



# Quality Control and Compliance

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*Marketing Director*

**AVT.**



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# Agenda

- The need for quality control, proofing & compliance
- MIS and quality control systems
- Integration and automation of web and job inspection



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# Automatic Inspection System (AIS)

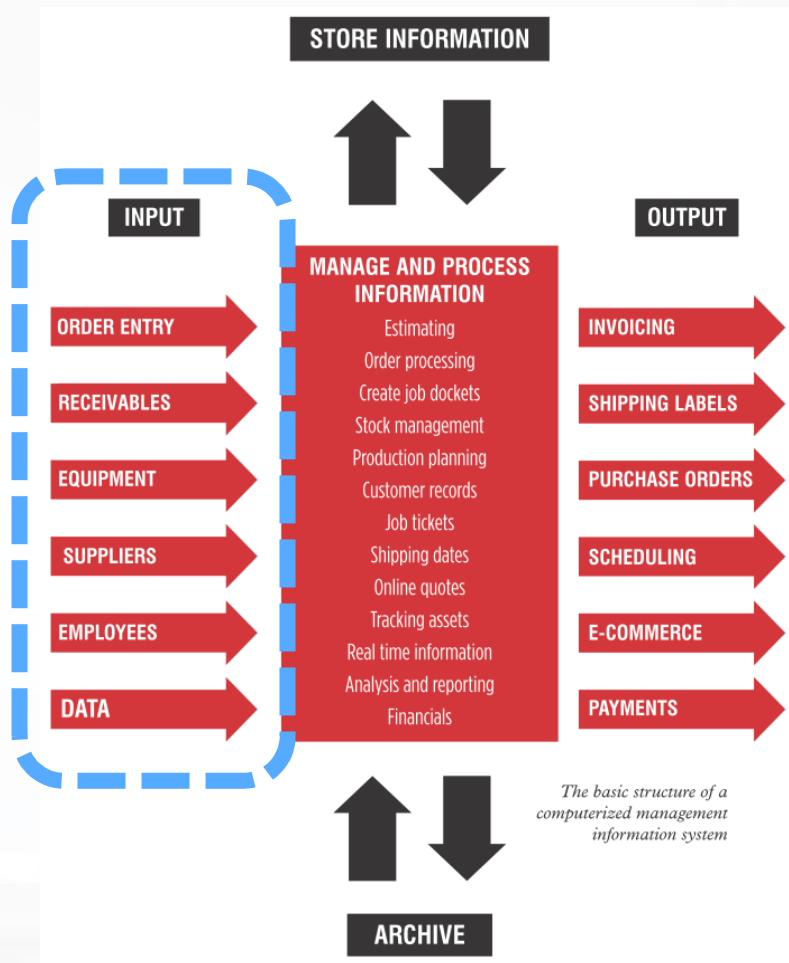
## Main benefits of AIS:

- Detection of print defect (QA)
  - On time / As early as possible!
- Reduction of waste & time (material, ink, laminates, machinery, manpower)
- Answering brand owner quality requirements
  - Get defect free / best quality packaging material
  - Comply with regulatory directives (CFR / Annex)
  - Comprehensive reporting



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# AIS: **more than** a standalone system



- Automatic Inspection Systems uses similar data as all other systems in the converting process
- Need for more automation – Industry 4.0
- ROI / AIS benefits increases once additional information is provided



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Illustration from: 'Management Information Systems and Workflow Automation', Michael Fairley

# Integration challenges



Known challenges: (no common format...)

- Format/protocol (JDF/XML/HTTP/others)
- Names/terminology/language (Job/Order/Design)

Unique AIS challenges:

- Single label/package, plate, multi-design...
- Proof - Customer's PDF or previous golden image



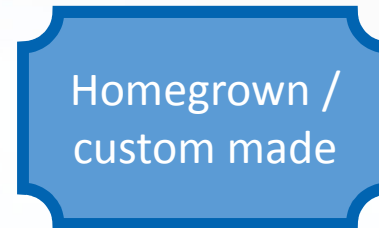
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# Integration challenges

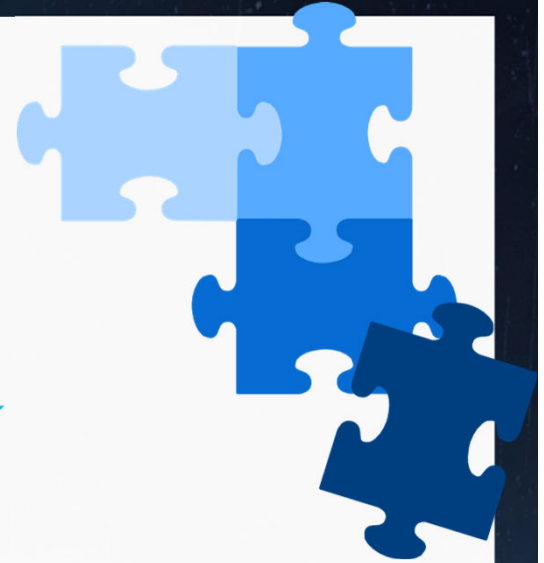


Dedicated MIS

**Vs.**



Other MIS used



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# Quality & MIS



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# The need for quality

## MIS hold a lot of the data

- Names, design layout, proof, production targets, equipment, substrate profiles and much more
- In some cases, even live meter count

## What's missing? - AIS feedback:

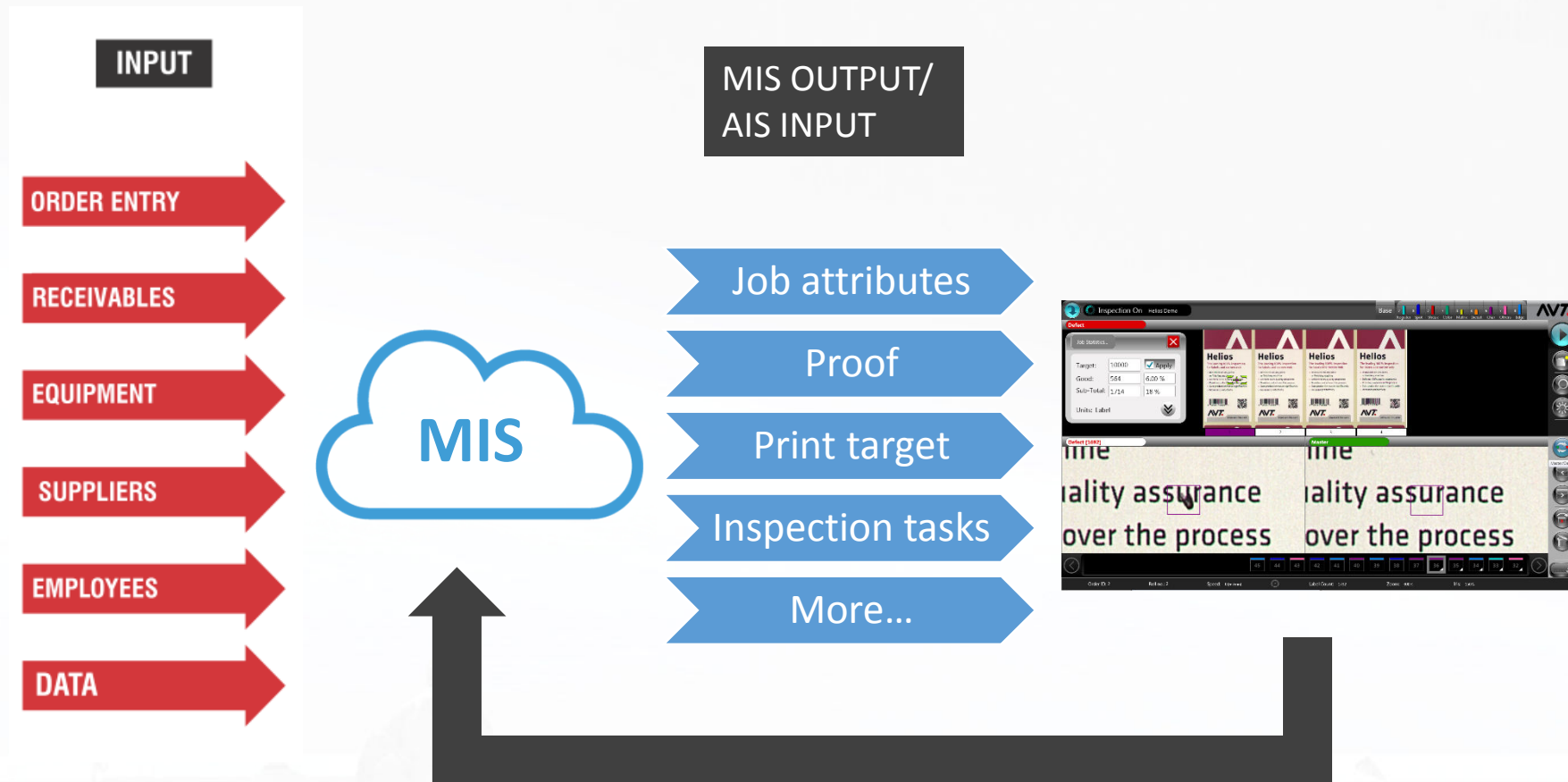
- Grade – **Quality** indicator
- Good/Bad – **Waste** indicator
- Assurance – **Proofing** & **Guarantee** indicators



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# AIS & MIS – How does it work?



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Illustration from: 'Management Information Systems and Workflow Automation', Michael Fairley

# Product guarantee – Job verification

Am I printing the right job?

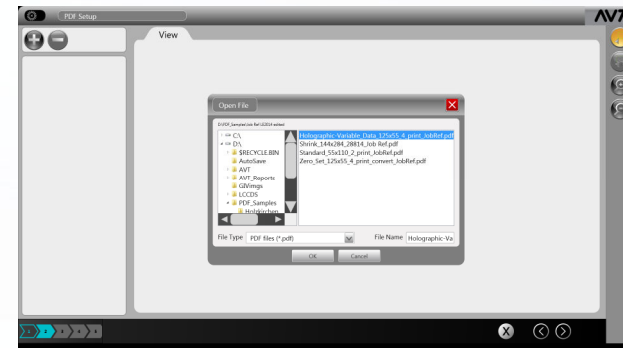
- Wrong language
- Wrong job/plate revision
- Damaged plates/cylinders



Data

Proof (PDF) file:

- Verified (digital)
- Single source
- Automation (no human factor)



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# Product guarantee – Job verification

Job Verification: 5 Print 15 Proof **AVT.**

**Master**

> cuts production waste significantly  
> Increases productivity

6 09761 45586 1

**AVT.**

www.avt-inc.com

Press E... ☰ ☒

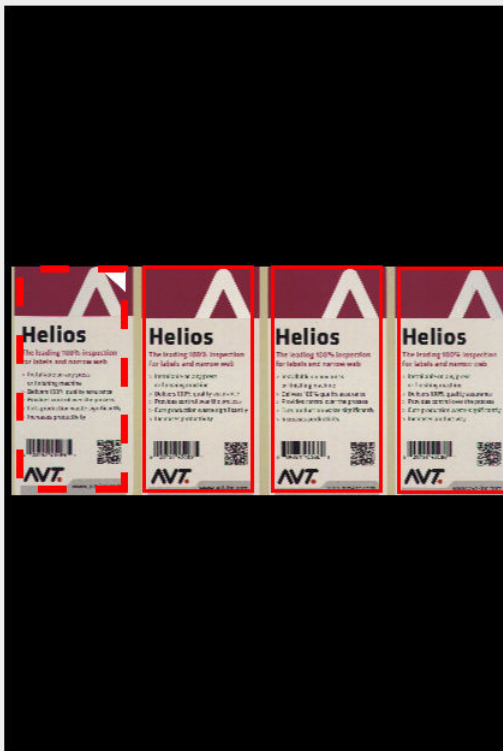
Order ID: 3    Roll no.: 2    Speed: 0 [m/min]    Label Count: 140    Zoom: 290%    Iris: 100%

# Wrong product!



Job Verification:

5 Print 15 Proof



Proof



> cuts production waste significantly  
> Increases productivity



www.avt-inc.com

Press E...



Order ID: 3

Roll no.: 2

Speed: 0 [m/min]



Label Count: 140

Zoom: 290%

Iris: 100%

# Wrong product!



Job Verification:

5 Print 15 Proof



Master



Press E...

Order ID: 3

Roll no.: 2

Speed: 0 [m/min]



Label Count: 140

Zoom: 290%

Iris: 100%



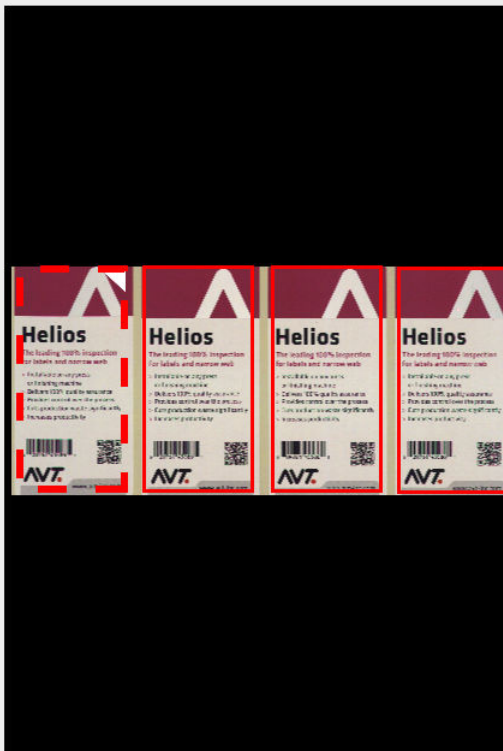


# Wrong product!



Job Verification:

5 Print 15 Proof



Proof



> cuts production waste significantly  
> Increases productivity



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Press E...



Order ID: 3

Roll no.: 2

Speed: 0 [m/min]



Label Count: 140

Zoom: 290%

Iris: 100%



# Automation



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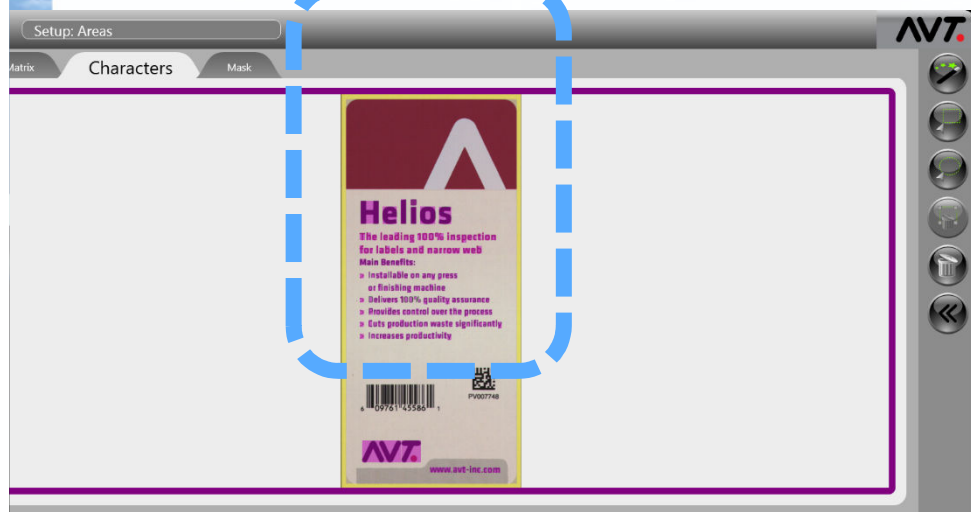


# Eliminating the “human factor”

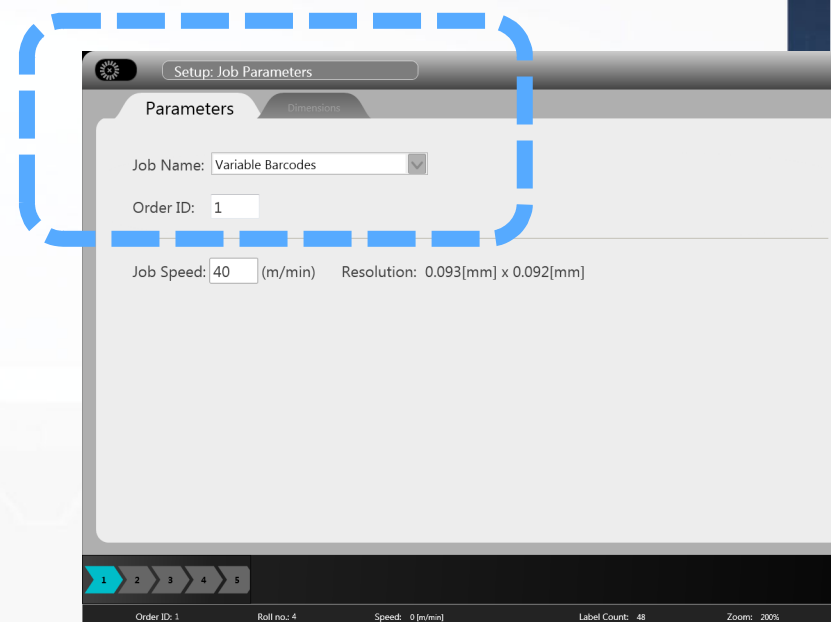
Need to automate and reduce mistakes :

- Computerized decision making
- But...pending operator input

Wrong job parameters



Wrong job name



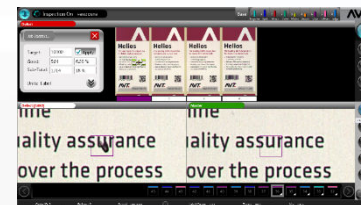
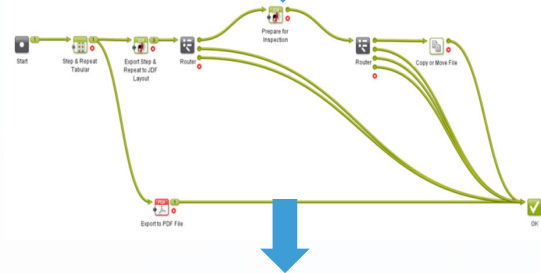
# Eliminating the “human factor”

Solution – Eliminate/reduce “human errors” with automation

MIS → AIS



MIS → Pre-press → AIS



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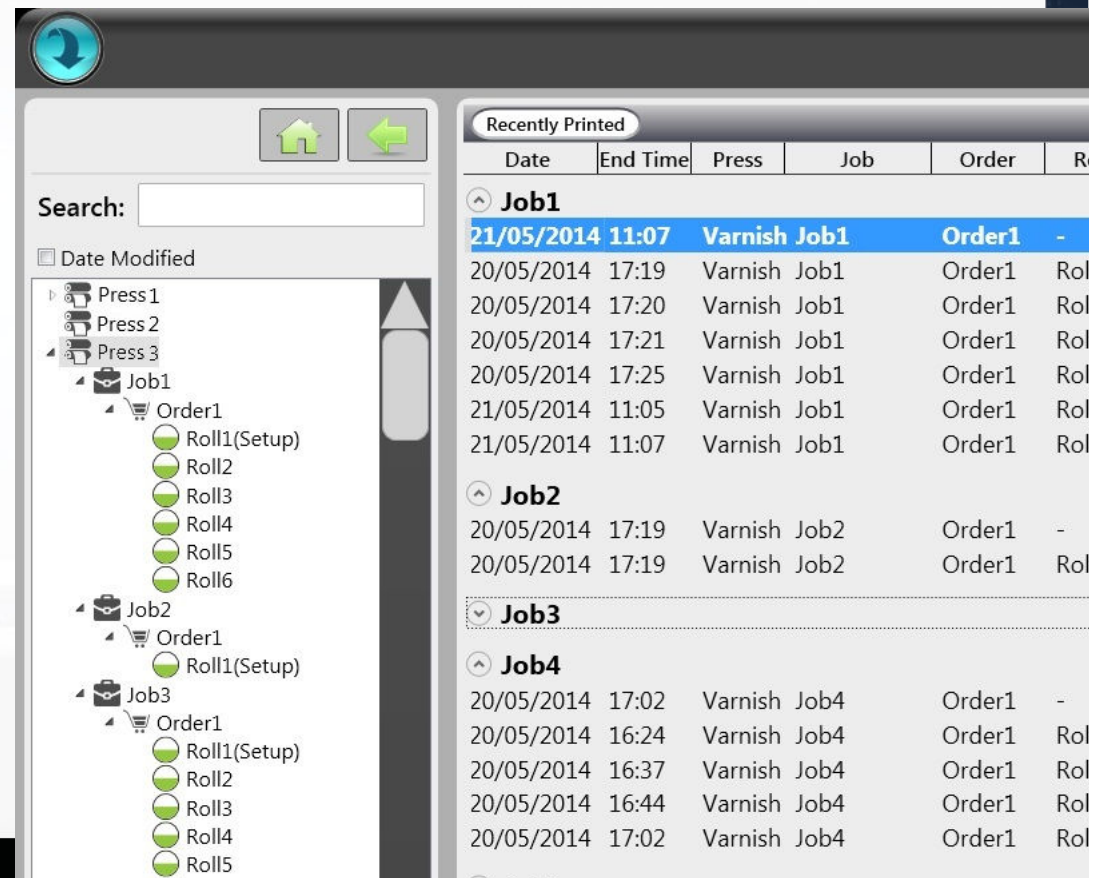
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# Trusted results + time & attention saved

Saving valuable time + operators skills and attention

Automation enables traceability

- Product/article ID
- Date/Time
- Quality



The screenshot displays a software interface with a file tree on the left and a 'Recently Printed' table on the right. The file tree shows a hierarchy of folders: Press 1, Press 2, Press 3, Job 1 (containing Order 1 and Rolls 1-6), Job 2 (containing Order 1 and Roll 1), and Job 3 (containing Order 1 and Rolls 1-5). The 'Recently Printed' table lists print jobs with columns for Date, End Time, Press, Job, Order, and Roll.

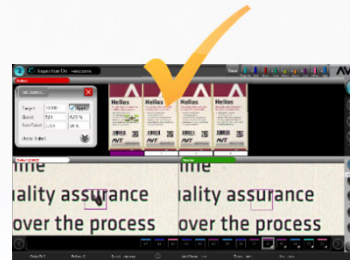
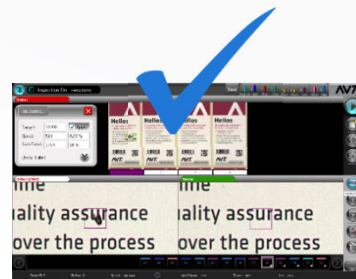
Date	End Time	Press	Job	Order	Roll
<b>Job1</b>					
21/05/2014	11:07	Varnish	Job1	Order1	-
20/05/2014	17:19	Varnish	Job1	Order1	Roll1
20/05/2014	17:20	Varnish	Job1	Order1	Roll2
20/05/2014	17:21	Varnish	Job1	Order1	Roll3
20/05/2014	17:25	Varnish	Job1	Order1	Roll4
21/05/2014	11:05	Varnish	Job1	Order1	Roll5
21/05/2014	11:07	Varnish	Job1	Order1	Roll6
<b>Job2</b>					
20/05/2014	17:19	Varnish	Job2	Order1	-
20/05/2014	17:19	Varnish	Job2	Order1	Roll1
<b>Job3</b>					
<b>Job4</b>					
20/05/2014	17:02	Varnish	Job4	Order1	-
20/05/2014	16:24	Varnish	Job4	Order1	Roll1
20/05/2014	16:37	Varnish	Job4	Order1	Roll2
20/05/2014	16:44	Varnish	Job4	Order1	Roll3
20/05/2014	17:02	Varnish	Job4	Order1	Roll4

# Trusted results

Current status – depends on operators skill and attention



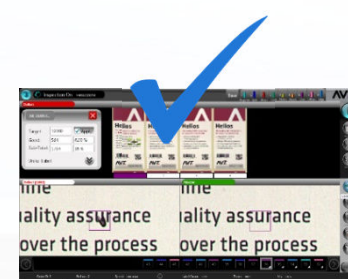
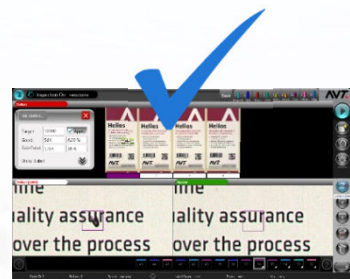
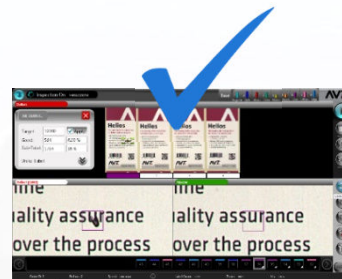
Operator input



Automation - leads to quality standardization



Automation



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# Additional data synchronization benefits



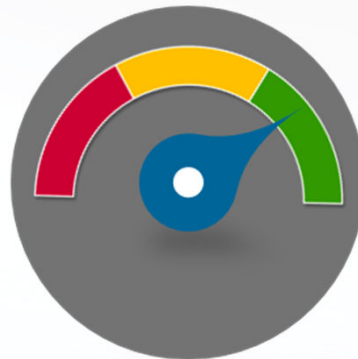
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# Bi-directional communication

- Statistics – MIS send a request to AIS, for inspection results of each inspected roll



Live feedback → Alert & Act on time



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# Inspection to intelligence (BI)

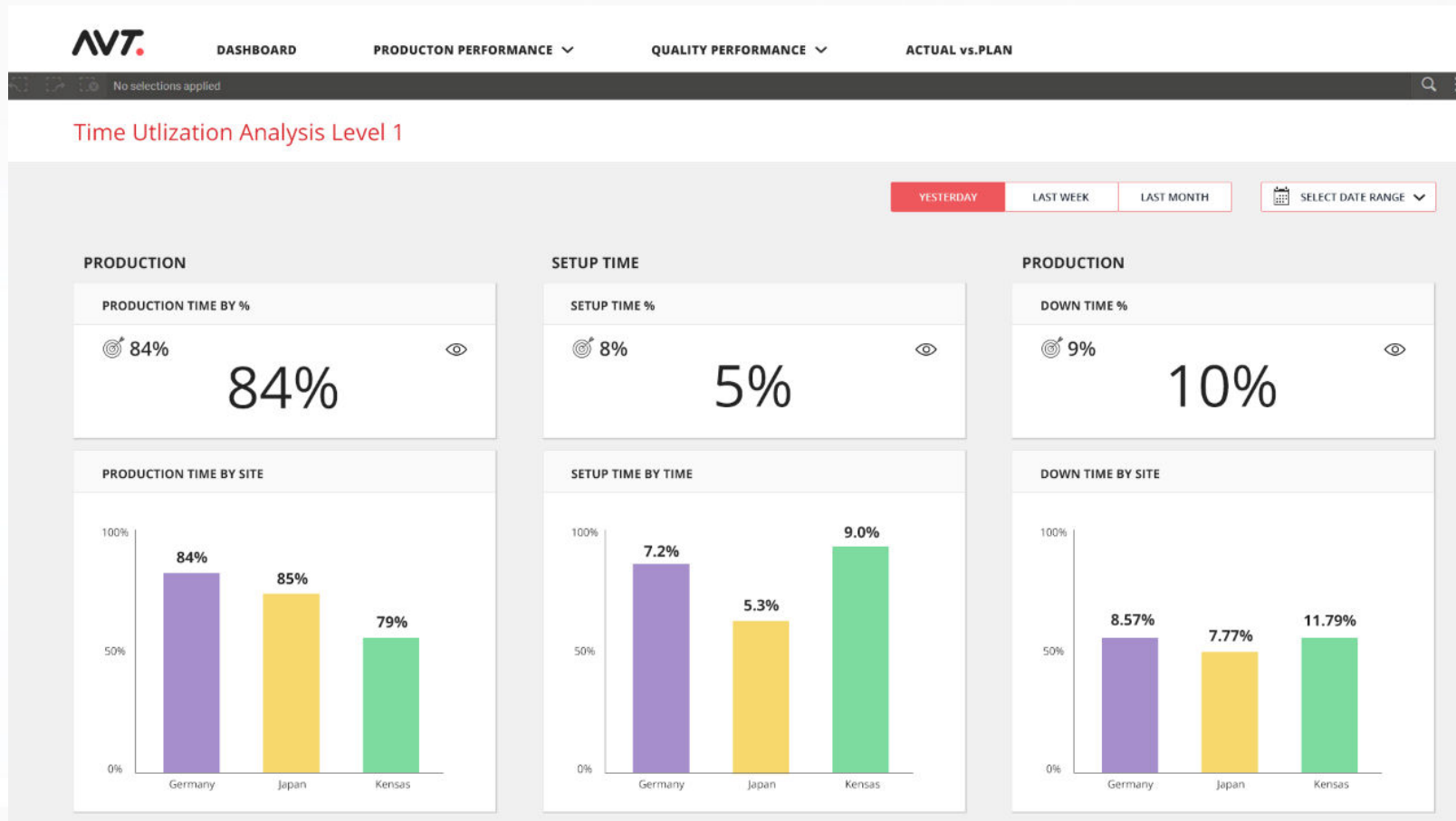
Analyze 'Print Data' and monitor KPI's

- Job time - Actual Vs. Planned
  - Actual **setup time**
  - Actual **production time**
- Production length - Actual Vs. Planned
  - Actual **waste** and avoid **re-prints**
- Percentage of extra print
  - Control **overprint**





# Inspection to intelligence (BI)



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# Summary

- Connectivity boosts overall benefits and ROI
- Reducing human error, time and attention with Automation
- AIS feedback:
  - Grade – **Quality** indicator
  - Good/Bad – **Waste** indicator
  - Assurance – **Proofing** & **Guarantee** indicators
- Inspection to intelligence (BI)
- Bi-dir communication (real time update & control)



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# Thank you

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