

# Product Information ArtsecurityID<sup>®</sup>

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## **1. Registration and Authentication of Cultural Artefacts**

### **1.1 Legal Base**

A Cultural Artefact is an object, which is considered meaningful and important because of religious or worldly reasons of archaeology, prehistory, history, art or science. The questions which artefacts are considered important are constantly undergoing changes in definition and views of society and depend on the cultural context. After the principle of characteristic responsibility the judgment is up to the owner in each case.

In trading and auctions a cultural artefact may only change hands, when it can be assumed that it has not been stolen, not been unlawfully discovered or not been illegally imported into a country. All persons involved in professional trading are obligated to adhere to a special business care code. For the procurement or purchase of cultural artefacts a detailed accounting is required. The information collected must identify the origin, date of purchase, purchase price or estimated value as well as the identity of the seller and its affidavit and power of attorney with authorization to act.

In the artefact description is all the information including object type, material, weight, measurements, inscriptions, motif, markings, unique features like damages and repairs noted and combined with information about the epoch, origin, author and title of the artefact.

This documentation needs to be kept for at least 30 years.

Sources:

- UNESCO-Convention from the 14<sup>th</sup> of the November 1970
- Transfer Law of Cultural Artefacts, Kulturgütertransfergesetz, KGTG; 20<sup>th</sup> of June 2003
- Transfer Rules of Cultural Artefacts, Kulturgütertransferverordnung, KGTV; 13<sup>th</sup> of April 2005

### **1.2 Security Deficiency of today's Identification**

Despite the numerous rules and regulations of today's laws, the usual methods to trace the identity and authenticity of a cultural artefact show tremendous deficiencies.

In the description of the appearance of a cultural artefact specialists will comment especially about the form, the colour and the arrangement of the elements in detail. For example a painting showing a characteristic object can therefore be assigned to the artist. If it is an object with few characteristics or none, the risk for a false identification or assignment increases.

Cultural Artefacts are permanently kept in highly secured buildings and rooms. During transport from the artist to the buyer or from the museum to an exhibition or a restaurateur, the risk increases that the original is being exchanged with a copy or forgery. In order to distinguish an original from a copy or forgery extremely expensive tests like age determination with chemical analysis, material testing or the painting technique are used. Despite those extreme technical and financial expenses of those experts the identity of the artefacts cannot be proven without a doubt. The buyer, owner or the insurer of those objects can sustain a tremendous damage.

### **1.3 Improvement of Forgery Safety**

An original is identified when the complete life span is recorded for any place and time. The protection for copying or forgery will be significantly improved when the original has been identified by an expert and has been marked with a safety feature, which is connected with the artefact in a database and can be retrieved and verified at any time.

## 2. Product Safety through Markings

### 2.1 Requirements of the Markings

The industry, for example, utilizes Marking Systems successfully to increase the quality standard and the tracing of production and logistic process. By using a colour or bar code to identify a product every change during the lifespan can be easily registered and proven.

A Marking used for Cultural Artefacts must satisfy very high demands, which none of the existing procedures can fulfil partly or completely:

- The Marking cannot change the appearance of the object in any way
- It must be invisible for the human eye
- The application on the object must be easy and flexible
- The material cannot influence the object neither physically nor chemically
- The Marking must stay attached on the object for decades

### 2.2 The Security Code

A product, for example, which satisfies most of those requirements, is produced from the company Simons Druck, D – 48301 in Nottuln and is marketed under the brand SECUTAG®.



Microscopic and highly resistant Melamine Alkyd polymer particles build the kernel of the product. The particles have a size between 0,005 and 0,045 millimetres. The code is achieved by a sandwich procedure, which is constructed from 4 to 10 different coloured levels. The particles will be applied with a colour-, varnish or other carrier layer onto the object.



Every colour code is exclusively assigned to one client. To create the code a certain number is assigned to every possible colour. With 10 colours more than 435 billion different codes can be created and displayed. With dual coding, the combinations of several particles, the number of codes is unlimited.



Through a simple testing of the applied particles and its colour code the identity of the object can be easily verified. The reading of the code can simply be achieved with a microscope or with an automated reading aide.

This method is successfully used in the industry for forgery proof marking of similar products. While production technology is very expensive, it offers a high protection and prevents the copying by counterfeiters or forgers.

For the use in protection of cultural artefacts this product is an important step. This method alone isn't enough to mark objects individually and be able to identify them again with high probability.

### **3. ArtsecurityID®**

#### **3.1 The Procedure**

For the identification of individuals, biometric data like fingerprints or retina scans are collected and evaluated. The highest security to uniquely identify an individual will be achieved by detection and processing of both biometric features.

In addition to the biometric methods there will be the one patent pending procedure, which creates for every cultural artefact two individual markings, and combined with the object they become an unmistakable marking:

The highest possible security is basically achieved through the following measures:

- At registration the object will be photographed and a probability generator assigns the position for the application of the micro particles with lasers.
- Every object will be marked in several spots with micro particles.
- After the application of the micro particles, the corresponding coordinates will be measured and, together with the particles code, saved as identification data.
- The particles code and the coordinates of the markings are comparable with a fingerprint of a human being.
- During the registration of the particles code and the coordinates of the markings there are additional physical measurements of the texture and the marking background like linen, wood texture, reflection, absorption, etc. collected and saved.
- This physical data is comparable with the biometric features of the retina of humans.
- Only this combination of geometric and physical data allows an individual and forgery proof marking for every cultural artefact and art object.
- The marking and evaluation unit (marking set) is fit into a portable suitcase. To prevent misuse the functions are only available after the user is identified through retina identification.
- The accrued information with today's technical standards for security and safety is stored in a database to which authorized users have access for registration and identification of cultural artefacts and art objects at anytime.
- We are trying to implement a recognized worldwide standard and a certification for worldwide renowned organizations like UNESCO.

After the cultural artefacts and the art objects are recorded the corresponding original certificates and its original copies will be archived with the same method.

This Procedure is not limited to the use of the protection of cultural artefacts. It can be used and applied to any individual object where the highest level of security for registration and an authentication is necessary.