A Preliminary Application of SystemVue On Weather Radar Simulation

Abstract

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SystemVue is an Electronic System Level (ESL) EDA simulation environment developed by Agilent. At present, SystemVue is mainly used in wireless communication system architecture and technological innovation of, aerospace and defense electronics. SystemVue's simulation application for radar systems is mainly focused on military radars, rarely for weather radars. Simulation examples of SystemVue on military radar show that it has superior simulation performance, therefore the application of SystemVue can be extended to the simulation and analysis of weather radars. Simulation of weather radar are of great help to its networking, calibration, fault analysis and new algorithm verification. This paper first briefly introduces the simulation environment of SystemVue, and introduces the creation process of weather radar component using the PPP algorithm in weather radar signal processing as an example. Next, a test platform for PPP component was built on SystemVue, and the performance of the component was tested using simulated radar echo signals. The results show that the SystemVue platform can help to verify the weather radar signal processing algorithm, and that the software radar can be built through SystemVue to implement the simulation and new algorithm verification of different weather radar systems.

Key words: SystemVue, weather radar, algorithm verification, PPP