Overview of ORiNOCO Development Kits

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Introduction

This Application Note describes briefly the function of the Utility Development Kit (UDK); Access Point Development Kit (ADK); and Driver Development Kit (DDK).

The content of each development kit is presented in general terms, that is, without giving a shipping list.

Summary Of Development Kits

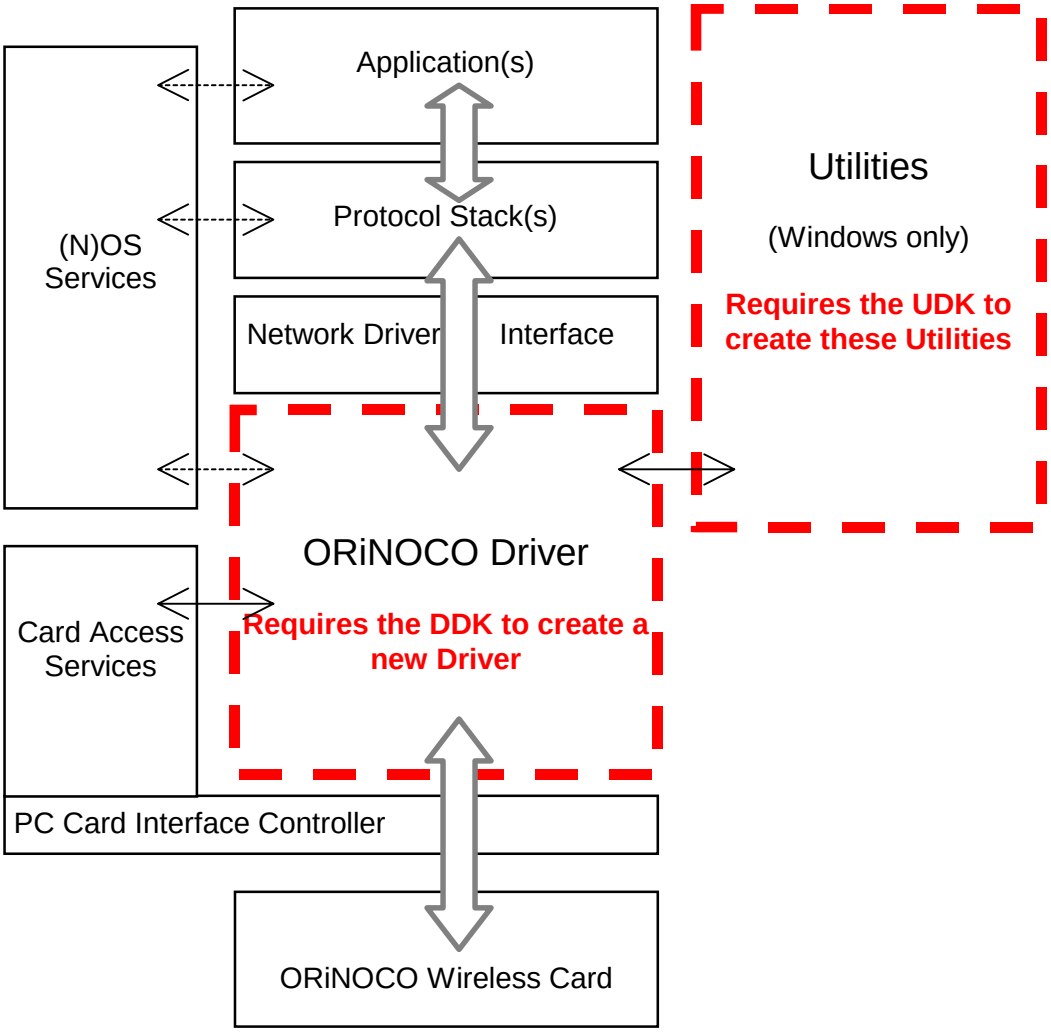
ORiNOCO products are supplemented with three development kits for use by OEM partners. These kits are made available as agreed with Agere and are subject to an NDA or SLA being in place (as indicated in the sections *Contractual* below).

The three kits are:

- Utility Development Kit (UDK);
- Access Point Development Kit (ADK);
- Driver Development Kit (DDK).

An additional kit, namely the sources for ORiNOCO drivers for Linux, is available on http://www.orinocowireless.com/ and is not discussed in this Application Note.

The diagram below shows where the UDK and DDK are applicable.



The ADK does not fit in the above figure: it applies to incorporating some or all of the Access Point functionality in OEM products.

Utility Development Kit

Context

The UDK is for use with the standard ORiNOCO drivers for the following operating systems:

- MS-Windows 95 and 98
- MS-Windows NT v4.00 and later
- MS-Windows 2000
- MS-Windows ME
- MS-Windows CE

Capabilities

With the UDK, OEM developers can develop ORiNOCO utilities and diagnostic tools which access the driver and the wireless card itself. Utilities such as the diagnostic and test functions of Client Manager can be created with the UDK.

<table>
<tr><td>Utility Specific Functions (USF)</td><td>Code created by OEM</td><td rowspan="2">OEM-written utility</td></tr>
<tr><td>Utility Interface Library (UIL)</td><td>UIL from UDK</td></tr>
<tr><td colspan="2">Standard Executable ORiNOCO Driver</td></tr>
<tr><td colspan="2">ORiNOCO Wireless Card</td></tr>
</table>

The kit includes examples which show how to use the UIL to retrieve the MAC address of a PC Card.

Deliverables

The UDK consists of:

- UIL library as C source
- various utility and configuration routines as C source and definition files
- *Interface Specification for Utility Interface Library (UIL)* in PDF
- the source code of sample utilities which show how to retrieve the MAC address of a PC Card using different driver types.

Contractual

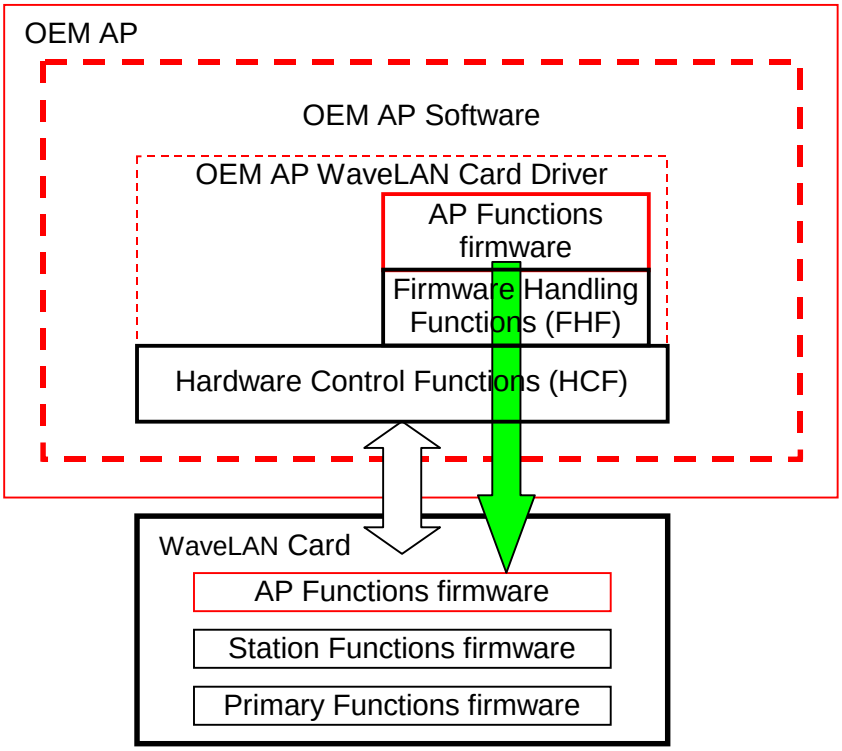
For the UDK to be made available, there must be an NDA in place between Agere and the OEM partner.

Access Point Development Kit

Context

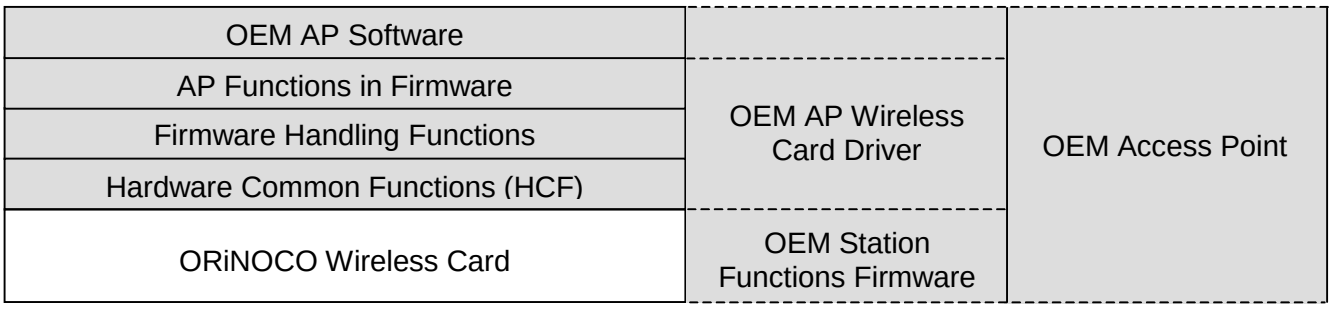
The ADK is applicable to OEM partners who wish to include some or all Access Point functionality in their own products. As program sources are delivered, and the OEM partner must develop the total product, there is little restriction to the context in which it can be applied.

The diagram below attempts to show the overall structure of an OEM's access point containing an ORiNOCO wireless card.



Capabilities

The ADK allows the OEM developer to integrate ORiNOCO access point functionality into OEM platforms.



The kit includes an example which shows how to initialize an ORiNOCO card for use in an Access Point.

Deliverables

- HCF library as C source.
- Firmware Handling Functions (FHF) as C source.
- Plugging Rules for FHF as C source.
- Access Point Firmware object code.

- *Software Interface Specification for Wireless Connection Interface for WaveLAN/IEEE* in PDF. (Description of HCF Library)
- *Design Note WMDN120: WMAC Controller Software Interface Registers* in PDF. (Firmware Interface Specification).
- *Design Note WMDN122: WMAC Controller Software Interface Commands* in PDF. (Firmware Interface Specification).
- *Design Note WMDN148: WMAC Controller Software Interface Frame Structure Formats* in PDF. (Firmware Interface Specification).
- *Design Note WMDN154: WMAC Controller Software Interface Record Structure Formats* in PDF. (Firmware Interface Specification).
- *Architecture Specification for WaveLAN-II AP MAC Functional Model* in PDF
- *Architecture Specification for WaveLAN-II STA MAC Functional Model* in PDF
- the assembler source code of a sample program showing AP initialization.
- snif.exe and accompanying documentation. This a DOS-based test routine with which you can capture all 802.11 data, management and control frames seen on the wireless interface.

Contractual

For the ADK to be made available, there must be an SLA in place between Agere and the OEM partner.

Driver Development Kit

Context

Agere has ORiNOCO drivers for the most popular platforms: the Driver Development Kit allows an OEM to create drivers for platforms for which there is currently no driver available.

A list of currently available ORiNOCO drivers is given in Appendix A.

Capabilities

With the DDK, OEM developers can create client drivers for platforms for which Agere does not provide drivers. If an OEM partner wishes to develop their own Control Panel Applet, or some similar configuration tool, then they will also have to develop their own driver, as the driver and applet are tightly coupled.

The DDK will also usually be required by OEMs who make use of the ADK.

Deliverables

- The HCF library is included as C source.
- *Software Interface Specification for Wireless Connection Interface for WaveLAN/IEEE* in PDF. (Description of HCF Library).
- *Design Note WMDN120: WMAC Controller Software Interface Registers* in PDF. (Firmware Interface Specification).
- *Design Note WMDN122: WMAC Controller Software Interface Commands* in PDF. (Firmware Interface Specification).
- *Design Note WMDN148: WMAC Controller Software Interface Frame Structure Formats* in PDF. (Firmware Interface Specification).
- *Design Note WMDN154: WMAC Controller Software Interface Record Structure Formats* in PDF. (Firmware Interface Specification).
- The source of the MS-DOS Packet Driver as an example.
- snif.exe and accompanying documentation. This a DOS-based test routine with which you can capture all 802.11 data, management and control frames seen on the wireless interface.

Contractual

For the DDK to be made available, there must be an SLA in place between Agere and the OEM partner.

Appendix A: ORiNOCO Drivers

The following ORiNOCO drivers are currently available:

- Windows95: NDIS 3 Miniport Driver
- Windows98, 98SE, Millennium Edition: NDIS 5 Miniport Driver and NDIS 5 USB Driver
- Windows 2000 (Service Pack 1): NDIS 5 Miniport Driver and NDIS 5 USB Driver
- Windows/NT versions v3.51 and v4 with Service Pack 4 or later - Service Pack 6 is recommended: NDIS 4 Miniport Driver
- Window CE: NDIS 4 Miniport Driver

OS version	Form Factor [1]	Processors Supported by ORiNOCO [2]
2.00	HPC	i486, R3000, R4000, SH3
2.10	HPC	i486, R3000, R4000, SH3
2.11	HPC Pro	ARM, R4100, SH3, SH4
2.12	Generic	ARM, i486, i586, R3000, R4100, SH3, SH4
3.00	HPC Pro	ARM, R4100, SH3, SH4
3.00	PPC	ARM, R4100, SH3
3.00	Generic	ARM, i486, i586, R3000, R4100, SH3, SH4

[1] HPC: Handheld PC
HPC: Handheld PC Pro
PPC: Palm/Pocket PC
Generic: independent of form factor

[2] ARM: Intel StrongARM SA11XX
i486/i586: Intel 486/586
R3000: MIPS R3000
R4100: MIPS R4100
SH3: Hitachi SH3
SH4: Hitachi SH4
VR4111: NEC VR4111

- Windows 3.x and MS-DOS: Packet Driver and DOS ODI Driver.
- Linux: driver sources and a compiled library are available, which are compatible with Linux kernel versions 2.0.x to 2.2.x for the Intel architecture.

  This includes the following Linux distributions, for example:

  - Red Hat versions 5.2, 6.0, 6.1, 6.2 and 7.0
  - Suse versions 6.1, 6.3 and 6.4
- MacOS: two ORiNOCO PC Card drivers available:

  The Classical Network Driver is applicable to Apple PowerBooks G3, 3400 Series,1400 Series, 5300 and 190 Series.

  The Open Transport Driver is applicable to Apple PowerBooks G3, 2400 Series, 3400 Series,1400 Series, 5300 and 190 Series.

  In both cases MacOS releases 7.5.2, 7.5.3, 7.5.5, 7.6, 7.6.1, 8.0, 8.1, 8.5, 8.5.1, and 8.6 are supported.

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