Abstract

For a turbine to operate safely, it is essential to keep it under constant monitoring, in addition to ensuring the most effective conditions, an important aspect is the safety of the self-employed and those in the environment. In more complex cases, because of the interplay of different processes, without the use of such control systems, the turbine can be blocked, so it is imperative to regulate it. Because of the size and complexity of a highperformance turbine system, it can be tested separately from the control system. Among these advantages is that, in addition to the necessary startup and shutdown tests, it is not necessary to charge it unnecessarily. For example, there may be dozens of triggering events on the control side that need to stop the turbine, taking into account its time, cost, and damage to the device itself, to consider the turbine enough for these triggers, but from the point of view of the control system For all this, for this reason, the separation of the various units from the manufacturing point of view has been formulated. For control systems, therefore, a complex, a device capable of simulating all the properties of a turbine is needed, which is a complex process, first and foremost it is necessary to know the characteristics of the turbine and its environment as well as the properties of each sensor and sensor to be able to build a truly representative device.

Testing of control systems may require a complex test device capable of simulating the signals of several systems that work in harmony with each other in the same time, thus providing a kind of substitute method for the software solution. In addition, sensor families such as so-called servo valve control and associated linear feedback (LVDT) testing are not solved, even on a software basis. Programming an available FPGA module can be a solution, connecting it to the turbine control system, developing and reprogramming its software.