

## An Intuitive Preprocessor Development for the Finite Element Analysis System, DIAMOND/IPSAP

Jong Keun Moon<sup>1</sup>, Jong Bum Kim, Sang Min Kim, Kuk Jin Park  
Chae Kyu Jang, Seung Jo Kim<sup>2</sup>

### Summary

As a finite element structural analysis tool, IPSAP has been developed over a decade ago by ASTL(*Aerospace Structures Laboratory* in Seoul National University) since early 1990's. IPSAP means 'Internet Parallel Structural Analysis Program' and is able to solve linear static analysis, thermal conduction analysis, and vibration analysis of various types of general complex structures.

By using Parallel Multi-Frontal solver, IPSAP shows efficient, powerful performance and accuracy in serial and parallel computing system and has been released by website(<http://ipsap.snu.ac.kr>) since 2004. But initial version of IPSAP did not support GUI(Graphic User Interface). To get over this inconvenience of IPSAP, the pre/post processor, DIAMOND has been developed.

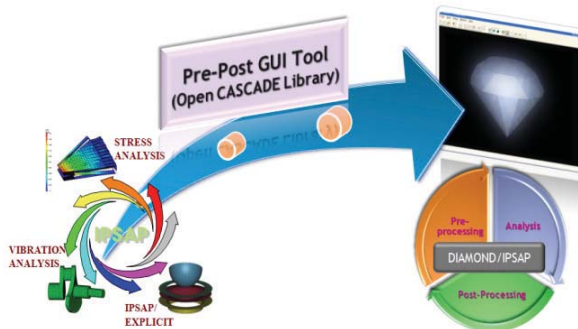


Figure 1: The Purpose of the Development for DIAMOND/IPSAP

DIAMOND/IPSAP provides user friendly environment for modeling and analyses. The goal of DIAMOND/IPSAP makes it possible that users can approach the structural analysis in easier and more efficient manner. As development environment of DIAMOND/IPSAP, OpenGL-based open source program, OpenCASCADE is implemented based on Microsoft Visual Studio 2005. Currently, Pre processing functions to make geometry and mesh has being developed. In this presentation, capabilities and functions of new DIAMOND/IPSAP as a free software will be introduced.

<sup>1</sup>School of Aerospace and Mechanical Engineering, Seoul National University, San 56-1 Shilim-dong, Gwanak-gu, Seoul 151-742 Korea

<sup>2</sup>Professor, Correspondent( [sjkim@snu.ac.kr](mailto:sjkim@snu.ac.kr)), School of Aerospace and Mechanical Engineering, Seoul National University, San 56-1 Shilim-dong, Gwanak-gu, Seoul 151-742 Korea

**keywords:** GUI(Graphic User Interface), Pre/Post Processor, Finite Element Analysis

