Datarizer

Datarizer eSignature
Gratis

Version 0

Help Document

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Launch the Application from the desktop (Desktop icon). A signing pencil.

Start Menu

Start=>All Programs=>Datarizer Inc=>Datarizer eSignature Gratis=>Datarizer eSignature Gratis

Datarizer eSignature Gratis Logo

Application Overview

1.1 What is Datarizer eSignature Gratis?

Datarizer eSignature Gratis is the free version of Datarizer eSignature which enables electronic signing and validation of PDF documents completely free of charge.

Datarizer eSignature Gratis is a software application (or system) that enables online signing and validation of PDF documents across the internet. It is native application with a small client and big server arrangement. It is also a cloud application with client side software for better user experience and rich interactive User Interface (UI). It was designed with a simple concept in mind to mimic traditional signing on paper to make it simple and user-friendly. Datarizer eSignature is free. Only PDF documents can be signed with Datarizer eSignature Gratis.

1.2 Why PDF Documents?

PDF stands for Portable Document Format. PDF was in existence since 1991 and had stood the software compatibility test of time across different platforms until to date. It was outlined by Adobe System, cofounder “John Warnock”. The major problem that is solved was document compatibility and quality across different platforms.

Applications compatibility and their associated files is still a major concern today. Software vendors continue to upgrade and develop new applications and in time compatibility is lost with older versions. This is a huge concern to electronic signing of documents, because legal documents must be kept and be accessible for many years.

Datarizer eSignature will keep documents for 25 years before permanent deletion with consultation with the originator.

1.3 How is it different from other electronic and digital signature software?

Datarizer eSignature Gratis blends both electronic and digital nature of signatures into one, without pushing the complexities to the user. The weakest link in any secure system is always the user (the human element). See the next sub-section for more insight on security.

It complies with the KISS principle, it is simple, user-friendly and affordable to all. Signed document does not need to be transmitted through emails (SMTP) as this transmission takes place in the system.

Datarizer eSignature Gratis serves only the copies and never the original document to prevent tampering with the document. The original document is broken down and kept in the database and used together with all the signatures and device used to sign to form the #hash or digital nature of the final document.

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This digital nature of the document cannot be forged. When a document is validated, this digital nature is used to check document that is being validated. If the document was changed in anyway, it will never validate true. Validation must be done using the Datarizer eSignature Gratis as it contains the original document with the original digital nature. The safest and secure place to store data or documents is in the database.

Document copies can only be served to the devices (computer, laptop etc) that are in the workflow as stipulated originally when the document was uploaded. NB: The document can never be listed, appear or served to the device which is not in the document workflow.

Datarizer eSignature Gratis is completely independent from Adobe Reader application. The technology that is used to sign the documents is on a file level and not on application level unlike the other electronic signature softwares. This prevents any compatibility issues that may arise in future.

If your device is stolen, call Datarizer Inc. and have all your documents linked to the new device. Your stolen device will be deactivated and wait for thief to come back and be caught. Even if the device is reformatted and reloaded with new OS, the thief will still be caught because the device hardware was not changed. This is the part that improves the security of the application (or system).

No peripheral are necessary such as expensive signing pads and pointers or pens. Use what is already available such as Paint application and scanners.

Datarizer eSignature Gratis offers the same freedom that one currently enjoys with PDF documents. Once the Document copy is served to the user, the user can do as they wish, that is, send it to whoever by email, delete it and archive it. Save time and money. Documents can be transmitted, signed within minutes across the globe, safely and securely. If a document is tempered with, it will be detected during the validation process.

All software updates are done online, meaning bugs and upgrades can be done quickly and efficiently. The fix or upgrade is as close as your next launch of the application. What a quick turnaround time.

It is 100% paperless. The option to print is still available but not needed. This is the freedom you have with the Adobe Reader.

Datarizer eSignature Gratis does not sign PDF documents that have been locked by a password for modification as this constitutes unethical behavior.

1.4 Authentication security formula

The authentication security formula can best be presented mathematically as:-

Security = ***Function*****∫(**Device, PIN, SSL, Visual eSignature, Document Digital Nature (#hash function algorithm), Validation code Technology, 3 times login failure lockout**)**

Datarizer eSignature also uses COMODO for an increased security online.

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SSL

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Datarizer eSignature Gratis uses the device that was used to sign in the security formula to limit the weakness of the user on security matters. For instance, if the login credential (PIN) of the user was hacked or phished, the Hacker will still not be able to log in the system despite applying the correct credential.

Secure Socket Layer (SSL) technology is used to connect the client and server devices through the security pipe.

The only place to keep data and documents/files secure is inside the database and nowhere else. The Database security permission should be reduced to the absolute minimum.

The Digital nature of the document is the complex mathematical computation algorithm that is done on the final document to produce a hash number which is so unique and cannot be reproduced again by using a different document.

Private Key ≈ Function∫(Device, Login Credentials, Document Digital Nature, SSL)
Public Key ≈ Function∫(Device, Document Digital Nature, SSL)

It is a security risk to explain beyond this level. This information is adequate to ensure that security has been taken care of to a reasonable extent.

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Definitions and Abbreviations

Application/System
Both words are used interchangeably in Datarizer eSignature Gratis. For simplicity they both mean application. However, system is much complex and bigger than application because of many devices connected together through the internet with big back end RDBMS.

Device
Device could be a computer Laptop, Notebook, Mobile smart phone, Desktop computer, Mac, iPad, Tablet, Surface. Any machine consisting of a processor, hard drive, screen and input devices (such as keyboard) and is capable of running this application as per the system requirements.
(**NB:** In future it will be possible to run Datarizer eSignature on all devices. Currently it only runs on Windows operating platform.)

Electronic Signature and Digital Signature
See general legal definitions in the next Section 3.

Device Stamp
It is a software independent unique code of the device.

Device Signature
It is a software independent unique serial number of the device.

Validation
A thorough computation process of looking at a smallest piece of a computer file, one by one, using a digital magnifying glass to ensure that the two files are exact match beyond reasonable doubt.

Authentication
A computation process or means of identifying users and devices, and verifying their eligibility before access is given into the system or application on the correct devices.

TRANS
It is verb and also a document status, meaning to change a document into a state where no further changes are allowed. This status “TRANS” gives a document its original value. The document in this state cannot be signed any further. **NB:** It is important that all the signatories sign the document before it is TRANS’d or else, no more signatures will be allowed. The last signatory must check if all have signed before clicking the “TRANS” button on the toolbar menu.

SSL:	Cryptography Secure Socket Layer technology
UI:	User Interface
PDF:	Portable Document Format
RDBMS:	Relational Database Management System. Database system such as Oracles, MYSQL, Postgre, MS SQL Server, DB2 etc.
KISS	**K**eep **I**t **S**imple **S**tupid principle.

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Legality of eSignatures

The digital age came along with an increase in digital information and in other cases it is no longer possible to sign using the traditional pen and paper. Things are happening quite fast. Imagine having to print a form, fill it in, sign it, scan it back into the computer and send it by email. Sometimes, the scan copy is not accepted, which means the original copy must be posted or transported where it is required. It cost time and money to do transact in this manner. Imagine buying shares online and receiving and signing the contract online immediately. This is efficient.

Governments all over the world have realized the role that electronic and digital signatures plays in the digital or information age. There is no turning back.

Electronic signature and digital signatures are legal in many countries, even though, not all countries have proper legislation in place to control the boundaries of electronic and digital signatures.

What is the difference between Electronic and Digital signatures?

Electronic Signatures

An **electronic signature** is a signature that consists visual form on a screen or print, characterized by a digital form incorporated in and attached to or associated with an electronic document.

A secure electronic signature is as an electronic signature that:-

- is unique to the person making the signature;
- the technology or process used to make the signature is under the sole control of the person making the signature;
- the technology or process can be used to identify the person using the technology or process; and
- the electronic signature can be linked with an electronic document in such a way that it can be used to determine whether the electronic document has been changed since the electronic signature was incorporated in, attached to or associated with the electronic document.

Digital Signatures

A **digital signature** is a mathematical scheme for demonstrating the authenticity of a digital message or document. A valid digital signature gives a recipient reason to believe that the message was created by a known sender, such that the sender cannot deny having sent the message (authentication and non-repudiation) and that the message was not altered in transit (integrity). Digital signatures are commonly used for software distribution, financial transactions, and in other cases where it is important to detect forgery or tampering. It involves the Cryptography technology. This signature does not have a visual form.

The concept of a legal Electronic/Digital signature

Many countries retain the following general rules to govern the use of electronic and digital signatures.

1. Intent to sign. The signature is valid only if the signatory had the intent to sign.

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2. The signatory MUST do the signing personally.
3. Notarization. It should be possible to certify, attest or authenticate that the signature or the entire document is legitimate.
4. The signature or the electronically/digitally signed document should keep an associated record to reflect the electronic process that was used to sign it.
5. Document retention. The signed documents (records) should be kept safe for a reasonable time period and the ability to reproduce them at a later stage to all concerned parties.
6. The capability of the electronic/digital process to prevent or expose the document forgery should this happen.

If the electronic or digital signature process covers the above, it will be adequate to ensure a safe and reliable usage of electronic or digital signatures.

It is important to note that, the electronic/digital process attempts to mimic or better the traditional ink on paper process which is simple enough for the average John Doe. The average John Doe should not be bombarded by complex computational algorithms to ensure the implementation of the above six points. The electronic digital process should use the complex computational algorithm information to apply to the six points and provide simplistic information that can be understood by the average John Doe.

The future of Electronic Signatures

Countries are busy putting or perfecting their legislation to govern the use of electronic/digital signatures. Amongst others are, just to mention a few:-

- South Africa – Electronic Communication and Transactions Act 25 of 2002.
- United States – Electronic Signature in Global and National Commerce Act of 2000.
- United States – Uniform Electronic Transaction Act or 1999 (UETA).
- United Kingdom – UK Electronic Communication Act of 2000.
- United Nations - UNCITRAL Model Law on Electronic Commerce of 1996.

The amount of electronic transactions and electronic information has vastly increased to an extent that this cannot be ignored but to be made better to work in all electronic transactional scenarios. Every country is working on to adopt some kind of electronic signature law.

All the software vendors supplying the electronic signature software must ultimately come together to produce one acceptable software that is acceptable globally by all.

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Application User Interface (UI)

The User Interface is simple and user-friendly. Signing a document is four clicks away.

1. Indicate whether you are signing a “New” or a “Signed” document.
2. Select to “*Sign All Pages*” or to “*Sign Last Page*”.
3. Select or Type your signing capacity.
4. Click “*Sign Document”* button.

That is all to signing a document using Datarizer eSignature software. See figure 1 below.

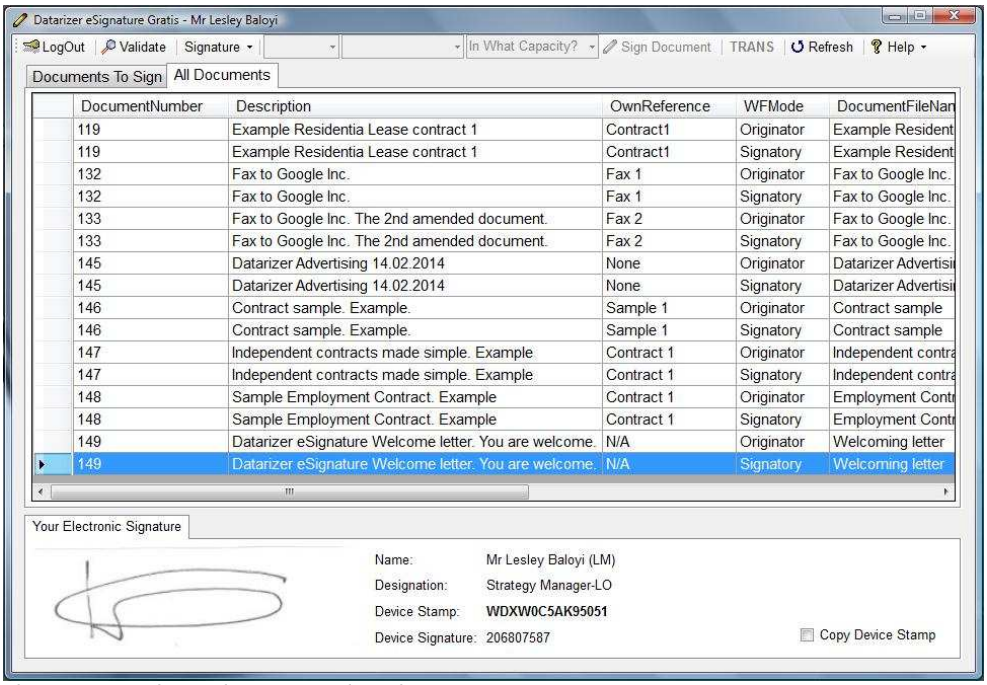

Figure 1 – Datarizer eSignature Gratis main screen

The PIN (Personal Identification Number) is required to gain access into the system. The User must log in on the device where he/she has registered the signing credentials. The device is partially authenticating the user as well. There are no Licence Fees and Service Accounts. See figure 2 Below.

Figure 2 – Login screen (First window)

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Figure 1 above shows the Device Stamp and Device Signature of a particular unique machine or device. This is unique and there is no other device with the same numbers or codes. It also indicates the visual electronic signature that will be included attached on the signed document. All these together form a unique digital pen that is used to sign the document. In the algorithm function, the Device Stamp and Device signature serves more or less the same purpose as Private Key and Public Key functions in the digital signature process. This is all coded in the application software.

The Device Stamp and Device Signature are not software dependant but hardware dependant. Even if the software is changed, these two codes will remain the same.

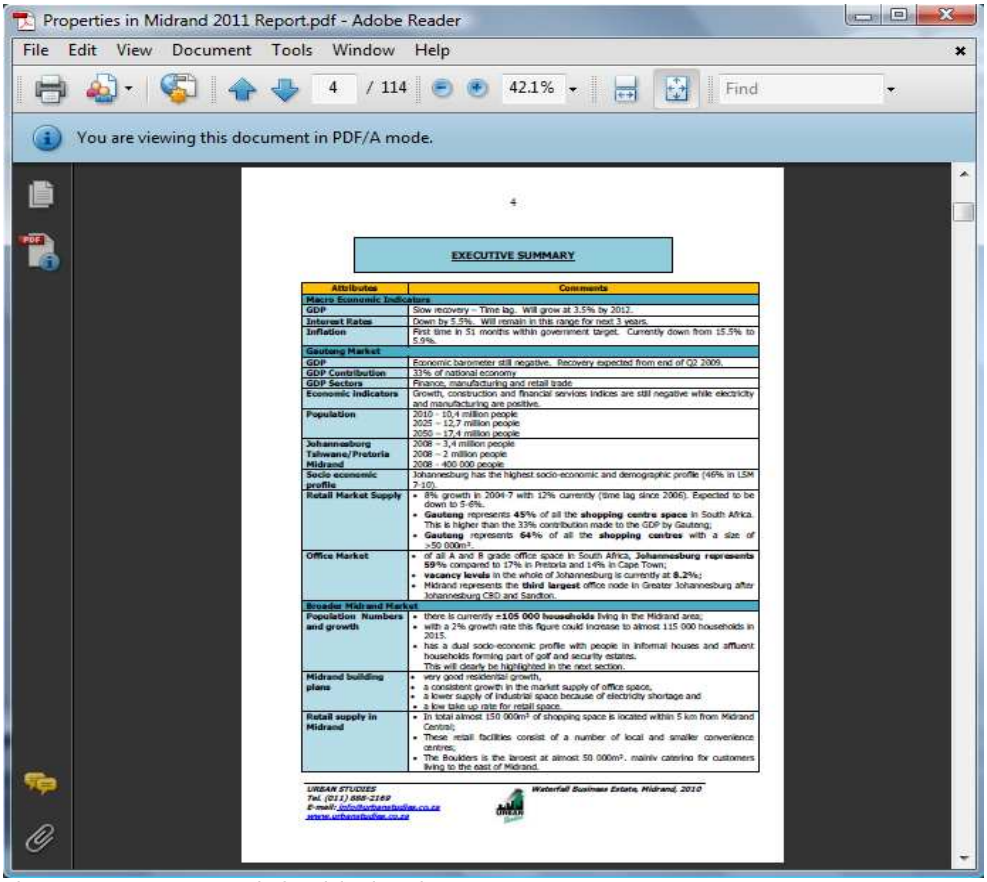

Figure 3 – PDF Document before it is signed

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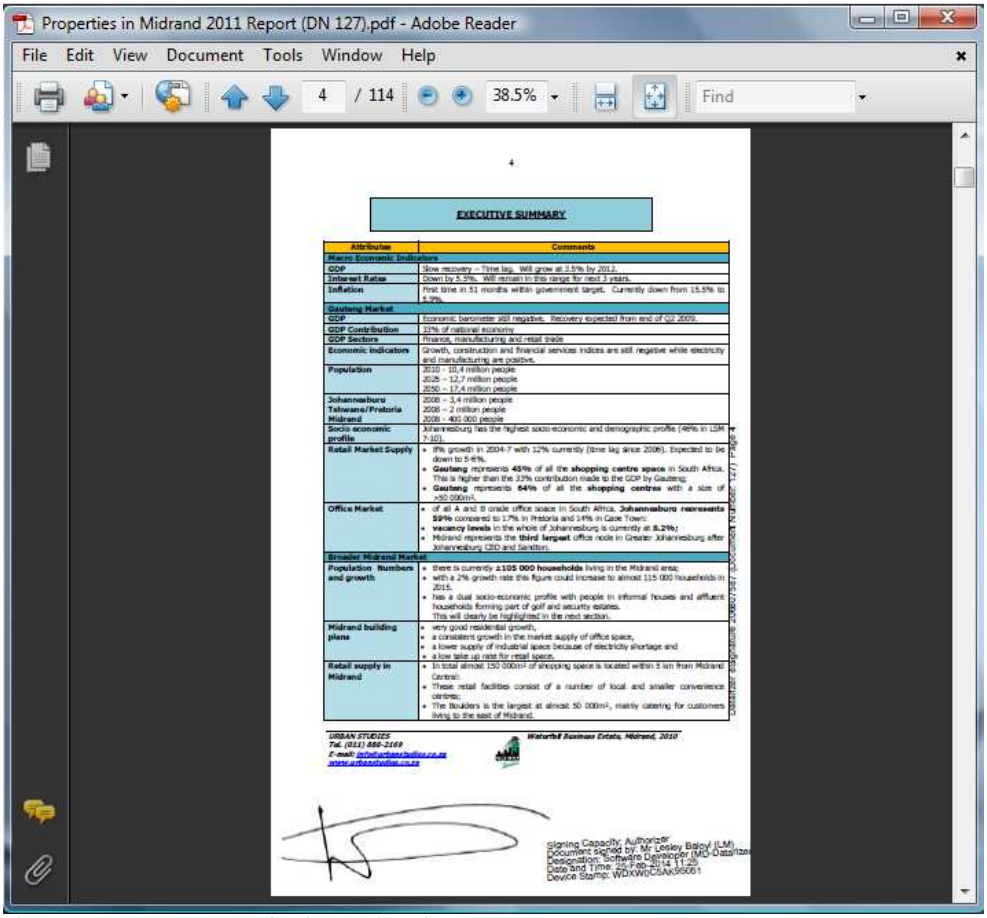

Figure 4 – PDF Document after it was signed

Figure 3 and 4 above shows an unsigned and a signed PDF documents respectively. All the 114 pages were signed.

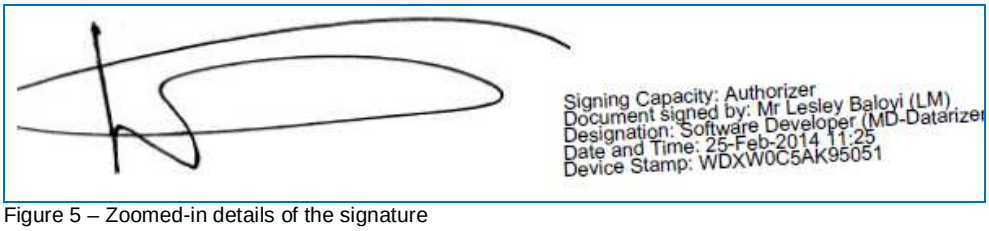

Figure 5 – Zoomed-in details of the signature

There is a transcript written vertically, along the document on the right hand side of the signed document which states
"Datarizer eSignature 206807587 (Document Number: 127) Page 4". See figure 4 above.

It is clear that this document was signed using Datarizer eSignature and the Document Number is a reference back to the application.

The signature above in figure 5 also contains some useful information such as Signing Capacity, Signatory, Designation, Date and Time and the Device that was used to sign the document.

5

System Requirements

Datarizer eSignature Gratis runs on Microsoft Windows Operating System (OS).

Windows Operating Systems
1. Windows XP 2. Windows Vista 3. Windows 7 4. Windows 8 (??? Very unstable. Special development in this area is in progress)

System	Minimum Disk Space	RAM	Processor
32 bit	600MB	512MB	1GHz
64 bit	1.5GB	512MB	1GHz

This application is supported by .NET Framework 4.0

Future Developments

Development is underway to bring this application to run on other platforms, such as iOS, Mobile Platforms (sambian), Linux etc. Some of the problematic platforms will be dealt through HTML and other scripting languages such as JavaScript and PHP. The challenge is always to bring the same security features as currently as in the Windows platform. Security will not be compromised.

The server side will not be changed with exception of scaling it up to store more data.

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6.1,2

How to? Everything

6.1 Get Security and Certification Authority Information?

Software Certificate was issued by COMODO. https://www.comodo.com

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The SSL certificate for secure connection between Server and Client machines was also issued by COMODO.

6.2 Create and upload your Electronic Signature?

All you need to create your Electronic Signature is a scanner, a paint brush application, pen and white piece of paper.

Signature Dimensions

Your signature should be 2cm X 7cm or 20mm X 70mm.

Figure 6 – Electronic Signature dimensions

Follow these steps to create your signature:-

1. Take an A4 size paper and mark out the dimension of 70mm X 20mm.
2. Sign inside the mark as shown in figure 18 above.
3. Cut out your signature out with scissors.
4. Scan the signature image into a PDF.
5. Open the signature image and set PDF zoom to 100%.
6. Use the PDF Snapshot tool to select the image and copy to clipboard.
7. Open the Paint application. *Start Menu=>All Programs=>Accessories*.
8. Click menu “Image=>Attributes”.
9. Set Width = 305 Pixels and Height = 85 Pixels as shown in figure 7 below.

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6.2,3

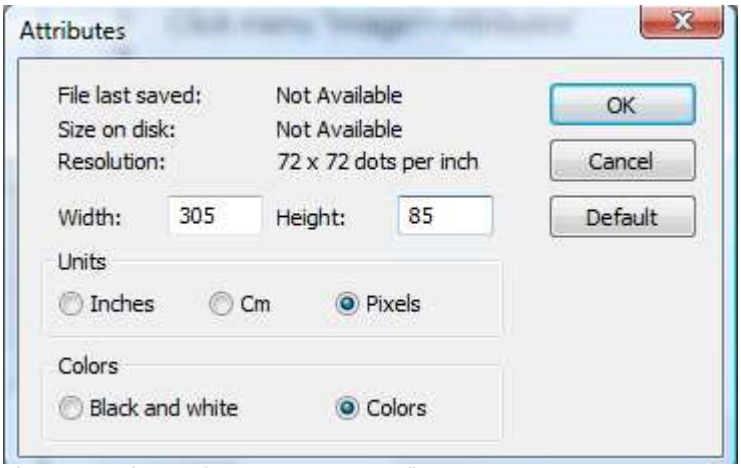

Figure 7 – Paint Brush menu "*Image=>Attributes*"

10. Click "*Ok"* button.
11. Click menu "*Edit=>Paste*" or "*Ctrl + V*" on the keyboard to paste.
12. The signature image should be in paint. Tip: Real size image. Take your paper signature and put it on the screen to check.
13. Save this image as *.jpg or *.tif or *.png.
14. Click menu "*File=>Save As*". Select the suitable file name and ensure that "*Save as type*" is selected as *.jpg or *.tif or *.png.
15. Click the "Save" button.
16. Your signature is done and ready to be uploaded.

17. Launch Datarizer eSignature Gratis application.
18. Login.
19. Click toolbar "*Signature=>Update*".
20. Browse and find your newly created image signature. Select it and Click "*Ok"* button.
21. Your signature is done and will appear at the bottom.

6.3 Sign a PDF document?

It takes only four clicks to sign a document. Our previous example in sub-section 9.4 uploaded a "*Document Number 129*". This document will be signed in this sub section. Follow the these steps:-

1. Log in by entering your PIN.
2. Select the document to sign in "*Documents to be signed*" tab. The top section list. Take note, there is top and bottom document lists.
3. There are three selections on the toolbar menu. Refer to figure 8 below:-
    a. Select "*New"* if you are signing new document (top list). Always select "*New*" for all documents in the "*Documents to be signed*" tab of the top section. This is the first signature. Select "*Signed*" if you are signing a signed document which is listed at the bottom of the "*Document to be signed*" tab. In case more signatures

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6.3

needs to be attached.

b. Select which pages to sign. Select "*Sign All Pages*" or "*Sign Last Page*". Signature will always appear at the bottom of the page.
c. Select the signing capacity or authority. You can either type it or select from the list. (*Authorizer; Approver; Accepted By; Witness; Compiler*).

4. Click "*Sign Document*" button.
5. The signed document will appear at the bottom list of the "*Documents to be Signed*" tab.

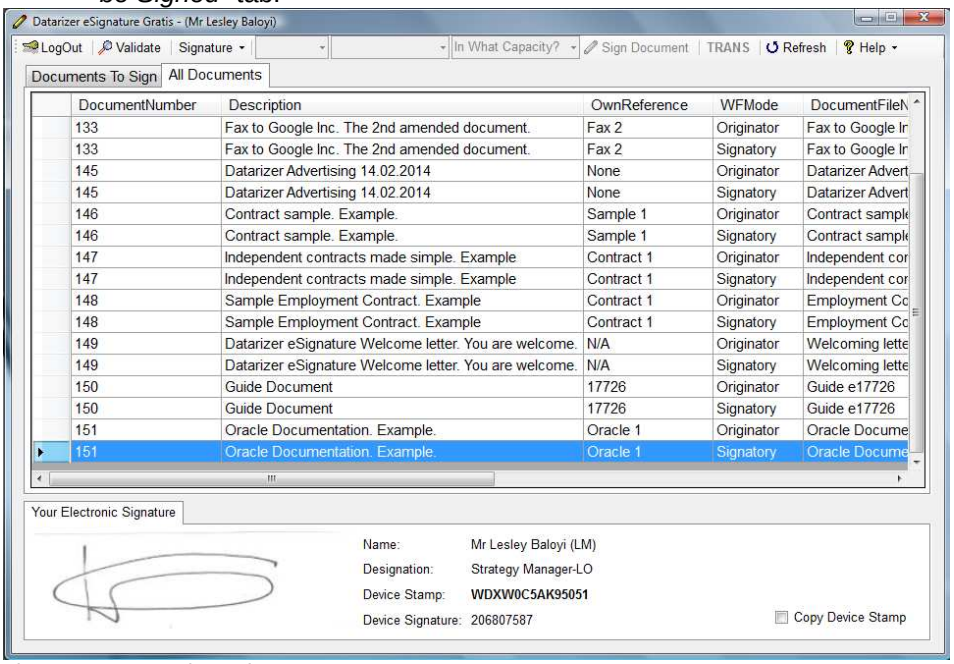

Figure 8 – How to sign a document

6. When all the Signatories have signed the document. The last Signatory to sign must click "***TRANS***" button on the toolbar menu.
7. The TRANS process will move the document/s from the "Documents to be signed" tab (bottom list) to the next tab "*All Documents*". This process is irreversible.
8. Document signing is completed.

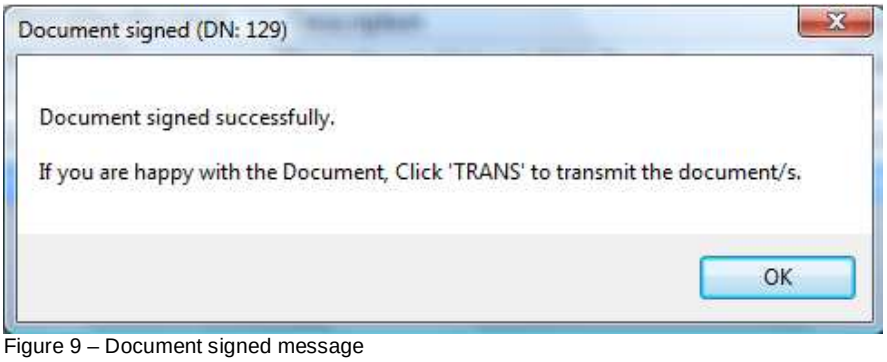

Figure 9 – Document signed message

NB: Once the "***TRANS***" button is clicked, no further changes or any signing can be done on the document. The document is sealed forever. It is important to note that this button is not clicked unless all the signatories have signed the document.

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6.4

This could have been coded in but it was left out for a very obvious reason.

6.4 Validate a document?

Datarizer eSignature validates all external PDF documents with a reference to itself, meaning, if a document was signed using Datarizer eSignature, it can be validated to check authenticity of the document. Validation is universal, it can be done on any device running Datarizer eSignature.

Validation is: True, means that the external document is the copy of the original document in the system and no changes has been made. It is authentic. If a document is validated to be true, Datarizer eSignature will serve a *Document Number* and depending on the document work flow, the document may or may not be served to the device. If you have a Document Number, you can call the document using the document search. If you are not on the correct device the document will not be served to the device.

Validation is: False, means that the document does not exist or changes were made. The external document copy was not signed using the Datarizer eSignature or it is a fraud or forgery. Follow these steps to validate a document:-

The Validation process is of a digital nature applying a complex mathematical algorithm. Follow these steps to validate a document:-

1. Click menu "*Document=>Validate"* or press F2 on the keyboard.
2. Select the external document or file to validate. Click "*Open*" button.
3. Wait for Validation message/s to return. See figure 10 and 11 below for a *True* and *False* validation messages respectively.

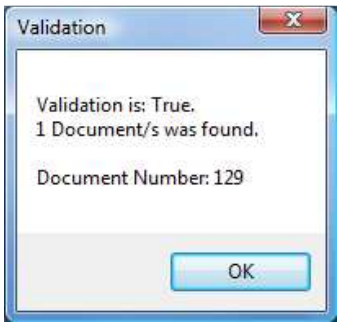

Figure 10 – Validation True

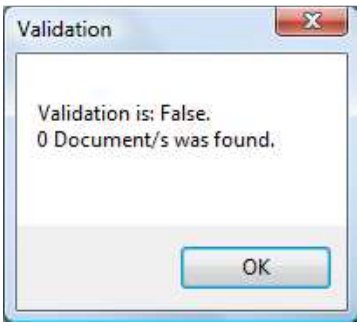

Figure 11 – Validation False

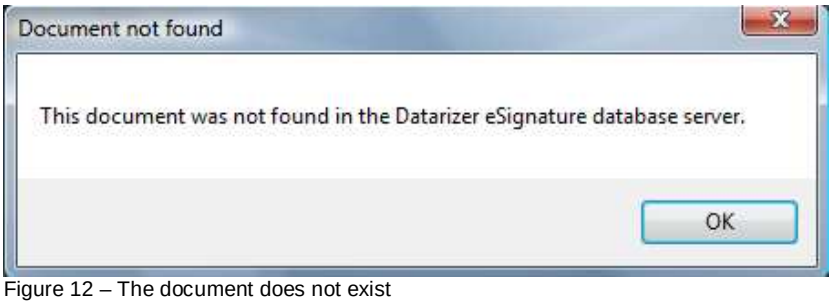

Figure 12 – The document does not exist

It is absolutely not possible for the digital validation process to validate and process the documents incorrectly. If this happens, it will give another error

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message and not the validation message/s. This is true validation beyond reasonable doubt.

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Down load the software from www.datarizer.co.za/Datarizer_eSignature.htm. Click on the download link and follow the download steps as provided. Downloading is simple.

There are no complex settings that the user must enter.

Even though you get a Desktop icon to launch the application, Datarizer eSignature is a pure internet based application running on the server and a small part temporarily running on the client machine.

Watch a YouTube video at http://youtu.be/llAaAgOCSWo

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Datarizer

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