Maintenance in China

Siveco China Newsletter September 2011

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Process Industry

One stone, two birds

For the second time our "Maintenance in China" newsletter is distributed at the Annual Process Industry Engineering & Maintenance Congress, held in Shanghai on September 5 & 6. I am also speaking at the event on the ambitious topic of "Technology-enabled technicians vs. the intelligent plant: the Chinese view": behind the fancy title, I will simply share our real-life experience dealing with maintenance improvement in the Chinese market.

This year's congress is particularly timely, as our company has made major inroads in the process industry, most recently signing deals with China's largest onshore LNG plant (Ningxia Hanas Natural Gas) and with a leading glassmaker, the Shanghai-based joint-venture of Saint Gobain Sekurit and Hanglas. We have accumulated an unparalleled record of success in the Chinese process industry, delivering real maintenance improvement to a large number of customers.

We have also recently released the latest version of our mobile solution, known as bluebee™, designed "for the worker of tomorrow". This is the latest release of the mobile technician solution we previously called "ehand", which we first implemented at Sichuan Lutianhua (a large producer of fertilizers). We presented the Lutianhua case study at last year's Congress where, the story received huge attention from the audience. Earlier this year, the same project also won an award by Motorola. Enjoying more and more success, bluebee™ has now been deployed to over 500 users all over China.

This brings us back to our core topic: the use of innovative technology, not as an end in itself, but as a "Trojan horse" for implementing best practices in the Chinese industry. People love technology, perhaps more in China than anywhere else. This, combined with large number of greenfield projects providing opportunities to install the very latest technologies, has led to all sorts of investment in "smart plants" stuffed with IT. More often than not, such projects bring only disappointing results, inevitably blamed on "the people": my people are not good enough, our engineers were not ready for this, our turnover is too high, etc. are comments I often hear. We have, on the other hand, achieved excellent results investing in high-tech on people rather than on the plant itself. This is the very idea embodied in bluebee™. This is the idea behind out entire business:

1. Technicians and engineers feel good about high-tech. The company is investing in them. They learn something new. They upgrade their skills. They go home in the evening telling exciting stories to their kids. They get to play with fancy toys.

2. Plant managers on the other hand enjoy the resulting improvement in the daily maintenance practice, a smooth implementation of preventive maintenance than often seems impossible to realize "on paper", less reliance on specific individuals, and the resulting ROI, often in less than one year (in some cases, only weeks).

One stone, two birds!

This issue of our newsletter contains all the usual sections: Reliability (insights into the so-called "EAM" market and its countless failures), Customer (reprints of Sichuan Lutianhua and B&G case studies), Partner (highlighting the use of industrial rugged smartphones by Motorola), Tips & Tricks (work permit) and some of our latest news.

We hope you enjoy reading us!

Bruno Lhopiteau

General Manager

Siveco China

Status of "Enterprise Asset Management" (EAM) in the Chinese market

This article is based on an interview of our GM Bruno Lhopiteau, a leading figure in the Chinese utility maintenance market, by magazine Control Engineering China, in which Bruno shares his experience in the power industry and explains its relevance to other process plants.

Learning from experience

Power plants were among the first to implement computerized maintenance systems in China. Some of us remember the old days of Siemens BFS++, the development of PSDI and Datastream (long before those two historical players got acquired by large IT firms), the quick emergence of IFS (the company that brought me to China for that purpose in 1999), the many unsuccessful attempts by other vendors who never really understood the market, and later the appearance of SAP as a major actor. Local companies have also tried to replicate the success of their foreign counterparts, often targeting smaller plants, sometimes shamelessly copying better-known systems, but usually not going very far.

It is the privilege of pioneers to also be the first to make mistakes and hopefully learn from them. The emergence of SAP as an all-encompassing corporate system provided an opportunity to replace failed "EAM" systems, unfortunately, more often than not, those projects themselves proved disappointing. Most plants did not take the time to reflect on those failures and disappointments. Are "EAM" projects – either as part of local MIS projects, global EAM suppliers or SAP deployments – doomed to fail? Our own experience in other process plants shows that it is not the case. In this article we would like to share some of the lessons we have learnt over the years.

The so-called "EAM"

Acronyms can be powerful tools, especially when nobody truly understands them. Over the years, IT salesmen have become more and more creative in finding new ways to promote their products. The term "EAM" was invented by IT people in the mid-90s and has gained huge popularity in the Chinese power market.

In our opinion as maintenance professionals, we have always preferred to use the timeless industrial term "maintenance management system" (MMS) or "computerized maintenance management system" (CMMS). Without the initial C for computerized, the acronym denotes a broader view of maintenance, including the system itself but, more importantly, its usage.

"EAM" pretended to include stock, purchasing, sometimes project management and more functionalities – making the CMMS a true enterprise-wide solution. This was forgetting that CMMS had always included such modules and that in asset-intensive industries like power generation, maintenance is anyway at the core of the enterprise business.

The same IT salesmen have in the past few years tried to promote new terms EMMS, SAM, eEAM etc... while also using every possible buzzword (RCM, RCM II, SRCM, ERP II and many more) often without even understanding their meaning.

In the end, we at Siveco have taken the position to use a word that maintenance professionals all over the world recognize, regardless of IT fads and salespeople's tricks. We encourage our customers to keep a clear mind and see the industrial reality behind the fancy words: the truth that CMMS, EAM, EMMS, MMS, etc. are one and the same thing.

Project failures due to "lack of maturity"

Most "EAM" implementations are heavily delayed, often taking several years to be fully operational. The system audits we perform often show a huge gap between the ambitious goals of the initial project and what has actually been achieved after several years. The comment we most often hear is "our organization was not mature"! It is surprising how successful large-scale state-owned companies so readily accept to be blamed for the failure of the projects... There are obviously various reasons for this; we will only discuss "professional" ones.

In our opinion, the relative lack of maturity, when it comes to maintenance methodologies and practices, is a given in the Chinese market. Maintenance consulting firms like us should of course take it into account during projects – in fact, as far as Siveco is concerned, it is the very reason behind our business! There are, on the other hand, many advantages of working in China. Among them, the abundance of new-built plants, for which systems can be designed and implemented from scratch – while in the West we mostly have to deal with existing plants, existing organizations and their working habits. Local technicians are much more open to new technology, they are very willing to accept change in their daily work process: in the West, technology is often seen as a threat, designed to control people's activities. Finally, in China, it is also much easier to obtain ROI from projects, because maintenance has seldom been optimized. Not only projects do not have to fail in China, but on the contrary they can be much more successful both in terms of the technology deployed and ROI obtained!

"EAM" projects fail mostly because they are IT-focused. "EAM" suppliers in China inevitably have a pure IT background and operate on a Western business model, assuming to get maintenance expertise from the client... This model if fundamentally flawed: in China such projects should be driven by maintenance people.

Plant equipment structures

The most commonly heard problem with "EAM" projects, a few years after "Go Live" (the term IT people use to say the system has been put into use – to be compared with the engineering term of "commissioning"), is that equipment structures are outdated. From this derives a whole series of other problems: if equipment structures are outdated, it is sometimes not possible to record work orders, or they get reported at the wrong place. As a result, the history of work becomes wrong, affecting analysis. Spare parts cannot be ordered based on specifications from the system, so instead the team starts to rely on drawings, Excel records, papers. The usage of the system drops – or, as using work orders and work permits is usually mandatory as part of the power plant operation, the quality of data drops instead, rendering the entire historical database useless after a while.

This phenomenon is further exacerbated by the lack of analytic technical-financial reports in most implemented systems. Reports tend to replicate former paper-based reports: list of work orders, financial reports, compliance and other regulatory reports to the authorities, which were designed with paper systems in mind. Reports needed for decision support and reliability improvement are usually not implemented...

A key reason technical data is not kept updated is it is wrongly designed to start with. Power plant executives in China often talk about KKS coding: this job is sometimes handled by design institutes or specialized firms, which will produce the KKS structure in paper or Excel format. KKS is the German standard for power plant equipment designation, it has however been replaced, several years ago, by other standards more relevant to the needs of the Chinese power industry: we advise clients to be suspicious when vendors still talk about KKS in 2011... Siveco has been working with the latest IEC 61346 *Industrial systems, Installations and Equipment and Industrial Products — Structuring Principles and Reference Designations,* IEC PAS 62400 *Structuring principles for technical products and technical product documentation* and ISO/TS 16952-10 *RDS-PP Reference Designation System Power Plants* (the "new KKS"). We note that China is an active member of IEC (the International Electrotechnical Commission).

In conclusion – time for a new start for power plant and other industrial CMMS in China

In power generation as well as in other industries in China,

customers can benefit from nearly 15 years of history with the so-called "EAM" projects. It is time companies draw lessons from past failures and the accumulated experience, which we attempted to summarize in this article. Power plants executives are educated engineers with high responsibilities in the well-being of the nation, they are perfectly capable to see the failings of past projects and to learn from them, even if people will still claim their project is successful to avoid losing face or to help their suppliers develop more business.

Our company Siveco China, the country's largest maintenance consultancy, has a long experience with power projects all over the world (our first customer was EDF, the French state-owned power utility), vast experience in process plants in China, and has recently displayed its ability in an export project[1] with CNEEC in Malaysia. Personally I have, since 1999, involved not only in CMMS but also in engineering systems, condition monitoring and ERP for power utilities.

There are four main ways we can contribute to maintenance projects in power plants (and more generally in process plants):

- CMMS audits of existing "EAM" systems, in view of proposing improvements (without changing the system itself). This topic has been covered in previous issues of our newsletter: *The maintenance assessment: a stepping stone for improvement*[2]. See also this case study: *CMMS optimization delivers concrete results for leading chemical producer*[3].

- Owner's engineers services, assisting the plant in the implementation of their "EAM" system – typically with SAP PM. This is explained in another article: *Getting the most out of SAP PM*[4].

- Implementing our mobile solution on top of an existing EAM system, as a way to clean up the database and bring it back to life. This was performed for example in the chemical industry, see case study of Sichuan Lutianhua Chemicals[5].

- For new plants, implementing a complete CMMS project from scratch, including the maintenance engineering and data collection part of the project, using our own CMMS "COSWIN". This is featured for example in the RPII case study[6].

All in all, in our view, a CMMS project should not be different from any other engineering project. In fact, a CMMS implementation is an engineering project, with clear goals and the ability to measure the results. This is the correct starting point for a project.

Links:
[1] http://tinyurl.com/exportprojectEN
[2] http://tinyurl.com/assessmentEN
[3] http://tinyurl.com/arkemaEN
[4] http://tinyurl.com/sappmEN
[5] http://tinyurl.com/lutianhuaEN
[6] http://tinyurl.com/rpiicasestudyEN

How systematic analysis helped leading lactic acid producer to quickly improve its plant reliability

Anhui BBCA & GALACTIC Lactic Acid Company Limited (B&G)

Anhui BBCA & GALACTIC Lactic Acid Company Limited (B&G) was born in 2002 as a joint venture between the Anhui BBCA Biochemical Co. Ltd., one of the leading agricultural products processing enterprise in China, and the Belgian company GALACTIC S.A., the second largest producer of lactic acid in the world.

B&G is using highly efficient technology and is integrated to an existing corn-based glucose production site. This set up results in highly rationalized production costs thus warrants strong competitiveness to the company and ensures the highest quality standards for the products.

B&G products are marketed within the Chinese Domestic Market as well as abroad. Further expansions will enable the company to follow the market growth and to provide high quality lactic acid to Polylactic Acid (PLA) projects. PLA is a new promising biodegradable polymer derived from lactic acid.

The maintenance project

After a few years of operation in a highly corrosive environment, the plant started to experience the early effects of aging: with production running at full capacity, breakdowns could affect the fulfillment of customers' orders. Recommendation by another Siveco client in Anhui province (Saint-Gobain Pipelines in Maanshan) and the company's successful track record in maintenance improvement were the key factors leading to the selection of Siveco for this project.

The main project goals were to build up a technical knowledge base for the plant, to support the maintenance team's daily work and to provide a decision support system for the management team. The COSWIN system was up-and-running in about three months and during the next three months the quality of data was progressively raised to the level necessary to conduct in-depth failure analysis.

The improvement process: example of failure analysis conducted 6 months later

Pumps are critical pieces of equipment in B&G's process: a failure could lead to a production stop resulting in significant financial losses. While technicians are familiar with pumps that break down several times per month and tend to focus their efforts on them, it is more difficult to identify less frequent breakdowns, the impact of which is however far from being insignificant in terms of time and money. As technical teams are busy dealing with daily emergencies, those infrequent problems tend to be overlooked: quick fixes are applied, without long-term solutions.

According to Martin van Gansberghe, former Deputy General Manager (Technical) at B&G and currently Technical Director of Galactic Group:

> *"Thanks to the Top 10 report in COSWIN, less than 6 months after implementation, we easily identified three types of pumps experiencing regular failures, which finally were more time-consuming than the most frequent, better known, problems."*

While the report did draw their attention to this particular problem, B&G's technical team still had to understand why these breakdowns occurred. As Martin describes it:

> *"COSWIN simplifies our life: we sit around the table with COSWIN, then go to the plant: the conclusion is right before our eyes!"*

The condensate pump was badly designed: the head was too low; as the pump was at times running light, the resulting cavitations accelerated the wearing out of the mechanical seal. The root causes of the other breakdowns were then quickly identified: an analysis of failures data gathered in COSWIN led the maintenance team to identify a bad mechanical seal choice for the evaporation pump. For the sulfuric acid pump, the main cause was bad operation of the pump: the timing of the related control valve was wrongly set up, causing the pump to run without load for a short moment.

Martin summarized the benefits of COSWIN-driven failure analysis:

> *"How could we have got rid of all these small, yet costly, failures without a systematic failure analysis process? In effect, the system literally pushes the results to the technical manager's mailbox, so that he can follow the progress and questions his teams on a regular basis."*

> *"Before COSWIN, some of the problems were perhaps known (our technicians obviously knew the pumps had problems, we just did not take time to think about it). Some corrective maintenance work was so frequent that it was wrongly re-qualified as preventive maintenance: we had someone checking it everyday, ready to act when the problem occurred. Top management was not aware of problems until they got out of hand and affect the business. Root causes were not systematically identified, quick fixes were applied instead."*

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A catalyst for maintenance improvement at leading chemical group

Sichuan Lutianhua Company Limited

Sichuan Lutianhua Company Limited (www.sclth.com) is engaged in the production and sale of fertilizers and chemical bulks. The Company primarily offers urea under the brand name of Gongnong and synthesis ammonia, with an annual production capacity of one million metric tons of synthesis ammonia and 1.6 million metric tons of urea at its Luzhou, Sichuan, production base.

During the year ended December 31, 2009, the Company produced 810,000 metric tons of synthesis ammonia, 1.23 million tons of urea, 60,000 metric tons of thick nitric acid, 50,000 metric tons of carbinol, 40,000 metric tons of nitro phosphor complex and 40,000 metric tons of ammonium nitrate. The Company primarily distributes its products in domestic markets.

Optimizing the inspection process – a key requirement in the chemical industry

Sichuan Lutianhua manages complex chemical production units, operating around the clock, with strong safety requirement and environmental regulations: the company is highly dependent on its maintenance organization to ensure availability, reliability and safety. In the chemical industry, maintenance can be considered the core business of the company and one of keys to its success.

Sichuan Lutianhua has over the years established a good maintenance practice, based on the know-how accumulated by its technicians, with a focus on preventive maintenance. Inspections and measurements play a major role in the company's preventive maintenance program, as a means to detect early signs of failures.

In 2009, Sichuan Lutianhua invested in a state-of-the-art "Enterprise Asset Management" (EAM) solution, which is currently still in improvement phase.

Sichuan Lutianhua's management team, always on the lookout for improvement opportunities and rich of this first experience using IT systems, decided to launch a project to support the inspection and measurement rounds. The utilization of mobile devices was imagined to be the ideal solution to support field technicians. The project team reviewed various hardware and software vendors before meeting with Siveco, the largest maintenance consultancy in China, a company uniquely positioned in using high-technologies to solve real-life maintenance problems.

The two companies quickly reached an understanding and the project was started in August 2010 with the following objectives:

- Standardization and planning of inspections (routine maintenance and measurements)

- Ensuring jobs are actually performed, through mandatory scanning of asset tags

- Diagnosis aid for technicians based on reported symptoms and access to know-how base

- Analysis of measurement trends, operation and management reports and optimization of plans over time

The project

Motorola handheld device were selected, equipped with 2D imagers for asset identification, to run the Siveco bluebee™ Inspector solution. Siveco provided the complete turnkey solution including consulting services, software, hardware (mobile devices, server and barcode printer) as well as
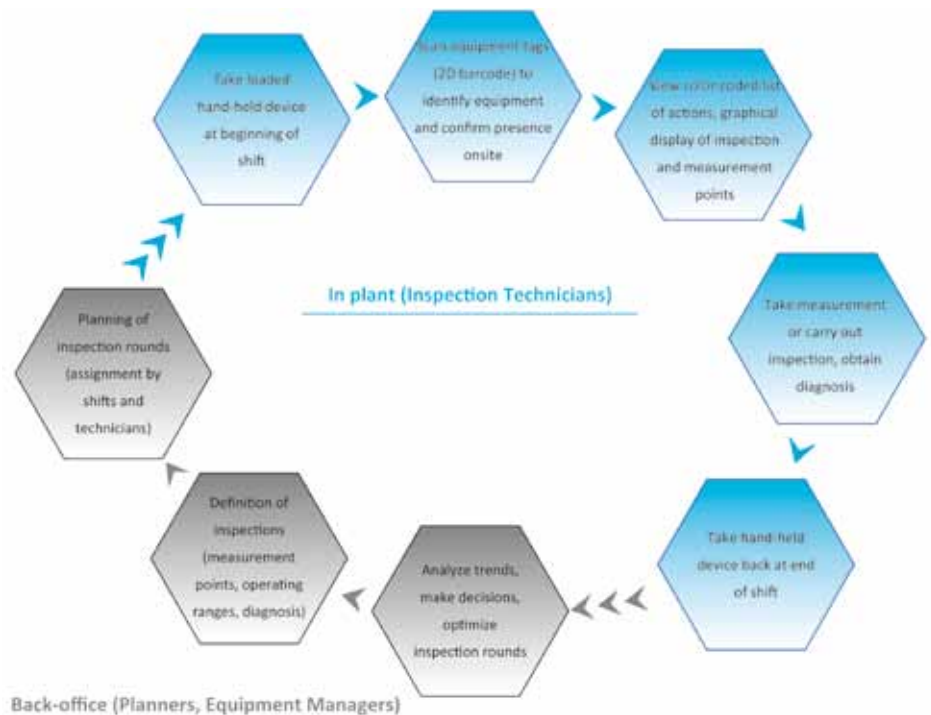
equipment labels (stainless steel plates).

Two Siveco project managers were appointed, one focused on overall project management and maintenance improvement, the other on the delivery of the system. The Siveco back-office team located in Shanghai, with three people dedicated full-time on the project, provided support for the entire project.

Immediate benefits

Such a project is characterized by immediate benefits experienced during implementation itself:

- Motivate the maintenance team and increase awareness: high-tech acts as a catalyst for maintenance improvement.

- Initiate a continuous improvement process based on predictive maintenance: strong linkage is created between field inspections and back-office analysis.

- "Clean up" of the CMMS database: especially more detailed equipment structures, down to specific inspection or measurement points.

The second series of benefits happened from the very first days of utilization:

- Ensure inspections are done: records cannot be saved without scanning of equipment tag (two-dimensional barcode on stainless steel tags), ensuring technicians have actually been there. Highly visual color-codes indicate unfinished actions. Management staffs receive completion reports to track job done.

- Immediate increase in accuracy of records (temperature, vibration): instant warning for out-of-range data.

- Onsite inspection results without the need to return to office: technician gets immediate warning when measurements are outside of safe range or into danger range and get access to diagnosis information, with easy contact with the back-office team if needed.

- Enable analysis based on trends: performed by the back-office team (equipment managers), they allow for true predictive maintenance and long-term optimization of the maintenance strategy.

Long-term benefits from the project will derive from the implementation of predictive maintenance that bluebee™ enables. Rapid improvements are expected in terms of downtime reduction and the indirect cost of maintenance.

bluebee™ – not the same old mobile solution!

The traditional mobile solutions provided by CMMS/EAM vendors are usually smaller-screen versions of the main product, presented as an option to the main system but almost never implemented. Hardware resellers can also develop custom applications with no industrial value-added. Siveco's bluebee™ suite, on the other hand, consists in standard off-the-shelf applications designed by maintenance engineers for maintenance engineers. Based on very intuitive user-interface requiring little or no training, bluebee™ allows for the direct creation of, and access to, know-how by technicians in the field.

The integrated system provides a technical knowledge base for the plant, to support the inspection work and to provide a decision support system for the maintenance team. By enforcing systematic recording of failures and work done, a historical database of inspection will be built up, thus enabling technical-financial analysis.

Key functionalities are:

- **Intuitive user-interface requiring very little or even no training.**

- **Access to the central knowledge-base** with three main points of entry: diagnosis (fault), equipment and inspection work orders.

- **Report of measured values (meters and measurements)** to the central database, with support to identify abnormal values and consult historical data.

- **Report of failures, with selection of faults and access to diagnosis support information.**

- **Access to inspection WO lists and possibility to report on the work orders.**

- **Synchronization with the back office system.**

- **Possibility to barcode (2D barcodes) equipments and inspection points**, for quicker and more accurate input and for verification purposes ("is this the right inspection point?", "has the technician actually been there?").

The mobile solution can be integrated with any back office system (SAP PM, Maximo, Datastream, COSWIN etc.) through a robust synchronization platform that takes care of data exchanges as well as optimizing telecommunications and the management of devices (software updates, security…). The platform is highly scalable, from a few devices to hundreds of mobile workers (for example for large multisite company). Siveco China's mobile R&D team, located in Shanghai, can further customize the standard modules to cater to specific customers requirements.

The implementation of bluebee™ mobile solution at Lutianhua won the silver award in the manufacturing category at the 2010 Motorola Enterprise Mobility Solutions Industrial Applications.

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Optimizing field service operations with Motorola's handheld devices

Motorola's rugged handheld mobile devices offer everything field service operations need to streamline processed and improve profitability in a compact easy-to-carry unit. A variety of options are available depending on the model selected and specific operational requirements.

Siveco China, a Motorola Authorized Reseller for the Asia Pacific region, provides complete turnkey mobile solution including services, software and hardware to end-customers.

Siveco's bluebee™ mobile solutions are optimized for Motorola's devices and take full advantage of all their features in order to bring the most convenience and the best ROI to field service teams. This article reviews some of the main hardware functionalities used by Siveco mobile applications.

Large touch screen

Siveco's bluebee™ mobile applications are designed to eliminate or at least limit the usage of the keyboard: instead, users interact with the system using large on-screen buttons, selecting data though pick-lists. This approach results in very intuitive user interfaces requiring little or no training.

Motorola MC70 running Siveco bluebee™ solution

GSM/EDGE, WLAN

Multimodal wireless networking ensures immediate data communication, regardless of whether your technicians are within reach of an in-house wireless network or outside in the field. Data communication is also available through the cradle (connected to a computer via a USB link) for example when the handheld is charging, during the night. Siveco's data synchronization platform ensures optimal utilization of the available networks based on priorities (types of data) and cost.

Barcode scanner (1D/2D), RFID reader

Machines, inspection points, work instructions can be immediately identified by barcode reading, removing the need for manual data input, ensuring perfect accuracy... and guaranteeing that technicians are physically present where they should be! 2D barcodes have become widely used (every train ticket in China has one) and can contain extensive data (not only the equipment identification number, but also its technical characteristics, operating range etc.) thus reducing the need to constantly access the central database. The same principle applies to RFID tags.

Camera

The integrated camera allows technician to capture photographs from the field, for example defects (a broken meter, a leaking pipe): "a picture is worth a thousand words" to illustrate an inspection report or a work order. Pictures from the field and all related information contribute to the company know-how based and can later be retrieved centrally for analysis or viewed by other field technicians on their own device.

Comprehensive voice functionality a.k.a. "making phone calls"!

A simple fact, often forgotten by software suppliers with limited understanding of industrial realities, the handheld device is first and foremost a mobile phone, allowing users to directly call technical experts for troubleshooting advice, suppliers hotline or colleagues etc. All contacts are referenced directly from the application (linked to an equipment, part or work instruction).

GPS

The integrated GPS allows the central system to geo-localize users (for example to contact the person nearest to location of an incident) but also their actions: all meters on a network can be geo-localized in by simply scanning their barcode tag, every work order is instantly geo-localized by its GPS coordinates and so on.

bluebee™ and MC70 in action at Sichuan Lutianhua plant

Rugged construction

Maintenance is not a tea party. Engineered to withstand rigorous use in extreme environments and working condition, devices are designed to endure multiple drops, a wide range of temperatures, moisture, dust and more, offering a much longer lifetime and lower Total Cost of Ownership (TCO) compared to standard commercial devices. Specially designed models are available that comply with regulations for work in hazardous environment, such as potentially explosive atmospheres.

About Motorola

Motorola is known around the world for innovation and leadership in wireless and broadband communications. Inspired by our vision of Seamless Mobility, the people of Motorola are committed to helping you get and stay connected simply and seamlessly to the people, information, and entertainment that you want and need. We do this by designing and delivering "must have" products, "must do" experiences and powerful networks — along with a full complement of support services. A Fortune 100 company with global presence and impact, Motorola had sales of US $35.3 billion in 2005. For more information about our company, our people and our innovations, please visit: *www.motorola.com*

Quick benefits from underutilized COSWIN functionalities: Work Permits

COSWIN includes a powerful Work Permit module that allows users to manage all types of work permits for Health, Safety and Environment (HSE) or other regulatory purposes. Examples include lockout procedures, fire permits, hot work permits, elevated work permits, electrical work permits, access permits, etc. The standard facility can easy be tailored to match local regulations and industry or company-specific requirements.

COSWIN Work Permit

The Work Permit (or WP) module is used to manage Work Permits, that is: raise requests for Work Permits, approve requests for Work Permits (that may be manual, or occur automatically from other COSWIN modules, for example Work Orders, Planning …,) add individuals or employees to Work Permits, and to delete & modify.

① A library of Work Permits types (WPs) can be created and … ② the permit type assigned to an equipment. Restrictions can be applied, for instance, every time there is an unplanned job on equipment XYZ, a permit must be raised ③ or the permit type can be assigned to a job. In this case whenever that job is to be done to whatever equipment, the constraints of the permit apply ④ employees (either internal or external) are likewise assigned to a job, these employees statuses and authorization will be linked to the WP (see below) ⑤ after a plan has been created and work orders created ⑥ the related work order will generate or raise a WP. Workflow will ensure that authorization for the permit is obtained for each employee ⑦ After the authorization circuit has been respected and all employees on the permit okayed ⑧ the work order can proceed on the specified equipment (or group of equipments) ⑨ In the case of say, an unplanned work order been raised against an equipment that has a permit restriction, the same logic as above applies ⑩ Users can track the status and authorization circuit of a permit at all times. WPs have various statuses such as 0=Raised, 1=not approved, 2=Approved, 3=Closed. The status of the employees and the WP must be logical, for instance, if only some of the employees have been approved but not all, then the status of the WP remains not approved.

Various levels of usage

First of all, the standard Do's & Don'ts functionality, which most COSWIN users have already seen as part of the Work Order (note that this tab may have been hidden in your installation of COSWIN, talk to your system administrator if you do not see it), can provide support for HSE in a simple manner. Do's and Don'ts are structured instructions that can be printed out with the WO. They can be defined at the Equipment level.
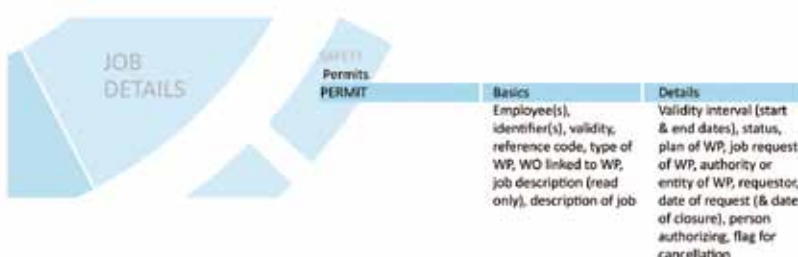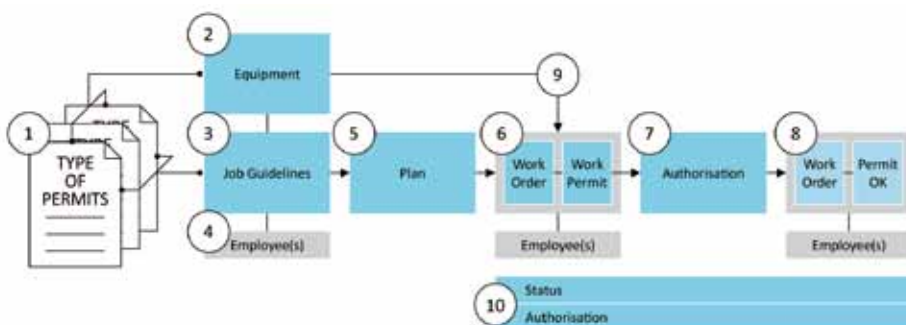
When actual Work Permits are needed (or an equivalent concept: do not be restricted by the standard terms used in COSWIN - remember that Work Permit is a generic term that may as well refer to Access Permits and also remember that any term can be changed in COSWIN using the Resource Editor), the COSWIN Work Permit functionality should be used:

The first level of utilization is simply to get the WP printed together with WO. The WP can then follow an approval route outside of COSWIN. This can easily be setup by customers.

A second level of utilization would be to keep track of the WP status and approvals in COSWIN, for follow-up and auditing purposes, but without constraining the WO process to much. Experience has shown, especially in China, that interlocked approvals in the CMMS (e.g. the WO cannot be released until the WP is approved) are very likely to block the process altogether, resulting in the creation of parallel paper systems. An experienced COSWIN user with access to the system document should be able to setup the system without difficulty.

The next levels of utilization may require additional help from Siveco, in terms of defining the work process,

	Basics	Details
SAFETY Permits PERMIT	Employee(s), identifier(s), validity, reference code, type of WP, WO linked to WP, job description (read only), description of job	Validity interval (start & end dates), status, plan of WP, job request of WP, authority or entity of WP, requestor, date of request (& date of closure), person authorizing, flag for cancellation

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Siveco China unveils innovative bluebee™ solution "for the worker of tomorrow"

July 6, 2011

Siveco China's General Manager Bruno Lhopiteau presented bluebee™, the latest version of the company's mobile solution for the worker of tomorrow, during his speech on the first day of the *2011 IET International Conference on Smart and Sustainable City*[1].

"In China more than anywhere else, we love technology" explained Bruno Lhopiteau, "Technology investment is often dedicated to machines or buildings rather than people. On the other hand, when projects fail to deliver results, people get blamed. Our approach is, in contrast, to invest technology on people, using it as an enabler for good operation and maintenance practices."

bluebee™ is the latest version of the eHand solution released at the Shanghai World Expo in 2010 and already used by leading industrial and facility management companies in China. bluebee™ runs on a rugged smartphone device and can synchronize maintenance and facilities management data with any back-office system. Compared to early versions, bluebee™ presents user interface improvements, new functionality and cloud-based data synchronization. bluebee™, a true homegrown innovation based on the company's long experience of maintenance in China, is developed by the Siveco China R&D team located in Shanghai since 2009.

Bruno Lhopiteau added: "Most bluebee™ users have never worked on a computer before. They are inspectors, technicians, supervisors etc. We equip them with mobile devices connected on our central cloud platform, where know-how collected from the field is accumulated and made available to all, for example for diagnosing a problem or making a decision."

The innovative bluebee™ solution and the corresponding approach to focus on people rather than hardware have received praises by leading academics present at the conference.

Links: [1] http://tinyurl.com/ieteventEN

configuring the system and ensuring its smooth implementation:

In companies where safety management has to be computerized, it is possible to enable constraints between WP and WO in COSWIN. The best example of this may be Singapore MRT (the city-state's metro system) which uses the full extend of COSWIN functionality to manage Track Access. COSWIN is interfaced with the physical access control system based on smart cards. Unless the Track Access Permit has been approved in the system, the worker will not be allowed access to the tracks.

Finally, note that the WP functionality can easily be interfaced with external systems using COSWIN standard data exchange tools. For example our customer Kerneos Aluminates Technology in Tianjin uses a globally centralized Work Permit system, based on digital signatures, which exchanges WP data with COSWIN.

Conclusion

Most companies still manage safety, lockout and work permits instructions outside of the CMMS: this is mostly due to existing habits based on paper systems, but also to insufficient knowledge of COSWIN, which is often seen as purely a "maintenance system" i.e. work orders. The immediate benefit of using the basic WP in COSWIN would be to help rethink, formalize and structure the process of managing safety. Additional benefits include traceability and ultimately replacing the paper trail for regulatory inspection purposes: it is important to note that the Chinese authorities can accept computerized records instead of the traditional papers. In its most advanced versions, the WP system is a critical tool to ensure safety.

Siveco further strengthen its position in Chinese automotive sector with Saint-Gobain HanGlas Sekurit Shanghai deal

August 8, 2011

Saint-Gobain HanGlas Sekurit (Shanghai) Co., Ltd. (SGHSS) has selected Siveco China to deliver a computerized maintenance management system (CMMS) to support the plant's maintenance improvement program. This follows a maintenance audit conducted by Siveco at the end of 2010.

SGHSS is among the largest factory of Saint-Gobain Sekurit Glass in the world. In 2002, Saint-Gobain Group and Korean leading glassmaker HanGlas Korea Glass Group jointly invested 183M USD to set up SGHSS to manufacture safety glass for the automotive industry. SGHSS now occupies an area of 200,000m^2 with more than 1200 employees. SGHSS has been awarded several automotive glass projects by many famous automotive manufacturers such as BMW, PSA, Changan Ford for Mazda, Dong Feng Nissan, GM Daewoo, Hyundai-KIA, FAW-VW, Renault-Samsung, and others.

Ningxia Hanas New Energy Group selects Siveco to implement CMMS in China's largest onshore LNG plant

August 26, 2011

Ningxia Hanas New Energy Group (www.hanas.com.cn) has selected Siveco China to implement the computerized maintenance management system (CMMS) for its LNG plant currently under construction in Yinchuan, Ningxia province. The plant is the country's largest onshore natural gas liquefaction project, a 1.27 billion CNY investment, with a production capacity of 2 x 0.4 millions tons per annum (Mtpa). The plant will be put into operation in September 2011. The CMMS project has already started.

For more latest news, see http://tinyurl.com/siveconewsEN

Maintenance in China e-newsletter

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