# Software Product Description

**PRODUCT NAME: DEC Remote Operation Service for VMS, Version 1.0** **SPD 32.89.00**

## DESCRIPTION

DEC Remote Operation Service (DECros) for VMS is a Digital Distributed Software (DDS) product based on software developed by MARBEN, S.A. DECros is an implementation of two Open Systems Interconnection (OSI) Application Service Elements (ASE), and the OSI Presentation Layer.

Specifically, DECros is an implementation of the following International Standards Organization (ISO) Standards and International Telegraph and Telephone Consultative Committee (CCITT) Recommendations:

1. Remote Operation Service Element (ROSE)–ISO IS 9072-1, and IS 9072-2, CCITT X.219, and X.229 (1988)

2. Association Control Service Element (ACSE)–ISO IS 8649, and IS 8650, CCITT X.217, and X.227 (1988)

3. Connection Oriented Presentation Layer–ISO IS 8822, and IS 8823, CCITT X.216, and X.226 (1988)

In addition, DECros fully supports the Abstract Syntax Notation One (ASN.1) and the associated Basic Encoding Rules (BER) as defined by ISO (IS 8824, and 8825) and CCITT (X.208 and X.209). An ASN.1 cross compiler is included in the DEC Remote Operation Service Development Kit for VMS (SPD 32.90.xx), and should be used by DECros application developers.

DECros for VMS operates over VAX OSI Applications Kernel (SPD 27.47.xx) and can be used over ISO 8802-3 (IEEE 802.3) Local Area sub-networks or over X.25 communication links using Digital's packet-switching product range. Refer to the VAX P.S.I. and VAX P.S.I. Access Software Product Descriptions (SPD 25.40.xx and SPD 27.78.xx) for more information.

### Features

The major features of DECros are:

- Application Programming Interface
  An Application Programming Interface (API) providing access to ROSE, ACSE, and the Presentation Services is provided in object-code form. This API should be linked with the DECros user-developed code, thus providing interprocess communication mechanisms between the user-developed code and DECros.
  The DECros API includes a number of memory management routines, transparent to the user, and is compliant with the memory management methods used by the ASN.1 cross-compiler included in the DEC Remote Operation Service Development Kit.
- Operator Interface
  An operator interface is provided as part of the Command and Management Utility (CMU). The CMU allows an operator to perform the following functions:
  — Event logging (including Protocol Data Unit trace), either interactively on the operator console and/or captured to disk.
  — Display DECros parameter values.
  — Modify selected DECros characteristics.
- Installation Verification Procedures
  Utilities are provided to verify that DECros is properly installed and activated.

*Remote Operation Service Element*

The Remote Operation Service Element (ROSE) is defined as an Application Service Element (ASE) in the Application Layer (also known as "Layer 7") in the OSI Seven-Layer Reference Model.

ROSE allows applications to exchange requests and responses in an interactive manner in a distributed open systems environment. ROSE is the basic OSI mechanism for interactive data communication. Therefore, ROSE is required by X.500 Directory Services and the Common Management Information Protocol (CMIP).

DECros does not support the Reliable Transfer Service Element (RTSE).

*Association Control Service Element*

The Association Control Service Element (ACSE) is an ASE in the Application Layer (also known as "Layer 7") in the OSI Seven-Layer Reference Model.

ACSE provides basic facilities for establishing and controlling an application association between two remote applications that communicate by a presentation connection (Layer 6).

*Connection Oriented Presentation Layer*

The Presentation Layer is the 6th layer in the OSI Seven-Layer Reference Model. The Presentation Layer is concerned with the representation of information in transit between open systems.

On behalf of Presentation Service Users it implements the transfer syntax negotiation function. The transformation to/from transfer syntax function can be implemented through the presentation layer; however, for efficiency, the DECros user application is in charge of this function. The purpose of the presentation services follows that of the corresponding session services.

## SOURCE CODE

The following source code modules are provided with binary on all magnetic distribution media:

- C code header to be included in the user-developed code to access the API properly.
- Initiator and Responder modules, in C code, to be used as examples of DECros access through the API.

## INSTALLATION

Digital requires that a customer's first purchase of this software product include Digital Installation Services. These services provide for installation of the software product by an experienced Digital Software Specialist.

For subsequent purchases of this product, only experienced customers should attempt installation. Digital recommends that all other customers purchase Digital's Installation Services.

*Customer Responsibilities*

Before installation of the software, the customer must:

- Previously have installed all requisite software and hardware, including terminals.
- Make available for a reasonable period of time, as mutually agreed by Digital and the customer, all hardware, communication facilities, and terminals that are to be used during installation.
- For verification of installation and connectivity to another VAX node, designate and provide access to a DECros host that has previously been installed by Digital.

Delays caused by any failure to meet these responsibilities will be charged at the then prevailing rate for time and materials.

## HARDWARE REQUIREMENTS

VAX, MicroVAX, VAXstation, or VAXserver configuration as specified in the System Support Addendum (SSA 32.89.00-x).

## SOFTWARE REQUIREMENTS

VMS Operating System

VAX OSI Applications Kernel

Refer to the System Support Addendum for availability and required versions of prerequisite/optional software (SSA 32.89.00-x).

## ORDERING INFORMATION

Software Licenses: QL-YU2A*-**

Software Media: QA-YU2A*-**

Software Documentation: QA-YU2AA-GZ

Software Product Services: QT-YU2A*-**

* 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 Equipment Corporation's Standard Terms and Conditions. For more information about Digital's licensing terms and policies, contact your local Digital office.

## LICENSE MANAGEMENT FACILITY SUPPORT

This 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 *License Management Facility* manual of the VMS Operating System documentation set.

## SOFTWARE PRODUCT SERVICES

A variety of service options are 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.

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