

American Printing House for the Blind

Desktop Tablet Magnifier

Clarifying Questions Responses

August 16, 2021



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We want to thank everyone who has responded for their initial interest in working with APH to develop this product. We know the Desktop Tablet Magnifier will enable users to meet their potential in the classroom and beyond. Your thoughtful clarifying questions and expertise continue to mold our product vision, and we are excited to get to work. Please note that vendor questions have been randomized by subject and respondent and, in some cases, reworded to ensure adequate context is provided to all readers. We would also like to strongly encourage any respondents who are not familiar with the **APH Low Vision Roadmap** to please email Greg Stilson (gstilson@aph.org) and Tyler Maddox (tmaddox@aph.org) to schedule a presentation on this topic in the near future. This will provide context of where the Desktop Tablet Magnifier fits in our low vision technology product line.

The next step of the RFP process will be the submission of written informational proposals by 5:00 PM EST on Monday, September 13 to Greg Stilson (gstilson@aph.org), Chris Prentice (cprentice@aph.org), and Tyler Maddox (tmaddox@aph.org). More specific details of this requirement can be found in the "Responses" section of the RFP. If you have any other questions about any aspect of the RFP process, please email Tyler Maddox (tmaddox@aph.org). Thank you again for your interest in working with us, and we look forward to hearing your ideas.

Q: What is the approximate annual purchase volume?

We estimate, based on comparable product categories, that the Desktop Tablet Magnifier will sell between 1000-1300 units per year. This product will be on the quota market for approximately 3.5-4.5 fiscal years before a potential product refresh or redesign is considered based on performance and other considerations. RFP selection will result in compensation for the R&D process as well as a percentage of sales. APH is also committed to supporting this product post-release by contracting periodic software updates throughout the product lifespan, although this component is not covered in the context of the current RFP and will be negotiated separately.

Q: Windows 10 or later? Reason for asking is that Windows 11 is around the corner.

Because the RFP document was drafted before the Windows 11 OS announcement, we expect development to accommodate Windows 10 and later. A primary goal of this product is building transferable technological skills, and often transferable equates to current. That said, development can kick off on Windows 10 with the option to upgrade and release on Windows 11 OS.

Q: More fully detail the use case(s) and provide a more explicit definition of what is meant by the term “document tray.”

The document tray is the surface component of the stand used for document magnification and is located directly below or near the tablet unit. In Scenarios 2 and 7 in the “Sample Use Cases” section of the RFP, the highlighted functionality is its ability to accommodate a wide range of document and book sizes while consistently providing high-quality live magnification and capture. We highly encourage creativity in how to achieve this goal by ensuring that as many materials as possible can be magnified in the document tray area without issue. When approaching document tray design, consider the most common book sizes, prioritizing accuracy for standard educational material sizes while still accommodating documents which might be used frequently by secondary and tertiary market users as defined in the “Our Audience” section of the RFP. One other thing to note on this topic is that this design component does not need to be a literal “tray” but can be any type of surface or mechanism that achieves the desired result.

List of standard US book binding dimensions:

Fiction (Novel)

- 4.25” by 6.87” (mass market)
- 5” by 8” (trade)
- 5.25” by 8” (trade)
- 5.5” by 8.5” (trade/”digest”)
- 6” by 9”

Novella

- 5” by 8”

Children’s

- 7.5” by 7.5”
- 7” by 8”
- 10” by 8”

Nonfiction

- 5.5” by 8.5” (trade/”digest”)
- 6” by 9”
- 7” by 10”

Textbooks

- 6” by 9”
- 7” by 10”
- 8.5” by 11”

Q: About the document reading camera, most Windows tablets (like Surface Book Pro 7) do not have a 12-megapixel camera. Is 12-megapixels required? Will an 8-megapixel sensor also be fine? Some Android-based devices do have higher resolution cameras, but Windows OS is listed as a requirement.

The Windows platform is required whereas the 12-megapixel camera recommendation is not. We are willing to be flexible with the camera sensor (especially in regards to the document camera) if it achieves high-quality captures, OCR, and live magnification in the context of our established use cases.

Q: Supply further detail to the use case for the adjustable height stand.

Based on qualitative data we have gathered for various desktop devices, many early grade learners have difficulty with standard device heights which are often tailored to middle grade and higher learners. The adjustable stand height requirement ensures that users of all sizes and age ranges can operate the Desktop Tablet Magnifier ergonomically while seated. The adjustable stand height in conjunction with magnification variables should support a wide range of users comfortably while still providing high-quality magnification.

Q: Make clear the expected screen magnifier and related functionalities desired in Basic versus Advanced modes with use cases.

Ideally, Basic Mode will serve 4 primary use cases:

- A user-friendly, app-focused interface for young learners or learners with lower technological literacy. The workspace in Basic Mode should feature educational software and magnification that function in an organized, intuitive, and focused way.
- A place where magnification is the primary focus. Users should have the ability to immediately magnify and perform OCR in Basic Mode.
- A platform where teachers can more fully control the device parameters in instances where they need to curate what is available to the student user, such as in the case of examinations or focused work.
- A primary mode for shared or communal device use. We have seen a lot of value for this type of product in shared spaces such as libraries, resource rooms, and assisted living facilities. Basic Mode will serve as a predictable UX that is less personalized to the user to fill this role.

With these use cases in mind, it is ideal if the screen magnification and related functionalities carry over between Basic and Advanced Modes seamlessly to ensure continuity of workflow and user expectations between the two modes. Overall, Advanced Mode is meant to function with less structure than Basic Mode but still retain the same core tools for an accessible user experience.

Q: Is ZoomText mandatory and if so, why?

Zoomtext is not mandatory. We cite Zoomtext as a software that achieves several outcomes that we expect to be present in the UX for the Desktop Magnifier. If similar outcomes can be achieved without the use of third-party software solutions, that is highly encouraged. That said, users should be able to perform their own software installs and have access to Zoomtext if they choose even if it isn't included with the device.

Q: At an MSRP of \$3800 or less, will APH need a certain margin for the distribution channel and service for this product? What will be the purchasing price from us?

As a non-profit corporation, APH does require a margin for delivering and supporting products which further our Mission. Such purchasing prices will be discussed at a later point in the RFP process. A key aspect of a successful proposal is ensuring that pricing is accessible to our patrons by presenting cost-effective components and manufacturing techniques that still achieve a compelling value proposition.

Q: Why have offline and online OCR capabilities on the same unit? Is your idea to offer the online solution as an "on-demand" solution? Is it then possible for us to charge for that service or do you want the online solution to be based on an AI-driven, self-learning cloud solution from Amazon or Google?

Our goal for having two different OCR capabilities is to ensure that there is an OCR solution available on the device that ensures an exceptionally high degree of accuracy and reliability to users with an internet connection to allow the onboard OCR engine to have more room for error. If the offline, onboard OCR engine can be proven to be highly consistent, accurate, and reliable, an online solution may be unnecessary.

We are not planning an on-demand OCR service currently.

Q: Further explanation required; we don't fully understand this requirement: 180-degree horizontal swivel base to accommodate a multitude of viewing angles, locking mechanism required.

This requirement is a design recommendation to achieve a high number of potential viewing angles when a user is not able to directly face the material which they are capturing or magnifying live with the distance-view camera. With this feature, a student would be able to swivel their Desktop Tablet Magnifier stand to a desired angle and lock it in place. Conceptually, the base will remain static while the upper portion of the stand rotates and locks. This outcome may also be achieved by swiveling the distance camera horizontally. The idea is to have as much flexibility in terms of viewing angles and heights as possible to accommodate wide-ranging classroom circumstances and we are seeking a design that approaches this challenge thoughtfully.

Q: Detail the vision for software application implementation within school districts. Example: Who determines what is installed and/or used?

Because school districts have different software requirements for various software categories (i.e., word processing, virtual classrooms, programming IDEs, file sharing) our goal is to pre-install several of the most pervasive educational software solutions. Ideally, there will be an option within the sandbox software or “Basic Mode” to enable/disable shortcuts to unneeded software by category to allow individuals and school districts to fine-tune their software needs as outlined in the RFP subsection “Software Requisites.” We would like for this to initially be a part of the Setup Wizard. Users will also be able to perform their own software installs outside of Basic Mode, but we aim to establish an education-centric foundation for out-of-the-box value and simplicity. We will work to determine the best way to install and deliver the selected software.

Q: How is the minimum 97% accuracy requirement for offline OCR measured?

For example, if we captured a 300-character document at a middle to high school grade reading level, we would like to see no more than 9 OCR character misrecognitions. Although this requirement is presented as a rigid test within the RFP, we are more interested in high-quality OCR at the character, word, and sentence level and an overall pleasant user experience.

Q: How many characters should be on the letter testing page? What is the degree of filling by percentage?

A simple Lorem Ipsum document to test an approximation of real-world character filling is sufficient for these purposes. We are not imposing a set method of testing OCR accuracy but encourage showcases which illustrate reliable OCR output.

Q: What's the difference between live mode and capture mode? Does live mode require more FPS while capture mode can be slower?

Live Mode refers to live magnification whereas Captured Mode refers to magnification of static, captured images, so FPS will not be a factor for the latter. The word "Mode" in this case is used to refer to the magnification and OCR of captured images.

Q: In live mode, what framerate is required and at what resolution?

30 FPS is required while 60 FPS is preferred. 1920 x 1080 Full HD resolution is preferred to match the UI resolution.

Q: Explain in more detail who is responsible for software installations listed on the RFP. Some are indicated as "pre-installed" others are not.

After jointly identifying appropriate software installs to meet the product goals, APH and the selected vendor will collaborate on the best and most efficient way to implement software installation. It is likely that all included software will be pre-installed on the device prior to release. One potential implementation is to prompt users within the setup wizard to select software and then run a background script to perform appropriate installations during setup so as not to pre-fill user storage space.

Q: Are there applications APH will provide for use on the tablet?

It is to be determined if APH will provide software developed in-house for the Desktop Tablet Magnifier.

Q: Should the 3.5mm audio "input" connection requirement be 3.5mm audio "output" connection?

Yes, this is an error and should be a 3.5mm audio output connection.

Q: Describe in detail what is meant by the term "Remote Desktop Magnifier" in the Requirements: Settings" section statement: "Should include features that make the Remote Desktop Magnifier accessible for students with multiple disabilities."

Please disregard any mentions of the "Remote Desktop Magnifier." All occurrences should read "Desktop Tablet Magnifier", and this was an error in the document.

Q: Is the distance camera excluded in the tablet/stand folding mechanism?

It would be preferable if the distance camera is included and protected in the collapsed tablet/stand design to avoid detachable components as much as possible, but we understand if there are limitations associated with this requirement.

Q: Explain the use case for full-page OCR for the distance camera.

OCR capability on the distance camera is mainly intended to provide immediate access to information when an instructor is projecting a document or using a smart board to show a document to a class. In this use case, a low vision user should be able to participate in discussions using live magnification and review after class with OCR of image captures. High-quality OCR for static images captured from approximately 10-20 feet away will meet this specification.

Q: Will the R&D cost be funded separately by APH for this project, or will that be covered within the purchasing of the devices?

APH will provide financial support for the R&D costs associated with this product. Details will be discussed at a later point in the RFP process.

Q: Are the buttons referenced in the “Front Interface” subsection of “Tablet Specifications” physical buttons or software buttons?

Tactile buttons on the tablet surface for primary navigation are highly preferable to accommodate young learners and users with multiple disabilities, but we will consider software buttons that achieve the same results.

Q: Does the analog SLR camera lens mean that the camera should have optical zoom? Could you provide more information about this distance camera requirement?

In the case of all onboard cameras, rather than prescribing specific technology, we would like to see proposals which take the use cases into account and prove how your technological solution solves the problem. Therefore, in explaining the distance camera requirement, it is better to illustrate with a use case such as Scenario 1 of the “Sample Use Cases” section. In short, any specific hardware components cited in this RFP are simply examples and we encourage thoughtful consideration of hardware fit based on your perception of this device’s standard use and the problems which it will solve daily.

Q: Provide greater detail to the following statement: “Backup document editing software required in the case that users do not have access to a mainstream software subscription.”

The general assumption is that most US school districts provide access to a mainstream document editing software suite for students such as Office 365. Therefore, it would be redundant to provide licensure for software that is often already provided. To ensure the minority of students without mainstream software access still have proper tools for editing documents, it is recommended that this product include an open-source alternative.

Q: Detail who is responsible for licensure of applications. (ZoomText, Microsoft Office Suite, etc.)

APH and the selected vendor will work with software providers to ensure that necessary software licensing fees are built into the COGS.

Q: Why use an analog SLR camera lens? And what optical range is required for the SLR lens? In our existing products we use an alternative lens system. Could that be an option?

We welcome any technological solution to achieve the goals set forth by this RFP, and proving that an alternative solution is a high-quality, cost-effective way to realize our joint product vision is highly encouraged.

Q: Expound on the use case for a 270-degree vertical swivel for the distance/self-view camera.

One primary design vision for the Desktop Tablet Magnifier includes the distance camera as a multi-modal tool for distance- and self-view. The 270-degree vertical swivel is a minimum vertical swivel requirement to allow for this camera to fulfill both needs. When oriented away from the user, this camera will ideally be optimized for distance magnification and when oriented toward the user, this camera will become a tool for self-grooming, video conferencing, and other needs. Alternatively, three separate cameras could fulfill the required document-, distance-, and self-magnification outcomes.