



INTEGRATED SYSTEM FOR PROTECTION, MANAGEMENT AND ARCHIVING OF CONFIDENTIAL ORIGINAL DOCUMENTS

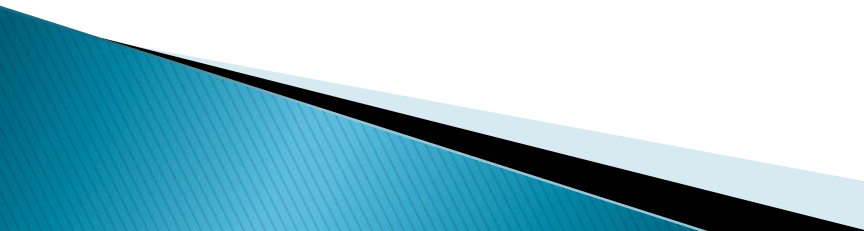


PREREQUISITES

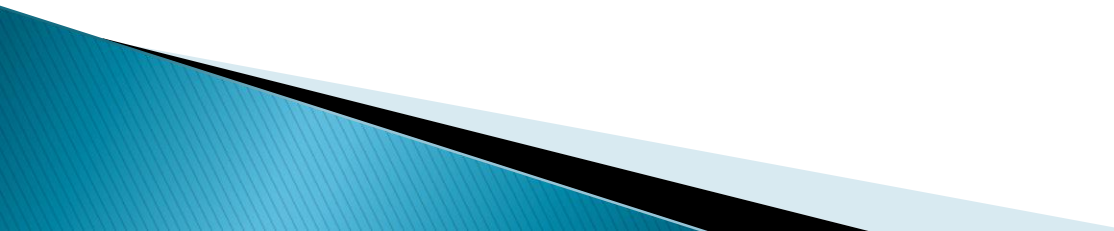
- ▶ To protect against unauthorized printing, copying and stealing of **original*** confidential documents
- ▶ To ensure safety features which prevent confidential original documents to be falsified

*ORIGINAL – Is defined as first copy that serve as base for reproduction or multiplication and is produced in a certain form

INFORMATION FLOW

- ▶ Electronic:
 - ▶ Creation – modifying – sending – archiving – access
 - ▶ Passwords required to control each step
 - ▶ On paper:
 - ▶ Printing – scanning – copying – moving – destroying
 - ▶ No control
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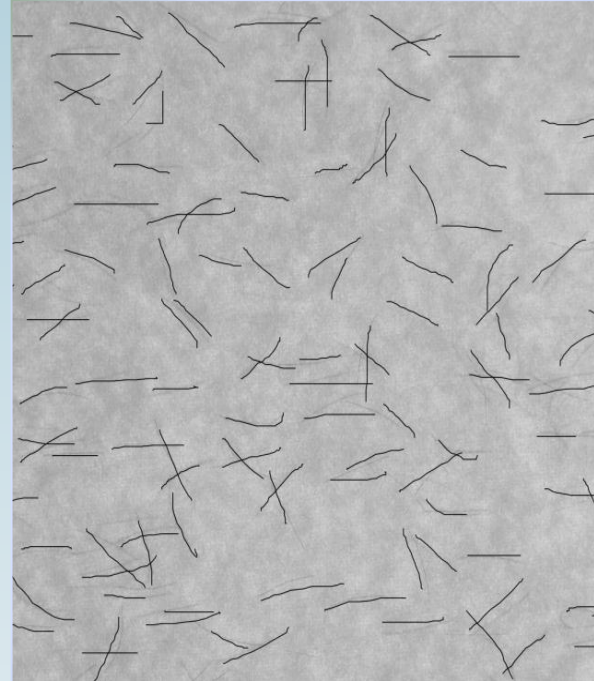
REGULAR OFFICE PAPER VERSUS SELFPROTECT PAPER

- ▶ Regular office paper – inert material, no tracking solutions
 - ▶ SelfProtect paper – contains a magnetic material embedded in the structure, which can be tracked along the entire lifecycle of the confidential document
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Existing paper



SelfProtect paper



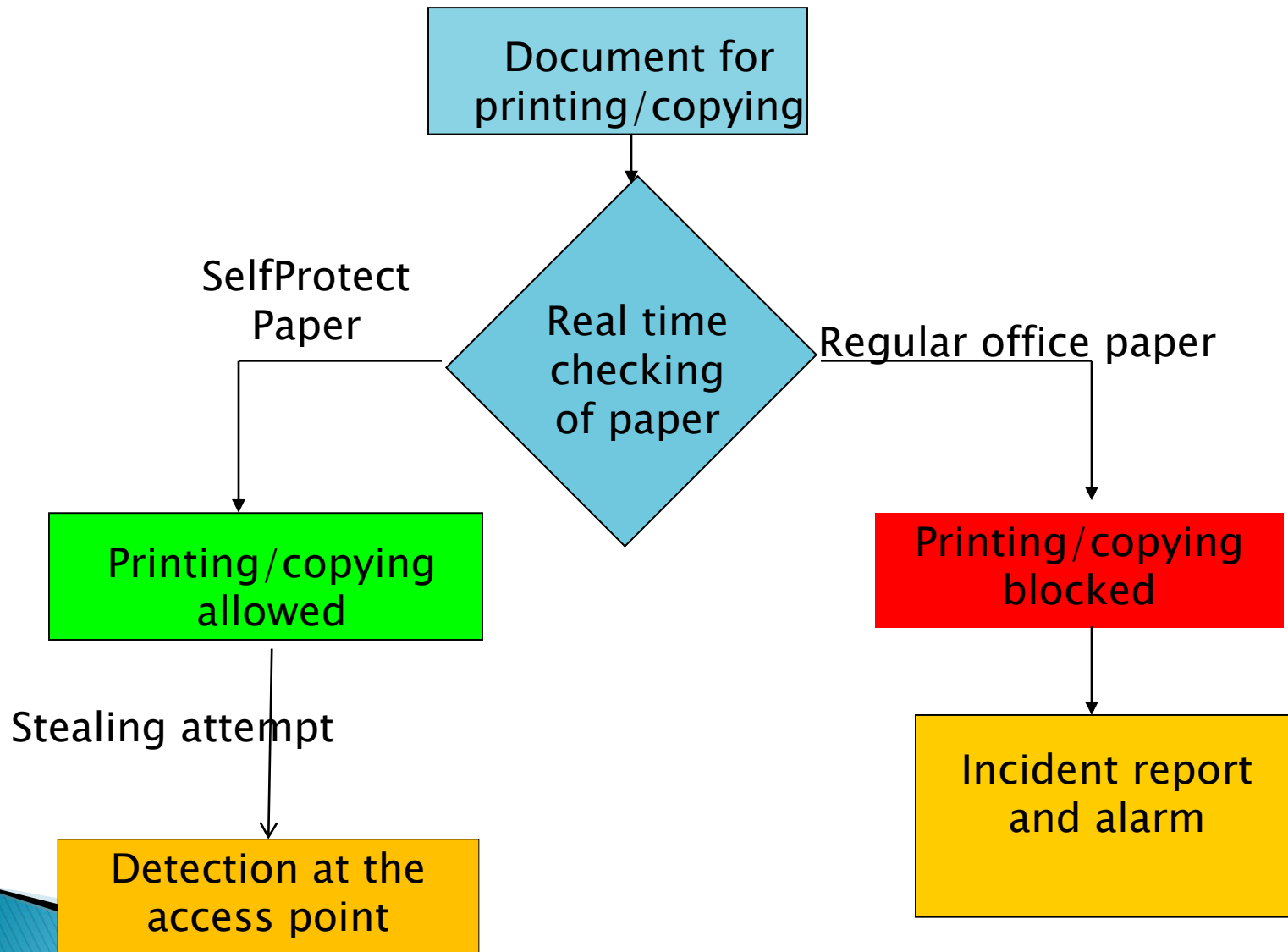
THE SOLUTION OF OUR INTEGRATED SYSTEM

- ▶ Uses the **security paper** which each page is unique, having at least 1000 microwires in composition, randomly distributed, so it is impossible to reproduce a sheet.
- ▶ Printing/copying the original documents only on this special paper
- ▶ The use of **sensors** in the printer that detects the attempt to use regular office paper
- ▶ Hardware and software embedded in the printer that blocks the use of regular office paper and generates incident reports
- ▶ Making the “**magnetic mark**” of the security paper
- ▶ **Scanning systems** use magnetic field scanning technologies – making the magnetic mark of the paper
- ▶ Compact equipment with integrated software provided with magnetic mark reader
- ▶ **EM gate-type detection device** installed at all access points

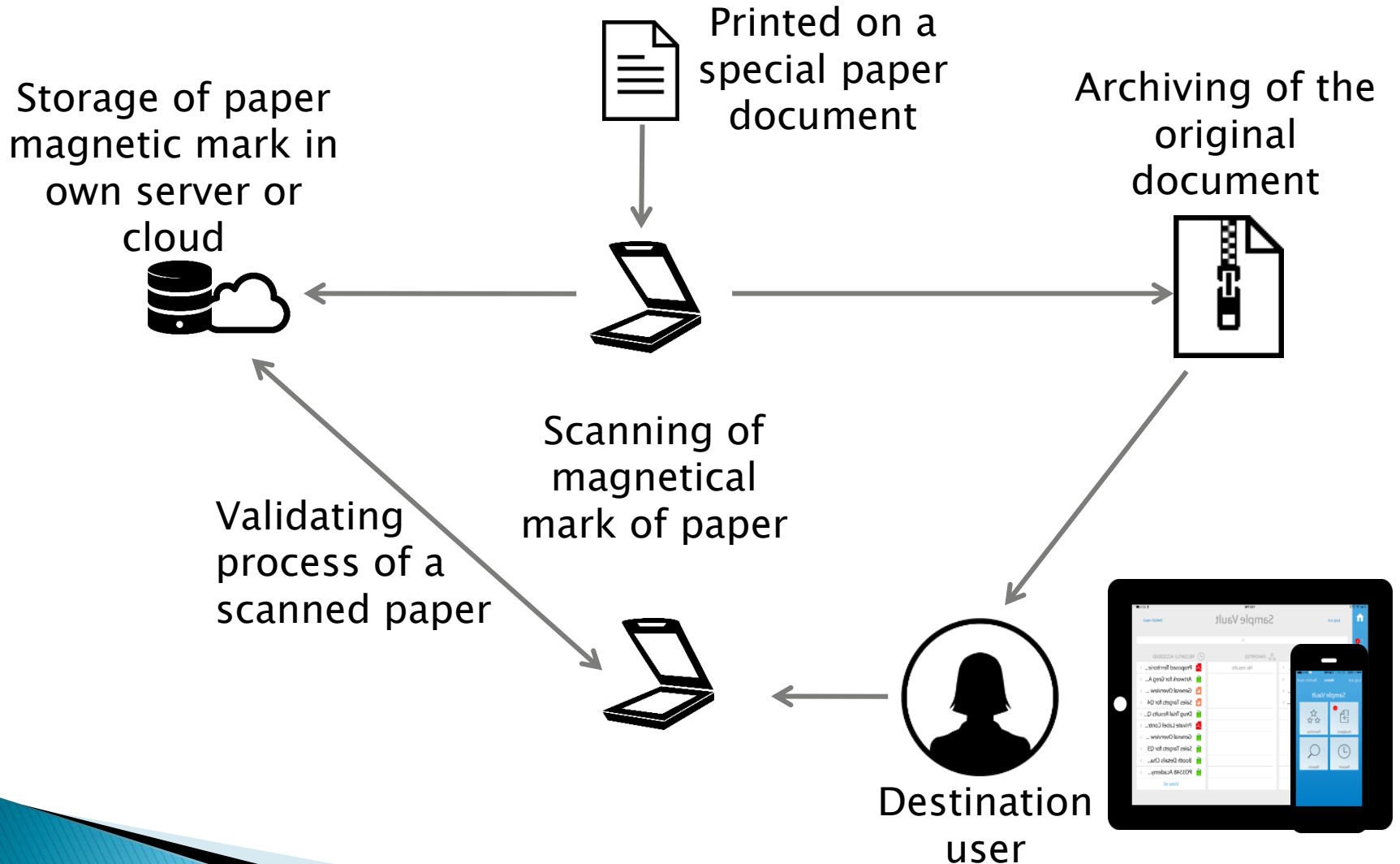
SAFEDOC SOLUTION COMPONENTS



PROCESS WORK-FLOW

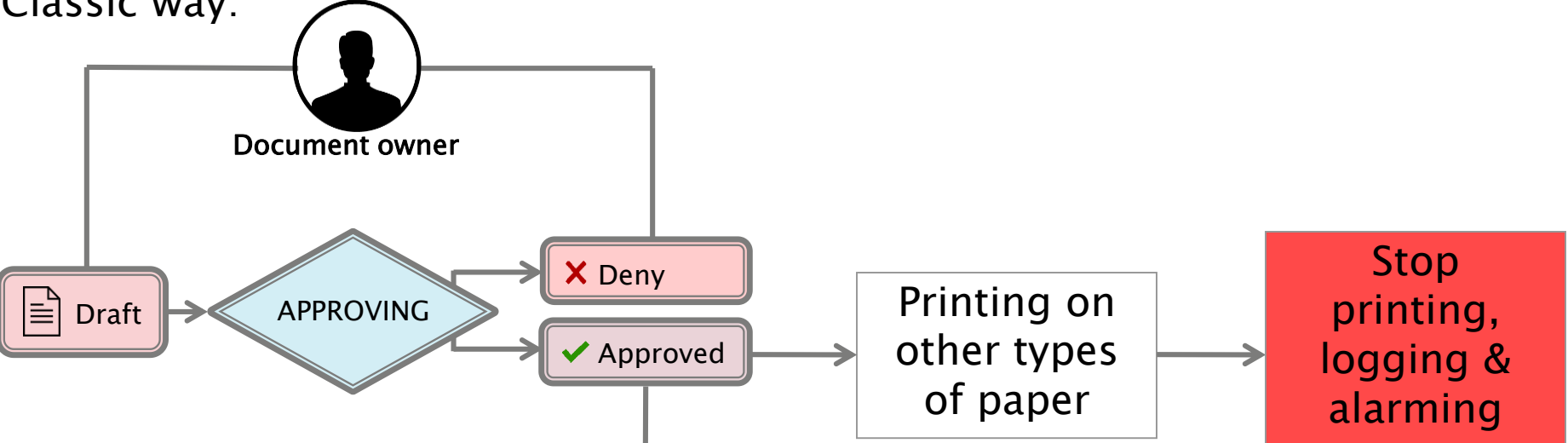


USING MAGNETIC MARK CASE

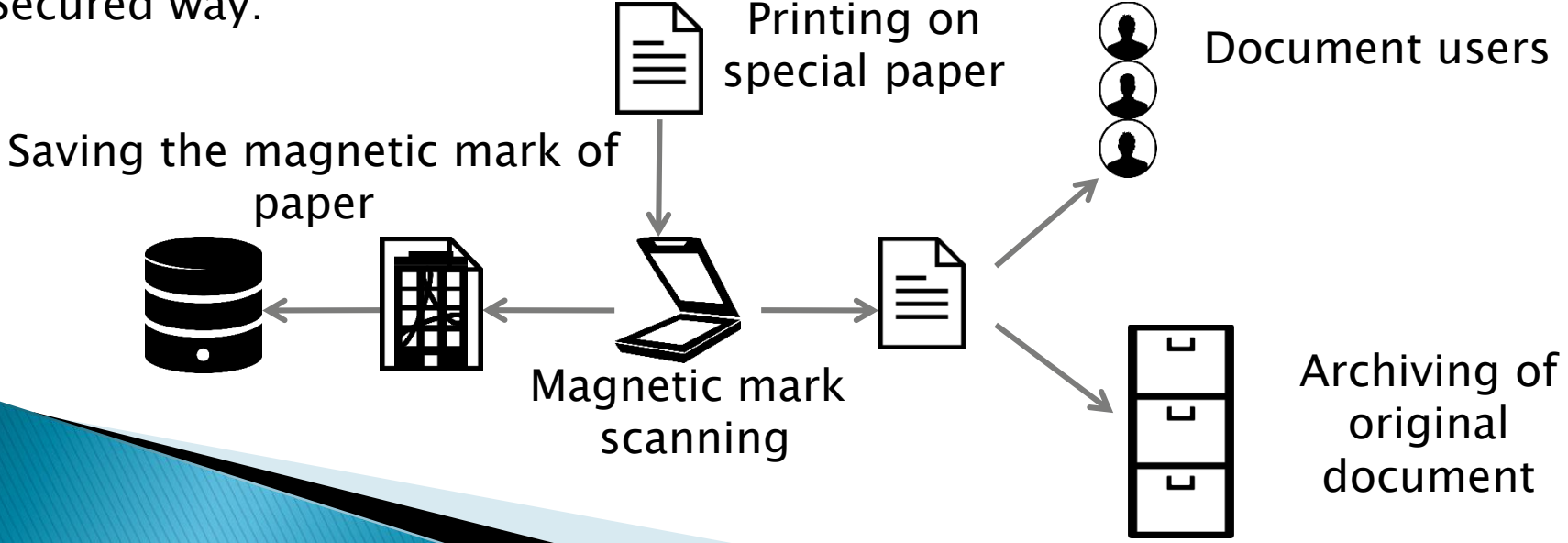


USING COMBINATED CASE SOLUTION

Classic way:



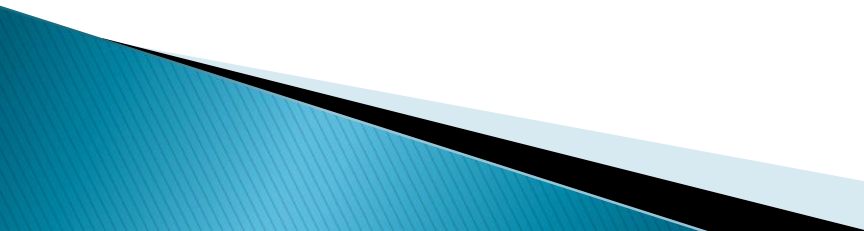
Secured way:



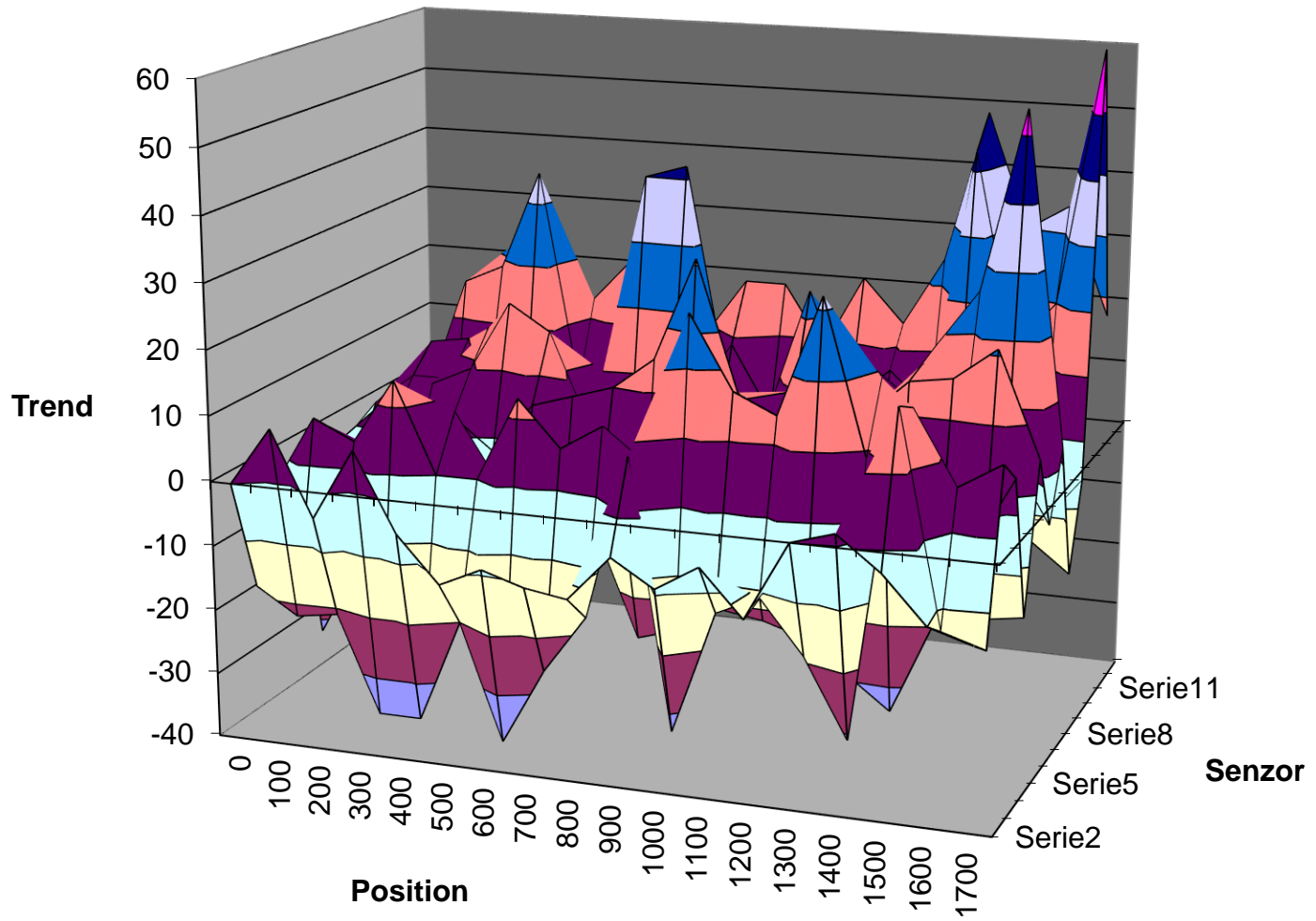
ADVANTAGES OF OUR SECURITY SOLUTION

- ▶ it is impossible to deactivate paper by magnetic means or other;
- ▶ it is impossible to deactivate paper by detaching (scratching off) the microwires without damaging the sheet of paper (will be rejected by equipment);
- ▶ it is impossible to use a regular office paper (will not be recognized by equipment);
- ▶ it is impossible to steal original or copied documents (document will be detected at the access point by the gate-type detector).

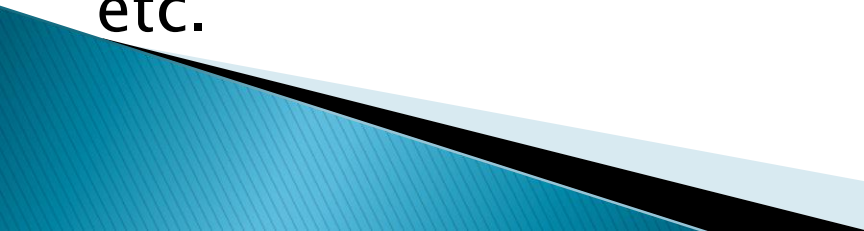
CHARACTERISTICS OF THE MAGNETIC MARK SOLUTION

- ▶ Uniqueness
 - ▶ Possibility to check and validate valuable or specially issued documents
 - ▶ The possibility of ensuring that in a document all pages are identifiable (not only the one signed)
 - ▶ The ability to ensure that the page has been signed or annotated by those involved in the decision.
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Magnetic mark



UNIQUENESS OF THE SECURITY SOLUTION

- ▶ The print solution allows strict print control only on special paper.
 - ▶ The scanning solution identifies and memorizes the unique magnetic mark of each page
 - ▶ It does not require changes to institutional procedures (magnetic mark printing or scanning equipment is inserted into the existing workflow of the documents)
 - ▶ It eliminates the possibility of illegal replacement of pages in a document
 - ▶ You can always check the authenticity of an original, along with data such as the issuer, origin, time-stamp, etc.
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INTEGRATE WITH EXISTING MANAGEMENT SYSTEMS

- ▶ Web services will be developed to allow access to certain functions and interface of the application (printer or scanner) so as to allow integration with any application that knows how to work with web services
 - ▶ It will have to develop and expose some functions, interfaces, parameters through an API so as to allow always the development of new modules and integration with other software applications.
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CASE OF USING THE SOLUTION TOGETHER WITH THE ELECTRONIC SIGNATURE

- ▶ The magnetic mark will generate a hashcode that is encrypted on a digital certificate and the result is printed on the paper as a 2D barcode.
- ▶ Using the existing CA/PKI infrastructure, combined with the digital certificate of the printing and reading equipment, the security paper has the follows characteristics:
 - **Identification/Authentication** – the CA/PKI Authority certifies the identity of the equipment/user using the Digital Certificate
 - **Privacy** – the Public Key of the Digital Certificate is used for encrypting the special paper magnetic mark so that only specially designated equipment can decrypt this magnetic mark and compare it to the printed printout of the paper;
 - **Integrity** – through the Digital Signature Imprint, the recipient/authority can identify the integrity of the security paper
 - **Non-repudiation** – a security paper with the encrypted magnetic mark inserted in the page demonstrates the originality, since only the sender has access to the Private Key used to sign the information;
 - **Insert additional data** – time-stamps

AUTHORS

