# Software Product Description

**PRODUCT NAME:** **VAX Decision Expert for VMS, Version 1.0** **SPD 25.D5.00**

## DESCRIPTION

VAX Decision Expert is a tool designed to assist programmers and engineers in building expert systems. VAX Decision Expert was intended for applications in diagnostics, maintenance and decision trees, although it has been used in a variety of other areas.

VAX Decision Expert has both development and delivery packages. The development package allows users to build expert systems by making selections from menus. Information can be shown in several ways: in a table format for entering if-then rules; a graphical editor for building and/or trees; and a graphical editor for building decision or procedural trees. VAX Decision Expert allows for both forward or goal chaining in the if-then table and and/or tree modules. The developer can control the search technique by setting probability and cost data so the system will search the most effective and least expensive route first. Also, the developer can control the search technique by using the utility language. The utility language is an underlying command language that provides the ability to perform functions that cannot be classified as if/then table, and/or tree, or decision tree functions, for instance input/output or inference control structures. The development package requires a DECwindows-supported display device, but does not adhere to the XUI style guide.

The delivery or end-user package is a simple menu interface aimed at the end-user with no computer experience. The screen is divided into two main parts: the procedure window and the history window. The current question or procedure is displayed in the procedure window. A pop-up menu window appears and the end user must choose a response from the menu in order to continue the session. Once the end-user responds, both the question and the end user's answer are placed in the history window. The procedure continues until a solution is reached. The delivery package can be displayed on a VT200 or VT300 series terminal, or in a DECterm window on a DECwindows-supported display device.

***Features of the Development Package***

*If/Then Tables:*

— Have a graphical editor for building sets of facts and if-then rules called tables (spreadsheet format); the rules define the relationships between the facts. Each fact allows for a short name, long name, fact explanation, utility language statements, T-values and F-values, and cost.

— Provide forward inferencing or a forward/backward chaining called goal mode inference.

— Allow interactive debugging of the table logic.

— Can be linked to other modules (tables and trees) in a knowledge base through the utility language.

— Contain facts which are stored in the global fact base and are the same in all modules within the knowledge base; when a fact's logical value is set, it is set automatically wherever it appears.

*And/Or Trees:*

— Are a collection of nodes connected in parent-child relationships. Each of which contains a fact identical to those in if/then tables. Each node allows for a short name, long name, fact explanation, utility language statements, T-values and F-values, and cost.

— Begin inferencing from the bottom up.

— Provide both forward and goal mode inferencing.

— Use logical operators that connect nodes using the Boolean functions AND, OR, NAND, NOR, and NOT.

— Have editing functions including: Add Child, Link, Unlink, Pick Subtree, Insert Subtree, Delete Subtree and Undo Subtree.

*Decision Trees:*

— Have nodes each of which represents a question or procedure. Each node allows for node text, short name, long name, node sizing, node position, node explanation, utility language statements, path labeling, and local or global use in the knowledge base.

— Have paths from the node that represent possible answers or choices.

— Use forward or top-down inference process only.

*The Utility Language:*

— Is a pair of optional subprograms associated with each fact or node.

— Provides functions that can link modules, display text and menus, and access external programs and devices.

*The VAX Decision Expert End-User Interface:*

— Is a built-in end-user interface.

— Has a procedure window, history window, module title, pop-up menu, message window, explanation window and end-of-session window.

**HARDWARE REQUIREMENTS**

VAX, MicroVAX or VAXstation configuration as specified in the System Support Addendum (SSA 25.D5.00-x).

**SOFTWARE REQUIREMENTS***

VMS Operating System

This product may run in either of the following ways:

- Stand-alone execution — running the X11 display server and the client application on the same machine.
- Remote execution — running the X11 display server and the client application on different machines.

VMS DECwindows is part of the VMS Operating System but must be installed separately. Installation of VMS DECwindows gives you the option to install any or all of the following three components:

- VMS DECwindows Compute Server (Base kit; provides runtime support)
- VMS DECwindows Device Support
- VMS DECwindows Programming Support

For stand-alone execution, the following DECwindows components must be installed on the machine:

- VMS DECwindows Compute Server
- VMS DECwindows Device Support

For remote execution, the following DECwindows components must be installed on the machines:

| Server Machine | Client Machine |
|---|---|
| VMS DECwindows Device Support | VMS DECwindows Compute Server (runtime support) |

* Refer to the System Support Addendum for availability and required versions of prerequisite/optional software (SSA 25.D5.00-x).

**ORDERING INFORMATION**

Software Licenses: QL-VI2A*-**
Software Media: QA-VI2A*-**
Software Documentation: QA-VI2AA-GZ
Software Product Services: QT-VI2A*-**

* Denotes variant fields. For additional information on available licenses, services and media refer to the appropriate price book.

**SOFTWARE LICENSING**

This software is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions. For more information about DIGITAL's licensing terms and policies, contact your local DIGITAL office.

**LICENSE MANAGEMENT FACILITY**

This layered product supports the VMS License Management Facility.

License units for this product are allocated on a CPU-capacity basis.

For more information on the License Management Facility, refer to the VMS Operating System Software Product Description (SPD 25.01.xx) or the VMS Operating System documentation set.

For more information on DIGITAL's licensing policies, contact your local DIGITAL office.

**SOFTWARE PRODUCT SERVICES**

A variety of service options is available from DIGITAL. for more information contact your local DIGITAL office.

**SOFTWARE WARRANTY**

Warranty for this software product is provided by DIGITAL with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

The above information is valid at time of release. Please contact your local DIGITAL office for the most up-to-date information.