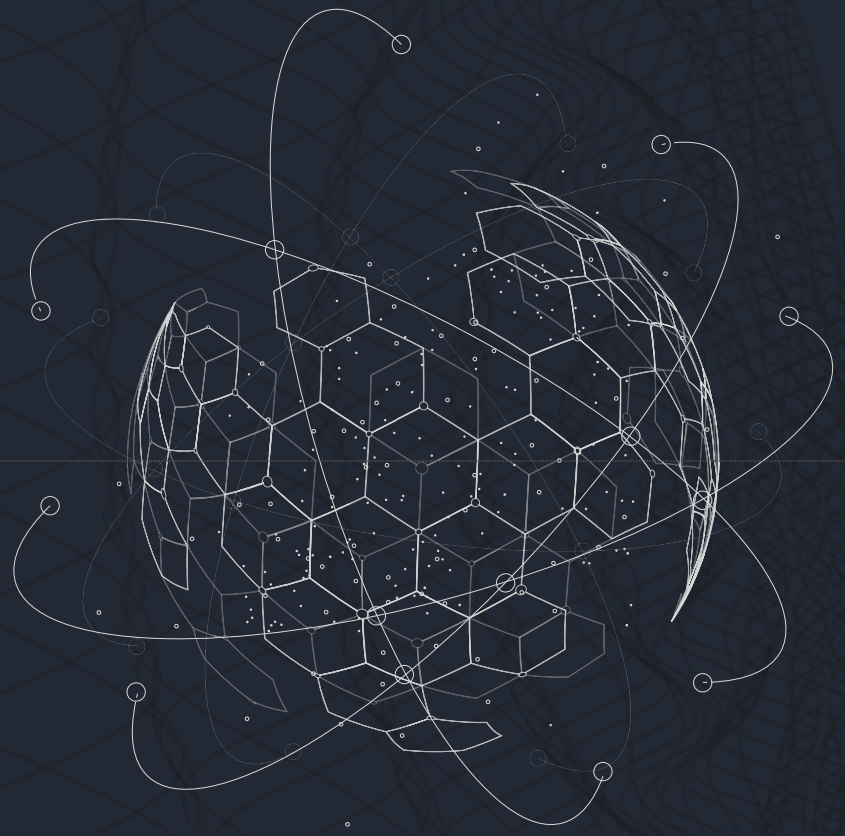
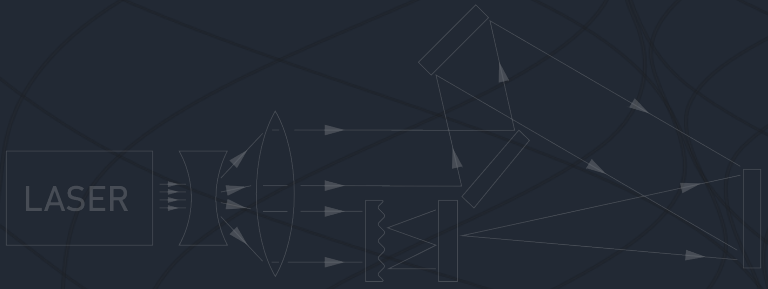




AN EYE FOR EVERY DIMENSION



16-03-2023





25+ PATENTS

Our principle technology was awarded the 1971 Nobel prize for Physics, 30+ years of R&D by MIT and Darpa, and continues development by Holotech's science team,



MARKET LEADER

HoloTech is the world leader in the holographic imaging industry, set apart by our advantage in imaging, rendering, production, and military service experience.



SERVICE RECORD

HoloTech has over 20 years of experience in military holography serving the United States Armed forces, and has produced over 10.000 holograms used in active service.



3D HOLOGRAPHIC
REAL-TIME DISPLAY



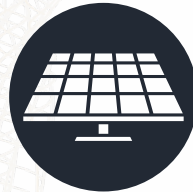
MILITARY INTELLIGENCE,
ANALYSIS & 3D MAPPING



IDENTITY, SECURITY &
BRAND PROTECTION



MEDICAL IMAGING
ANALYSIS & EDUCATION



HOLOGRAPHIC SOLAR
ENERGY COLLECTOR

HOLOTECH IS ACTIVE IN THE FIELDS OF SECURITY, MILITARY, MEDICAL, SUSTAINABLE ENERGY, AND REAL-TIME HOLOGRAPHIC DISPLAYS






NORTH AMERICA
EUROPE
UNITED ARAB EMIRATES


50+ TEAM MEMBERS


TWO PRODUCTION FACILITIES


25+ PATENTS



SWITZERLAND

HOLOTECH SWITZERLAND AG
HEAD OFFICE

Address:
Zweigniederlassung
Zug Baarerstrasse 1376302 Zug
Switzerland



HUNGARY

HOLOTECH HU K.F.T.
PRODUCTION FACILITY

Address:
Nadas Str. 2
Vac 2600
Hungary



UNITED STATES

HOLOTECH USA Inc.
PRODUCTION FACILITY

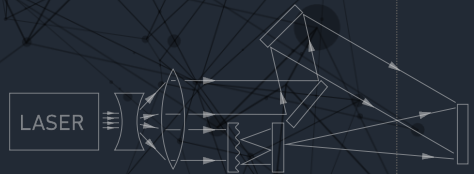
Address:
5900 Balcones drive
Suite 100, Austin Texas
USA



DUBAI

HOLOTECH UAE L.T.D.
MENA ASIA PR & SALES

Address:
Dubai Silicon Oasis
Dubai
U.A.E.





MIT and **DARPA** jointly developed and deployed this technology for the US. Military. A decade of R&D costs **100 million USD**.



MIT conducted successful laboratory research and created a revolutionary hologram incomparable to anything currently available.

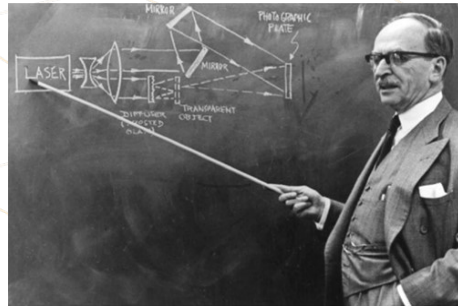
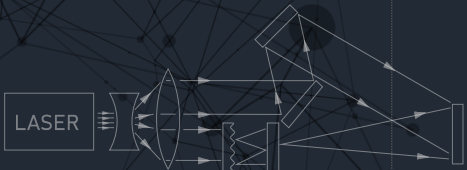
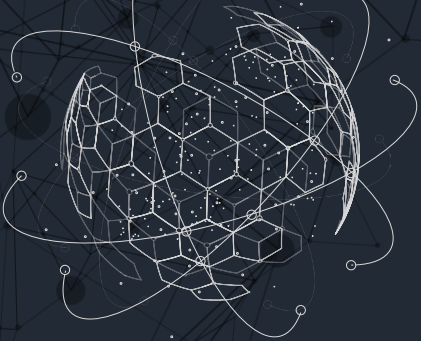
HoloTech acquired all technology, assets, and IP from Zebra INC. Then continued to work in the military sphere.

Based on the core technology **HoloTech** engineered new technologies for various industries.

LABORATORY RESEARCH
DEVELOPMENT BUDGET
MARKET LEADER

- **20 YEARS OF R&D**
- **USD 100 MILLION**
- **OVER 25 PATENTS**

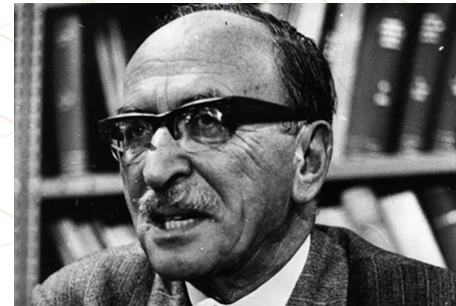




PRINCIPLE THEORY

Holography dates from 1947 when the Hungarian British scientist **Dennis Gabor** developed the theory of holography while working to improve the resolution of an electron microscope.

Gabor coined the term hologram from the Greek words **holos**, meaning **whole**, and **gramma**, meaning **message**.



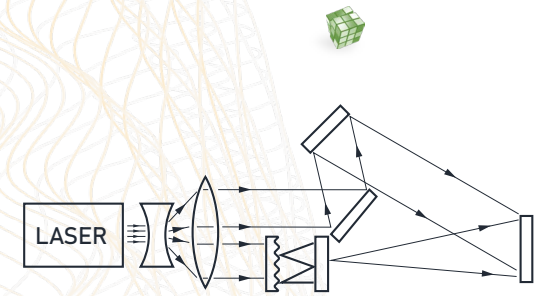
NOBEL PRIZE

In 1971, Dennis Gabor was awarded the **Nobel Prize** in Physics for inventing and developing the holographic method, a lens-less, three-dimensional photography system with many applications.



1971 - PHYSICS

THE FIRST HOLOGRAM



EXISTED ONLY IN A LABORATORY

Dr. Gabor made his first hologram in 1948 using a light source that consisted of a mercury arc lamp with a narrow-band green filter



MONOCHROMATIC



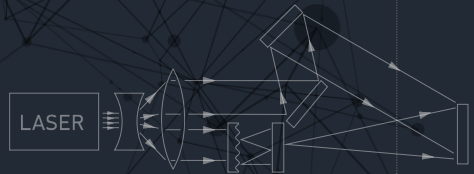
TIME CONSUMING & EXPENSIVE

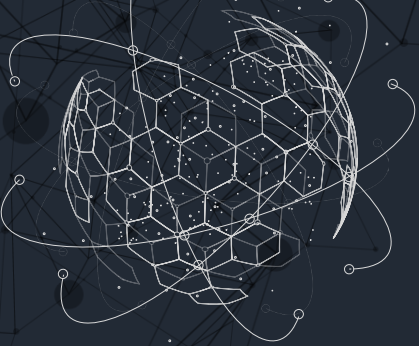




EVOLUTION OF THE HOLO *WHOLE* GRAM IMAGE

- FULL COLOR
- HIGH DEFINITION
- RENDERING
- MASS PRODUCTION
- DURABLE
- MULTI-IMAGE
- MOTION HOLOGRAM
- REAL-TIME DISPLAY
- SOLAR HOLOGRAM





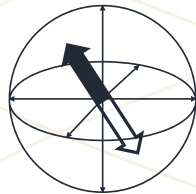
HIGH DEFINITION

FULL COLOR 3D IMAGE IN HIGH DEFINITION (PHOTOREALISTIC) QUALITY WITH BOTH INWARD AND OUTWARD PERSPECTIVE



MULTI-IMAGE

UP TO 800 HOLOGRAMS CAN BE CHANNELLED WITHIN A SINGLE HOLOGRAM TO CREATE A MULTI-IMAGE OR FULL-MOTION HOLOGRAM



HEIGHT & DEPTH

THE HOLOGRAM IS IN FULL PARELEX WITH A DEPTH AND HEIGHT PERSPECTIVE UP TO 100 CENTIMERS



NO OPTICS

WITH ANY LIGHTSOURCE THE HOLOGRAM IS CLEARLY VISIBLE BY THE NAKED EYE AND CAN BE PHOTOGRAPHED OR FILMED WITHOUT A NEED FOR SPECIAL EQUIPMENT

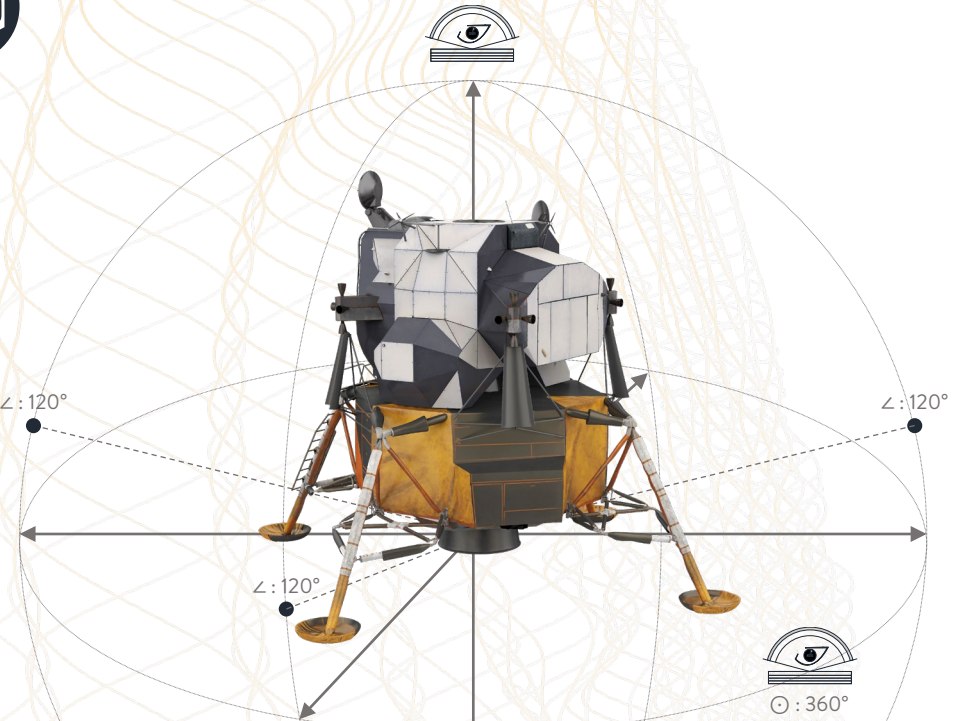


PHOTO REALISTIC



FULL COLOR



NAKED EYE



CHANNELLING

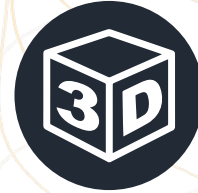
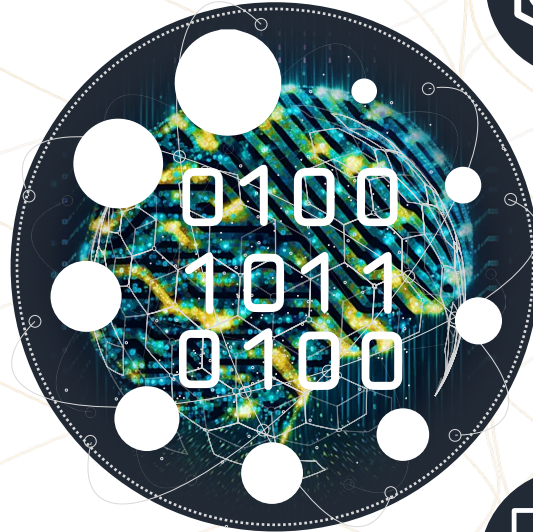


FULL PARELEX

A REAL FULL PARELEX HOLOGRAPH



DIGITAL HOLOGRAM RENDERING ENGINE



CREATE A DIGITAL HOLOGRAM FROM ANY SOURCE



3-DIMENSIONAL FILES

ALL 3D FILES, SUCH AS BLENDER 3D STUDIO MAX, STL, 3D TECHNICAL DRAWING, OR 3D ARCHITECTURE FILE

DIGITAL GRAPHICS

ALL DIGITAL IMAGE FILES, JPEG PNG, PDF, PSD, AI, SVG OR ANY PIXEL OR VECTOR BASED FILE.



MEDICAL IMAGES

ALL MEDICAL SCANNING AND IMAGING FILES, MRI, CT, PET, ULTRASOUND, AND X-RAY

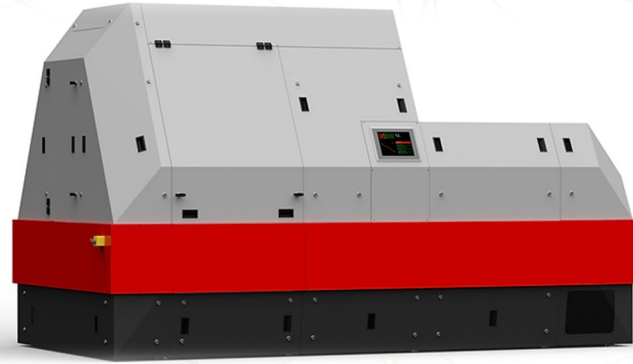
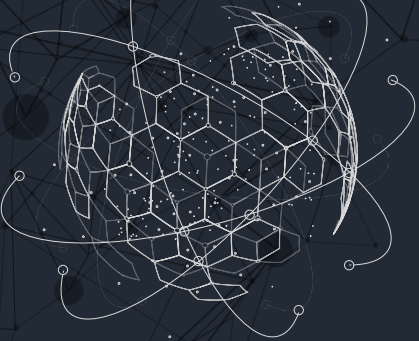
SATELITE & LIDAR

GOOGLE MAPS, SATELITE IMAGES, TELESCOPE IMAGES, LIDAR, OR GEOGRAPHICAL IMAGE FILE

WORKFLOW

OUR PROPRIETARY SOFTWARE AND MACHINERY ARE PERFECTLY INTEGRATED TO PROVIDE A SEAMLESS WORKFLOW. UPLOAD ANY COMPATIBLE FILE TO OUR CLOUD TO CREATE THE HOLOGRAM.





H.1. MASTER MACHINE

The H.1 is our own designed and built machinery. It is based on a complex optical layout involving RGB lasers, mirrors, lenses, prisms, and other optical elements.

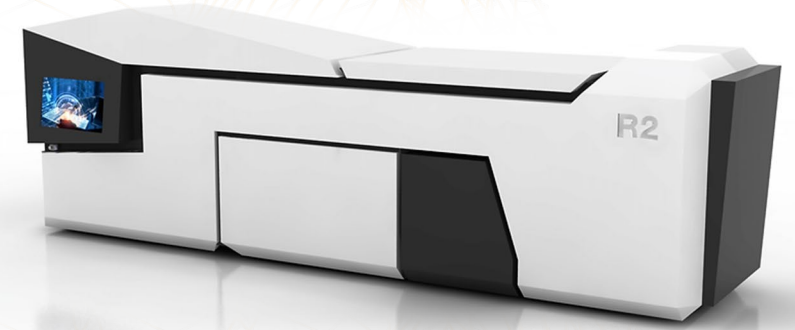
The H.1. Master Machine produces *Hogels* (holographic pixels) as small as 0,2 x 0,2 mm, with 1024 x 1024 resolution and full-color spectrum. These holograms are full parallax, provide a 120° viewing angle, can be produced in vertical and horizontal orientations, and are up to 60 cm x 80 cm in size.

The entire production process is digital - there is no need for nanostructures, plates, or embossing.



SHEET TO SHEET

OUR PRODUCTION EQUIPMENT



R.2. REPLICATION MACHINE

The R.2 is our own designed and built machinery, engineered to create replicate holograms at high speed, accurately, and consistently.

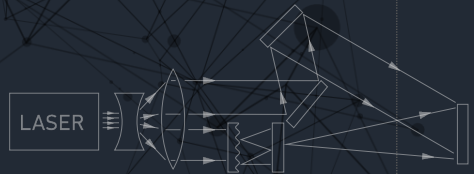
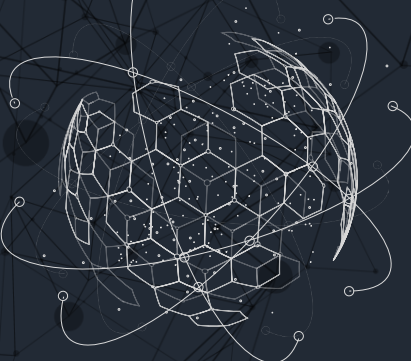
It is a roll-to-roll design with a laser beam to record the holograms on photosensitive materials. The resulting holograms retain all properties of the master hologram produced by the H.1. Master Machine

The entire production process is digital - there is no need for nanostructures, plates, or embossing.



ROLL TO ROLL





HOLOGRAPHIC FILM

PHOTOPOLYMER LAYER

Holographic images are recorded within our specially developed photopolymer (*PP*) layer. The PP layer has a minimum thickness of 10 μm , and up to 24 μm .

POLYCARBONATE LAYER

The hologram is encapsulated protected by two Polycarbonate (*PC*) layers.

THERMOPLASTIC POLYURETHANE

A final layer of Thermoplastic polyurethane (*TPU*) can be applied, and protects the final product. TPU has many properties, including elasticity, transparency, and resistance to oil, adding protection and strength to the film.

MATERIAL COMPOSITION



TRANSPARENT



DURABLE



SUSTAINABLE

PROTECTION LAYER

10 μm , or 25 μm

POLYCARBONATE

15 μm , or 67 μm

PHOTOPOLYMER

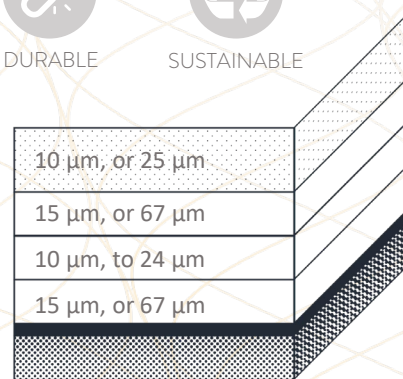
10 μm , to 24 μm

POLYCARBONATE

15 μm , or 67 μm

TRANSPARENT ADHESIVE BOND

SURFACE MATERIAL



ROLL TO ROLL



SHEET TO SHEET



UP TO 200 C



WATER PROOF



SCRATCH RESISTANT



UV RESISTANT



PRESSURE RESISTANT



FLEXIBLE

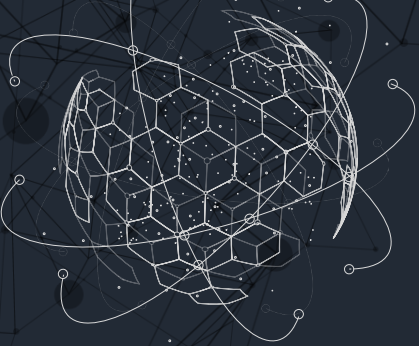


ADHESION



STAMPING





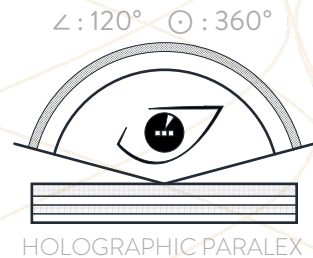
CHANNELLING

MULTI-IMAGE HOLOGRAM

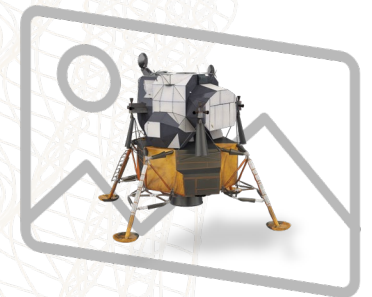
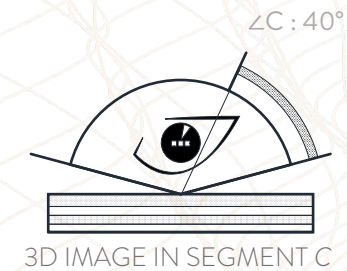
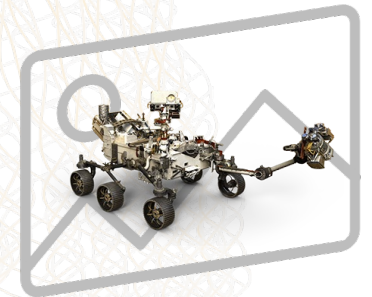
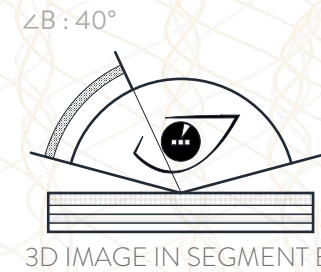
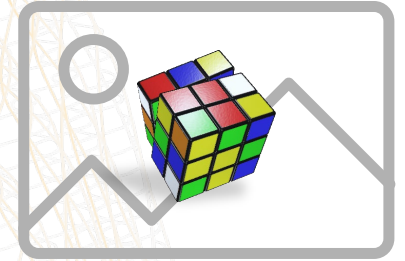
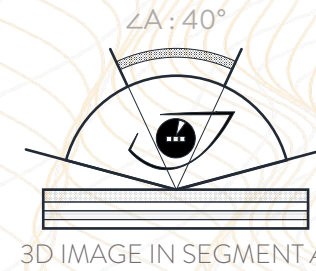
Different 3D images can be combined into a single hologram to make each visible from a specific range of angles. Within its range, each holographic image maintains its complete 3-dimensional properties.

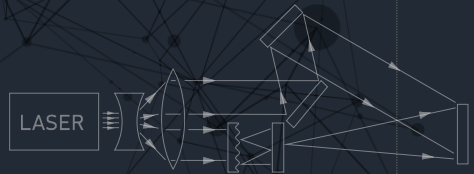
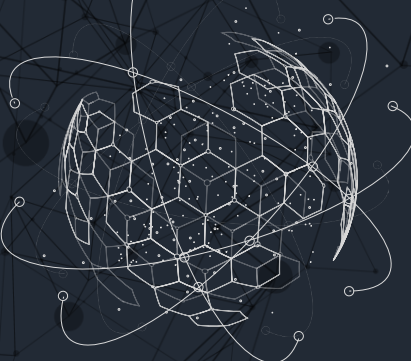
MOTION HOLOGRAM

Up to thousands of different images can be packed into a single hologram. It creates a holographic image moving in motion while maintaining all its 3d-dimensional properties.



MULTI-IMAGE PRINTING





INTEGRATE CONVENTIONAL PRINTING TECHNIQUES

HYBRID TECHNOLOGY

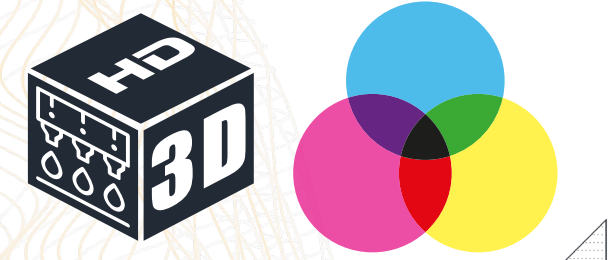
HoloTech can incorporate multiple conventional printing techniques under, within, or on top of the holographic layer. We have named it *'hybrid printing,'* and it can include a combination of different printing techniques and transparent and opaque inks.

HOLOGRAPHIC MATERIAL STACK

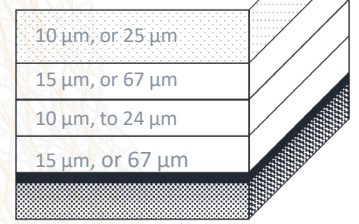
The hologram is created within the Photopolymer layer (24µm), protected by two Polycarbonate layers (15µm), and the durability of the stack is increased with a protection layer of TPU carbonate (10µm). The stack has a final thickness of 69µm.

INTEGRATION POINTS

Either Polycarbonate layers, or on the surface material.



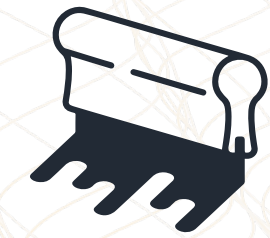
PROTECTION LAYER
POLYCARBONATE
PHOTOPOLYMER
POLYCARBONATE
ADHESIVE BOND
SURFACE MATERIAL



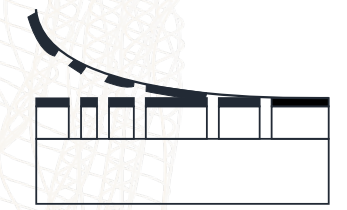
OFFSET



UV PRINTING

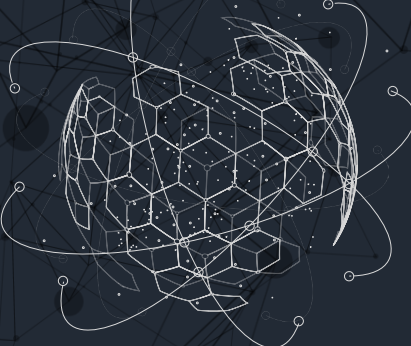


SCREEN

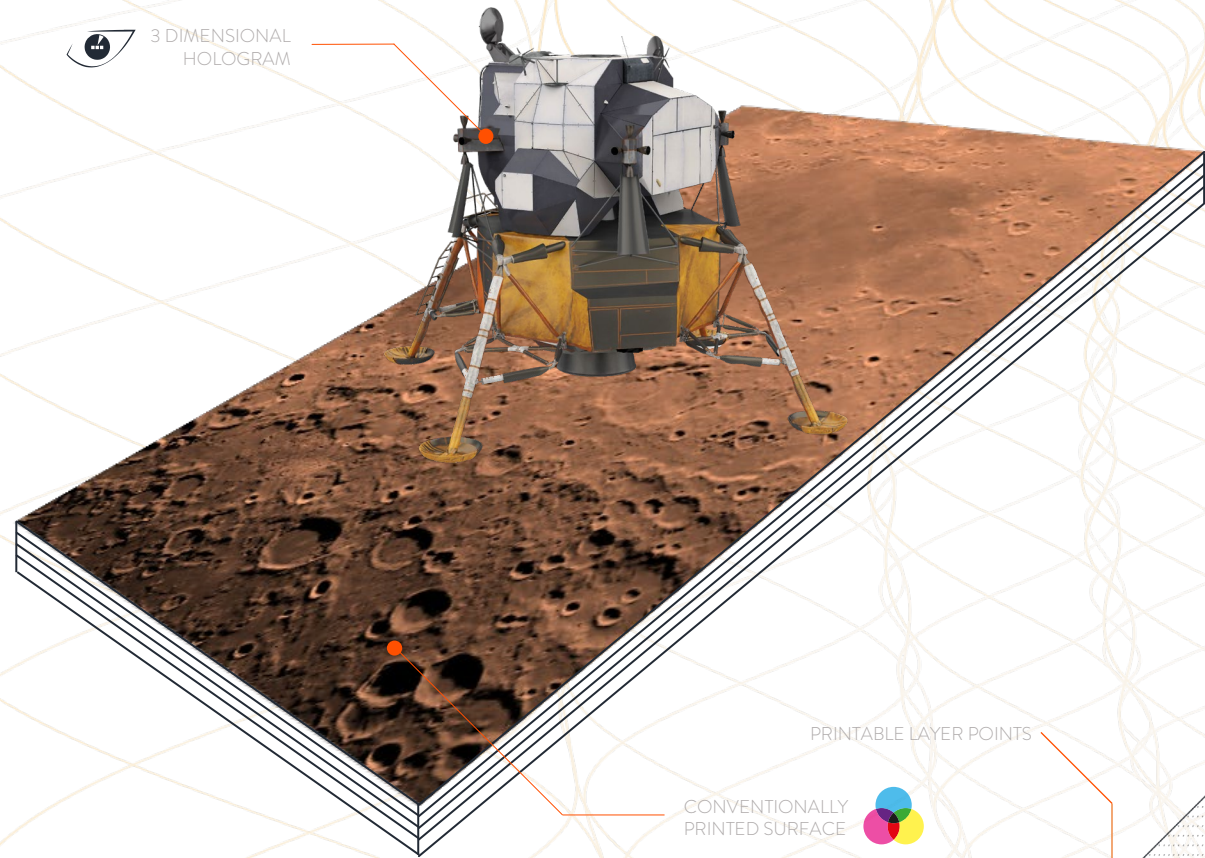


INTAGLIO & GRAVURE



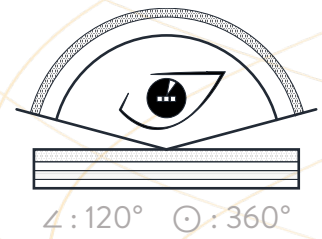


3 DIMENSIONAL HOLOGRAM

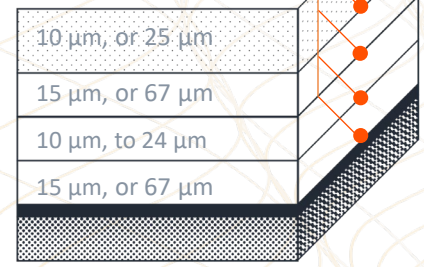


PRINTABLE LAYER POINTS

CONVENTIONALLY PRINTED SURFACE



PROTECTION LAYER
POLYCARBONATE
PHOTOPOLYMER
POLYCARBONATE
TRANSPARENT ADHESIVE BOND
SURFACE MATERIAL



HYBRID PRINTING

CONCEPT



INKS & LACQUERS



FULL-COLOR



UV & VARNISH

COMPATIBLE PROCESSES



ROLL TO ROLL



LAMINATION



ADHESION



STAMPING



OFFSET



UV PRINTING



SCREEN



GRAVURE

COMPATIBLE SURFACES



PAPER



SECURITY PAPERS



POLYMER



METAL



PLASTIC



TEXTILE

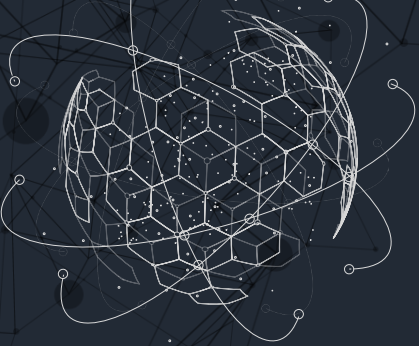


ACRYL



GLASS





SECURITY, IDENTITY & BRAND PROTECTION



LONG LASTING & DURABLE

OUR HOLOGRAMS HAVE A LIFESPAN OF OVER 25 YEARS, AND ARE HEAT, COLD, BEND AND SCRATCH RESISTANT



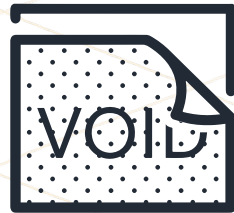
UNMATCHED PERCEPTION

FULL COLOR 3D HOLOGRSPHIC IMAGES IN HIGH DEFINITION (PHOTOREALISTIC) QUALITY WITH BOTH INWARD AND OUTWARD PERSPECTIVE



VISUAL AUTHENTICATION

NO NEED FOR SPECIAL OPTICS, UV LIGHT, OR MAGNIFICATION. THE HOLOGRAM IS VISIBLE TO THE NAKED EYE



TAMPER EVIDENT

ANY ATTEMPT TO REMOVE THE HOLOGRAPHIC FILM, MODIFY, OR ALTER IT DESTROYS THE HOLOGRAPHIC IMAGE



LOW LEAD TIME

OUR RESOURCE SUPPLY, PRODUCTION PROCESS AND SOFTWARE SYSTEM ALLOW US TO TACKLE YOUR PROJECT PROMPTLY



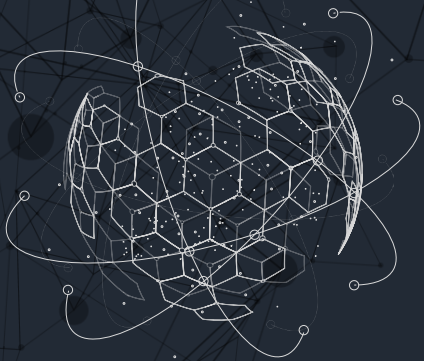
NON-REPLICABLE

OUR TECHNOLOGICAL EDGE MAKES IT IMPOSSIBLE TO REPRODUCE OR COPY A HOLOGRAPHIC SECURITY FEATURE

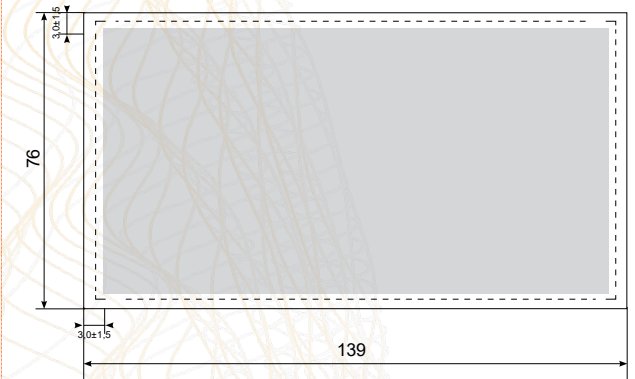
TRUMPLESS SECURITY AND AUTHENTICATION FOR

BANKNOTE | PASSPORT | VISA LABEL | CHEQUEBOOK | CERTIFICATE | BRAND PROTECTION

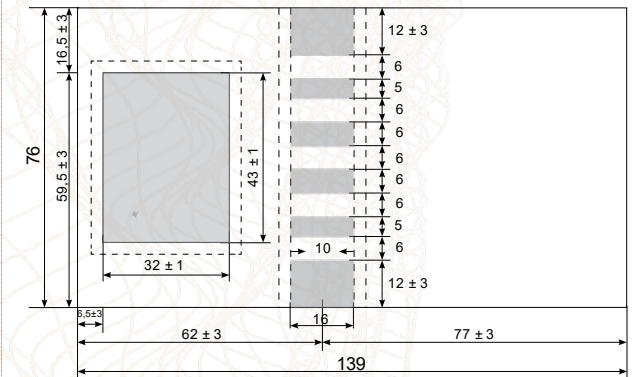




HOLOGRAPHIC BANKNOTE

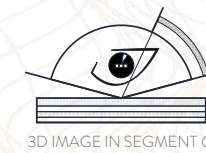
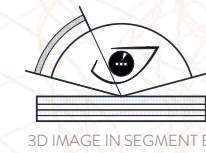
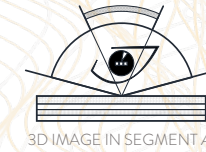
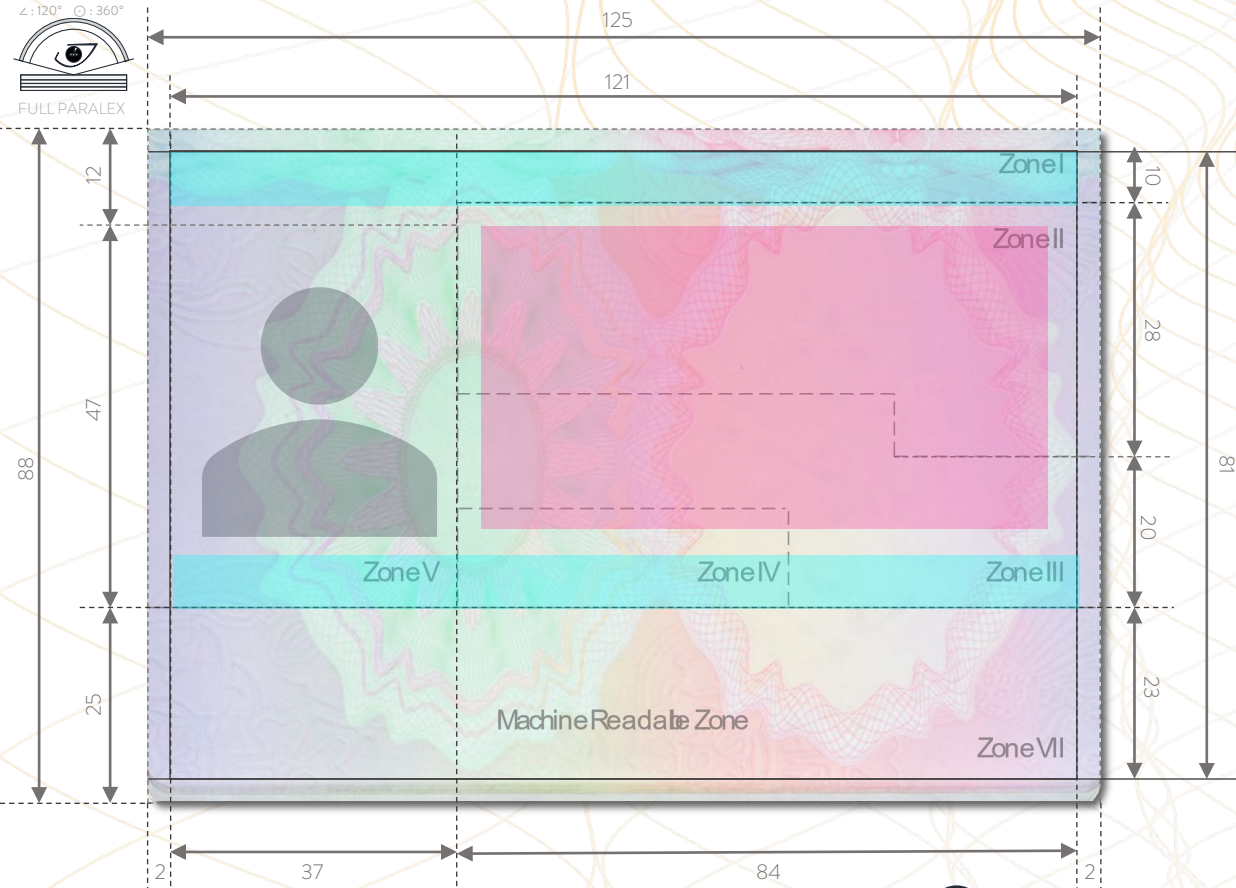


FULL HOLOGRAPHIC SURFACE




HOLOGRAPHIC SECURITY ELEMENTS





 OFFSET PRINTED PORTRAIT ON THE HOLOGRAPHIC FILM

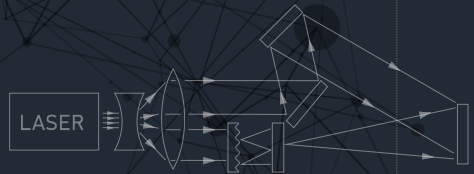
 HOLOGRAMS II & III VISIBLE IN SEGMENT B OR C

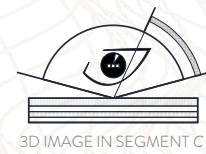
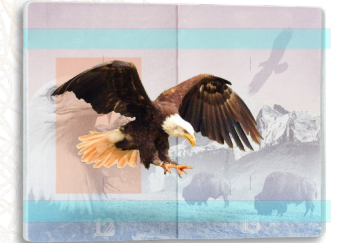
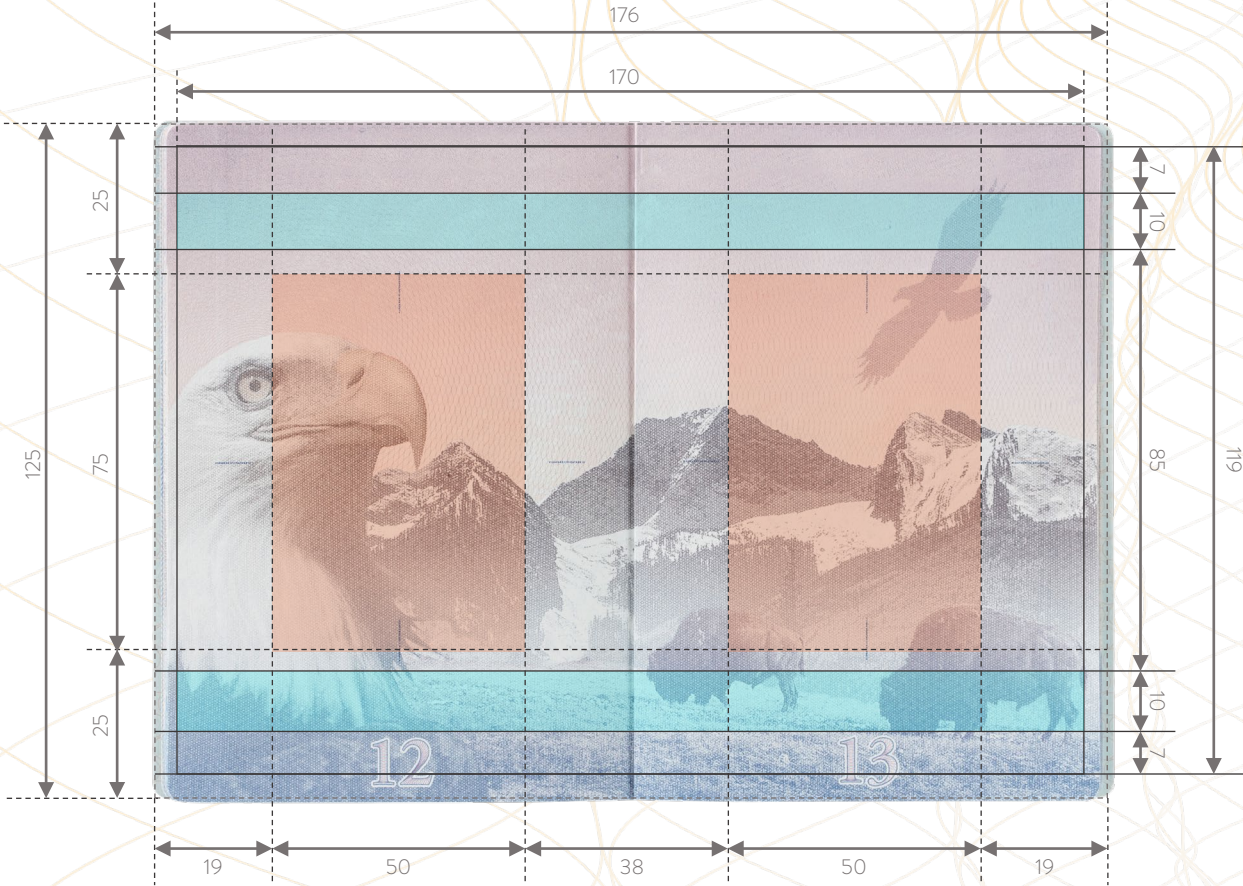
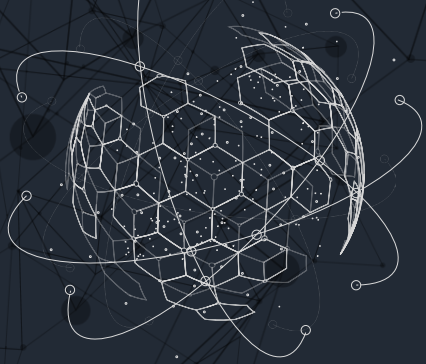
 LAMINATED OR ADHESED ON TO THE DATA PAGE

 OFFSET PRINTED IDENTITY INFORMATION ON THE FILM

 HOLOGRAM I VISIBLE IN FULL PARALEX

 TAMPER EVIDENT ONCE COMPLETED





HOLOGRAM I
VISIBLE FROM ALL ANGLES



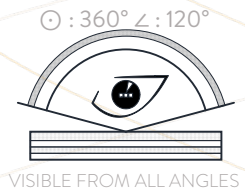
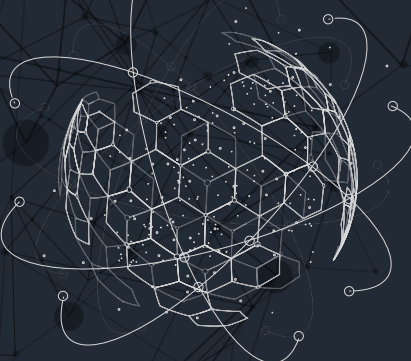
HOLOGRAMS II & III
ONLY VISIBLE FROM ANGLES B OR C

∠ : 120° ⊙ : 360°



VISIBLE FROM ALL ANGLES





HOLOGRAPHIC VISA LABEL

UNLIKE A KINEGRAM, HOLOTECH'S SECURITY HOLOGRAM CANNOT BE REPRODUCED. YOUR DESIGN CAN EASILY BE MODIFIED, OUR HOLOGRAM IS AUTHENTICABLE BY THE NAKED EYE, AND HOLOTECH IS READY FOR FLEXIBLE PRODUCTION.



TAMPER EVIDENT



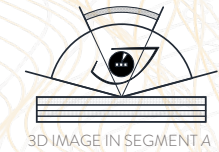
LOW LEAD TIME

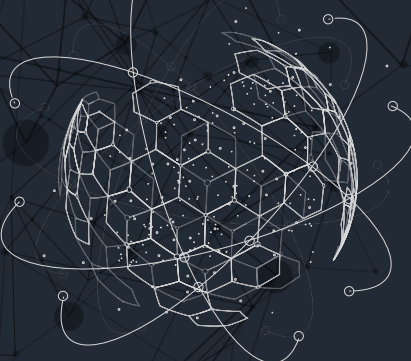


VISUAL AUTHENTICATION



NON-REPLICABLE





HOLOGRAPHIC CHEQUE BOOK

CHEQUEBOOK WITH SECURITY HOLOGRAM



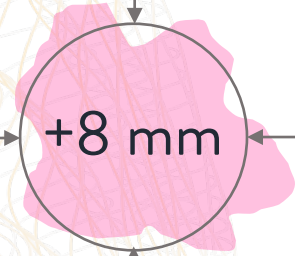
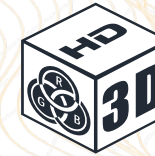
TAMPER EVIDENT



VISUAL AUTHENTICATION

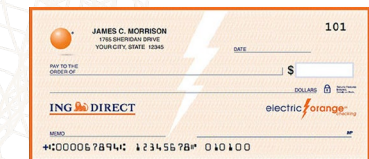
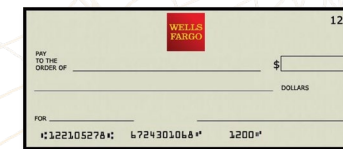
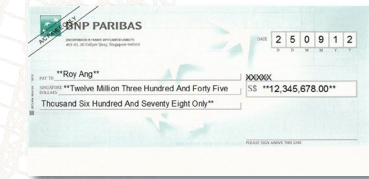
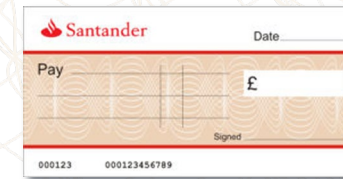
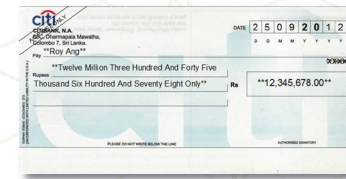


NON-REPLICABLE



SECURITY HOLOGRAM

CAN BE MADE IN ANY SHAPE OR SIZE, WITH A MINIMUM SIZE OF 8 MILLIMETERS, AND THE HEIGHT AND DEPTH PERCEPTION ARE PROPORTIONALLY RELATED TO THE HOLOGRAM'S SIZE

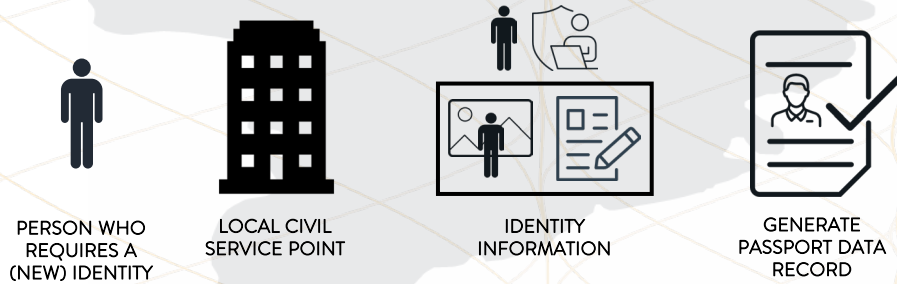


ALL CHEQUEBOOKS IN CIRCULATION USE SIMILAR FEATURES

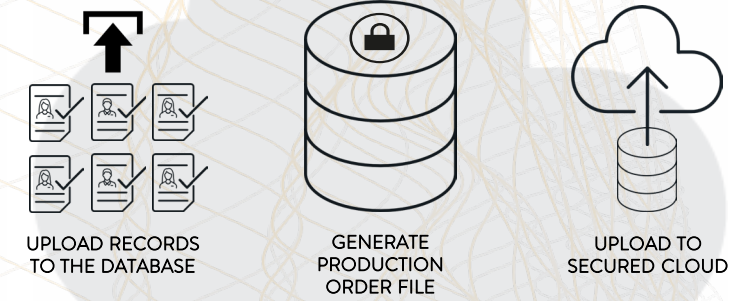
INTAGLIO | MICRO TEXT | GUILOCHE | UV INKS | IDENTIFIERS | REFLECTIVE FOIL - AND ARE NOT TRUMPLESS



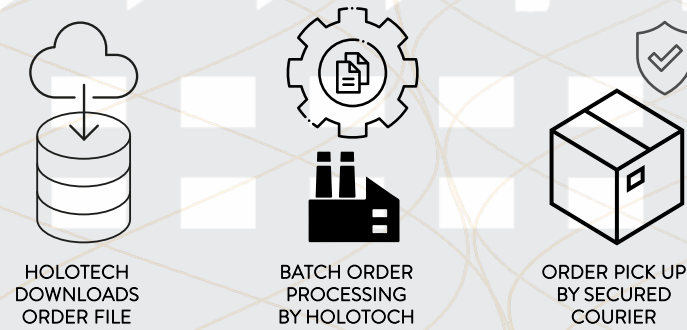
1 - REQUEST PROCEDURE



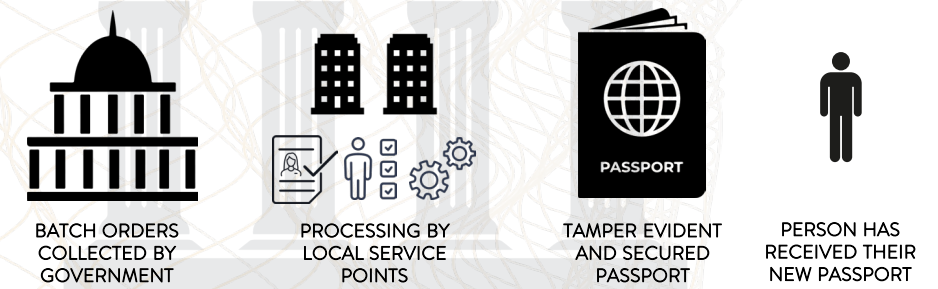
2 - DATA PROCESSING

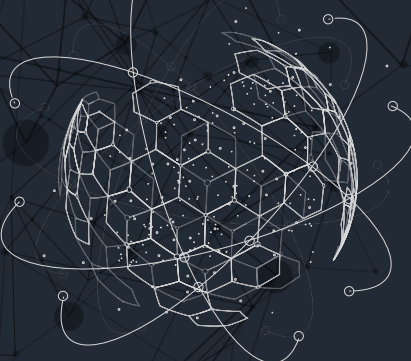


3 - BATCH PRODUCTION



4 - IDENTITY DELIVERY





WHY YOU SHOULD CHOOSE HOLOTECH



MARKET LEADER

THE WORLD LEADER IN DIGITAL AND PRINTED HOLOGRAPHY



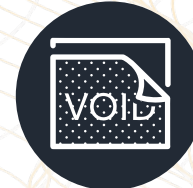
NON-REPLICABLE

IT IS IMPOSSIBLE TO COPY OR REPLICATE OUR HOLOGRAMS



EXCEPTIONAL

FULL PARALEX3D IN HIGH DEFINITION & FULL COLOR



TAMPER EVIDENT

ANY TAMPER ATTEMPT DESTROYS THE HOLOGRAM COMPLETELY



LONG-LASTING

DURABLE AND RESILIENT LASTING AT LEAST 25 YEARS



LOW LEAD TIMES

WE CAN GENERATE A HOLOGRAM IN A FEW MINUTES



STOCK AVAILABLE

BE ASSURED OF RELIABLE LEAD TIMES, AND DELIVERY



TRUSTWORTHY

UNWAVERING COMMITMENT TO SERVICE, SECURITY AND INTEGRITY



INTERGRAF ✓

APPLIED FOR THE INTERGRAF CWA 15374 CERTIFICATE



SECURED ENVIRONMENT

FOR DATA PROCESSING AND THE IMPLEMENTATION OF YOUR PROJECT

HOLOTECH 10 /10



AN EYE FOR EVERY DIMENSION

THANK YOU
FOR YOUR CONSIDERATION

