



**Mühlbauer**

High Tech International

**Mühlbauer ID Services GmbH**

# **Blanks of identity documents of the national passport system, driving licenses and registration certificates for the period 2024 – 2029**

Lot 1: ID-3 Documents

## **Technical Proposal**

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Table of Contents

**1 DOCUMENT SPECIFICATION – EPASSPORT WITH POLYCARBONATE HOLDER PAGE ..... 4**

1.1 General product overview – PA, PC, PH, PT, PD & PS ..... 5

1.2 eCover ..... 6

1.2.1 Chip ..... 6

1.3 End leaves ..... 8

1.4 Remarks and Visa pages (inner paper pages) ..... 9

1.5 Polycarbonate Holder Page ..... 10

1.5.1 Holder page structure ..... 12

1.6 Numbering ..... 13

1.7 Physical and electrical characteristics ..... 14

**2 PACKAGING, STORAGE AND DELIVERY OF CARDS ..... 15**

2.1 Packaging and storage ..... 15

2.2 Delivery plan ..... 16

# 1 Document specification – ePassport with Polycarbonate Holder Page

The characteristics of the blank ePassports including card materials, construction, characteristics and dimension, follows the recommendation of ICAO Doc 9303.



- Drawing up of the design (background design, images, texts and captions of data fields) will be carried out by Public Service Agency (PSA)
- Manufacturing of the passports (PA, PC, PH, PT, PD & PS) and printing, the background design, the image of the State Coat of Arms, the name of the State and the document, the captions of the data fields will be carried out by Mühlbauer
- Personalization of data page and “Remarks page” will be carried out by Public Service Agency (PSA)
- Chip personalization will be carried out by Public Service Agency (PSA)

The proposed passports (PA, PC, PH, PT, PD & PS) will:

- Have technical characteristics in accordance with recommendation of Doc 9303, part 1-2, 9-12
- Correspond to TD3 size format with nominal dimensions 88 ( $\pm 0,75$ ) mm width, 125 ( $\pm 0,75$ ) mm height
- Consist of the electronic cover and inner paper (34 pages), including the polycarbonate (PC) card with title and data pages
- Incorporate the following identical features: a) background design; b) security elements (such as MLI, holographic element, transparent window, tactile element of title page and data page), their shape and positioning; c) paper and security features of the paper (such as watermark, security thread, security fibers). Two different color ranges will be used for the inside pages: - One color ranges for the Passport of citizen of the Republic of Moldova (PA) - Second color ranges for the (PS, PD) Passports and (PC, PH, PT) Travel documents The passport blanks will be differentiated by: - cover color; - information on the inner cover (front and back); - content of the title page; - content of the data page; - the text on the visa pages; - serial number
- Physical and electrical characteristics of the passport booklets, as well as logical data structure (LDS) characteristics, inspection systems and PKT solutions will comply with the requirements stipulated in parts 9-12, Doc 9303

## 1.1 General product overview – PA, PC, PH, PT, PD & PS

<b>Types of ePassport</b>	<p>ePassport with Polycarbonate Holder Page</p> <ul style="list-style-type: none"> <li>• Passport of citizen of the Republic of Moldova (PA)</li> <li>• Travel document for stateless persons (PC)</li> <li>• Travel document for beneficiaries of humanitarian protection (PH)</li> <li>• Travel document for refugees (PT)</li> <li>• Diplomatic Passport (PD)</li> <li>• Official Passport (PS)</li> </ul>
<b>ePassport construction</b>	<ul style="list-style-type: none"> <li>• Electronic Cover (embedded chip in the back cover)</li> <li>• End leaves</li> <li>• Inner paper (34 pages - page numbering in the passport will start with character 3 from the first paper page)</li> <li>• PC card with the title and data page (the PC card will not be numbered with a displayed page number)</li> </ul>
<b>Dimension</b>	<ul style="list-style-type: none"> <li>• according to ICAO Doc 9303 (ID3)</li> </ul>
<b>Data page construction &amp; material</b>	<ul style="list-style-type: none"> <li>• High secure multi-layer construction without any kind of glue or adhesive</li> <li>• Integrated security features are implemented on different layers of holder page</li> </ul>
<b>Chip technology</b>	<ul style="list-style-type: none"> <li>• Contactless chip with antenna (RFID) inside cover</li> <li>• Chip personalization will be done according to the Contracting Authority requirements</li> </ul>
<b>Booklet binding</b>	<ul style="list-style-type: none"> <li>• The PC card with data page will be fixed in the booklet through the hinge. The hinge will ensure the card sewing into the spine, which will have the inner edge freely placed between the last page of the booklet and the inside back cover</li> <li>• Double paper sheets and the PC data page of the booklet will be stitched along the spine by using a special sewing thread consisting of three twisted together distinct fibers in three colors: blue, yellow and red (in colors of Moldovan flag). The red and yellow sewing thread will present UV fluorescence – yellow and red. The sewing thread ends will be firmly fixed by using the method "locked backstitching" in order to ensure resistance to unpicking, in accordance with recommendations of Doc 9303.</li> <li>• The sewing method that stitches the sheets into the booklet will be done through the chip inlay located in the cover to prevent the inlay from being removed from the passport booklet and to prevent the pages from being removed without leaving clear traces of this</li> </ul>
<b>Inks</b>	<p>During the manufacturing of passport booklets will be used the following special inks:</p> <ul style="list-style-type: none"> <li>• Offset printing inks (pantone)</li> <li>• Intaglio and letterpress printing inks</li> <li>• Visible and invisible at normal light exhibiting fluorescence under UV light (in one or more colors, Bi-UV etc.)</li> <li>• Fluorescent inks under UV radiation and visible under IR radiation</li> <li>• Optically variable ink (OVI) with fluorescence under UV light</li> <li>• Anti-stokes inks</li> <li>• Metameric Ink Pair (IR drop-out)</li> <li>• Iridescent inks</li> </ul>
<b>Printing</b>	<p>For producing the passport booklet will be used the following printing methods:</p> <ul style="list-style-type: none"> <li>• offset printing; including iris printing</li> </ul>

	<ul style="list-style-type: none"> <li>• intaglio printing</li> <li>• screen printing/ flexography</li> <li>• letterpress printing</li> <li>• hot foil stamping</li> <li>• laser perforation</li> <li>• laser engraving</li> </ul>
<b>Passport personalization</b>	Personalization of the passport (all types) will be done in accordance to the Contracting Authority requirements
<b>Technologies and security features during personalization process</b>	<ul style="list-style-type: none"> <li>• laser engraving in internal layers of the data and image on the data page</li> <li>• laser engraving in relief of the passport serial number and image of the holder's signature</li> <li>• tactile elements applied by blind embossing to protect the data in the VIZ;</li> <li>• laser engraving in internal layers of the MLI image (secondary image of the holder and passport serial number)</li> <li>• use of expansion technologies that provide duplication of the identification data: MRZ, chip</li> <li>• the use of biometrics: facial image, fingerprints and holder's signature</li> </ul>

## 1.2 eCover

<b>Construction</b>	<ul style="list-style-type: none"> <li>• Outer layer, made of thick synthetic material</li> <li>• Middle layer, polymer film in which the chip is embedded (inlay)</li> <li>• Inner layer made of paper having a mass of 120 g/m<sup>2</sup> – 130 g/m<sup>2</sup></li> </ul> <p>The layers of the covers will be joined in such way that their separation will not be possible</p> <p>Material will be approved by Contracting Authority.</p>
<b>Material:</b>	<ul style="list-style-type: none"> <li>• High quality heat resistant material</li> <li>• Chemical resistant</li> <li>• Tear proof</li> <li>• Sweat and damp resistant</li> </ul>
<b>Contactless chip:</b>	<ul style="list-style-type: none"> <li>• Contactless Chip Module</li> </ul>
<b>Color:</b>	<ul style="list-style-type: none"> <li>• Passport of citizen of the Republic of Moldova (PA) – Burgundy Red</li> <li>• Travel document for stateless persons (PC) - Red</li> <li>• Travel document for beneficiaries of humanitarian protection (PH) - Grey</li> <li>• Travel document for refugees (PT) - Brown</li> <li>• Diplomatic Passport (PD) - Green</li> <li>• Official Passport (PS) – Black</li> </ul>
<b>Foil blocking:</b>	<ul style="list-style-type: none"> <li>• Foil blocking on front cover</li> <li>• Blind embossing – tactile element in form of a national ornament</li> </ul>
<b>Content</b>	Will be done according to the Contracting Authority requirements

### 1.2.1 Chip

The proposed document will contain a chip module, which is equipped with the state of the art chip operating system. This multi-application operating system is fully compliant to ISO/IEC 14443 contactless communication and enables travel documents to be highly interoperable. Applications running on top of that system provide the dedicated functions necessary for electronic machine readable travel documents.

The main features for the communication interfaces are:

- Contactless: ISO/IEC 14443 Type A or B up to 848 kbps
- PC/SC compatible
- Support of extended length APDUs
- Support of secure messaging

The solution is fully compliant to ICAO Doc9303 and therefore supports (secure) data storage in the logical data structure (LDS) as defined by ICAO Doc 9303 (i.e. personal data, biometric data like face, fingerprint or iris images) and controlled access to these data.

The travel application on the chip supports various crypto setups and crypto migration. This includes the following:

- DOC. 9303 & BSI TR03110
- Support of all mandatory and optional DGs
- LDS Version 1.7 & 1.8
- Passive Authentication (PA)
- Basic Access Control (BAC)
- Active Authentication (AA)
- Extended Access Control (EAC)
- Supplemental Access Control (SAC) / PACE

The solution supports the following norms and standards:

- ISO/IEC 7816
- ISO/IEC 14443
- ICAO Doc 9303 "Machine Readable Travel Documents" Eighth Edition
- Technical Guideline TR-03110-1 BSI TR-03110-1 Advanced Security Mechanisms for Machine Readable Travel Documents – Part 1 - Version 2.10,
- Technical Guideline TR-03110-1 BSI TR-03110-3 Advanced Security Mechanisms for Machine Readable Travel Documents – Part 3 - Version 2.10

Additionally the chip solution is evaluated and certified in the Common Criteria scheme:

- the Chip-Hardware is EAL 6+ certified
- travel application with the PACE/EAC configuration EAL 5+

The following cryptographic algorithms and security features are provided:

- ISO/IEC 7816-8 security commands
- DES, 3DES & AES
- RSA up to 4096bit
- Elliptic Curve up to 521bit
- SHA-1 & SHA-2 family
- Chip Authentication
- Terminal Authentication
- De-/Encryption
- True random numbers generation
- Random UID / PUPI

With more than 80 KB of memory for personalisation the chip provides enough space for mandatory and optional data groups in the Logical Data Structure. After personalisation the write access to the memory will be blocked as required by ICAO.

### 1.3 End leaves

<b>Paper material:</b>	<ul style="list-style-type: none"> <li>• Security paper</li> <li>• Grammage: 120 g/m2 – 130 g/m2</li> <li>• Will have a white (whitish) color</li> <li>• Does not contain optical brighteners (no visible fluorescence exposed to UV light)</li> <li>• Will have appropriate absorbency and roughness</li> <li>• Will support inkjet printing</li> <li>• Will contain mixture of cotton and cellulose fibers - 60% cotton fibers being included</li> </ul> <p>Material will be approved by Contracting Authority.</p>	
<b>Design</b>	Will be done according to the Contracting Authority requirements	
<b>Security background design:</b>	<p>On the inner cover layer:</p> <ul style="list-style-type: none"> <li>• minimum 12 visible colors (10 offset forms including iris printing, (2 forms with shift colors effect to A-B-A));</li> <li>• minimum 3 invisible colors with UV/ BiUV fluorescence (2 offset forms including iris printing, (with shift colors effect to A-B-A))</li> <li>• minimum 2 visible colors for intaglio printing</li> <li>• minimum one color with iridescent ink</li> </ul> <p>Primary colors (CMYK) will not be used when printing security background design</p>	
<b>Security features:</b>	<ul style="list-style-type: none"> <li>✓ Three types of security fibers with fluorescence under UV light: one type of fiber being controllable in the visible part of the spectrum and two types invisible in normal light (multicolored fluorescent fibers (blue, yellow and red) alongside with colored fibers (except blue fluorescent fibers)).</li> <li>✓ Graphical feature printed with OVI ink</li> <li>✓ Tactile feature applied by blind embossing</li> </ul>	<ul style="list-style-type: none"> <li>✓ Microprint</li> <li>✓ Background/ security printing</li> <li>✓ Graphic feature intaglio printed IR pair inks</li> <li>✓ Graphic feature, printed using special invisible ink exhibiting fluorescence exposed to UV/ BiUV and/ or IR light</li> <li>✓ Graphic feature printed with iridescent ink</li> <li>✓ Latent image</li> </ul>



## 1.4 Remarks and Visa pages (inner paper pages)

<b>Paper material:</b>	<ul style="list-style-type: none"> <li>• Security paper</li> <li>• Grammage: 90gsm</li> <li>• Will have a white (whitish) color</li> <li>• Does not contain optical brighteners (no visible fluorescence exposed to UV light)</li> <li>• Will have appropriate absorbency and roughness</li> <li>• Will support inkjet printing</li> <li>• Will contain mixture of cotton and cellulose fibers - 60% cotton fibers being included</li> <li>• Appropriate chemical sensitivity, by including into the paper mass of special chemical agents that will change the paper color when treated with organic or inorganic solvents</li> </ul> <p>One awarded Mühlbauer will provide the test-table of the solvents and the colors in which security paper is colored. Material will be approved by Contracting Authority.</p>		
<b>Design</b>	Will be done according to the Contracting Authority requirements		
<b>Security background design:</b>	<p>On remarks and visa pages:</p> <ul style="list-style-type: none"> <li>• minimum 6 visible colors ( 4 offset forms including iris printing (2 forms with shift colors effect to A-B-A))</li> <li>• minimum 4 invisible colors with UV/ BiUV fluorescence (3 offset forms including iris printing (with shift colors effect to A-B-A))</li> </ul> <p>Primary colors (CMYK) will not be used when printing security background design</p>		
<b>Security features:</b>	<table border="0"> <tr> <td data-bbox="513 1059 970 2045"> <ul style="list-style-type: none"> <li>✓ Three types of security fibers with fluorescence under UV light: one type of fiber being controllable in the visible part of the spectrum and two types invisible in normal light (multicolored fluorescent fibers (blue, yellow and red) alongside with colored fibers (except blue fluorescent fibers))</li> <li>✓ Security polymer thread locally positioned with a 1,5 mm wide with a printed text "REPUBLICA MOLDOVA" (with direct and mirrored reflection), inserted in the paper substrate and exhibiting appropriate fluorescence exposed to UV light. The security thread, positioned parallel to the spine of the blank having a tolerance range from 5 mm to 15 mm from the outer edge of the leaf</li> <li>✓ graphical element with three-dimensional effect (volumetric), incorporated into the security background design</li> </ul> </td><td data-bbox="970 1059 1426 2045"> <ul style="list-style-type: none"> <li>✓ multi-tone watermark locally positioned, with pronounced degree of contrast, ensuring a realizable visual control/ inspection</li> <li>✓ Micro-printed text with deliberate error</li> <li>✓ Background/ security printing</li> <li>✓ Anti-copy features</li> <li>✓ Graphical element printed using special invisible ink, exhibiting fluorescence exposed to UV light and/ or IR light</li> <li>✓ Floating numeration of pages (combination of collocation marks and page numbers) invisible under normal light, exhibiting fluorescence under UV light</li> <li>✓ Duplication of the page number incorporated into the security background design of each page</li> <li>✓ See-through feature</li> <li>✓ Invisible Bi-UV printing</li> <li>✓ Visible printing with anti-stokes ink</li> </ul> </td></tr> </table>	<ul style="list-style-type: none"> <li>✓ Three types of security fibers with fluorescence under UV light: one type of fiber being controllable in the visible part of the spectrum and two types invisible in normal light (multicolored fluorescent fibers (blue, yellow and red) alongside with colored fibers (except blue fluorescent fibers))</li> <li>✓ Security polymer thread locally positioned with a 1,5 mm wide with a printed text "REPUBLICA MOLDOVA" (with direct and mirrored reflection), inserted in the paper substrate and exhibiting appropriate fluorescence exposed to UV light. The security thread, positioned parallel to the spine of the blank having a tolerance range from 5 mm to 15 mm from the outer edge of the leaf</li> <li>✓ graphical element with three-dimensional effect (volumetric), incorporated into the security background design</li> </ul>	<ul style="list-style-type: none"> <li>✓ multi-tone watermark locally positioned, with pronounced degree of contrast, ensuring a realizable visual control/ inspection</li> <li>✓ Micro-printed text with deliberate error</li> <li>✓ Background/ security printing</li> <li>✓ Anti-copy features</li> <li>✓ Graphical element printed using special invisible ink, exhibiting fluorescence exposed to UV light and/ or IR light</li> <li>✓ Floating numeration of pages (combination of collocation marks and page numbers) invisible under normal light, exhibiting fluorescence under UV light</li> <li>✓ Duplication of the page number incorporated into the security background design of each page</li> <li>✓ See-through feature</li> <li>✓ Invisible Bi-UV printing</li> <li>✓ Visible printing with anti-stokes ink</li> </ul>
<ul style="list-style-type: none"> <li>✓ Three types of security fibers with fluorescence under UV light: one type of fiber being controllable in the visible part of the spectrum and two types invisible in normal light (multicolored fluorescent fibers (blue, yellow and red) alongside with colored fibers (except blue fluorescent fibers))</li> <li>✓ Security polymer thread locally positioned with a 1,5 mm wide with a printed text "REPUBLICA MOLDOVA" (with direct and mirrored reflection), inserted in the paper substrate and exhibiting appropriate fluorescence exposed to UV light. The security thread, positioned parallel to the spine of the blank having a tolerance range from 5 mm to 15 mm from the outer edge of the leaf</li> <li>✓ graphical element with three-dimensional effect (volumetric), incorporated into the security background design</li> </ul>	<ul style="list-style-type: none"> <li>✓ multi-tone watermark locally positioned, with pronounced degree of contrast, ensuring a realizable visual control/ inspection</li> <li>✓ Micro-printed text with deliberate error</li> <li>✓ Background/ security printing</li> <li>✓ Anti-copy features</li> <li>✓ Graphical element printed using special invisible ink, exhibiting fluorescence exposed to UV light and/ or IR light</li> <li>✓ Floating numeration of pages (combination of collocation marks and page numbers) invisible under normal light, exhibiting fluorescence under UV light</li> <li>✓ Duplication of the page number incorporated into the security background design of each page</li> <li>✓ See-through feature</li> <li>✓ Invisible Bi-UV printing</li> <li>✓ Visible printing with anti-stokes ink</li> </ul>		

## 1.5 Polycarbonate Holder Page

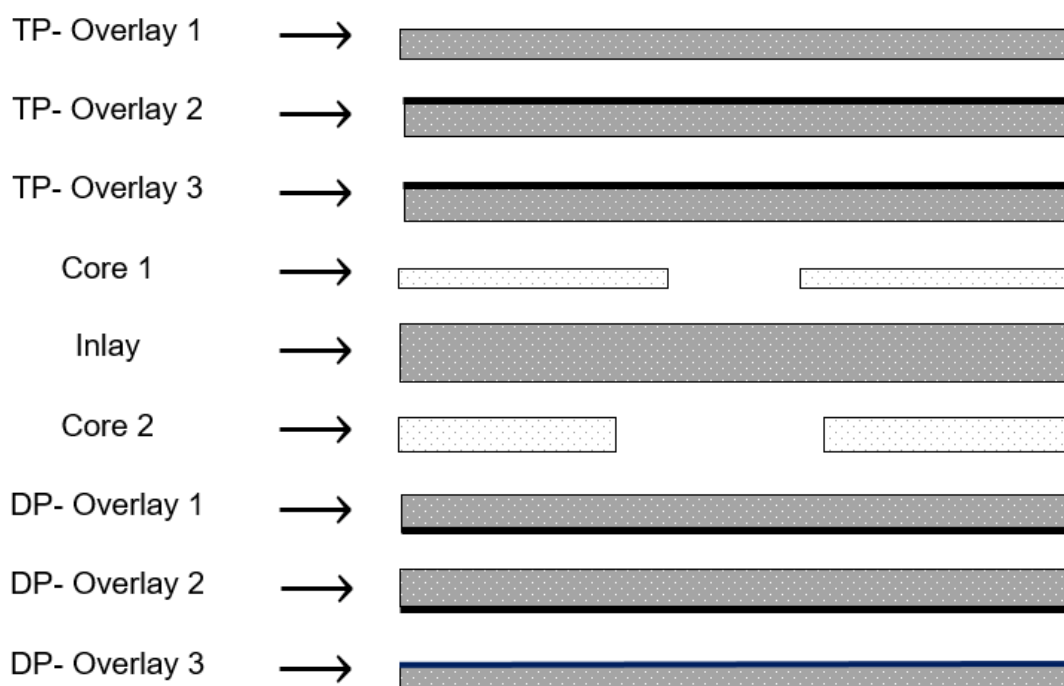
<b>Holder page material:</b>	100% Polycarbonate (synthetic material), without fluorescence under UV light
<b>Holder page construction:</b>	<ul style="list-style-type: none"> <li>• High secure multilayer construction without any kind of glue or adhesive</li> <li>• Construction resistant to splitting</li> <li>• Resistant to physical action, scratches, separation in layers and secured in its construction</li> <li>• Thickness not exceeding 0,76 mm</li> <li>• Rounded corners at the outer edge (radius <math>3,18 \pm 0,30\text{mm}</math>)</li> <li>• The sewing method of the holder page in the structure of the passport book will be secure and durable/ resistant</li> <li>• Minimum 6 layers (once awarded Mühlbauer will share the final document structure with the Contracting Authority)</li> </ul>
<b>Hinge technology:</b>	<ul style="list-style-type: none"> <li>• Holder page inner edge from the spine will be fixed by fusion with a hinge</li> <li>• The hinge will ensure the card binding in the spine, having the inner edge freely placed between the last page and inner side of the back cover</li> <li>• The hinge will be made out of synthetic material and it will be partially inserted in the PC card body</li> <li>• The hinge material will not present fluorescence under UV light (without optical brighteners)</li> <li>• The hinge material will be durable and flexible during the document validity period</li> <li>• The hinge will be supported with security features which will not allow extraction of PC card from the passport booklet without tampering traces</li> <li>• The fusion of the hinge with the PC card body will be done by a technique that will ensure the adhesion firmness between them, preventing the detachment in layers of the card body and accessing the security features from its structure without tampering traces</li> <li>• The hinge will be secured with features of level 1 and level 2</li> </ul>
<b>Design</b>	Will be done according to the Contracting Authority requirements
<b>Security background design:</b>	<p>On the title page:</p> <ul style="list-style-type: none"> <li>• minimum 8 visible colors (6 offset forms including iris printing, metamerik Ink Pair and Pantone with UV fluorescence (2 forms with shift colors effect to A-B-A)) on the first layer (all in one polycarbonate layer)</li> <li>• minimum 4 invisible colors with UV/ BiUV fluorescence (3 offset forms including iris printing, (with shift colors effect to A-B-A)) on the second layer (all in one polycarbonate layer))</li> </ul> <p>On the data page:</p> <ul style="list-style-type: none"> <li>• minimum 8 visible colors (6 offset forms including iris printing, metamerik Ink Pair and Pantone with UV fluorescence (2 forms with shift colors effect to A-B-A)) on the first layer (all in one polycarbonate layer)</li> <li>• minimum 4 invisible colors with UV/ BiUV fluorescence (3 offset forms including iris printing, (with shift colors effect to A-B-A)) on the second layer (all in one polycarbonate layer))</li> </ul> <p>Primary colors (CMYK) will not be used when printing security background design</p>

<p><b>Security features:</b></p>	<ul style="list-style-type: none"> <li>✓ Materials used for the holder page and hinge will not present fluorescence under UV light (without optical brighteners)</li> <li>✓ Semi-transparent DOVID (70 x 35 mm) consisting of separate elements will be distributed over a large area of the document to protect the main personalization areas on a discontinuous reflective layer. These elements will form inlays of foils without any residual materials between them, in order to allow the perfect fusion of the polycarbonate layers during the lamination process. Each DOVID element is applied as a discontinuous area (set of different elements with the smallest one being is not bigger than 10 mm<sup>2</sup> and the biggest one will not exceed 200 mm<sup>2</sup> and the minimum distance between two graphical elements shall be 0.5 mm). DOVID items will display the following features: <ul style="list-style-type: none"> <li>- maintained in the same plane and angle of light reflection, the two distinct reflective colors of the DOVID will interchange at any 90° rotation.</li> <li>- by tilting DOVID up and down, part or the entire surface of the two colored reflective areas will simultaneously display animations in opposite directions.</li> <li>- a part of one of the two colored reflective areas forms an object that renders a positive 3D relief effect on the "DOVID" surface. The DOVID will be applied to a layer of polycarbonate to ensure adhesion with the body of the card, being placed in the structure of the card above the layer of biographical data engraved by laser. The DOVID will be applied to a layer of polycarbonate to ensure adhesion with the body of the card, being placed in the structure of the card above the layer of biographical data engraved by laser</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>✓ Graphical feature, printed with special invisible fluorescence (except blue color) exposed to UV light and/or IR</li> <li>✓ UV fluorescent ink printing in Hinge area</li> <li>✓ Feature made of color-changing optically variable ink (OVI) (representing the symbol of the electronic document) with UV fluorescence</li> <li>✓ Features applied with UV/ BiUV and IR fluorescence inks, IR visible</li> <li>✓ Relief laser engraving features, with tactile effect</li> <li>✓ The background design will consist of secure offset printed graphics</li> <li>✓ The background design will consist of secure offset printed graphics (iris), protected with guilloche/fine lines, anti-copy/anti-scan elements, micro text in negative and/or positive with deliberate error, etc.</li> <li>✓ The data page will be protected with level 1 security features (detected without equipment- through sigh, touch and tilt), level 2 (inspected with simple equipment); and at least one security feature of level 3 (examined under special conditions)</li> <li>✓ Tactile features applied by blind embossing for protecting of VIZ data</li> <li>✓ The transparent window will accept laser engraving during the personalization process</li> <li>✓ The lenticular surface of the outer layer of the card intended for CLI/MLI images, located on the data page, will contain offset pre-printed lenticular effect image, will be partially filled out during personalization process (MB SWIFT)</li> <li>✓ Laser engraved passport serial number (title page)</li> <li>✓ Microprint</li> <li>✓ Background/ security printing</li> <li>✓ Blind embossed tactile feature</li> </ul>
<p><b>Content of the Holder page</b></p>	<p>Content of the title page and data page will be done according to the requirements of Contracting Authority</p>	

### 1.5.1 Holder page structure

The final document will consists of several synthetic foils, which together form a multi-layer construction. Each of these foils carries different components of the document, for example the antenna, the printed or the personalized part. During the production the different foils are assembled, collated and laminated together under high heat and pressure – without using any kind of glue. The final result is a mono block of polymer which cannot be separated into the original single foils, anymore. Therefore, this multi-layer construction prevents documents from being copied or imitated: any attempt of separating the different document layers or manipulating the data will damage the other layers so that an immediately recognizable evidence is left on the document. The adjacent layers of the PC card body will ensure the application of the requested security features. Once awarded Mühlbauer will share the final document structure with the Contracting Authority.

Example structure of holder page:



Thickness of holder page will not exceeding 0,76 mm

## 1.6 Numbering

<b>Type:</b>	<ul style="list-style-type: none"><li>• <b>Passport of citizen of the Republic of Moldova (PA)</b> - passport will consist of the series represented by the letters "BP" and sequential number of 7 (seven) Arabic numerals</li><li>• <b>Travel document for stateless persons (PC)</b> - passport will consist of the series represented by the letters "BC" and sequential number of 7 (seven) Arabic numerals</li><li>• <b>Travel document for beneficiaries of humanitarian protection (PH)</b> - passport will consist of the series represented by the letters "BH" and sequential number of 7 (seven) Arabic numerals</li><li>• <b>Travel document for refugees (PT)</b> - passport will consist of the series represented by the letters "BT" and sequential number of 7 (seven) Arabic numerals</li><li>• <b>Diplomatic Passport (PD)</b> - Serial number of the passport will consist of two capital letters of the Latin Alphabet "BD" and 7 (seven) Arabic numerals</li><li>• <b>Official Passport (PS)</b> - Serial number of the passport will consist of two capital letters of the Latin Alphabet "BS" and 7 (seven) Arabic numerals</li></ul>
<b>Location:</b>	<p>The serial number of passport will be applied:</p> <ul style="list-style-type: none"><li>• to the bottom on the inside front cover - letterpress printing</li><li>• to the bottom on the title page - laser engraving</li><li>• to the bottom-centered of pages 3 - 34 - laser perforation</li><li>• to the outside back cover will be fixed a sticker with a 1D barcode – Code 128 with serial number of the passport booklet</li></ul> <p>Specifications for barcode symbology Code 128 according to ISO/IEC 15417</p>

## 1.7 Physical and electrical characteristics

Physical and electrical characteristics of the passport booklets, as well as logical data structure (LDS) characteristics, inspection systems and PKI solutions will comply with the requirements stipulated in parts 9- 12, Doc 9303.

The passport booklet will have a certificate issued by an independent accredited laboratory on passing the tests on physical, electrical, LDS and PKI objects according to the following methods:

- Physical test methods for passports (durability) - ICAO Doc 9303, ISO/IEC 18745-1;
- Test methods on the contactless interface devices (e-passports, smart cards, hardware) - ICAO Doc 9303, ISO/IEC 10373-6; ISO/IEC 18745-2;
- Test methods for Application Protocol and Logical Data Structure – ICAO TR RF Protocol and Application Test Standard for eMRTD - Part 3. Tests for Application Protocol and Logical Data Structure. Version: 2.11. Date - March, 2018 (ISO/IEC 18745-3);
- PF Protocol and Application Test Standard for eMRTD - Part 5: Tests for PKI objects - ICAO TR RF&Protocol P5 RF Protocol and Application Test Standard for eMRTD - Part 5: Tests for PKI objects.

Mühlbauer will also perform test methods for determining the characteristics of the identification cards in accordance with ISO/IEC 10373-1 and test methods for machine readable travel documents (MRTD) and associated devices - in compliance with ISO/IEC 18745, Part 1 and 2.

The manufacturing materials of the passport booklets will comply with the requirements of environmental security, not present any toxic hazards and have appropriate certification.

Reports from independent accredited laboratory will be delivered within 6 months after Mühlbauer receives personalized blank models from contracting authority.

## 2 Packaging, Storage and Delivery of cards

### 2.1 Packaging and storage

Passport booklets will be packed in corrugated cardboard boxes (inner boxes) of 100 (one hundred). Passport booklets will be arranged five pieces each with the seam facing the wall of the box and the next five facing the opposite wall. Four inner boxes will be packed and sealed in an outer box of reinforced corrugated cardboard. A label containing product identification and information will be applied to each box.

The label on inner box will contain the following intonation:

- Manufacturer (abbreviation or Logo)
- Name of goods (or the code)
- Box number (digits and barcode)
- Quantity
- Range numbers of passport booklets contained in the box

Range numbers of passport booklets contained in the box. The label on outer box will contain the following intonation:

- Careful when transporting (sign will be displayed on box)
- Do not throw (sign will be displayed on box)
- Store in a dry place (sign will be displayed on box)
- Manufacturer (name and address)
- Origin country
- Name of goods
- Box number (digits and barcode)
- Quantity
- Range numbers of passport booklets contained in the box

Inscriptions on labels will be displayed in English language

Boxes of passport booklets will be stored under normal conditions on smooth and horizontal surfaces, which will ensure that the properties of the passport booklets are intact.

An optimal temperature and humidity regime will be ensured during storage, the indoor microclimate will be maintained within:

- Temperature from 18°C to 22°C
- Humidity of 50% +/- 10%
- Neutral environment: no acid, alkaline, organic and inorganic solvents

## 2.2 Delivery plan

Contracting Authority is entitled to modify the delivery timing during the reference year with the Mühlbauer Group's consent.

No.	Type	Quantity	Expected deadlines
1	Passport of citizen of the Republic of Moldova (PA) - (serial number BP 0000000)	1000	Within 30 calendar days from the date of the Buyer's final approval of the assembled blank models
	Travel document for stateless person (PC) - (serial number BC 0000000)	500	
	Travel document for beneficiaries of humanitarian protection (PH) - (serial number BH 0000000)	500	
	Travel document for refugees (PT) - (serial number BT 0000000)	500	
	Diplomatic Passport (PD) - (serial number BD 0000000)	500	
	Official Passport (PS) - (serial number BS 0000000)	500	
2025			
2	Passport of citizen of the Republic of Moldova (PA) - (serial number BP 0000000)	150 000	During 2025, within 45 calendar days from the date of the Buyer's order submission
	Travel document for stateless person (PC) - (serial number BC 0000000)	600	
	Travel document for beneficiaries of humanitarian protection (PH) - (serial number BH 0000000)	3 000	
	Travel document for refugees (PT) - (serial number BT 0000000)	1 000	
	Diplomatic Passport (PD) - (serial number BD 0000000)	2 500	
	Official Passport (PS) - (serial number BS 0000000)	2 000	
2026			
3	Passport of citizen of the Republic of Moldova (PA) - (serial number BP 0000000)	440 000	During 2026, within 45 calendar days from the date of the Buyer's order submission
	Travel document for stateless person (PC) - (serial number BC 0000000)	0	
	Travel document for beneficiaries of humanitarian protection (PH) - (serial number BH 0000000)	0	
	Travel document for refugees (PT) - (serial number BT 0000000)	0	
	Diplomatic Passport (PD) - (serial number BD 0000000)	0	
	Official Passport (PS) - (serial number BS 0000000)	0	
2027			
4	Passport of citizen of the Republic of Moldova (PA) - (serial number BP 0000000)	450 000	During 2027, within



	Travel document for stateless person (PC) - (serial number BC 0000000)	0	45 calendar days from the date of the Buyer's order submission
	Travel document for beneficiaries of humanitarian protection (PH) - (serial number BH 0000000)	0	
	Travel document for refugees (PT) - (serial number BT 0000000)	0	
	Diplomatic Passport (PD) - (serial number BD 0000000)	0	
	Official Passport (PS) - (serial number BS 0000000)	0	
2028			
5	Passport of citizen of the Republic of Moldova (PA) - (serial number BP 0000000)	500 000	During 2028, within 45 calendar days from the date of the Buyer's order submission
	Travel document for stateless person (PC) - (serial number BC 0000000)	0	
	Travel document for beneficiaries of humanitarian protection (PH) - (serial number BH 0000000)	0	
	Travel document for refugees (PT) - (serial number BT 0000000)	0	
	Diplomatic Passport (PD) - (serial number BD 0000000)	0	
	Official Passport (PS) - (serial number BS 0000000)	0	
2029			
6	Passport of citizen of the Republic of Moldova (PA) - (serial number BP 0000000)	380 000	During 2029, within 45 calendar days from the date of the Buyer's order submission
	Travel document for stateless person (PC) - (serial number BC 0000000)	0	
	Travel document for beneficiaries of humanitarian protection (PH) - (serial number BH 0000000)	0	
	Travel document for refugees (PT) - (serial number BT 0000000)	0	
	Diplomatic Passport (PD) - (serial number BD 0000000)	0	
	Official Passport (PS) - (serial number BS 0000000)	0	



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