

Software Management System

Computer Technology

In the early 1980s, Goddard Space Flight Center (GSFC) sponsored development of a software management system to support image processing and remote sensing applications. Known as the Transportable Applications Environment (TAE)*, it was developed for GSFC by Century Computing, Inc., Laurel, Maryland.

TAE was designed to help system developers and end users in organizing and managing the multiple programs often involved in computer solutions to information management problems. It provides user interface development tools and a stable framework in which a system can be built, and it lowers the cost of system development and software conversion by providing software and structures for commonly recurring requirements.

Over the years, TAE evolved from a traditional menu and command oriented system to a state-of-the-art user interface development system supporting high resolution graphic workstations. Through NASA's Software Management and Information Center (see page 128), GSFC distributed the software to more than 900 government, academic and private sector users, periodically upgraded the system, and backed it with a TAE Support Office that assisted users on specific problems.

In 1993, however, GSFC decided to complete the technology transfer process for TAE and asked Century Computing to take over support and commercial distribution of the software. Through a Century/GSFC agreement, the company was awarded lifetime rights to market TAE Plus, the latest version of the software system, and Century will make the software available to NASA at no cost for five years. Century also assumed responsibility for upgrades and support services associated with TAE Plus.

Century Computing introduced TAE Plus to the commercial market in October 1993 as a tool for building graphical user interfaces. The TAE Workbench lets a user lay out an interface interactively, choosing from a set of building blocks called "presentation types." The user selects the presentation types he wants, uses a mouse to

| | A | B | C | | D | E | F | |
|--------|------|--------|----------|------|--------|---------|------|-------------|
| 9X | | /B | .B | ** | /B | /B | | X |
| 10X | / | / | / | ** | . | / | . | X |
| 11M | . | . | .H | ** | . | . | . | |
| 12M | . | / | .H | ** | / | . | . | |
| 13M | . | / | . | ** | / | . | . | |
| 14M | . | . | . | ** | / | E | . | |
| 15M | . | . | .H | ** | . | . | . | W |
| 16M | . | . | . | ** | / | E | . | W |
| 17X | / | / | / | ** | / | / | / | XW |
| 18X | . | / | . | ** | / | / | / | XW |
| 19W | . | . | .H | ** | . | E | . | W |
| 20W | . | . | . | ** | . | E | . | W |
| AVAIL: | SEAT | LETTER | LEAST | PREF | :U | SMOKING | -- | BULKHEAD :B |
| TAKEN: | . | . | UPPER | DECK | :J | NOSMOKE | :** | WING :W |
| BLOCK: | / | . | HANDICAP | :H | BUFFER | :/ | EXIT | :X |

position and resize them on a display, and sees the interface just as the end user will see it. Writing code is not necessary; the TAE Plus Code Generator writes the interface code, which can then be easily integrated with the application code.

The accompanying illustrations show a comparison between a type of display used by many travel agents to select airline passenger seating (**above**) and a TAE Plus version of the seating chart, created without programming (**below**). Century Computing literature stresses that use of the TAE Plus requires little computer experience: "If you can use a mouse, you can build an effective graphical user interface with TAE Plus."

* TAE is a registered trademark of Century Computing, Inc.

The screenshot displays the TAE Plus software interface. On the left is a control panel with the following elements:

- # of Passengers:** A text box containing the number "2".
- Names:** A text box containing "Mr. and Mrs. John Doe".
- Seating Criteria:** A section with two columns of checkboxes:
 - Left column: ☒ Window, ☒ Aisle, ☒ Don't Care.
 - Right column: ☒ Front, ☒ Back, ☒ Don't Care.
- Bulkhead:** ☐ Bulkhead
- Handicap:** ☐ Handicap
- Message Area:** A text box containing the message: "Choose from one of the alternative seating options shown to the right."

On the right is a graphical representation of an airplane cabin layout. It shows two main sections: "LAVATORY" and "GALLEY". The seating area is filled with icons representing seats. Some seats are marked with red "X" icons, indicating they are taken or unavailable. There are also blue wheelchair icons indicating handicap-accessible seats. The layout is symmetrical with exits marked at the ends.