

ABB Medium Voltage Days 2016

# Simplify your switchgear

## Digital concept

# Technical session 1

## Simply your switchgear – Digital concept

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Product Group Medium Voltage Apparatus

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Product Group Medium Voltage Switchgear

- Company: ABB
- Location: Ratingen, Germany

# Overview

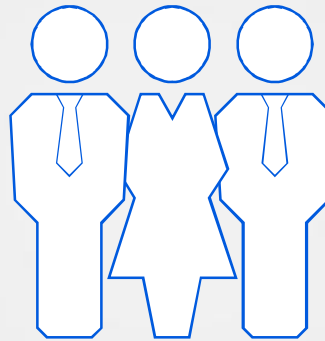
- Simplify your switchgear projects
- Questions and answers
- Product demonstration



# Customer requirements

Keep project time-schedule

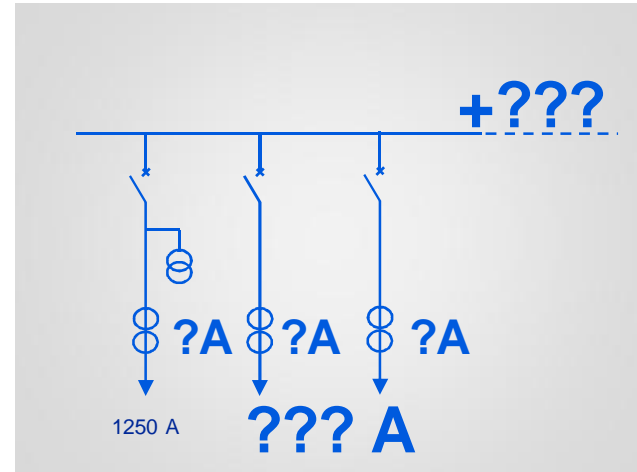
Comply with specification  
and standards



Keep cost targets

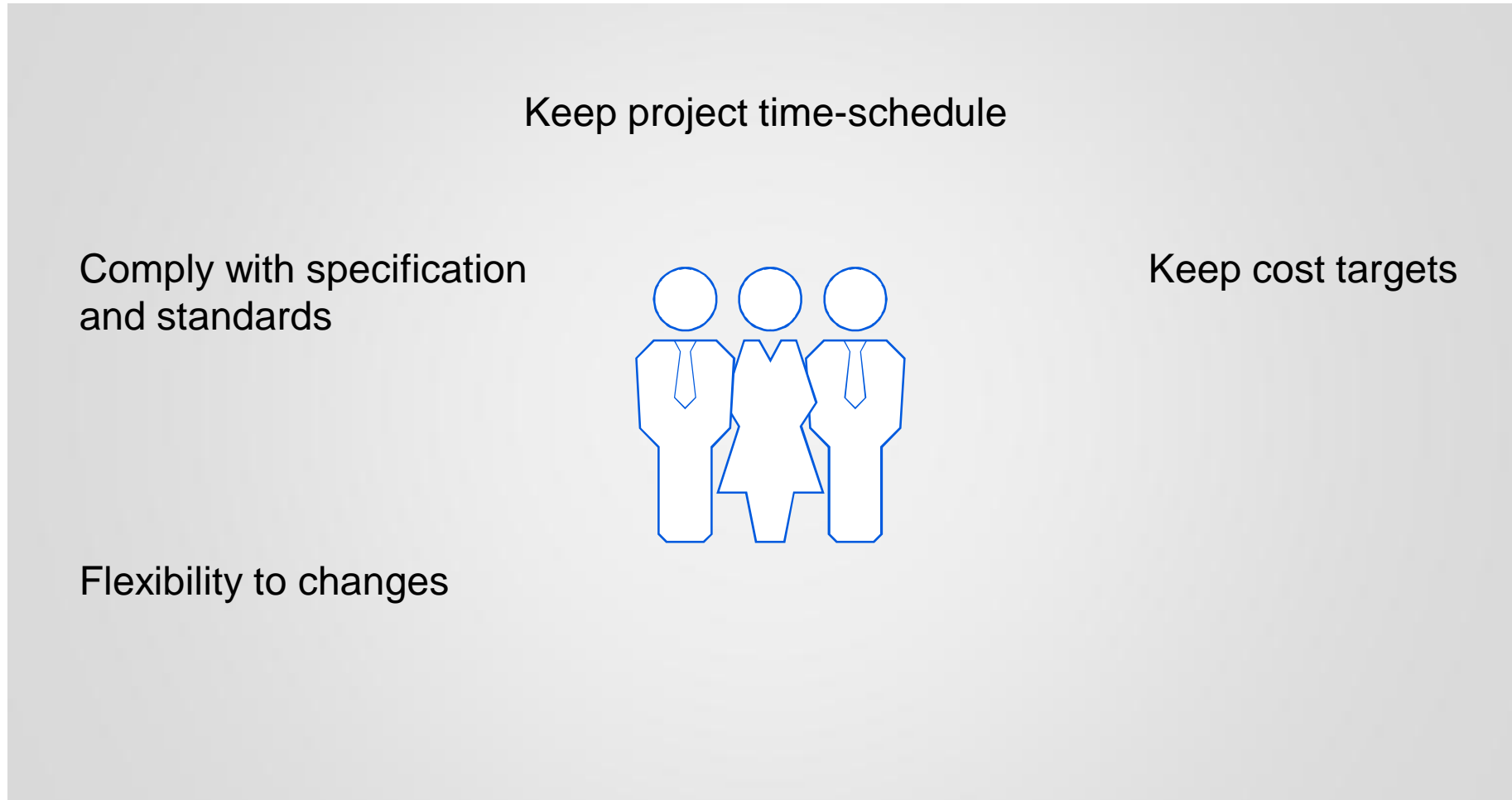
# ABB view

## Specification - Impact on project execution



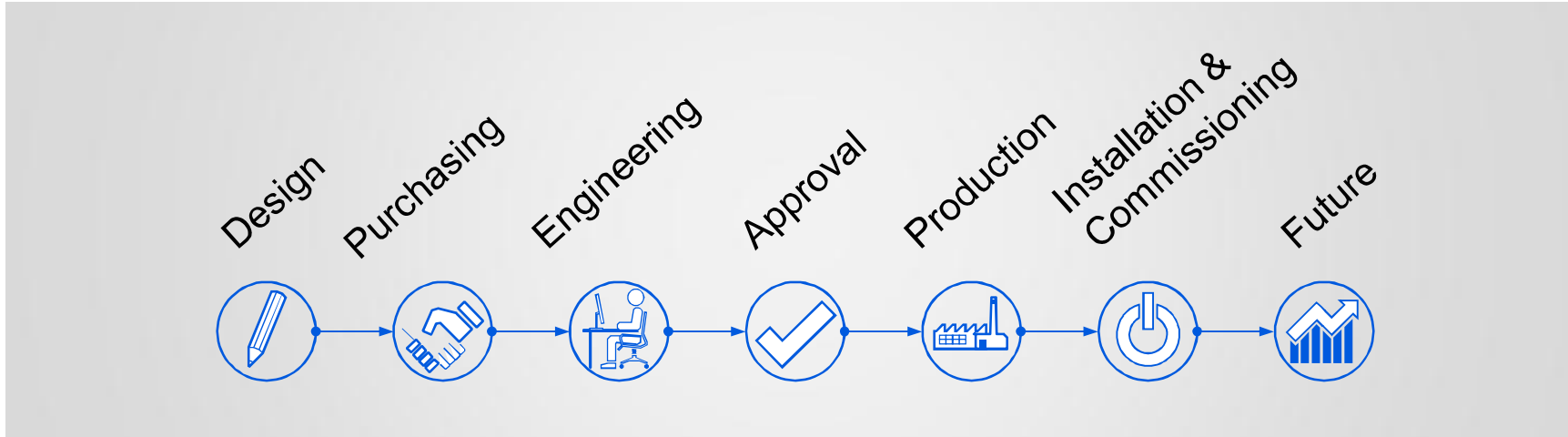
- Complex specifications - manageable, but sometimes not clear if complexity is really needed
- Unclear specifications - critical impact on timeline for traditional switchgear

# Customer requirements



# Customer & ABB requirements

## Flexibility



### Targets

- Depend less on 100% clarification at start
- Shorten delivery time
- More flexibility towards changes
- Meet cost targets

# ABB solution Flexibility

## Design

Purchasing

Engineering

Approval

Production

Installation &  
Commissioning

Future

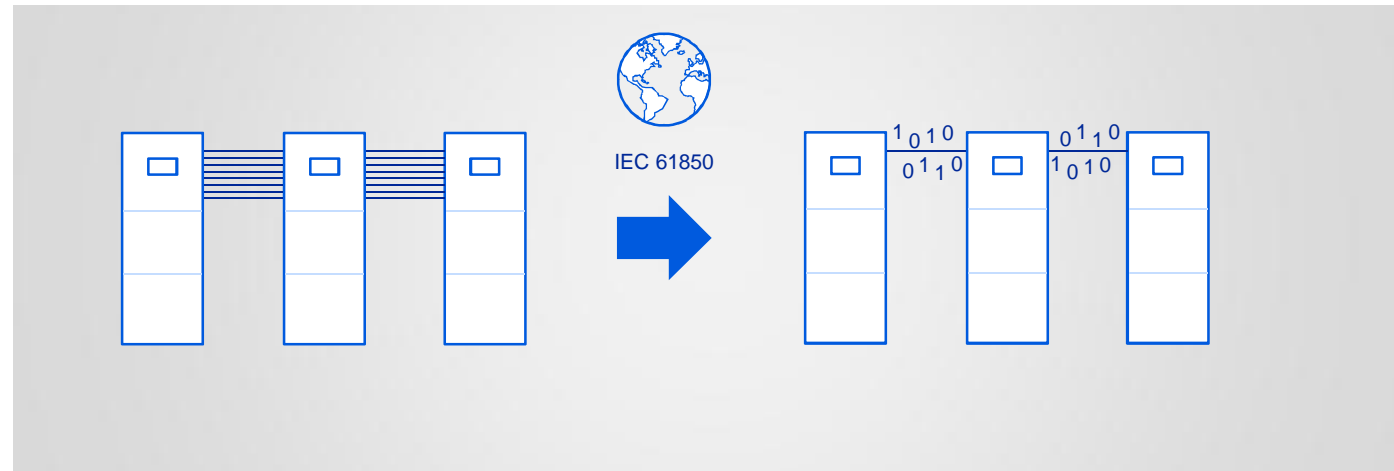


- Fully type tested switchgear in line with the relevant standards
- Covering typical protection and measuring functions
- Ready for changes of loads and protection parameters
- Combination of well-proven primary design with advanced measuring and secondary technology



# ABB solution

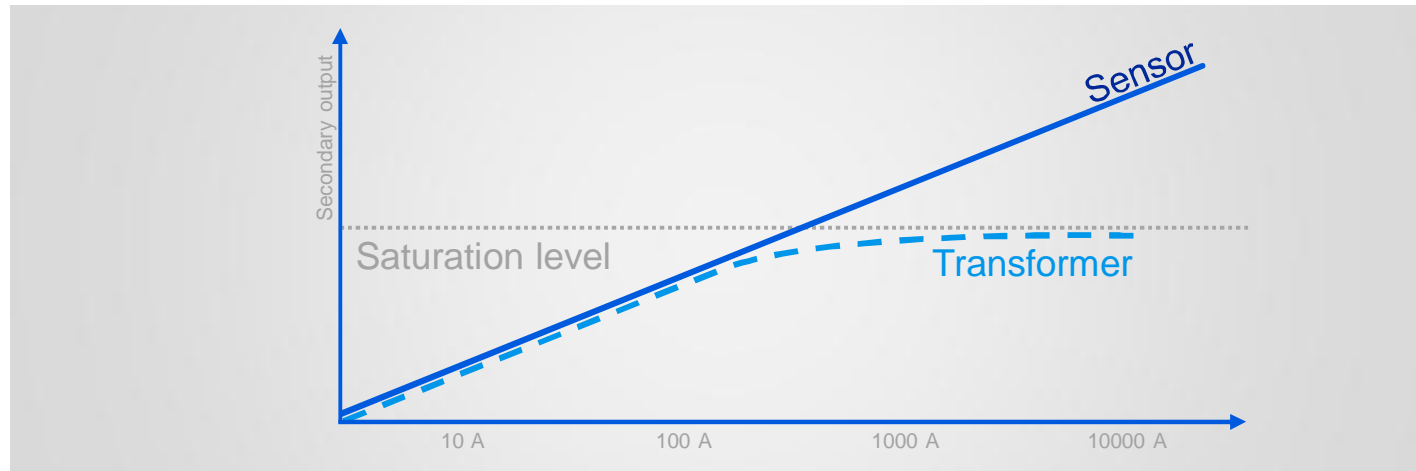
## Communication



- High Performance of IEC 61850-9-2
- Electrical logic between panels via Ethernet communication
- Only one network cable instead of hard wires
- Active supervision of connections & signals
- Easy installation, testing and extension

# ABB solution

## Sensor technology



- Linear response on all the measurement range
- No saturation
- Single instrument for protection and measurement functions and wide measurement range

# ABB solution Flexibility

Design

Purchasing

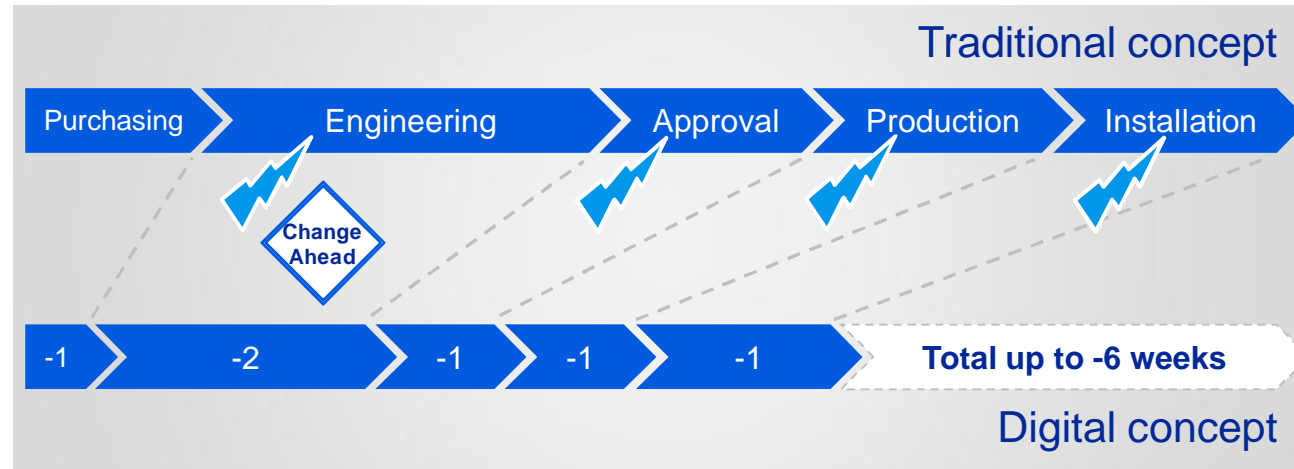
Engineering

Approval

Production

Installation &  
Commissioning

Future



- Major changes possible without impact on delivery schedule
- Load changing = no change of hardware
- Reducing project related loops and buffers – achieving shorter delivery time
- Time saving on customer side  
No re-/calculation of CT data, no loops for clarification

# ABB solution

## Flexibility

Design

Purchasing

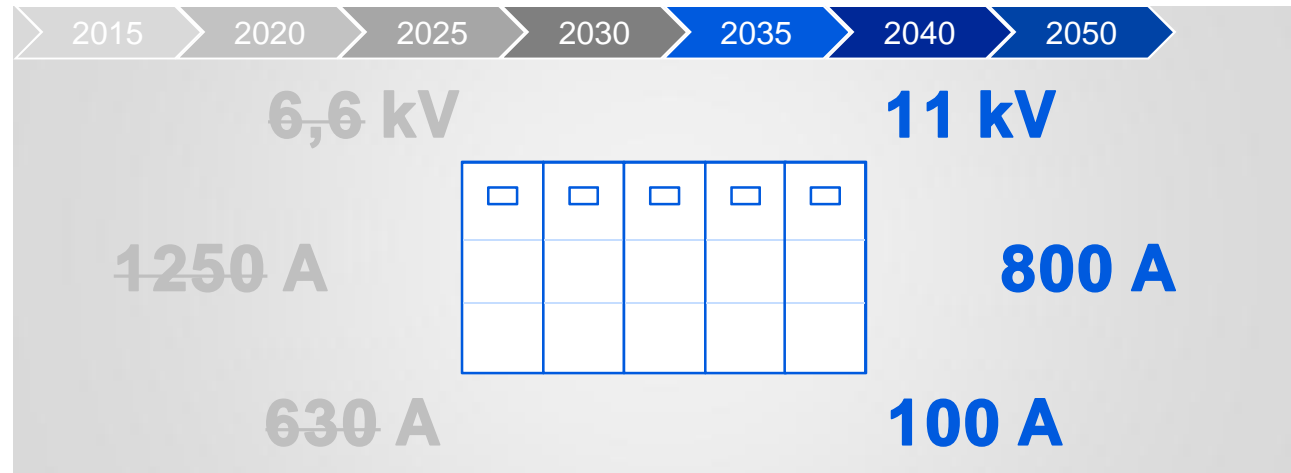
Engineering

Approval

Production

Installation &  
Commissioning

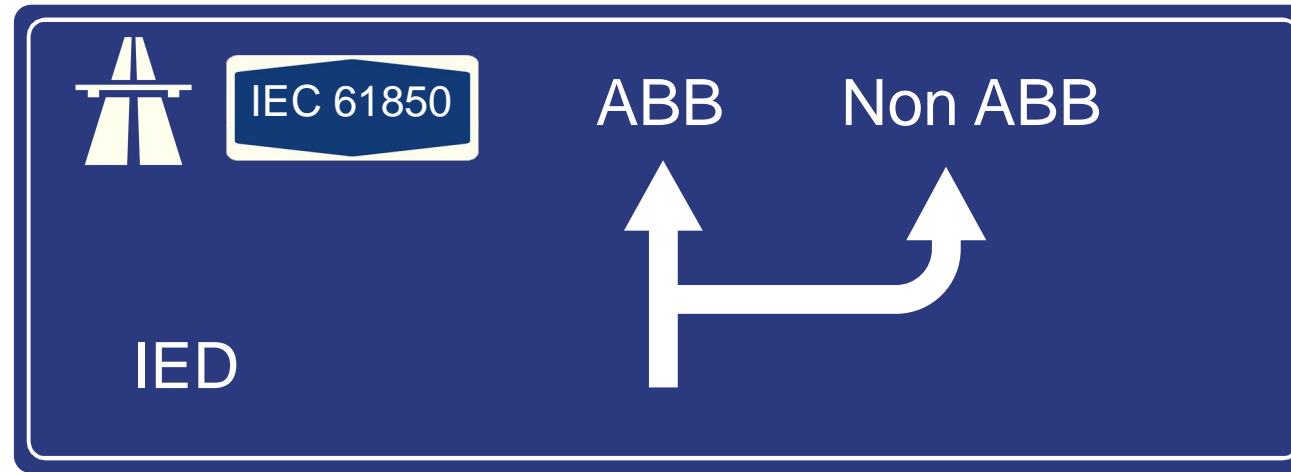
**Future**



- Switchgear delivered but still project changes are coming?
- Future proof: load changes do normally not require change of hardware, just adjustment of relay settings needed

# ABB solution

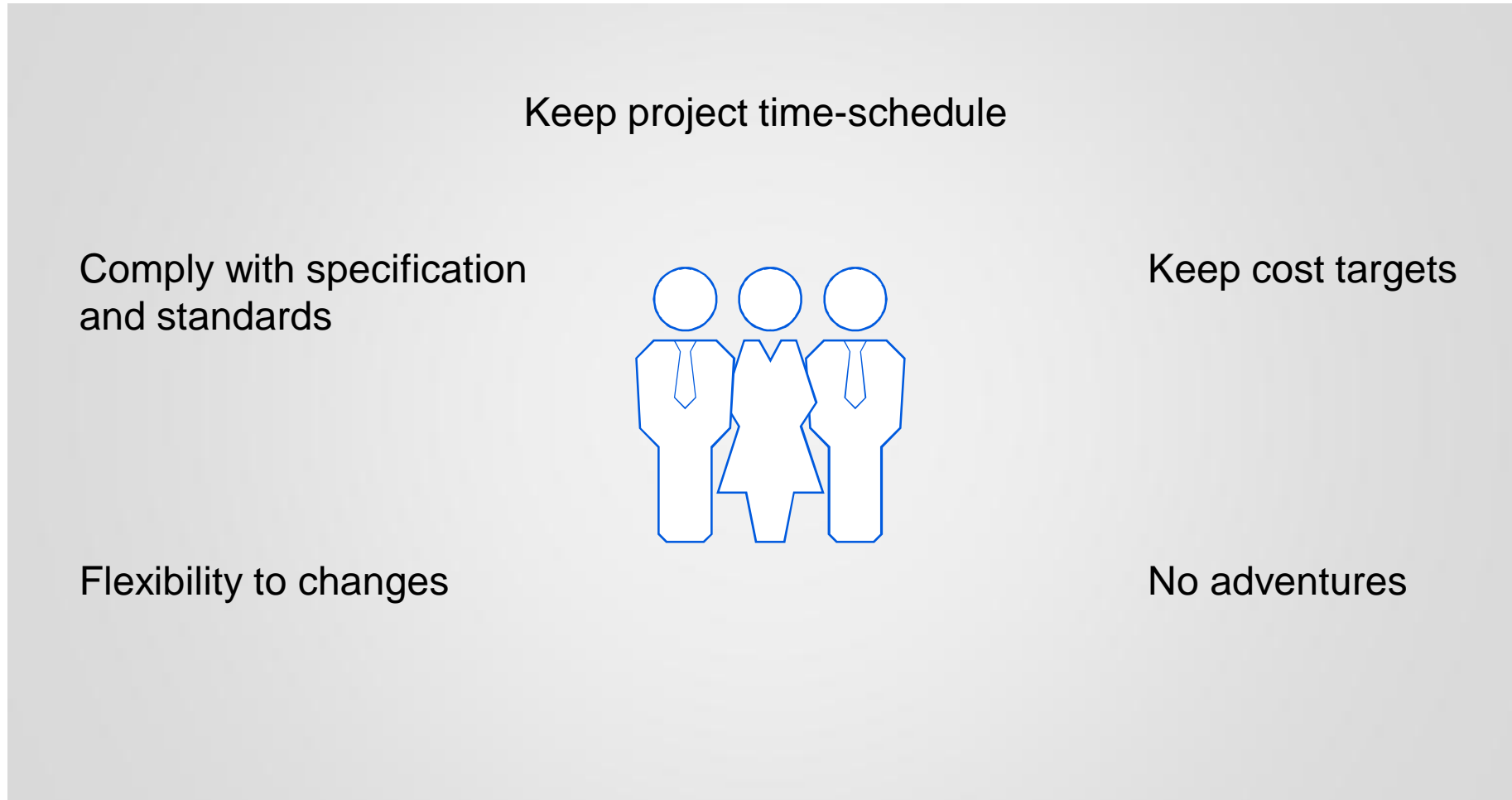
## Compatibility



- Full benefit and performance of digital concept is given with a complete ABB solution
- Compatibility between switchgear and non ABB devices is made through an interface in IEC 61850 format

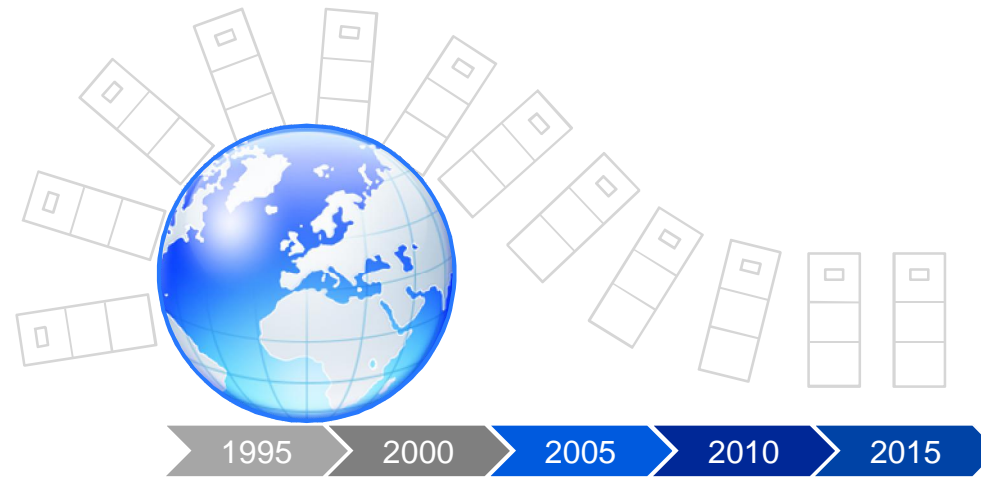


# Customer requirements



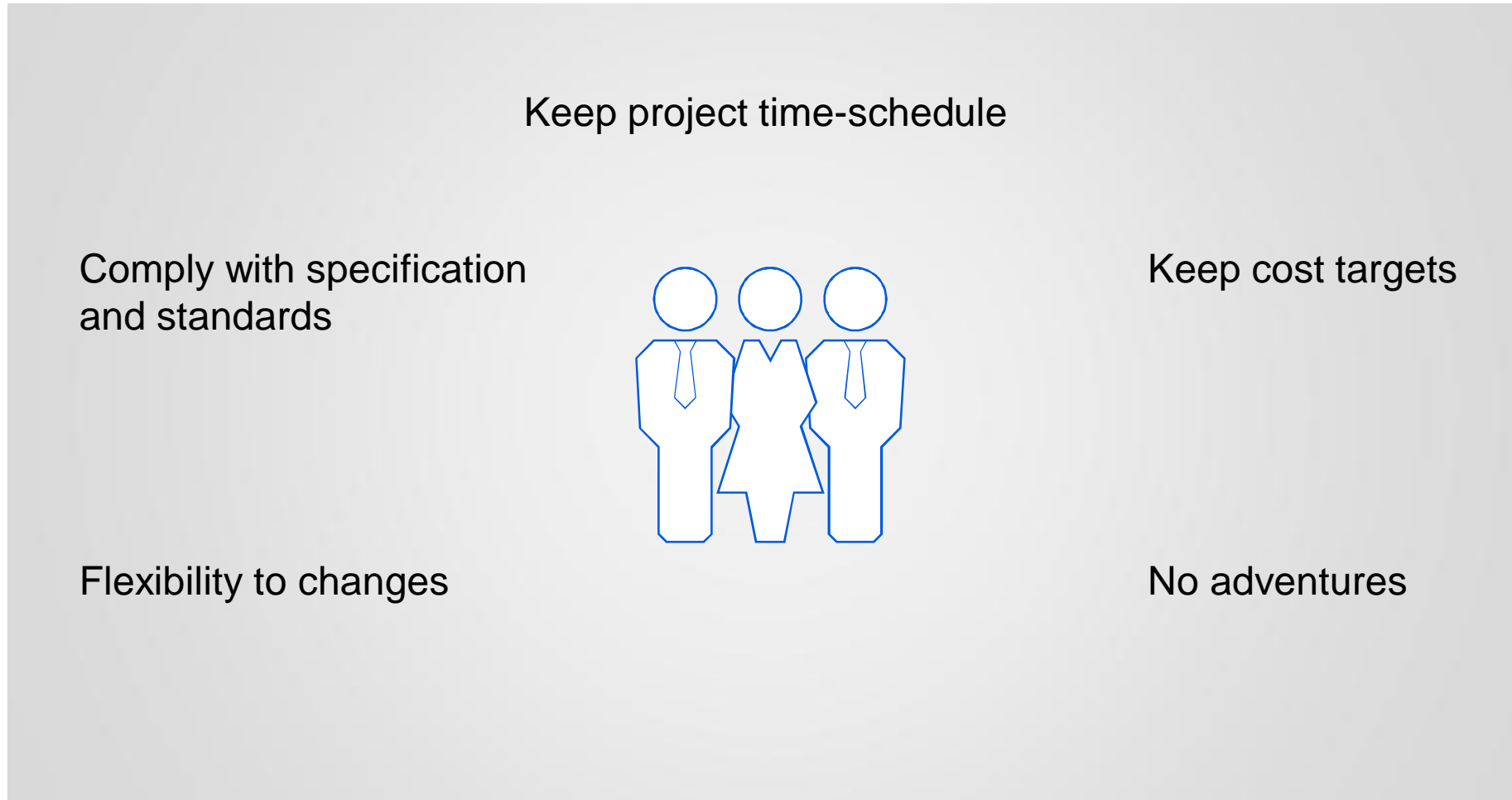
# ABB solution

## No adventures



- Proven switchgear design complemented by an established communication and measurement technology
- Combining the benefits of simplified configuration and flexibility of IEC 61850 communication
- IEC 61850 is used in 40% of switchgears with ABB relays
- Worldwide more than 10'000 panels with sensor technology in operation since 1995

# Customer requirements



# Summary

Fully type tested  
well-proven switchgear



Short delivery in spite of changes



Cost efficient:  
saving your time for clarification



Increased reliability – less space

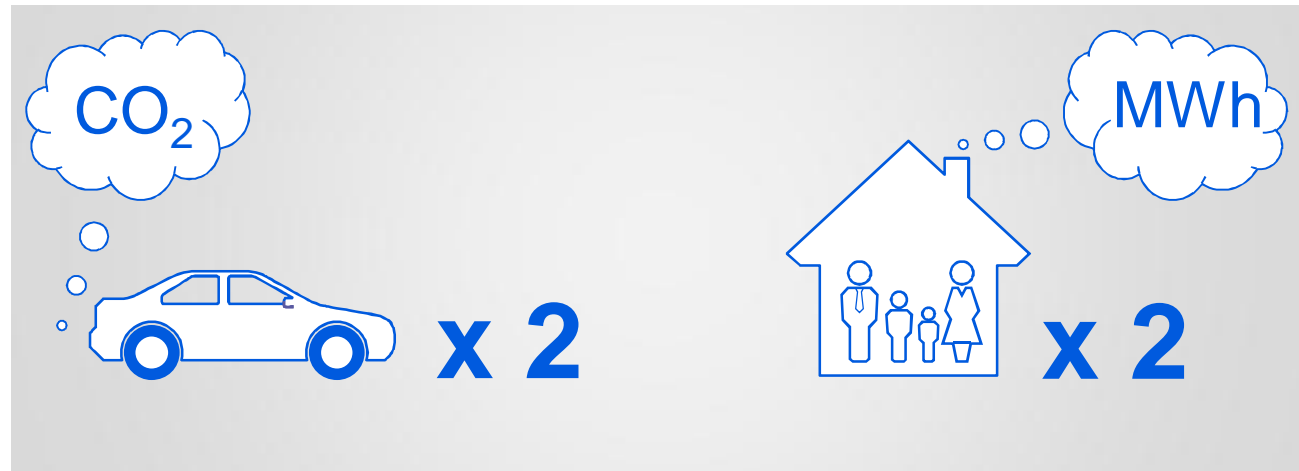


Improved environmental footprint



# ABB solution

## Green solution



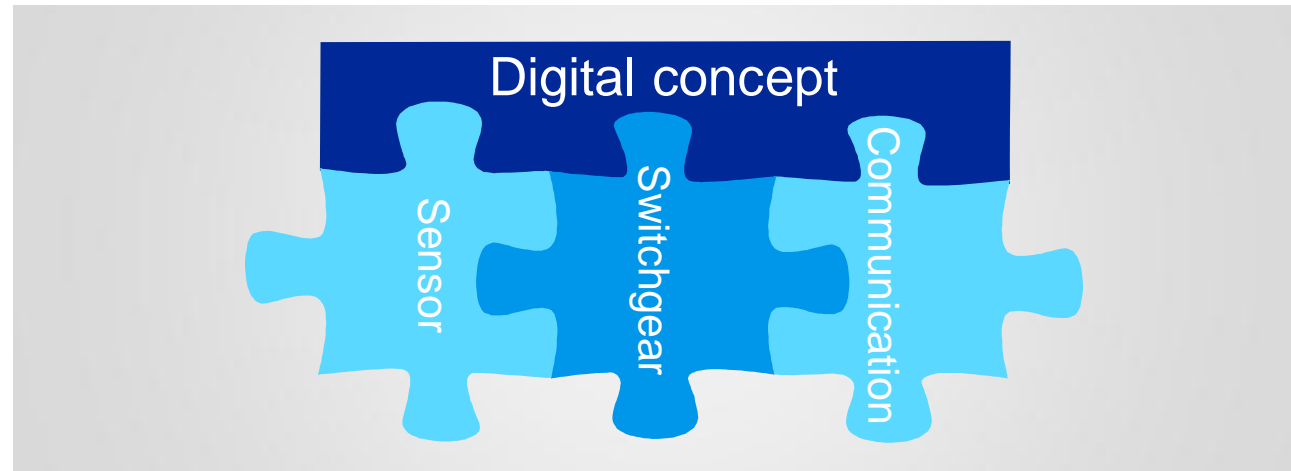
During 30 years of operation of a 14 panel switchgear

- Energy saving up to 250 MWh
- Reduced lifetime costs
- CO<sub>2</sub> savings up to 150 tons



# Our products

## Primary switchgear



- |  |   |
|--|---|
| ▪ UniGear Digital  | ZX0.2 Digital                           |
| ▪ Air-insulated medium voltage switchgear                                      | Gas-insulated medium voltage switchgear |
| ▪ Rated voltage up to 24 kV  | Rated voltage up to 36 kV               |
| ▪ Versions available:<br>UniGear ZS1, UniGear 550<br>UniGear 500R, UniGear MCC | More versions in progress               |

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