System and method for performing oilfield simulation operations

The invention relates to a method for performing operations of an oilfield having at least one process facilities and at least one wells. Operative connected thereto, each at least one wellsite having a wellbore penetrating a subterranean formation for extracting fluid from or injecting fluid to an underground reservoir therein. The method involves selectively coupling a plurality of oilfield simulators according to a predefined configuration, each oilfield simulator modeling at least a portion of the oilfield, a first oilfield simulator of the plurality of oilfield simulators receives an oilfield control parameter as an input, identifying an uncertainty parameter associated with a plurality of probable values each corresponding to a weighted probability, a second oilfield simulator of the plurality of oilfield simulators receives the uncertainty parameter as an input, modeling the operations of the oilfield to generate an estimated performance by selectively communicating between the plurality of oilfield simulators, the operations of the oilfield is modeled with a predetermined value of the oilfield control parameter and at least one of the plurality of probable values of the uncertainty parameter; and identifying an optimal value of the oilfield control parameter based on the estimated performance.