ABB Ability™ Backup Management for electrical systems - Data Care
Data-sharing and backup service for protection relays
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Introduction
Introduction

Business case (1/3)

Customer segments for medium-voltage (MV) and low-voltage (LV) switchgear
• Nuclear
• Marine
• Oil, gas and chemicals
• Food and beverage
• Utilities
• Mining and infrastructure

Industrial Internet of Things (IIoT)
• Growing number of electronic devices, such as gateways and sensors, installed in the switchgear

MV protection relays
• Over 1,500,000 ABB protection relays of different ages installed in utilities and industries worldwide
Introduction

Business case (2/3)

• The diminishing knowledge of older protection relays and versions together with the complexity of modern protection relays are increasing the criticality of maintaining documents, such as configuration and setting files, disturbance recordings, drawings, wiring diagrams and technical solutions.

• Smooth relay operation requires current, relevant and reliable information to be easily available 24/7 at all user levels.
Documentation and other information required to operate and maintain the equipment (other than product/component manuals) are usually delivered in printed format and on DVD.

- Relay configuration and engineering tools
- Electrical schematic drawings and technical documentation
- Firmware and software updates, for instance, security patches

Disadvantages of existing approach

- Important data and product knowledge restricted to individual users
- CDs, DVDs, external hard disks and printed documents at risk of being misplaced, lost or subject to possible damage
- Limited data-sharing
- Demanding updates and scalability

**Estimated lifetime of assets in the distribution network**

- Substation: 50-60 years
- Switchgear: 30-40 years
- Relay protection: 10-15 years
- Control system: 10-20 years
## Introduction

ABB Power Care – the framework for customer support agreements

<table>
<thead>
<tr>
<th>ABB Power Care</th>
<th>Entry level</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
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</thead>
<tbody>
<tr>
<td>Skills development services</td>
<td>Product training list</td>
<td>Product training</td>
<td>Application training</td>
<td>Coaching services</td>
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<tr>
<td>Emergency maintenance services</td>
<td>Single point of contact</td>
<td>Technical support with agreed response time</td>
<td>Call-out support with agreed response time</td>
<td>Spare parts assessment and management</td>
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<tr>
<td>Diagnosis and condition assessment</td>
<td>Documentation of installed base and preliminary survey</td>
<td>Asset condition and risk assessment</td>
<td>Asset monitoring</td>
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<tr>
<td>Self-maintenance services</td>
<td>Installed base life cycle status report</td>
<td>Manuals and instructions on-line</td>
<td>On-line support for self-maintenance</td>
<td>Data Care</td>
</tr>
<tr>
<td>Delivered maintenance services</td>
<td>Periodic technical assessment</td>
<td>Protection and control engineering services</td>
<td>Switching apparatus engineering services</td>
<td>Full switchgear engineering services</td>
</tr>
</tbody>
</table>

Data Care is one of Power Care’s most advanced services.
Service description
Service description

Data Care – cloud-based approach to device data backup (1/2)

- Secures technical information on protection and control relays, as well as any other related documentation, throughout their entire life cycle
- Integrated into Protection and Control Manager PCM600, the setting and configuration tool for Relion® protection relays
  - When connecting to a protection relay, the latest configuration (hardware and software) is stored and automatically uploaded to the cloud.
- Configuration version management
- Storing of process information, such as disturbance recordings, for in-depth analysis
- Remote support and expertise easily accessible
- Firmware updates available for download
Service description
Data Care – cloud-based approach to device data backup (2/2)

• Easy access to service contract, substations, bays and information on protection relays with convenient graphical structure
• Easy management of substation information, such as adding and deleting of switchgear, bays, protection relays and e-mail notifications
• User-friendly relay management feature for easy searches, edits, and additions of protection relays and their related technical information files
• Individual access rights
• User accounts created, and user rights defined and granted by own administrator to employees and subcontractors
• Future-proof with possibility to add and edit information on retrofitted switchgear and protection relays, without any additional approvals or changes to the graphical structure
Service description

Use case

Relay data from existing relays

- Automatic transfer of configuration files for selected Relion relays via PCM600.
- Upload whenever an internet connection is available
- Manual upload possible if required
- Easy account, plant and device administration via the Data Care Web portal
- Free up- and download of data for authorized users
- Possibility to manually add protection relays and their related technical information files
Customer benefits
Customer benefits
Convenient and easy data-sharing and backup (1/2)

Easy access online to technical information on your protection relays – anywhere, anytime

• Efficient sharing of technical information among employees, subcontractors and service providers
• Individual user accounts and access rights at substation level
• All technical information on your protection relays conveniently stored in one place – throughout their entire life cycle

File management

• Automatic transfer of configuration files and disturbance recordings for selected ABB protection relays via PCM600 v. 2.5 or later (for relays registered via the ABB Life Cycle Service Tool in PCM600)
• Manual uploading and downloading of files (file size max. 100 MB)

No special skills required
Customer benefits
Convenient and easy data-sharing and backup (2/2)

Easy administration
• Only basic computer skills required to manage the graphical substation structure
• Company’s own administrator maintains company account, creates user accounts and defines user rights

Added value
• User-defined email notifications for periodical testing and preventive maintenance
• Email notification template of your choice for other purposes
• Activity reports for your administrator
User groups
User groups
Protection relay user groups

• Field crew
  • Installation and commissioning
  • Maintenance personnel
• Protection relay specialists and engineers
• Operators
• Subcontractors
• Service providers
User groups

User groups within ABB

- Life cycle services
- Field services
- Maintenance services
- Modernization services
- Consulting services
- Technical support
Service levels
Service levels
Subscription process through ABB Power Care Customer Support Agreement

- Data Care/ABB administrator
  - Creates license subscription based on number of users, number of devices and storage space according to service contract. Grants access rights to ABB analyst.

- ABB analyst
  - Can provide access to customer account administrator and provides related support in Data Care.

- Data Care/Customer Account administrator
  - Manages substations for own company and can provide access to own employees as account administrator or engineer and to subcontractor as engineer.

- Customer employees/subcontractors
  - Customer and/or subcontractor employees maintains the data through their own accounts.
Service levels
Subscription process through ABB Ability™ Marketplace

- Data Care/Customer Account administrator
  - Purchases license through ABB Ability™ Marketplace

- ABB Ability™ Marketplace
  - License subscription based on number of users, number of devices and storage space

- Data Care/Customer Account administrator
  - Manages substations for own company and can provide access to ABB analyst, to own employees as account administrator or engineer and to subcontractor as engineer

- Customer employees/subcontractors
  - Customer and/or subcontractor employees maintains the data through their own accounts
# Service levels
User access levels (1/2)

## Account administrator (customer)

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<tr>
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<tr>
<td>Company information</td>
</tr>
<tr>
<td>Account license information</td>
</tr>
<tr>
<td>Graphical structure</td>
</tr>
<tr>
<td>License subscriptions</td>
</tr>
<tr>
<td>User management</td>
</tr>
<tr>
<td>Company management</td>
</tr>
<tr>
<td>Substation management</td>
</tr>
<tr>
<td>My relays</td>
</tr>
<tr>
<td>Upload file</td>
</tr>
<tr>
<td>Service request</td>
</tr>
<tr>
<td>Activity report</td>
</tr>
<tr>
<td>Recycle bin</td>
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</tbody>
</table>

## Engineer (customer/subcontractor)

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<td>Service request</td>
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<td>Recycle bin</td>
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</table>
Service levels
User access levels (2/2)

ABB analyst

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Service levels
Ability™ Marketplace

Ability™ Marketplace: https://eu.marketplace.ability.abb/home
Ability™ Marketplace: https://us.marketplace.ability.abb/home

Data Care in Ability™ Marketplace
Service levels
Subscription-based pricing

Main subscription

<table>
<thead>
<tr>
<th>Level</th>
<th>Price</th>
<th>Included</th>
<th>Devices</th>
<th>Gigabytes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>₹999.00</td>
<td>5 Users</td>
<td>20 Devices</td>
<td>2 Gigabytes</td>
</tr>
<tr>
<td>Medium</td>
<td>₹499.00</td>
<td>10 Users</td>
<td>100 Devices</td>
<td>10 Gigabytes</td>
</tr>
<tr>
<td>Large</td>
<td>₹999.00</td>
<td>15 Users</td>
<td>500 Devices</td>
<td>50 Gigabytes</td>
</tr>
<tr>
<td>Extra Large</td>
<td>₹1,999.00</td>
<td>30 Users</td>
<td>5000 Devices</td>
<td>500 Gigabytes</td>
</tr>
</tbody>
</table>

Add-on

<table>
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<th>Add-on</th>
<th>Price</th>
<th>Included</th>
<th>Devices</th>
<th>Gigabytes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Care Add-on Users</td>
<td>₹299.00</td>
<td>15 Users</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Care Add-on Devices</td>
<td>₹1,599.00</td>
<td>5000 Devices</td>
<td>500 Gigabytes</td>
<td>5 Users</td>
</tr>
</tbody>
</table>
Cyber security and backup process
Cyber security and backup process

Cyber security

Irregular and regular cyber security tests according to ABB’s strict security policies, procedures and guidelines

- Protected by antivirus program
- Patched monthly if necessary patches have been published by software vendors
- Servers hardened according to hardening guidelines
- Monitored 24/7 by server vendors
- Continuous system vulnerability scans
Cyber security and backup process

Server backups and restore

- Server backups done on daily basis by service vendor
- Retention policy based on ABB’s minimum security baseline
  - 12 months old data ready to be restored (variations may apply)
- Restore test every 6 months
- Disaster recovery test once a year (mostly based on SOX requirements)
Cyber security and backup process

Best business practice security methods

- Compliance with ABB’s strict security policies, procedures and guidelines
  - Continuously reviewed and updated according to the global IS thread situation
- Personnel trained through mandatory global security awareness programs
- Only authorized personnel have physical access to the servers
- IS architecture reviewed and approved by certified IS security professionals