A spiral process can be contrasted with a waterfall process, which is a traditional process that consists of a sequence of activities that include analysis of requirements, design, coding, testing, and support. A spiral process is an iterative process that can be regarded as a repeating modified waterfall process. Each iteration includes assessment of risk, analysis of requirements, design, coding, testing, delivery, and evaluation. A key difference between a spiral and a waterfall process is that a spiral process can accommodate changes in requirements at each iteration, whereas in a waterfall process, requirements are considered to be fixed from the beginning and, therefore, a waterfall process is not flexible enough for some projects, especially those in which requirements are not known at the beginning or may change during development. For a given project, a spiral process may cost more and take more time than does a waterfall process, but may better satisfy a customer’s expectations and needs.

Models for simulating various waterfall processes have been developed previously, but until now, there have been no models for simulating spiral processes. The present spiral-process-simulating model and the software that implements it were developed by extending a discrete-event simulation process model of the IEEE 12207 Software Development Process, which was built using commercially available software known as the discrete-event simulation process model of the IEEE 12207 Software Development Process.