



DATA CENTER SOLUTION DAY 2023 | OCTOBER 19, 2023 | JAKARTA, INDONESIA

Electrification Services

Services providing CARE, MODERNIZATION, & ADVISORY

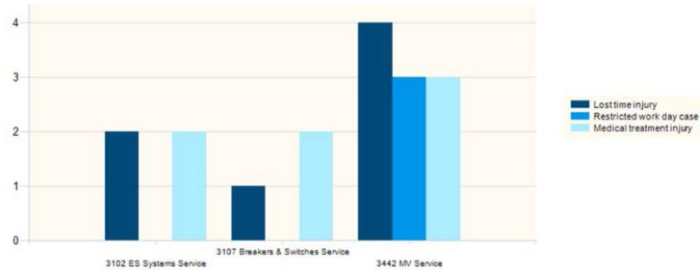
T. Irfan Ardiansyah, Local Division Manager, Electrification Service, Indonesia



HSE policy and improvement initiatives

Safety standards on service and project sites

HSE policy and procedures



All service units in EP work on the basis of ABB HSE management system, according to group policy and periodical monitoring and reporting is in place for all sites.

Specific initiatives are in place to encourage proactive behaviours and reporting of near miss and hazards
“don’t look the other way”

Safe site working



Safe working on site is prepared by safety planning and risk assessment. ABB people on site tasks are trained and equipped with appropriate tools and PPE according to checklists and work instructions to solve the expectation from customer in a safe and professional way.

Contractors

“L20” :
License To
Operate





Use of contractors (all third parties) is carefully controlled. Contractors are not sent to sites alone without an ABB supervisor, “person in charge”, unless properly trained according to ABB HSE standards and qualified in ABB systems with their own authorized person in charge.


Electrification Service global strategic framework

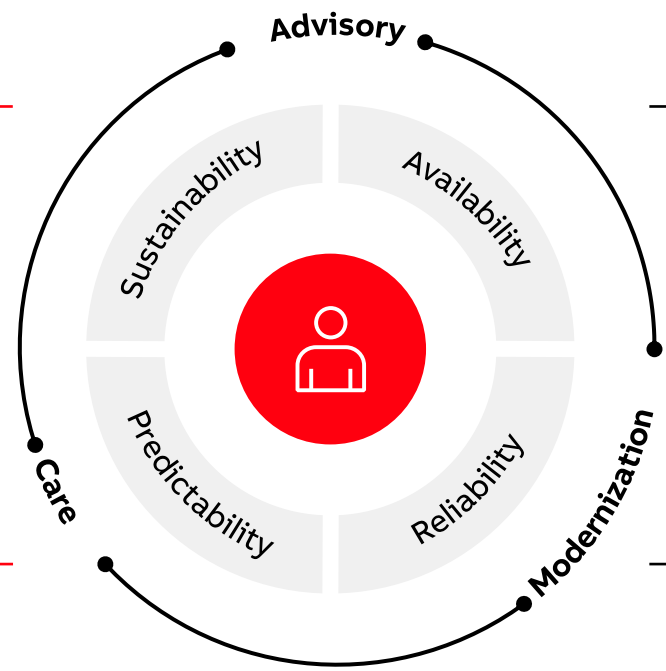
How we are realizing our business ambition

External market drivers




-  Aging and growing installed base
-  Shrinking global labor force
-  Environmental sustainability
-  Digitization impacting customer expectations
-  Evolving business models

Sources of competitive advantage






-  **1**
Reputation, track record & global brand
-  **2**
Scale & coverage
-  **3**
Technology leadership and domain expertise



Strategic enablers

- 1**  Digital
- 2**  Partnerships
- 3**  The ABB Way

Business ambition

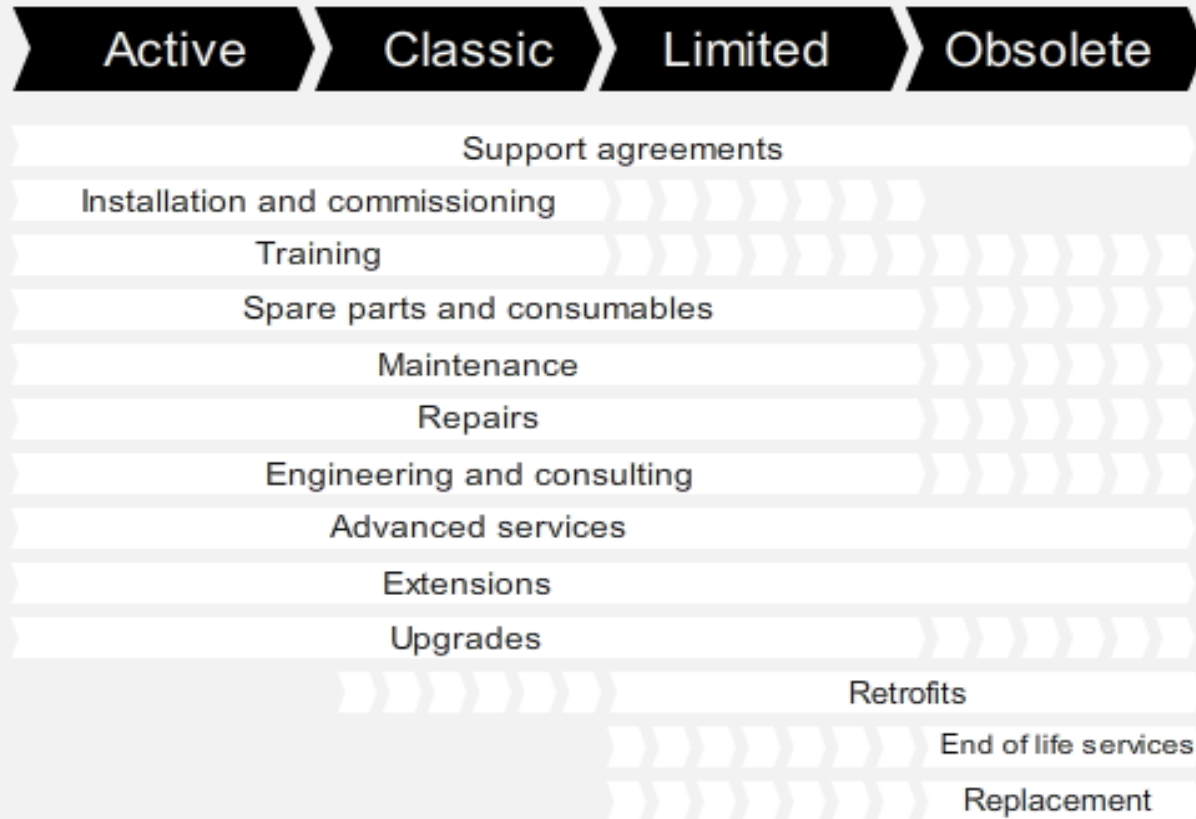
-  Profitable Growth 1.5x
-  Complementary to ABB Offering
-  Trusted service advisor
-  Level-up recurring revenues
-  Sustainability and innovation leader

Life Cycle Services

Product Life Cycle Management

Life Cycle Management process is split into four steps in order to allow both ABB and the customers to properly manage the transition.

Life Cycle Services are available at every stage of the lifecycle.



Capability



1- Safety

AK3 Listrik, Sea Survival (TBOSIET), PICW (Person in charge at Service Work)



2-Installation and commissioning

A great investment in long-term trouble-free equipment operation.



3-Training

The best way to ensure user staff has the needed skills.



4-Spares and consumables

All original and genuine spare parts, upgrade kits and service boxes.



5-Maintenance

Preventive, risk-based and predictive maintenance services to keep running the production.



6-Repairs

Workshop and on site repairs by our service engineers to get equipment ready to restart as soon as possible.

Capability

Life cycle services for extended life-time and improved performance



7-Engineering and consulting

Product application recommendations, customized switchgear solutions, health and environmental best practices.



8-Extensions, upgrades and retrofits

Enhance existing equipment with the latest technology.



9-End of life services

Equipment decommissioning and disposal, with special care of SF6 gas.



10-Replacements

Replacing older equipment can dramatically increase performance and reduce costs.

8.1-Panels extensions

Expansion of any kind of switchgear with either original legacy equipment or panels of active lines.

8.2-Safety upgrades

Achieve maximum safety integrating arc fault protection systems and remote breakers racking solutions.

8.3.1-Breakers retrofits

Replacement of any old circuit breaker with modern equipment.

8.3.2-Relays retrofits

Integration of advanced protection and communications capabilities with full functions compatibility.

Predictability

Advanced services for smart asset management

10-Advanced services



MySiteCare

MySiteCare is a monitoring and diagnostic unit for circuit breakers and switchgear. It collects field data for providing local diagnostic information and sending the same to MyRemoteCare.



SWICOM

Available offering

1. Breaker monitoring through Relion relays
2. Partial Discharge detection through PDCOM
3. Wireless Temperature monitoring
4. Data visualization

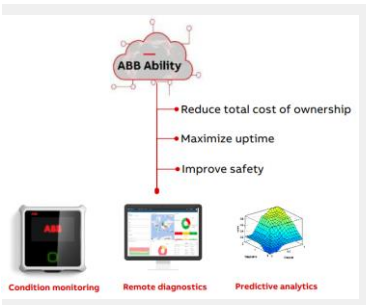


ABB Ability

- **Reduce total cost of ownership:**
Optimization of maintenance schedule and increase work force efficiency
- **Maximize Uptime:**
Avoid unplanned outages which directly effect revenue generation
- **Improve safety:**
Reducing catastrophic failures which impact human and asset life



RAISE

Remote Assistance is a live video sharing service solution that improves interaction by allowing ABB Experts to remotely interact with field personnel and “see what they see”

Helping optimizing costs and performance over the entire lifetime of MV assets

Distribution Solutions Service

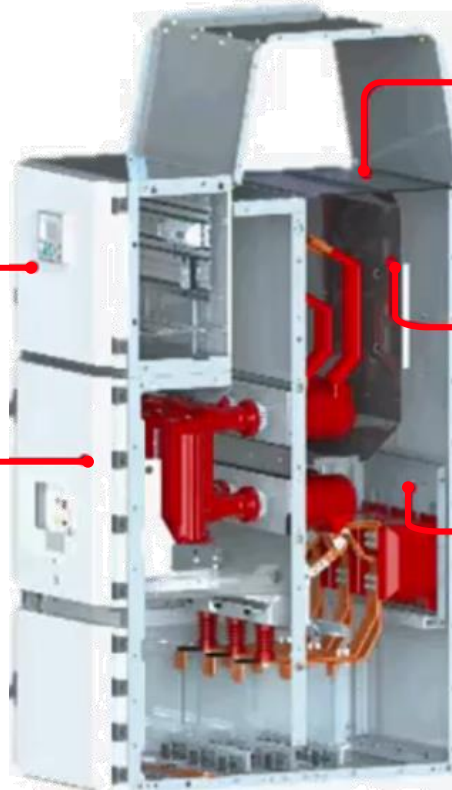
Examples of maintenance needs and service for MV Switchgear

Protection relay

- Function check
- Spare part, replacement
- Maintenance and secondary injections
- Software upgrade

Circuit breaker

- Inspection and basic maintenance
- Advance maintenance and servicing operating mechanism
- Spare parts, retrofit
- Safety upgrade e.g. remote racking



Exhaust gas duct

- Inspection and basic maintenance

Busbar compartment

- Inspection and basic maintenance
- Safety upgrade e.g. arc fault protection

Feeder compartment

- Inspection and basic maintenance
- Advance maintenance and servicing earthing switch
- Spare parts
- CTs primary injections

Services protecting your investments: maintain, modernize, assess and manage

Distribution Solutions Service

Examples of maintenance needs and service for LV Switchgear

MNS Module

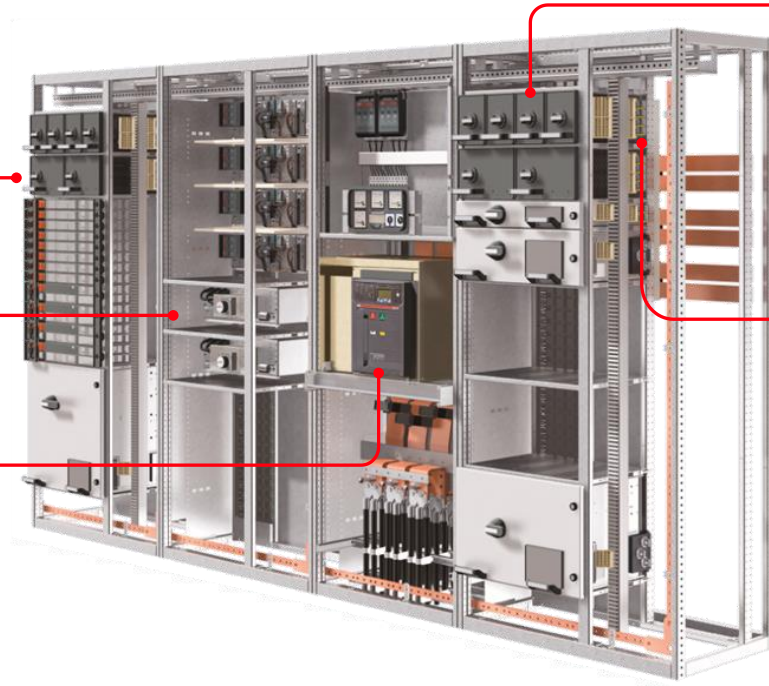
- Function check
- Spare part, replacement
- Maintenance (power contacts)
- Upgrade of components

MNS Cubicle

- Mechanical check
- Electrical inspections (distribution bars, CCU, Cable termination)

MNS Cubicle (ACB)

- Mechanical check
- Function check (relays, ATS)
- Electrical inspections (ACB, bus bars)
- ACB maintenance Level 1,2
- Upgrade and retrofit



MNS Module (int.)

- Function check
- Upgrade and retrofit of components, protection relay
- Serial comms check
- Replacement

MNS Conductor

- Electrical check (terminals)
- Replacement

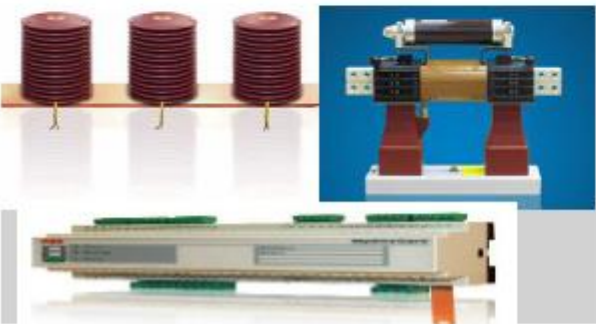
Value add maintenance to ensure life time operation and performance of LV switchgears

Service Portfolio

CB Retrofits (One to one/universal module)



Advance services (UFES/Is-limiter/MRC)



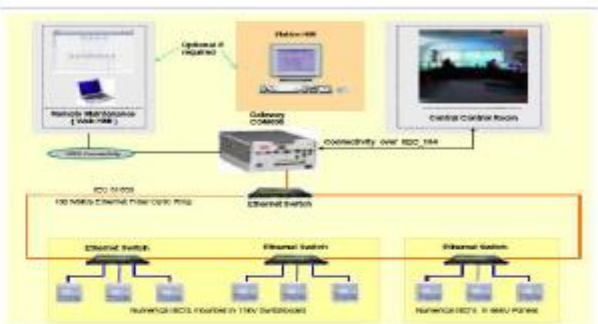
Relay retrofits



Spare part support



Relay retrofit with SCADA



Extensions & upgrades



Circuit Breaker Retrofit

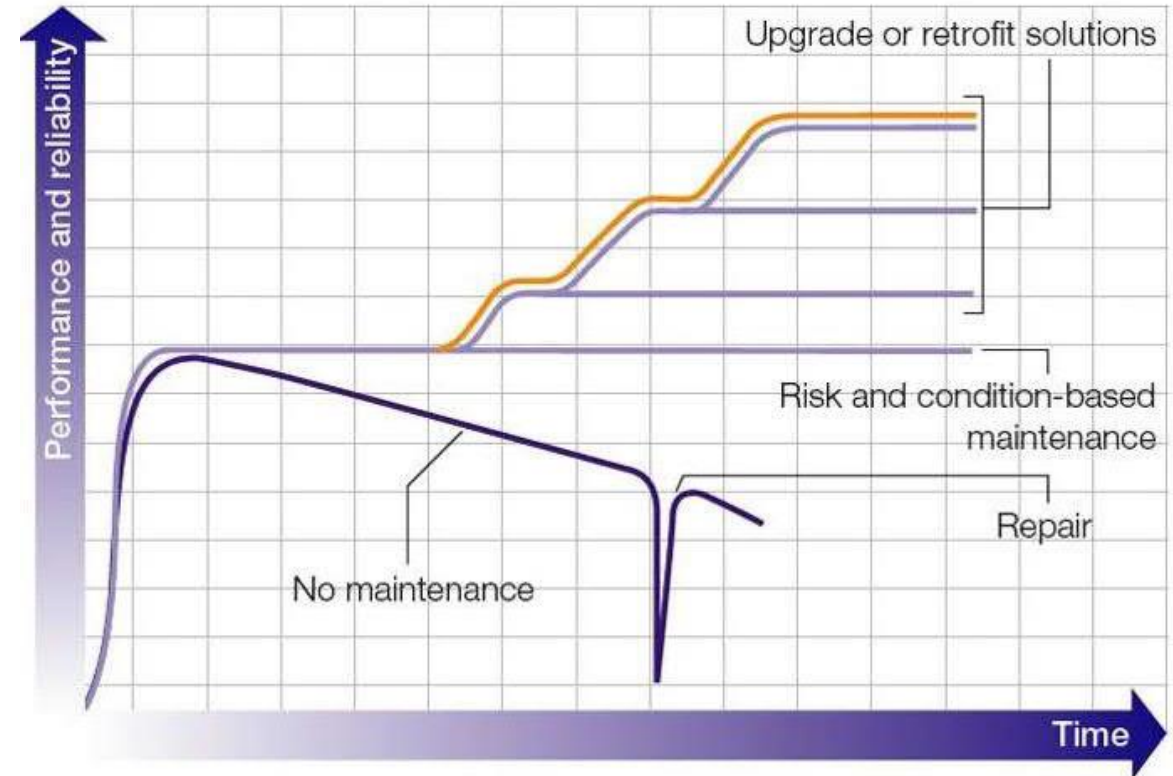
Retrofit = the replacement of original obsolete components in existing installations by the implementation of latest state-of-the-art components.

Retrofit Solution presently available in Market:

1- One to One type Breaker Retrofit / Plug and Play

2- Module type Breaker Retrofit.

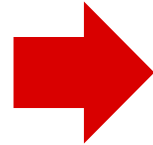
Why Retrofit?



Circuit Breaker Retrofit

Modular Retrofit

BEFORE



AFTER

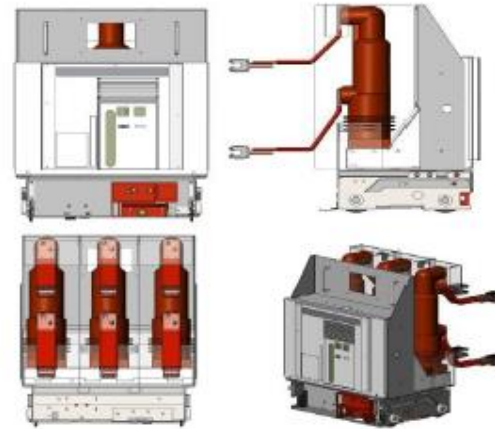


Circuit Breaker Retrofit

One to One Retrofit-3D Model



Old Breaker



New Retrofit Solution

Circuit Breaker Retrofit

Modular Retrofit

BEFORE



AFTER



Retrofit Solution

OneFit - Retrofit Solution for MV Circuit Breaker

CB retrofill is a modernization process including the replacement of the circuit breaker and some of the functional components of the power compartments. It is applicable where the existing switchgear frame is in serviceable condition.

OneFit is the latest ABB hard-bus retrofill design concept, embedding an integrally safe plug-in technology that allows to **easily connect the new breaker to a wide range of existing panels**. OneFit is composed by a frame hosting the new circuit breaker. It is connected to the existing switchgear bushings by an additional power circuit, that acts also as inner interface with the new CB. .



OneFit

Customer benefits in retrofit solutions

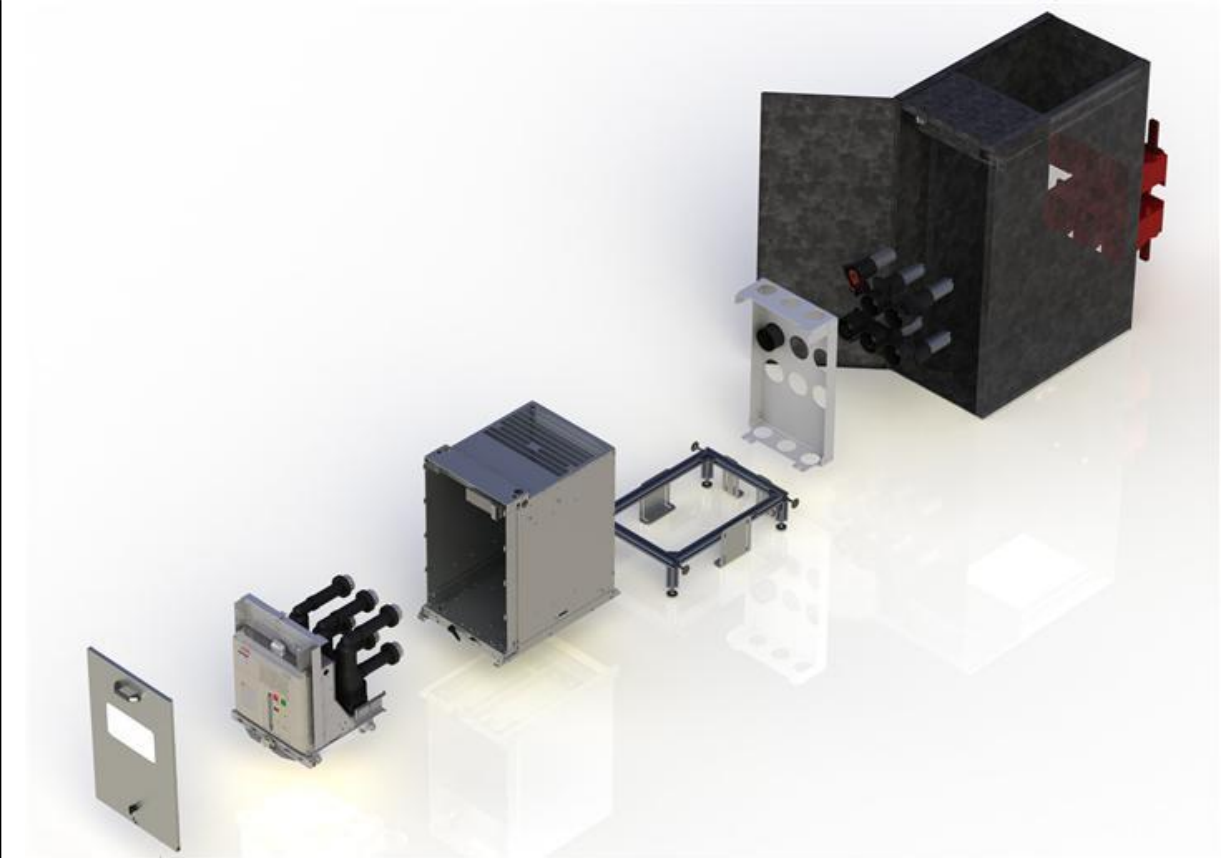
Both ABB and non-ABB installed base applicability targeting full life time extension

Quick and easy integration of the generator circuit breakers into existing switchgear lineups

Integrated solution with the same operating interface of the distribution retrofit breakers

ABB technical support and analysis of the existing network and the new retrofit breakers

Compliance with latest Standards of the complete retrofit solution

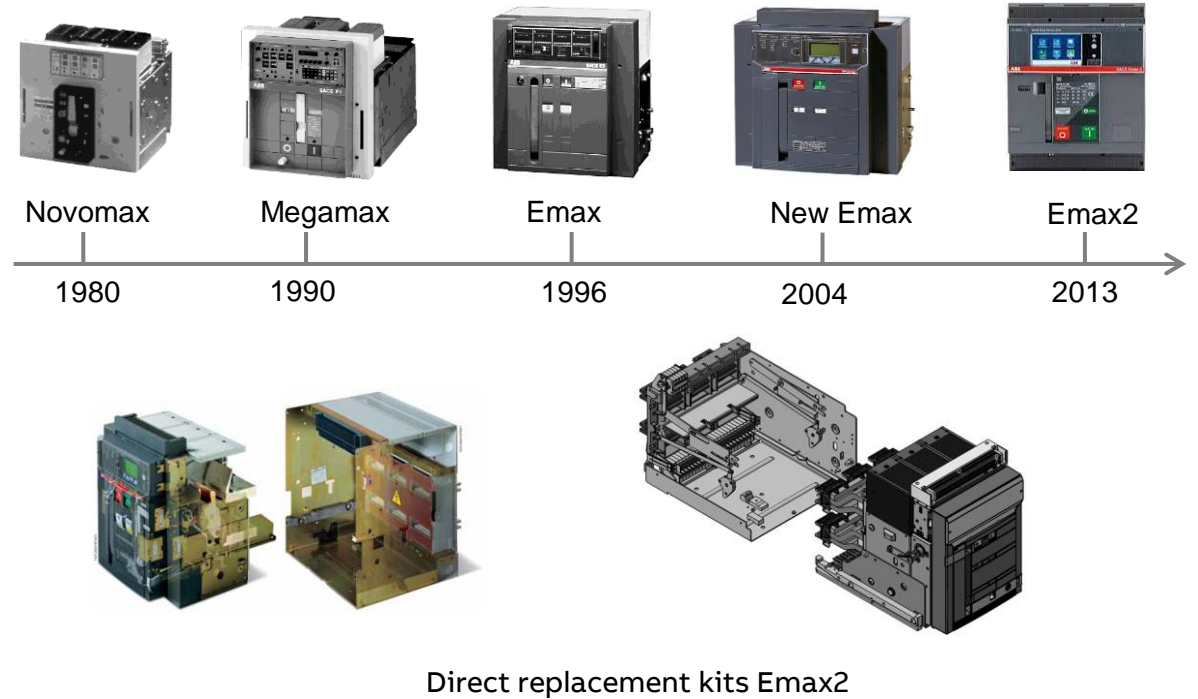


Retrofit Solutions

ACB circuit breaker upgrade and retrofit program

Our offering

- Direct replacement of ACB with Emax2
- Modification of section and bus bar to install Emax2 where DR is not available
- Breaker upgrades (product functionality or SW/HW versions)
- Alternative to replacement
 - Ekip-Up to maintain and integrate installed breaker into MNS Digital Upgrade
- Breaker function test using Ekip test kit
- Breaker preventive maintenance program
- Breaker and protection unit (Ekip / PR) operation training program



Retrofit of ACB available for low voltage switchgears

Retrofit Solutions

Retrofit Solutions for Low Voltage Air Circuit Breaker

Hard Bus Retrofill (RF)

Megamax

Novomax

Otomax

Isomax (S8)

Competitors – Schneider, H&W, Mitsubishi, Siemens, Terasaki, AEG



Cradle in Cradle (CiC)

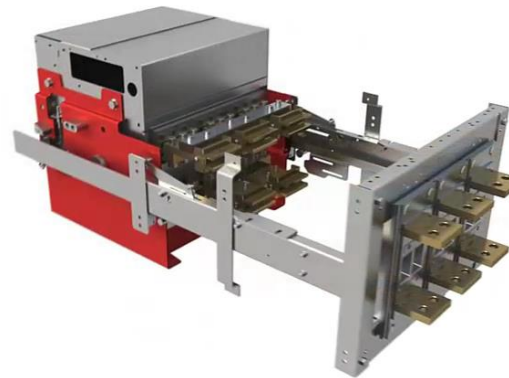
Isol

Fusol

Otomax

BBC K-Line

Competitors – GE, Federal Pacific, Allis Chalmers



Direct Replacement (DR)

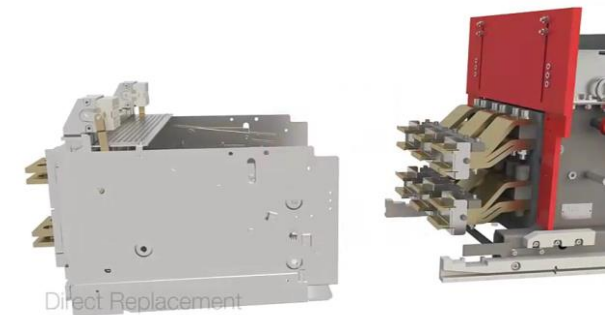
Emax (New in Old)

Megamax (OD and CD)

Novomax

Modul

ASEA ALG

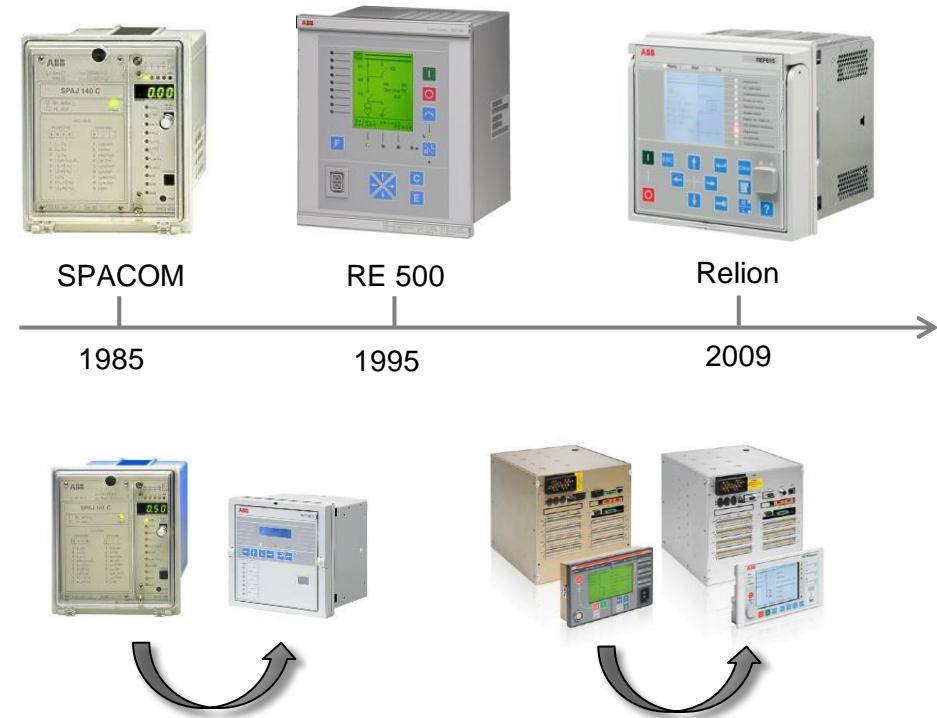


Retrofit Solution

Protection relay maintenance, upgrade and retrofit program

Our offering

- Modification, upgrades (product functionality or SW/HW versions modifications)
- Relay Retrofit program and relay retrofit kits
- SPACOM and REF542 maintenance
- Maintenance exchange unit service
- Repair and warranty handling
- Spare parts
- Refurbished spare devices
- BIO-Tester Relion® series relays
- Protection relay training program

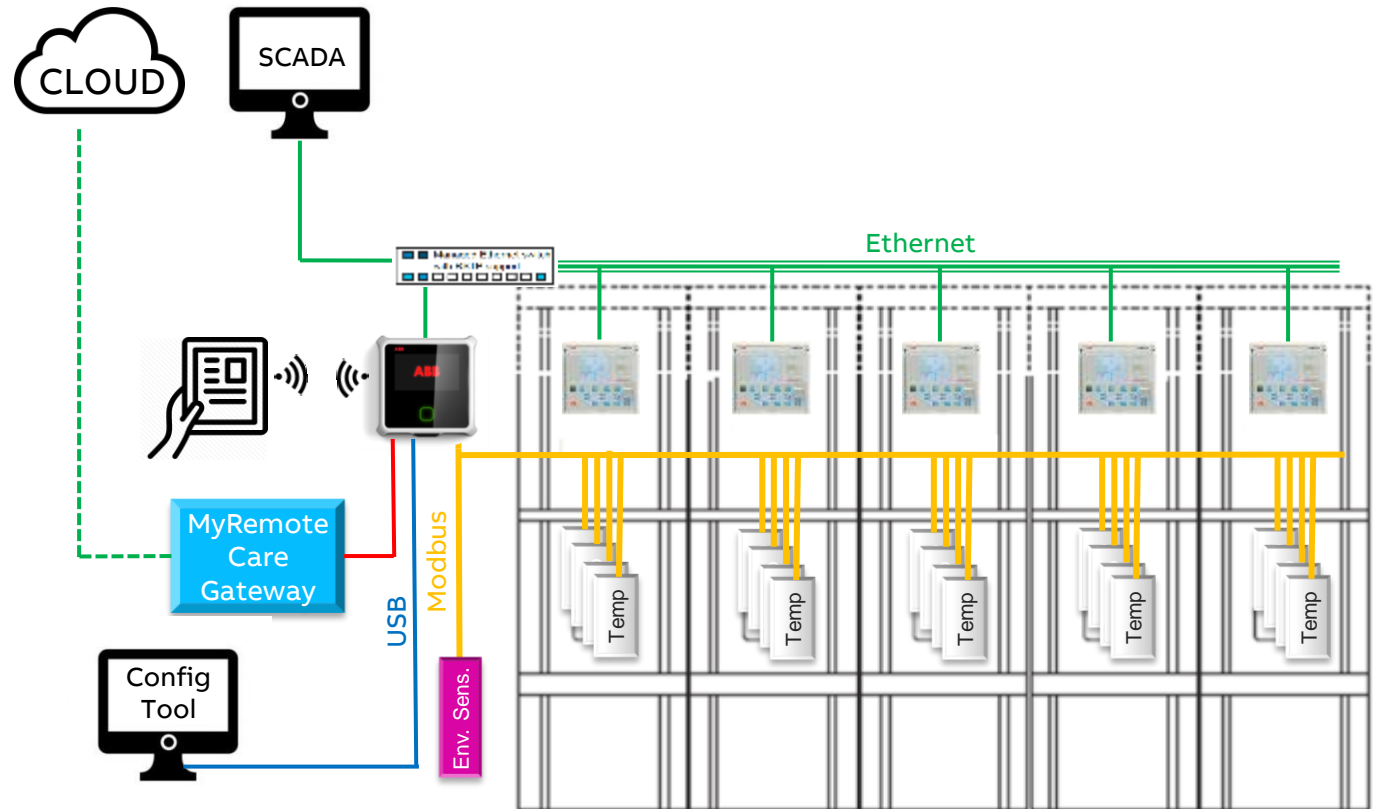


SWICOM

Scenario Overview

SWICOM makes KPI's available to user/system by different means:

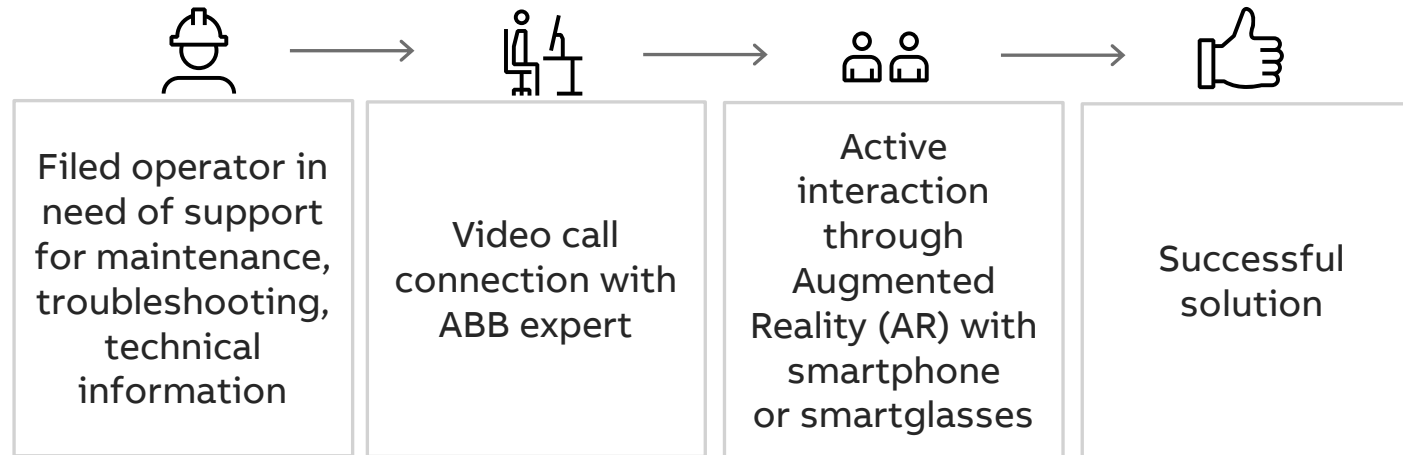
- LocalHMI
- Mobile App
- IEC 61850 server (e.g to SCADA)
- MyRemoteCare cloud



Remote Assistance for electrical systems - RAISE

Idea

Remote Assistance is a live video sharing service solution that improves interaction by allowing ABB Experts to remotely interact with field personnel and “see what they see”



Augmented reality to bring ABB expertise and knowledge when and where you need it

Global network

Primary Service Centers and Local Service Centers 40 EPMV Service / 15 EP Service Country Service units

Algeria, Hydra**
Argentina, Buenos Aires
Australia, Sydney
Belgium, Zaventem
Brazil, Guarulhos
Canada, Brampton
Chile, Santiago
China, Xiamen
Colombia, Bogota
Croatia, Zagreb**
Czech Republic, Brno
DR Congo, Kinshasa**
Denmark, Skovlunde
Ecuador, Quito**
Egypt, Cairo
Estonia, Juri**
Finland, Vaasa
France, Paris
Germany, Ratingen
Greece, Athens
Hungary, Budapest**
India, Nashik
Indonesia, Jakarta
Ireland, Dublin
Italy, Dalmine
Jordan, Amman**
Kazakhstan, Almaty**
Kuwait, Kuwait City**



Malaysia, Kuala Lumpur
Mexico, San Luis Potosi
Morocco, Casablanca**
Netherlands, Rotterdam
New Zealand, Auckland*
Nigeria, Abuja**
Norway, Skien
Oman, Muscat**
Pakistan, Lahore**
Peru, Lima
Philippines, Paranaque**
Poland, Przasnysz
Qatar, Doha
Russia, Moscow
Saudi Arabia, Al-Khobar
Singapore, Singapore City
Slovakia, Kosice**
South Africa, Johannesburg
South Korea, Seoul
Spain, Barcelona
Sweden, Vesteras
Switzerland, Baden
Taiwan, Kaohsiung
Thailand, Bangkok
Turkey, Istanbul
UAE, Abu Dhabi
United Kingdom, Stone
USA, Florence

ABB