Thus a major component of aircraft design is largely overlooked: the internal layout of the airplane. This thesis describes the design and implementation of a new computer software, the Internal Layout Module, designed to enhance the ability of the aircraft designer to arrange, modify, view, and analyze the internal components of an airplane. By considering the internal layout concurrently with the external shape and size, the configurator can effectively design the smallest airplane that meets specifications.

The module is coded in C++ entirely under the object-oriented paradigm to ease integration with existing code and to ensure future maintainability and extensibility. New components as varied as seats, galleys, lavatories and cargo containers have been designed for use in the Internal Layout Module and to provide a foundation for future object-oriented geometry for aircraft design.

The module has been successfully integrated with the aircraft conceptual design code ACSYNT (AirCraft SYNThesis). The process of adding this new object-oriented module to existing procedural code is discussed in detail.

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