

携帯電話開発のための統合シミュレーション環境の構築

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The Consolidated Simulation Environment for The Cellular Phone Terminals Development

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概要 携帯電話開発時シミュレーション環境は、これまでは開発の効率化にはほとんど寄与していない状況であったが、今回われわれは上流段階で電気系、機械系、熱系の設計解析を統合的にシミュレーションできる環境を構築し、設計・開発期間の短縮を実現した。提案構成では電気系CADと機構系CADを統合するため共通モデルライブラリ、解析用ライブラリなどを整備して装置モデリング精度改善とモデリング時間短縮を両立させることに成功、アンテナ特性解析、EMI対策、圧迫耐力、熱解析などの項目について、検証期間を従来比それぞれ15%、38%、27%、40%削減、全携帯電話開発工程を18カ月から10カ月に短縮した。

Abstract

We propose a new method of consolidating a disjointed simulation environment for the development or design of cellular phone terminals. The resulting environment was applicable to each phase, especially the early phase, in which simulation tools for development TAT improvement had been considered impractical. The simulation environment was designed to include electrical CAD and mechanical CAD environments. Libraries were consolidated into a common analysis library and a common model library, which simultaneously helped to improve accuracy and analysis time, so that the simulation environment become practically applicable to actual development stages. Examples of practical development scenes, such as an antenna performance analysis, an EMI countermeasure design, a pressure durability evaluation, and a thermal radiation analysis demonstrated the effectiveness of our proposed environment. By introducing the new environment, we could reduce the total development period, including prototyping, from 18 months to 10 months (the contribution of each was 15%, 38%, 27%, and 40%, respectively).

Key Words: Consolidated Simulation, Duplication and Waste Cut, Model Tuning, Virtual Development, Feedback Loop