- Universal automation involves programming something once for multiple uses

- It is a revolution for companies, but comes with risks

- Automation involves mechanical elements, servo technology, drive technology, and a control system

- Programmable logic controllers (PLCs) have been used for 50 years and are reliable, but have limitations in IT and software applications

- Digitally networked factories and reconfigurable systems are important for success in today's industrial world

- Classic PLCs are not designed for flexible modifications and require shutting down the entire system for new programs

- The shift towards analytics and AI poses a challenge for classic PLCs

- Industrial companies face challenges such as supply chain problems, skills shortages, energy shortages, and customization requests.

Universal automation is a new approach that allows companies to program something once and do the engineering once, rather than having to redo it for each individual vendor. This approach opens up a range of opportunities but also brings risks. Automation involves mechanical elements, servo technology, drive technology, and control systems, with the automation pyramid structure illustrating how these elements work together. Programmable logic controllers (PLCs) have been used in automation for 50 years and are known for being robust, sturdy, and reliable, but they have limitations when it comes to IT networking and software applications. Digitally networked factories and reconfigurable systems are becoming important for success, but the classic PLC approach reaches its limits when it comes to flexible modifications. Universal automation allows for vendor-independent automation with IEC61499, making it easier to modify and optimize systems. While there are challenges with implementing universal automation, it offers benefits such as cost savings, increased efficiency, and more flexibility in the face of supply chain problems, skills shortages, energy shortages, and customization requests.

Bullet Summary:

- Universal automation allows for programming something once and doing the engineering once

- Automation involves mechanical elements, servo technology, drive technology, and control systems

- Programmable logic controllers (PLCs) have been used in automation for 50 years and are robust and reliable, but have limitations with IT networking and software applications

- Digitally networked factories and reconfigurable systems are becoming important for success, but the classic PLC approach reaches its limits when it comes to flexible modifications

- Universal automation allows for vendor-independent automation with IEC61499

- Universal automation offers benefits such as cost savings, increased efficiency, and more flexibility in the face of challenges such as supply chain problems, skills shortages, energy shortages, and customization requests.