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ABB’s New PixelPaint Solution
Non-overspray technology following up

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Quick Flashback of Last SURCAR Content

Color choice in 1908

You can get "Ford T" of any color, provided that this color is black

~ Henry Ford ~
Two Tone painted cars were already popular in the 50’s - 60’s, the trend is growing today.
The masking process is needed in the current paint line.
**PixelPaint in the current process**
The non-overspray technology eliminates the masking process

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The current two-tone process

High CAPEX & OPEX

Two-tone today

- Market: custom looking, more personalization, visually reduces the bulk (SUV, Crossover, EV, Pickup truck)
- Manufacturer’s need: be able to paint the second color in existing line without reducing cycle time and adding manpower. In case the trend doesn’t last we should avoid in investing in a special line.
- Solution: overspray free application. After several tests ABB’s solution is based on inkjet technology
- Challenges: paint properties, contamination, sharpness of the edges, cycle time, robot precision, programming.....

Eliminate the masking and demasking process with non-overspray technology for two-tone application
ABB PixelPaint System
Non-overspray technology for two tone applications without masking

PixelPaint

- Type: function package includes inkjet head, paint robot (IRB 5500), dosing package, and RobotStudio simulation
- Target: Auto OEM, Tier 1, GI, etc.

Customer value proposition

<table>
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<tr>
<th>Productivity</th>
<th>Flexibility</th>
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<tr>
<td>Eliminate the double cycle time currently required two-tone applications</td>
<td>Significantly deduct CAPEX &amp; OPEX for masking/demasking process</td>
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<thead>
<tr>
<th>Quality</th>
<th>Simplicity</th>
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<tr>
<td>Zero overspray of paint, environmentally friendly. VOC, CO2 down.</td>
<td>Remove the need for manual and time-consuming masking/demasking</td>
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PixelPaint in the current process

The non-overspray technology eliminates the masking process

The current two-tone process

The scenario 1 with PixelPaint

The scenario 2 with PixelPaint

Eliminate the masking and demasking process with non-overspray technology for two-tone application
ABB’s Offering Overview
Complete turn-key solution for customer

Robot
- High precision robot
- Choice between painting robot or high precision handling robot

Print head
- High DPI inkjet head
- Head with nozzle quantity > 1000
- Independently control nozzles
- Sharp edges and invisible overlapping

User friendly tool
- RobotStudio simulation
- Ease of use programming
- Manual teaching free

Process control
- Precise process control package
- Same “Brush” concept as painting

Other accessories
- PLC
- Safety accessories
- Manpower
- Warranty
PixelPaint System Highlights

Paint supply system

- **Paint supply system**: Supply paint to Inkjet head with circulation
- **Control system**: Send pre-designed image to Inkjet head. Setting parameter to achieve optimal quality
- **Ex-proof system**: Applicable inside paint booth with purged system
PixelPaint System Highlights

Control system

- **Paint supply system**
  Supply paint to Inkjet head with recirculation

- **Control system**
  Send pre-designed image to Inkjet head
  Setting parameter to achieve optimal quality

- **Ex-proof system**
  Applicable inside paint booth with purged system
PixelPaint System Highlights

Ex-proof system

**Paint supply system**
Supply paint to Inkjet head with recirculation

**Control system**
Send pre-designed image to Inkjet head
Setting parameter to achieve optimal quality

**Ex-proof system**
Applicable inside paint booth with purged system
### ABB’s Unique Solution
New paint application

1) Droplet jetting solution

2) Control droplet size

3) More than 1000 nozzles

- Flow
- Drop x 1000
- Middle
- Small 20 um
- Large 50 um
- > 1000 = 100 mm
Principal of Print Head

Robot moving

- Robot movement;
- Droplet jetting interval;
- Adjustable;

Diagram showing robot movement and droplet interval.
PixelPaint Corridor

Image converts to the target pattern

Printing data → Inkjet Software → Inkjet head → Target pattern

RGB → Convert digital data → Inkjet print → Actual image
Roof painting
Examples