

CONTACT

The ABB India Magazine

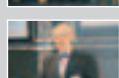
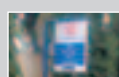
Productivity
Efficiency

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ABB



India Round-up

- Continued customer confidence helps ABB India register strong 2003 performance
- Prestigious Asiamoney award enforces investor confidence
- Samman Patra for excise compliance
- Dinesh Paliwal appointed Chairman of ABB India
- ABB develops Railway Circuit Breaker with magnetic actuator drive
- Service support gets closer to home !
- Top automation technology boosts steel production
Interview with Sajjan Jindal, Chairman and MD, JISCO
- ABB technologies playing a key role in Tata Steel's capacity expansion and modernisation
- 'Into the future' with ABB at Elecrama 2004
- World-class Building Solutions
– A key to performance efficiency and productivity
- In conversation with Markus Bayegan

4

4

4

5

5

6

7

8

10

13

Global Round-up

- Welcome to the future of power grid control
Making substations smarter
- Remote diagnostics
ABB appoints Fred Kindle as new CEO

15

16

Technology Digest

- Open house!
Gateways to the EIB

17

Living our commitment to Sustainability

20

Channel Line

21

Q&A

22

CONTACT

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Dear Friends,

On the macro front, industrial revival is gathering pace and select sectors are already seeing brownfield expansions. As business confidence increases, more sectors are expected to go in for brownfield and greenfield capacity expansions. Power sector reforms are underway and likely to accelerate further post elections, as the transmission and distribution focus continues, backed by initiatives like APDRP, corporatisation and privatisation of SEBs, distribution reforms in Delhi and the passing of the Electricity Act.

As India integrates itself with the global economy, the need for competitiveness, increased automation, higher productivity and efficiency, cost effectiveness and world-class quality is being increasingly realised. The common thread binding these factors is technology and innovation and in this issue, you will get an insight into some of ABB's latest technology initiatives.

As the world moves towards a more knowledge driven society, work places are being redefined in order to optimise their performance and maximise the efficiency of employees to ensure the highest standards of productivity. At the same time, India is moving towards a far more discerning consumer environment where multiplexes and shopping malls are becoming the order of the day and comfort is being redefined to new levels as is the case with sectors like hospitality and leisure. Similarly, sectors like IT, biotechnology, pharma and healthcare are adopting the most exacting and uncompromising standards when it comes to the environment they operate in. This is where ABB building solutions are playing a major role in areas like comfort cooling, energy efficiency, electrical installations and the development of intelligent buildings with a wide range of products, systems and services, which you will read more about in this issue of CONTACT.

We continue to strive towards making our customers more competitive and productive, in every possible way, by leveraging ABB's cutting-edge products and solutions combined with domain expertise in power and automation technologies. We look forward to your continued support and collaboration along this journey.

Yours sincerely,

Ravi Uppal

Vice Chairman & Managing Director, ABB India

India Round-up

Continued customer confidence helps ABB India register strong 2003 performance



January this year, ABB India announced its 2003 full year results. Based on the continued trust of the customers in ABB's technologies and domain expertise the company registered a strong performance. Orders were up 31% at 17054 MINR, further strengthening the order backlog, revenues up 25% at 15031 MINR and exports grew by 75%. To provide customers better access to its wide

range of standard products, ABB India has increased its channel partner strength to around 400. The company also expanded capacities in several businesses like MV switchgear, transformers and motors and also enhanced its range of product offering, introducing several new products like LV Capacitors, Condenser bushings, Railway Circuit Breakers, etc.

Prestigious Asiamoney award enforces investor confidence

ABB India was honoured with the *Asiamoney* award for 'Best Small Cap Company 2003' from India (300 Million USD range).

Asiamoney's 12th annual best-managed companies' poll was conducted across nearly 3000 fund managers, chief investment officers and heads of research in the Asia Pacific region, Europe and North America. ABB India's Chief Financial Officer, K Rajagopal, received the award on behalf of the company in February this year.

Asiamoney, part of the Euromoney Group, is considered among the most influential financial magazines and a leading authority on finance, banking, investment and treasury in the Asia-Pacific region.



Dinesh Paliwal appointed Chairman of ABB India



ABB India's Board of Directors, elected Dinesh C. Paliwal, already a Director, as Chairman of the Board. Paliwal (46 years) is an Indian citizen and presently heads ABB's Automation Technologies division worldwide from Connecticut, USA. He is a member of ABB's Group Executive Committee (EC), headquartered in Zurich, Switzerland. In addition to his global division responsibility, he is also the President and Country Manager of ABB in USA.

Dinesh Paliwal, takes over the Chairman's role from Peter Smits, Head Power Technologies division and member ABB Group Executive Committee who shall continue to be a Director on the Board.

Samman Patra for excise compliance

Recognition of corporate responsibility

ABB India was awarded the *Samman Patra*, (Certificate of respect/honour) instituted by the Central Government. The Chief Commissioner of Central Excise presented the award to K Rajagopal, CFO, ABB India, at a ceremony held in Bangalore, earlier this year.



ABB develops Railway Circuit Breaker with magnetic actuator drive

In keeping with its tradition of technology innovation, ABB India has developed a Railway Circuit Breaker with a magnetic actuator drive which is now in operation at the Northern Railway – Narela (Delhi) Traction Substation. The 27.5 kV, 2000 A FSK-II type breakers are intended for 12 railway zones across India.

The FSK-II is the world's first commercially produced outdoor breaker for railway power supply, which uses actuation technology. The breaker is equipped with a vacuum interrupter, a state-of-the-art magnetic actuator drive and an electronic controller. The circuit breaker is designed as per the latest IEC standards and offers various advantages such as reduced maintenance and increased reliability, thanks to fewer components and interfaces through digital inputs. This new generation of breakers has been developed to address the railway AC circuit breaker market for outdoor applications especially where operating conditions are particularly demanding.



Service support gets closer to home !

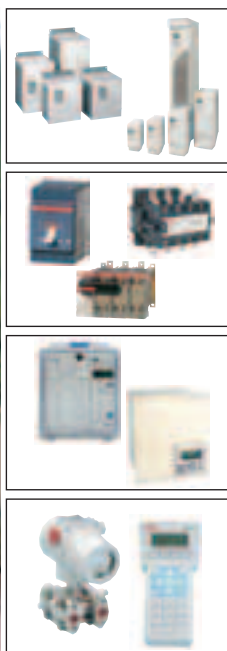


ABB has always sought to provide end-to-end solutions to its customers. In today's dynamic, competitive and zero-tolerance environment, a vital part of that offering is the service that supports any technology offering.

In keeping with this philosophy, ABB has further enhanced its service network in the country to provide greater access to its customers, so they can get faster, more efficient service and in turn enhance their competitiveness.

Three new ABB Service Centres were simultaneously inaugurated in January at New Delhi, Mumbai and Kolkata. Through these service centres, ABB will offer single window service for drives, LV switchgear, relays and instrumentation. Now, for our customers, we are truly just a call, email or visit away.



Top automation technology boosts steel production

Interview with Sajjan Jindal, Chairman and Managing Director, Jindal Iron and Steel Company

“ABB has the image of coming up with cutting-edge technology, and I know that it will provide the latest technology in India, as soon as it is marketed elsewhere,” says Sajjan Jindal, Chairman and Managing Director of Jindal Iron and Steel Company, one of India’s top steel producers. “The technology and quality is world-class and we get good service and on-time delivery,” says Sajjan Jindal. “That is why we continue with ABB as a supplier of choice.”

ABB has provided a variety of drives, process controls, and other automation and electrical equipment for a number of the O. P. Jindal Group’s plants. ABB has recently engineered, designed, supplied, supervised and commissioned a new galvanising line at Vasind and a cold rolling mill in Tarapur, both close to Mumbai.

Long-term relationship

Partnership with the O. P. Jindal Group is growing stronger. ABB last year implemented four new automation related projects – from two power plants at Vasind. They underscore a 15-year relationship based on advanced technology, efficient service and a close understanding of the customer’s needs. ABB’s control technology has resulted in a reduction in plant downtime and energy savings. “We are the lowest gigajoule producer in the Indian steel industry, and ABB has played its role in this achievement,” says Jindal.

Good service

Service is a key issue. “ABB has a good after-sales service,” says Jindal. “I remember one instance a few years ago when a technical expert flew in from Bangalore around midnight to correct a fault.”

Jindal is one of the leading steel producers in India. Referring to the steel industry, Jindal says: “We have ambitious plans to leapfrog and become India’s second largest producer.”

JISCO

Jindal Iron & Steel Company Limited (JISCO) is part of the O. P. Jindal Group and a leading manufacturer of flat steel products in India and the largest producer of galvanised steel products in India. It has the largest integrated manufacturing facility and is engaged in the cold rolling and galvanising business with almost 75% of its production being exported to over 45 countries across 5 continents around the globe.



ABB in Steel

ABB is a leading provider of turnkey solutions from design to engineering through supply of systems and products to commissioning and service for the steel industry. ABB provides state-of-the-art technology that enhances plant productivity and boosts energy savings. ABB's offering for the steel industry includes:

- Industrial^{IT} automation, optimisation and information management solutions
- Control and measurement systems
- Software solutions for integrating and optimising plant assets and operations
- Information and production management, planning, scheduling and manufacturing execution systems
- Analytical products and solutions
- Business Consulting Analysis and Solutions for value chain optimisation and implementation of real-time order fulfillment for their customers.



Solutions based on ABB's Industrial^{IT} platform can optimise your value chain within and beyond your plant to achieve true efficiency. By integrating and optimising the entire procurement, manufacturing and sales process – bridging the gap between industrial plant floor automation and business systems within the enterprise, among suppliers and through to your customers.

ABB technologies playing a key role in Tata Steel's capacity expansion and modernisation



ABB India has been awarded turnkey orders to provide automation and electrical solutions for projects related to Tata Steel's one million tonne expansion, through reputed international OEMs. This includes complete automation and electrics for a new 600,000 tonnes per annum rebar mill at Jamshedpur. The project scope includes engineering, supply, erection and commissioning of AC multidrives, motors, transformers, switchgear, automation & communication systems and field devices and is expected to be completed by early 2005.

ABB is also providing a turnkey solution through the process know-how supplier, for the Sinter plant, which includes complete DCS (Distributed Control Systems) based on ABB's Industrial^{IT} platform, aimed at seamless, real-time integration of automation and information systems with production processes. The scope of supply also includes HV & LV drives as well as HT Machines.



Biplab Majumder
Head – AT Division, ABB

"We remain focused on making our customers more efficient and competitive through ABB's comprehensive technology offering worldwide experience and unparalleled domain expertise," said Biplab Majumder, Head – Automation Technologies (AT) Division, ABB India, commenting on the success. "With these orders we reaffirm our position as market leaders when it comes to automation solutions for the metals sector," he added.

ABB has a long association with Tata Steel, who has continued to repose its faith in ABB's leading-edge technologies. Other projects where ABB is supporting Tata Steel's modernisation and expansion plans include crane electrics, the recently installed pickling and tandem cold mill, continuous galvanising, recoiling as well as the electrolytic cleaning lines.

'Into the future' with ABB at Elecrama 2004

Visitors at ELECRAMA 2004 had a taste of ABB's latest generation of power and automation in New Delhi in February this year.

Several new and innovative products, recently introduced or being launched in India were showcased at the ABB stall, spread over 500 sq mt. This included the company's new range of low voltage products like Distribution boards, MCBs, RCBs and an array of Electrical Wiring Accessories (EWA). Other technologies on display included the new range of Compact Substations, Ring Main Units (RMUs), Circuit breakers for railway applications and Low Voltage Capacitors.

Customers showed immense interest in ABB's Industrial^{IT} offering – the latest generation of Industrial^{IT} enabled AC Drives – the ACS 550, ACS 050 and Operate^{IT} product suite, which facilitates power network management.

Several working demos including distribution automation and SCADA solutions, Network Protection systems, Billing Systems, Relays, Drives applications and a state-of-the-art industrial robot captured the attention of the steady flow of visitors including leading customers like Powergrid (PGCIL), DMRC (Delhi Metro), NDPL (New Delhi Power Ltd.), Reliance Energy (BSES) and many other leading utilities and industrial customers. Several government officials, channel partners, analysts, students and journalists also visited the stall.

"We remain committed to expanding our range of offering in the country by introducing world-class products and technologies backed by our global expertise and experience as well as our in-depth understanding of the local market," said Ravi Uppal, Vice Chairman and MD, ABB India.



Some new products showcased

Ring Main Units

ABB's SF6 gas insulated Ring Main Units provide reliable, efficient and cost-effective solutions for power distribution. The units are equipped with vacuum circuit breakers and switch fuse disconnectors sealed for life in a common stainless steel SF6 gas insulated tank which ensures maximum safety to operators and climate independent operation over their entire lifetime. These units require minimal maintenance and have a long electrical and mechanical life. Facility for remote control and monitoring is available as an integrated solution. Also available is a GSM based low cost, remote alarm system for supervision of secondary substations and switchgear. ABB is one of the largest producers of SF6 gas insulated Ring Main Units and has an extensive installed base across India.



Compact Substations

The compact or unitised substation is a completely self-contained, factory assembled substation with a transformer and high voltage / low voltage compartments. The ABB CSS is available in a totally enclosed walk-in and non walk-in type, aesthetically appealing vandal / weather proof metal clad housing.

The substations mounted upon a galvanised steel base frame are ready for placing into position on a concrete base. The high voltage compartment contains an SF6 insulated Ring Main Unit and the low voltage compartment an LT panel switchboard. These prefabricated, factory assembled and tested substations provide substantial savings in space, time and cost.



Railway Circuit Breakers

The FSK II Railway Circuit Breaker is the world's first commercially produced outdoor breaker for railway power supply and offers various advantages such as reduced maintenance and increased reliability, thanks to fewer components and interfaces through digital inputs.



Flameproof motors

ABB's range of flameproof motors are designed for safety and reliability in hazardous areas and suitability for use in temperature classes T5 and T6. The special flameproof enclosure design keeps any inadvertent explosion inside the enclosure from propagating through gaps.



ACS 550 and ACS 050 Drives

The ACS 550 is a standard drive which is simple to install and configure. The drive has common user and process interface with fieldbus, common software tools for sizing, commissioning and maintenance. Some of the advanced features of the drive include sensorless vector control, Integral RFI filter for 1st and 2nd environment as standard and a flexible fieldbus system with built-in Modbus. The ACS 550 is available in two voltage ranges: 380 - 480V & 208 - 240V.



The ACS 050 is a compact drive ideal for DIN-rail mounting and does not require any programming. This IP 20 class drive is available in a power range from 0.18 to 0.75 kW (100 - 240 V). It is ideally suited for applications such as fans, pumps, gate control, material handling, conveyors etc.



MCBs, RCDs and DBs

Miniature Circuit Breakers (MCBs)

ABB's range of MCBs are available in 1Pole-2Pole-3Pole-4Pole and 1Pole+Neutral (1P+Na), 3Pole+Neutral (3P+Na) with thermo-magnetic release. They can easily be snap fitted on a 35mm DIN-rail and come with a wide range of accessories like auxiliary contact, signaling contact, shunt trip, under voltage release and mechanical interlock, which can conveniently be retrofitted on to the MCB.



Residual Current-operated Devices (RCDs)

The ABB range of RCDs makes use of the well-proven principle of utilising core balance transformers with permanent magnet trip devices. ABB's RCCBs come in a wide range - from 1 pole + Neutral DS 971 to a 4 pole DS 674 range with over-current protection (RCBOs).



Distribution Boards (DBs)

ABB's range of DBs has been developed as a modern distribution system for ABB's innovative switchgear. Simple versatility is realised with wall mounted and floor standing cabinets, which are readily adaptable to suit most functions.



World-class Building Solutions

– A key to performance efficiency and productivity

Buildings are now regarded as a key productivity factor for every business. Effective facility management, be it commercial buildings, industrial plants or marine and offshore applications, is critical to achieve enhanced efficiency and profitability.

Today, infrastructure development and maintenance costs are major considerations as well. This has led to the design of intelligent facility management solutions, integrated with the building architecture at the concept stage, to keep operating costs to the minimum.

ABB offers integrated, optimised and cost-effective building solutions for several key sectors such as Commercial & Industrial Buildings, Pharmaceutical, Biotechnology, Food Processing, Semi-conductor, Electronic industries, Power Generation & Distribution as well as Marine & Offshore.

Indoor Climate Control

ABB offers a complete range of solutions including design, engineering, supply, erection and commissioning of Heating, Ventilation, Air-conditioning (HVAC) systems to meet specific customer requirements for accurate monitoring and control of temperature, relative humidity, pressure differential, carbon dioxide, noise levels etc. These solutions encompass:

- Water / brine chillers
- Air handling units and fan coil units
- Cooling towers and pumps
- Ventilation fans, accessories and fresh air units
- Sheet metal ducting and terminal registers/grilles/diffusers
- Thermal and acoustic insulation of ducts
- Piping for water, compressed air and refrigerant gas
- Insulation of pipes
- Electricals related to power and control
- Instrumentation, controls and automation
- Clean room technology

ABB's project execution capability is in accordance with GEP / GMP – a benchmark for global standards; and also offers all necessary support and documentation for validation by global agencies like ISO14644, US-FDA, UK-MCA, SA-MCC to suit customer requirements.



Power Distribution and Management

ABB offers a wide range of solutions for power distribution and management, including emergency backup power and asset management services for HT (3.3 to 400 kV) and LT (415 V) systems. While designing and implementing these solutions, ABB focuses on:

- Optimal selection of equipment ratings
- Initial cost and running costs in relation to life-cycle costs
- Minimal rework and implementation time
- Optimal time for construction

ABB offers products, systems and solutions for:

- High voltage incoming supply and distribution
- Low voltage distribution
- Bus bar trunking – sandwich construction as well as air insulated
- Maximum demand monitoring – status monitoring, emergency shutdowns, logging of consumption, protection co-ordination including PLCs, SCADA systems, etc
- Emergency backup and uninterrupted power
- General and emergency lighting
- Earthing and lightning protection
- Automatic power factor correction



Building Automation Systems

ABB has unparalleled domain expertise in building automation solutions – be it design, engineering, commissioning or asset management services.

ABB offers Integrated Building Management Systems (IBMS) using Industrial^{IT} architecture and EIB system – a non-proprietary and decentralised system that uses only one pair of control cables (24 VDC). The system is flexible, scalable and adaptable.



Support Utility Systems

ABB offers systems and solutions for efficient operation of facilities. This includes supply, installation, commissioning, integration and asset management services for:

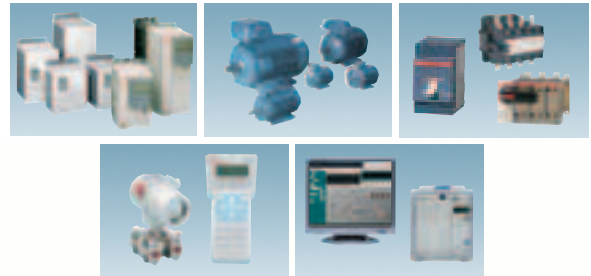
- Fire detection, monitoring, protection and suppression systems
- Alarm systems
- Telephone / local area / cable networks
- Security and CCTV systems
- Public address, emergency evacuation and channel music systems
- Access control systems
- Electronic earthing including dedicated computer earthing, antistatic rack earthing, etc.



A wide range of standard products

ABB also has a comprehensive offering of standard products for a wide range of applications:

- AC & DC drives
- Low voltage motors
- Low voltage products
- Instrumentation and analytics
- Programmable Logic Controllers (PLCs), Distributed Control Systems (DCS) and Human System Interface (HSI)
- Transmission and Distribution Relays



Some recent building system projects



Marine and Off-shore



ONGC: Revamping of HVAC and allied system at SH/IC off shore platforms, Mumbai High.



Andaman Port Authority: HVAC for 400 men passenger vessel, HDPEL, Kolkata.



New Mangalore Port Trust: Electrical contracting for Internal & External Electrical Installation for Tanker Jetty No. 3 & 4.

Shipping Corporation of India: Air conditioning for Bulk Carrier at HSL.



Pharma and healthcare

RANBAXY

Ranbaxy: HVAC for formulation plant, Ponta Sahib, H. P.



Wockhardt: HVAC for 250 bed super specialty hospital, Bhandup, Mumbai and Bio-Tech Parks at Aurangabad.



Unichem Laboratories: HVAC for formulation plant, Gaziabad, UP.



Plethico Pharmaceuticals: HVAC for various formulation plants at Kalaria, Manglia and Indore.



Power Plants



NTPC: Air conditioning and Ventilation for 3x210 MW plant, Ramagundam, AP and 4x210 MW plant, National Captive Power Plant, Dadri, UP.



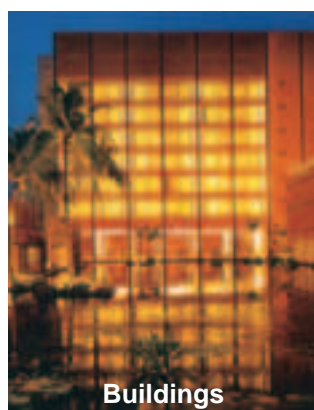
PGCIL: Electrical contracting for 200 kV Substation, Hiriyur.



BHEL: HVAC system for transmission station including valve building, Chandrapur and Phadke, MSEB, Maharashtra.



Alstom: HVAC system for 1x125 MW Neyveli – Zero Lignite Fired TPP, Neyveli, Tamil Nadu.



Buildings



ITC-Sheraton Hotel: Complete ACMV system for ITC-Sonar Bangla, 7 Star Delux Business Resort and Hotel, Kolkata.



E-City (Zee Telefilm Group): Complete HVAC system for Multiplex-Fun Republic, Andheri, Mumbai.



Wipro Technologies: Electrical Contracting for software training centres, Bangalore, Hyderabad and Pune.



Digital GlobalSoft Ltd: Airconditioning for Digital park and other office blocks, Bangalore.

Hewlett Packard: HVAC for entire office, Bangalore.

In conversation with Markus Bayegan

Chief Technology Officer, ABB Group and Head, Group R&D and Technology.

What is ABB's approach to R&D and changing the face of business?

ABB has been at the forefront of technological innovation for over a century and our power and automation technologies are the backbone of many industries. ABB invests around a billion US dollars a year in research and order related development. On an average, 27% of total first filings are software related. Industrial^{IT} has been identified as the common technology platform across the Company. Industrial^{IT} enables real-time, seamless integration of plant operations and business processes across the entire value-chain based on an open architecture platform aimed at bringing greater efficiencies to customers' operations and making them more competitive in an increasingly networked world. Over 37,000 of ABB products have been Industrial^{IT} certified to date.

What is the role that the Industrial^{IT} Centre in India is playing in the Group's R&D efforts?

ABB India's Industrial^{IT} Centre in Bangalore is an integral part of ABB's global R&D base and automation technologies network and plays a leading role in development and quality assurance of future ABB products and services. The R&D facility in Bangalore helps leverage local advantages offered by the city for software development in terms of technical knowledge base and software infrastructure as well as the cost advantage. "Brain Power" is the major advantage reaped by locating this Centre in India, besides the cost advantage. ABB has invested heavily in terms of intellectual capital and this centre brings together highly skilled domain experts who form the core team working with software programming partners.

The Indian Industrial^{IT} Centre develops and supports software intensive products, including support to the Global Automation Lab in developing and adopting new technologies for ABB. It is a key strategic technology partner to ABB's businesses with a mandate to monitor, assess and develop technologies for the future and also develops, maintains and supports a range of software intensive products, acts as a partner for ABB R&D centres as well as business areas within the Group.



What have the key achievements of this Centre been thus far?

The India Centre has met and exceeded all its planned targets. Particularly noteworthy has been the high technological ability, software skills and overall domain competence developed at the Centre. The ABB Group is extremely encouraged with its first two years of operations and is now entering into a rapid growth phase. Around 30 projects have already been successfully completed. Over 1000 products have been certified by the India Centre so far and around 25 projects are currently in progress. The Centre is now also authorised to certify at Level 2, the highest level of certification that ABB has granted so far. Products manufactured locally in India have been Industrial^{IT} certified by this Centre. The India Centre helped achieve considerable cost savings and significantly reduced time to market for several Industrial^{IT} enabled projects, including the release of the new 800xA automation system announced in December 2003. This Centre is now designated as the lead centre within ABB for fieldbus technologies, automated testing, migration tools and new graphics technologies.

What are the plans on the anvil for this Centre?

Our R&D experience in India has been very satisfying. During the short span of its two-year operation, our Automation lab here has done excellent work. We intend to double the

continued...

manpower capacity of the centre in India from the current level to approximately 100 domain experts within the year. The model remains the same, ie, to build a strong team of domain experts within the Group and work with local partners as a support base. This Centre is also ready for active participation in applying automation to power technologies product development while continuing to expand in automation technologies. This Centre is now ready for mission critical and time critical projects with full life-cycle responsibility. The India Centre is being developed into the main centre for migration of legacy systems to Industrial^{IT}. The degree of technical complexity will increase with regard to the nature and scope of projects undertaken.

Extended Automation at ABB India's Industrial^{IT} Centre

The 800xA system extends the scope of traditional control systems to include all automation functions in a single user and engineering environment so that plants/mills can run smarter and better at substantial cost savings. ABB's pledge of 'Evolution through Enhancement' ensures that future advances in systems' technologies will enhance rather than compromise customers' current investments. The system dramatically improves plant-wide productivity by providing integrated core functions such as Operations, Engineering, Information Management, Batch Management, Asset Optimisation, Control and I/O and Fieldbus (Field Device Integration).



Emerging technologies

Over the years ABB has developed technologies that have gained recognition and respect not just from the research & scientific community but also the customers it serves. Here is a glimpse of a few path breaking innovations.

Getting the message across faster – switched Ethernet technology that improves the speed and efficiency of automated networks – and the equipment they control based on an algorithm that decides which messages should be chosen and processed first.

Meter reader that mimics the human eye – contactless encoder for water meters that uses optical character recognition to read a water meter's odometer wheels, resulting in unparalleled accuracy in automated meter reading. Light-emitting diodes illuminate the odometer digits for visibility and artificial retina chips focus on the number wheels for perfect read-outs virtually every time.

Advanced industrial communication – a cost-effective and easily reconfigurable wireless sensor system that reduces the need for cables and individual sensors. The technology can also be used in pocket portals, allowing plant operators to detect equipment problems and even take corrective measures from the factory floor. With the pocket portal's hand-held display, operators are free to roam the plant without ever losing access to control room information and controls.

Dry capacitors that store twice the energy in half the space – DryHED (Dry High Energy Density) capacitors that are specially designed for high-voltage direct currents with "self-healing" capacity in the event of an electrical fault. Such a system has been put in place in Long Island, New York for the U.S. Department of Energy to supply power to Long Island in case of emergencies.

Third harmonic filters – a filter based on patented power technology that eliminates the threat of screen flicker – an increasing problem in the modern age of the electronic office.

Preserving power with the flick of a switch – a high-speed transfer switch which reacts instantly in the event of a power failure by anticipating potential power interruptions and immediately switching to a second power source. The real-time control of the high-speed transfer switch is based on a new algorithm developed by ABB.

Parallel to the development of immediate market-driven products and services, ABB is working on many industrial applications of emerging technologies. ABB is currently working very closely with many renowned institutes, like Massachusetts Institute of Technology, Carnegie Mellon University, Stanford University etc, on microelectromechanical systems (MEMS), wireless applications and software technologies.

Nanotechnology – Material re-engineering at the atomic scale

Wireless Applications – Enabling efficient connectivity with wireless technology

Software Technologies – Product-related and process-enabling software development

Microelectromechanical Systems (MEMS) – Integrating IT and communications with micromechanical structures

Global Round-up

Welcome to the future of power grid control

Recall the power outages which plunged the Northeastern United States, Ontario – Canada and parts of Europe into darkness last year resulting in downtime and lost production? One of the main reasons behind this is the fact that many power grids were built before microprocessors and fiber optics based technologies existed and these grids were not designed to detect and suppress system-wide disturbances. Instead, as individual components sense trouble and shut down, the remaining power flows become disturbed, and neighbouring transmission lines and power plants shut down.

ABB has developed a solution that can track electric flows across continent-wide grids several times a second, identify any disturbances, enabling immediate action and reducing the likelihood of a blackout. The solution is based on control algorithms which employ a highly simplified model of how a grid works and is capable of instantly identifying serious problems within the grid. ABB engineers are now studying how these algorithms can protect the all-important power corridor linking Italy and Switzerland.



Many researchers are looking for solutions to problems associated with grid collapses, but ABB's approach in particular attracted the attention of Technology Review's editors. Technology Review (www.technologyreview.com), a publication of the Massachusetts Institute of Technology (MIT), has just unveiled its annual selection of ten hot new technologies that the editors predict will affect our everyday lives in revolutionary ways. The publication has featured ABB's Christian Rehtanz, who is described by the editors as a researcher "whose ideas and efforts both epitomize and reinvent his or her field".

Making substations smarter

Conventional substations are equipped with circuit breakers that interrupt power, either automatically in case of an electrical failure or manually for maintenance work. But these circuit breakers by themselves cannot detect a fault before cutting power – which is literally a matter of milliseconds.

Thanks to ABB's microprocessor-based Multifunction Protection and Switchbay Control Unit – REF542plus, medium-voltage substations can now detect faults in milliseconds. The REF542plus combines measurement, monitoring, protection, control and self-diagnostics functionality into one bundle and also features web-based remote monitoring and SMS alerting. The new GPS-based time synchronisation also makes fault identification accurate and helps to reduce the fault frequency in distribution networks.

REF542plus uses the GPS time data to continuously synchronise its own embedded clock. This clock time-tags events occurring in the switchgear with extremely high precision going beyond milliseconds. The time-tagged event is then sent to a remote computer, which analyses the cause of the fault. The higher the accuracy of the time data, the easier it is to reconstruct the fault by cross comparing data from all pieces of equipment detecting the fault. The GPS-based time synchronisation will help gradually reduce the fault frequency in substations around the world.



Remote diagnostics

Optimize^{IT}

ABB

Consider a situation where vibration data of motors installed in a plant is collected, then loaded onto a PC. The software analyses and screens the vibration data against specifications, looking for potential problems. If servicing is required, data is automatically uploaded to ABB's global condition monitoring experts, who then reply with recommendations or work orders.

Such remote service tools like the Asset Optimiser from ABB can help increase return on assets without incurring additional costs of deploying manpower on site round-the-clock, and without unnecessary delays thereby minimising downtime and taking a proactive approach to maintenance. The focus is on getting more out of the processes, systems and machines, making them run more efficiently, more cost-effectively, and ensuring a longer service life. ABB's Asset Optimiser can be configured to constantly scan and look for problems, perhaps even problems that the customer is not used to looking for due to other core responsibilities. It can also be directly linked to most computerised maintenance management software and generate work orders according to



the plant's operating systems.

Plant operators can use this software in combination with ABB's SolutionsBank, which includes more than 60,000 number of online equipment and process documents. SolutionsBank automatically logs new processes and analysed documents, constantly improving its scope of knowledge.



ABB appoints Fred Kindle as new CEO



The Board of Directors of ABB Ltd recently announced the appointment of Fred Kindle as the Group's new Chief Executive. Kindle, currently CEO of Swissbased Sulzer AG, will join ABB on

September 1, 2004 and assume the role of President and CEO in January 2005, when the current CEO Jorgen Dormann will revert to a single role as Chairman of ABB Ltd.

Kindle said: "I look forward to my new task at ABB. The know-how and commitment of the people at ABB, the reputation of the ABB brand and the strong global market position of the company provide an excellent foundation for an exciting and successful future."

Prior to joining Sulzer, Kindle spent four years as a consultant with McKinsey in New York and Zurich, and also worked with technology company Hilti AG. He has Swiss/Liechtenstein citizenship.



Technology Digest

Open house! Gateways to the EIB

Being able to change the TV channel from the comfort of your armchair might give you the feeling of being in control, but it's nothing compared with the empowerment you experience when you log onto the Web from a vacation hotel to, say, check the temperature – and lower the sunblinds – in your home, 2000 miles away. Seems far-fetched? Not with today's gateway technology.

Every new commercial building, whether a small company branch office or the headquarters of a global concern, is almost certain to have a 'bus' system installed on which its technical facilities and services are run. And of all the systems currently available, the one most likely to be used is the European Installation Bus (EIB)^[1].

There are numerous reasons for installing EIB. Companies can exchange data between many different systems situated anywhere in the building and a huge, still-growing range of products can be connected to it, including light switches, sensors and dimmers, temperature regulators, shutter actuators and sunblinds, as well as virtually every kind of circuit terminal. In fact, over 10,000 EIB-compatible products, offered by more than 100 vendors, are currently available on the market. These products provide a level of

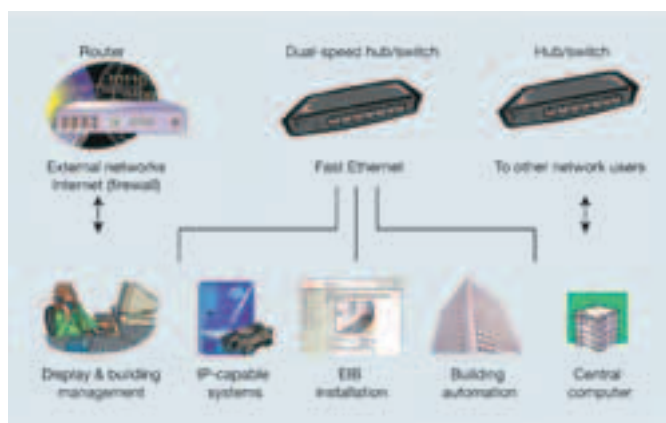
comfort and convenience that people have come to expect at home as well as in the office. In addition to making life more comfortable and secure, the EIB can also contribute to energy-saving, for example by optimising power consumption on the basis of how many people are present in a building or room.

ABB began developing and marketing products for use with EIB in the early 1990s and currently offers a wide range of EIB-compatible deliverables to industry and commerce.

EIB/IP gateway

The sheer number and diversity of the electrical and electronic equipment installed in our homes and workplaces make reliable communication between the different devices and systems a top priority.

Of the systems developed to date, the Ethernet has emerged as *the* communication standard for industrial control systems and building automation systems. Personal computers and other everyday devices already use the Ethernet to communicate and exchange data with each other. This and the fact that it is so widely used in modern commercial buildings, makes the Ethernet an obvious choice as the interface between the EIB and other systems, allowing data on the EIB to be received by devices connected to it⁽¹⁾. Whole new application areas have opened up as a result, as well as new opportunities for linking EIB devices and other equipment connected to the Ethernet. And the EIB can continue to use Ethernet as the backbone over which EIB system parts communicate with each other.



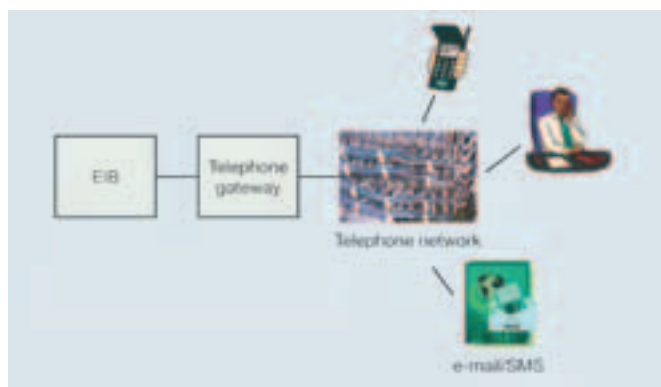
1. Using the Ethernet as interface between EIB and other systems has numerous benefits in a wide range of applications.

ABB will soon bring to the market a so-called IP gateway for the EIB. This device converts EIB telegrams into telegrams for the Ethernet, and vice versa. Since, homeowners are increasingly installing in-house networks for their PCs and domestic appliances, the IP gateway will also offer advantages to this consumer group, by making the EIB accessible for data exchange between devices.

Telephone gateway

In recent years a new requirement has emerged: to be able to remotely control and monitor buildings and apartments. The first interfaces to be developed for this were telephone dialing and answering machines. These made it possible to transmit information as voice messages from the EIB to a telephone, or to send commands to the EIB via the telephone line simply by pressing a button. Users were thus empowered to switch on

and control the temperature, in the office or in the home, by remote means⁽²⁾.



2. The telephone gateway empowers people to communicate directly with the EIB, for example to remotely switch on and control a domestic heating system from the office.

Telephone interfaces still offer interesting possibilities, and new functions are constantly being added. For example, these days, every telephone gateway is expected to be capable of sending text messages or e-mails, facilitating the transmission of information about system disturbances. Facility management is another area that is making new demands on telephone functionality; here the need is for systems to be networked via the telephone.

Internet gateway

Rounding off the ABB gateway portfolio is the Internet gateway IN/S. This lets users link up to installed electrical equipment from an Internet access point anywhere in the world. From here they can, among other things, remotely control and monitor systems at their convenience. Live transmission is also an option; an additional module⁽³⁾ and video cameras are all that is needed.



The IN/S gateway offers even more. For example, it can independently send e-mails to a mailbox or mobile devices to report disturbances and alarms.

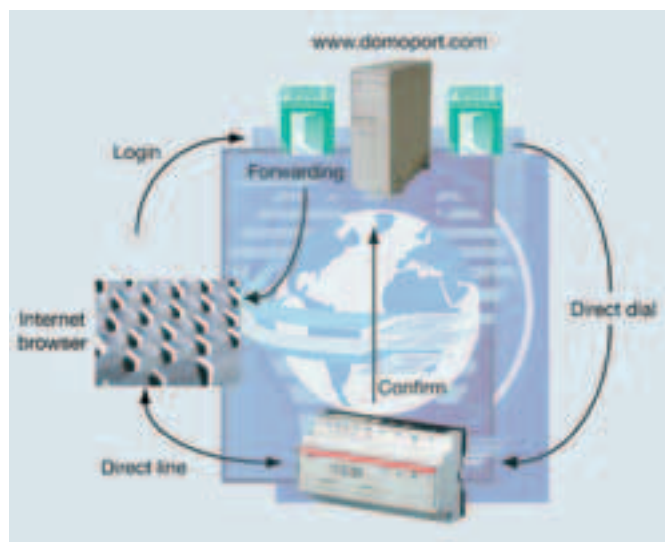
Configurators are also available for timers and for logically linking inputs and outputs. These are easy to use and can be accessed either via the Internet or a local network.



3. Video module for remote live transmissions

Of course, the Internet gateway can also be used for convenient remote control and monitoring of property and installations. A homeowner, for example, can access his home device from a vacation hotel anywhere in the world simply by logging onto the Web⁽⁴⁾.

Internet is the medium that provides the all-important link. Since the devices have their own integrated web server, they make all the interfaces available to the Internet user, wherever he is located. A clearly structured graphic display ensures user-friendly operation. All that is needed at the Internet gateway location is a telephone hook-up (analog or ISDN).



4. The combination of Internet gateway and Web lets people access their home devices from anywhere in the world.



5. First version of the Internet gateway, with four analog and six binary inputs as well as six binary outputs. Target users are owners or occupants of buildings that do not already have a bus system installed.

The first version of the Internet gateway⁽⁵⁾, with four analog and six binary inputs as well as six binary outputs, is now available. This version is primarily of interest for owners or occupants of buildings that do not have a 'bus' system installed. The temperature systems of vacation homes, for example, could be controlled remotely in this way.

The new version of the Internet gateway with direct EIB connection will offer new possibilities by allowing even more inputs and outputs to be connected to the 'bus' than with a conventional gateway.



Source: ABB Review

Living our commitment to Sustainability

Why Sustainability matters ?

What exactly is sustainability in the context of business responsibility? By definition, it is when a company acts in a holistic manner by manufacturing and supplying environmentally sound products and acts as a socially responsible citizen. Sustainability covers a wide scope including a company's environmental affairs, social policies like occupational health and safety, and community affairs.

Why is sustainability important? As part of its triple bottom line approach, ABB strives to balance *economic*, *environmental* and *social* objectives as an integral part of its business activities. ABB fulfils its commitment to sustainable development by supplying eco-efficient products, sharing its latest technologies with emerging markets, contributing to common efforts, raising standards within its supply chain, and continuously improving its own sustainability performance.

How does sustainability work? Consider, for example, ABB's ongoing effort to reduce the environmental impact of its core products. ABB entered the sustainability arena in a structured manner in the 1990s and initially focused on the environmental performance of its sites, products and projects. That resulted in the development of Environmental Product Declarations, which describe and quantify the environmental performance of core products over their entire life-cycle. That product life-cycle perspective now permeates ABB's entire industrial process - from product design and material selection to waste management. Environmental Product Declarations, in turn, positively impacts customers who need products that improve the efficiency of their companies while minimising the impact on their



environment. The initiative also impacts suppliers because the company favours those who are certified to global environmental standards like ISO 14001 or equivalents.

Since the 1990s, ABB has since expanded its focus to include other aspects of sustainability. ABB's social policy launched in 2000, underpins the company's commitment to society. The company is involved in a wide range of social activities that aim to improve the quality of life for the communities in which the company operates.

ABB India is involved in various sustainability initiatives including developmental projects at government schools across the country, a mid-day meal scheme, implementation of environmental, health and safety standards at its units, rehabilitation of earthquake victims, partnerships with academia and greening initiatives, among others. A dedicated ABB India Foundation® has been set up to facilitate the implementation of the company's social, community and environmental initiatives and ensure continuity of efforts, thereby giving sustainability its distinct identity within the business framework and enabling the company to *live* its commitment to sustainability.

Interview with Mr. Kantilal

Proprietor of Cauvery Electricals – one of ABB's biggest Channel Partners in South India



How long have you been associated with ABB?

I have been associated with ABB since the setting up of the Low Voltage Products unit, way back in '90-91, when ABB has just entered the LV Products business. We were an extended warehouse for ABB and marketed ABB's LV products. We have come a long way and now we sell the entire ABB LV product range from MCCBs and Contactors to DBs and MCBs.

What are the key factors that have contributed to your long fruitful partnership with ABB?

A business relationship is not just about the numbers. It was my father and brother who started the partnership with ABB and now I'm the one who is fostering this relationship. In my years of dealing with ABB what we have learnt is that a high level of integrity, transparency and ethics are basic requisites for a healthy and profitable business partnership, leading to mutual respect and admiration.

How do you take to the introduction of ABB's web-based ordering system?

To be very frank, I had a lot of reservations when it was first introduced and found it rather tedious to use. But over time, I have realised the advantages it offers – total transparency, real-time information and a very friendly interface. I'm now a strong advocate of this system. We also do a lot of business with large contractors and also a large volume of counter sales. Given this breadth of our activities, the web-based ordering system is an ideal tool that makes it easier and faster to do business.



Digi Drives on a roll !

Digi Drives (P) Ltd., Faridabad, one of ABB's leading channel partners in North India has recently bagged 2 major orders.

One is an order-part of a modernisation project for a cold rolling steel mill in East Africa and includes the supply of ABB DC Drives, LV Motors and Industrial^{IT} based AC 800M control system (900 I/Os) with a Process Portal Human Machine Interface (HMI).

The other is for an automation system for a newsprint unit and includes four ABB DC

Drives running in Master/Slave mode. The control system being supplied will be based on the AC31 PLC and Profibus communication with a Process Panel HMI.

So ABB and Digi Drives are certainly on a roll!



Do you feel your channel partners are capable of providing technical solutions that are equivalent to ABB's?

Subhankar Saha, Indian Aluminium Company

Some of our System Integrators, who specialise in specific verticals like steel and paper, are trained by our product / process application specialists on a regular basis at ABB's training centre in Bangalore. They are capable of delivering equivalent solutions within their purview, based on ABB's technology.

Do you have solutions for remote metering between DISCOMS and transmission companies?

Adarsh Jain, HVPNL

ABB offers solutions for remote metering and boundary metering (between DISCOMS and Transmission utilities) in our range of Automatic

Meter Reading (AMR) systems. Based on customer specific requirements, these can be implemented with various communication media like PSTN/GSM telephone networks, microwave radio networks, etc. Our systems can be integrated with third party meters compliant with industry standard protocols. We can also provide integrated solutions with SCADA and billing systems.

I would like to know the criteria for arriving at the figure for BIL at high altitude

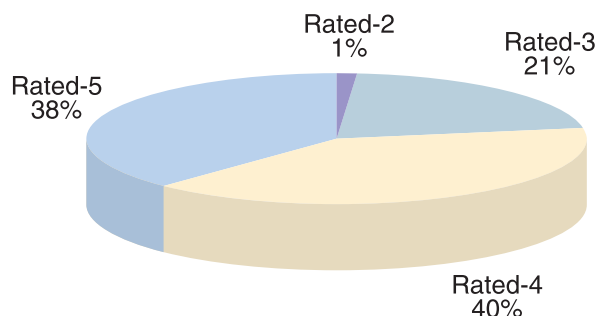
Dipankar Chakraborty, Otto India Pvt Ltd

At high altitudes, due to low atmospheric pressure, the dielectric strength of air is less. Hence the lightning impulse voltage withstanding capability of switchgear is enhanced for use in high altitudes. The correction factors to be applied for the rated lightning impulse withstand voltage level for different altitudes are given in IEC 60694.

Your feedback !

We take this opportunity to reiterate that we welcome your valuable feedback and also solicit your suggestions and opinions on how CONTACT can add more value to your day-to-day business and make the reading experience more enriching.

Summary of ratings compiled from your feedback received over the last 7 issues is depicted below.



On a scale of 1 to 5 (5 indicating extremely interesting and 1 indicating not so interesting)



Communicating...

Brochures



ACH 550
Drives

ACS 50
Drives

ACS 550 Drives

ACS 800
Drives

Electrical Wiring
Accessories

Contactors

Classiq Lumina

Corporate
LeafletAC & DC
DrivesAT Product Service
Directory

Posters



Site Posters



Elecrama 2004

Nimlocks

Automation
TechnologiesPower
Technologies

Building Solutions

Sustainability



Some recent media coverage

We are delighted to bring you the first issue of **CONTACT** for 2004. Thanks to your constant encouragement and support this newsletter is commencing its third year and its distribution base is constantly expanding. We have always welcomed your feedback. Now we specifically request your insights and suggestions on specific areas like content / design / layout etc. which will go a long way in helping us with future issues and strengthening our **CONTACT** with you even further !



Harmeet S. Bawa, *Head GF-Corporate Communications, ABB India*

If you have the vision...



...we have the drive

Into the future with ABB's latest generation of drives

ACS 550 Standard Drive – easy to install, simple to configure with common user and process interface as well as common software tools for sizing, commissioning & maintenance.

ACS 050 Compact Drive – IP 20 class drive which can be easily mounted on a DIN-rail and does not require any programming.