



MÜHLBAUER
TECH WEEK 2018

08 - 12 OCTOBER 2018 RODING, GERMANY

ID-CARD & ePASSPORT PERSONALIZATION

High Secure & Cost Efficient Color
Personalization Technologies for ID
Documents

COMPANY



- Owner-managed group
- International market leadership in the fields of
 - Parts & Systems
 - Semiconductor Related Products
 - Document Solution Related Products
 - TECURITY® Solutions
- The Mühlbauer Group's philosophy: Our customers are our partners!





BASIS

- 3,500 employees at 35 sites worldwide
- 400 engineers in R&D
- 400 trainees
- Excellent sustainability standards



INVESTMENTS

- Annual investments (approx. 15 million EUR) in
 - Latest technologies
 - Infrastructure
 - Systematical & logical completion of the product chain



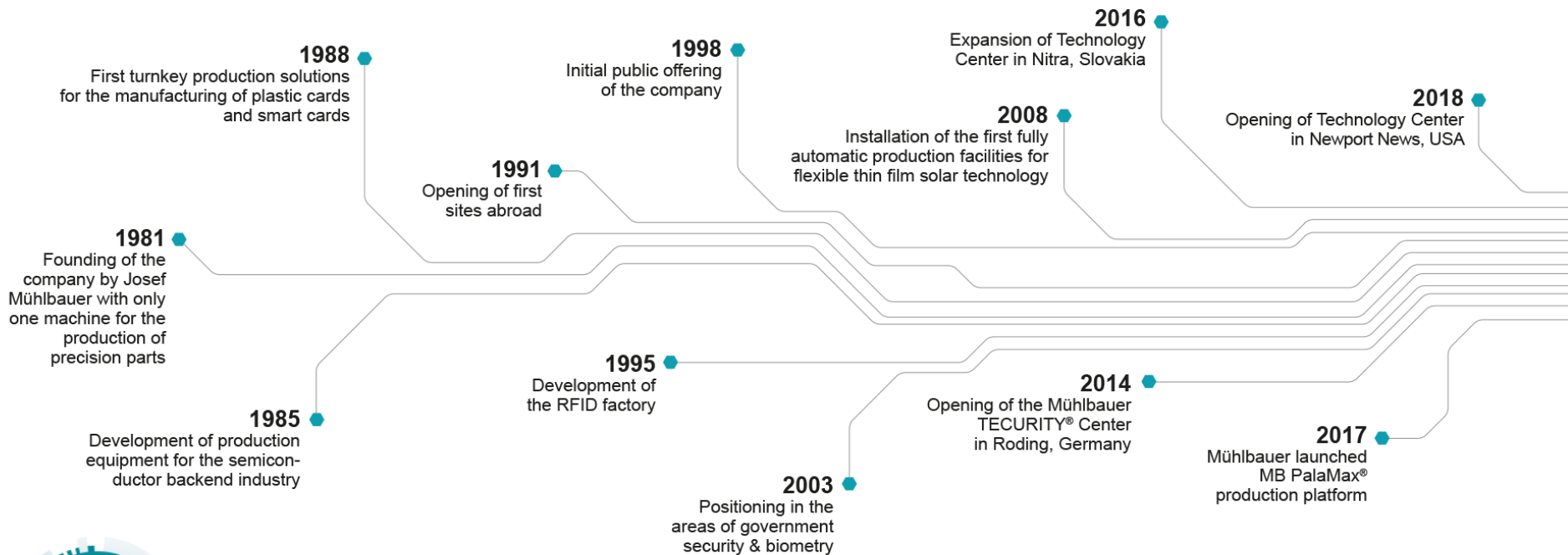
MARKET POSITION

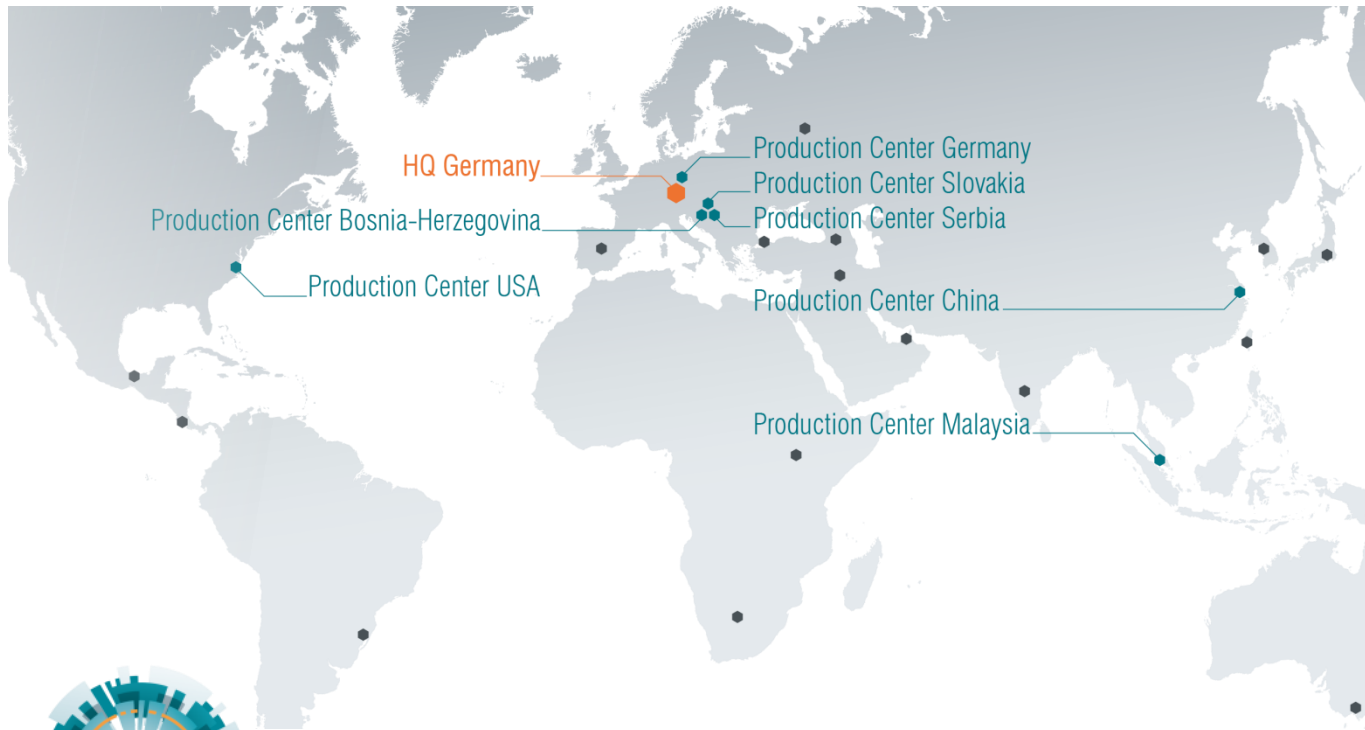
- PARTS & SYSTEMS – Intersectoral Parts Manufacturing
- AUTOMATION – Market leader in the areas of RFID
- TECURITY® – Solution partner for identification & verification projects



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History





- 35 production & service locations
- Technology centers in: USA, Slovakia, Serbia, Malaysia & China
- Inhouse precision-part production
- Provision of
 - High-end semiconductor & RFID systems
 - Reliable vision inspection technologies
 - Innovative ID document end-to-end-solutions
 - Secure access & border control systems

COLOR PHOTO PERSONALIZATION



Colour Photo Personalization

Be Part of the Revolution



10+

Lifetime of
more than 10 years



Laser



Inkjet (+LQC)



Inkjet+Laser+LQC



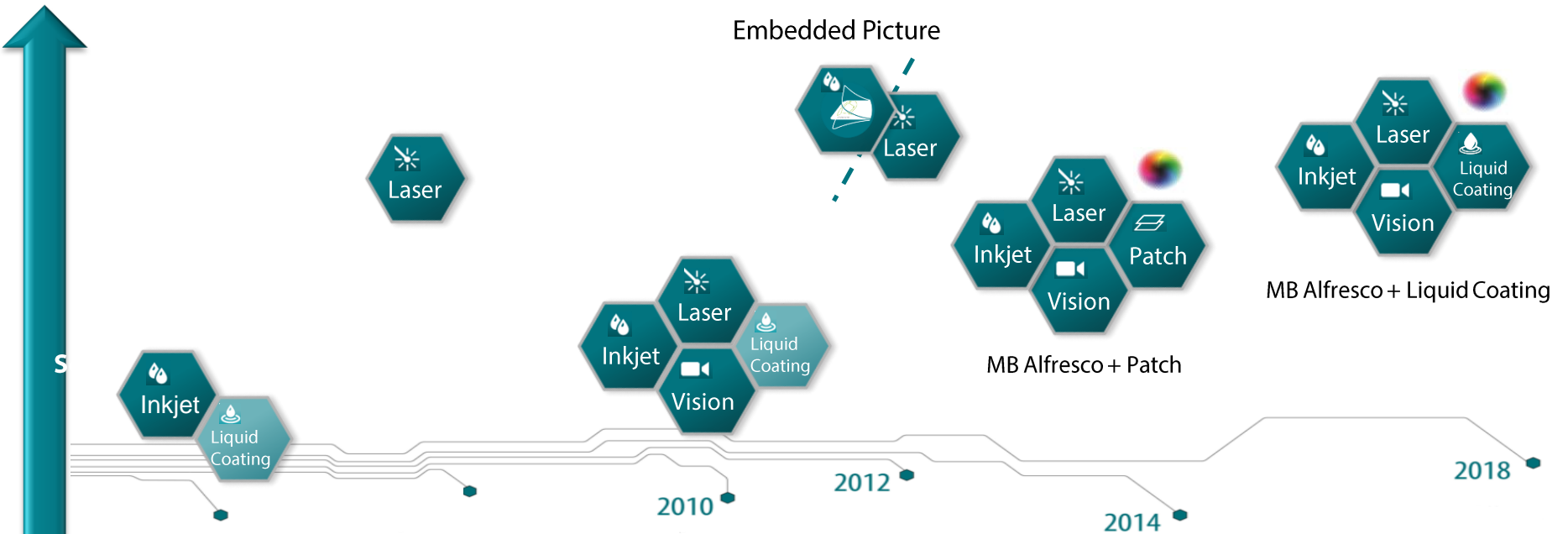
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Alfresco+Patch



Alfresco+LQC



MB Document Family Laser



Laser



- Variable power classes to suit your applications
- Up to 40% faster laser engraving with best quality
- Long laser lifetime with lowest operating costs (guaranteed up to 75,000 working hours)
- Fast service and support reaction time with no need of third party suppliers
- In-house developed layout editing Software specially for the security features / document personalization



LES 16 (Greyscale)
Laser for Mid Volumes



LES 25 (Greyscale)
Max Speed & Productivity



LES 20 F (Greyscale)
Fiber Laser for
Low Volumes



LES 31 F (Greyscale)
Fiber Laser for
GSM & Metal Card



LPS 100
Laser for
Number Perforation



LPS 400
Laser for
Number Perforation



MB Document Family

Embedded Picture



Embedded Picture



MB Embedded Picture
Combined print and laser
engraving personalization



Color picture
inside



No blank
documents



High resolution
color picture



On Demand
Production



100 % Automated
Production

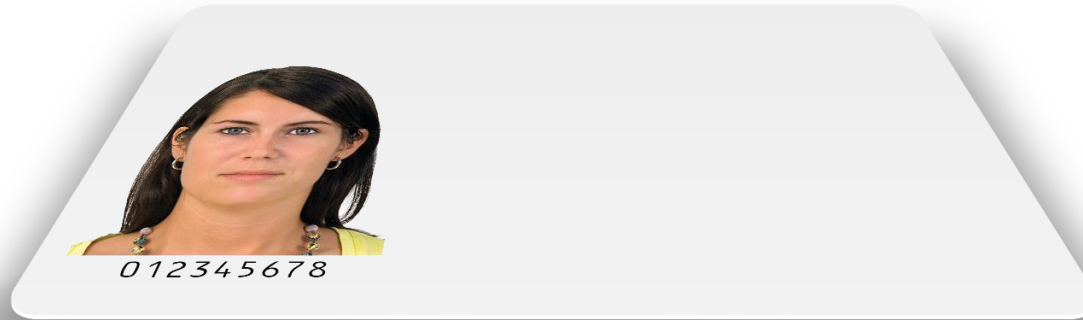


Lifetime of
more than 10 years



MB EMBEDDED PICTURE

High Resolution Color Picture Inside the Document Body



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MB Document Family

Alfresco with Patch



Alfresco+Patch



High resolution
color picture



Color picture
combined laser
engraving



Lifetime of
more than 10 years*



Highest
durability



Latest polymer
materials



Perfect light
fastness

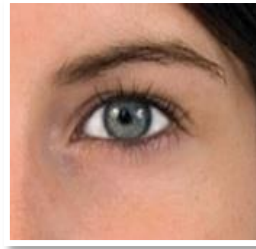
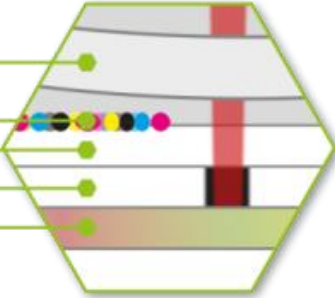
Protective
adhesive layer

MB Alfresco
Picture on card surface

Laser inactive layer

Laser active layer

Layer with design



Standard Picture



Picture without
Black (CMY)



Laser engraving
(Black)



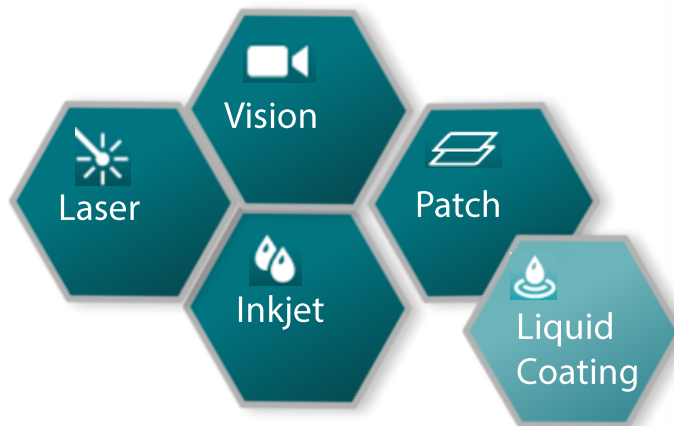
Color Picture
with laser
engraving

MB ALFRESCO



MB Document Family

Alfresco with Liquid Coating



Core Processes / Developements (for Alfresco + LQC)

Inkjet Printing and Personalization Technology

- **Machine technology**
 - from 800uph to 6000+ uph in single pass
 - highest printing quality
 - individual background printing
 - edge to edge printing
 - vision alignment and positioning (x,y,μ)
 - masking / cropping
 - data matching / verification
- **New materials and inks**
 - low consumable costs
 - durability and sustainability
 - suitable for PC, PETG, PVC and others
 - special INKS (invisible INK, multi color UV, forensic markers)
 - Liquid coating technology

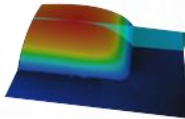


SPECIMEN	
MARTINA	01/01/1990
TECHURITY HEALTH CARE	12345678
91234567	01/01/2024

Core Developements / Processes (for Alfresco + LQC)

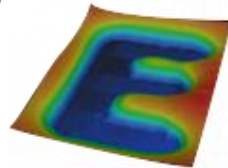
Inkjet and LQC Technology for Government ID

- **Durable photo / surface protection**
Pira certified for 10+ years
chemical attack (complete destruction of cardbody,
picture with LQC ok)
- **Partial and contour coating**
printing technology
enabling smooth transition and any shape
extra fraud protection
- **LQC Personalization, as add-on for security features**
watermark, relief printing and personalization
special INKS (fluorescent, IPI, real/multicolor UV)
translucent ink (e.g. for embedded hologram)



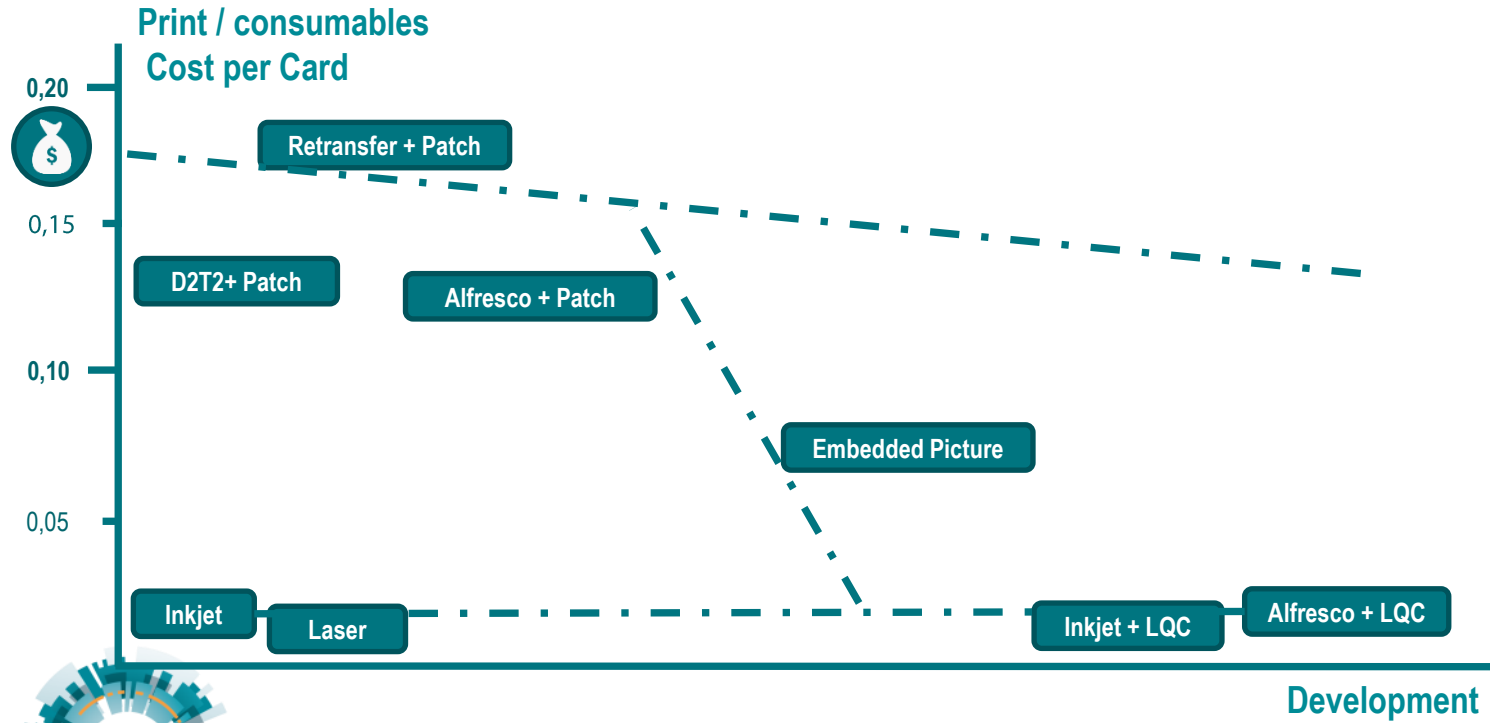
Contour coating

Partial coating



High Secure & Cost Efficient Color Personalization

Print / Consumable Cost per Card



Colour Photo Personalization

Be Part of the Revolution



We are ready ...



Thank you very much
for your attention!

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