

# **Exhibit 23**

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# FACSIMILE TRANSMITTAL FORM

TO: Todd Titensor  
COMPANY: Novell/Wordperfect  
CC: \_\_\_\_\_  
PHONE: \_\_\_\_\_  
FAX: 801-228-6277

FROM: Brad Strauss  
BLDG/ROOM: \_\_\_\_\_  
PHONE: \_\_\_\_\_  
DATE & TIME: \_\_\_\_\_  
QTY OF PAGES: \_\_\_\_\_

☒ Urgent    ☐ For Review    ☐ Please Comment    ☐ Please Reply    ☒ Please Recycle

**Message...**

Here you Greg Jones wrong.  
We should be Scrap old set ref.  
of this please.

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☒ Urgent☐ For Review☐ Please Comment☐ Please Reply☒ Please Recycle**Message...**

Here you go. Dates are obviously wrong.  
We should have updated ones next week.  
Thanks,  
Brad

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**Price List****Software Validation Testing by VeriTest - Windows 95 Logo program**

Base Price per product*	\$600
Languages	\$200 additional for non-English language products [distinct from "Localized product" described below]
Retesting	\$200 for retesting after product fails to pass previous testing

\*The base price applies to the testing of an individual product. Some clarifications:

- I . **Suites**: Each product in a suite must be individually tested. If there are, e.g., 4 products in a suite, you will pay a fee for each of 4 products to be tested. Once all products have passed and been licensed, you can then use the Logo on any of the 4 products individually, or in any combination of the 4, including the complete suite.
- I I . **"Series"** of products based on the same code engine: Often products like multimedia titles have a series of products based on the same code engine, where all that varies is the content [e.g., text/graphics]. Once 1 product based on that code engine has passed testing, other products based on the same engine do not have to go through or pay for further testing.
- I I I . **Languages and Localized product**: There are 2 situations:
  - A . Non-English language product going through testing: VeriTest will handle testing of any product targeted at any language to which Windows 95 is localized. The price for testing on, e.g., the Spanish language edition of Windows is an additional \$200 over the base price [ = \$800], to cover costs associated with hiring translation services.
  - B . An already-tested product which gets localized to other languages: Once a product has passed testing, its localized versions do not have to also go through testing, as long as the source code basically stays the same and only strings get localized, or the various language versions have equivalent functionality in all areas related to Logo requirements. The software manufacturer will self-determine whether their products fit into this category. This is analagous to the example of a product "series" above; if all that changes is e.g., translation from French to German or Japanese, then that's a content change which does not have to be retested.

BAR132799



July 6, 1994

Dear Windows Developer:

Innovation and change are hallmarks of the computer industry. As exciting technologies take hold, we face the challenge of communicating to our customers how our products fit in with these technologies. You may be currently using the Microsoft Windows<sup>™</sup> Logo to signal to your customers that your product is based on today's prevailing Windows operating environment, version 3.1. As Windows evolves to its next generation, Windows<sup>™</sup> 95, which is due out in the first half of 1995, the Windows Logo program will also evolve.

Currently, the 50 million users of Windows can use the Logo to spot products that were designed to work with the Windows operating system. Similarly, after Windows 95 is released, users will be able to easily identify products that have been developed specifically to take advantage of the power and ease of use built into both Windows 95 and Windows NT, by looking for the familiar Windows flag. *This means that the Windows Logo will evolve to designate products that were designed specifically to take advantage of the Windows 95 operating system.* And so, only if you develop Windows 95-based or Windows NT-based products will you be able to use the Windows flag to signal to your customers that your product is based on and designed especially for Microsoft's new generation of operating systems.

To facilitate your planning, we'd like to give you as much information as we have available, as early as possible, about the changes to the Windows Logo Program. Please review the contents of this packet with the appropriate technical and marketing people in your company when deciding how to proceed, before contacting Microsoft. The information in this packet is divided into the following categories.

- Why is the Windows Logo Program changing?
- What are the criteria for licensing the Windows 95 Logo?
- How do I get information on licensing the Windows 95 Logo?
- What will the new Logo look like?
- What does this mean for me if I currently use the Windows Logo?
- What alternatives do I have if my product uses the Logo now, but doesn't qualify for the new Logo?
- Where can I provide feedback to Microsoft, get answers to questions about changes in the Windows Logo program, and get general information on Windows 95?

If you are currently a participant in the Windows Logo Program, we would like to thank you for your use of the Logo. We feel strongly that the Windows Logo is a valuable marketing tool for companies that develop Windows-based products, and for Microsoft. As our product lines evolve to meet the ever-changing needs of computer users, we hope that the Windows Logo continues to be a solid marketing tool, and a succinct communicator to customers that they can expect a positive experience from products carrying the Logo. If you plan to join the Windows Logo Program in the near future, we look forward to having your company join us. To all, we appreciate your commitment to developing great products for the Windows environment.

Best regards,

The Windows Logo Team  
Microsoft Systems Division

*Microsoft and the Windows Logo are registered trademarks, and Windows is a trademark of Microsoft Corporation.*

Rev. 12/20/94

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## TABLE OF CONTENTS

<i>Executive summary .....</i>	<i>2</i>
<i>Why the Windows Logo program is changing .....</i>	<i>3</i>
<i>Criteria for licensing the Windows 95 Logo .....</i>	<i>4</i>
<i>Software products .....</i>	<i>4</i>
<i>Hardware products .....</i>	<i>4</i>
<i>Book publishers .....</i>	<i>4</i>
<i>Retailers .....</i>	<i>4</i>
<i>How to get information on licensing the Windows 95 Logo .....</i>	<i>4</i>
<i>What the Windows 95 Logo looks like .....</i>	<i>5</i>
<i>What about the Windows NT Logo? .....</i>	<i>5</i>
<i>What this change means for you if you currently use the Windows Logo .....</i>	<i>5</i>
<i>Alternatives if your product uses the Windows Logo now but doesn't qualify for the new Logo .....</i>	<i>6</i>
<i>How to provide feedback to Microsoft, and ask questions on changes in the Windows Logo program .....</i>	<i>7</i>
<i>Appendix A: A detailed discussion of Logo requirements for software products .....</i>	<i>9</i>
<i>Appendix B: A detailed discussion of Logo requirements for hardware products .....</i>	<i>11</i>
<i>Appendix C: Logo retirement schedule for international shipments of Windows 95 .....</i>	<i>14</i>

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## Executive Summary

For the last 2 years, the Windows Logo has been a strong marketing tool for makers of products based on the Windows operating environment. Going forward, the Windows Logo program will evolve to help vendors signal that their products are designed to take advantage of the technology built into the next generation of Windows, named "Windows 95".

The criteria for licensing the Windows 95 Logo will increase substantially over today's requirements. For hardware products, including PC Systems and Subsystems, the baseline criteria include supporting Plug and Play in Windows 95. For software products, the baseline criteria include being a 32-bit Windows-based application, with the Windows 95 user-interface and shell support. Full details are outlined in Appendices A and B.

Some important details:

- We will begin licensing the new Logo approximately in early 1995. Logistical information on joining the new program will be made available 2-3 months prior to the start of licensing.
- To facilitate the communication of a clear message behind Windows 95 Logo, the current Logo will be phased out of the marketplace. As of September 30, 1994, we are no longer licensing the current Logo. Current licensees will continue to have permission to use the Logo through April 30, 1995. Every effort is being made to provide as much advance information as possible. Note that these dates do not reflect international-language shipments. International cutoff dates are detailed in Appendix C.

We are very excited about this new Logo, and hope that you will be able to take part in our new program. In the event that your product does not meet the new criteria, and hence will not be able to carry the new Windows Logo, you are certainly still able to use the term "*for Windows™*" to communicate your product's target platform.

We are very interested in ensuring that you have all the information you need to proactively plan for these changes in your product cycle. Sources for further information, as well as where to direct feedback, are provided on page 7.

We appreciate your interest in the Windows Logo, and your commitment to the Windows family of operating systems. We hope you find the news provided here to be helpful and informative.

## Why The Windows Logo Program Is Changing

We learned two important lessons in the last few years about how Logos can help communicate a message or hinder the communication process if used incorrectly:

1. Having multiple versions of the Microsoft® Windows™ Logo, leads to customer confusion
2. All users of the Windows Logo benefit from a clear, focused message to the customer

Here's an illustration of the problem: We currently have a Windows-Compatible Logo for software and for hardware peripherals, while we have Windows Ready-to-Run for PC systems. Further, there is a Windows- Compatible 32-Bit Application Logo, a Windows NT™-Compatible Logo, and a Windows NT Ready-to- Run Logo. From our market research on the Logo, we know that customers do not readily distinguish between the different versions. On the contrary, we've learned that customers are confused by these variations, as any of you who have tried to sort out which Logo to use on your product(s) can probably empathize.

Therefore, we are making every effort to minimize variations on our Windows Logo. A simple Logo, consistently used, will make the Logo a strong marketing tool for both Microsoft and you, and will be most successful in communicating the positive messages users associate with the Windows Logo.

To this end, with the roll-out of Windows 95:

- We will not differentiate between Windows-Compatible and Windows Ready-to-Run
- We will not have separate versions for the newer 32-bit, OLE-compliant applications and today's 16-bit applications
- There will not be separate Logos for Plug and Play, Windows 95-based hardware, and today's legacy hardware
- The Windows 95 Logo, since it will signify 32-bit applications, will be the only Logo available for software. Since hardware differences continue to be significant between Windows 95 and Windows NT, there will continue to be a "Windows NT Compatible" Logo available for hardware.

It is critical for all Logo customers to understand the implications of this:

- Today's Logos which are focused on Windows 3.1, will be phased out
- The new Windows 95 Logo will only apply to products that have been designed to take advantage of some of the advanced features in the Windows 95.

While reducing Windows Logo confusion is an important goal, there is an even greater goal we are trying to achieve. *Much of the industry is working very hard and very creatively to develop hardware and software products that will exploit new technologies integrated into Windows 95. Our mission is to help users identify these great new products, and to help them understand that these products will be a step beyond what they are used to today.*

In summary, there are two major goals we are trying to accomplish in phasing out the current Windows-Compatible Logo and introducing a streamlined "new" Windows Logo.

1. Reduce confusion among both hardware and software vendors and end users. Multiple Logos lead to questions like: "Which Logo do I put on my box?" and "What's the difference between these different Logos?"
2. Allow us all to communicate to our customers the single, focused message that Windows 95 enables useful and exciting new technologies, and one need only look for products that carry the new Windows Logo to find products that bring these technologies to life.



## Criteria For Licensing The Windows 95 Logo

Your criteria for being eligible to license the Windows 95 Logo will depend on what type of product you create and/or sell. Criteria for software products, hardware products, books and retailers are addressed in summary form here. Full details for software and hardware products are in Appendices A and B.

### Software products

To qualify for the new Windows 95 Logo when, an application must meet the requirements discussed in detail in Appendix A. The baseline requirements to be eligible for the Logo are: applications must be 32-bit Windows-based applications, properly support the Windows 95 Shell and some elements of the User Interface, use long filenames, and support OLE where appropriate [as defined in Appendix A]. Our goal is to award the Logo to applications that provide added value to users of Windows 95.

### Hardware products.

To license the Windows 95 Logo, all hardware products must meet or exceed Microsoft's Plug and Play specification as described in the *Hardware Design Guide for Windows 95*<sup>1</sup>, published by Microsoft. Plug and Play is an architecture jointly developed by hundreds of companies throughout the industry that improves the integration of PC hardware and software, and is designed to make installation and configuration of new devices easy. On a basic level, Plug and Play devices must be able to identify themselves to the system and declare their services and resource requirements. This enables Windows 95 to determine and establish a working configuration for all devices on the PC system and automatically load the appropriate drivers. Hardware requirements are discussed in depth in Appendix B.

### Book publishers.

When a product is the subject of a book that is licensed to carry the Windows 95 Logo, the publisher of that book is eligible to use the same Logo to promote the book. For example, if product "XYZ" for Windows is licensed to carry the Windows 95 Logo, then publishers of books on "XYZ" may apply to Microsoft to license the Logo. The objective in this case is to communicate to the user/reader that the book is about a product that was designed specifically to take advantage of Windows 95. You will be able to obtain a list of licensed products by faxing the Windows Logo Department. If the product manufacturer is not licensed to carry the Windows Logo, you should notify them of your interest in using the Logo on your book jacket and promotional materials, and encourage them to complete the licensing process with Microsoft.

### Retailers.

Retailers may use the Windows 95 Logo to promote products that are licensed to carry the Logo. In addition, retailers may use the Windows Logo and the Windows NT Logo to promote these operating systems, themselves. You will be able to obtain a list of licensed products by faxing to the Windows Logo Department.

## How To Get Information On Licensing The Windows 95 Logo

We will begin licensing the new Logo approximately in early 1995. If you received this mailing directly, you can expect to receive a follow-up mailing, which will provide logistical details on how to initiate the licensing process, 2-3 months before the start of the new licensing program. If you received this packet through Microsoft Developer Solutions Phone-Fax Service, you can expect that informational updates will

<sup>1</sup> The *Hardware Design Guide for Windows 95* will be available for purchase after November 1, 1994. Beta versions may be requested by sending email to [thv@microsoft.com](mailto:thv@microsoft.com), with your Name, address, fax #, Windows 95 Beta ID number. Let them know you are interested in receiving a copy of the Hardware Design Guide.

continue to be posted there. You can simply request a document index to see which documents are available regarding the Windows Logo Program.

*NOTE: You can reach the Phone-Fax Service directly at (206) 635-2222. The document you are reading is #130. Request an index of available documents to view a list of other information that is available on the Windows Logo and other topics.*

## What The Windows 95 Logo Looks Like

A sample of the Windows 95 Logo is available through the Microsoft Developer Solutions Phone-Fax service. Call (206) 635-2222, and request Document #134.

## What about the Windows NT Logo?

There will continue to exist one Logo for products based on Windows NT, specifically the "Windows NT Compatible" Logo, which will be available for hardware products only. Windows NT Ready to Run will phase out, and all licenses of Windows NT Ready to Run will be sent artwork for Windows NT Compatible. This is consistent with our efforts to minimize the number of variations on the Windows Logo. The hardware requirements for the Windows NT Compatible Logo remain unchanged.

## What This Change Means For You If You Currently Use The Windows Logo

The change in the Windows Logo Program coincides with, and helps to communicate, a major upgrade of the Windows operating system and the technologies enabled within it.

The current Windows-Compatible Logo is only available for use on products that are *Windows-based*, that is, software products and device drivers must be written to the Windows API and include certain features. Similarly, the new Windows 95 Logo will only be available for products that are *based* on Windows 95. (Which means that these products, with the exception of device drivers, also run natively on Windows NT). Simple compatibility is not sufficient. As described in the Criteria section, software products and device drivers must be coded to the Win32 API, and hardware products must support a major technology in Windows 95: Plug and Play.

A critical question to many of you, particularly if you will continue to sell the 16-bit version of your product(s), after the current Windows Logo is phased out, is:

*How will the retiring of the current Windows Logo be accomplished,  
and how should I plan for it?*

We have discontinued licensing of the current Logo as of October 1, 1994<sup>2</sup>. Licenses will continue to be accepted until September 30, 1994, but the licenses will reflect a very narrow term. If your product is already licensed, or becomes licensed by September 30, you may continue to use the current Windows Logo on existing inventory to promote your licensed products, up until April 30, 1995. All existing Windows Logo licenses are closed as of October 1, 1994, with the provision that existing inventory may continue to be used up until April 30, 1995.

You should plan to not include the Logo on packaging, collateral, advertising, or any material(s) that will be in use beyond April 30, 1995. Remember, for your flexibility, you have the option to put the Windows

<sup>2</sup> The dates contained in the body of the text refer to the English-language shipment of Windows 95. For a schedule of Logo discontinuation dates relative to international-language shipments of Windows 95, see Appendix C.

Logo on your materials in sticker form in the interim, to achieve the appropriate timing effect. *The key is that the current Logo should no longer appear in the marketplace after the cutoff date, April 30, 1995.* Be sure to plan for the amount of time that it takes for your product to make it through the channel. That is, you should not be sending product(s) carrying the Logo through the channel after March, or perhaps earlier. Please note that this cutoff date for Logo usage is approximately the time we expect the Windows 95 Logo to be appearing on products.

We are very excited about the new Windows 95 Logo. We are letting you know about changes to the program now, in order to give you as much advance notice as possible so that you can integrate this information proactively into your product cycle and begin to plan for the next version of the Windows Logo. We are also committed to giving you as much information as possible on these Logo changes to facilitate your decision-making process.

For those of you that hold an active trademark license to use the Windows Logo, you may be interested in reviewing paragraphs 7a and b of the Windows Logo License Agreement, which discuss the terms of the agreement. This paragraph provides for 30 days written notice for closing the license agreement, and 90 days thereafter to distribute then-existing units of Product containing the Logo. By explaining all these issues to you as early as possible, we have aimed to provide 90 days written notice for closing the license agreement, and 210 days thereafter to distribute existing Product and marketing materials containing the Logo.

For those of you that have been active users of the current Windows Logo, we sincerely hope that you will join up with us again, and license and actively use the Windows 95 Logo on your Windows 95-based products.

## **Alternatives If Your Product Uses The Windows Logo Now But Doesn't Qualify For The New Logo**

The Logo requirements are taking a considerable step up with the release of Windows 95. It is a reality that many products that use the Windows Logo today will not be eligible to license the new Windows Logo. In case your product does not meet the new criteria, here are some alternative ways to communicate your message.

Perhaps you use the Logo primarily as a platform-indicator, maybe to distinguish your Windows-based products from character-mode products. If this is the case, then replacing the Windows Logo on your box is simple. If you already refer to your product as "XYZ" for Windows, then your work is in effect, done. You could augment this with a snipe on your box to communicate "for Windows<sup>™</sup>" or "Windows<sup>™</sup>-Compatible" (in text), so that your customer understands that it is your Windows-based offering. You do not need a trademark license or any special permission from Microsoft to use the product name itself, "Windows<sup>™</sup>", when referring to Microsoft's product. Your only obligation is to include the TM symbol at the end of the name, and attribute the trademark with the phrase "Windows is a trademark of Microsoft Corporation" somewhere on the piece.

Perhaps you use the Logo to communicate concepts or evoke attitudes that are often associated with the Windows Logo. If you are trying to communicate "this product is easy to use" or "this product is a safe buy" or "well-integrated with the Windows environment", then you are probably using the Logo in support of your primary messaging. Undoubtedly you have been employing creative marketing tactics and messaging to elicit the right association with your product. Continuing to do so will be your best strategy during this transition of the Windows Logo Program. Of course, in the not too distant future we hope to be sending you the Windows 95 Logo for use on your 32-bit Windows 95-based product(s), to be used also as a strong supporting message in your overall marketing plan.

## How To Provide Feedback to Microsoft, Ask Questions On Changes In The Windows Logo Program, and Where to Get More Information on Windows 95

You can ask questions, provide feedback, and get informational updates in 4 ways. Before submitting questions, however, please understand that we cannot guarantee an immediate or even a direct response, as we anticipate considerable feedback. We will make every effort to get you the information you need. The method of response will be determined based on the number and types of questions. For frequently-asked questions of general interest, we will post a Windows Logo Questions and Answers document on the Microsoft Developer Solutions Phone-Fax Service. The first posting will be in early August. If questions continue to come in, the Q&A document will be updated periodically. If your question is extremely specific, and not likely to be of general interest, then we will make every attempt to answer your question(s) privately within 4-8 weeks.

You can direct your comments and questions to:

1. by email: [Logo@microsoft.com](mailto:Logo@microsoft.com)
2. by fax: (206) 936-7329, Attn: Windows Logo Transition Feedback, Bldg. 6
3. by post: Microsoft Corporation  
Attn: Windows Logo Transition Feedback, Bldg. 6  
One Microsoft Way  
Redmond, WA 98052-6399

To obtain the Windows Logo Questions and Answers document:

4. Developer Solutions Phone-Fax Service:  
(206) 635-2222. This document is #130. Request an index of available documents to view a list of information that is available on the Windows Logo and other topics.

For general information available on Windows 95, Microsoft has established several electronic distribution points:

- The Microsoft FTP server contains all of these files. Customers can connect to [ftp.microsoft.com](ftp://ftp.microsoft.com) to retrieve them from the `\peropsys\win_news` directory.
- The Microsoft WWW server contains many, but not all, of these files in hypertext form accessible to Mosaic users and other users of the internet WWW server. Connect to <http://www.microsoft.com>
- The Microsoft Download Service also contains a complete listing of these files.
- CompuServe GO WINNEWS.
- Bulletin Board Networks -- FIDO\*Net, Canada Remote Systems, and Windows Online may also contain complete sets of these files.

**The Microsoft Systems Division thanks you for your continued interest in the Windows Logo Program and your overall commitment to creating great products for the Windows family of operating systems. For those of you that are currently licensed, we look forward to continuing the relationship with you for many years to come. For those of you who will be new to the Windows Logo Program, we look forward to having you join us!**

© 1994 Microsoft Corporation. All rights reserved. Microsoft, Win32, and the Windows Logo are registered trademarks and Encarta, Windows, and Windows NT are trademarks of Microsoft Corporation.  
"XYZ" for Windows is a fictitious product name.

## Appendix A: A Detailed Discussion of Logo Requirements for Software Products

*This discussion is divided into 4 categories:*

- a) Non file-based applications and applications that run exclusively in full-screen mode\*
  - b) File-based applications\*\*
  - c) Development tools (e.g., compilers, linkers)
  - d) Utilities (e.g., virus scanners, disk management)
- \*\*A file-based application is defined as one that provides Open, Save, and Close File menu options
  - \*An application that runs exclusively in full-screen mode is one that cannot e.g., be windowed or minimized. Generally, this refers to applications without min/max buttons or those that use the full-screen APIs.
  - Further definition of the requirements below may be obtained by reviewing the article, Diving into the Requirements for the Windows 95 Logo<sup>3</sup>.

### *A. General requirements, including non file-based applications and applications that run exclusively in full-screen mode.*

To qualify for the Windows 95 Logo, an application must meet the appropriate requirements listed below. The first five requirements apply to all applications.

1. An application must be a Win32<sub>+</sub> application programming interface executable, compiled with a 32-bit compiler that generates an executable of the PE (Portable Executable) format. OR the application must have been created by an application or tool that satisfies the Windows 95 Logo requirements and creates 32-bit Windows-based applications. [For example, an application written in the forthcoming 32-bit version of Visual Basic would fall into the latter category, i.e., the resulting applications are not necessarily executables.]
2. An application needs UI/Shell support. Following the *Microsoft Windows User Interface Design Guide*, version 4.0<sup>4</sup>, this means:
  - It must register 16x16 and 32x32 pixel icons for each file type and the application.
  - Using the Windows 95 look, as described in the UI Design Guide, version 4.0 is recommended. [The intent is not for all applications to look the same, but that applications with the Windows 3.1 "look" be updated]. Using system-supplied dialogs and controls is also recommended, but not required.
  - It must use the system metrics for sizing.
  - It is recommended that your application use the system colors.
  - Using the right mouse button for context menus (and not using the right mouse button for anything else) is recommended.
  - Follow Windows 95 application setup guidelines to make the application properly visible in the shell. At a minimum, this means that you use the registry, not add information to win.ini or system.ini, and provide complete uninstall capability with your application. In addition, the installation process must be automated for the end-customer.
3. It must run successfully on Windows NT 3.5 [or the latest version of Windows NT], and, if it uses Windows 95-specific application programming interfaces (APIs), then the Windows 95-only

<sup>3</sup> This article may be obtained through Microsoft's Developer Solutions Phone-Fax Service. You can reach the Phone-Fax Service directly at (206) 635-2222. The document you are reading is document is #130. The article referenced is #131. Request an index of available documents to view a list of other information that is available on the Windows Logo and other topics.

<sup>4</sup> The UI Design Guide is available through subscription to MSDN [Microsoft Developer Network]. To join the Microsoft Developer Network in the U.S. and Canada, call (800) 759-5474. In Europe, call +31 10 258 88 64. Everywhere else, call (402) 691-0173 for local contact information.

- functionality must degrade gracefully on Windows NT 3.5. Conversely, if it uses Windows NT-specific APIs, then the Windows NT-only functionality must degrade gracefully on Windows 95.
4. It must use long filenames; i.e., your application must 1) support long filenames; 2) use long filenames for displaying all document and data filenames in the shell, in title bars, in dialogs and controls, and with icons; and 3) hide the .XXX extension names in the application, itself.
  5. Plug and Play event-awareness is recommended, but not required. Some examples of this are being aware of slow links, and reacting to system messages about the insertion or removal of new devices.

**B. For file-based applications...**

The next three requirements apply to those applications that deal with files (those that provide Open, Save, and Close File menu options). Typical game software, which often run exclusively in full-screen mode would *would not need to follow* these three requirements

6. It must support Universal Naming Conventions (UNC) pathnames.
7. It must have OLE 2.0 Container and/or Object support and OLE 2.0 drag-and-drop support. It is also recommended (but not required) that it have OLE 2.0 compound file support with (document summary information included) and OLE 2.0 Automation support.
8. It needs to support simple-mail-enabling using Common Messaging Call (CMC) API or MAPI; i.e., it must include a Send or Send Mail command in the File menu.

**C. Modified requirements for utilities such as disk optimizers and anti-virus software.**

9. Same as #1, above, with the exception of components that must use Exclusive Volume Locking API, soft interrupts, or components that must talk directly to 16-bit drivers. UI and other components of these applications must be 32-bit and use the Windows 95 thunking mechanism to access these 16-bit components.
10. Same as #2, above.
11. Same as #3, above, with the exception of products such as disk utilities that implement platform-specific functionality that does not make sense on Windows NT 3.5.
12. Same as #4-#8, above.

**D. Modified requirements for compilers and other development tools.**

13. In addition to the requirements listed below, if Windows is one of the compiler or development tool's target platforms, then it must be capable of producing applications that can meet all of the Windows 95 Logo requirements.
14. Same as #1.
15. Same as #2, above, with the exception that on registering icons for each file type and the application, common source file extensions like .c, .cpp, .h, and .hpp are excluded from the requirement.
16. Same as #3, above.
17. Same as #4, above, except you do not need to hide source file extensions.
18. Same as #5, above.
19. Same as #6, above.
20. It must support OLE in the following ways:
  - OLE drag-and-drop support is required within the tool [i.e., you must be able to drag/drop e.g. controls within the tool, but you do not need to be able to drag/drop an external object like a spreadsheet into the tool].
  - OLE Automation support (recommended but not required).
  - It must provide an easy point-and-shoot way (commonly known as wizards or experts) of creating applications with OLE Container and/or Object support, or provide this functionality by default.
21. Same as #8, above.

## Appendix B: A Detailed Discussion of Logo Requirements for Hardware Products

*This discussion is divided into the following categories:*

- a) PC systems
- b) PC Subsystems
  - i. Display Adapters
  - ii. Audio Adapters
  - iii. Storage Devices
  - iv. Parallel Port Devices [Printers]
  - v. External Communications Devices
  - vi. Modems
  - vii. Network Adapters

### PC Systems

For a PC to qualify for the Windows 95 Logo, it must meet a minimum set of requirements as outlined below, and pass the System Compatibility Test (SCT) for Windows 95. The design requirements are detailed in the Hardware Design Guide for Windows 95<sup>5</sup>. The SCT tests are included in the Windows 95 DDK, along with instructions for OEM participation. System testing is OEM-administered, and results are sent to MCL [Microsoft Compatibility Labs]. Requirements include:

1. An 80386 architecture (or compatible) CPU [80486-33 or better is highly recommended]
2. 4MB RAM [8 MB recommended]
3. Plug and Play BIOS version 1.0a or later which reads back all resources [BIOS which soft-sets all resources is recommended]
4. Molded-in or permanently printed icon labels on the computer case for built-in ports - if the same icons appear on the cable connectors, matching of icons will be easier
5. Option ROMs on expansion cards must use the Plug and Play header format documented in the Plug and Play BIOS specification
6. System display adapter must use a packed-pixel frame buffer with at least VGA 640x480x8bpp, color for desktops and 64 gray scale for mobiles [VGA 1024x768x8bpp is recommended for desktops, and 64 color for mobiles]
7. 3.5-inch, 1.44-MB internal floppy disk drive in desktops [recommended for mobiles]
8. At least one parallel port that supports IEEE-P1284-I mode protocols for compatibility mode and nibble mode - the system must be capable of receiving the parallel device's identifier in nibble mode [ECP P1284-I recommended]
9. One integrated or separate serial port, with 1-16550A required for mobiles [1-16550A recommended for desktops; also additional PS/2 style port and pen devices with barrel button recommended; and serial infrared devices meeting IrDA spec are recommended]
10. APM 1.1 is required for mobile systems [recommended for desktops]
11. If the system ships with expansion cards, it is recommended that the cards meet the Logo specifications defined in this document, and use 32-bit Windows 95-based device drivers.

<sup>5</sup> Working copies of the Hardware Design Guide for Windows 95 are available under Non-Disclosure with Microsoft, by sending email to [ihv@microsoft.com](mailto:ihv@microsoft.com), with your Name, address, fax #, Windows 95 Beta ID number. Let them know you are interested in receiving a copy of the Hardware Design Guide. This source is valid only until November 1, 1994, after which time the Design Guide will be final, and available for purchase. Until November 1, 1994, The Hardware Design Guide for Windows 95 is not a final document, and requirements contained therein may undergo slight modifications prior to finalization.

\* The Plug and Play Specification for Windows 95 is available on CompuServe in the PlugPlay forum.

## PC Subsystems

In order for a device to qualify for the Windows 95 Logo, it must meet the requirements described in the Hardware Design Guide for Windows 95, also detailed here, and pass the compatibility tests conducted by Microsoft Compatibility Labs (MCL). Wherever the Hardware Design Guide is inconsistent with what is documented here, this document prevails. Pre-qualifying test tools and MCL device/driver submission details will be included in the 2nd Windows 95 beta DDK release<sup>6</sup>. Detailed Windows 95-based device driver design information can be found in the current DDK. Detailed hardware design information can be found in the Hardware Design Guide for Windows 95. In general, requirements include:

### *Plug and Play Device Drivers*

In order to carry the Windows 95 Logo, device drivers are required to support Plug and Play in Windows 95 as follows:

1. Retrieves configuration information from Configuration Manager
2. Is dynamically loadable
3. Is dynamically reconfigurable
4. Reacts to system messages about the insertion or removal of new devices

An ideal Windows 95-based Plug and Play driver has the following capabilities:

1. Requires minimal user interaction to select the proper driver
2. May need to understand state information; that is, the settings for the device may need to change based on which user is logged in, whether the machine is docked or undocked (in the case of a docking station architecture) or both.

### *i. Display Adapters*

1. Support the VGA graphics standard
2. Support at least a 640x480x8bpp display driver - desktops must have capability of displaying at least 256 colors; mobiles must support the 8bpp driver and map colors into at least a 64 gray scale display so that changes to higher-resolution external monitors can be made without restarting Windows 95.
3. Use a packed-pixel frame buffer with at least 8 bits per pixel (bpp)
4. The VGA BIOS, if it exists separately, must have its base address fixed at C000h [an alternate address is recommended]
5. The standard VGA page frame and I/O address resources can be static (i.e., not relocatable)
6. All non-VGA standard display resources (also known as "extended" resources, such as register sets and so on) must provide at least one alternate configuration in case of conflict during IPL boot - the VGA BIOS must know how to use alternate configuration register addresses.
7. Capable of being disabled if a conflicting VGA expansion card is added to the system
8. Support the VESA ergonomic timings
9. On ISA Plug and Play display adapter expansion cards used as a system boot device, the display adapter circuitry should come up active when power is turned on or the system is reset

### *ii. Audio Adapters*

1. Capability to produce 22 kHz, 8-bit, monaural, output-only sound as minimum performance
2. Support of either SoundBlaster or Microsoft Windows Sound System compatibility to use built-in drivers for Windows 95
3. Use of a 1/8" mini-phone jack wired for stereo as the output connector
4. Mapping of the base I/O address to configurations compatible with either SoundBlaster or the Microsoft Sound System

<sup>6</sup> The easiest way to get the latest documents and information on Windows 95 is through subscription to MSDN [Microsoft Developer Network]. Call 800-759-5474 to join. To join the Microsoft Developer Network in the U.S. and Canada, call (800) 759-5474. In Europe, call +31 10 258 88 64. Everywhere else, call (402) 691-0173 for local contact information.



5. Support of at least all IRQ signals used either by SoundBlaster or the Microsoft Windows Sound System
6. Selection of at least three available DMA channels, either 8-bit or 16-bit channels, if DMA is supported
7. Capability of being disabled in case of resource conflicts with other devices

### **iii. Storage Devices**

#### **iii.a. Floppy Disk Controllers**

1. Use of at least three static I/O addresses: 3F2h, 3F4h, and 3F5h
2. Support of IRQ6
3. Support of at least DMA 2, if DMA is used - in addition, the controller should be capable of selecting at least two other available DMA channels, either 8-bit or 16-bit
4. Capability of being independently disabled

#### **iii.b. IDE/ATA Adapters**

1. Use of the first device attached to the adapter as the boot device
2. Use of the standard I/O addresses 1F0h through 1F7h and 3F6h
3. Support at least IRQ14
4. Capability to be disabled if an ATA (IDE) expansion card is added to the system - in addition, if a single adapter card contains a floppy disk drive controller, the adapter must be capable of independently disabling the floppy drive controller if a conflict occurs

#### **iii.c. IDE/ATA Peripherals**

1. Support the ATA Packet Interface protocol for CD-ROMs defined in SFF-8020, version 1.2.
2. Are compliant with requirements specified in the ATA - 2 specification.
3. Set the Signature after an ATA Read or ATA Identify Command is received.
4. Implement the SEEK command and set the DSC bit when the ATAPI seek is complete, but do not change the drive select bit.
5. Return CANNOT READ MEDIUM - INCOMPATIBLE FORMAT additional sense code qualifier when a READ is received on an audio track.
6. Support CD-DA.
7. Support the READ\_CD command sector types mode 2 form 1, mode 2 form 2, mode 1 form 1, and mode 1 form 2.
8. Support the Test\_Unit\_Ready command.

#### **iii.d. SCSI Host Adapters**

1. Meeting the standards described in the current version of the Plug and Play SCSI Specification\*
2. Support of the SCSI Configured Auto-Magically (SCAM) Level 1 protocol for automatic SCSI identifier assignment
3. External SCSI peripheral subsystems must use the 50-pin, high-density shielded device connector defined in the SCSI-2 Standard
4. Selection of at least three available DMA channels, either 8-bit or 16-bit, if DMA is supported
5. Capability of being disabled in the event of resource conflicts with other devices
6. Support automatic switchable termination for PnP operation of internal, external or mixed SCSI configurations.

#### **iii.e. SCSI Devices**

1. Meeting the standards described in the current version of the Plug and Play SCSI Specification\*

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\* The Plug and Play Specification for Windows 95 is available on CompuServe in the PlugPlay forum.

2. Support of the SCSI Configured Auto-Magically (SCAM) Level 1 protocol for automatic SCSI identifier assignment
3. External SCSI peripheral subsystems must use the 50-pin, high-density shielded device connector defined in the SCSI-2 Standard
4. Use of the drivers and receivers that meet the specifications defined in the single-ended alternative of the SPI
5. Cables must conform to the cable requirements defined in clause 6 of the SPI specification
6. External SCSI peripherals must contain two connectors for the SCSI cable: a SCSI in connector and a SCSI out connector - the last peripheral in the chain uses a terminator on the SCSI out connector
7. Attachment of a permanent terminator to the end of the cable, for internal SCSI peripherals
8. Internal SCSI peripherals must not terminate the SCSI bus
9. Terminations must conform to the terminator requirements in the SPI specification over the TERMPWR voltage range of 4.0 to 5.25 VDC
10. Terminators must be powered from the TERMPWR line on the SCSI bus
11. Provision of overcurrent protection for the TERMPWR line or lines
12. Only terminators can draw power from TERMPWR
13. Implementation of the SCSI Bus Parity signal defined in the SCSI-2 Specifications.

#### *iv. Parallel Port Devices [Printers]*

1. Meeting the standards described in the current version of the Plug and Play Parallel Port Device Specification\*
2. Compliant with IEEE P1284-I
3. Support of the Compatibility and Nibble mode protocols to read the device ID from the peripheral

#### *v. External Communications Devices*

1. Ability to identify themselves using the identification method described in the Plug and Play External COM Device Specification\*

#### *vi. Modems*

1. Support at least 9600 bps V.32 with V42/V42bis protocol for data modems
2. Support the TIA-602 (Hayes-compatible) AT command set, with extensions for flow control, V.42/V.42bis
3. Support fax capabilities of at least 9600 bps V.29 with class 1 (TIA-578A)
4. Support Plug and Play device identification, using the appropriate Plug and Play specification (e.g. ISA bus, COM port, PCMCIA slot, LPT port).
5. 16550A compatible UART interface

#### *vii. Network Adapters*

1. Support of the NDIS 3.1 network device driver, which supports dynamically starting and stopping the network card
2. Provide a means of automatically enabling the adapter as a boot device or enabling the adapter as a non-bootable device, if the network adapter is designed with RIPL capability
3. No hooking of INT 18 and INT 19 on ISA bus systems - this is a requirement for an ISA Plug and Play card
4. Support of at least seven IRQ signals and enable/disable
5. Selection of at least three available DMA channels, either 8-bit or 16-bit, if DMA is supported
6. Capability of being disabled in case of resource conflicts with other devices

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\* The Plug and Play Specification for Windows 95 is available on CompuServe in the PlugPlay forum

## Appendix C: Logo Retirement Schedule for International Shipments of Windows 95

The dates discussed in the section entitled "What This Change Means For You If You Currently Use The Windows Logo" apply to the English-language shipment of Windows 95. Since many localized versions of Windows 95 will ship after the English-language shipment, the cutoff dates are adjusted accordingly, as noted here. The cutoff dates apply to your *target* platform. That is, if you have products that are targeted to run on English-language Windows, then you should follow the cutoff dates that apply to the English-language version of the product. If your target platform is Japanese-language Windows, then you should follow the cutoff dates that apply to the Japanese-language version of the product.

<i>Language of Target Platform</i>	<i>Discontinuation of Licensing</i>	<i>Logo no longer appears on packaging, advertising, etc.</i>
English, German, French, Swedish, Italian, Dutch, Spanish	October 1, 1994	April 30, 1995
Danish, Norwegian, Finnish, Portuguese [including Brazil]	November 1, 1994	May 31, 1995
Japanese, Chinese, Korean, Chinese [PRC]	February 1, 1995	August 31, 1995
Russian, Czechoslovakian, Turkish, Greek, Polish, Basque, Thai, Indonesian, Catalan, Hebrew, Arabic, Hungarian, Slovenian	April 1, 1995	October 31, 1995

*no longer  
Valid*