

NASTRAN INPUT DATA PREPARATION USING THE FEM EDITOR

Malcolm W. Ice
Frank J. Robl

Boeing Computer Services Company

ABSTRACT

A software development project currently under-way at BCS is the FEM Editor, which provides special-purpose preprocessing capabilities for creating and modifying NASTRAN input data. Card image forms, one each NASTRAN card type, are displayed on a color graphics screen, along with descriptions of the card fields. Data input consists of filling out the form, tabbing from field to field, and editing and data generation using a command menu. The user selects the specific card form either through a menu traversal or by explicitly keying in the NASTRAN card name.

FEM EDITOR DESIGN CONCEPT

**PROVIDE A DATA PREPARATION TOOL
TO FILL THE GAP BETWEEN
SOPHISTICATED MESH GENERATION
AND THE
MANUAL CREATION OF "DATA CARDS"**

FEM EDITOR

DESIGN CONSIDERATIONS

- **DEAL WITH NON-GEOMETRY INPUTS
AS WELL AS GEOMETRY**
- **DEAL WITH NATIVE NASTRAN DATA**
- **USEFUL FOR "SHOTGUN" DATA**
- **USEFUL WITHOUT HAVING TO LEARN
SUBTLE GENERATION SCHEMES**

FEM EDITOR SOLUTION

**A SPECIALIZED EDITOR USING DATA ENTRY
INTO NASTRAN DATA FORMS ON A TERMINAL SCREEN**

FEM EDITOR

FEATURES

- **DATA ENTRY INTO LABELLED WINDOWS, SIMILAR TO THE FORMS IN THE USERS' MANUAL**
- **FORWARD AND BACKWARD TABS SET AUTOMATICALLY**
- **DATA SELECTED FOR MODIFICATION BY "POINTING"**
- **MULTI-RECORD GENERATION FROM A BASE RECORD**
- **MENU TRAVERSAL TO ISOLATE THE APPROPRIATE FORM**

FEM EDITOR IMPLEMENTATION

- LOCAL MICROPROCESSOR (PDP 11/23)
- COLOR RASTER TERMINAL (DEC VSV/11)
- EDITOR CONTROL
 - TRACKING CROSS VIA DIGITIZER
 - KEYBOARD
- TABLE DRIVEN
 - FORMS
 - MENUS