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EMBEDDED PICTURE TECHNOLOGY

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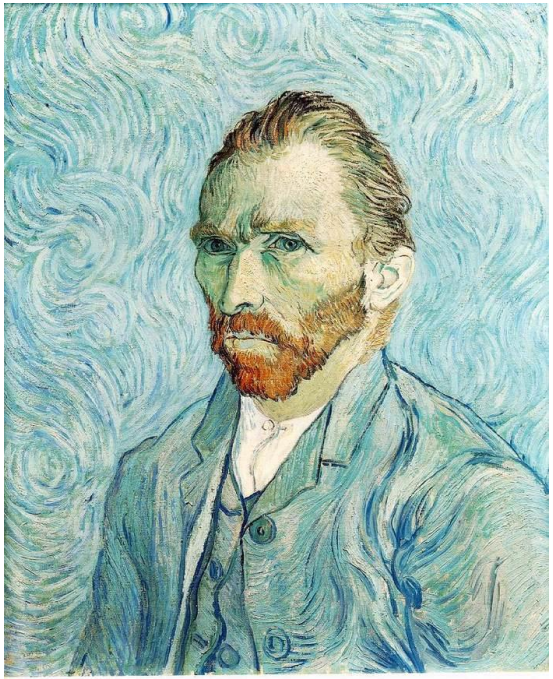
Technical Project Manager
Document Solution



Images: https://www.goodreads.com

"What color is in a picture, enthusiasm is in life."

Vincent van Gogh

Agenda

- Revolution and development in color picture technology
- MB color family (including D2T2 and MB Alfresco Picture Technology
- MB Embedded Picture

COLOR PICTURE TECHNOLOGY

Revolutions in Picture Technology

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Images: wikipedia, fotolia

Painting	Woodcut	Camera obscura	Film photography	Polaroid	Digital
ca. 60.000 years old	400 BC	1500	1876	1947	1991

Revolutions in Picture Technology for Security Documents

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Images: wikipedia, PRADO, Mühlbauer Group

- Signature 450 BC
- Real Picture ca. 1900
- Photographic process ca. 1950
- Inkjet printing ca. 1985
- Dye-sublimation / Thermal transfer printing
- High secure Greyscale laser picture
- High secure Color picture

MB COLOR FAMILY

Personalization Technology MB Color Family

MB D2T2 PICTURE

MB ALFRESCO® PICTURE

MB EMBEDDED PICTURE

Images: Mühlbauer Group

- Different technologies available: Laser, inkjet, dye sub, retransfer or combination
- Different locations/layers: Embedded / on top / combination

MB D2T2 Picture

COLOR PICTURE SOLUTION

- Protective adhesive layer
- MB D2T2 Picture on card surface
- Laser engraving
- Blank card

PERFECT FOR DECENTRALIZED INFRASTRUCTURE

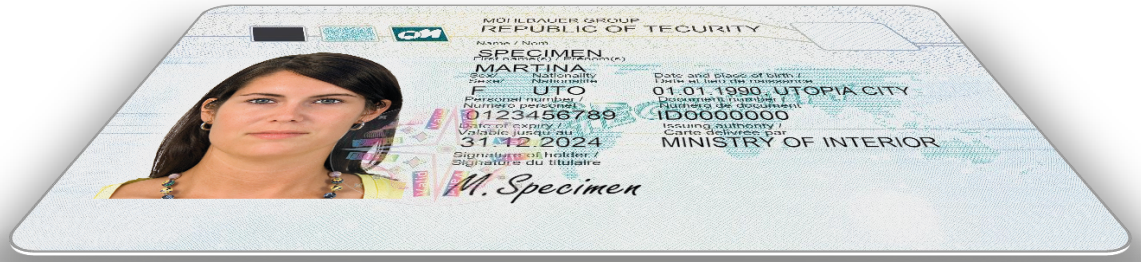
HIGH RESOLUTION COLOR PICTURE (600 dpi)

COLOR PICTURE COMBINED LASER ENGRAVING

MB ALFRESCO PICTURE

MB Alfresco Picture

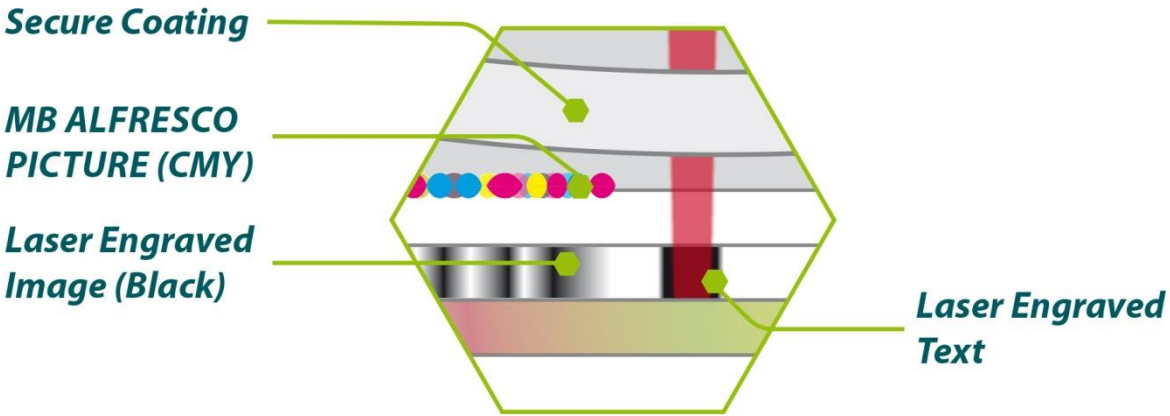
COLOR PICTURE SOLUTION



- Separation of color picture into CMY and black
- Laser engraving of black text and black picture elements inside card body
- Inkjet printing of CMY elements on card surface

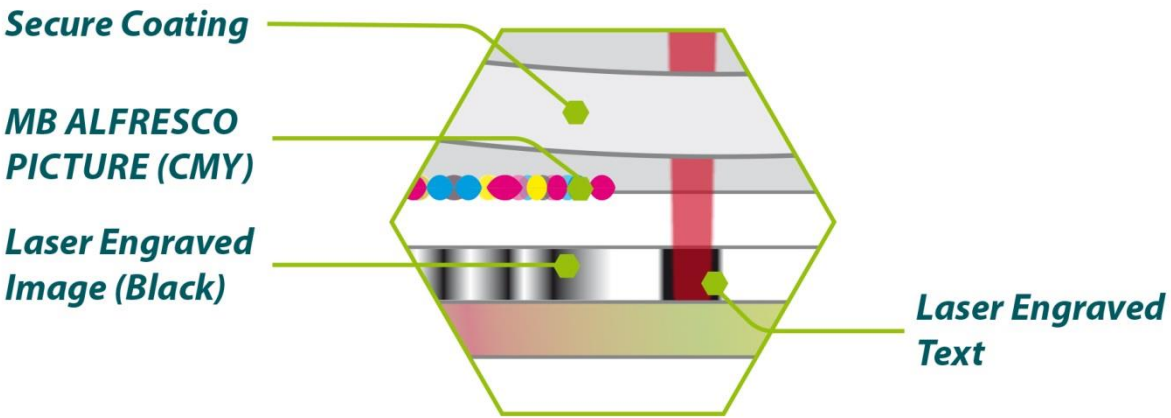
Images: Mühlbauer Group

COLOR PICTURE SOLUTION



Images: Mühlbauer Group

COLOR PICTURE SOLUTION



Images: Mühlbauer Group

MB Alfresco Picture + Liquid Coating

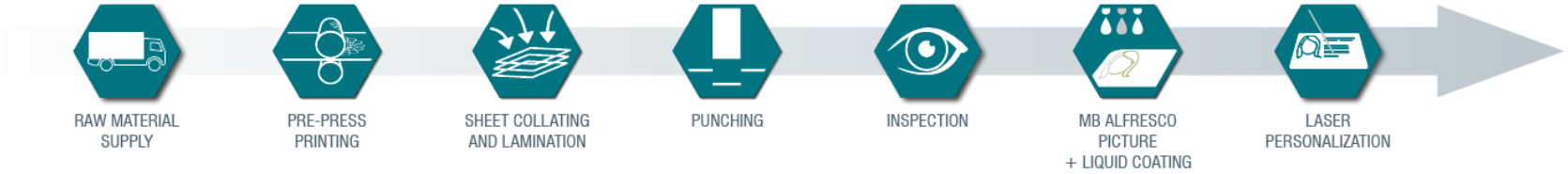
COLOR PICTURE SOLUTION

Images: Mühlbauer Group

- Coating applied in the course of printing process
- New design and security features possible (e.g. personalization elements, relief, UV fluorescence)
- No limitation of existing technologies and features

MB Alfresco Picture

PROCESS CHAIN



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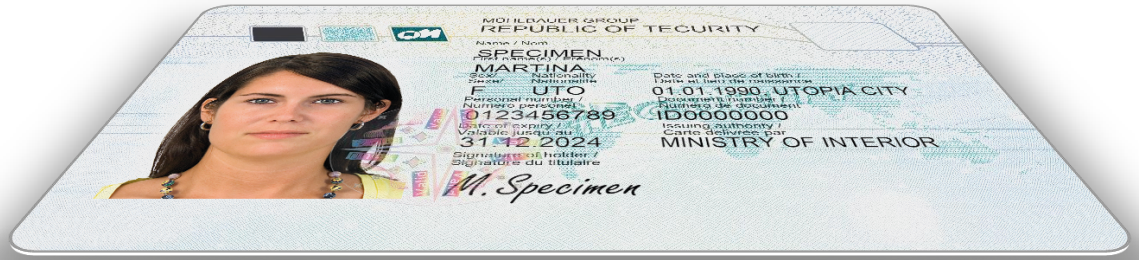
COLOR PICTURE SOLUTION

- 10+ — LIFETIME OF MORE THAN 10 YEARS
- 1440 dpi — HIGH RESOLUTION COLOR PICTURE (600 dpi)
- COLOR PICTURE COMBINED LASER ENGRAVING
- HIGHEST DURABILITY
- PERFECT LIGHT FASTNESS



MB EMBEDDED PICTURE

MB Embedded Picture

WHY EMBEDDED PICTURE?

„341,956 blank EU travel documents in criminal hands“

A classified Dutch government report has revealed that criminals stole 341,956 passports, identity cards, visa stickers and drivers' licences from European government facilities since 2000.

Netherlands, NRC Handelsblad, **February 08, 2010**

„500 blank Canadian Forces ID cards went missing in 2014“

Canada, National Post, **September 28, 2016**

„Hundreds of blank passports stolen from citizen services“

Denmark, CPH post online, **September 25, 2014**

„35,000 stolen blank Italian ID Cards“

TrusID, **February 11, 2012**

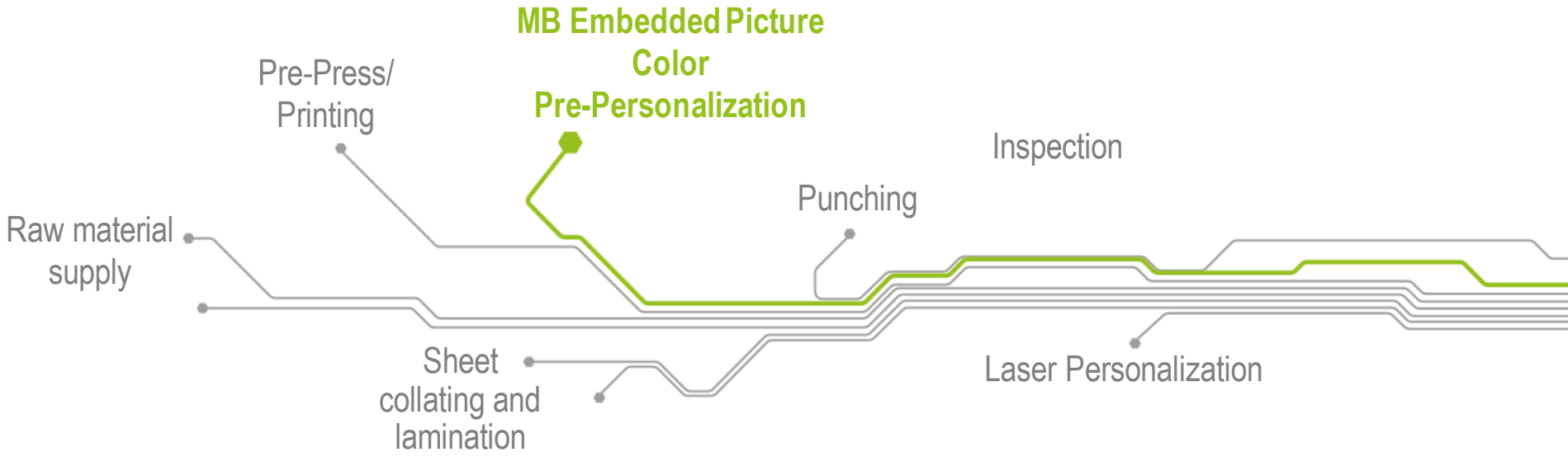
“Blank documents stolen from the Driver & Vehicle Licensing Agency”

UK, **November 28, 2012**

“Thousands of blank UK passports stolen in raid could be used in fraud or terrorism”

UK, The Guardian, **July 30, 2008**

MB Embedded Picture



MB Embedded Picture

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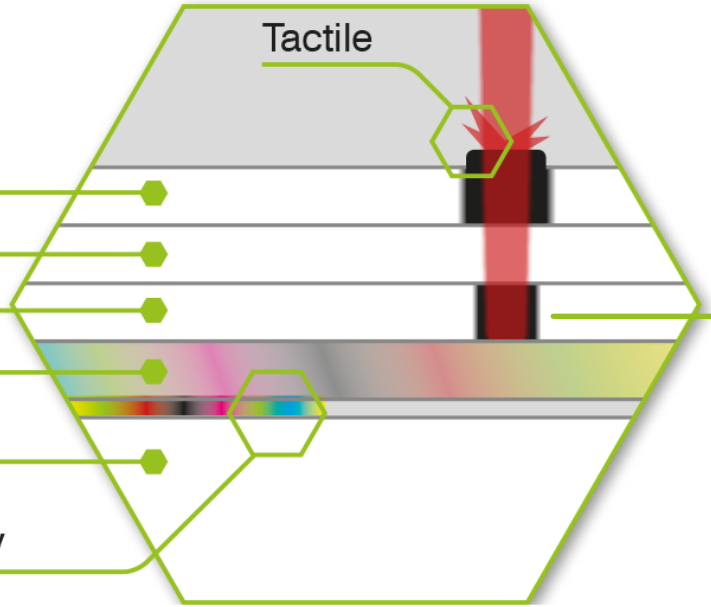
HIGH RESOLUTION COLOR PICTURE INSIDE THE DOCUMENT BODY

Color picture embedded inside card body

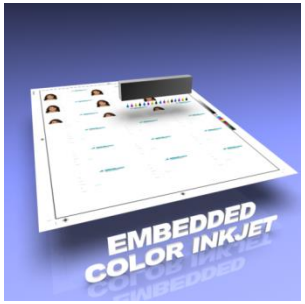


Laser engraving

MB Embedded Picture

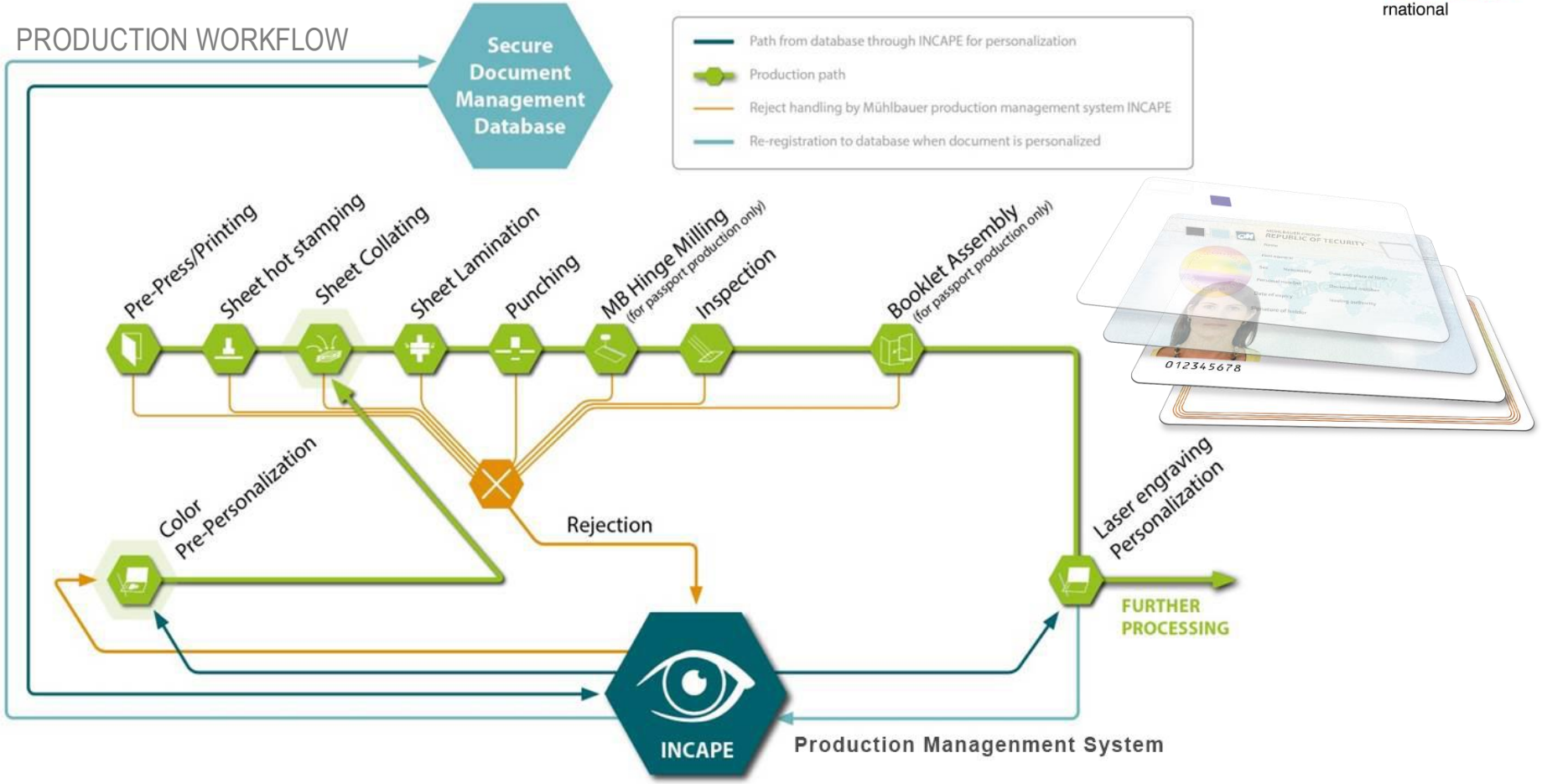
ASP (AUTOMATIC SHEET PERSONALIZATION)

- Highest print quality (1440DPI, full color, ➔ easiest holder identification)
- Use of market proven inkjet technology (low invest, easy to use, fully automated)
- Freely scalable machine concept for mid to high volume production
- Backup solutions
- Secure and economic solution



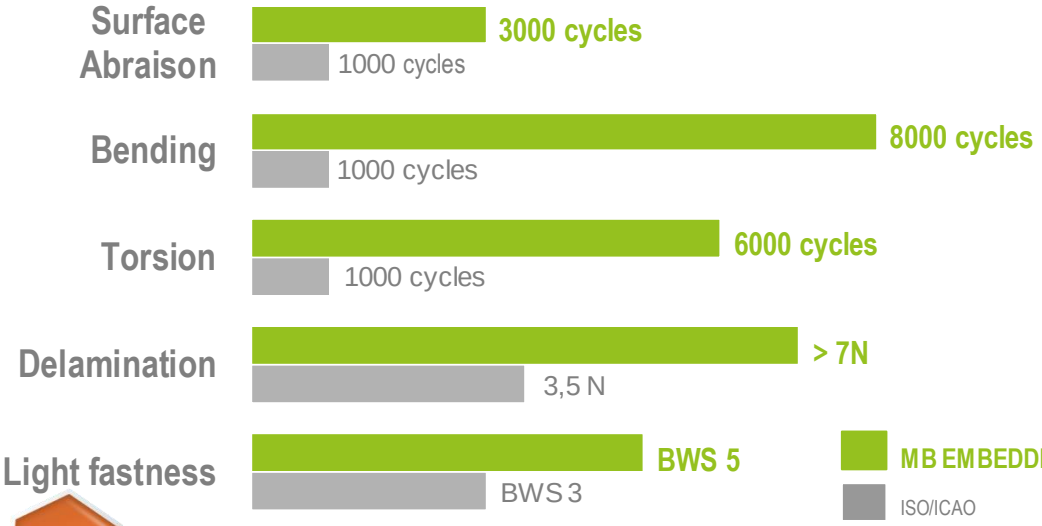
MB Embedded Picture

PRODUCTION WORKFLOW



MB Embedded Picture

QUALIFICATION STANDARDS



MB Embedded Picture

HIGH RESOLUTION COLOR PICTURE INSIDE THE DOCUMENT BODY

MB Embedded Picture

ADVANTAGES AND BENEFITS

- 10+ — LIFETIME OF MORE THAN 10 YEARS
- 1440 dpi — HIGH RESOLUTION COLOR PICTURE (1440 dpi)
- NO BLANK DOCUMENTS
- COLOR PICTURE INTEGRATED INTO THE CARD BODY
- LATEST POLYMERE DOCUMENT MATERIALS

MB Embedded Picture

MB EMBEDDED PICTURE can be used for polycarbonate or similar material keeping the benefits in term of durability and resistance against environmental influences of the product.

ID card

Drivers license

Passport eHolderpage

Passport Flexpage in combination with eCover

…and many more

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REFERENCES

National identity document projects for Bosnia and Herzegovina

First national wide ID document project including national eID card, drivers license and passport with polycarbonate datapage utilizing the embedded picture technology.

MB Embedded Picture

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CONCLUSION

- Color picture with highest printing quality (1440 dpi ,full color)➔ easier and faster holder verification
- No blank documents
- 100% traceability including reject handling
- No special raw material required
- No additional high sophisticated equipment needed compared to competitor solutions (e.g. multiple laser)
- Use of market proven inkjet technology (low invest, easy to use, fully automated)
- No limitations in terms of security features
- Freely scalable machine concept for low to high volume production
- Backup solutions
- Secure and economic solution

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