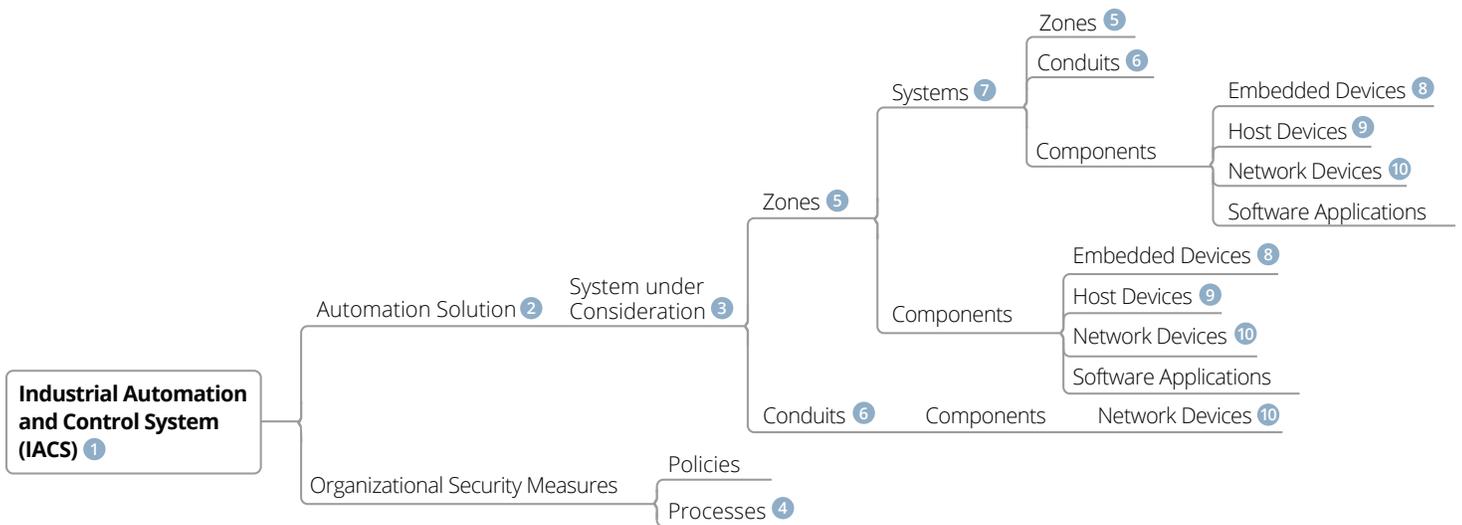


# Industrial Automation and Control System Taxonomy

## Definitions of Terms



### 1. Industrial Automation and Control System (IACS)

Control system and any complementary hardware and software components that have been installed and configured to operate in an IACS

**NOTE 1:** These systems include but are not limited to: a) industrial control systems, including distributed control systems (DCSs), programmable logic controllers (PLCs), remote terminal units (RTUs), intelligent electronic devices, supervisory control and data acquisition (SCADA), networked electronic sensing and control, and monitoring and diagnostic systems [In this context, process control systems include basic process control system and safety-instrumented system (SIS) functions, whether they are physically separate or integrated]; b) associated information systems such as advanced or multivariable control, online optimizers, dedicated equipment monitors, graphical interfaces, process historians, manufacturing execution systems, and plant information management systems; c) associated internal, human, network, or machine interfaces used to provide control, safety, and manufacturing operations functionality to continuous, batch, discrete, and other processes.

**NOTE 2:** The IACS may include components that are not installed at the asset owner's site.

**NOTE 3:** The definition of IACS was taken from ISA-62443-3-3. Examples of IACSs include Distributed Control Systems (DCS) and Supervisory Control and Data Acquisition (SCADA) systems. ISA914 62443-2-4 also defines the proper noun "Solution" to mean the specific instance of the control system product and possibly additional components that are designed into the IACS. The Automation Solution, therefore, differs from the control system since it represents a specific implementation (design and configuration) of the control system hardware and software components for a specific asset owner.

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## 2. Automation Solution

A collection of personnel, hardware, software, procedures, and policies involved in the operation of the industrial process and that can affect or influence its safe, secure, and reliable operation

**NOTE 1:** Automation Solution is used as a proper noun in this part of [SOURCE: ISA-62443].

**NOTE 2:** The difference between the control system and the Automation Solution is that the control system is incorporated into the Automation Solution design (e.g., a specific number of workstations, controllers, and devices in a specific configuration), which is then implemented. The resulting configuration is referred to as the Automation Solution.

**NOTE 3:** The Automation Solution may be comprised of components from multiple suppliers, including the product supplier of the control system.

## 3. System under Consideration

Defined collection of IACS and related assets for the purpose of performing a security risk analysis

**NOTE 1:** A SuC consists of one or more zones and related conduits. All assets within a SuC belong to either a zone or conduit.

## 4. Process

Set of interrelated or interacting activities which transforms inputs into outputs

**NOTE 1:** Inputs to a process are generally outputs of other processes.

**NOTE 2:** Processes in an organization are generally planned and carried out under controlled conditions to add value.

## 5. Zone

Collection of entities that represents partitioning of a System under Consideration on the basis of their functional, logical, and physical (including location) relationship

**NOTE 1:** A zone has a clear border. The security policy of a zone is typically enforced by a combination of mechanisms both at the zone edge and within the zone.

## 6. Conduit

Logical grouping of communication channels, between or connecting two or more zones, that share common security requirements

**NOTE 1:** This is analogous to the way that a physical conduit protects cables from physical damage.

**NOTE 2:** A conduit can traverse a zone if the security of the channels contained within the conduit is not impacted by the zone.

## 7. System

Interacting, interrelated, or interdependent elements forming a complex whole

**NOTE 1:** A system may be packaged as a product.

**NOTE 2:** In practice, the interpretation of its meaning is frequently clarified by the use of an adjective, such as control system. In the context of a control system, the elements are largely hardware and software elements.

## 8. Embedded Device

Special purpose device running embedded software designed to directly monitor, control, or actuate an industrial process

**NOTE 1:** Typical attributes include no rotating media, limited number of exposed services, programmed through an external interface, embedded operating systems (OSs) or firmware equivalent, real-time scheduler, may have an attached control panel, and may have a communications interface.

**NOTE 2:** Examples include PLCs, field sensor devices, safety instrumented system (SIS) controllers, distributed control system (DCS) controllers.

## 9. Host Device

General-purpose device running a general-purpose operating system (for example, Microsoft Windows OS or Linux), capable of hosting one or more applications, data stores, or functions

**NOTE 1:** Typical attributes include rotating media, no real-time scheduler and full HMI (keyboard, mouse, etc.).

## 10. Network Device

Device that facilitates data flow between devices, or restricts the flow of data, but does not directly interact with a control process

**NOTE 1:** Typical attributes include embedded OS or firmware, no HMI, no real-time scheduler, and configured through an external interface.