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**THE EVALUATION AND EXTENSION OF TAE IN THE DEVELOPMENT OF
A USER INTERFACE MANAGEMENT SYSTEM**

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INTRODUCTION

- LARGE INFORMATION PROCESSING PROGRAM
- JPL
- GRAPHICS AND DISPLAY ENGINEERING GROUP
- USER INTERFACE MANAGEMENT SYSTEM (UIMS)
- TAE

TOPICS

- THE PROJECT
- PROJECT REQUIREMENTS
- UIMS
- REQUIREMENTS SUPPORTED BY TAE
- MODIFICATIONS TO TAE
- LESSONS LEARNED
- EVALUATION OF TAE AS A UIMS

THE PROJECT

- INFORMATION GATHERING AND DISPLAY SYSTEM
- DISTRIBUTED PROCESSING NETWORK
- HOST PROCESSORS (VAX 11/750)
- WORK STATIONS (VAXSTATION 11)
 - VAXSTATION DISPLAY + SPECIAL GRAPHICS DISPLAY DEVICE

THE USER

- TRIGGERS VARIOUS USER FUNCTIONS (APPLICATIONS SOFTWARE)
- PERFORMS SOPHISTICATED I/O
 - QUESTION/ANSWER
 - FORM FILLING
 - WORD PROCESSING
 - GRAPHICAL ENTITY MANIPULATION AND DISPLAY

PROJECT REQUIREMENTS

- PROVIDE A CONSISTENT USER INTERFACE TO USER FUNCTIONS
- PROVIDE A CONSISTENT APPLICATIONS INTERFACE TO USER FUNCTIONS
- SUPPORT BOTH COMMAND AND MENU TRIGGERING OF USER FUNCTIONS
- SUPPORT MULTIPLE USER INTERACTION TECHNIQUES
- PROVIDE CONSISTENT HELP AND MESSAGE FACILITIES
- SUPPORT A MULTI-WINDOWED ENVIRONMENT
- SUPPORT A DISTRIBUTED APPLICATIONS ENVIRONMENT

UIMS

"A UIMS IS A SOFTWARE PACKAGE THAT ACTS AS A BUFFER, OR MEDIATOR, BETWEEN APPLICATIONS SOFTWARE AND THE USERS OF A SYSTEM".

H. J. STRUBBE

UIMS CHARACTERISTICS

- CONTROLS USER DIALOGUE
- PROVIDES A CONSISTENT USER INTERFACE
- SUPPORTS A STANDARD APPLICATIONS INTERFACE TO USER FUNCTIONS
- SUPPORTS ONE OR MORE USER FUNCTION TRIGGERS
 - COMMAND
 - MENU
 - ICON

UIMS CHARACTERISTICS (CONTINUED...)

- SUPPORTS SEVERAL USER INTERACTION TECHNIQUES
 - QUESTIONS/ANSWERS
 - FORM FILLING
 - WORD PROCESSING
 - GRAPHICS
 - MENUS
 - MULTIPLE WINDOWS
- SUPPORTS A SET OF INTEGRATED TOOLS TO DEFINE USER FUNCTIONS AND DEVELOP USER DIALOGUE

ADVANTAGES OF UIMS

- USER
 - EASE OF LEARNING SYSTEM
 - PREDICTABILITY
 - GENERAL EASE OF USE

- APPLICATIONS DEVELOPER:
 - NO USER INTERFACE SOFTWARE DEVELOPMENT REQUIRED
 - MORE PORTABLE
 - EASIER ON PROGRAMMER
 - USER INTERFACE CAN BE DEVELOPED BY NON-PROGRAMMERS
 - USER INTERFACE CAN CHANGE WITHOUT CHANGE TO APPLICATIONS SOFTWARE

REQUIREMENTS SUPPORTED BY TAE

- SUPPORTED REQUIREMENTS
 - CONSISTENT APPLICATIONS INTERFACE TO USER FUNCTIONS
 - SUPPORT OF BOTH COMMAND AND MENU MODE
 - TOOL PROVIDED FOR DIALOGUE CONTROL (TCL)

- UNSUPPORTED REQUIREMENTS
 - NO SUPPORT FOR PROJECT DISTRIBUTED ENVIRONMENT
 - NO SUPPORT FOR SOPHISTICATED USER INTERFACE

MODIFICATIONS TO TAE

- **DISTRIBUTED ENVIRONMENT**
 - **USED PROJECT COMMUNICATIONS PROTOCOL**

- **SOPHISTICATED USER INTERFACE**
 - **INTRODUCTION OF OBJECT DATA TYPE**
 - **SUPPORT OF SOPHISTICATED TOOLS (FORMS MANAGER, WORD PROCESSOR, GKS, PROJECT SPECIFIC GRAPHICAL OPERATIONS)**
 - **SUPPORT OF MULTI-WINDOWED ENVIRONMENT**