

The BOEING 777 - Concurrent Engineering and Digital Pre-Assembly

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Abstract

The processes created on the 777 for checking designs were called "digital pre-assembly". Using FlyThru(tm), a spin-off of a Boeing advanced computing research project, engineers were able to view up to 1500 models (15000 solids) in 3d traversing that data at high speed. FlyThru(tm) was rapidly deployed in 1991 to meet the needs of the 777 for large scale product visualization and verification. The digital pre-assembly process has had fantastic results. The 777 has had far fewer assembly and systems problems compared to previous airplane programs. Today, FlyThru(tm) is installed on hundreds of workstations on almost every airplane program, and is being used on Space Station, F22, AWACS, and other defense projects. It's applications have gone far beyond just design review. In many ways, FlyThru is a Data Warehouse supported by advanced tools for analysis. It is today being integrated with Knowledge Based Engineering geometry generation tools.