich points out. “The new BMW 7-series has more embedded software than a 1989 Airbus airplane.”

“We may see an emergence of special sets of audits, such as a software design

process audit, that emerge as part of the standard ISO/TS 16949 audit,” says Dror. “It's definitely one possible solution to the problem. It would be an obvious benefit if the ISO/TS 16949 auditor could come and audit both at the same time.”

Madsen admits that one hurdle to overcome is the proprietary nature of the source code of software. “Some suppliers might resist having something so proprietary under great scrutiny by an auditor,” he says. “There must be a failsafe in place so that everyone who develops software for the auto industry goes through the same rigorous process. What we're saying is more attention and emphasis should be placed on how software is developed and what it's going to be used for.”

CONCLUSION. The DNV executives agree that as the evolution of the car continues to progress, the vast majority of recalls will be related to software, and the percentage is only going to increase.

“One car company executive once told me: ‘We have millions and trillions of bits and bytes running through the car and sometimes two of them meet and they don't like each other and they cast off, and we don't know why,’” says Frölich. “This is precisely the issue. To get the communication and calibration of all the software systems in the vehicle under control is the main challenge. And, you must have the process of developing these systems commonized, before you can start harmonizing the various software systems in the automobile.”

Madsen points out that standardizing the software design process would also save

a great deal of money for software suppliers on the product development side. “If they could show a customer that they meet a certain software design standard, then not only could they do business with more customers, but also, their customers would not be asking them to take extra steps to validate their software design.”

Dror recognizes that some suppliers' first thought will be, ‘The last thing I need is another expensive audit.’ “But, what's the alternative?” he asks. “A really bad recall can wipe out a brand image overnight. So, instead of thinking about the cost of additional auditing, it's better to think about the cost of not doing it. The OEMs already have enough analysis to know that auditing the software design process makes sense.”

What does DNV think AIAG's role should be in all this? “AIAG is the forum where standards are set that lead to expectations in performance,” concludes Djurovic, “and standards are what's lacking in the software segment. We need to pay a little more attention to how we install software and how we measure, monitor and manage it in the vehicle. There's no doubt that we're facing this challenge as an industry, because the integration of software into the vehicle just keeps growing and growing. We're optimistic that AIAG can be the host for a serious discussion of this issue in the near future.”

Carla Kalogeridis is editor in chief of Actionline. If you'd like to see more Actionline articles on this topic, please e-mail her at reachcarla@comcast.net.

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Car-drivers around the world aspire to own a Ferrari. The Italian builder's quality standards ensure that its reputation remains unequalled.

Ferrari builds on performance

A Ferrari is, to many, more than just a car: it is a work of art. At the Ferrari plant in Italy, ISO certification has improved its already high standards of quality and innovation.

TEXT > EVA HALVORSEN PHOTO > COURTESY OF FERRARI

The Ferrari plant at Maranello, Modena, is unlike any other carmaking factory in the world. The wooded surroundings impact a sense of quiet, and the natural light, the fresh air, the white-collared workers, all contribute to a unique work environment.

Says Franco Magagni, Industrial Director of Ferrari for the past three years, 'No other carmaker has a workplace to match this in quiet, cleanliness and comfort.' He is a mechanical engineer from Bologna and has worked his way through the Fiat system. Fiat is the major owner of Ferrari. Magagni's main responsibilities are manufacturing, quality, purchasing new technology and components development.

He continues, 'A Ferrari is a work of art. We have never spent a cent on advertising. The Ferrari brand speaks for itself. The older the car is, the more it is worth. We can provide spare parts for all Ferraris built in the past 40 years.' The company limits its production to around 4,000 'hand-made' cars annually, and is determined to keep it at that level.

ISO CERTIFICATION. DNV has certified Ferrari according to the ISO 9000 and 14000 standards, recognising the company's environmental concerns and decision to reduce any negative impact from its operations.

'The ISO evaluation and certification have improved quality and reduced environmental effects,' says Magagni. Ferrari's management system implementation reflects the company's philosophy: 'Provide time and resources and make sure the systems meet our needs.' And the result is impressive. Says Magagni, 'Achieving ISO 14000 was a direct result of working towards the ideal manufacturing environment. After gaining the ISO 9000 certificate I personally wanted the ISO 14000 for our facilities as well.'

Work towards certification began in 1994. The company was beginning to recover from a turbulent period and quality was an issue. To encourage innovation and improve quality, Ferrari decided to go for a quality management certificate: rather than simply a sales tool, they

realised it would enable the quality processes to develop in the right direction.

FRUITS OF COLLABORATION . 'We always go for the best in Ferrari. We believe that DNV is the most serious and reliable certification company in Italy,' Magagni explains. 'DNV has had great influence on our improvement. It has been a masterpiece of collaboration.' But it was no joyride. Ferrari faced tough experiences all the way. He describes it as a sound relationship.

Director of Institutional Affairs Leonardo Omodeo-Zorini in DNV Italy returns the compliment. He also describes the relationship as sound and fruitful. 'Ferrari has always taken our input and comments very seriously,' he says. He believes that their relationship has contributed to increase Ferrari's level of quality as well as its environmental performance. He emphasises that the level of anomalies found since the beginning of the certification process has been extremely low.

'During the latest renewal activities at the end of September this year, we only



'THE AUDIT AND EVALUATION PROVED TO BE VERY USEFUL IN OUR DRIVE FOR CONTINUOUS IMPROVEMENT'

– Franco Magagni

DNV has awarded ISO 9000 and 14000 certification to the legendary Maranello plant.



identified opportunities for improvement. This is a very positive sign with reference to the degree of efficiency of the processes managed by Ferrari,' he says.

In 1996 the ISO 9000 certificate was issued by DNV for Ferrari GT luxury and sports cars, with the scope of 'Manufacture, sale and after-sale servicing of GT cars'. Maserati GT was certified in 2000 with the same scope. The Ferrari plants started their ISO 14000 process around 1999. This certificate was issued in 2001, with the scope of 'Design and manufacture of GT cars through design and development, alloy casting, machining, panelling, painting and assembly. Manufacture of racing cars through alloy casting, composite materials manufacture and painting, machining and assembly.'

Magagni is proud of the company's achievement. 'We are the only racing car company to have certified manufacture of Formula One cars to ISO 14000. Other car manufacturers may be "best in class" in some specific environmental aspects, but our goal is to match them.'

STREAMLINING PROCESSES. 'A customer does not buy a Ferrari because the company has a quality or environmental certifi-

cate on the wall,' Magagni points out. 'Customers have extremely high expectations of our cars, and we saw this approach to management as a valuable tool that would allow us to adopt procedures leading to both innovation and efficiency. We felt it was a form of guarantee.'

Magagni believes that the ISO 9000 process helped lead to consistency as well as quality. Ferrari's production processes have improved, with less waste, fewer operations that have no added value, and less pollution. The audit and evaluation proved to be very useful in the drive for continuous improvement.

IMPLEMENTATION AND BENEFITS. The certification work was also well received by the employees. Innovation is part of the company's culture, and the workers do what it takes to contribute to the improvement processes. Magagni states that the processes were implemented without question. The employees' satisfaction is a key issue to him. He personally meets all of them twice a year, and has introduced his own award system to encourage innovation. 'This year 200 members of the workforce were awarded weekend stays in cultural cities with their families. The result has

proved to be a highly motivated and cooperative staff.'

Magagni emphasises that the company has not rushed to implement certification. 'But in a company where craftsmanship is as important as technical innovation, rushing the process would have meant we were only interested in a certificate on the wall, rather than management systems that would improve our performance.'

RETAINING EXPERTISE. He estimates that besides cost savings from reductions in energy use, and waste due to the plant's energyefficient design, Ferrari can also attribute savings to significantly reduced personnel turnover. As a result of ISO 14000 implementation, the company has reduced the turnover to an extremely low level.

Concludes Magagni, 'The consequences are twofold: first it has reduced the cost of recruiting and training new employees; and second it has achieved a notable increase in productivity and quality due to the consistency of the workforce. In short, a healthy and comfortable environment has incalculable value.'



Bringing intelligence to car security

Huf is one of the main suppliers in the world in the Car Access, Security and Immobilization (CASIM) segment. They make the first things you touch on a car, such as the door handles, the keys and the ignition. As a first tier supplier in the international auto industry, certification is a must, but Huf can't afford to be satisfied with just a framed piece of paper on the wall. TEXT > ANDERS ØVREBERG PHOTO > HUF



Huf delivers the entire car access, security and immobilisation system for the new BMW 1series: lockset, doorhandle, emblem tailgate handle, startstop button and key insert box.

Huf Hülbeck & Fürst GmbH & Co. KG, began as a small family owned company that started making locks and keys back in 1908. When the auto industry in Germany took off, they realised that cars needed locks too, and supplied their first car key to Mercedes in 1920. This ability to adapt has stayed with the company, and the Huf name can now be found on many sets of car keys around the world.

“One of the most important success factors for Huf has been our ability to remain technology leaders within our segment,” says Dr. Dieter Kopperschläger, Executive Vice President of the Huf Group. “Huf has managed to change from a purely mechanical company to a company that is able to produce high level 'mechatronic' products, which integrate electronics and mechanical products. And electronics makes all the difference in car security today.”

For example, a leading Huf mechatronic product is the push-button start of the new BMW 1-series. In fact, Huf delivers the entire car access, security and immobilisation system for the series.

REQUIRED CERTIFICATION. The automotive industry is a fiercely competitive business. To ensure quality, certification is not optional but a mandatory requirement if delivering parts to the automotive industry. The certification required is to the automotive specific ISO/TS 16949 standard. It covers a comprehensive quality system for automotive industry manufacturing suppliers.

“To be able to hang an ISO/TS 16949 certificate on the wall is no great advantage, except as a ticket to trade. But if you closely consider and understand what is written in the TS, and apply these ideas and rules to your production, then bene-

fits come. Then you can improve your work processes and handle the demands for continuous improvement, as well as increase quality and control costs,” says Dr. Kopperschläger.

He underlines that anyone working to be certified should “make sure the application of these standards make you successful, and that you are not doing it for the certification itself.”

A DEMANDING BUT REWARDING PROCESS

Huf made the decision to go for ISO/TS 16949 in September 2003. At this time a new version of the standard had been issued, incorporating many of the requirements in ISO9001:2000, and their previous certifications were expiring.

“One of the advantages of the second edition ISO/TS16949 is that you basically only have to deal with one quality standard,” explains Dr. Kopperschläger.

“Therefore we decided to make a complete re-certification. It was in the beginning of February 2003 that we made the decision to go for DNV as a partner, and in September 2003 we passed the audit for the headquarters and another design location in Munich.” In the process of getting certified, Huf integrated 46 project teams, set up 38 process owners, integrated 420 documents, completed 265 process flowcharts, and made 83 overviews of processes.

“It was a lot of work,” laughs Dr. Kopperschläger, “but the process really has given us a completely new way of looking at our production.” A computer tool called ARIS collects and provides all this information on the company intranet, for all group members and employees to access at anytime.



Huf workers on the production line.

AN INTERNATIONAL FAMILY. Huf's current leading position was not just secured being a technology leader. The company made a decision as early as in 1983 to go global, and established the first German venture in Spain.

“We have now followed an international strategy for more than 20 years. In fact, in most countries we were the first for our product range, and that is a big advantage for us. Now we have 10 members in the Huf Group spread on three continents, with the youngest member being in Poland,” says Dr. Kopperschläger.

Huf has more than 5000 employees around the world, although most of these can be found at the company's headquarters in Velbert in Germany.

AN INTERNATIONAL PARTNER. Running a widespread international company places extra importance on corporate best practices and corporate rules. Ensuring that

the customers are offered the same quality in every market is crucial, and a concern for Huf as well.

“We needed someone who could help us in rolling out the TS Certification around the world. Otherwise, we may have run the danger of a Huf Group member getting a TS Certificate that is not valid. DNV could prove intense knowledge regarding the content of the TS Certification. DNV could also assist in rollout of the certification to the other members of the Huf Group, as DNV is located in all the countries where we are represented. This made all the difference,” says Dr. Kopperschläger.

Technological competence and hard work have proven yet again to be gold for the Huf Group, who brings intelligence not just to cars but to the certification process as well.



DR. DIETER KOPPERSCHLÄGER

I don't think there is another company in the world that can cover all the interfaces and components of a complete car access, security and immobilization (CASIM) system. Maybe if you put five or six other companies together, can they match our product variety and capability," says **DR. DIETER KOPPERSCHLÄGER**, Executive Vice President of the Huf Group in Germany.

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