**Input/output automata give a formal paradigm that may be used to describe almost any sort of asynchronous concurrent system. The I/O automaton model, on its own, has a relatively simple structure that allows it to describe numerous sorts of distributed systems. Additional structure must be added to this fundamental model in order to define certain sorts of asynchronous systems. The model provides an explicit mechanism for defining and reasoning about system components such as processes and message channels that interact at variable relative speeds. [1] Nancy A. Lynch and Mark R. Tuttle published the first I/O automata in "Hierarchical validity proofs for distributed algorithms" in 1987. [2]**

**"A distributed system component that may communicate with other system components is represented by an I/O automaton. It is a basic sort of state system in which transitions are linked to specific actions." [1] Input, output, and internal actions are the three categories of activities. The automaton communicates with its surroundings via its input and output actions, but its internal activities are only visible to the automaton. Unlike internal and output actions, which the automaton selects and executes, input actions, which simply come from the environment, are not within the automaton's control. [1]**