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CASiNO: Component Architecture for Simulating Network Objects‡

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SUMMARY

We describe the Component Architecture for Simulating Network Objects (CASiNO) useful for the implementation of communication protocol stacks and network simulators. This framework implements a rich, modular coarse-grained dataflow architecture, with an interface to a reactor kernel that manages the application's handlers for asynchronous I/O, real timers and custom interrupts. These features enable developers to write applications that are driven by both data flow and asynchronous event delivery, while allowing them to keep these two functionalities distinct. We provide an example program and expository comments on the program to illustrate the use of the CASiNO framework. Published in 2002 by John Wiley & Sons, Ltd.

KEY WORDS: telecommunications; protocols; object orientation; framework; simulation

1. INTRODUCTION

A framework is generally defined as a set of cooperating classes that make up a reusable design for a specific class of software [1–3]. 'Frameworks are becoming increasingly common and important. They are the way that object-oriented systems achieve the most reuse' [1]. In this paper, we present a design and C++ implementation of the CASiNO (Component Architecture for Simulating

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