Security features for coins and medals with laser technology
ACSYS Lasertechnik

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1. Motivation

▲ Security more important than ever

▲ Competition to other payment methods

▲ Limited capabilities with traditional methods

▲ New possibilities with laser technology

▲ Features that also can be implemented for circulation coin
2. Setup - Blanks

- Brass core with silver .999 coating
- Diameter $\Theta 40$ mm & Thickness 3 mm
- Polished and washed
2. Setup Tools

- Complete tooling done with laser technology
- Convexity and edge directly in data included
- Hardened Böhler K455 Steel
- Minted at the Staatliche Münzen Baden-Württemberg
3. Design - Obverse

- Labyrinth in combination with Aztec-Code
- Different heights for the labyrinth
- Multi angled design for the simple reflection grid
- Steps with micro text as with an Aztec temple
3. Design - Reverse

MULTI FROSTING

- Multiple frosting
- All different frostings in one process
- Shiny frosting as additional optical effect
- Perfect imitation of sand blasting
4. Micro features

- Micro-text
- Depth of 80 µm
- Size ~60 µm
- Lens with Laserbeam of ~15 µm
- Positiv letters
4. Micro features

- Micro-symbols
- Depth of ~60 µm
- Size ~50 µm
- Lens with Laserbeam of ~15 µm
- Positiv objects
4. Micro features

- Patented Code-in-Code function
- Total code size ~600 µm
- Code segment size ~40 µm
- Different lens setup for each code
- Each code has different information
- Readable with smartphone app
5. Simple reflection grid

- Different light effect on different view angles
- Fast process with high durability
- Any shape or size possible
- Lens with Laserbeam of ~25 µm
6. Multiple frosting

- Multiple frosting
- All different frostings in one process
- Shiny frosting as additional optical effect
- Perfect imitation of sand blasting
- Lens with Laserbeam of ~45 µm
8. ACSYS Medal

- Obverse – The Labyrinth
- 3D laser engraving
- Micro features
- Simple reflection grid
- Frosting
- Code-in-Code
8. ACSYS Medal

▲ Reverse – Commercial
▲ 3D laser engraving
▲ Multiple frostings
9. Lasersystems by ACSYS

- New PIRANHA μ - 2016 Design.
- Yb: Fiberlaser – Wave length 1064 nm
  - High-Resolution Laser digitizing module
  - Direct Drives
  - Direct Granite mountings for all axes
  - LAS – Live Adjust System
  - Quick hitch function
  - Different types of lenses
  - Extended performance laser with $M^2$ of 1.1
9. Lasersystems by ACSYS

- New ORCA μ - 2016 Design
- Pico Second Laser, Wave Length 1064 nm
- Other wavelengths possible
  - High-Resolution Laser digitizing module
  - Direct Drives
  - Direct Granite mountings for all axes
  - LAS – Live Adjust System
  - High speed laser engraving
9. Lasersystems by ACSYS

- PEARL
- Table laser system
- Innovation in ergonomics
- High precision cross table
  - The innovative operating Concept is based on the flexible singlepiece machining system with the unique LAS - Live Adjust System from ACSYS.
9. Lasersystems by ACSYS

- **PIRANHA Multishift**
- Combines fully automated machining with high-precision laser technology
- Depending on the configuration, the magazine consists of up to 20 trays that are automatically transferred into the machine
- High-strength, temperature-resistant and vibration-free granite construction
Visit our booth C25 for a live demonstration!

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