

We welcome you to join our journey
of creating
Dignity in Threads...





We are Committed to excel together...®

Thank you customers for your meaningful contributions for the past Twenty Five years in building the Philosophy called “NEST EXPERIENCE”



You are our

- ☐ Inspirations
- ☐ Specifications
- ☐ Guidance
- ☐ Mentor

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NEST Solutions @ Thread.

'NEST Solution'
is guided by
'NEST philosophy'
and aimed at creating
'NEST Experience'.

In continuation of our commitment to create dignity in threads,
we build bridges to create "NEST Solutions".

NEST Solution @ thread ensures total health monitoring solution
for threads at the level of process to ensure elegance in fabric.

Value Creation at right context and right time

i-Spin

Creating dignity in threads...



i-Spin' has been evolved to work and grow with dignity in threads. It is the commitment of "NEST `i-Spin'" to grow with self-respect, goodness and majesty in threads, that ensures elegance in fabric.

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Dignity in thread is ensured by living up to the following guiding principles:

- ❑ Understanding the meaning of "Dignity" in threads
- ❑ Organising to create "Dignity" in threads
- ❑ Creating "Dignity" in threads.
- ❑ Evaluating the creation of "Dignity" in threads.
- ❑ Improvement of "Dignity" in threads.
- ❑ Learning to create values in continuous basis.

Understanding the meaning of "Dignity" in threads.



Understanding real-time monitoring of spindle performance

- ❑ To reduce dependency of skilled man power towards achieving the excellence in spinning process.
- ❑ Enabling to improve operator's efficiency by minimizing non-productive movements and providing a comfort zone.
- ❑ Understanding the need of comprehensive reporting, accessible anywhere any time.

Understanding the meaning of "Dignity" in threads.



Understanding the need for round the clock monitoring of

Ring Spinning

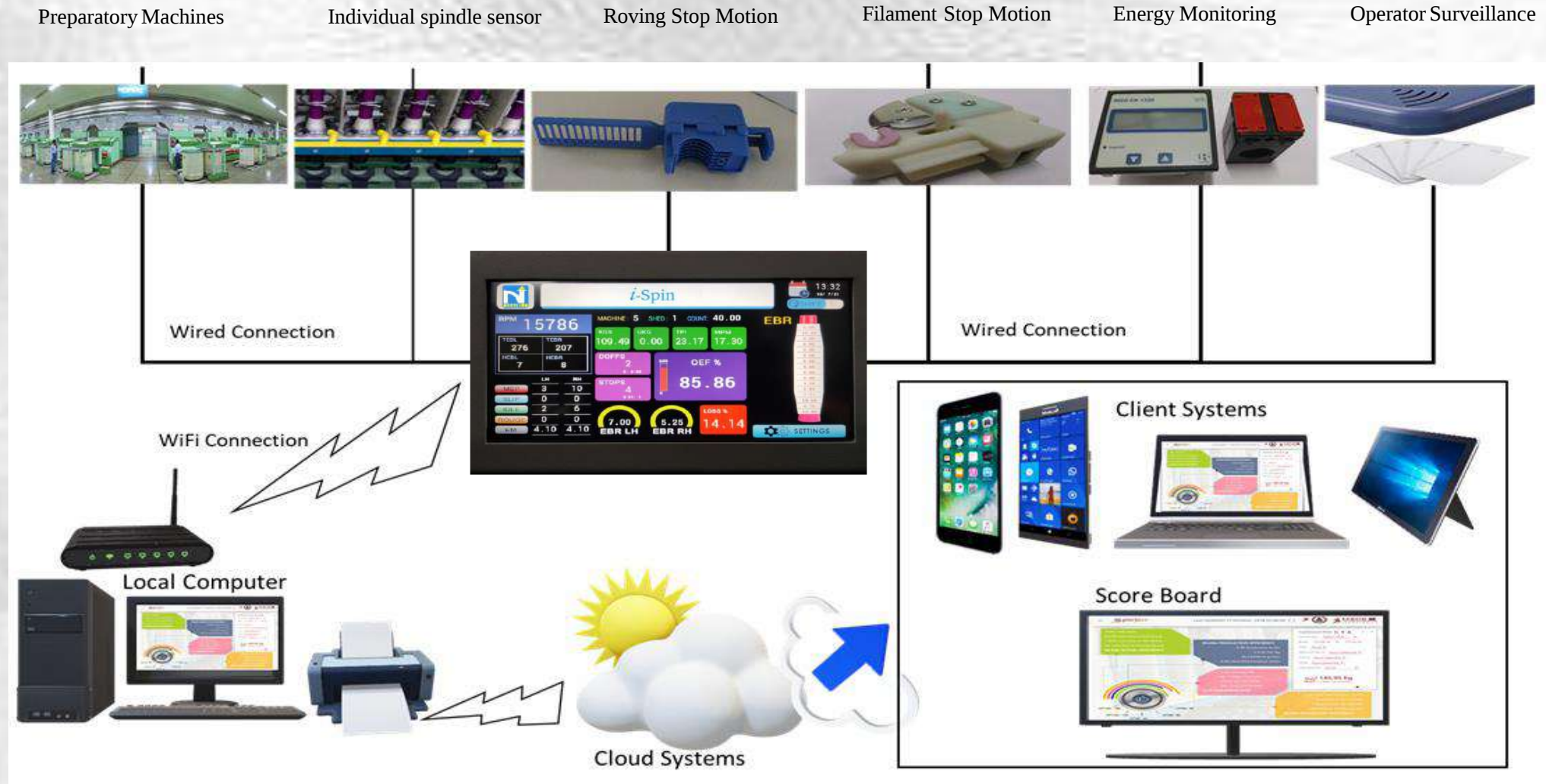
- ☐ Production
- ☐ Power
- ☐ RH and Dry Bulb
- ☐ Individual Spindle status - End Break, Idle,
- ☐ Rogue and Slip spindles

Preparatory

- ☐ Production
- ☐ Power Monitoring
- ☐ RH and dry bulb
- ☐ Stoppage detection
- ☐ Utilities Power Monitoring

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Functional Architecture



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Organising to create "Dignity" in threads.

Resources Organised

- ❑ First of its kind to implement cloud based system, which facilitates huge data storage, artificial intelligence -based analysis and access any time any were in the world.
- ❑ LoT enabled Wi-Fi technology assures 100% data safety and security.
- ❑ Panoramic spin view enables prognosis of defective spindles at real time.
- ❑ All critical data is displayed in a single screen.
- ❑ Highly functional touch screen display at each machine to analyze machine data.
- ❑ Highly informative dashboard, TV Screen, Mobile app.
- ❑ Multi color indications for each spindle.
- ❑ Video reports of panoramic view
- ❑ Unique add-ons for further value creations to meet customers specific requirements.

Basic Installation

- ☐ Inductive Sensor at each spindle
- ☐ Multicolor LED for each Spindle
- ☐ Production & Doffing Sensors
- ☐ Touch Screen Machine Terminal on each Machines
- ☐ Side lamps for End Breaks, Doff and Maintenance information (optional)
- ☐ Wireless Communication on TCP/ IP protocol
- ☐ Network Switches for internet connections

Pre Requisite

- ☐ Single Phase 220V @600VA for PC
- ☐ Single Phase 220V @500 VA for MT & RR
- ☐ Single phase 220V @300 VA for score Board
- ☐ Internet connectivity to cloud

User Interface

- ☐ Touch Screen machine Terminals at each Machine
- ☐ Score Board at Customer request Points
- ☐ Operator Kiosk for Operators at customer request points
- ☐ High End Industrial PC for Mill reports
- ☐ Cloud connectivity for mill reports from any part of the Globe



Cloud Based System

- ☐ Huge data storage facilities
- ☐ AI based analysis
- ☐ AWS cloud system
- ☐ Three tier data safety and security provides high degree of redundancy
- ☐ 99.99% up time
- ☐ Customer can opt for cloud or server or both for data management

IoT Enabled Wi-Fi Technology

- ☐ Accessible from anywhere at anytime
- ☐ Enabling to control the machine to optimise the performance from remote
- ☐ Software updates possible from remote
- ☐ 100% data safety and secured

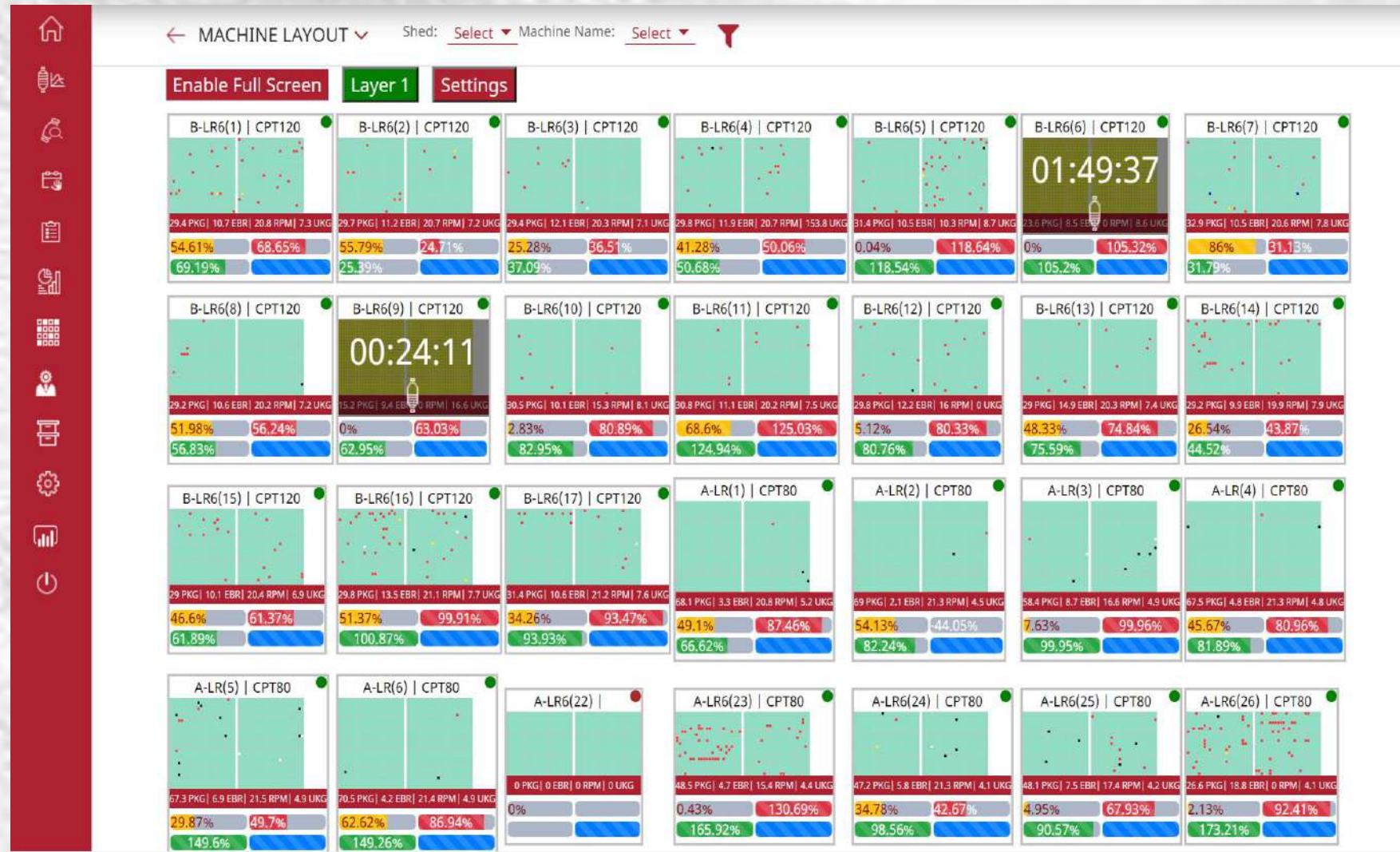
Signature value creating functionalities - 1

- Enables prognosis study of defective spindles at real time
- The bird's eye view of complete ring spinning facility of 50,000 spindles indicating End breaks, Idle, Rogue, Slip, Production details, UKG, Doff status and maintenance status.

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Revolutionsed Panoramic Spindle View



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50,000 spindles panoramic view in one screen in real time.

- ☐ End breaks
- ☐ Rogue spindles.
- ☐ Slip spindles.
- ☐ Idle spindles (machine and operator idle spindles shown separately)
- ☐ Doff indication.
- ☐ Stop indication with timer.
- ☐ Doff status indication.
- ☐ Traveller change schedule.
- ☐ Maintenance schedule.
- ☐ Mango tube maintenance (for compact)
- ☐ Data loss indication.

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Signature value creating functionalities - 1

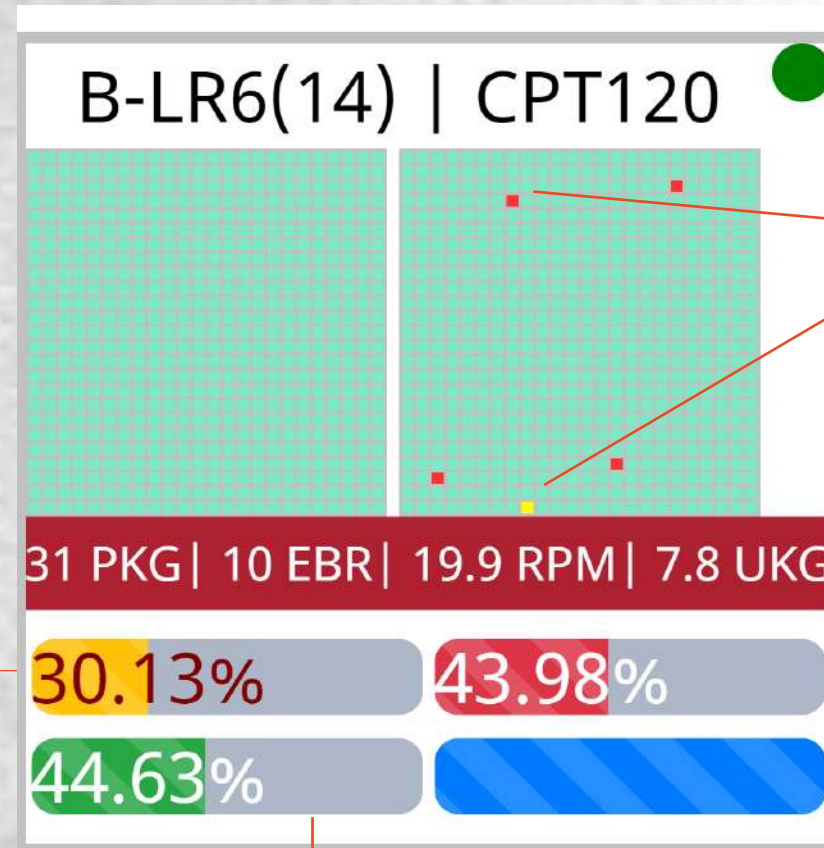
- Enables prognosis study of defective spindles at real time

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Doffing Status

Machine Cleaning Schedule



Machine Signal Status

Indication of Breaks

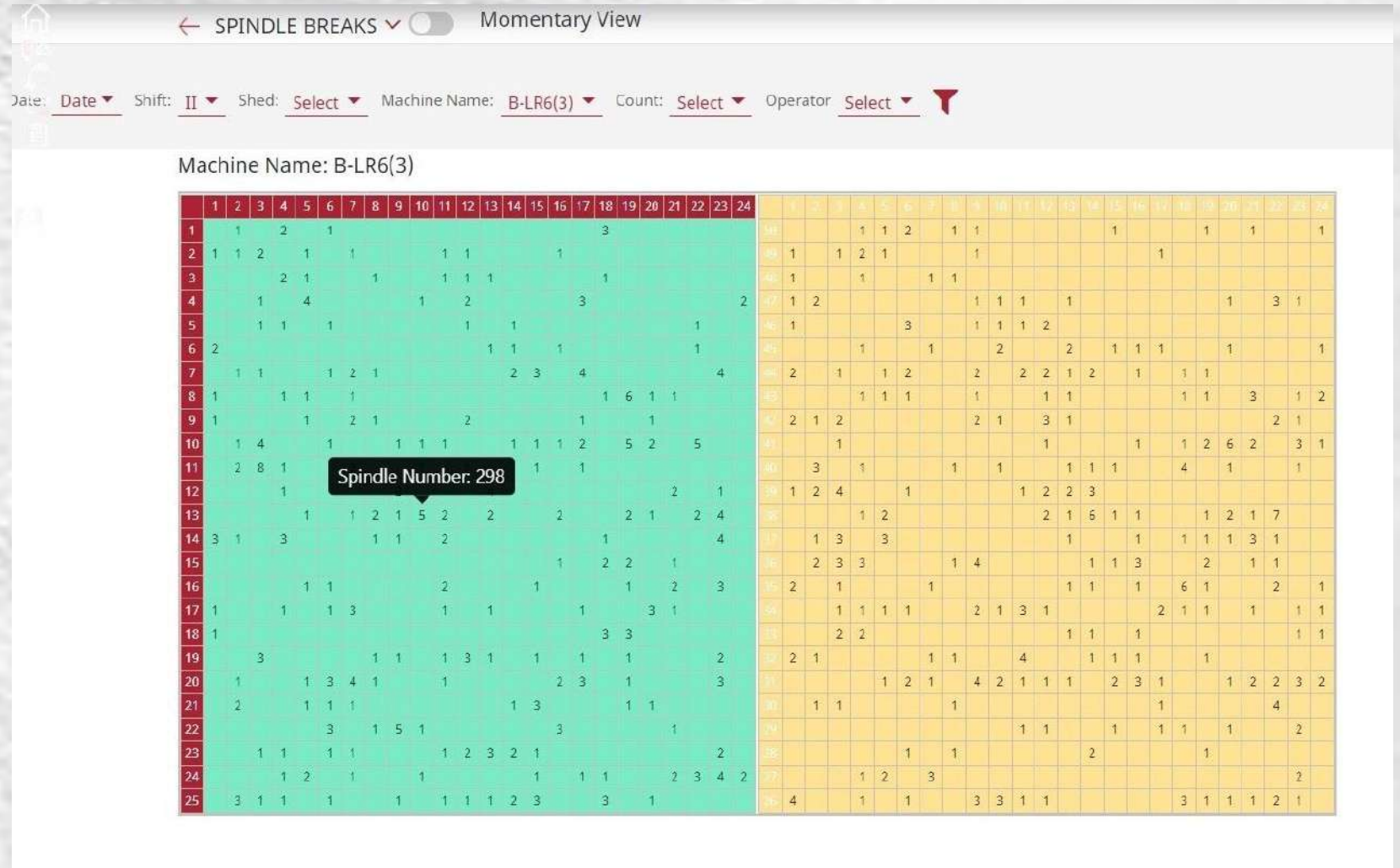
Traveller Changing Schedule

Mango Tube Cleaning Schedule

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Signature value creating functionalities - 1

Momentary Spindle Breaks View



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Signature value creating functionalities - 2

STOP Report



← STOP REPORT ▾ Show Hide Columns

Date: Date ▾ Shift: II ▾ Shed: Select ▾ Machine Name: Select ▾ Count: Select ▾ Department: Select ▾ Stop Code: Select ▴ Supervisor: Select ▾ Operator: Select ▾

Group By: Shed ▾ Schedule: Select ▾ Share With: Select ▾

Show All ▾ entries

SHD	MAC	STOP CODE	DATE	SFT	COUNT	STOP DURATION	END TIME	LOSS %
A	4	Unknown	07/08/21	II	80	01:06:35		
A	6	Doff	07/08/21	II	80	00:07:56		
A	22	Doff	07/08/21	II	80	00:05:38		
A	23	Doff	07/08/21	II	80	00:04:55		
A	23	Unknown	07/08/21	II	80	00:01:11	14:00:25	14:01:36
A	24	Unknown	07/08/21	II	80	00:00:40	14:24:22	14:25:02
A	24	POWER FAIL	07/08/21	II	80	00:03:55	14:20:00	14:23:55
A	24	Unknown	07/08/21	II	80	00:04:41	14:15:44	14:20:25
A	25	Doff	07/08/21	II	80	00:04:56	14:19:41	14:24:37
A	27	Doff	07/08/21	II	80	00:04:38	14:44:09	14:48:47
A	28	Unknown	07/08/21	II	80	00:01:30	14:12:56	14:14:25
A	28	Doff	07/08/21	II	80	00:04:00	14:08:55	14:12:55
A	29	Doff	07/08/21	II	80	00:07:43	14:53:24	15:01:07
A	32	Unknown	07/08/21	II	80	00:07:45	14:24:54	14:32:38

Previous **1** Next

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Signature value creating functionalities - 3



Machine Terminal touch screen display

- ❑ User interface at the machine terminal enabled by touch screen display.
- ❑ Highly functional touch screen display to analyze machine data.
- ❑ 3 months data can be stored at the machine terminal display itself.

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Machine Terminal touch screen display

All critical data are displayed in a single screen

- ☐ Efficiency
- ☐ Spindle Speed
- ☐ End Breaks EBL / EBR
- ☐ End mending time
- ☐ Total breaks
- ☐ Handover breaks
- ☐ TPI
- ☐ Delivery rate m/min
- ☐ Production in Kg
- ☐ Rogue spindles
- ☐ Slip spindles
- ☐ Stop details
- ☐ UKG
- ☐ Tape Cuts
- ☐ Cop Stage wise breakages
- ☐ Multi shift data are displayed
- ☐ Acts as machine entry terminal to enter stop details and machine parameters

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IoT enabled Wi-Fi technology
assures 100% data safety and security

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No intermediate manufacturer dependable devices
used for communication.

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Customer can opt for Cloud or server
or both for data management.

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15 Kg per machine lesser weight rails
than other suppliers – helps in energy saving.

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Video reports of panoramic spindle view

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Configurable sections for spindle view

- Freely groupable sections enables user to compare end breaks between machine sections.
- Multi machine details in one page to compare end breaks between machines
- All type of end breaks listed, ex Idle, Rouge, Slip and Natural End breaks

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Date: <u>Date ▼</u> Shift: <u>Second ▼</u> Machine Name: <u>Select ▼</u> Count: <u>Select ▼</u> Operator: <u>Select ▼</u> Show Hide Columns APPLY																	
LMW (1)	Shift	LL				LR				RL				RR			
		IDLE	ROGUE	SLIP	EB	IDLE	ROGUE	SLIP	EB	IDLE	ROGUE	SLIP	EB	IDLE	ROGUE	SLIP	EB
04/12/2018	Second	1	1	0	76	0	0	0	77	0	0	0	63	0	0	0	55
LMW (2)	Shift	LL				LR				RL				RR			
		IDLE	ROGUE	SLIP	EB	IDLE	ROGUE	SLIP	EB	IDLE	ROGUE	SLIP	EB	IDLE	ROGUE	SLIP	EB
04/12/2018	Second	0	0	0	143	0	0	0	129	1	0	0	154	0	0	0	179
LMW (3)	Shift	LL				LR				RL				RR			
		IDLE	ROGUE	SLIP	EB	IDLE	ROGUE	SLIP	EB	IDLE	ROGUE	SLIP	EB	IDLE	ROGUE	SLIP	EB
04/12/2018	Second	1	0	0	93	0	0	0	51	0	1	0	92	0	0	0	88

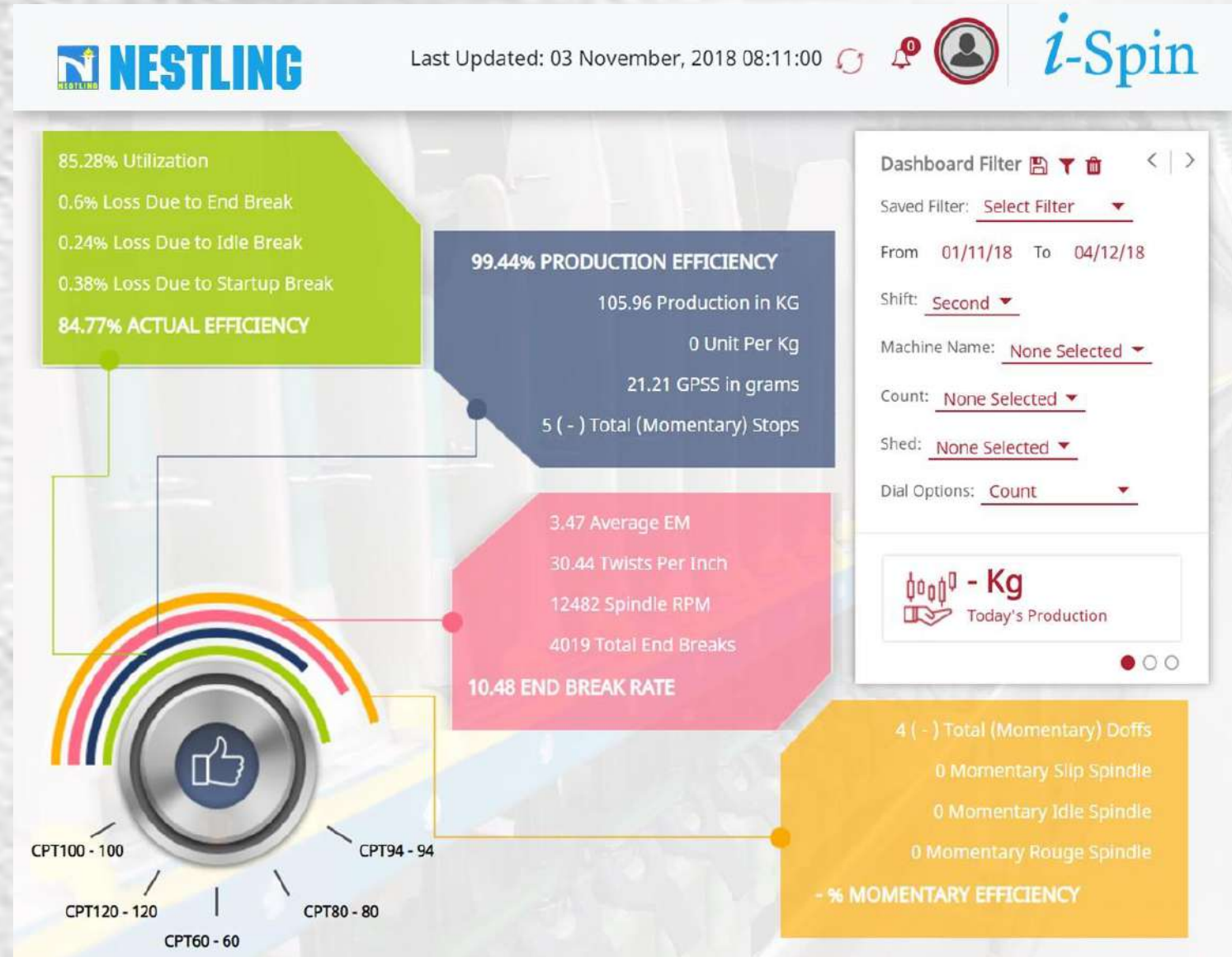
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Comprehensive Dashboard reports

- The details of efficiency with EBR, Production losses, End mending details, Stop details, Real time operator efficiency, Rolls off, Day's Production and Un authorized doff time enabled with data filter

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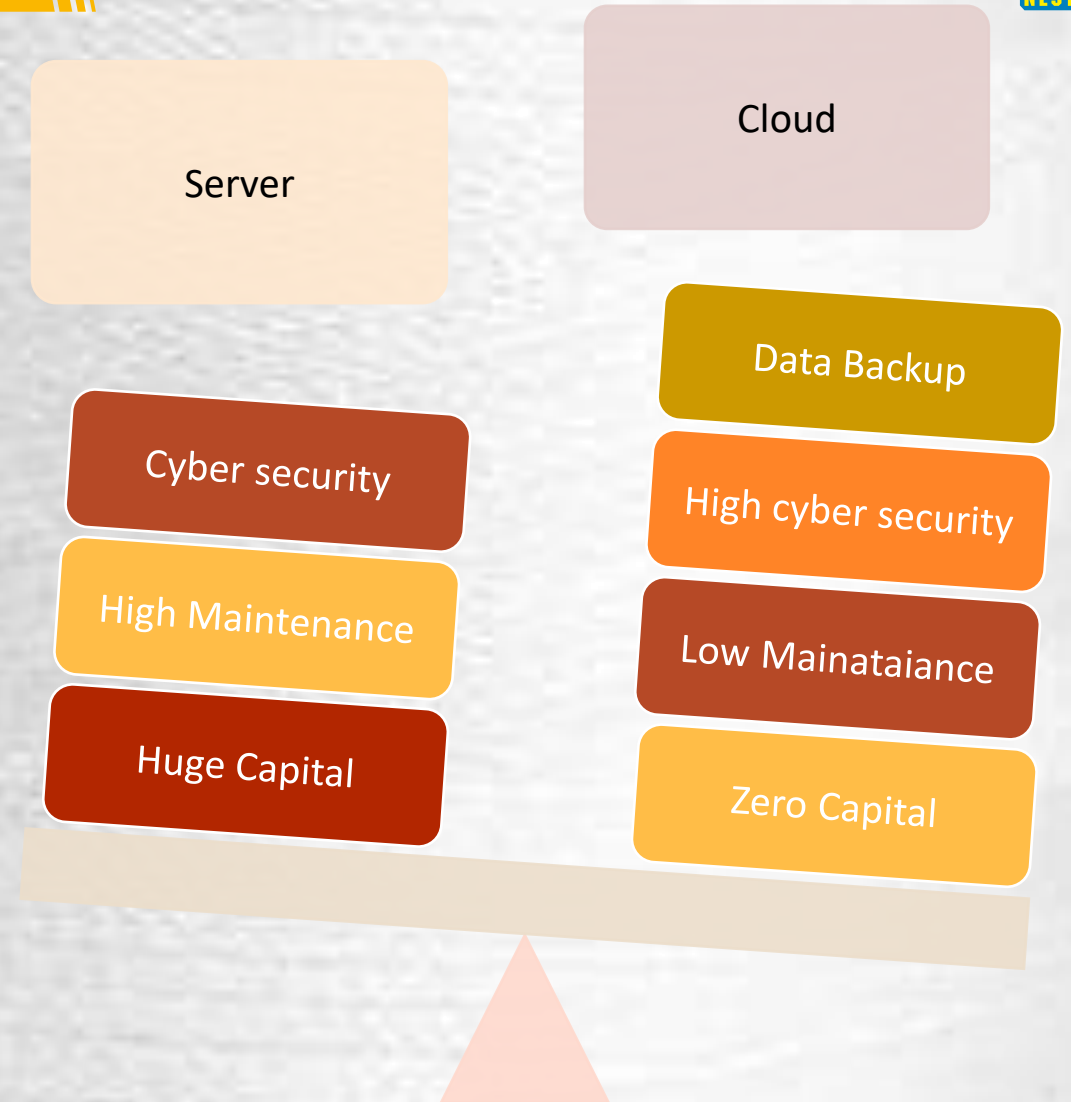
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Choice of Cloud or Server

- ❑ Server cost, Operating system licenses Anti Virus licences
- ❑ cost are huge
- ❑ Low maintenance cost as it's shared between multiple customers
- ❑ **i-Spin** is hosted by well renowned Amazon cloud service,
- ❑ the premium platform available in the market
- ❑ 24X7 and different geographical location Data backup and
- ❑ 99.99% uptime guaranteed
- ❑ Large Data storage, Cloud can hold large data.

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10+ Add Ons

- ☐ Energy *
- ☐ Pneumafil control
- ☐ Air monitoring
- ☐ Relative Humidity RH% *
- ☐ Bobbin runout indication.
- ☐ Roving stop motion (RSM)
- ☐ Filament stop motion
- ☐ Preparatory monitoring system (PMS)
- ☐ Configurable TV screens *
- ☐ Power BI analysis *
- ☐ Production enhancement based on breaks.
- ☐ Automatic illumination control.
- ☐ Operator surveillance.

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Multi color indications for each spindle



- ❑ Red color to indicate Breaks
- ❑ Green color to indicate Idle breaks



- ❑ Red flashing to indicate Rogue spindles
- ❑ Green flashing to indicate Slip spindles

Defective cops identification

The Rogue and Slip spindles are identified during doffing for easy segregation and removal

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Evaluating the creation of “Dignity” in threads



A Measurement of real time spindle status update for value creating decision and wastage analysis

OUTPUTS

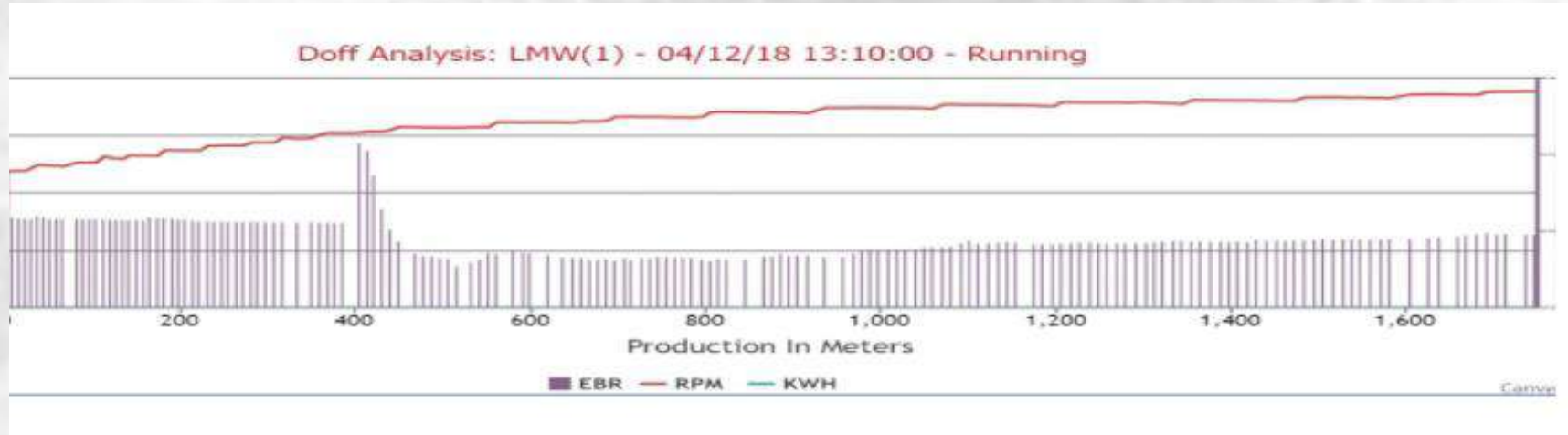
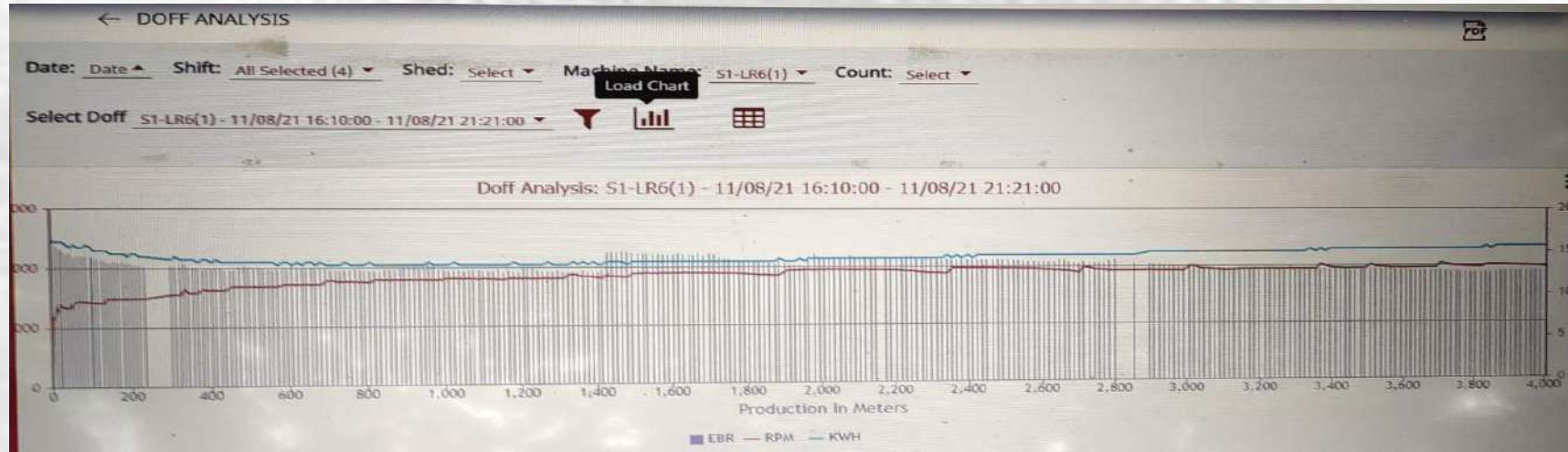
- Fully configurable numerical reports
- Production Parameters
- End Break Details
- Stop & Doff Details
- Doff analysis
- Energy Reports with UKG
- Graphical Analysis of any selected parameter
- Configurable sections for spindle view

i-Spin Production Report														
			Date: 05/03/19			Shift: First			Machine: ALL					
			Count: ALL			Department: ALL			Supervisor: ALL					
			Operator: ALL			Shed: ALL			Gorup By: Date					
DT	SFT	SHD	MAC	SDE	NEC	KGs	EBR	EM	40'A	AEF	DF	DFM	STP	STM
05/03/19	Prod	01	1	L	40	27.8	1.04	1.00	100.00	00.00	0	0.0	1	10.7
05/03/19	Prod	01	1	R	40	27.1	0.89	0.10	100.00	00.00	0	0.0	1	10.7
05/03/19	Prod	01	2	L	40	27.3	4.00	0.04	100.00	00.1	0	0.0	0	0.0
05/03/19	Prod	01	2	R	40	27.47	5.5	1.70	100.07	00.07	0	0.0	0	0.0
05/03/19	Prod	01	3	L	40	24.25	4.17	1.77	100.00	00.00	0	0.0	1	10.0

i-Spin STOP REPORT									
SHD	MAC	STOP CODE	DATE	SFT	COUNT	STOP DURATION	START TIME	END TIME	LOSS %
01	1	Unknown	05/03/2019	Second	40	00:20:40	14:50:40	15:20:54	10.01
01	2	Unknown	05/03/2019	Second	40	00:20:20	14:50:40	15:20:16	10.01
01	3	Unknown	05/03/2019	Second	40	00:20:00	15:10:16	15:20:16	2.40
01	4	Unknown	05/03/2019	Second	40	00:20:20	15:20:00	15:20:01	2.00

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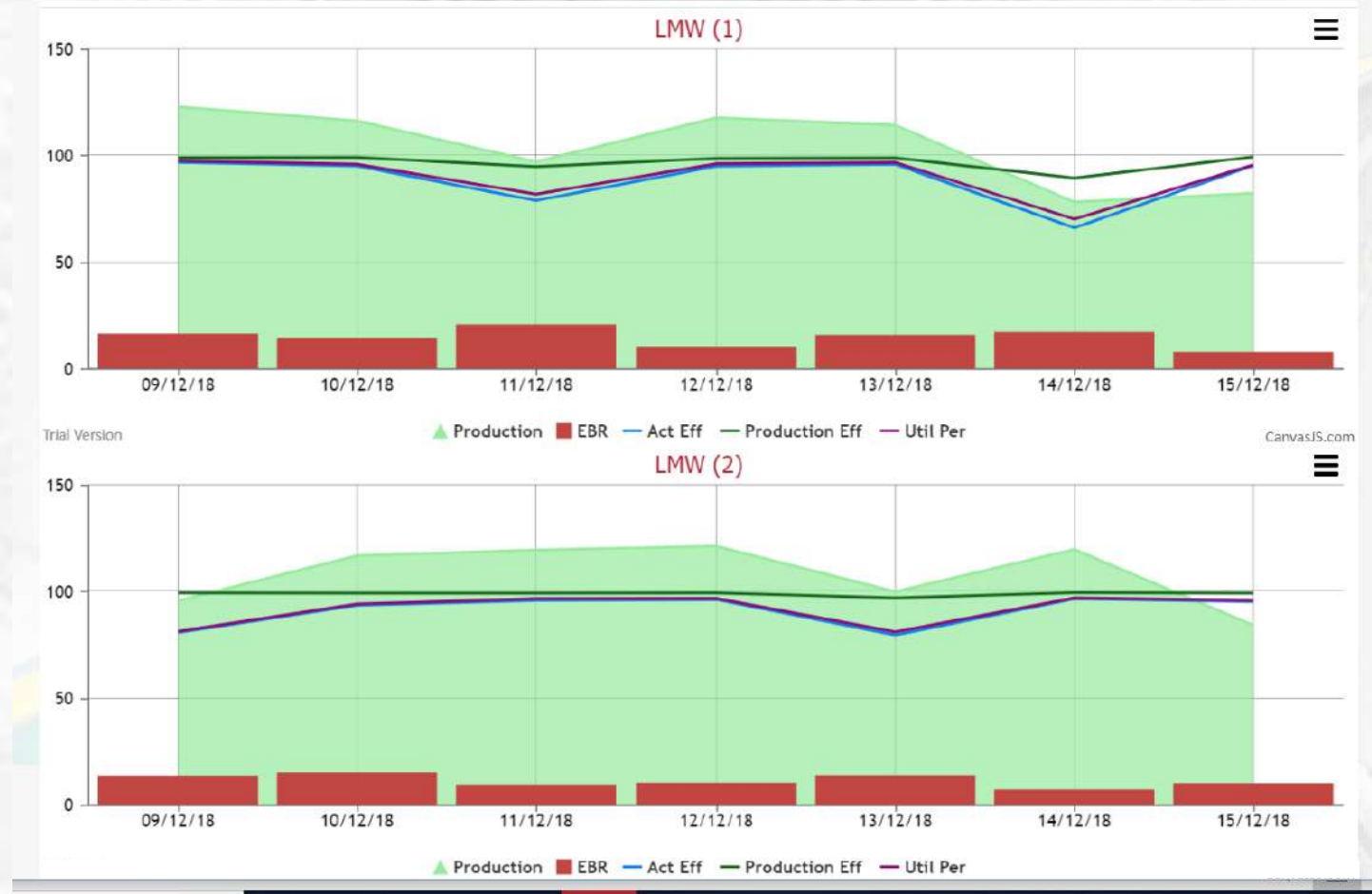
Doff Analysis



- ❑ Speed Vs EBR w.r.t Time & Length
- ❑ Speed Vs KWh w.r.t Time & Length

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Trend Analysis



□ For any selected parameters

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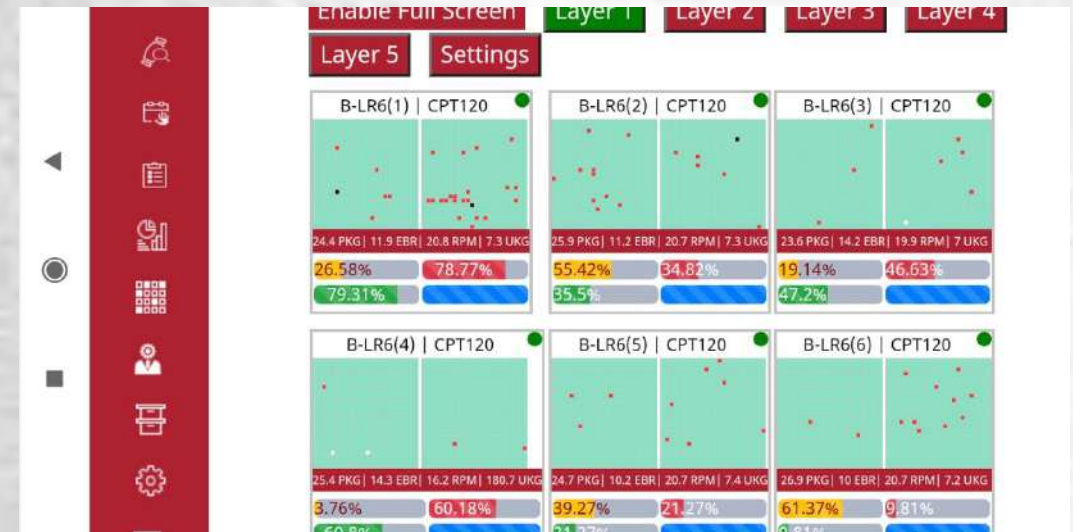
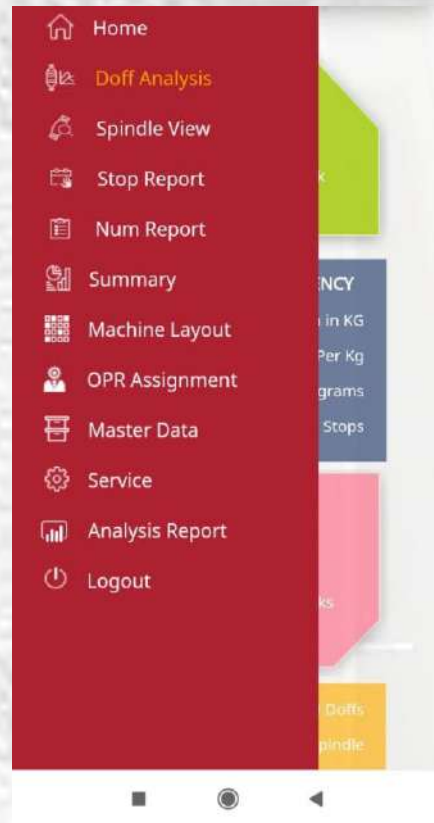
- ❑ **Operator Ranking:** Operators will be ranked based on their performance and top 3 operator will be displayed on the TV screen with their name and Photo
- ❑ **Worst Machines:** Top 5 worst performing machines will be listed for Maintenance people quickly attend the machine
- ❑ **Doff Status:** List of machine getting closer to doff will be displayed along with time remaining to doff

MAC	COUNT	NEXT DOFF	TIME TO DOFF	COP
4	60.0	10:14:49	-00:03	
23	60.0	10:56:25	00:38	
21	60.0	11:21:36	01:03	
15	60.0	12:09:25	01:51	
24	60.0	13:01:58	02:43	

MAC	COUNT	ROGUE	SLIP	IDLE
10	8.11	23	0	76
3	8.11	16	0	7
2	8.11	16	0	0
6	8.11	9	0	0
28	8.11	5	0	17

RANK	PHOTO	NAME	EM	PEF	EBR
1			16.57	99.54	6.8
2			18.48	99.49	6.83
3			31.97	99.13	8.46

MOBILE SCREEN LAYOUT



Show entries

DATE	NEC	SFT	MAC	TPI	RPM	KGs	GPSS(A)	GPSS(R)	EBR	EM
16/07/21	120	III	7	38.5	20.6	26.53	30.76	31.11	11.86	4.6
16/07/21	120	III	8	38.6	19.4	23.0	26.59	27.41	10.32	4.04
16/07/21	120	III	9	38.6	16.7	25.05	28.96	29.61	8.05	3.6
16/07/21	120	III	10	38.6	14.8	25.55	29.53	30.28	9.64	4.19
16/07/21	120	III	11	38.7	20.3	25.49	29.55	29.89	11.8	4.3
16/07/21	120	III	12	38.6	18.3	24.5	28.41	29.13	13.09	4.21
16/07/21	120	III	13	38.7	20.3	24.77	28.71	28.91	9.63	3.5
16/07/21	120	III	14	38.7	19.0	23.71	27.5	28.44	11.82	3.98

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Fibre to Yarns Analysis

- ❑ Cloud enabled statistics
- ❑ Interface with other systems enabling comprehensive analysis
- ❑ Custom Development required

Section wise End-breaks

- ❑ Machine section can be grouped seamlessly and enables user to compare end breaks between machine sections.
- ❑ Multi machine details in one page to compare end breaks between machine.
- ❑ Comprehensive data involving Idle, Rogue, Slip and Natural End Breaks

Improvement of “Dignity” in threads

Unique add-ons for improvements in value creations to meet the customers specific requirements

- ☐ Preparatory monitoring system (PMS)
- ☐ Roving stop motion (RSM)
- ☐ Filament stop motion
- ☐ Bobbin run out indication
- ☐ Draft monitoring
- ☐ Automatic Pneumafil control
- ☐ Relative humidity RH %
- ☐ Energy
- ☐ Air monitoring
- ☐ Configurable TV Screens
- ☐ Power BI analysis
- ☐ Operator surveillance and RF ID system
- ☐ Automatic illumination control
- ☐ Automatic break control system

Created values

- ❑ 27% improvement in end mending time (Operator efficiency)
- ❑ 20% increase in productivity
- ❑ Waste reduction more than 50%
- ❑ 5% lighter rail (15Kgs lesser weight for 1200 spindles)
- ❑ Energy saving
- ❑ 30% Energy saving by optimizing shop floor lighting
- ❑ Eliminates components saving with RSM 100%
- ❑ Reduction in second quality yarn sales by 33%
- ❑ Autowinder improvement in performance 2%
- ❑ Payback period less than 9 months
- ❑ 20% increase in Productivity
- ❑ Waste reduction more than 50%
- ❑ Energy saving
- ❑ Eliminates Component damages with RSM 100%
- ❑ Reduction in second quality yarn sales by 33%

PRODUCTION MONITORING SYSTEM

- ❑ Multiple stop inputs possible (Upto 4 wired stops + 1 other stops)
- ❑ IOT device
- ❑ Touch screen display
- ❑ Data entry at machine terminal
- ❑ Memory storage upto 3 months data
- ❑ Cloud or Server or Both for data management – Data can be viewed anywhere at Any time.
- ❑ Machine layout report giving data at real time – Efficiency, Production (Kg), productivity m/min,
Stops – S_0 , S_1 , S_2 , S_3 Others.
- ❑ Mobile App with Alerts.

SLEEK SORTER



- ❑ Senso: Hi end camera – possibility of identifying more colours, multiple colours can be identified.
- ❑ Bobbin sorting – upto 120 / min
- ❑ IoT enabled
- ❑ Motorized (servo motor) ejection due to gravity. Due to this response time fast and positive.
- ❑ Touch screen display.
- ❑ More accurate remnant detection.
- ❑ No repeated teaching of bobbin colour and no operator skill required.
- ❑ Capacity – 4 colours + 1 rejection + 1 remnant.
- ❑ Machines can be cascaded.
- ❑ No special installation facility required – no civil work.
- ❑ Low space requirement – Machine: 900mm and with crates max 2 mts.
- ❑ Operator safety is assured – due to no pneumatic systems.

Our Commitment to create Healthy Customer Experience



Our organizational philosophy is to create value for our customers in the form of

“NEST Experience”

by applying

‘Understanding, Organizing and Executing’

to educate customers, provide timely and continuous customer interaction through

dedicated resources personnel on 24*7 basis,

provide services through agile and resilient people,

expeditious spares supports and much more.

Our ‘Club *i*-Spin’ approach would help us to understand and organize to create

“Healthy Customer Experience”

on continuous basis.

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THANK YOU

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