MIMO control systems:

Systems with more than one input and/or more than one output known as Multi-input Multi-output which require multiple control loops, these systems can be complicated through loop interactions that result in variables with unexpected effects.

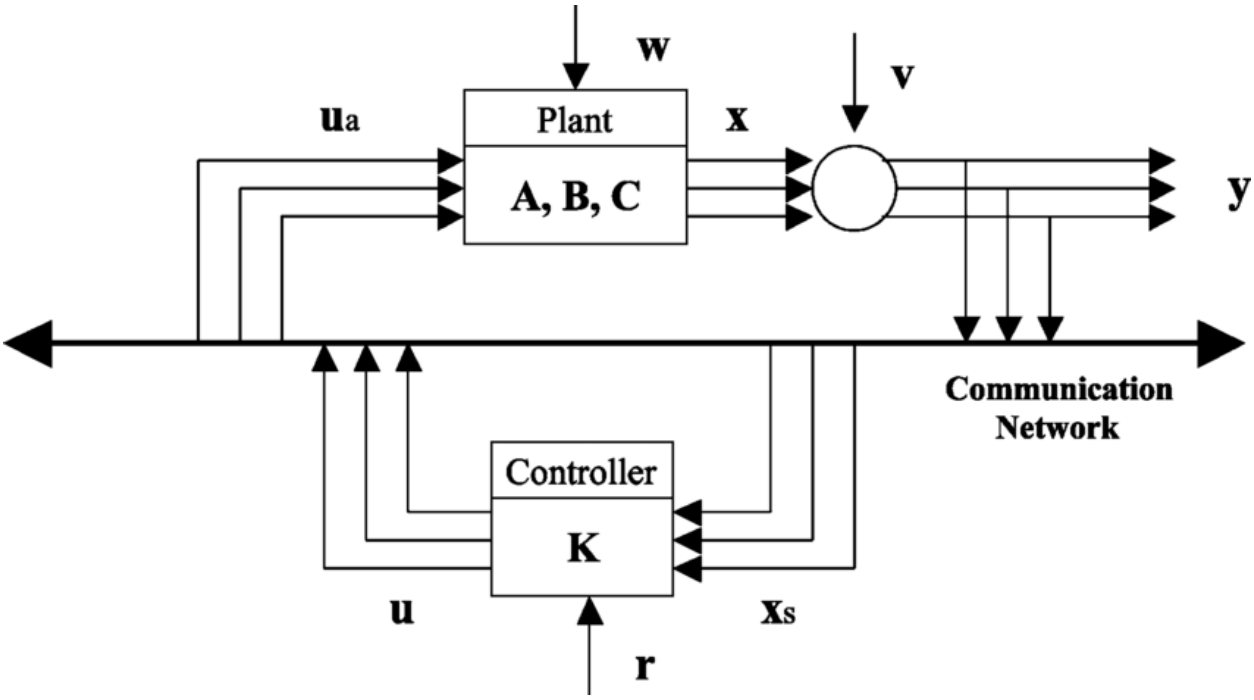
MIMO vs. SISO:

MIMO(Multi-input Multi-output)	SISO(Single-input Single-output)
• High Bit Error rate • High Data Transmission rate • Used in next generation wireless technologies like WLAN and LTE	• Low Bit Error rate • Low Data Transmission rate • Used in radio and satellites

MIMO systems:

Examples of MIMO systems include heat exchangers, chemical reactors, and distillation columns. These systems can be complicated through loop interactions that result in variables with unexpected effects. Decoupling the variables of that system will improve the control of that process

Network architecture and communication modules



When sensory and actuation devices in a control system are exchanging data through one common communication medium, the sharing of communication bandwidth will induce unavoidable data latency and might degrade the control performance. Hence, the utilization of communication resource and the requirement of control specification should be analyzed and properly designed when implementing a control system over a network architecture