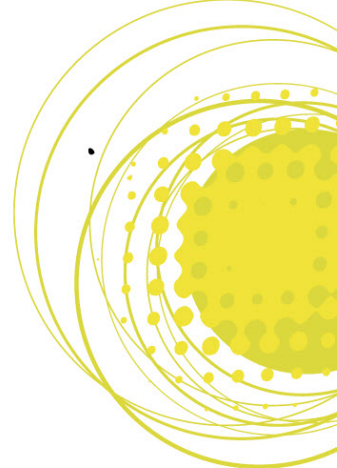
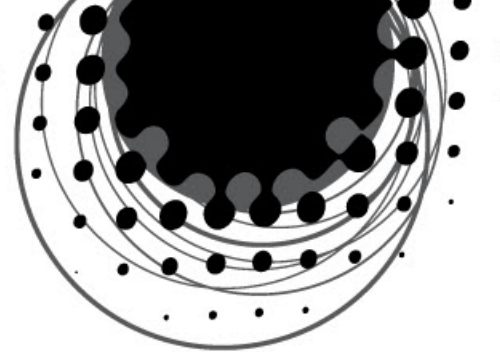




NPES-ICC Color Management Conference 2015

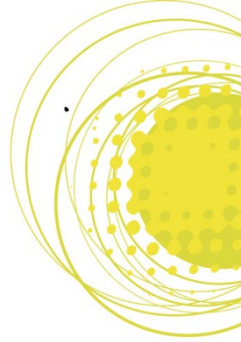
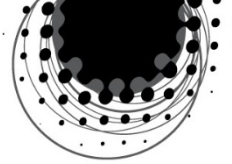
BCCL COLOR & PROCESS OPTIMIZATION

February 12, 2015 • India Expo Centre • Greater Noida, Delhi NCR



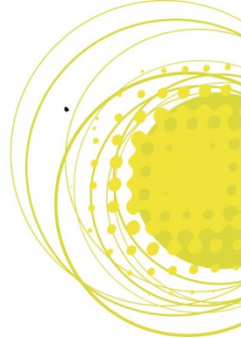
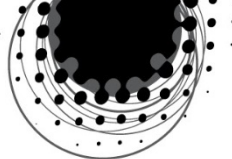
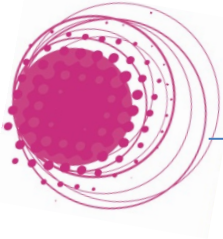
Mr. Nilay Patel & Mr. Prashant Amritwar





**Consistent and uniform reproduction at
12 BCCL & 27 Print partner locations
to print 1.5 crore+ copies,
contains Editorial along with
High value Advertisements.**





Workflow

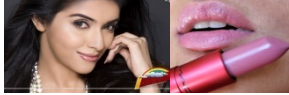
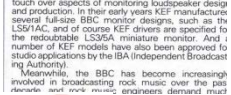


BCCL Workflow

PREPRESS SECTION

 
Digital Ads in EPS / PDF format in CD / DVD-
received online www.response4u.com

Images/Txt received from Agencies

Preflight/
Error
Checking
Server



Auto
Image
Enhancer



Page
Planning



WFM





CMS



RIP



PRESS SECTION

CTP



KRAUSE







POST-PRESS SECTION

Workflow Structure:

Input



IPM

Output



CMS



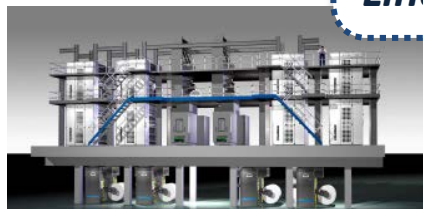
**Monitor
Calibration**

*Color Gamut
Color temperature
Contrast and Brightness*



**CTP
Linearization**

*Linearization & evenness
RIP and resolution
Focus & Exposure*

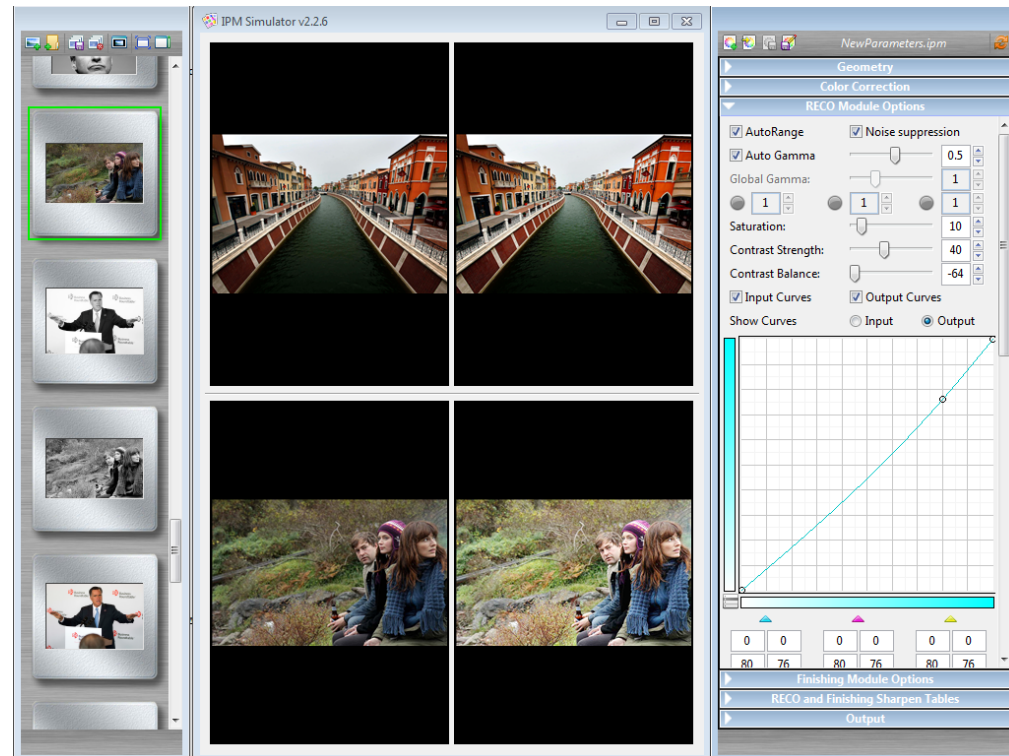
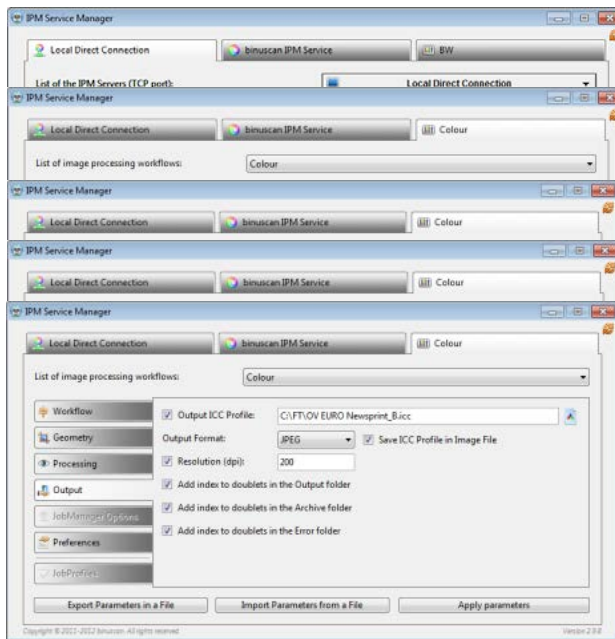


**Print Unit
Optimization**

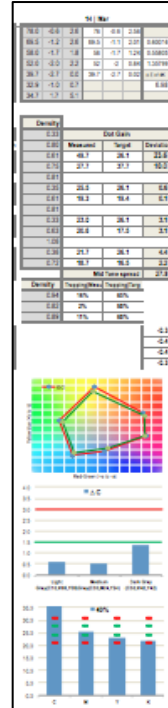
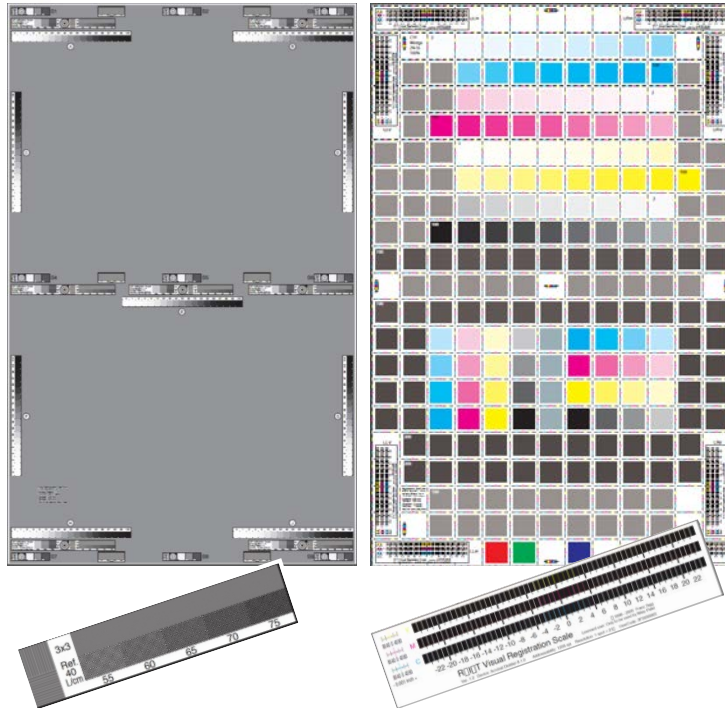
*Press Linearization
Cylinder Alignment
Analysis of Ink pack and Fount solution*



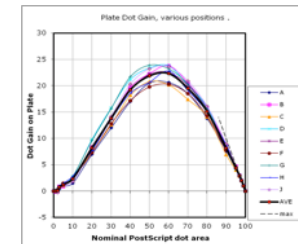
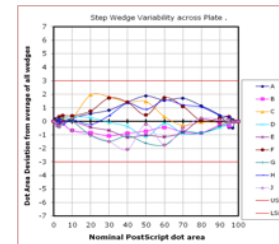
- **Define color space and applies ICC Profile**
- **File format**
- **Enhance saturation & dynamic color balance**



Test form & database



PS area	A	B	C	D	E	F	G	H	J	AVE	StdDev	Range
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	1.2	0.9	1.1	0.9	1.2	1.0	1.0	0.9	0.9	1.0	0.1	0.3
2	2.2	2.0	2.3	2.0	2.2	2.2	2.3	2.2	1.8	2.1	0.2	0.5
3	3.6	3.9	4.1	4.0	3.4	4.1	3.3	3.9	3.4	3.7	0.3	0.8
5	5.9	5.9	6.2	5.9	6.1	6.5	6.3	5.8	5.9	6.1	0.2	0.7
10	12.8	11.9	12.8	12.9	12.6	13.0	12.6	12.7	11.9	12.6	0.4	1.1
20	29.2	27.8	30.6	28.9	28.2	29.4	27.6	28.4	27.6	28.6	1.0	3.0
30	45.6	43.7	46.6	44.7	44.1	46.5	43.3	45.2	43.3	44.8	1.3	3.3
40	62.2	59.9	62.2	60.4	59.6	62.2	59.7	62.1	58.7	60.8	1.4	3.5
50	75.5	72.9	75.1	72.5	72.6	74.1	72.0	74.5	73.4	73.6	1.2	3.5
60	84.8	82.8	83.6	83.1	82.1	85.0	81.5	84.8	81.5	83.2	1.4	3.5
70	92.0	89.5	90.0	89.4	89.5	91.4	89.5	91.5	89.8	90.3	1.0	2.6
80	96.8	94.8	95.6	94.8	95.8	95.7	94.8	96.7	95.9	95.7	0.8	2.0
90	98.8	98.1	98.3	97.9	98.3	98.6	98.0	98.8	98.5	98.4	0.3	0.9
95	98.9	99.0	99.3	99.2	99.6	99.7	99.4	99.7	99.3	99.3	0.3	0.8
97	99.4	99.9	100.0	100.0	99.9	100.0	100.0	100.0	99.9	99.9	0.2	0.6
98	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0	0.0
99	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0	0.0
100	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0	0.0



- Test pages are designed with multiple test targets to optimize the process with cost effective approach
- Automatic and cross functional databases, equipped with SQC, are developed, which enable us to take prompt decisions

Lab for Ink & Paper Testing:



Viscosity Tester for checking Ink flow



*Draw down tester for Ink shade (L*a*b*)*



Scuff resistance tester for quality of adhesion with substrate



Tackometer :accurately test ink tack.



Tensiometer for testing paper tensile strength



Burst tester for paper



Tear resistance tester for paper



COBB tester for testing water absorbency for paper

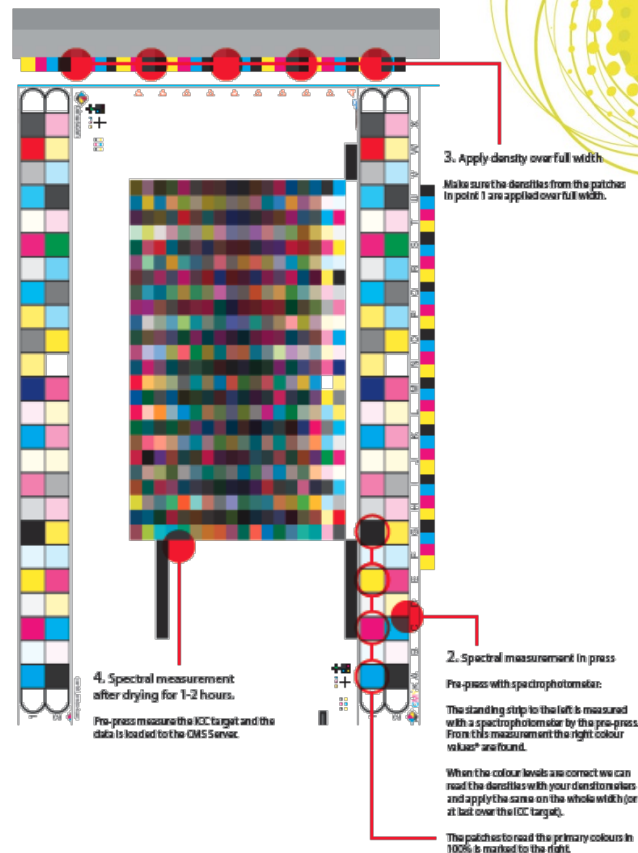
Color Module Service

Pre check list to print the test target

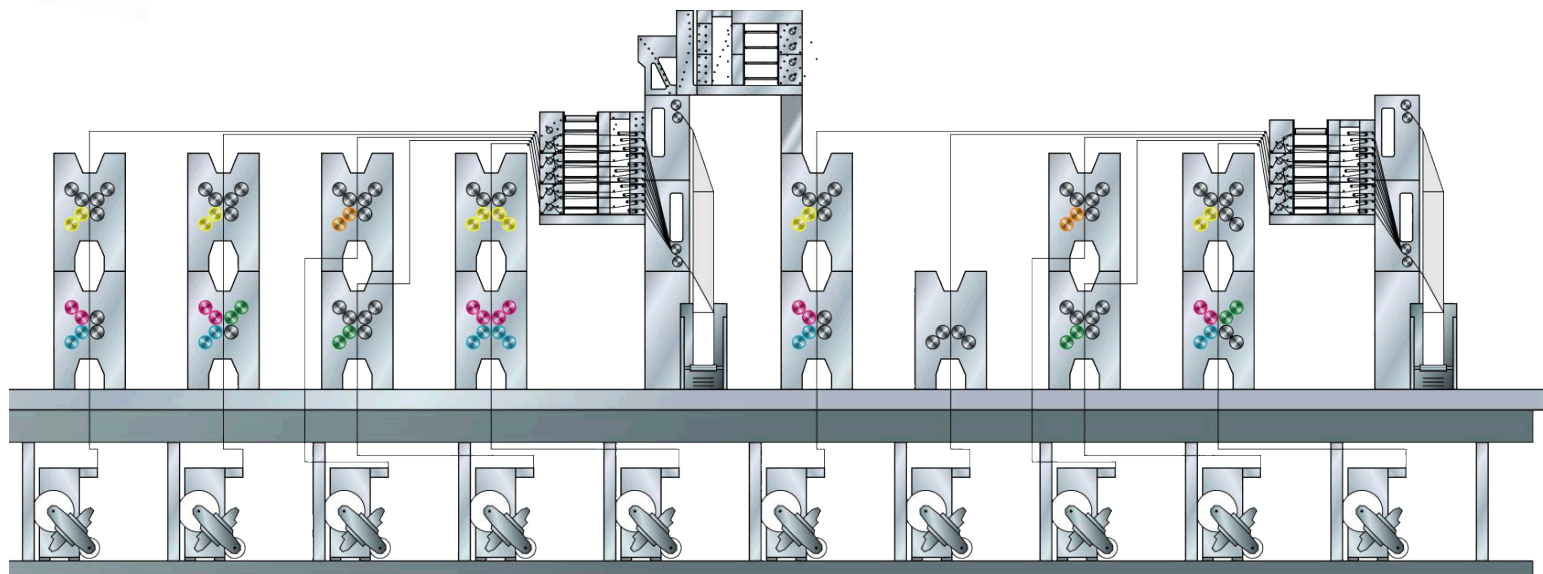
INPUT DETAILS :		
Sr.No.	Title	Parameters/ Details
1	Fount Concentrate :	Brand name
2	Fount Concentrate :	Percentage
3	Base Water :	Conductivity
4	Base Water :	pH
5	Fountain Solution :pH	Conductivity
6	Fountain Solution :	Temperature
7	Ink : Process Colour (CMY)	Brand & Batch No.
8	Ink : Black	Brand & Batch No.
9	Newsprint :	Brand
10	Newsprint :	Type/ GSM
11	Plates :	Brand
12	Blankets :	Brand
13	Blankets :	Impressions
14	All Roller Settings :	Checked
15	All Ink Keys Zero Setting :	Checked

For each printing dot, Binuscan CMS Server searches within the press profile for the different CMYK formulations matching the desired $L^*a^*b^*$ value, and selects the most cost effective ink formulation without change in visual appearance.

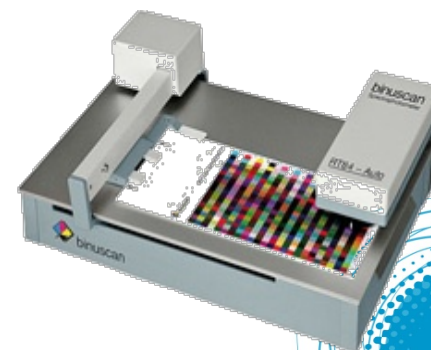
ISO control and press measurement for CMS Server



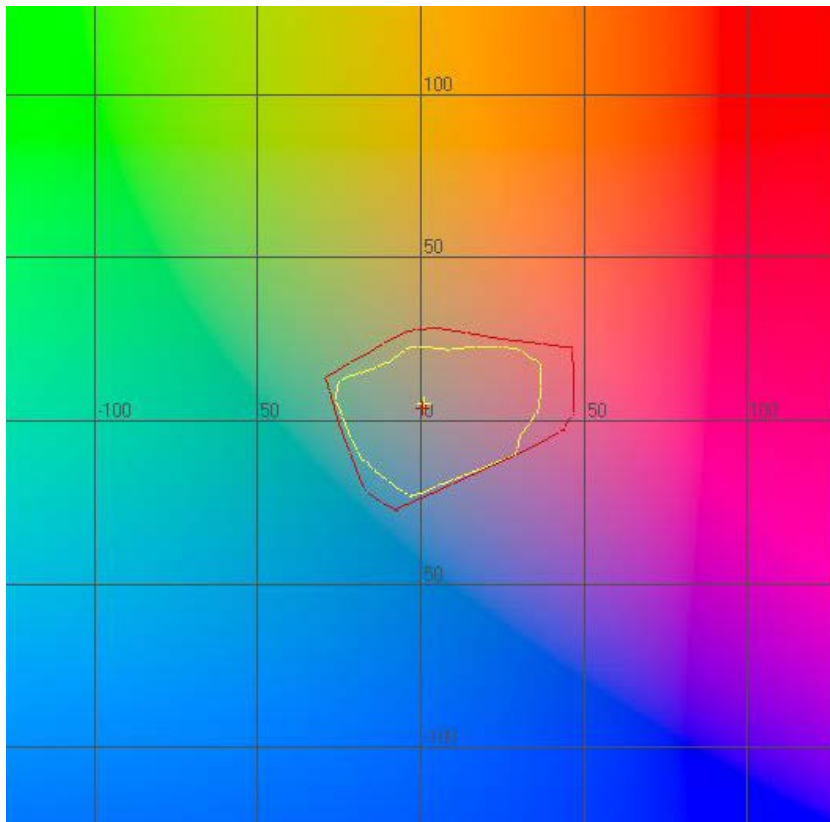
Color Module Service



Target is printed with specified density and multiple printed test targets are measured to create press profile. Different press speeds, substrate and multiple locations are considered to create a press profile

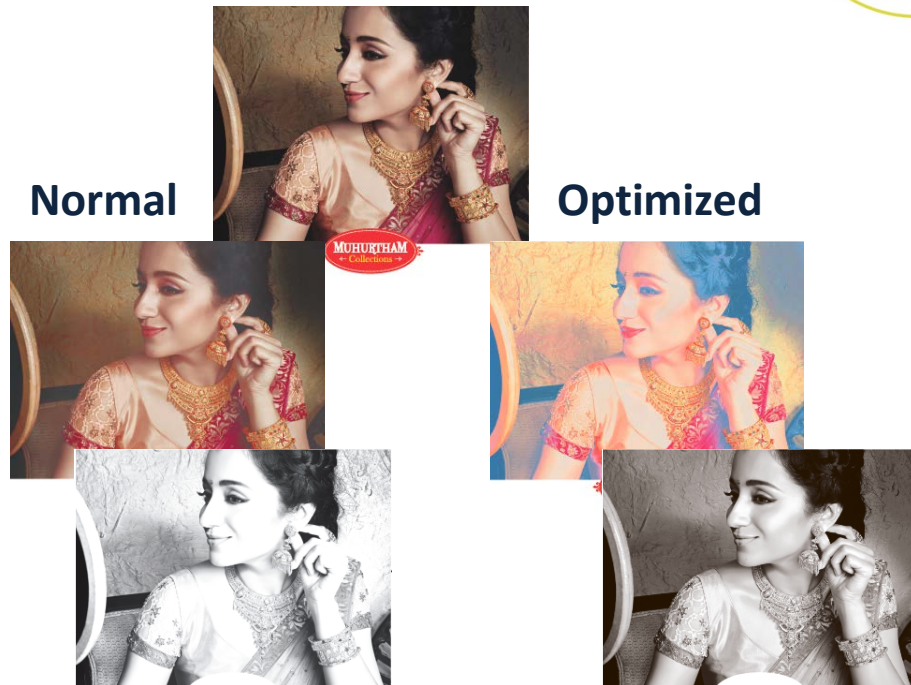


Color Space



Normal

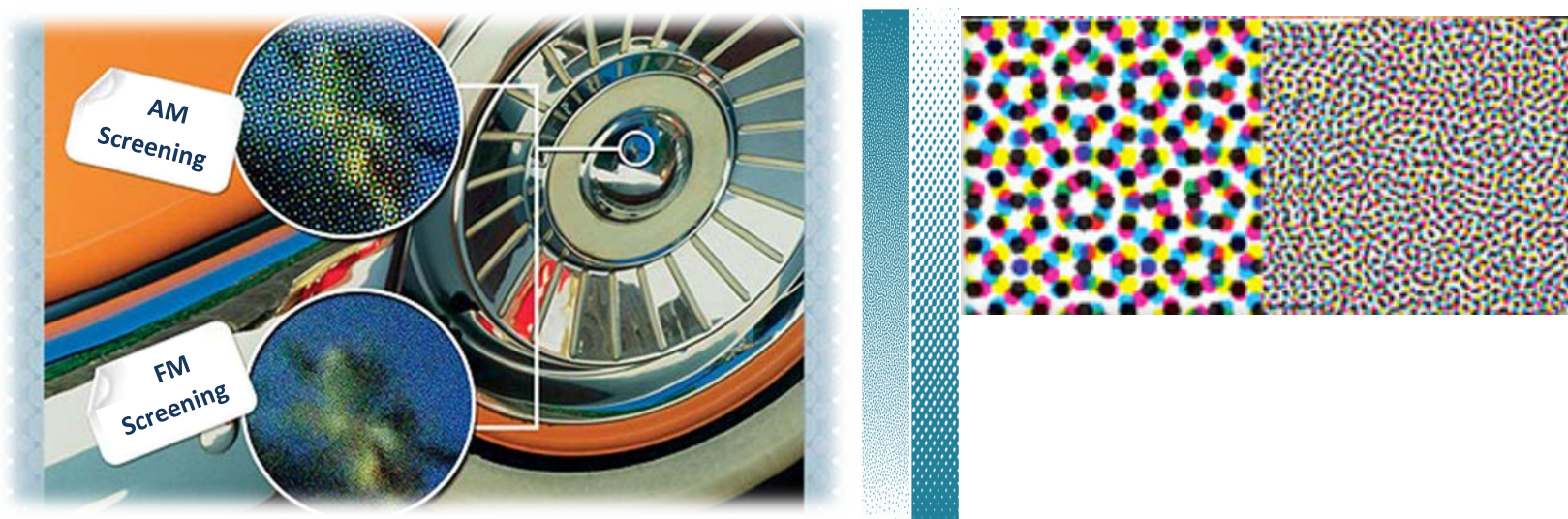
Optimized



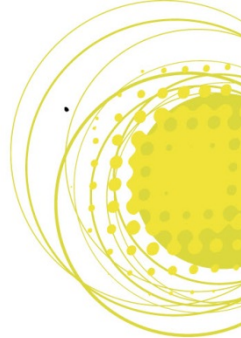
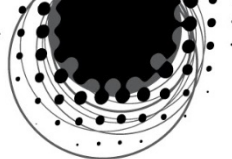
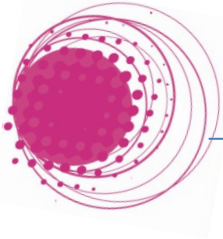
TOI Optimized Press Profile is larger than conventional newspaper profile and results in substantial Ink saving.

FM Implementation

Harlequin Dispersed (HDS) FM screening provides noticeable ink saving & Moiré free appearance



Time taken to Expose one single plate at various stages			
	AM	FM	Difference
DPI	1200	1016	8.3%
RIP time	47 sec	30 sec	36.17%
Time taken for Exposure	10.18	8.92	6.6%



Initiatives



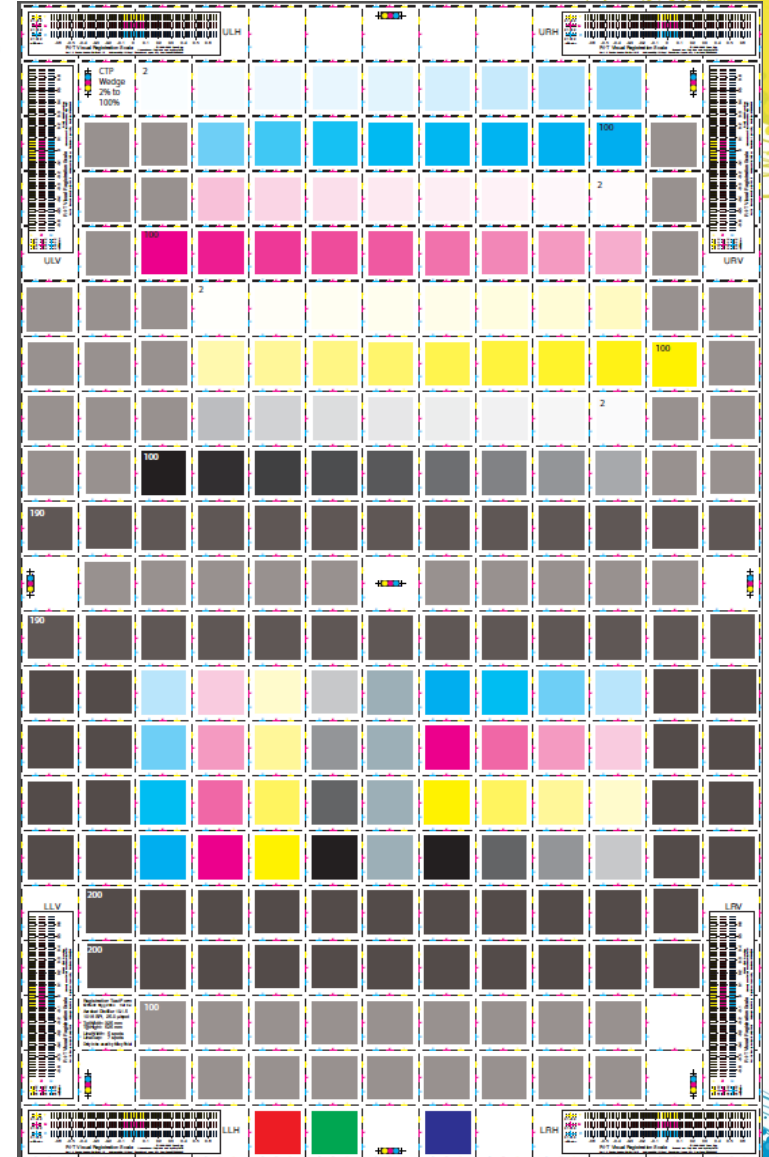


BCCL Process Initiatives

- **Successfully implemented UV Print Process on MAN & MANUGRAPH**
 - *Live run with no lead time*
 - *Gloss paper on front jacket*
- **Successfully implemented HDS screening on Heat set and Cold set Printing**
- **Conducting structural print audit such as Pin Test, Dry-Solid Test in regular time interval**
 - **Result:**
 - *Reduction in startup waste*
 - *Better ink lay down and registration*
 - *Optimum ink and water curve*

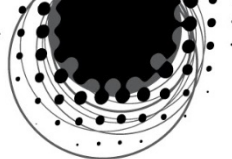
BCCL Process Initiatives

- One Profile concept for MAN and MANUGRAPGH Presses
- TOI Standard Dot gain curve is generated from test run at one production plant
- All other plants are following standard dot gain curve by applying transfer curve
 - *Similar visual appearance across India*
 - *Dashboard is created for all plants to match standard dot gain curve*





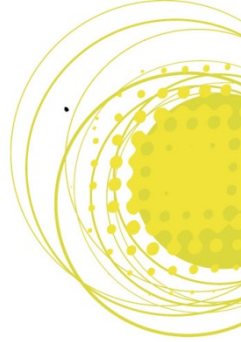
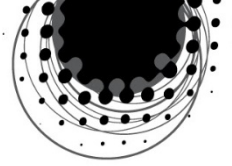
Quality Process Initiatives



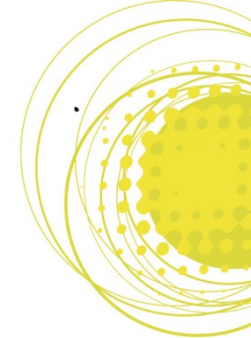
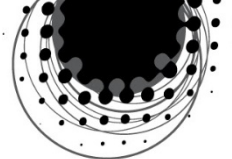
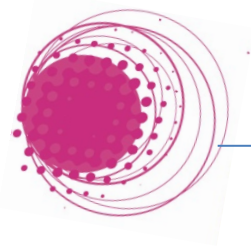
- **Premium Quality at Premium Price**
- **Quality to print with intend of eliminating problems that might result in defects**
- **Best Quality with best efficiency**
- **Quality is achieved by taking your starting point and making it better**



BCCL consistency Initiatives



- **Maintain print ink density within given tolerance**
- **Verify mechanical check such as Dot gain, Grey balance, Trapping, density.**
- **Daily visual check and evaluate the printed copy as per given INCQC defect list**
- **Print audit such as Pin Test, Dry-Solid Test are conducted in regular time interval**



Thank You

