

# Simulator for press operation

## Training simulator option for MPS Control Console

### Objective

In close cooperation with the French company Sinapse Print Simulators, ABB has extended the newspaper printing control console by a training simulator. This has resulted in an outstanding tool for the training of newspaper printing personnel. The use of the system not only promotes the understanding of the offset printing process, but also the special objective is the training of the operators in order to quickly overcome quality problems at start up, to obtain salable newspaper copies in a short time and also to react appropriately if faults occur. The resulting reduction in the quantity of waste ensures that the investment in the training simulator is amortized within a short time.

### Description and benefits

The Sinapse simulation software models the technical process of a printing press in real time. The integration of this software and MPS Control Console — the ABB control console for newspaper printing — results in a solution which allows the console operator to go through different production situations on the simulated press. Starting with the actions at the console, the simulator shows in each case the effects on the printed product without the necessity of running the press. With so-called training units, practical cases from daily operation can be simulated in order to observe and continually improve the reactions of the operator.



Simulation of a newspaper with a displaced web

### The following benefits result from the application of the training simulator:

- “Learning by doing”, without the cost of production
- Increased productivity — salable copies faster
- Prevention of press stops
- Training the operators to analyze problems and to take appropriate measures faster
- Increased awareness by the personnel for the consequences of incorrect actions
- Faster familiarization with new printing presses — before they are installed
- Learning with graded training units for printing personnel at all levels
- More efficient than conventional training methods, optimum training of new personnel
- More satisfied, more competent personnel

## Simulator functions

The simulator has 2 modes of operation:

- **Introduction**, in which the effects of changes at the control console on the printed product are demonstrated to the trainee. The simulator uses a typical press imposition for this including several scanned newspaper pages. On the simulator screen, the effect of each change on the printed image for the appropriate web or newspaper page is shown. The training program is divided into press set-up, and the adjustment of ink, water, register, web tension, etc.
- **Advanced level**. This is characterized by the fact that the actions of the trainee and the time required are recorded. The report based on this recording is used both for the assessment and for the specific correction of weak points of the trainee.

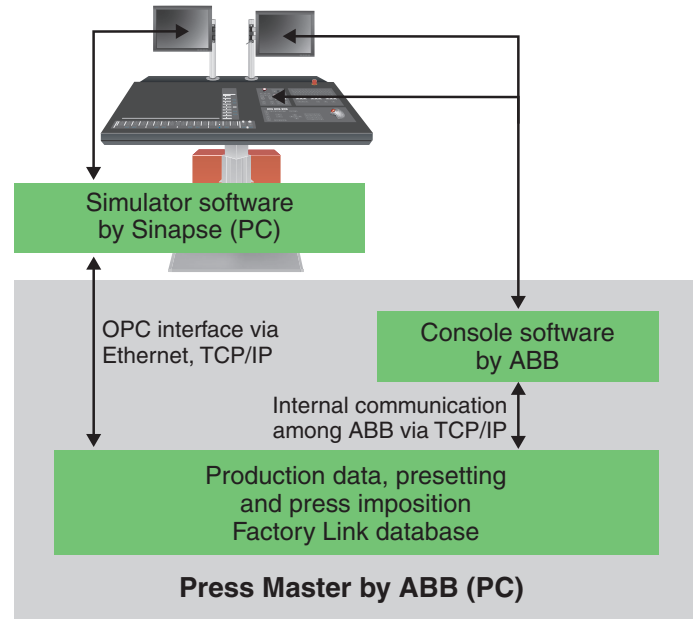
Generally the simulator has the following typical functions (for a complete definition, see the Sinapse documentation):

- Simulated model of a press configuration based on pre-defined productions with several webs in the ABB Press Master backup-library, containing four-color and single-color pages,
- Simulated model of the contents of the newspaper based on scanned pages,
- All operations at the console such as web tension, angle bar and slitter, cut-off register, position of the printed image, color density, ink/water balance, etc. have an immediate effect on the simulated newspaper,
- For the folder the simulator can show the result of problems with the edges, cut-offs, half and quarter web widths, pin laps, creases, tears and dog ears,
- The simulated states of the printing units are shown per web, the states concerning color and color register are shown per web and page,
- Simulation of faults in the press elements,
- Diagnosis aids with the display of the possible causes of a problem that is presented,
- Extensive configurable structure of the training units and themes,
- Logbook of a training session with the name, problem description, actions taken, time required and the resulting production costs.

## System architecture

The Sinapse software runs on a PC and is connected to the ABB Press Master/MPS Control Console PC (see diagram). The pre-configured press impositions in accordance with the project agreement are stored in the Press Master. With the command "Preset Backup Production" the selected press imposition is transferred both to the simulator and the control console at the same time. The training can then start with this imposition.

The simulated results from the software can either be displayed on a second screen at the console or projected on the proof copy area of the console with a projector. Both these displays and also the training units need to be adapted for the specific project.



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Notwithstanding the functions and characteristics described herein, the project specific agreements are valid for the execution of the simulator.

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