

# Software Product Description

**PRODUCT NAME: DECosap for VMS, Version 2.0A  
(Digital's Omni Services for SINEC-AP)**

**SPD 32.75.02**

## DESCRIPTION

DECosap for VMS is a network communication product. It provides a solution to connect Digital Open-VMS VAX applications with Shop Floor devices based on Siemens® SINEC® Application Protocol and SINEC H1 communication protocols. SINEC H1 services are also identified as PG communication services within Siemens literature. Although mainly oriented to the manufacturing environment, SINEC H1 and SINEC AP address generic applications and are intended to provide a common communication method between different Siemens automation devices—Programmable Logic Controllers (PLCs), Numeric Control Machines, Robots, Personal and Minicomputers.

Siemens SINEC H1 has been recommended for connecting PLCs and host computers on large configurations. It has been specified on top of the ISO/OSI Transport Layer and it is based on Ethernet to improve effectiveness and efficiency: effectiveness through higher performance and efficiency through lower costs per connection.

Siemens SINEC AP is layered on top of SINEC H1 and provides proprietary Session, Presentation, and Application layers. The result offers an integrated Siemens Level 1 solution with an associated value of a consistent and uniform view to the Plant Floor applications.

DECosap for VMS fully supports both communication protocols—SINEC H1 and SINEC AP—as detailed in Appendix A of the System Support Addendum (SSA 32.75.02-x).

## Features

DECosap provides the support for both SINEC H1 and SINEC AP Application, Presentation, and Session layers. As both communication protocols are defined on top of the ISO OSI Transport Layer, DECosap for VMS relies upon DECnet/OSI to complete the communication stack. For more information, refer to the DECnet/OSI Software Product Description (SPD 25.03.xx).

Because of the functional compatibility between Siemens SINEC AP and MMS (Manufacturing Messaging Services) ISO International Standard 9506, Parts 1 and 2,

DECosap is integrated within the software architecture of the DEComni product to supply the Application Programming Interface (API). For more information, refer to the DEComni for VMS Software Product Description (SPD 32.32.xx).

## Components

- **DECosap Services**—This component adds support for SINEC AP and SINEC H1 functionality under the DEComni API. Supported services are listed in Appendix A of the System Support Addendum (SSA 32.75.02-x) and are divided among the following categories.
  - a. For SINEC H1: Environmental Management, Messages Exchange, Device Management, and Variable Access.
  - b. For SINEC AP: Environmental Management, VMD Support, Variable Access, Serial Transfer, Program Invocation, and Domain Services.
- **Configuration and Management Facilities:** DECosap for VMS uses the DEComni facilities ODF, ODSCL, and OMNIVIEW.
- **Installation Verification Procedure (IVP)**—DECosap IVP performs a series of tests to verify proper installation.

## Documentation

DECosap for VMS includes the following documentation:

- *DECosap for VMS Network Manager's and Programmer's Guide* provides an overview of SINEC H1 and SINEC AP concepts and terminology. It includes a description of the services available through the DEComni API and features of DECosap. It also describes the use of the DEComni utilities ODSCL and ODF.
- *DECosap for VMS Installation Guide* explains how to prepare for installation, how to install the product, and what to do after DECosap is installed.

## INSTALLATION

Only experienced customers should attempt installation of this product. Digital Equipment Corporation recommends that all other customers purchase Digital's Installation Services. These services provide for installation of the software by an experienced Digital Software Specialist. The installation of DECosap for VMS consists of the following:

- Verification that all components of the product have been received.
- Verification that the necessary versions of the prerequisite software and documentation are available.
- Verification of the appropriate system parameters.

**Note:** Should a software specialist be required to modify the previously installed operating system parameters, a prevailing rate time and materials charge will apply.

- Verification that the system meets the minimum hardware and software requirements as specified in the SSA.
- Provision for a reasonable period of time, as mutually agreed upon by Digital and the customer, of all hardware communication facilities and terminals that are to be used during installation.
- Installation of the software by creating the necessary directories and copying the software from the distribution media.
- Verification of the proper installation of the product by running the IVP.

Connectivity to all other nodes within the network is the responsibility of the customer. Delays caused by any failure to meet these responsibilities will be charged at the prevailing rate for time and materials.

## HARDWARE REQUIREMENTS

Processor and/or hardware configurations as specified in the System Support Addendum (SSA 32.75.02-x).

## SOFTWARE REQUIREMENTS

- OpenVMS VAX Operating System
- DECnet-VAX with DECnet-VAX Version 5.4 Extensions or  
DECnet/OSI for OpenVMS VAX
- VMS DECwindows Motif®
- DEComni for VMS
- DEC Rdb for OpenVMS VAX Run-Time option

Refer to the System Support Addendum (SSA 32.75.02-x) for availability and required versions of prerequisite software.

## ORDERING INFORMATION

Software Licenses: QL-YLNA\*-\*\*  
DECosap/DEComni License Package: QP-LCHA\*-\*\*  
Software Media and Documentation: QA-YLNA\*-\*\*  
Software Documentation: QA-YLNA\*-GZ  
Software Product Services: QT-YLNA\*-\*\*

\* 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 layered product supports the OpenVMS 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 OpenVMS VAX Operating System Software Product Description (SPD 25.01.xx) or the *License Management Facility* manual of the OpenVMS VAX 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.

### **Warranty Limitations**

Digital has developed this product according to SINEC H1 and SINEC AP communications protocols as defined by Siemens. The conformance to these specifications are in Appendix A of the System Support Addendum (SSA 32.75.02-x). Not all Siemens communication processors (CP) support the full range of H1 and AP services. The services supported by each CP are listed in Appendix B of the System Support Addendum (SSA 32.75.02-x). To minimize the risk of interworking problems, Digital has tested this product against selected Siemens devices to prove interoperability.

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# System Support Addendum

PRODUCT NAME: DECosap for VMS, Version 2.0A  
(Digital's Omni Services for SINEC-AP)

SSA 32.75.02-A

## HARDWARE REQUIREMENTS

### *Processors Supported*

VAX: VAX 4000 Model 100,  
VAX 4000 Model 200,  
VAX 4000 Model 300,  
VAX 4000 Model 400,  
VAX 4000 Model 500,  
VAX 4000 Model 600

VAX 6000 Model 200 Series,  
VAX 6000 Model 300 Series,  
VAX 6000 Model 400 Series,  
VAX 6000 Model 500 Series,  
VAX 6000 Model 600 Series

VAX 7000 Model 600 Series

VAX 8200, VAX 8250, VAX 8300,  
VAX 8350, VAX 8500, VAX 8530,  
VAX 8550, VAX 8600, VAX 8650,  
VAX 8700, VAX 8800, VAX 8810,  
VAX 8820, VAX 8830, VAX 8840

VAX 10000 Model 600 Series

VAXft Model 110,  
VAXft Model 310,  
VAXft Model 410,  
VAXft Model 610,  
VAXft Model 612

VAX-11/750, VAX-11/780, VAX-11/785

MicroVAX: MicroVAX II, MicroVAX 2000,  
MicroVAX 3100 Model 10/10E,  
MicroVAX 3100 Model 20/20E,  
MicroVAX 3100 Model 30,  
MicroVAX 3100 Model 40,  
MicroVAX 3100 Model 80,  
MicroVAX 3100 Model 90,  
MicroVAX 3300, MicroVAX 3400,  
MicroVAX 3500, MicroVAX 3600,  
MicroVAX 3800, MicroVAX 3900

VAXstation: VAXstation II, VAXstation 2000,  
VAXstation 3100 Model 30,  
VAXstation 3100 Model 38,  
VAXstation 3100 Model 40,  
VAXstation 3100 Model 48,  
VAXstation 3100 Model 76,  
VAXstation 3200, VAXstation 3500,  
VAXstation 3520, VAXstation 3540

VAXstation 4000, Model 60,  
VAXstation 4000, Model 90,  
VAXstation 4000 VLC

VAXserver: VAXserver 3100 Model 10/10E,  
VAXserver 3100 Model 20/20E,  
VAXserver 3300, VAXserver 3400,  
VAXserver 3500, VAXserver 3600,  
VAXserver 3602, VAXserver 3800,  
VAXserver 3900

VAXserver 4000 Model 200,  
VAXserver 4000 Model 300,  
VAXserver 4000 Model 500

VAXserver 6000 Model 210,  
VAXserver 6000 Model 220,  
VAXserver 6000 Model 310,  
VAXserver 6000 Model 320,  
VAXserver 6000 Model 410,  
VAXserver 6000 Model 420,  
VAXserver 6000 Model 510,  
VAXserver 6000 Model 520,  
VAXserver 6000 Model 610,  
VAXserver 6000 Model 620,  
VAXserver 6000 Model 630

### *Processors Not Supported*

MicroVAX I, VAXstation I, VAX-11/725, VAX-11/730,  
VAX-11/782, VAXstation 8000, VAX 9000 series

### *Processor Restrictions*

A TK50 Tape Drive is required for standalone MicroVAX  
2000 and VAXstation 2000 systems.

### Other Hardware Required

#### *IEEE 802.3 Connection*

- DEUNA or DELUA for operation on UNIBUS based VAX, or BI-VAX with appropriate UNIBUS adapter.
- DEBNA for operation on BI-bus based VAX.
- DEQNA or DELQA for operation on Q-bus based VAX.
- DESVA for operation with MicroVAX or VAXstation 2000.

### Disk Space Requirements (Block Cluster Size = 1)

A configuration with at least 8.0 MB is recommended.

Disk space required for installation: 40,000 blocks

Disk space required for use (permanent): 18,000 blocks

**Note:** 40,000 blocks of disk space required for installation are due to the integration with DEComni.

These counts refer to the disk space required on the system disk. The sizes are approximate; actual sizes may vary depending on the user's system environment, configuration, and software options.

### CLUSTER ENVIRONMENT

This layered product is fully supported when installed on any valid and licensed VAXcluster\* configuration without restrictions. The *HARDWARE REQUIREMENTS* sections of this product's Software Product Description and System Support Addendum detail any special hardware required by this product.

\* V5.x VAXcluster configurations are fully described in the VAXcluster Software Product Description (29.78.xx) and include CI, Ethernet, and Mixed Interconnect configurations.

### SOFTWARE REQUIREMENTS

- OpenVMS VAX Operating System, V5.5 - V5.5-2

#### *Layered Products:*

- DECnet-VAX V5.5 with DECnet-VAX V5.4 Extensions or

DECnet/OSI for OpenVMS VAX V5.5

- DEComni for VMS V2.0A

- VMS DECwindows Motif® V1.1

- DEC Rdb V5.0 for OpenVMS VAX Run-Time option

#### *OpenVMS Tailoring:*

The following OpenVMS classes are required for full functionality of this layered product:

- OpenVMS Required Saveset
- Network Support
- Programming Support
- System Programming Support
- Utilities

For more information on OpenVMS classes and tailoring, refer to the OpenVMS VAX Operating System Software Product Description (SPD 25.01.xx).

### GROWTH CONSIDERATIONS

The minimum hardware/software requirements for any future version of this product may be different from the requirements for the current version.

### DISTRIBUTION MEDIA

9-track 1600 BPI Magtape, TK50 Streaming Tape

This product is also available as part of the OpenVMS Consolidated Software Distribution on CD-ROM.

**ORDERING INFORMATION**

Software Licenses: QL-YLNA\*<sup>-\*\*</sup>  
DECosap/DEComni License Package: QP-LCHA\*<sup>-\*\*</sup>  
Software Media and Documentation: QA-YLNA\*<sup>-\*\*</sup>  
Software Documentation: QA-YLNAA-GZ  
Software Product Services: QT-YLNA\*<sup>-\*\*</sup>

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

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

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**APPENDIX A - SINEC® AP Functionality Cross Reference Tables**

The following tables list the Conformance Building Block (CBB) services and parameters that are supported by DECosap for VMS V2.0A. They are compared to the services provided within the first version. The level of support depends upon the level of functionality provided by the target Siemens® communication processors.

**Table 1**  
**Siemens SINEC AP CBB Services Cross Reference Table**

	DECosap/VMS V1.0	DECosap/VMS V2.0A	CP143	CP231A CP231B	CP141	KS100
<b>Environment Management</b>						
Initiate	B	B	B	N	B	N
Conclude	B	B	B	N	B	N
Abort	B	B	B	N	N	N
Cancel	N	C	N	N	N	N
<b>VMD Support Services</b>						
Status	C	B	B	N	B	N
GetNameList	C	C	S	N	B	N
Identify	C	B	B	N	B	N
GetCapabilityList	C	C	S	N	B	N
UnsolicitedStatus	C	B	B	N	B	N
<b>Variable Access Services</b>						
Read	B	B	B	N	B	N
Write	B	B	B	N	B	N
InformationReport	C	B	B	N	B	N
GetVariable- AccessAttributes	C	C	S	N	B	N
<b>Domain Management Services</b>						
InitiateDownload- Sequence	N	C	S	N	C	N
DownloadSegment	N	C	S	N	C	N
TerminateDownload- Sequence	N	C	S	N	C	N
InitiateUpload- Sequence	N	C	S	N	C	N
UploadSegment	N	C	S	N	C	N

**Table 1 (Cont.)**  
**Siemens SINEC AP CBB Services Cross Reference Table**

	DECosap/VMS V1.0	DECosap/VMS V2.0A	CP143	CP231A CP231B	CP141	KS100
TerminateUpload-Sequence	N	C	S	N	C	N
RequestDomain-Download	N	C	S	N	C	N
RequestDomainUpload	N	C	S	N	C	N
LoadDomainContent	N	N	S	N	C	N
StoreDomainContent	N	N	S	N	C	N
DeleteDomain	N	C	S	N	C	N
GetDomainAttributes	N	C	S	N	C	N
<b>Program Invocation Services</b>						
CreateProgram-Invocation	N	C	B	N	N	N
DeleteProgram-Invocation	N	C	B	N	N	N
Start	N	C	B	N	N	N
Stop	N	C	B	N	N	N
Resume	N	C	B	N	N	N
Reset	N	C	B	N	N	N
Kill	N	C	B	N	N	N
GetProgramInvocation-Attributes	N	C	B	N	N	N
<b>Serial Transfer Services</b>						
Read	B	B	B	B	B	B
Write	B	B	B	B	B	B
Send	B	B	B	B	B	B
Exchange	B	B	B	B	B	B

B = Client and Server  
C = Client only  
S = Server only  
N = Not supported

**Table 2**  
**Siemens SINEC AP CBB Parameters Cross Reference Table**

Parameters	DECosap for VMS V1.0	DECosap for VMS V2.0A
STR1	TRUE	TRUE
STR2	FALSE	TRUE
NEST	0	10
VNAM	FALSE	TRUE
VADR	FALSE	TRUE
VALT	FALSE	TRUE
VSCA	FALSE	FALSE
TPY	FALSE	FALSE
VLIS	FALSE	FALSE
REAL	FALSE	FALSE
AKEC	FALSE	FALSE
CEI	FALSE	FALSE

Supported Siemens Communication Processors (CP)  
are:

- CP143: for Simatic® S5 PLC family
- CP231A/B: for Sinumerik NC 800 and Sirotec Robot  
Controllers
- CP141: for Sicomp PC 32-xx (PC AT® Compatible)
- KS100: for Sicomp M70 (with IOSY-H1 software pro-  
viding SINEC AP)

**APPENDIX B - SINEC H1 Functionality Cross Reference Tables**

The following tables list the Conformance Building Block (CBB) services and parameters that are supported by DECosap for VMS V2.0A. They are compared to the services provided within the first version. The level of support depends upon the level of functionality provided by the target Siemens communication processors.

**Table 3**  
**Siemens SINEC H1 CBB Services Cross Reference Table**

	DECosap for VMS V1.0	DECosap for VMS V2.0A	CP535
<b>Environment Management</b>			
Initiate	B	B	B
Conclude	B	B	B
Abort	B	B	B
Cancel	N	C	N
<b>VMD Support</b>			
Status	N	C	S
<b>Variable Access Services</b>			
Read	N	B	B
Write	N	B	B
<b>Domain Management Services</b>			
InitiateDownloadSequence	N	C	S
DownloadSegment	N	C	S
TerminateDownloadSequence	N	C	S
InitiateUploadSequence	N	C	S
UploadSegment	N	C	S
TerminateUploadSequence	N	C	S
<b>Program Invocation Services</b>			
Start	N	C	S
Stop	N	C	S

**Table 3 (Cont.)**  
**Siemens SINEC H1 CBB Services Cross Reference Table**

	DECosap for VMS V1.0	DECosap for VMS V2.0A	CP535
<b>Serial Transfer Services</b>			
Send	B	B	B

B = Client and Server  
 C = Client only  
 S = Server only  
 N = Not supported

**Table 4**  
**Siemens SINEC H1 CBB Parameters Cross Reference Table**

Parameters	DECosap for VMS V1.0	DECosap for VMS V2.0A
STR1	FALSE	TRUE
STR2	FALSE	TRUE
NEST	0	10
VNAM	FALSE	FALSE
VADR	FALSE	TRUE
VALT	FALSE	FALSE
VSCA	FALSE	FALSE
TPY	FALSE	FALSE
VLIS	FALSE	FALSE
REAL	FALSE	FALSE
AKEC	FALSE	FALSE
CEI	FALSE	FALSE

Supported Siemens Communication Processors (CP)  
 are:

- CP535