ARC BRIEF

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MTL: Expanding Opportunities with a Focus on Fundamentals

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Keywords

MTL, Cooper Crouse-Hinds, Elpro, Tofino, Intrinsically Safe Ethernet, Redundant FISCO, Wireless HART Adapter, Fieldbus

Summary

MTL has been through some significant changes in the past year. The company was acquired by the Cooper Crouse-Hinds division of Cooper Industries in February of 2008. In the first quarter of 2008 MTL announced that it would be divesting its MTL Open Systems Technology (MOST) business. The MOST divestiture signaled an exit from the business of control platforms for MTL and reaffirmed the company's commitment to its traditional space – the infrastructure of the automation system between the controller layer and the device layer. Now that MTL has the considerable resources of a large up-and-coming global automation supplier behind it, the company can take advantage of some considerable opportunities to expand its global business, provide solutions to customers in conjunction with Cooper Crouse-Hinds' expertise in explosion proof technologies, expand its channels to market, and of course continue to grow both organically and through acquisitions.

With the acquisition by Cooper Crouse-Hinds, the divestiture of MOST, and a host of new offerings and developments on the way, MTL is refocusing on the fundamentals of its core business while taking advantage of some big opportunities as part of a large up and coming automation supplier.

Analysis

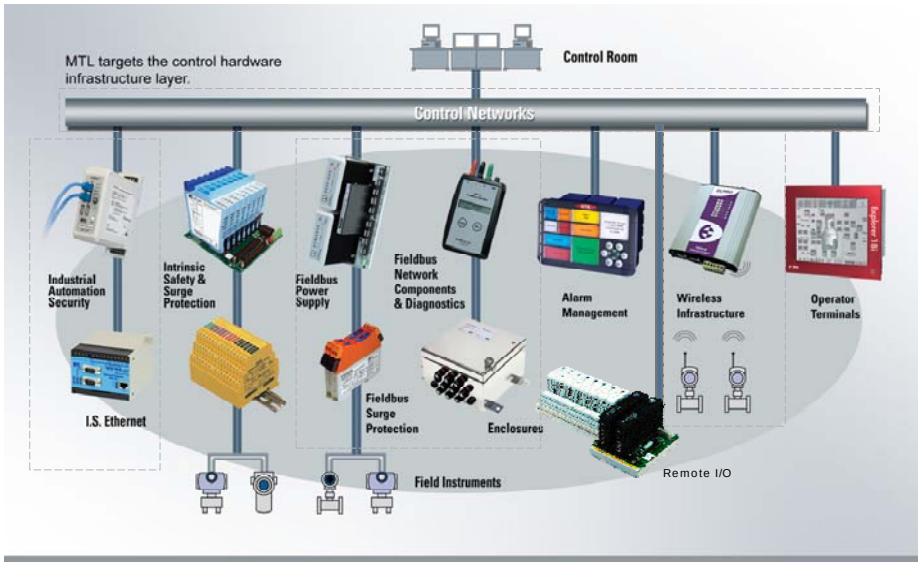
Cooper Industries' acquisition of MTL was one of the biggest automation acquisitions of the past year, and it was only one of thirteen deals closed by the company in the past 12 months, all aligned with the company's disciplined three-tiered acquisition strategy. This strategy is based on building out strategic platforms that strengthen the core businesses with complementary products; adding more end user specification and technology

solutions to transition the product portfolio towards more value-added solutions for customers; and enhancing their global footprint.

Cooper Crouse-Hinds has a pedigree in hazardous area protection, and are the number one supplier of explosion proof equipment for North America. In 1995, Cooper purchased CEAG from ABB. CEAG is a European leader of technology equivalent to explosion-proof products designed to meet European International Electrotechnical Commission (IEC) standards. In addition to IEC explosion protection for hazardous areas, the company specializes in industrial and hazardous area electrical products, and commercial products such as weatherproof enclosures, conduit bodies and switch covers.

Why Cooper Crouse-Hinds?

MTL has grown extensively over the past ten years. In April 2005, MTL acquired GeCma, a supplier of industrially hardened operator terminal units and embedded PCs for hazardous area and general-purpose applications. In 2007, MTL made three key acquisitions that boosted its position in the hardware business in several key areas. Elpro was acquired in May of 2007 and is a major supplier of wireless infrastructure components. Ocean Technical Systems is a supplier for SCADA applications and telemetry for offshore and process applications, while RTK Technologies is a niche supplier of alarming and annunciation equipment for the plant floor.



MTL's Strategy to Compete at the Infrastructure Layer Between the Control System and the Field Remains Unchanged

MTL was at a stage of development where they would have had to make substantial additions to its resources for the company to grow further. Cooper Crouse-Hinds already has the resources to help MTL grow, along with the tried and tested

processes for executing this growth successfully. MTL's fundamental strategy remains the same, and growing its business through acquisition is a strategic objective that has not changed. MTL's strategic objective as a key supplier at the control hardware infrastructure layer between the controllers and field instruments has remained unchanged as well.

As a parent company, Cooper sees that there is a significant opportunity in this space, and will be able to help MTL execute and realize its vision. Cooper is also a good choice because the company is not a competitor of any of the major DCS suppliers, who are key customers for MTL. In ARC's opinion, the divestiture of MOST in 2008 should also facilitate closer relationships with the DCS suppliers, since the MOST technology was essentially the hardware layer of a DCS that could be implemented as a total process automation solution by systems integrators.

A Balanced Approach to Intrinsic Safety and Explosion Proof Techniques

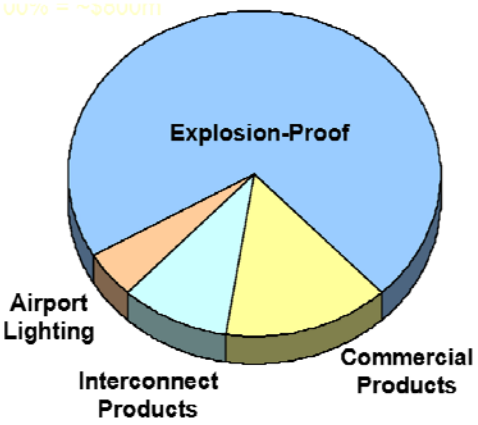
Cooper Crouse-Hinds expertise in the electrical side of the business balances nicely with MTL's expertise in the instrumentation side. The combination of the two facilitates a unified approach to intrinsic safety and explosion proof techniques in industrial plants. There is an increasing a crossover between explosion protection techniques in the market today, and the instrumentation and electrical sides of the business have traditionally differed in their approaches to this issue. Although MTL have always approached hazardous areas from the instrumentation perspective, it can be approached from other perspectives such as power, motor controls,

Year	Company Acquired	Core Business
1989	Hitech Instruments	Gas Monitoring Equipment
1994	Telematic Systems	Surge Protection Equipment
2000	Atlantic Scientific	Surge Protection Equipment
2000	Standard Automation & Control (STAC)	Process Automation System Components
2005	GeCma	Operator Displays for Hazardous Areas
2007	Elpro International	Wireless Products for Process Automation
2007	Ocean Technical Systems	SCADA & Telemetry Equipment for Offshore and Process Applications
2007	RTK Instruments	Products for Alarming & Annunciation
2008	MTL Acquired by Cooper Industries	Explosion Proof Products, Electrical
2008	Divestiture of MOST	Process Automation System Components

MTL has Grown its Business Significantly through Focused Acquisitions

switchgear, control centers, switches, and so on. Many of these devices have traditionally been protected through mechanical techniques.

The intrinsic safety approach has traditionally been used for light current applications such as instruments, where power specifications run in the milliamps. The advent of bus systems and increasingly distributed intelligence throughout the plant, however, has more instrumentation people dealing with the conundrum of how to get more power down the data trunks and combining communications with power distribution on the same cable. With intrinsic safety, for example, the user is limited to 24 volts at low currents typically less than 500 mA.



Cooper Crouse-Hinds Business by Segment (Percent of Dollars)

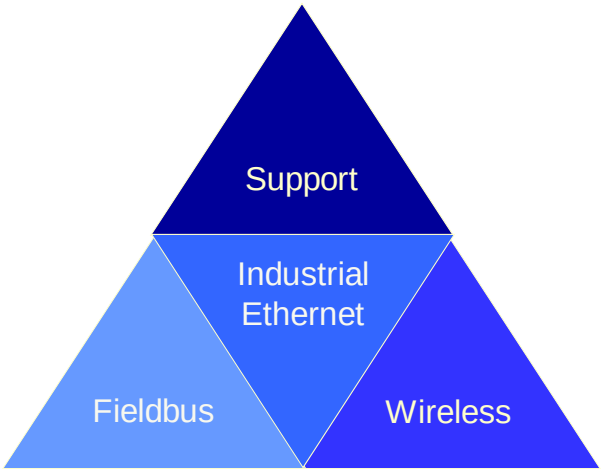
The Holy Grail for many end users has always been getting all the power where you need it with all the benefits of intrinsic safety. There are ways to do it electronically, there are mechanical ways such as injection molded plastic enclosures (not all approaches are limited to heavy metal enclosures), and there are mixed approaches that combine the electronic and mechanical. Getting the right mixture of technologies for the right application is important. From this purely technical point of view, there is a great deal of logic in putting Cooper Crouse-Hinds and MTL together. Customers can choose from the entire spectrum of intrinsic safety and explosion proof technology for their requirements.

Global Sales & Distribution

The sales and support infrastructure of Cooper Crouse-Hinds is another advantage. Having a wide sales and support infrastructure is another key to success for any truly global automation player, and combining MTL's and Cooper's resources in this regard certainly expands the distribution and sales opportunities considerably. There is a very clear understanding at MTL and Cooper, however, in that separate sales people are required to call on automation end users versus the customers that typically purchase products traditionally sold by Cooper. It is not the goal of either company to take two salespeople and replace them with one, but there will be a certain amount of consolidation of administrative functions and real estate.

Sharing Production & Engineering Resources

As a smaller automation supplier, one of MTL's primary concerns had always been managing its production and infrastructure costs. MTL have always been reluctant to subcontract important parts of their production process, because so much of their reputation is based on quality and reliability. The acquisition by Cooper Crouse-Hinds has allowed MTL to reduce their cost of raw materials through the combined purchasing power of MTL and Cooper Crouse-Hinds. Of course, Cooper also has manufacturing operations in China, Mexico, Eastern Europe, and other parts of the world, allowing MTL to expand its manufacturing and service footprint considerably.



Core Foundations of MTL's Industrial Networks Business

Much of the cost that was incurred doing mechanical work to install MTL products has now been undertaken with Cooper Crouse-Hinds systems business, which specializes in putting instrumentation and components into enclosures, factory acceptance testing, and so on. Working in conjunction with Cooper Crouse-Hinds, MTL can also offer customers complete subsystems fitted in enclosures.

Cooper Acquisition Does not Stall Major Product Developments

Despite the large amount of activity at MTL with the Cooper acquisition and divestiture of MOST (and presumably more acquisitions on the way), MTL has managed to make some significant product introductions in the past year, many of them a first for the process industries. These include intrinsically safe Ethernet products, and redundant FISCO solutions for fieldbus,

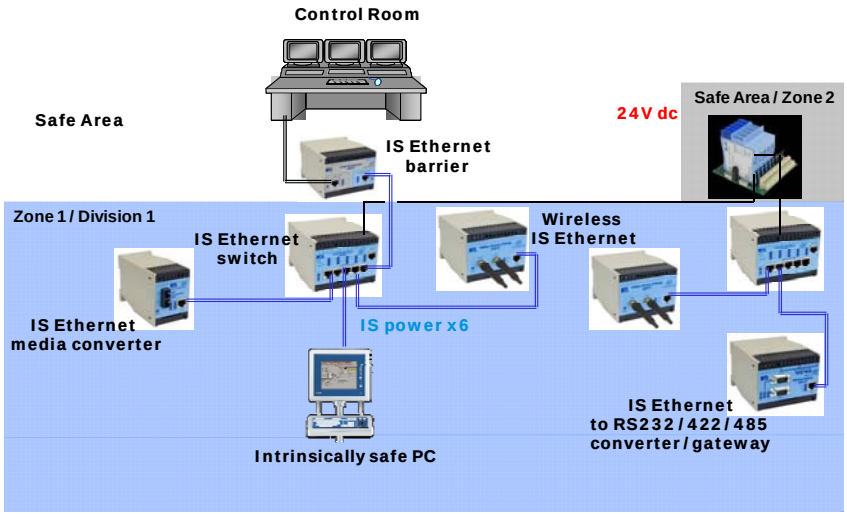
MTL Delivers Intrinsically Safe Power Over Ethernet

Ethernet has become the de facto standard for control networks in process automation today, and is gradually making its way down to the device level. Ethernet's penetration in process automation naturally brings with it the need for intrinsically safe Ethernet products. In 2008, MTL released the

9400 Series Intrinsically Safe (IS) Ethernet range and launched an enhanced Power supply, 9491-IS, which incorporates MTL's patented Fast Switch technology.

The 9400 Series delivers Intrinsically Safe "Power over Ethernet" allowing live connection and disconnection of the end device in Zone 0 and Zone 1 hazardous areas, typically reducing the cost of installing the LAN in hazardous areas by 40 percent. The 9400 series comprises a wireless LAN access point, managed Ethernet switch, copper to fiber media converter and serial gateway that are certified to be mounted in a Zone 1 hazardous area with connectivity into Zone 0. Zone 2 mounting IS Ethernet isolator and associated IS power supply complete the product range. The 9491-IS power supply uses MTL's patented "Fast Switch" technology to allow live power connection/disconnection without the need for a gas clearance certificate.

The Ethernet Gateway gives legacy Intrinsically Safe equipment "Ethernet connectivity" by allowing conventional serial communication port equipment to be connected to an Ethernet network. This enables easy integration of a wide range of IS serial measurement devices including analyzers, weighing systems, dust monitors, displays, I/O etc. into today's control systems.



MTL Intrinsically Safe Power Over Ethernet (PoEx)

The IS Wireless LAN product is a multi-functional module that can be used as an 802.11a/b/g/h Access Point, Wireless Bridge or Wireless Repeater. This provides hazardous area infrastructure for the mobile operator using Intrinsically Safe PDA's anywhere on the process plant.

The IS managed Ethernet switch allows the interconnection of intrinsically safe Ethernet networking components via its five ports. The Ethernet switch can also distribute power to compatible devices connected to each of its five ports, thus providing Intrinsically Safe "Power over Ethernet"

(PoEx) via the RJ45 Cat5e cables. The Fiber Optic Media Converter allows an Ethernet network to be extended over a greater distance.

MTL Provides Redundant FISCO for Fieldbus

MTL is an active supplier of physical layer components for Foundation Fieldbus, such as power supplies and wiring components. MTL's business in fieldbus power supplies has been particularly active. The company's Megablock wiring components are the industry benchmark for connecting instruments to the fieldbus home run cable. In 2001, MTL came out with a power supply for intrinsically safe networks conforming to the IEC standard for Fieldbus Intrinsically Safe Concept (FISCO). H1 Foundation Fieldbus is capable of being intrinsically safe by definition, but in the early days of fieldbus deployment, the limitations of IS meant that you could only support a small number of devices on any one segment. This is what is known as the "entity" concept in the original IEC standard. In practice, you were limited to four or five FF devices on any one network.

With FISCO, compliance with intrinsic safety specifications is easier than with a conventional system. MTL released a FISCO solution that made it possible to bring more power to the trunk cable, thus allowing more devices to be placed on H1 networks in IS areas, allowing 10 to 12 devices to be supported per segment. While MTL has had their FISCO solution available since 2001, other suppliers have decided to go with field barrier solutions – the primary alternative to IS. As a leader in intrinsic safety barrier solutions MTL can also offer the Fieldbus Barrier solution to end users.

Traditionally, however, a FISCO power supply is only a simplex device, so if a power conditioner were to fail all communications with everything on the trunk would be lost. Because the Fieldbus Barrier technology with its high energy trunk can support redundant power supplies, the end user has redundancy with no practical limits for energy in the field. The price for this redundancy is added complexity in the field as the Fieldbus Barriers consume extra current. In the general-purpose fieldbus market, redundancy of power supplies is well established and frequently specified. MTL has applied this thinking to FISCO and is the first supplier to make a redundant FISCO power supply available. A redundant FISCO power supply offers overall higher availability for fieldbus systems.

Advancements in Fieldbus Diagnostics

Increased acceptance of fielbus has also led to a greater need to monitor the health of digital fieldbus network. Fieldbus network monitoring and diagnostics solutions monitor the entire physical layer of fieldbus networks which includes the cable infrastructure, terminals, power supplies, device interface hardware, fault protection equipment, and communication—the signal transmitted across the network the Fieldbus networks efficiently in real-time.

MTL has established a place for itself as one of the leading fieldbus network monitoring and diagnostic suppliers. The company's fieldbus diagnostic module is unique because it is the only such product that uses H1 to communicate the diagnostic information to the host. The diagnostic module is now installed in and is monitoring over 6,000 fieldbus segments around the world. The module allows alarm limits to be set on critical parameters, allows customers to identify issues with wiring on fieldbus segments, identifies when unauthorized changes had been made, and shows peak levels of noise on bus segments. MTL is currently working on an enhanced version of the module that will incorporate the latest Enhanced Electronic Device Description Language (EDDL), and is working on an FDT version.

Elpro to Introduce Wireless HART Adapter

MTL acquired Elpro in May of 2007. The company is a major supplier of wireless infrastructure components. Elpro Technologies manufactures, markets, and supports a line of wireless products and systems for use in process manufacturing industries. This enables the products to be localized and customized for operation in both licensed and unlicensed RF bands in many countries. Elpro's products fall into two major classes: those designed for telemetry of analog and discrete I/O signals and those designed for RF connection of serial communications used by devices such as PLCs, RTUs, fieldbuses and SCADA components.

Some of the key future developments from Elpro include a wireless HART gateway, with a wireless HART adapter available by the end of the year. Elpro estimates that the new adapter should take very little time to install and have online. Elpro is a voting member of the ISA 100 committee, and will offer firmware upgrades for the ISA 100 wireless specification once it becomes available. The company also continues to develop its line of wireless I/O.

Byres Security Partnership Yields new Developments

The recent introduction of the Tofino Security Solution in conjunction with Byres Security is a more recent example of how MTL can drive real value into hardware components that will have widespread appeal for automation suppliers, OEMs, and SIs. Introduced in October of 2007, the Tofino Security Solution changes the way Industrial Ethernet security is managed by providing an "Intrinsically Secure" solution right out of the box. Field technicians can attach power to Tofino, connect two network cables and walk away, instantly transforming vulnerable control devices into highly secure fortresses. The Tofino Security Solution has already been embraced by suppliers and end users.

Future developments for the Tofino device include making it easier to use with features such as assisted rule generation. In the opinion of Byres and MTL, the main problem with cyber security in process automation is that it is too difficult to use and takes too much work to set up. The long-term goal of the MTL/Byres team is to offer products that require absolutely zero configuration, making security solutions accessible to the average control engineer. A good firewall digs in and looks at HTTP content, and Byres intends to do the same deep packet inspection functions with Tofino for industrial applications. There will be a version of Tofino that will be available later in 2008, for example, that will analyze all Modbus writes to the system.

Tofino Security Device

MTL is the sole distributor and channel to market for Tofino in the oil and gas and process industries, and they also manufacture all the hardware. There are many potential synergies for Tofino within other divisions of Cooper and MTL has been exploring this possibility. OEM versions of Tofino should also be available by early 2009 from some of the major DCS suppliers.

Conclusions

- The Cooper acquisition will put to rest any questions or concerns about the future of MTL as an independent provider of solutions for the control system hardware and network infrastructure. Through Cooper,

MTL can effectively continue the partnerships with the major process automation suppliers that it has spent years developing.

- Cooper gives MTL access to the resources it will need to grow and develop its business worldwide. There are many potential synergies between MTL and other businesses with Cooper, as we are already witnessing through the development of total solutions including MTL hardware and Cooper enclosures.

- MTL continues to come out with new products and technologies and has not been slowed by the Cooper acquisition. In an age where it is quite difficult to add value to the hardware infrastructure of the control system due to the influx of commercial off the shelf components, MTL continues to drive innovation with new products such as redundant FISCO solutions, intrinsically safe Ethernet products, wireless HART products, and the Tofino security device.

This paper was written by ARC Advisory Group on behalf of MTL. The opinions and observations stated in the paper are ARC's. For further information or to provide feedback on this paper, please contact the author at lobrien@arcweb.com.