

# Innovation



- 6 Innovation highlights**  
ABB's top innovations for 2012
- 11 Traction transformation**  
A power-electronic traction transformer (PETT)
- 18 SafeLink CB switchgear**  
An innovative, integrated secondary distribution solution
- 22 SF<sub>6</sub> and a world first**  
ABB launches the first-ever SF<sub>6</sub> recycling center
- 27 Eliminating downtime**  
Keeping the power flowing during grid instabilities
- 30 Power fitness**  
Reliable voltage protection of sensitive loads
- 34 The power of integration**  
Reaching new levels of productivity in the automation industry
- 41 Controlling the living factory**  
Modeling a mammalian cell culture for an online process control system
- 47 The fieldbus outside the field**  
Soft FF reduces commissioning effort simulating Foundation Fieldbus
- 53 Winning by design**  
Innovative door communication system wins international design award
- 56 The frugal manufacturer**  
Regulatory issues set the agenda (part 3)

# Trends in technology



- 6 Collaborating in a new dimension**  
An interactive display helps make the right decisions
- 13 Expert access – anytime, anywhere**  
ServicePort delivers top process expertise to anywhere in the world
- 18 Energy control at your fingertips**  
Award-winning technology delivers an unprecedented insight into energy usage
- 23 Red robots in the red house**  
ABB robots help a traditional Black Forest brewery
- 26 Looking within**  
ABB is making use of its own IRB 140 robots to step up productivity, improve quality and reduce costs in its own factories
- 29 Onboard DC grid**  
The newest design for marine power and propulsion systems
- 34 Raising the waters**  
Lift irrigation is getting a boost from ABB's synchronous motors
- 40 Distribution goes green**  
ABB's amorphous metal distribution transformers are maximizing energy savings
- 49 Transformers transformed**  
Using vegetable oil as an insulating fluid reduces transformer fire risk

# Software



- 6 ABB's software is everywhere**  
Why ABB is a software company
- 12 A parallel future**  
Continuing innovation for next-generation real-time controllers through software
- 17 Bridging customer needs**  
A movable bridge application arises out of embedded control programs in ABB low-voltage drives
- 23 IT/OT convergence**  
How their coming together increases distribution system performance
- 28 A capital asset**  
The PAS 55 specification and enterprise asset management
- 35 Scaling factors**  
Software scalability for ABB's future IT
- 39 Optimizing mining operations**  
Integration across the mining enterprise is key to increased productivity
- 44 Model behavior**  
Using distribution models to deliver smart grid volt/var control
- 52 Better together**  
The value of transforming data into actionable intelligence
- 59 Taking the initiative**  
ABB's software development improvement initiative bears fruit
- 64 Cyber security**  
Protecting critical infrastructure in a changing world
- 70 ABB drives training home**  
ABB helps set up and equip drives training center in Austria
- 75 Sea change**  
ABB will set the standard for software on ships

# Service



- 7 Service and R&D**  
ABB's service technologies are crucial to ensuring longevity in its products
- 13 Remote, but close**  
Improving operations and maintenance with remote optimization
- 18 Global reach, local support**  
ABB's global SIU organization provides local support to robots across the world
- 25 Service solutions**  
A look at what is to come
- 32 Fingerprint analysis**  
Optimizing boiler efficiency pays off
- 37 Productive predictions**  
Life expectancy analysis improves maintenance management of high-voltage motors and generators
- 42 Seeing through switchgear**  
Radiographic inspection saves costs and downtime and enables better maintenance planning
- 46 Always in touch**  
Adapting mobile devices to industrial applications
- 53 Protection from cyber threats**  
Can utilities and industries afford a cyber security breach?
- 59 Sustainable energy reductions**  
ABB's industrial energy efficiency solutions are delivering accelerated energy savings to industry
- 64 Texas transformed**  
Achieving significant savings through a new electricity market management system
- 72 Engineering success in Thailand**  
Provision of services to Dow's largest manufacturing site in Asia
- 77 Index 2012**  
The year at a glance