

ABB's Augmented Field Procedures Solution Designed to Increase Efficiency and Compliance

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ABB Ability, Augmented Field Procedures, Mobility, Digitalization, Digital Transformation, Procedural Automation, Efficiency, Operator

Summary

ARC Advisory Group recently met with [ABB](#) to discuss its recently announced [ABB Ability Augmented Field Procedures Solution](#). The solution addresses many of the challenges associated with adhering to established operational procedures to help ensure compliance and safety. As we learned, this ABB solution leverages convergent technologies: mobility solutions and IT infrastructure.

When executing manual procedures, human errors emerge as the main challenge. Even in highly automated operations, many areas still require manual execution and when people are involved, errors are more likely to occur. Standard operating procedures (SOPs) are used to mitigate errors, avoid unnecessary downtimes, and safety incidents, but these are not always followed.

ABB works with a wide range of customers to improve operational performance across both the process and energy industries. When executing manual procedures, human errors are often the main challenge. Even in highly automated operations, many areas still require manual execution. And when people are involved, errors are more likely to occur. Standard operating procedures (SOPs) are used to mitigate errors and avoid both unnecessary downtime and safety incidents. But these SOPs are not always followed.

As we learned, the new ABB solution:

- Utilizes available technology to improve collaboration, increase efficiency, and improve safety
- Integrates various information sources, including real-time data
- Is scalable from an operating unit to a full global enterprise
- Facilitates knowledge capture and the institutionalization of expertise

Mitigating Human Fallibility

Regardless of the industry or even the task, human performance varies. Many studies have demonstrated the impact of inadequate or poorly followed procedures due to human error. This has led to severe incidents, significant downtime, and overall operational losses. According to Matilda

Making a step change in reducing human error and increasing workflow efficiency enables a safer working environment and drives improved profit potential.

Steiner-Arvidsson, Global Product Manager for Manufacturing Operations Management Solutions with ABB, as companies begin to embrace digitalization, a key challenge still remains: “How do we significantly minimize human error when manual procedures are utilized?”

ABB believes making a step change in reducing human error and improving operations workflow efficiency would enable a safer working environment and drive improved profit potential. “Customers are looking for a more integrated and flexible approach to SOPs to reduce the possibility of making mistakes by working on the right asset, in the right sequence, and doing the right things,” Ms. Steiner-Arvidsson said.

Today’s Technology Enhances Effectiveness

These challenges are not new, with several procedure management solutions already available. However, ABB believes that recent advances in technology have created an opportunity to address the challenges more effectively.



ABB Ability Augmented Field Procedures Solution Provides Plant Operators with Step-by-step Assistance When Executing Procedures

These include mobility enhancements with the introduction of industrial-grade tablets, smartphones, and wearables; and the combination of industrial WiFi and IT.

Ms. Steiner-Arvidsson indicated that the company’s Augmented Field Procedures mobile app improves the way work is accomplished beyond the traditional paper-driven methodologies. The operator gets an up-to-date view on the scheduled tasks and step-by-step assistance when executing the procedures. The solution eliminates

confusion about latest version or having it updated, copied, and distributed to pertinent personnel. Additionally, the mobile app provides the operator

with knowledge management tools, including easy access to supporting information (pictures and manuals). Operators can also use the built-in camera to take pictures of the procedural steps or read the QR code to ensure that the proper work is executed on the correct piece of equipment. This enables operators to build competency while executing tasks.

Significantly, the ABB solution integrates control system data, so the operator can receive real-time field information and capture values automatically. Operators can interact with any control system directly to execute procedures in a synchronized manner. This improves work efficiency and reduces the need for control room and field operators to communicate back and forth via radio. The solution provides pertinent instructions and also helps ensure that the work is done correctly. It offers features like voice synthesis and an industrial chatbot to support the operators, as well.

Utilizing technology like Microsoft's HoloLens, the solution can provide augmented reality (AR) features. This technology enables hands-free operations and the user can view field data in the augmented context of their physical area of view. This powerful spatial context enhances work execution and builds worker capability. The technology also provides a platform for remote support, consultation, and collaboration with offsite experts and enables integration with asset management and other applications.

Benefits of Augmented Field Procedures Solution

ABB believes customers will realize several benefits from the solution:

- Enhance health and safety through reduced incidents and abnormal situations, and complying with regulatory requirements
- Increase workforce efficiency through improved procedure creation, distribution, and procedure maintenance by consistent execution of procedures through the integration with any supplier's real-time process control system
- Improve field operations' collaboration by linking procedures and tasks to the involved roles and persons and providing the interface to enable collaboration with and confirmation by multiple stakeholders
- Support retention of corporate knowledge through work practice standardization and by providing a basis for operator training and task certification
- Support continuous process improvements by recording procedure execution performance

- Ensure complete audit trail and data by recording actions, time-stamps and complete execution history for every step

Self-configurable and Easy to Implement

Traditionally, procedure management solutions required significant cost and effort to implement. “One clear customer requirement is a high degree of self-service,” said Ms. Steiner-Arvidsson. To this end, the new ABB solution simplifies workflow and does not require having an ABB expert on site to implement. The customer also has the option of using preconfigured templates that can be reused as building blocks. This templating enables enterprise-level and global rollouts, facilitates sharing procedures across sites, and delivering comprehensive global solutions.

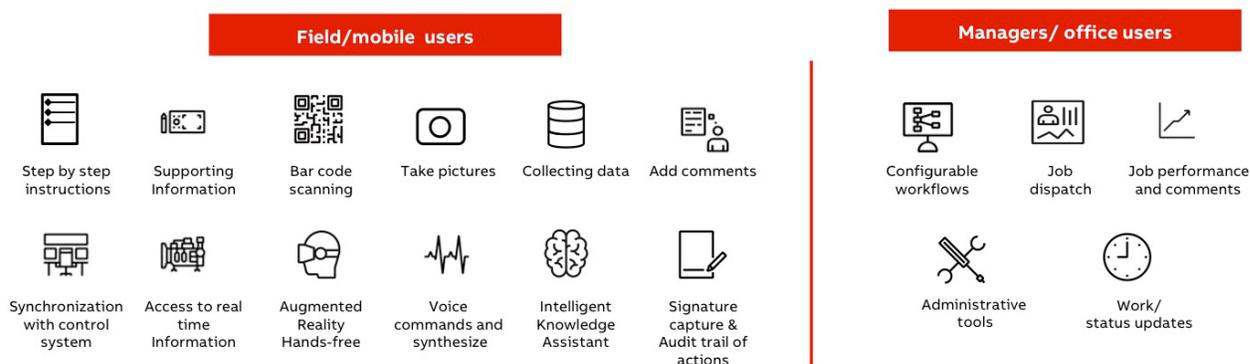


ABB Ability Augmented Field Procedures Solution Supports a Wide Variety of Users

Conclusion

Although procedural management techniques are well established and the benefits well documented, the industry has been slow in adopting these best practices. Even large corporations only have pockets where procedural management has been implemented well. Newer technologies like wearables, augmented reality, and data analytics offer end users the opportunity to improve what is already in place. The biggest challenges end users face are the lack of personnel to implement and optimize, a lack of capital to invest, and a lack of focus.

ABB’s Augmented Field Procedures solution brings several technologies together to address the related pain points. As ARC has written in the past, anything that can be automated, should be automated. In this case, if the human cannot be removed, he or she should at least be made more reliable. By overcoming common barriers, industrial organizations can begin to

address human reliability and create a safer work environment while realizing productivity gains and operational improvements.

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