**Innovation of Diffractive Optically Variable Image Device for Electronic ID Cards (eID card) (reissue)**

Technical specification

ANNEX 1 to the Agreement for supply of security elements for Czech electronic ID cards

No. 029/OS/2021 (hereinafter referred to only as “Agreement”)

1. **Subject of the order**

Diffractive optically variable image device (hereinafter the “DOVID”) for the Czech biometric identification card (hereinafter the “eID card”).

Subject of performance: 1. Design (to be approved by the Client in terms of compliance with the requirements of the Client)

2. Masterhologram (to be approved by the Client in terms of compliance with the requirements of the Client)

3. Polycarbonate foil with security element DOVID and printed marks (the first 200 Pilot Sheets will be approved by the Client and then AQL acceptance according to standard ISO 2859-1, which will be done for each delivery of the material)

The Client requirements for DOVID:

1. Mainly transparent (i.e. HRI element) supplemented by a metallic element made from aluminium. The metallic element must work as a supplementary element to the main HRI element. It must to be placed out of the personalized area and can be made just by contours or also be filled out. The metallic element will occupy a minimal percentage of the area of overall designed design.

2. Laser engravable in the photo area and other places of personalized data.

1. **Requirements for Design**

The Client requires that the design of DOVID should be inspired by Symbols of the Czech Republic (e.g. leaves of linden trees, the coat of arms or Czech Crown Jewels) and can be supplemented by other features. There are various possibilities for the final shape of the element. DOVID must include a first level, second level and a third level of the security features (further requirements in table no. 1 below). The Client is also open to the possibility of incorporating features other than those stated below, if the given level and minimum quantity or security features shall be fulfilled.

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| --- | --- | --- |
| *Security level* | *Minimum quantity of type of security features which shall be used in DOVID* | *Example of possible security elements (The Client is also open to use some special or new features in the given security levels)* |
| Overt features (1st level)  Verifying the authenticity of DOVID visually with the naked eye, without any equipment. | 6 | 3D effect, kinetic, achromatic, switch effect, matte effect |
| Covert features (2nd level)  Security features that require simple tools to verify them e.g. magnifying glass. | 4 | Hidden feature, negative and positive microtext, microlenses |
| Forensic features (3rd level)  Recognizable only with special knowledge and specialized equipment e.g. microscope. | 2 | Nanotext, nanoimage |

Security level 1 and 2 are of primary interest for control authorities.

*Tab. no. 1: Number of required security features in individual levels.*

*The Client does not state any individual business names of the security elements thereby not violating any intellectual rights of any supplier, or favouring any business solution. Only general names of security features and examples are stated.*

The eID card shall comply with the requirements set out in the Regulation (EU) 2019/1157 of the European Parliament and of the Council of 20 June 2019. Regarding this regulation DOVID shall be used on the front of the eID card with advanced design and features, including an enhanced diffractive element for advanced machine verification.

The minimum size of DOVID: min 25 x min 35 mm; maximum is not specified (full coverage of eID card is also possible)

The location of DOVID on the eID card:

must partly cover the photo area and personalized data. Final position will be fitted according to the final submitted size and design.

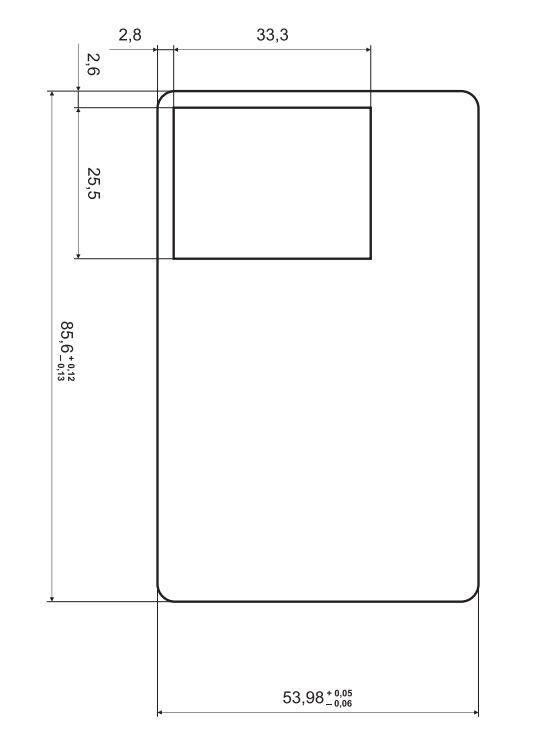
The design of the new eID card (printing and personalized data including):

*Pic. no. 1: Design of the new Czech eID card*



***„S P E C I M E N“***

Photo size and position on the eID card:



*Pic. no. 2: Position of photo on the eID card*

**TECHNICAL DRAWING:**

The Contracting authority provides the Contractor with the layout of the PC sheet, positions of eID cards, and registration marks (see the Attachment No. 1). After the approval of the design the Contractor will prepare the Technical drawing (which will also include parameters, positions and application tolerance of DOVIDs) and will then submit it for approval to the Contracting authority. The Technical drawing approved by the Client pursuant to Article IV paragraph 5 of the Agreement will be the Attachment No. 2 of this Technical specification.

1. **Application**

The DOVID must be applied on a Sheet of polycarbonate foil (not in reel) and must be resistant to the hot lamination process. It must also be resistant to delamination and copying. The sheet of polycarbonate foil must contain the printed black registration marks according to Attachment No. 1.

Foil specification: Transparent polycarbonate foil, thickness 100 µm, laser engravable.

The eID card is composed of Makrofol® ID foils only.

Therefore, the polycarbonate foil containing DOVID must be compatible with Makrofol® ID foils from the company Covestro in order to maintain compatibility with the lamination process in production, complying with conditions of the Contracting Authority.

The polycarbonate foil containing DOVID must be prepared to endure machine cleaning against impurities. THE CLIENT uses sheet machines from TEKNEK company.

Sheet size: 295 x 330 mm

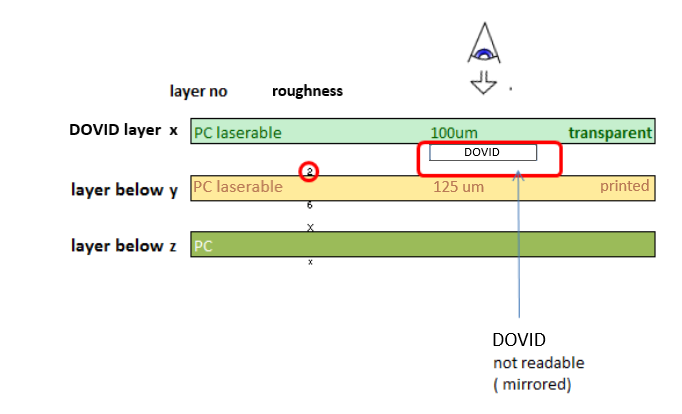
Number of positions on the sheet: 15 positions on the sheet

Positioning on the sheet: layout in the Attachment no. 1

Application position tolerance: ± 1 mm in x and y axis (tolerance of the center of the DOVID to the right registration mark, closer to the reference corner, marked in the layout)

Orientation on the PC sheet: mirrored Position in the eID card construction: front side of the eID card,

inner side of the overlay layer (see picture no.3), will be attached to the smoother side of the printed layer (roughness 2)



*Pic. no. 3: Card construction*

1. **Packaging**

The Sheets will be packed in boxes with a plastic infilling, 6x 96 pc of Sheets. Each box will be numbered in ascending order and labelled. A date, production no., batch no., and the quantity of Sheets will be marked on the label. These six boxes will be packed into the transport box (container). These transport boxes must also be numbered, labelled (no. of transport box, no. of c boxes in, date of packing), and sealed.

1. **Storage Conditions**

Acceptable storage conditions:

Temperature range of 10 to 25°C with a maximum relative humidity of 60%.

The duration of the transport conditions **is not** to exceed a maximum of 12 days. The material **is not** to be exposed to direct sunlight.

1. **Attachments**

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| --- | --- |
| No. | Description |
| 1 | THE CLIENT\_TS\_Attachment No.1\_ Sheets layout\_registration\_marks |
| 2 | Technical drawing approved by the Client ( Article IV paragraph 5 of the Agreement) |