



# Document Protection System

## DPS

### Technology Overview

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## **INTRODUCTION**

Oculus VisionTech (OVT) is a Wyoming corporation that is a reporting issuer in Canada and the United States, and whose common shares are listed for trading on the TSX Venture Exchange (TSX.V – OVT, OTCQB - OVTZ).

OVT has recognized that internet-based, digital document security/protection products are a business opportunity for the company that allow it to apply its proprietary real-time digital video watermarking technology, which was developed for studios and networks in the entertainment industry, to the digital document security/protection sector. This white paper is intended to provide an overview of OVT's cloud-based Document Protection System (DPS) technology and to provide an introduction to the online, digital document security/protection industry and possible vertical markets that exist in the sector, including the ability to confirm the authenticity of online documents and photographs distributed through traditional wireline networks or over wireless smart devices.

## **DOCUMENT PROTECTION BY WATERMARKING - OVERVIEW**

The OVT DPS technology secures/protects digital documents (including text documents, photos, blueprints, etc.) from any modification, and/or attempted forgery. The OVT cloud-based DPS technology works by imperceptibly watermarking documents, using real-time image processing and watermarking algorithms to create a secured/protected copy of the document. This protected copy is designed to resist any attempts to alter or forge the document by forensically tracking and deterring any attempts to tamper with the document. The watermarking algorithms are able to ascertain whether a document is protected by the OVT DPS technology and if any attempts to modify or tamper with the document occurred. Any such modifications are flagged, time stamped, and can be spatially highlighted in the document where any tampering occurred. This authentication and verification process ensures the integrity of the original document.

## **OVT DPS – THE TECHNOLOGY DIFFERENTIATOR**

Documents are created with various software office products such as Microsoft Office, Open Office, etc., each of which has its own file formats. To be used successfully for a variety of documents, any document security/protection system must be capable of handling and working with all present and future file formats.

One strategy to this problem is to use a document file format invariant watermarking system. This solution is superior to a system that supports different file formats by employing handlers for each document file format. Also, the protection of the documents implies that the documents can be converted to compressed images, which is an additional level of an exposure to an image CODEC (which is lossy compression by CODEC's pixel segmenting and quantization nature) artifacts.

Consequently, the number of false positives during the document authentication process could increase dramatically, which decreases the system's reliability and end-user's confidence. The OVT DPS solution is content-based, and searches for robust, invariant image segments. This proprietary digital image processing/recognition technology is a file format invariant watermarking system, and is subsequently fundamentally different from today's document data encrypted schemes, stored in different file formats-containers. The OVT DPS technology "personalizes" protected documents, based on their content, which is a "game changer" in the document protection industry.

The OVT DPS solution relies on the PDF (portable document format) document format to create a format invariant watermarking system. PDF document readers are freely available and widely popular. All the incoming documents can be converted to PDF images and protected with an image understanding algorithm, while the PDF document layout is preserved.

The PDF document can subsequently be encrypted before delivery, such that it cannot be opened without providing proper credentials. The result is that a document watermarking system can be offered as a cloud-based software service that can:

1. **Protect** - Accept any incoming document through a web portal, watermark it and return the watermarked document as a PDF document.
2. **Authenticate** - The "document authenticator" is also a cloud-based software service that can accept the watermarked document and validate the authenticity of the documents.

The cloud-based DPS combines the access control security for electronic documents, forensic grade anti-tampering technology, based on the document's content "understanding", and data storage (optional) into a single, unique solution. Because of its cloud-based scalable system architecture, the OVT DPS can easily expand and grow into a complete document management, security and storage eco-system, offered in a flexible and cost-effective web service model.

The cloud DPS technology can be deployed and scaled in wide range of vertical markets such as: corporate contracts and agreements management; corporate core development docs - IP protection, real estate contracts management, government-related document management and security (health care, law enforcement); specification document protection for industrial users in the automotive, aerospace, engineering companies, etc. sectors.

The OVT DPS can also provide cost-effective document/photo security solutions for the personal document management field (B2C segment).

## **BUSINESS MODELS**

OVT's core DPS watermarking technology could be deployed as an online service to provide the protection, authentication and, potentially, storage of secured/watermarked documents needed by customers in a variety of document management applications that address multiple vertical markets.

OVT is in the process of developing two business models for its cloud-based DPS:

**Core Document Authentication Service** – In this B2B model, large document management systems can store their customers’ documents on their servers and only request the authentication of certain high-security documents. In this model, the OVT DPS will authenticate the subject document, provide analytics and charge the customer for the authentication. The advantage of this model to OVT is the ability to widely and quickly access multiple document management system providers in the market and leverage their existing customer base.

**Document Protection Application** – In this model, OVT can build the entire cloud infrastructure to support large volumes of document storage, provide full service and be responsible for dealing with all end-users of the system - both B2C and B2B. Dealing directly with end users gives OVT the opportunity to offer services that extend beyond watermarking or document protection and to scale the value proposition.

### CLOUD DPS SYSTEM ARCHITECTURE

