

工程与应用

基于C4ISR系统仿真的报文编解码方法研究

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摘要 分析了C4ISR系统仿真中报文编解码的几个关键问题, 逐个给出了独到的解决方法。从编解码规则存储、数据结构和编解码函数的设计几个方面, 并且结合报文编解码的流程给出了C4ISR系统仿真中报文编解码的详细设计方法。针对C4ISR系统报文的复杂性和灵活性, 提出了一种新颖的编解码方法, 有效地解决了报文种类多、编解码方式灵活等问题; 而且, 与传统的方法进行了比较, 从而可以看出其编解码的优缺点。采用现在流行的XML文档对编解码规则进行存储; 数据结构和编解码函数采用C++语言进行描述; 从软件工程的角给出了数据流图和主要的程序流程图。仿真结果证明, 编解码函数的设计方法思路新颖、编解码效率高、可扩展性好。

关键词 [报文](#) [编码](#) [解码](#) [帧](#)

分类号

Study of message encoding and decoding method based on C4ISR system simulation

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Abstract

Several key problems of message encoding and decoding in C4ISR system simulation are analyzed, and new methods are put out. The detail design methods of storing rules of message encoding and decoding, data structure and function of encoding and decoding are brought out. And it also gives flow charts of message encoding and decoding. A novel method is designed to solve the problems of encoding and decoding in C4ISR system simulation, such as large number of messages and diverse encoding and decoding styles. And it is compared with the normal methods, so its advantage and disadvantage can be clearly shown. Rules of message encoding and decoding are stored in XML. Data structure and function of encoding and decoding are described through C++. The data flow drawing and main flow chart of program are given from the aspect of software engineering. Simulation results show that the design method of message encoding and decoding function is very novel, efficient and extensible.

Key words [message](#) [encoding](#) [decoding](#) [frame](#)

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