An Object-Oriented, Device-Independent GUI for the Creation of Rule-Based Fuselages and Spine-Based Aircraft Components

ABSTRACT: In recent years, the use of computer-aided design (CAD) systems for conceptual aircraft design has greatly increased. As a result, new and better methods for creating surface models of aircraft geometry using dimensional parameters are needed. One such method, the Rule-Based Fuselage method, was suggested by Lockheed. The Rule-Based Fuselage method allows an aircraft designer to define complex aircraft fuselage geometry by specifying the fuselage profile and individual parametric cross-sections along the fuselage. This paper describes a PHIGS-based, object-oriented GUI which supports the creation of a Rule-Based Fuselage. This GUI also supports a Spine and Cross-Section method for creating arbitrarily shaped aircraft components. This GUI was integrated into ACSYNT, a well-known aircraft conceptual design system.