



## TriMedia/Nexperia Development Software

### DEVELOPMENT SOFTWARE OPTIONS FOR TRIMEDIA/NEXPERIA HARDWARE

Philips Semiconductor has recently repackaged the Nexperia (formerly called TriMedia) software to create a new release. This info-sheet summarizes the offerings and answers some typical questions. Note that some issues discussed here may have changed since this was written, please contact the MDS sales staff if you have further questions.

Where else to get more information or help:

MDS website:

<http://www.mds.com>

Philips Nexperia Website:

<http://www.semiconductors.philips.com/platforms/nexperia/index.html>

Philips Nexperia Support Website:

<http://www.support.trimedia.philips.com/>

Yahoo TriMedia eGroup:

<http://groups.yahoo.com/group/trimedia/>

Complete details are best found in the documentation package delivered with the tools. All of the Nexperia hardware and software manuals are supplied as pdf files, and can be found on the Philips Nexperia Support Website.

### Philips Packages by Name

#### NDK

Nexperia Development Kit. This is the basic set of tools needed to develop Nexperia applications: compiler, linker, debugger, assembler, librarian, and profiling tools. It includes some basic library functions as well, such as the TSA/TSSA core and peripheral (audio, video) libraries, and the 2D drawing library.

The current version is 2.2, with Service Pack 1 (SP1), released in June 2002. This is the minimum version needed for using the IADK

#### SDE

Software Development Environment. The old name for what is now the NDK, and also sometimes called the TriMedia Compilation System, or TCS. The NDK contains updated examples for more platforms, but the tools are basically unchanged. The last version was 2.2. The SDE does not work with the IADK.

#### IADK

Integrated Application Development Kit. This is what used to be called the "Apps-CD" in the old days. All of the libraries and examples have been cleaned up, built, and tested with the NDK. Note that in some contexts (i.e., Philips) people say IADK and mean IADK+NDK. We will always refer to each separately. The current IADK version is 1.0, with Service Pack 1 (SP1) required (released with the NDK in June 2002).

#### Which Package?

In general, get the NDK and not the older SDE. The SDE can not be used with the IADK. MDS is starting to phase out support for SDE. An upgrade from SDE 2.2 to NDK 2.2 SP1 is available from MDS. (SDEs prior to 2.2 are not upgradeable, i.e. Philips requires you to buy the NDK at full price).

The DVE-2 supplemental software from MDS is all built around the NDK, so with the DVE-2 the NDK must be used.

The IREF board supplemental software (BSP, examples) are setup to be rebuilt with the SDE2.2 environment. Note that the BSP and examples are supplied with source and executable forms, so you do not need to rebuild them to just run them from the NDK tools. To rebuild the examples you generally have to modify the setup anyway, it's not really all that different to modify them to the NDK vs. SDE setups.

Therefore MDS suggests you purchase the NDK with the IREF. But in some cases you should be prepared to edit the makefiles a bit more than you would with the DVE-2.

#### Don't forget JTAG

To develop programs on the DVE-2 or on custom hardware, a JTAG debugger is required. MDS has a new version of the Nexperia JTAG debugger for the PCI bus, this debugger is only supported for use with the NDK.

#### Libraries

##### Philips Libraries (IADK)

Information on the Philips libraries can be found on the Philips website, though this list is not always up to date. Due to licensing issues, this CD must be purchased directly from Philips.

## DResearch Libraries offered by MDS

MDS offers a number of video codecs (H.263+, MJPEG, MPEG4) from DResearch. These are being updated as needed to support use with the NDK.

## Other Libraries

You should discuss your plans with your Philips Nexperia 3rd party library vendors to ensure their library is usable in the development environment you plan to use.

## DSPOS FUSION TCP/IP stack

MDS offers the FUSION stack as an option for use with the DVE-2 and IREF. The FUSION code has been built using the NDK.

Note that the SDE/NDK includes the PSOS pNA component, but this is not a supported component any longer. Therefore MDS strongly suggests the FUSION stack for any project needing TCP/IP.

Note also that the IADK examples include a partial library version of FUSION. The version in the IADK is for evaluation only and may not be used in products.

## pSOS

There is no change in the pSOS components between the SDE and NDK. The system includes pSOS and pSOS+m, the port is derived from pSOS 2.5. As discussed earlier, the pSOS pNA is still included, but not supported. In general, for future compatibility, Nexperia applications should use the wrappers for OS related tasks and not make direct OS calls.

## Pegasus Software Development Environment

The "out of the box" TM1300 specific template files are setup for use with the IREF and SDE 2.2. Modification for use with the NDK is straightforward, check the release notes for any other information.

Note that the DVE-2 can be used as well, but there is no Ethernet based version of tmman (the host to board driver) that makes the host/target communications automatic. However, as all source code the libraries and run time program are present, these can be customized to match your specific requirements.

## How does the NDK compare to the SDE?

For those of you that have used the SDE before, the NDK is roughly equivalent to the old SDE 2.2, but it adds the "SAS" (Stand Alone Systems) support. So, from the MDS point of view, the NDK adds SAS support for the DVE-2 in addition to all the software to support the TM1300 IREF board.

The NDK has a new directory structure for all the development files, and all new "build" files (makefiles and batch files). Also, it completely revises the documentation structure (it adds new documents, a new main menu, and embeds the old SDE docs, or at least most of them).

Basically, the NDK is a new environment that contains the old SDE 2.2 within it (in the TCS22DVP subdirectory).

The NDK still uses the TSSA (TriMedia Software Streaming Architecture) and the TSA (TriMedia Software Architecture), if you are familiar with those.

The NDK also merges some of the DVP (Digital Video Platform) stuff (utility programs, "standards" for makefiles and other build files, and even a "standard" way of naming directory trees) that various Philips groups built on top of the SDE when designing systems for Nexperia processor chips. Future versions of the NDK will add support for the new Nexperia chips that are coming out. The entire NDK currently supports only the PNX1300 based products (IREF and DVE-2, from the MDS point of view).

## Ordering information

The datasheets for the IREF, DVE-2, and JTAG board list the typical product combinations needed. Please contact your local distributor or the MDS sales department for ordering information for specific package components.

### NDK Philips NDK 2.2 with SP1

- compiler, linker, assembler, utilities, core libraries, examples
- documentation on CDROM

### NDK-U Philips SDE2.2 to NDK 2.2 with SP1

- original SDE 2.2 CDROM must be returned to MDS for exchange

TriMedia is a trademark of TriMedia Technologies Inc.

NEXPERIA and NXP1300 are trademarks of Philips Semiconductor, Inc.

DiskOnChip is a trademark of M-Systems Inc.

FUSION is a trademark of DSPOS, Inc.



Nexperia SW info rev 1d Sep 02 PRELIMINARY

17330 Brookhurst St., Suite 230, Fountain Valley, CA 92708  
Phone: 714-378-5805 / Fax: 714-378-5985  
email: [sales@mds.com](mailto:sales@mds.com) / web URL: <http://www.mds.com>