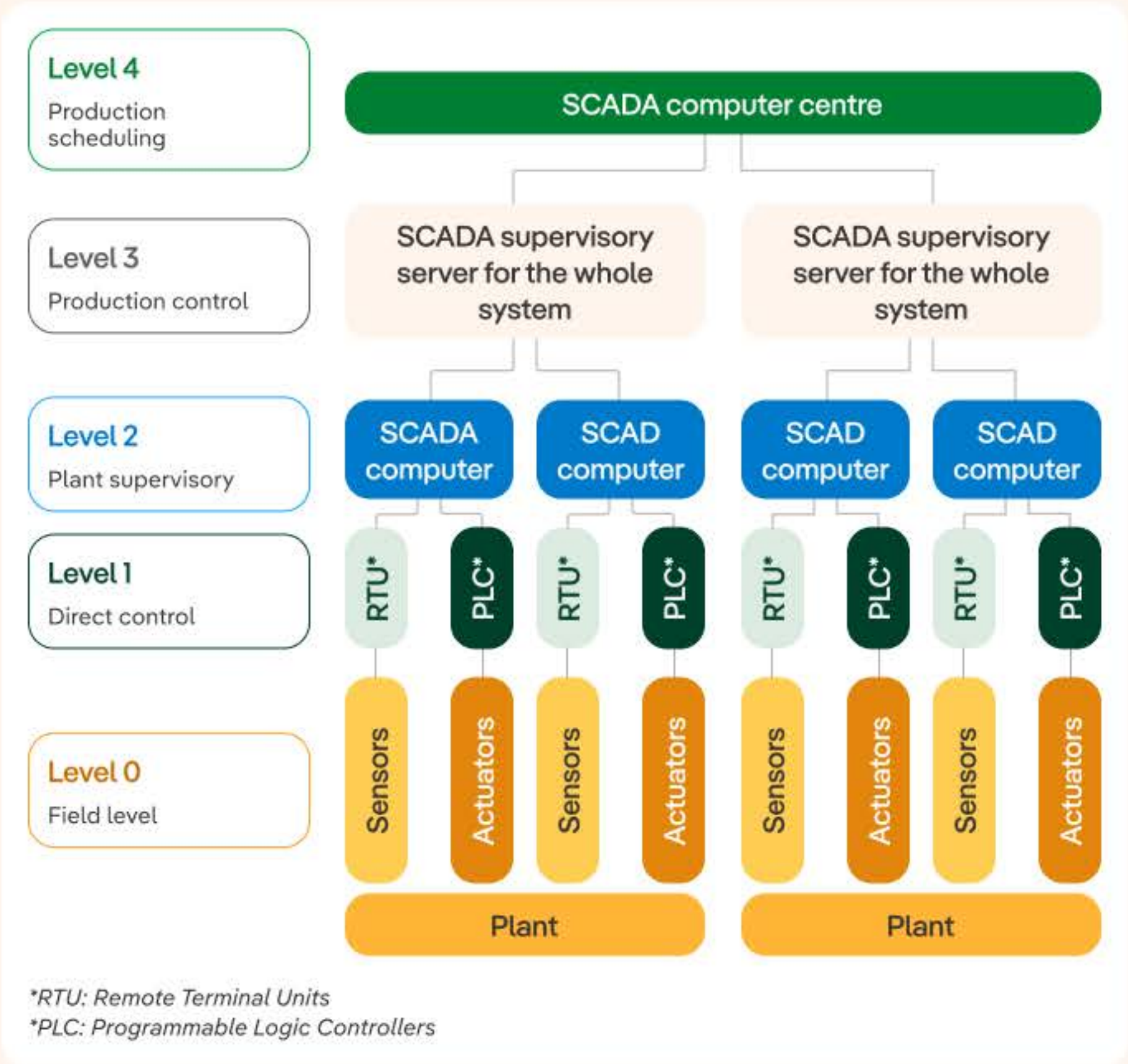


# How does a SCADA system work?

## The case of a power grid system

A SCADA (Supervisory Control and Data Acquisition) system monitors and controls in real time the **generation, distribution and transmission** of energy in electricity grids. This tool enables the **electricity system's** efficient, secure and automated management.



- Level 0** Sensors and actuators collect data from substations, lines and transformers.
- Level 1** RTUs and PLCs act as microprocessors interfaced with different devices throughout the industrial process.
- Level 2** SCADA field controllers communicate with SCADA supervisory computers. The SCADA software processes and analyses the information to detect anomalies or issues.
- Level 3** HMI (Human–Machine Interface) user interfaces allow operators and technicians to visualise and analyse information, determine the causes of problems and identify machines or processes that are not working to then make critical real-time decisions.
- Level 4** The SCADA system stores and processes the data in an orderly manner. This makes it possible to plan the overall production and analyse the overall development of the process, as well as to produce reports and statistics.

Source: Techtarget.