Getting used to new equipment can be challenging, especially when operators have to wait for it to be installed before being able to learn how it works. This takes time – for the installation to be done and for employees to feel comfortable working with the new machine.

However, there is now a solution – virtual commissioning technology developed by ABB Drives that can safely train saw line users, before the equipment is installed and commissioned.

For Veisto Oy, the Finnish manufacturer of HewSaw automated sawn timber production lines, this was a particular challenge – mainly because its HewSaw lines are customised and built to order. This meant that customers had to wait for their new equipment to be fully installed and commissioned before they could start operator training. The delay before full production meant lost income.

However, Veisto has worked with ABB to develop a more efficient way of learning that means their operators can start training offline. This has resulted in a much shorter ramp up to full productivity.

Veisto developed its training system using the ABB Ability Virtual Commissioning for drives. The tool utilises existing 3D designs to create virtual models of saw lines including the various PLCs, motors and drives.

HewSaw saw lines are complex machines – effectively robots 10m in length. They take logs up to 550mm in diameter and process them into sawn timber products at speeds up to 200m a minute. Because no two logs are the same, the saw line requires a high level of control and fast response to ensure the maximum amount of recovery from each log.

Originally, the virtual model was planned to be used primarily as a sales and marketing tool. However, it soon became clear that customers could benefit from off-site training, especially younger workers who have grown up using game systems.

“It was the capability of the ABB Ability Virtual Commissioning concept to capture the complexity of our saw line that impressed me,” said Tuomas Halttunen, Veisto’s vice-president.

“Safety considerations and the speed of operation make it hard to show customers how the equipment operates in real-life. But in the virtual world we now can show everything in slow motion, and with the guards off.”

The next step for Veisto is to develop the model as a full “digital twin” that mimics the exact operation of the sawmill equipment.

This will accelerate production line development and testing at the design stage to provide full virtual commissioning as well as helping with fault diagnosis.