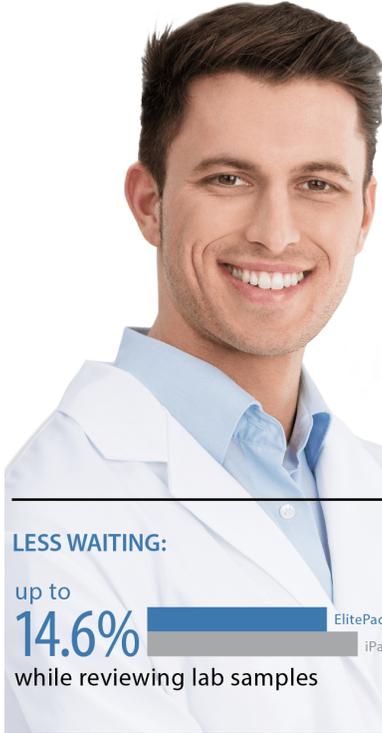
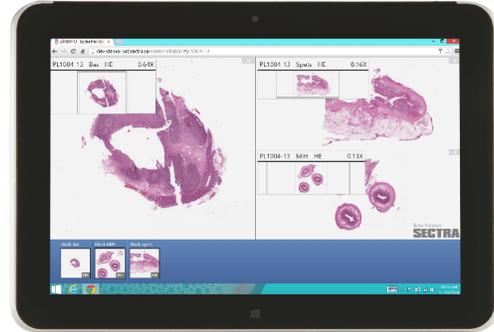


# USING SECTRA PATHOLOGY VIEWER WITH THE HP ELITEPAD 1000 G2 POWERED BY INTEL



Less waiting and more features with the Intel® processor-powered HP ElitePad 1000 G2

The HP ElitePad 1000 G2 delivered superior features and better performance when using Sectra® Pathology Viewer and doing other pathology-related tasks.\*



## LESS WAITING:

up to **14.6%** while reviewing lab samples

ElitePad iPad

## MORE FEATURES:



View multiple samples in Sectra Pathology Viewer



Use Sectra Pathology Viewer and other apps side by side



microSD™ card reader

\*vs ARM-based Apple iPad Air™

Having all available data relating to a problem lets medical professionals make appropriate decisions in a timely manner. Tablets running medical software should enable an efficient workflow and facilitate making a diagnosis, doing research, or communicating with colleagues. Which tablet gets the job done?

In the Principled Technologies labs, we compared the experience using Sectra Pathology Viewer with two devices: an Intel processor-powered HP ElitePad 1000 G2 and an ARM processor-based Apple iPad Air. We put both devices through real-world scenarios with representative tasks to see which devices offered a better experience with Sectra Pathology Viewer.

In our hands-on testing, we found that the Intel processor-powered HP ElitePad 1000 G2 delivered more features than the iPad Air, including the ability to view multiple samples in Sectra Pathology Viewer. The Intel processor-powered HP ElitePad 1000 G2 also took less time to complete the tasks in the two scenarios. The bottom line: medical professionals using Sectra Pathology Viewer would have a better experience and improved workflow by choosing the Intel processor-powered HP ElitePad 1000 G2.



OCTOBER 2014 (Revised)  
A PRINCIPLED TECHNOLOGIES TEST REPORT

Commissioned by Intel Corp.

## USING SECTRA PATHOLOGY VIEWER

In a medical research lab, having the right equipment can save time, facilitate collecting data, and help researchers make accurate interpretations. Waiting on a tablet for any crucial task can hinder productivity and frustrate users, leading to challenging experiences when handling valuable data. We tested two tablets with different processors and operating systems by putting them through common tasks using Sectra Pathology Viewer. We looked at the amount of time these tablets took to complete tasks in two scenarios and the feature functionality each tablet provided.

Researchers, doctors, and others commonly use Sectra medical software in their daily routine. Sectra Pathology Viewer is a useful tool that researchers and doctors can use to view and annotate digitized tissue samples. The software can help pathology departments digitize their workflows, which aids in organizing and tracking samples and reduces the amount of time pathologists spend preparing and viewing samples. Sectra Pathology Viewer stores high-resolution images in the cloud for viewing in the app, providing a platform for viewing samples scanned with a digital microscope, regardless of their potentially large size. Sectra Pathology Viewer offers access for additional users to view annotations and stored notes on samples.

We tested the following two devices:

- **HP ElitePad 1000 G2**, powered by an Intel Atom™ processor, running Microsoft® Windows® 8.1 Professional
- **Apple iPad Air**, with an Apple A7 processor, running iOS 8.1

Both tablets have a touch-focused user interface, business-ready applications, and lab-appropriate features. For detailed specifications on the tablets we tested, see [Appendix A](#). For more on how we tested, see [Appendix B](#), and for detailed results, see [Appendix C](#).

## DEVICE FEATURES

The devices we tested had similarities in appearance, both coming in slim form factors, but contained different hardware and software features. For example, the HP ElitePad 1000 G2 had vibration feedback when pressing certain buttons, alerting the user when the device registered selections.

Figure 1 shows the hardware features of the devices we compared in our hands-on testing.




	HP ElitePad 1000 G2	Apple iPad Air
Rear camera (MP)	8.0	5.0
Rear flash	✓	✗
Front camera (MP)	2.1	1.2
Display size (inches)	10.1	9.7
Resolution	1920 × 1200	2048 × 1536
3.5mm audio	✓	✓
microSD	✓	✗
Magnetometer	✓	✗
Gyroscope	✓	✓
Battery capacity (Wh)	30	32.4
Storage (GB)	64	64
RAM (GB)	4	1
Vibrating alert	✓	✗
Wi-Fi® – 802.11a/b/g/n	✓	✓
Bluetooth® 4.0	✓	✓

Figure 1: The hardware features of the two devices we tested.

## WHAT WE FOUND

### Reviewing lab samples

Christine has worked at a pathology clinic for a number of years and recently received a new tablet for viewing and analyzing blood, tissue, and cell samples. On a typical day, she helps a lab technician prepare a few samples for the digital microscope. These samples upload automatically to the cloud after Christine and the technician scan them, which means they can quickly see if the samples have been correctly prepared. Struggling with a few of the digital microscope’s features, Christine loads a PDF manual

on her tablet from her Webmail that describes how to complete certain tasks. Finally, they get all the samples digitized. At her desk, Christine loads a sample in Sectra Pathology Viewer and ensures that the scanned samples are good enough. She opens Microsoft Word, makes a few notes on this particular sample, and notes problems with digitizing the samples for the slide.

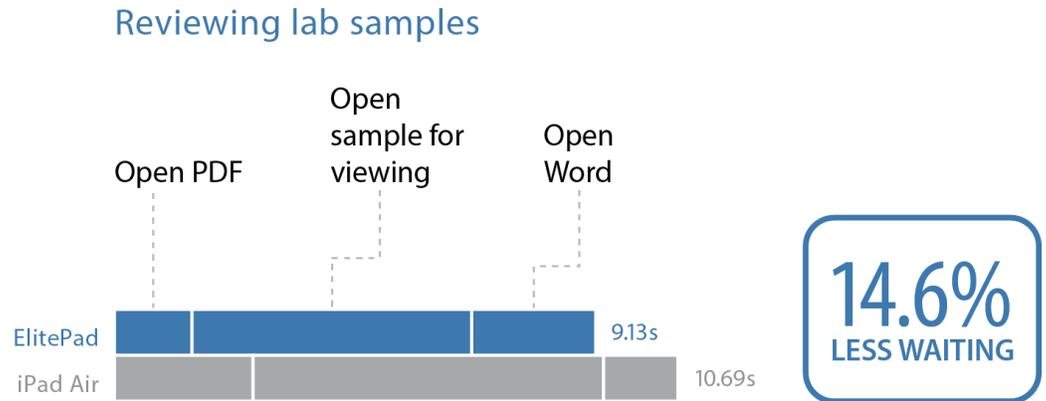


Figure 2: The time spent waiting while reviewing lab samples with the two devices.

## Collaborating with colleagues

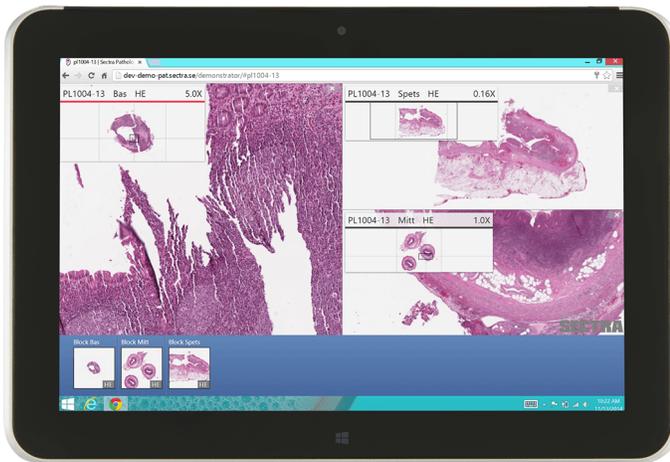
James is a new hire at a pathology center. He received a tablet in a laboratory-wide effort to cut down on paper and X-ray film costs, while improving the amount of data and visuals available to help doctors diagnose issues and contribute research. One day, James attends a meeting with some of the veteran doctors on staff. They've asked him to give a short presentation on his research. He loads the Microsoft PowerPoint® deck from his microSD card and explains his findings from the past few weeks. After the meeting, James returns to his workstation to analyze samples that a lab assistant had previously imaged using the digital microscope. With Sectra Pathology Viewer, he loads a sample and zooms in on several unusual features of the diseased tissue. Flipping through a few more samples, he finds an especially interesting one. James views two samples at the same time to compare them. He then opens Microsoft Word, types a short description of the interesting sample, saves it, and sends the sample and his notes to one of his colleagues for a second opinion.

Figure 3 shows the features that would be helpful to James. With the HP ElitePad 1000 G2, James would be able to view three samples at the same time in Sectra Pathology Viewer, compared to only one with the iPad Air. James could also use the microSD card slot to save or transfer data with the HP ElitePad 1000 G2.

	HP ElitePad 1000 G2	Apple iPad Air
Viewing multiple samples simultaneously	✓	✗
microSD card slot	✓	✗

**Figure 3: Feature support while collaborating with colleagues with the devices.**

Figure 4 shows how James would be able to view multiple samples at the same time in Sectra Pathology Viewer with the Intel processor-powered HP ElitePad 1000 G2, but not with the iPad Air.



HP ElitePad 1000 G2



Apple iPad Air

**Figure 4: Displaying multiple samples in Sectra Pathology Viewer with the Intel processor-powered HP ElitePad 1000 G2 vs. only one sample with the iPad Air.**

As Figure 5 shows, the Intel processor-based HP ElitePad 1000 G2 required 10.5 percent less waiting than the iPad Air for the steps in the scenario. The HP ElitePad 1000 G2 opened a single sample in Sectra Pathology Viewer two seconds faster than the iPad Air, a difference for James that would add up as he views samples throughout the day. With the Intel processor-powered HP ElitePad 1000 G2, James would have a better experience with a faster device and features that enable a more efficient workflow.

## Collaborating with colleagues

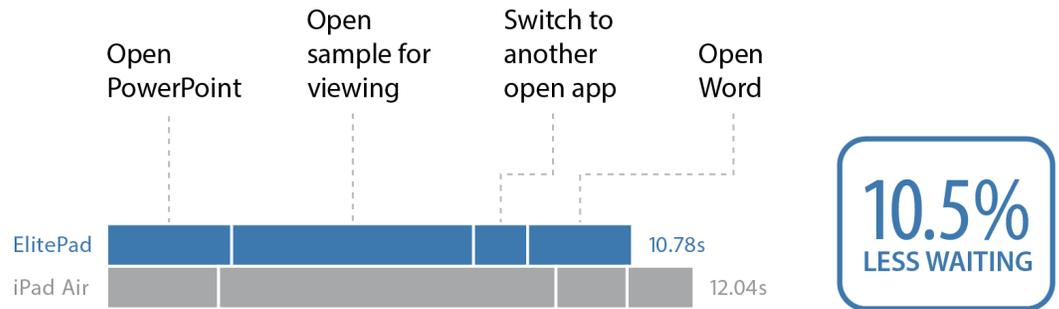


Figure 5: The time spent waiting while collaborating with colleagues with the devices.

## CONCLUSION

Tablets bring mobility and flexibility to the workplace, and differences in the hardware and software of the various devices on the market can have a great impact on the productivity of those who use them. Sectra Pathology Viewer is a common tool for tablets that pathology researchers and doctors use to view samples. In pathology research scenarios, we found that the Intel processor-powered HP ElitePad 1000 G2 provided up to 14.6 percent less waiting than the Apple iPad Air and offered more features such as the ability view multiple samples at a time. The Intel processor-powered HP ElitePad 1000 G2 is on call and ready to provide a better experience with Sectra Pathology Viewer.

## APPENDIX A – SYSTEM CONFIGURATION INFORMATION

Figure 6 presents detailed information for the three tablets we tested.

System	HP ElitePad 1000 G2	Apple iPad Air
Processor	Intel Atom Z3795	Apple A7
Processor (GHz)	1.6	1.4
Processor cores	4	2
Memory (GB)	4	1
Storage (GB)	64	64
Battery capacity (Wh)	30.0	32.4
Display	10.1" (1920×1200)	9.7" (2048×1536)
Wireless	802.11 a/b/g/n	802.11 a/b/g/n
Bluetooth	Bluetooth 4.0	Bluetooth 4.0
System weight (lbs.)	1.5	1.05
Front camera (MP)	2.1	1.2
Rear camera (MP)	8.0	5.0
OS	Microsoft Windows 8.1 Pro	Apple iOS 8.1

Figure 6: Detailed configuration information for the two tablets.

## APPENDIX B – HOW WE TESTED

Before testing the devices with these procedures, ensure each device has the most recent version of the Web browser Google Chrome™. We used version 38.0.2125.111 on the Microsoft Surface Pro 3 running Microsoft Windows 8.1 and version 38.0.2125.67 on the Apple iPad Air 2 running iOS 8.1.

### Reviewing lab samples

1. Navigate to the device's home screen or desktop, and launch Google Chrome.
2. Navigate to the test PDF in Web mail. We used a 2.6MB PDF and loaded it from an attachment in Outlook 365™ Web mail.
3. Navigate to the Sectra Web viewer using Google Chrome:  
`www.dev-demo-pat.sectra.se/demonstrator/#pl1004-13`
4. Enter the credentials.
5. Simultaneously start the timer and sign into the site.
6. When the sample has completed loading, stop the timer, and record the result.
7. At the bottom left of the screen, select the sample Block E, and start the timer.
8. When the sample finishes loading, stop the timer, and record the result.
9. Navigate to the device's desktop or home screen.
10. Select the shortcut for Microsoft Word, and start the timer.
11. When Microsoft Word has completed loading, stop the timer, and record the result.
12. Complete steps 1 through 11 two more times.

### Collaborating with colleagues

1. Start the timer, and launch Microsoft PowerPoint.
2. When Microsoft PowerPoint fully loads, stop the timer, and record the result.
3. Navigate to the device's home screen or desktop.
4. Navigate to the Sectra Web viewer using Google Chrome:  
`www.dev-demo-pat.sectra.se/demonstrator/#pl1004-13`
5. Enter the credentials.
6. Simultaneously start the timer and sign into the site.
7. When the sample has completed loading, stop the timer, and record the result.
8. At the bottom left of the screen, select the sample Block E, and start the timer.
9. When the sample finishes loading, stop the timer, and record the result.
10. Navigate to the device's desktop or home screen.
11. Launch Microsoft Word, and start the timer.
12. When Microsoft Word has completed loading, stop the timer, and record the result.
13. Complete steps 1 through 12 two more times.

## APPENDIX C – TEST RESULTS

Figure 7 presents the detailed results, with the time to complete the tasks in the scenarios recorded in seconds. We performed all tasks three times and used the median scores. Note: Testing with Sectra Pathology Viewer was done in the US toward a server in Europe.

	Intel processor-powered HP ElitePad 1000 G2	ARM processor-based Apple iPad Air
<b>Reviewing lab samples</b>		
<b>Time to load 2.6MB PDF from Web mail</b>		
Run 1	00:01.41	00:02.65
Run 2	00:01.55	00:02.55
Run 3	00:01.47	00:02.63
<b>Median</b>	<b>00:01.47</b>	<b>00:02.63</b>
<b>Time to open a sample in Sectra Pathology Viewer</b>		
Run 1	00:05.31	00:06.85
Run 2	00:05.22	00:06.57
Run 3	00:05.35	00:06.65
<b>Median</b>	<b>00:05.31</b>	<b>00:06.65</b>
<b>Time to open Microsoft Word</b>		
Run 1	00:02.35	00:01.48
Run 2	00:02.31	00:01.41
Run 3	00:02.36	00:01.37
<b>Median</b>	<b>00:02.35</b>	<b>00:01.41</b>
<b>Total time waiting</b>	<b>00:09.13</b>	<b>00:10.69</b>
<b>Collaborating with colleagues</b>		
<b>Time to open Microsoft PowerPoint</b>		
Run 1	00:02.51	00:02.29
Run 2	00:02.62	00:02.37
Run 3	00:02.56	00:02.26
<b>Median</b>	<b>00:02.56</b>	<b>00:02.29</b>
<b>Time to open a sample in Sectra Pathology Viewer</b>		
Run 1	00:04.93	00:07.02
Run 2	00:05.00	00:06.92
Run 3	00:04.96	00:06.85
<b>Median</b>	<b>00:04.96</b>	<b>00:06.92</b>
<b>Time to switch to another sample in Sectra Pathology Viewer</b>		
Run 1	00:01.12	00:01.45
Run 2	00:01.08	00:01.53
Run 3	00:01.11	00:01.46
<b>Median</b>	<b>00:01.11</b>	<b>00:01.46</b>
<b>Time to open Microsoft Word</b>		
Run 1	00:02.18	00:01.37
Run 2	00:02.14	00:01.43
Run 3	00:02.15	00:01.36
<b>Median</b>	<b>00:02.15</b>	<b>00:01.37</b>
<b>Total time waiting</b>	<b>00:10.78</b>	<b>00:12.04</b>

Figure 7: Detailed results.

## ABOUT PRINCIPLED TECHNOLOGIES



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