

Definition Of The Intelligent System (IS)

Do not take the considerations shown under [What Is Intelligence](#) (For continuous reading, like a book - do not enter here now) as a justification for the following definition. We wrote them just to show the way by which we reached the definition. We herewith, more or less arbitrarily, create a new [concept](#), the "Intelligent System" (IS) and think it is a useful one. We have used it in building artificial intelligent systems. It seems to explain quite well some occurrences in natural intelligent systems (IS), in [societies](#), and is useful in understanding some philosophical questions. In no sense is it a true or false definition, just a useful one. Also we are certain that this definition can be improved. [See [Definitions](#) (For continuous reading, like a book - do not enter here now)].

Here is a useful definition of an Intelligent System:

- It is a [system](#).
- It [learns](#) during its existence. (In other words, it [senses](#) its [environment](#) and learns, for each [situation](#), which [action](#) permits it to reach its [objectives](#).)
- It continually [acts](#), mentally and externally, and by [acting](#) reaches its [objectives](#) more often than pure chance indicates (normally much oftener).
- It consumes [energy](#) and uses it for its internal processes, and in order to act.

What does this definition imply?

- The [system](#) has to exist.
- An [environment](#) must exist, with which the system can interact.
- It must be able to receive [communications](#) from the environment, for its elaboration of the [present situation](#). This is an [abstracted](#) summary of the [communications](#) received by the [senses](#). By communications, in turn, we mean an interchange of matter or [energy](#). If this communication is for the

purpose of transmitting [information](#), it is a variation of the flow of energy or a specific structuring of matter that the system perceives.

- The [IS](#) has to have an [objective](#), it has to be able to check if its last action was favorable, if it resulted in getting nearer to its objective, or not.
- To reach its objective it has to select its [response](#). A simple way to select a response is to select one that was favorable in a similar previous situation.
- It must be able to [learn](#). Since the same response sometimes is favorable and sometimes fails, it has to be able to recall in which situation the response was favorable, and in which it was not. Therefore it stores situations, responses, and results.
- Finally, it must be able to [act](#); to accomplish the selected [response](#).

You can go over the above noted **conditions** and check, mentally, what would happen if you cancel anyone of them. We believe that you will conclude that all are necessary. If any one is absent the [IS](#) could not function.

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