



**6th Symposium and Exhibition on ICAO
MRTD's, Biometrics and Security Standards**

Pre-Lunch Presentation

01 November 2010

ICAO Headquarters

Montréal, Canada

THERE IS ONE FOR EVERYBODY

WELCOME

How to secure important Government Credentials – a case study



Digital Identification Solutions Group
Gerd Schaefer, Founder

INTRODUCTION

The Digital Identification Solutions Group

- Management Experience in the Identification & Security Business since the beginning of 1988, therefore more than 22 years of experience
- Head office in Germany and subsidiaries in Europe, Middle East, Asia Pacific (Singapore), China, Latin America, and in the United States
- 110 employees worldwide and more than 30 software developers and project-managers
- Public listed company at the Frankfurt Stock Exchange since 2006
- Digital Identification Solutions Group revenue in 2009: More than US \$ 28,5 million. Year end estimate for 2010: more than US \$ 36 million



COMPANY ACTIVITIES

Market Segments

- Personal Identification and ID Management for Corporate Clients
- Governmental ID Cards (National ID, Military ID, Social Security, Drivers License, Car Registration)
- Machine Readable Travel Documents (ID Cards, MRP, ePassports, Visa)

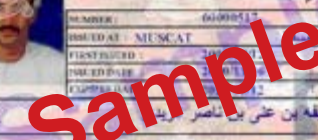
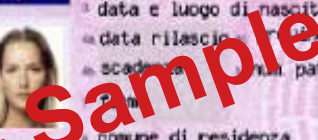


EDISecure® & IDExpert®

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

STATE OF SOUTH CAROLINA
DEPARTMENT OF MOTOR VEHICLES
DRIVER'S LICENSE

-



CASE STUDY

How to secure important Government Credentials?

Initial Situation (case study):

- Provide secure Gun License Cards for a Central American Country
- Personalization Volume: between 50.000 and 100.000 Cards per year
- Previous Problems: Lack of Protection against Forgery and Fraud



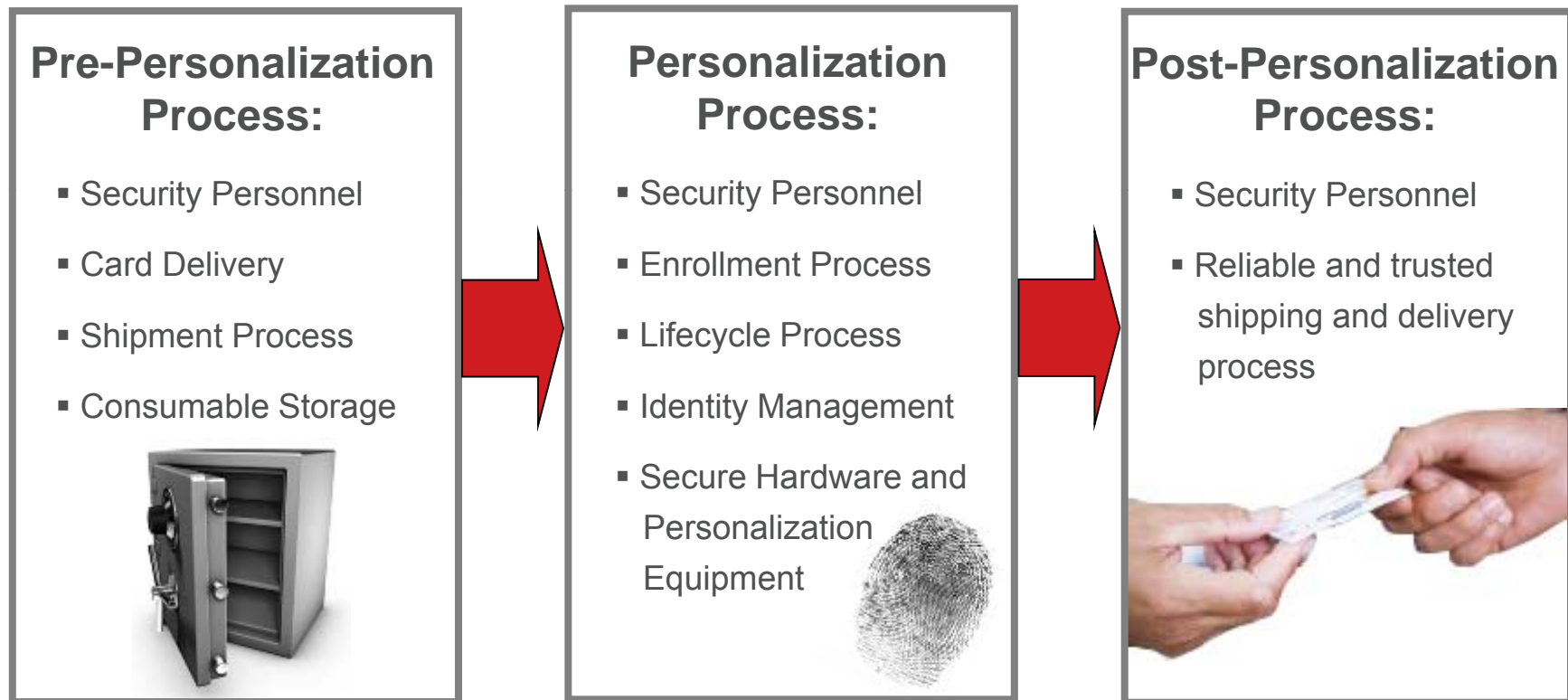
CASE STUDY

Security Measures

- Production of Gun License Cards
- Controlled card stock and storage
- Color and laser personalization and lamination in a one-step process
- Live-capturing of photo, fingerprint and signature
- Embedded Contactless Encoding Technology
- Data Synchronization with central database
- Combination of a variety of security features
- Special PET-G Card material for long lifetime and laser compatibility

CASE STUDY

Risk Management – a secure workflow process



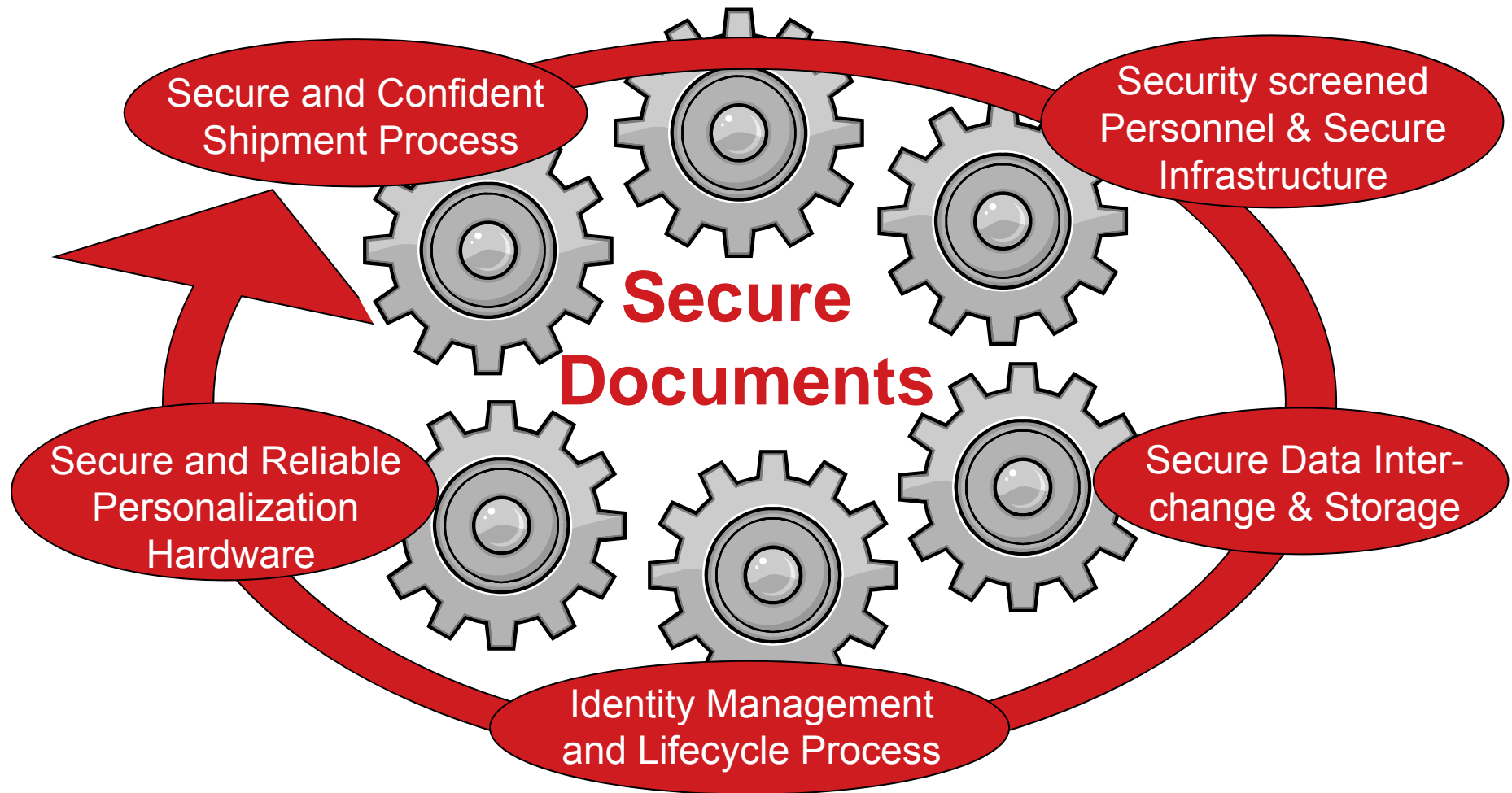
CASE STUDY

Security Measures

- **Production of Gun License Cards**
- Controlled card stock and storage
- Color and laser personalization and lamination in a one-step process
- Live-capturing of photo, fingerprint and signature
- Embedded Contactless Encoding Technology
- Data Synchronization with central database
- Combination of a variety of security features
- Special PET-G Card material for long lifetime and laser compatibility

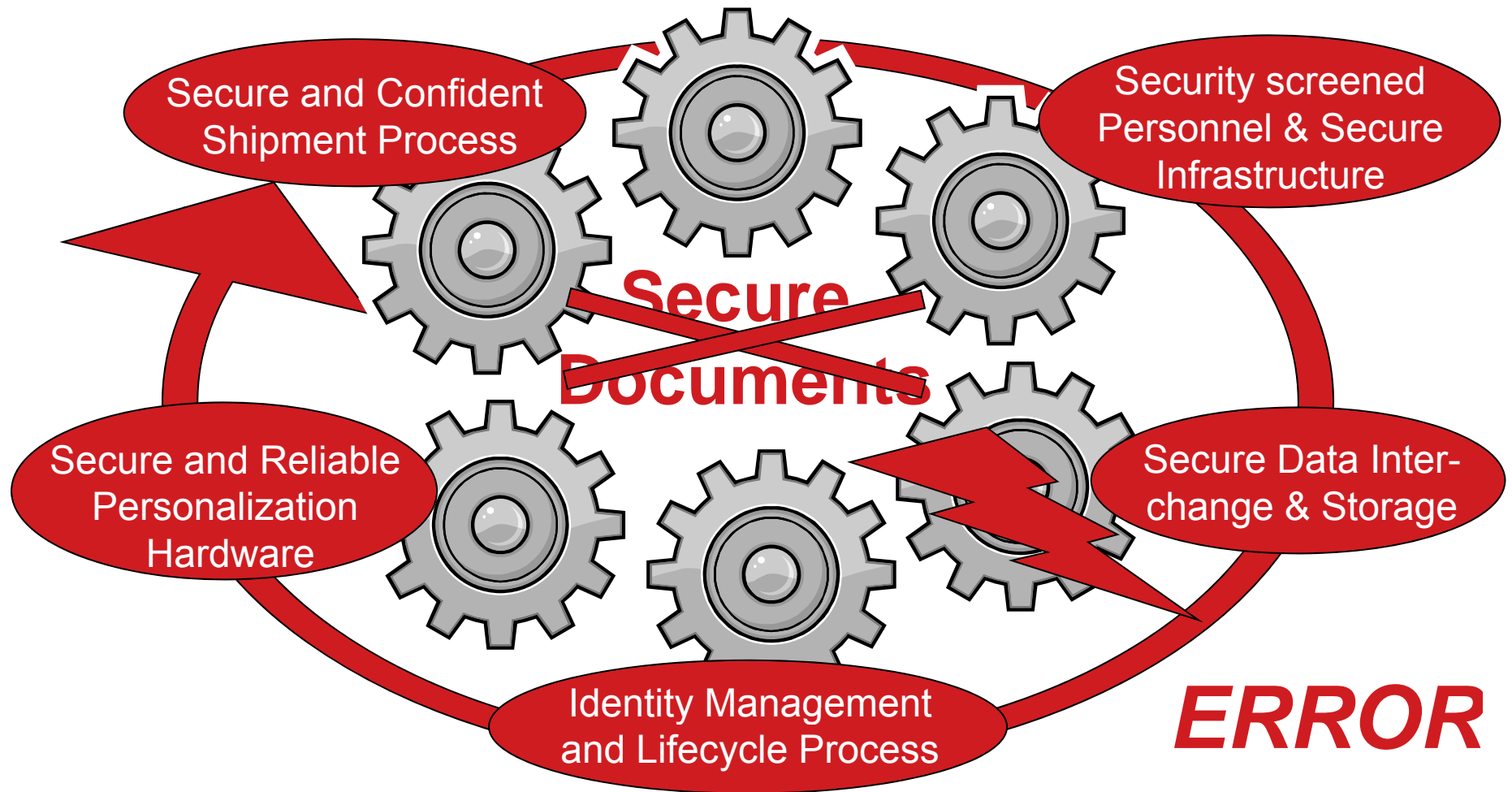
SECURITY MEASURES

How to secure the Workflow Process for secure ID Documents?



SECURITY MEASURES

How to secure the Workflow Process for secure ID Documents?



CASE STUDY

Security Measures

- Production of Gun License Cards
- **Controlled Card stock and storage**
- Color and laser personalization and lamination in a one-step process
- Live-capturing of photo, fingerprint and signature
- Embedded Contactless Encoding Technology
- Data Synchronization with central database
- Combination of a variety of security features
- Special PET-G Card material for long lifetime and laser compatibility

CREDENTIAL SECURITY

Controlled card stock and storage

- Complete tracking and observation of the card production process including consistently control of:
 - Card stock
 - Produced cards
 - Rejected / misprinted cards



Credential Scanning Module



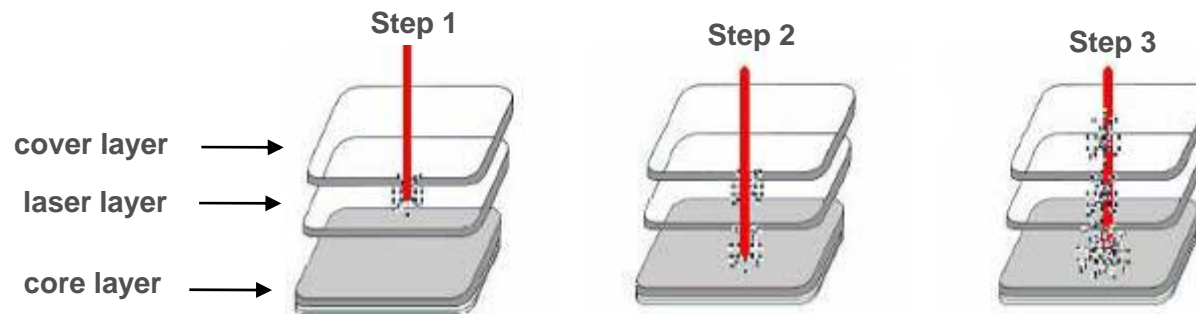
CASE STUDY

Security Measures

- Production of Gun License Cards
- Controlled Card stock and storage
- **Color and laser personalization and lamination in a one-step process**
- Live-capturing of photo, fingerprint and signature
- Embedded Contactless Encoding Technology
- Data Synchronization with central database
- Combination of a variety of security features
- Special PET-G Card material for long lifetime and laser compatibility

Laser Engraving – a new development in the desktop segment

- Laser Engraving permeates from the inner core of the card to the surface



- B/W tone scale reproduction with 256 decrees of grey level
- “Sideways” operation for smallest footprint and fastest speed in the desktop segment
- Competitive investment cost and total cost of ownership

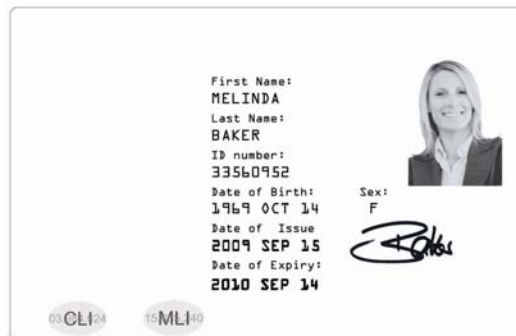


INNOVATIVE CONCEPTS

Color and laser personalization and lamination in a one-step process



Holographic Overlay



Laser Personalization



Color Retransfer Personalization



ILM Lamination Module

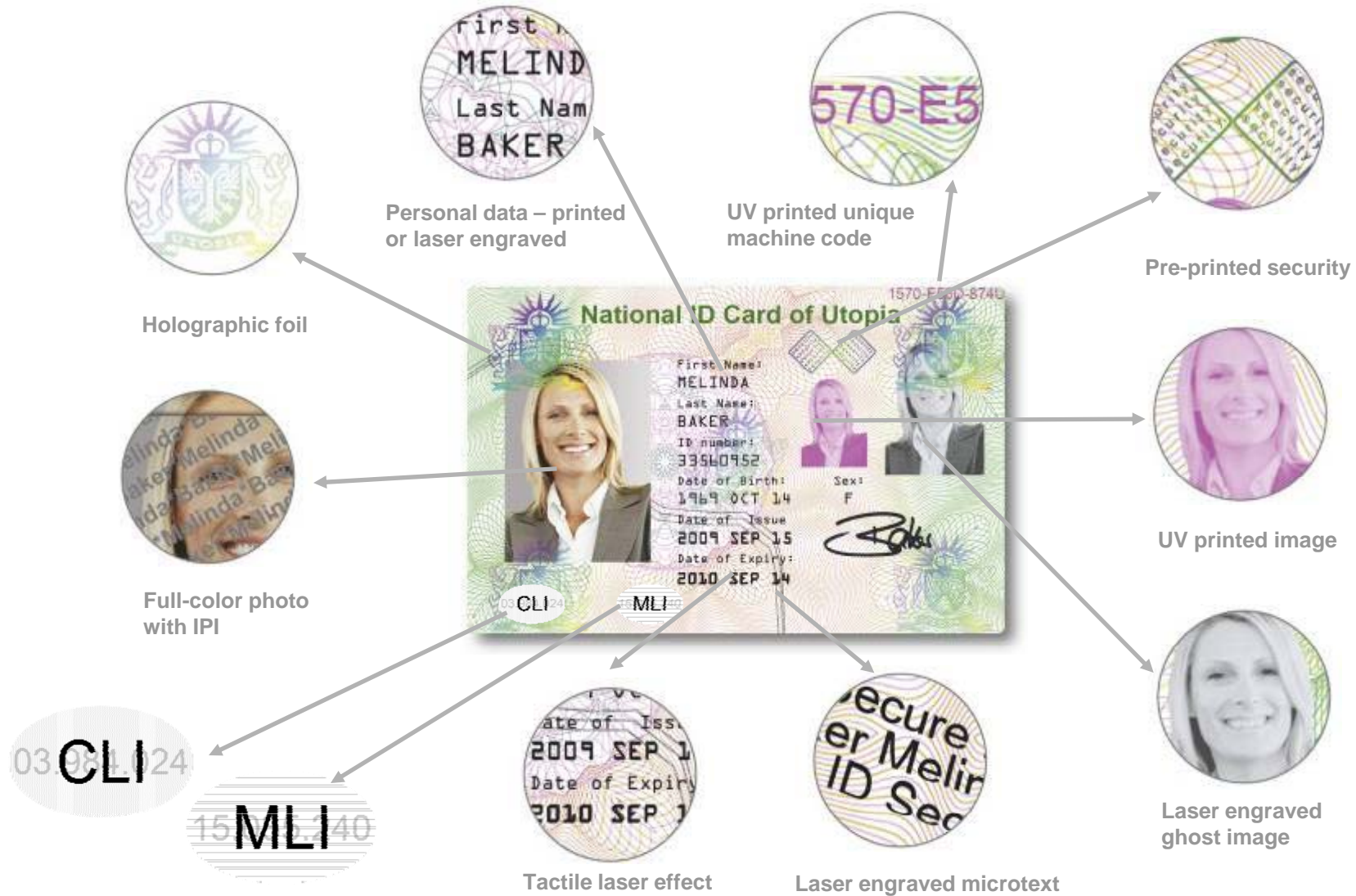


LEU Laser Engraving Unit

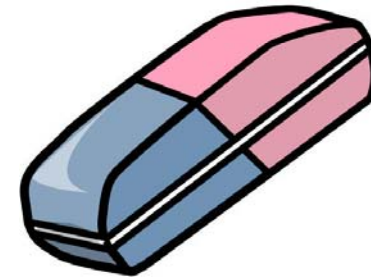


XID Retransfer Printer

SECURITY FEATURES





SECURITY F



First Name:
MELINDA
Last Name:
BAKER
ID number:
33560952
Date of Birth:
1969 OCT 14
Date of Issue
2009 SEP 15
Date of Expiry:
2010 SEP 14

Sex:
F



03 OCT 24
15 ML 140

CASE STUDY

Security Measures

- Production of Gun License Cards
- Controlled Card stock and storage
- Color and laser personalization and lamination in a one-step process
- **Live-capturing of photo, fingerprint and signature**
- Embedded Contactless Encoding Technology
- Data Synchronization with central database
- Combination of a variety of security features
- Special PET-G Card material for long lifetime and laser compatibility

CASE STUDY

Live-capturing of photo, fingerprint and signature

- Protect the document against manipulation and duplication
- Secure the physical and logical properties due to personal identification and document verification
 - Special Video ID Cameras
 - Digital Cameras
 - Image Scanners
 - Fingerprint Scanners
 - Signature Pads



CASE STUDY

Security Measures

- Production of Gun License Cards
- Controlled Card stock and storage
- Color and laser personalization and lamination in a one-step process
- Live-capturing of photo, fingerprint and signature
- **Embedded Contactless Encoding Technology**
- Data Synchronization with central database
- Combination of a variety of security features
- Special PET-G Card material for long lifetime and laser compatibility

MACHINE READABILITY & ENCODING

Embedded Contactless Encoding Technology

RFID (Radio Frequency Identification)

- Contactless Chip: Mifare 4k
- RFID chip embedded in the card body
- Communication between embedded chip and a reader via antenna
- Advantage: information exchange does not require any contact between card and reader

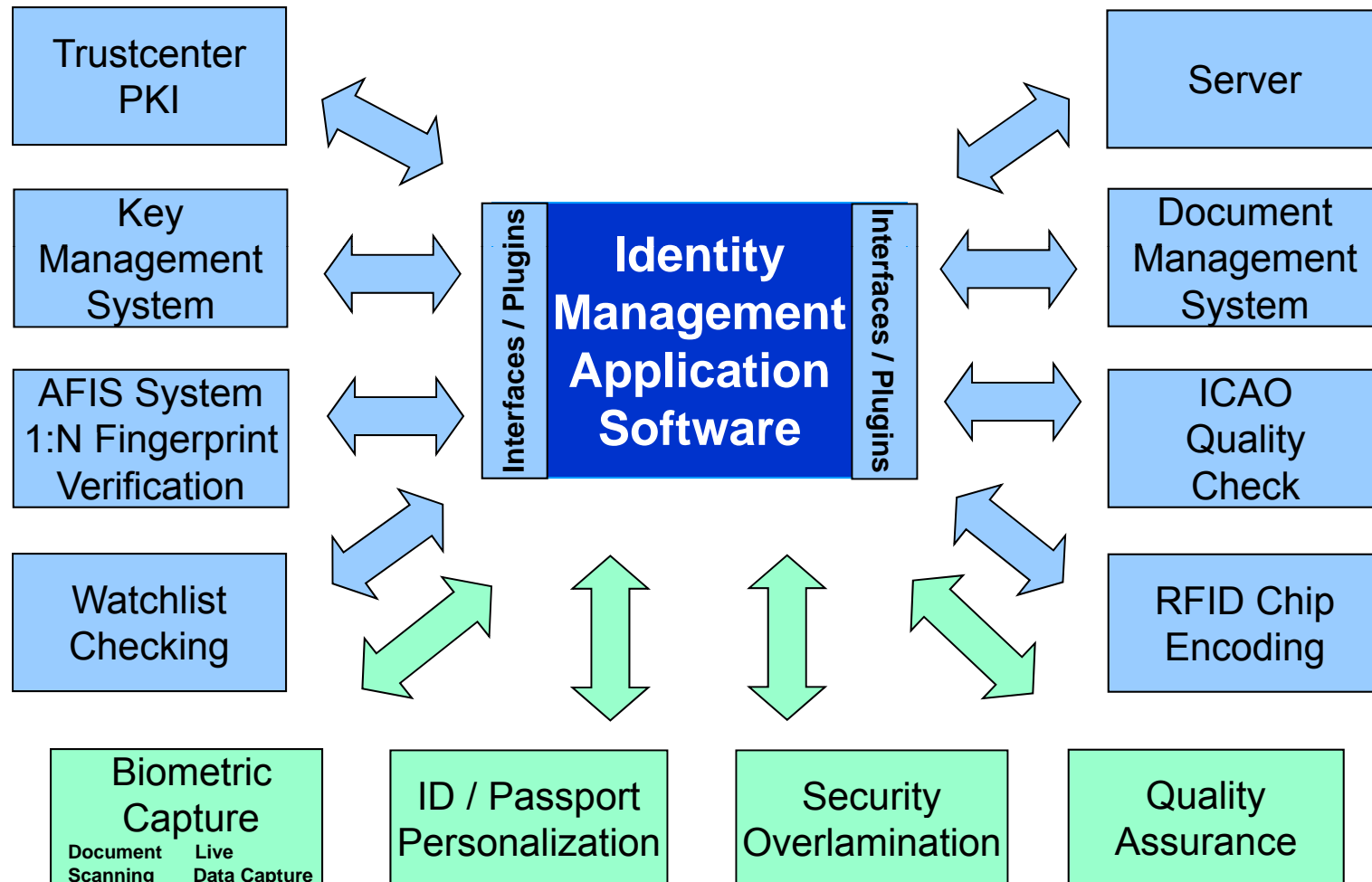


CASE STUDY

Security Measures

- Production of Gun License Cards
- Controlled Card stock and storage
- Color and laser personalization and lamination in a one-step process
- Live-capturing of photo, fingerprint and signature
- Embedded Contactless Encoding Technology
- **Data Synchronization with central database**
- Combination of a variety of security features
- Special PET-G Card material for long lifetime and laser compatibility

WORKFLOW & ID MANAGEMENT



IDENTITY MANAGEMENT

Identity Management - More than just biometrics...

- Design, Personalization & Issuing of ID cards
- Central point for the management of digital identities throughout their lifecycle
- Central definition of policies & business rules
- Synchronization of systems
- Central storage of digital identities and credentials



CASE STUDY

Security Measures

- Production of Gun License Cards
- Controlled Card stock and storage
- Color and laser personalization and lamination in a one-step process
- Live-capturing of photo, fingerprint and signature
- Embedded Contactless Encoding Technology
- Data Synchronization with central database
- **Combination of a variety of security features**
- Special PET-G Card material for long lifetime and laser compatibility

SECURITY FEATURES

■ Pre-print



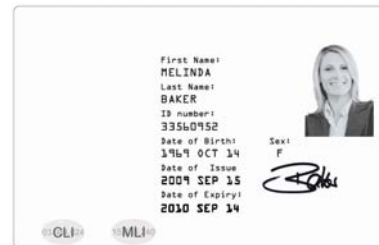
- Electronic Guilloches
- Fine Lines
- UV Ink Personalization
- Microtext

■ Print Personalization



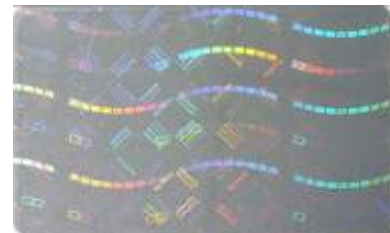
- Ghost Image / Shadow Image
- Overlapping Objects
- IPI (Invisible Personal Information)
- UV Ink Personalization

■ Laser Personalization



- Tactile Elements (e.g. variable Microtext)
- MLI (Multiple Laser Image)
- CLI (Changeable Laser Image)
- HLI (Hidden Laser Image) (G&D Technology)
- Edge Engraving (Gemalto Technology)

■ Additional Protection



- Holographic Overlays
- Holographic Patches
- etc.

SECURITY FEATURES

Print Personalization

Ghost Image / Overlapping Objects

Semitransparent duplication of the photo

Overlapping objects are difficult to counterfeit



IPI (Invisible Personal Information)

Protection of the photo

Not detectable by the naked eye



UV Ink Personalization

On demand UV Ink Personalization

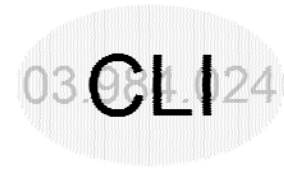
“Machine-Tracking-Code”



SECURITY FEATURES

Laser Personalization

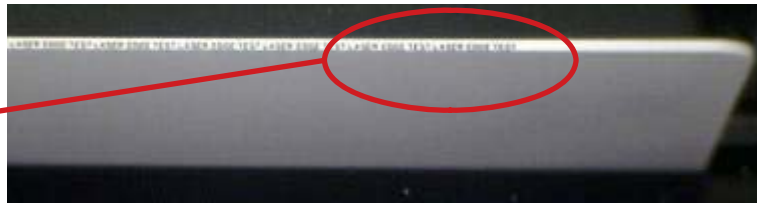
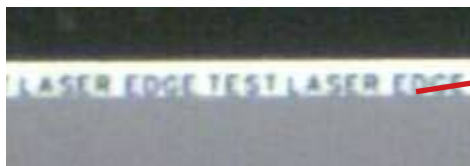
CLI (Changeable Laser Image) -> Horizontal tilt axis



MLI (Multiple Laser Image) -> Vertical tilt axis



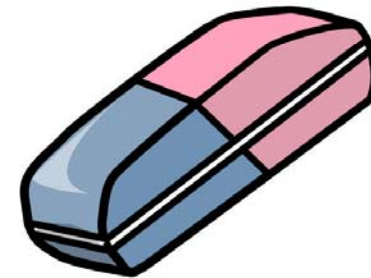
Edge Engraving (Gemalto Technology)



HLI (Hidden Laser Image) (G&D Technology)



SECURITY F



SURFACE DATA PROTECTION

How to make an OVD even more secure?

UV Inks
IR Pigment
Flip Ink

High Resolution
Guilloche Artwork

SecureText™
Pixel
Encryption
At 200X

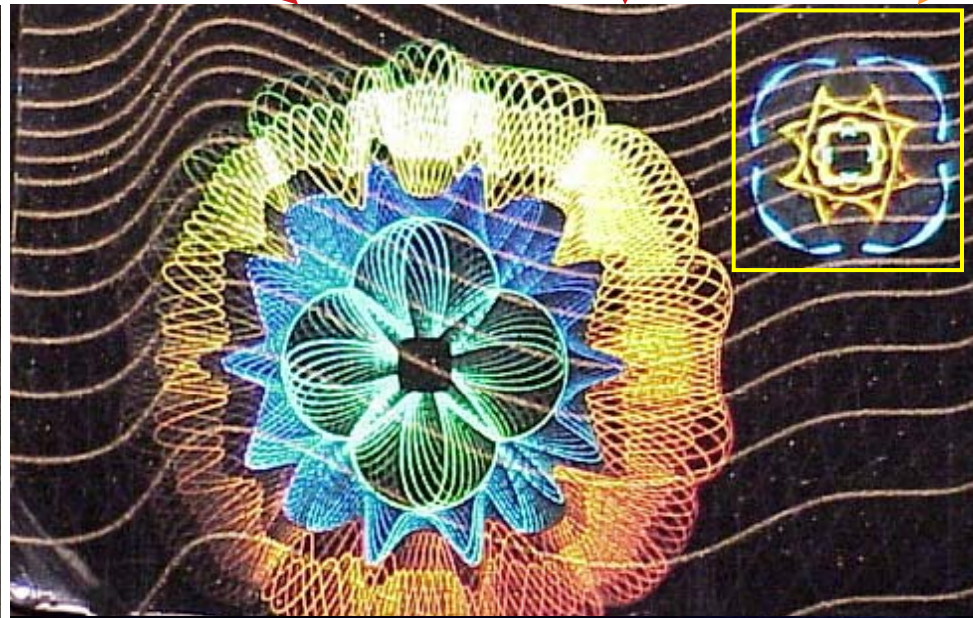


Image Seen in White Light

COVID™ is a
registered trademark
of ITW COVID

CASE STUDY

Security Measures

- Central Production of Gun License Cards
- Controlled Card stock and storage
- Color and laser personalization and lamination in a one-step process
- Live-capturing of photo, fingerprint and signature
- Embedded Contactless Encoding Technology
- Data Synchronization with central database
- Combination of a variety of security features
- **Special PET-G Card material for long lifetime and laser compatibility**

CARD MATERIAL

Special PET-G Card material for long lifetime and laser compatibility

Requirements:

- Long lasting cards
- Contactless encoding compatible
- Compatible for Retransfer and laser personalization
- Compatible for overlamination
- Affordable costs



CASE STUDY – A SUCCESS

Onsite impressions

- Implementation of LCP 9000 in January 2010
- Team of Sales and Technical Specialists
- Volume: 50.000 – 100.000 Cards per Year
- System Extension order in progress



**Want to experience more
about our solutions?**

Just visit us at our booth 14+15.



Digital Identification Solutions Group



Vielen Dank!

Thank You!

¡Muchas gracias!

Muito Obrigado

Спасибо!

شكرا !

ありがとう!

谢谢!

Terima kasih!

THERE IS ONE FOR EVERYBODY