

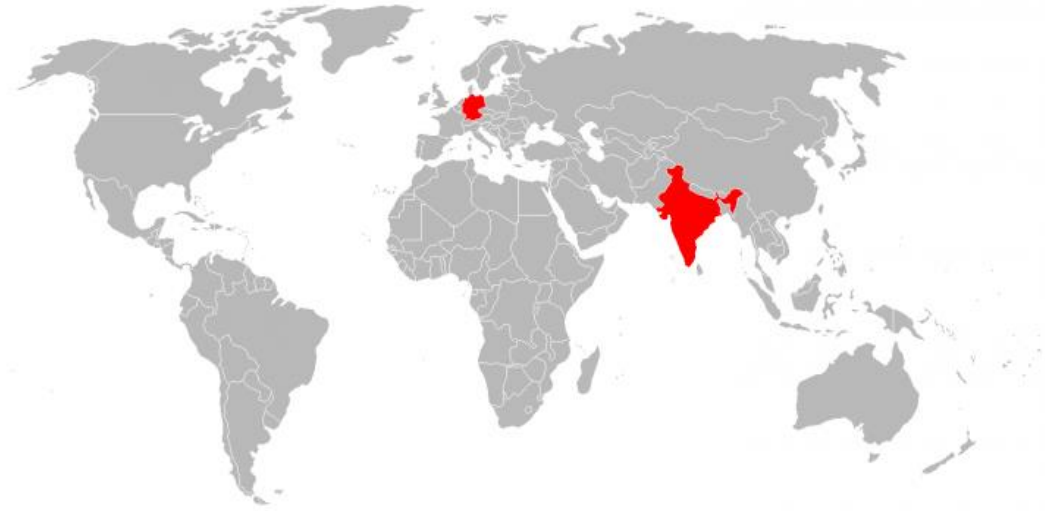


# Foundry Digitalisation

Bhushan Bhatt

- About Us – Introduction
- What Means Foundry Digitalisation?
- How Foundry Can Be Digitalised?
- What is The Difference Between Integrated – Non Integrated Digitalised Foundry?
- How To Begin With Integrated Foundry Digitalisation?
- Advantages Of Digitalisation
- Digitalisation & Industry 4.0
- Q&A

- Foundry Resource Planning & Consulting Pvt. Ltd., Vadodara- India
- Headquarter: RGU Asia Pte Ltd, Singapore
- Distinguished partners in ASEAN / ANZ / China / SA
- ONLY solutions for FOUNDRY and working exclusively on foundry digital platforms for resource planning
- Products
  - **FRP.base**
  - **FRP.kompakt**
  - **FRP.melt**
- Interface with SAP, Oracle, Tally, & others possible



## Digitisation

The process of changing from analog (physical) to digital form (*simplest digitization example: paper fax vs. email*)

## Digitalization

The use of digital technologies to change a business model and provide new revenue and value-producing opportunities. (*e.g. digital planning of production and integrated checking of actual*)

## Digital Transformation

The total and overall societal *effect* of digitalization in a company and/or even society. (*e.g. ban of MS-Excel at Hinduja Foundry*)

Source: Gartner, Khan, Shahyan (2017-06-02)

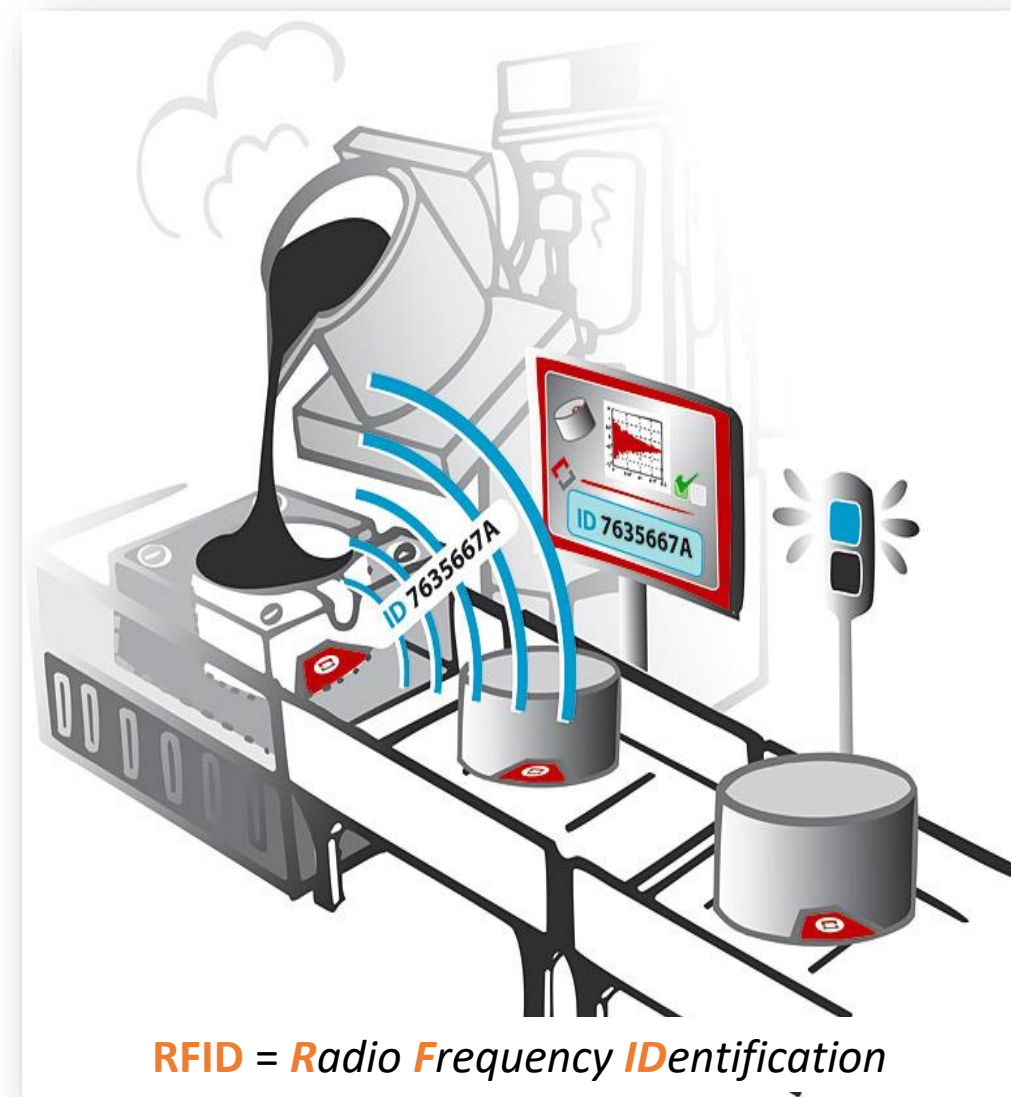
# What Means Foundry Digitalisation?

- Get away from paper and log sheets, excel is not digitalization
- Digitally plan & check against plan
- System based work in progress reporting shift-wise/daily/real-time
- Realtime monitoring (not for whole foundry, few areas)
- Working with an integrated system
- Rely on fact data instead of meeting, guts feeling , assumption
- Integrated planning – material requirements – purchase-consumption



- **Short term goal**

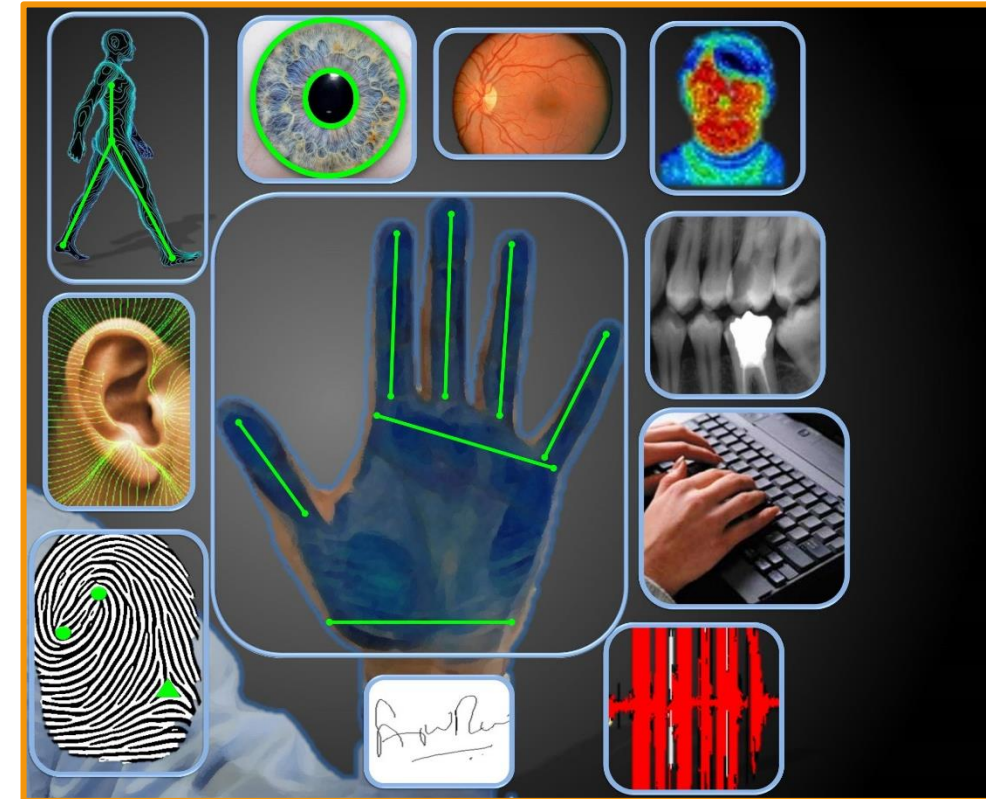
- Overcome paper & log sheets in Sales-Purchase-Material/store -
- Think beyond just BOM
- What are the resources required to make one casting? Man-Machine-operation- Workflow
- Real inventory of all the casting laying anywhere in foundry at any stage
- Status of per order and its progress known anytime 24X7
- Traceability heat code wise
- No missing castings – transparency
- Overview of capacities – bottlenecks
- Status of tools e.g. available, maintenance , tool life



- **Mid term goal**
  - System based Planning and scheduling to get realistic delivery date
  - Per order heat code, Hardness, Spectrometer data linkage – full traceability !
  - Able to print “Quality Certificate” from system without looking up past data
  - Work with an integrated system for Sales-Purchase-Materials – Tool Management - PPC- Quality Management - Dispatch

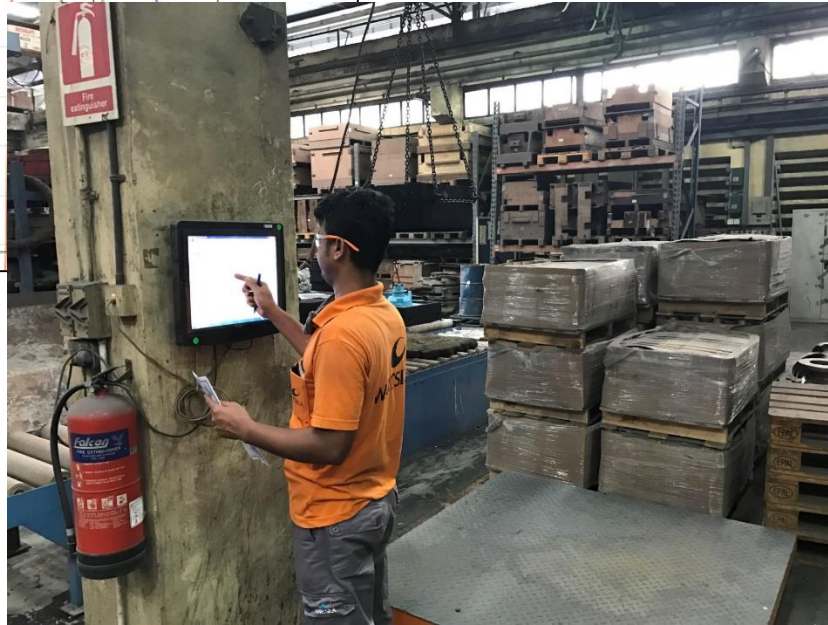
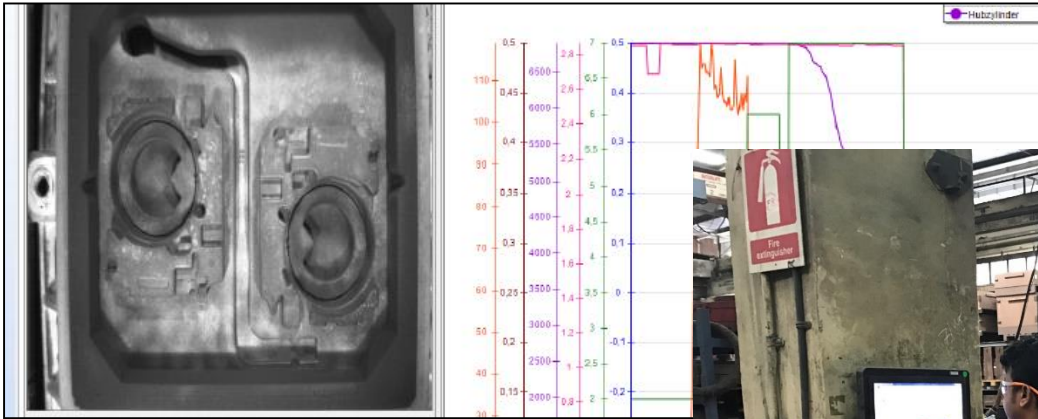


- **Long term goal**
  - Define critical process /areas where system can directly collect data from machine
  - Less dependency on human data entry for critical to quality processes
  - Interface with advance sensors, automation, RFID, Cameras etc. to reduce manual entries and get real time data
  - Preventive approach to reduce scrap and rejections
  - Across all departments online info/Dashboard monitoring
  - SMS – Email – alarm notifications



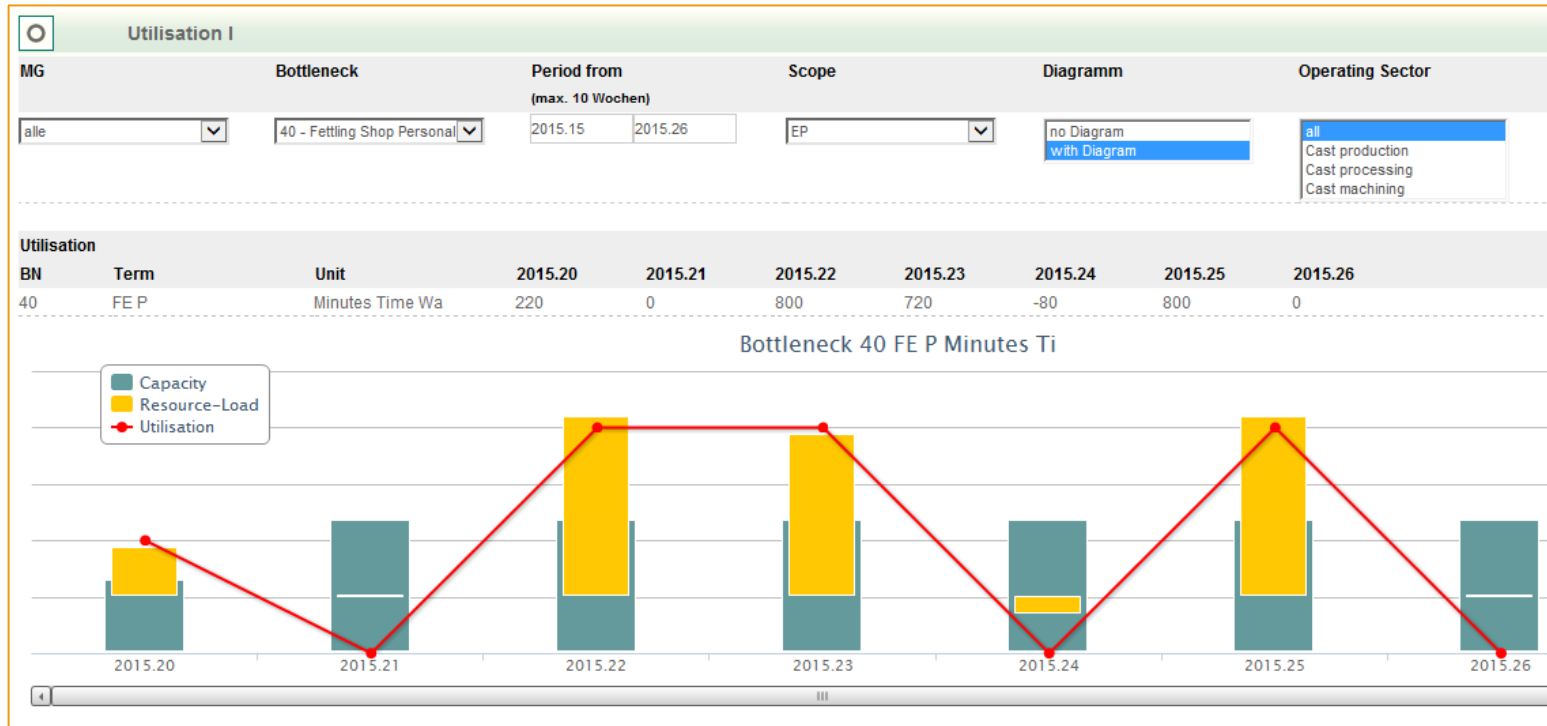


# Example - How Foundry Can Be Digitalized?



# Example - How Foundry Can Be Digitalized?

BN	BN/Year	Description	Unit	Week	% Level of efficiency	Capacity/Unit	Capacity/Hour	Load Actual	Load in word %	Load Arrear	Load Arrear %	Workload	%
39	Year/BN	Shake out / Knock off	Minutes Ti	2020.15	100	28200	360	0	0	92124	326.7	100	
39	Year/BN	Shake out / Knock off	Minutes Ti	2020.16	100	28200	300	0	0	63924	226.7	100	
39	Year/BN	Shake out / Knock off	Minutes Ti	2020.17	100	28200	300	0	0	35724	126.7	100	
39	Year/BN	Shake out / Knock off	Minutes Ti	2020.18	100	28200	300	0	0	7524	26.7	100	
39	Year/BN	Shake out / Knock off	Minutes Ti	2020.19	100	28200	300	0	0	0	0	26.7	



# Example - How Foundry Can Be Digitalized?

Order	Voucher	Moulding	Pouring	ShotBI	KnockOff	Fettling	Heat	Inspection	Machining	Final inspection	Stock prd. order	Inv. prd. order	Delivered order
2000006.02	09687	0	1500	0	0	0	0	0	0	672	818	818	0
2000006.03	09693	0	590	0	0	0	0	0	0	590	0	0	0
2000018.01	09680	0	855	0	0	0	0	0	855	0	0	0	0
1900113.01	09638	0	1399	0	0	0	0	0	0	0	1399	82	1317
1900110.01	09626	0	1285	0	0	0	0	0	0	1274	0	0	0
1900110.02	09636	0	720	0	0	0	0	0	71	648	0	0	0

YeCW	CC-No.	Article-No.	CustNo.	AssyOrd	OrderTyp	Locking note	You	No.o.T	No. Di	Open	Moulds open	free	Infotext 1	Open work
18.51	1100		100023	1800005.02AAC	R - Released for Pro active		0928515	2344	2338	6		N		-Til-Hor-She-Fin
18.51	1100		100023	1800005.02AAD	R - Released for Pro active		0928415	2344	2338	6		N		-Til-Hor-She-Fin
18.51	1100		100023	1800005.02AAB	R - Released for Pro active		0928610	2344	2320	24		N		-Til-Hor-She-Fin
18.51	1100		100023	1800005.02AAF	R - Released for Pro active		0928819	2344	2340	4		N		-Til-Hor-She-Fin
18.52	8200		100023	1800005.02	R - Released for Pro active		0929071	2344	2340	4		N		-Til-Hor-She-Fin
19.04	1100		100027	1800006.02AA	R - Released for Pro active		0930619	105	0	105		N		-Til-CS+-Ver-Jac-SBM-Fet-1st-Fin
19.04	1100		100027	1800006.02AAA	R - Released for Pro active		0930510	105	0	105		N		-Til-CS+-Ver-Jac-SBM-Fet-1st-Fin
19.04	1100		100027	1800006.02AAB	R - Released for Pro active		0930410	105	0	105		N		-Til-CS+-Ver-Jac-SBM-Fet-1st-Fin
19.04	1100		100027	1800006.02AAE	R - Released for Pro active		0930110	105	0	105		N		-Til-CS+-Ver-Jac-SBM-Fet-1st-Fin
19.04	1100		100027	1800006.02AAF	R - Released for Pro active		0930010	105	0	105		N		-Til-CS+-Ver-Jac-SBM-Fet-1st-Fin
19.04	1100		100027	1800006.02AAC	R - Released for Pro active		0930310	105	0	105		N		-Til-CS+-Ver-Jac-SBM-Fet-1st-Fin
19.04	1100		100027	1800006.02AAD	R - Released for Pro active		0930210	105	0	105		N		-Til-CS+-Ver-Jac-SBM-Fet-1st-Fin
19.04	4000		100027	1800006.02	R - Released for Pro active		0930845.1	105	69	36		N		-Til-CS+-Ver-Jac-SBM-Fet-1st-Fin
19.04	4000		100027	1800006.02	R - Released for Pro active		0930845.2	105	59	46		N		-Til-CS+-Ver-Jac-SBM-Fet-1st-Fin
19.04	4000		100027	1800006.02	R - Released for Pro active		0930845.3	105	97	8		N		-Til-CS+-Ver-Jac-SBM-Fet-1st-Fin
19.04	4000		100027	1800006.02	R - Released for Pro active		0930840.2	105	59	46		N		-Til-CS+-Ver-Jac-SBM-Fet-1st-Fin
19.04	4000		100027	1800006.02	R - Released for Pro active		0930840.1	105	97	8		N		-Til-CS+-Ver-Jac-SBM-Fet-1st-Fin
19.04	8200		100027	1800006.02	R - Released for Pro active		0930871	105	95	10		N		-Til-CS+-Ver-Jac-SBM-Fet-1st-Fin
19.04	8200		100027	1800006.02	R - Released for Pro active		0930870	105	97	8		N		-Til-CS+-Ver-Jac-SBM-Fet-1st-Fin

# Example - How Foundry Can Be Digitalized?

Order Date	Order.Item	OrdNo.	OrderTyp	ProcStat	ProcSt	Status	Prod.-Grp.	Description	Delivery Sta	Tool.-	BkckSt	BkckSt	Q Finish	Q RP
27-02-2020	2000053.01	530	Individual Order	SAL will check	100	active	Others	Housing	Raw Part					
27-02-2020	2000053.02	1100	Individual Order	SAL will check	100	active	Others		Raw Part					
15-02-2020	2000025.05	630	Individual Order	Partial delivere	100	active	Others		Raw Part					
15-02-2020	2000025.04	525	Individual Order	Partial delivere	100	active	Others		Raw Part					

Supplier sales as per Item group based on Incoming goods 07.04.2020 12:40

Date from: 07.01.2020 Date to: 07.04.2020

Supplier	Article -Group	Turnover	% from total Sales
Supplier Name	6014 Non-Ferrous Scrap	4.743.810,00 INR	26,23
	6011 Ferrous charge materials (w/o Scrap)	2.298.480,00 INR	12,71
	6011 Ferrous charge materials (w/o Scrap)	1.798.978,00 INR	9,95
	6002 Add. substances	1.260.340,00 INR	6,97
	6004 Mounting parts. will remain in the product	712.559,00 INR	3,94
	6300 Facilities	650.000,00 INR	3,59
	6016 Non-Ferrous alloying materials	514.200,00 INR	2,84
	6200 Tools	428.944,00 INR	2,37
	6013 Ferrous Scrap	411.200,00 INR	2,27
	6000 Moulding Material/Sands	350.000,00 INR	1,94
	6006 Packaging. Charge-carrier	276.660,00 INR	1,53
	6300 Facilities	260.000,00 INR	1,44

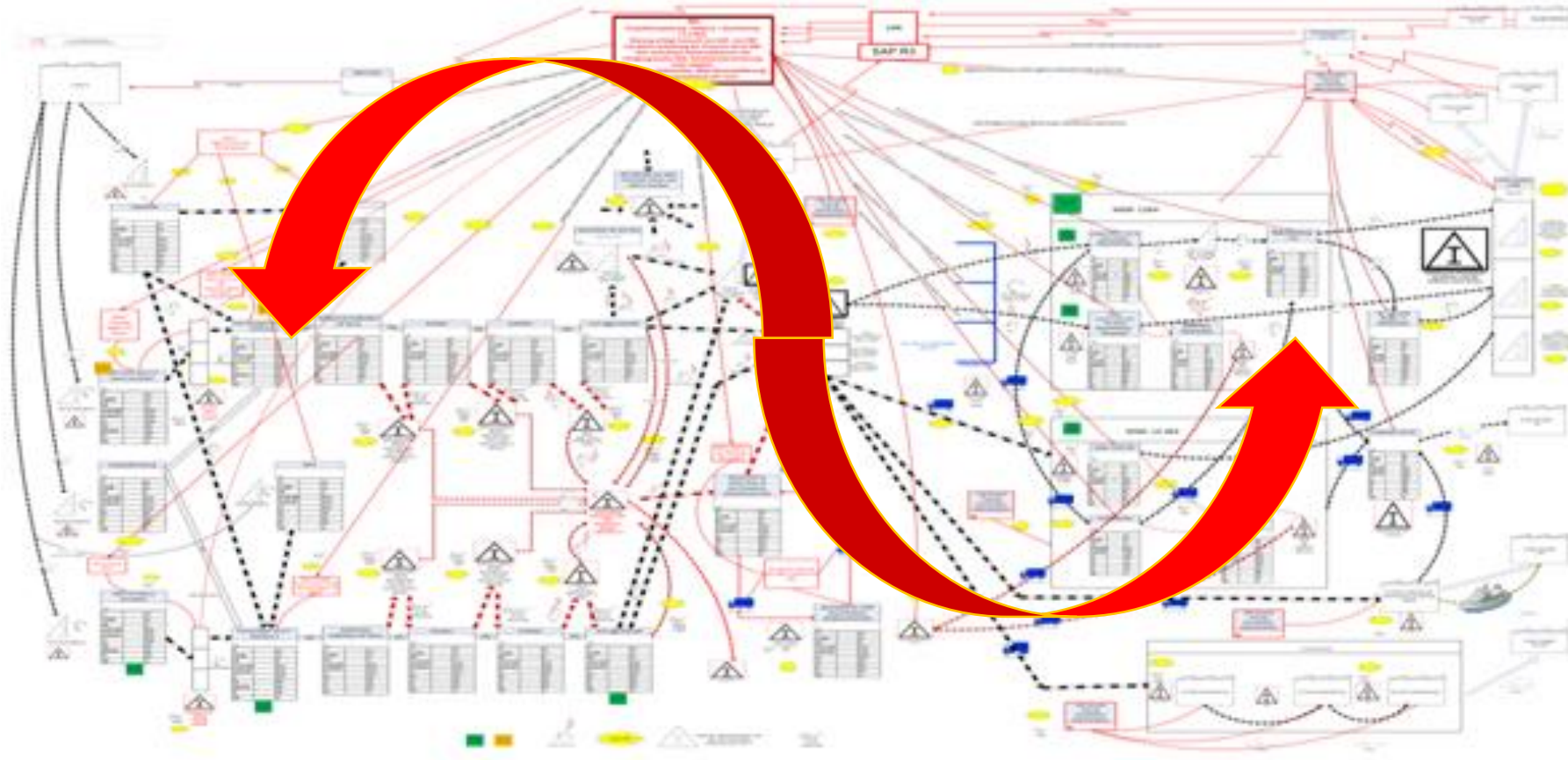
# Difference between Integrated – Non Integrated system

Non Integrated System	Integrated system
Works only for admin area Sales – Purchase – Store - Dispatch	For Foundry Tool Management– PPC must be part of integration with sales – Purchase - Store – Dispatch
Limited to BOM & Routing	Multiple BOM – Man- Machine – Operation – Tool – Cycle time – Quality criteria are linked with each other
Will need multiple island solutions to connect them	Single system will work across all the departments
Interface will be nearly impossible	Easy to interface with other software / hardware solutions incl. IoT / other machines
After few years may reach to limitations	Allows you to expand as you grow

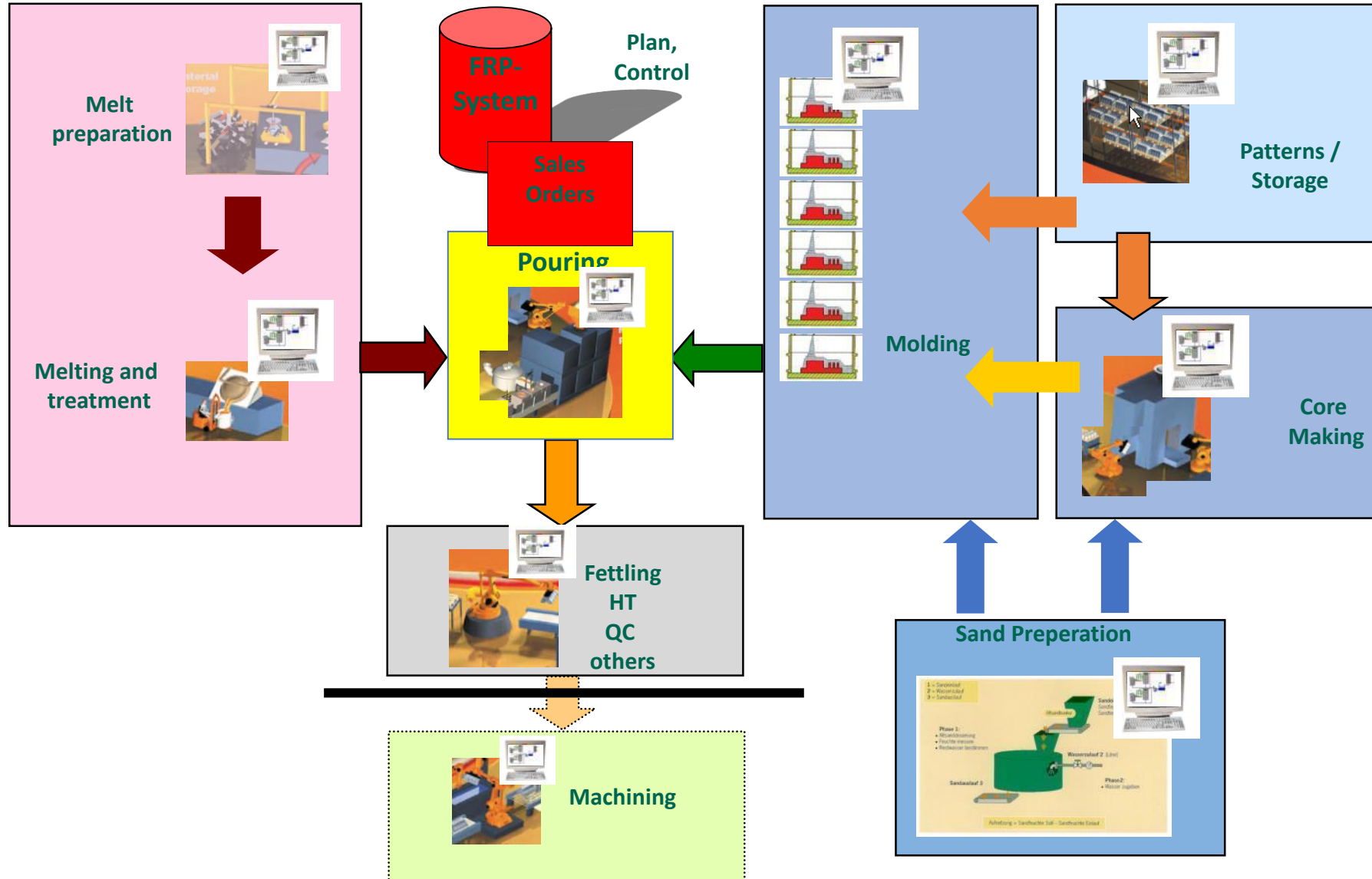
# Difference between Integrated – Non Integrated system

In foundries processes are:

- **non-linear, discontinuous process chains**
- **Excel or General ERP may fail, need Foundry specific solutions e.g. FRP®**



# How to begin with Integrated Digitalised system?



# How to begin with Integrated Digitalised system?



**Molding Machine**



**Man power**



**Pouring specification**



**Cooling Knock-off**



**Sand**



**Molding Pattern**



**Inspection**



**CSM Machine**



**Pattern**



# How to begin with Integrated Digitalised system?



**Manpower**



**Inspection**



**Fettling**



**Tools**



**Machine center**

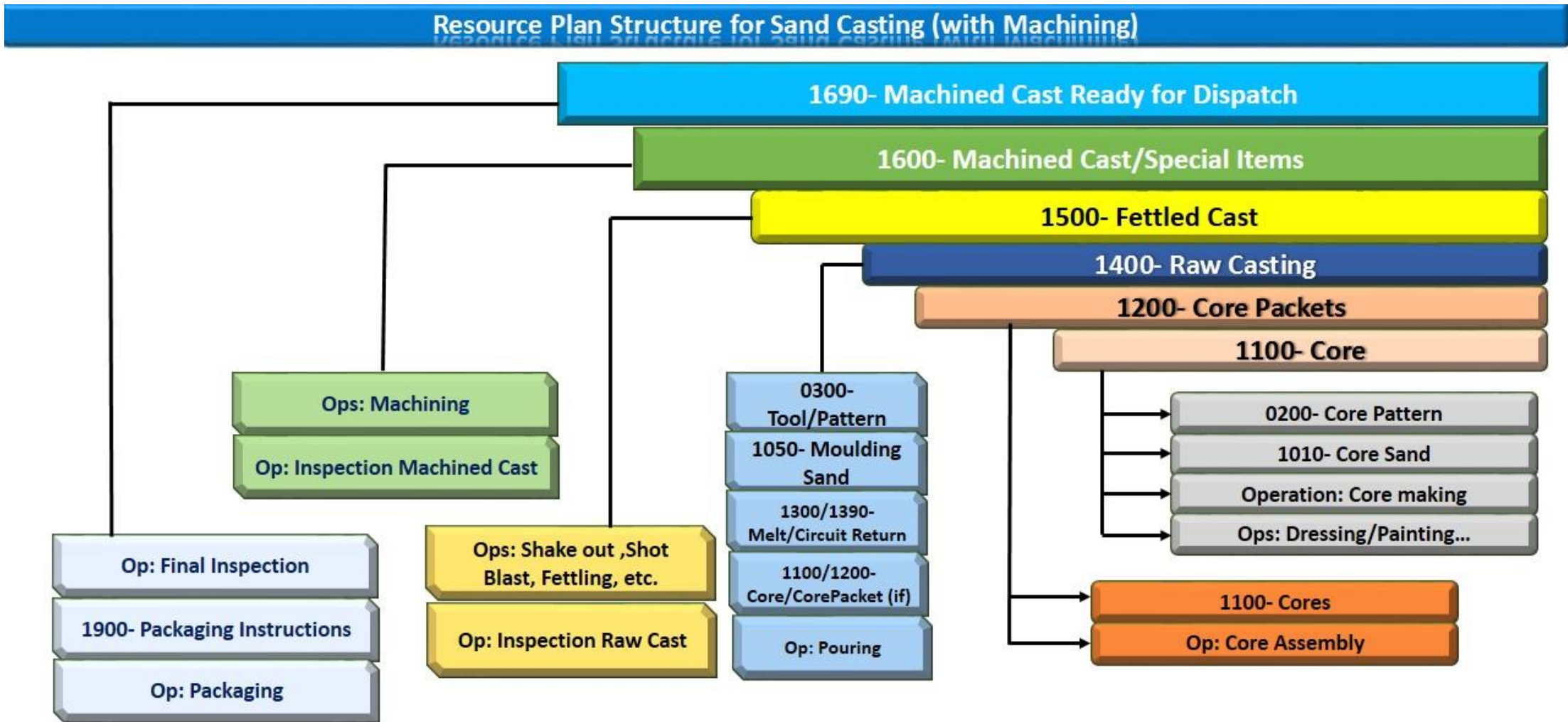


**Inspection**



**Shot blasting**

# Example – Integrated Digitalized Resource Plan



# Example – Integrated Digitalized Resource Plan

Resource Plan	Technique	Technique	Special																			
<b>Item-Ident.-No.</b>	1590-00012	RP Var.	01	Last modified on	04-05-2018	dko	04-05-2018															
Equipm. Id.-No.	0800-00013			Pattern number																		
ItemIdNo(Foc)	1590-00012			Description Focus																		
<b>Structure</b> ^																						
	Level	Ident-No.	Va	MI	mU	RS	uC	Group	Description	Calc. per	valid from	Material	Qual.Co.	Draw.-Id-Nc	Info							
▶ 1		1590-00012	01	<input checked="" type="checkbox"/>	1	●	<input type="checkbox"/>	Fettled Cast ready		Piece	-- --	1.4581	8005-00i									
2	A	1500-00001	01	<input type="checkbox"/>	1	●	<input type="checkbox"/>	Fettled Cast		Piece	-- --	1.4581	8005-00i									
3	AA	1400-00011	01	<input checked="" type="checkbox"/>	1	●	<input type="checkbox"/>	Raw Casting		Piece	-- --	1.4581	8005-00i									
4	AAA	1100-00007	01	<input checked="" type="checkbox"/>	1	●	<input type="checkbox"/>	Cores		Piece	-- --	CS-COLDI										
5	AAB	1200-00001	01	<input checked="" type="checkbox"/>	1	●	<input type="checkbox"/>	Core Packets		Piece	-- --											
6	AABA	1100-00008	01	<input checked="" type="checkbox"/>	1	●	<input type="checkbox"/>	Cores		Piece	-- --	CS-COLDI										
7	AABB	1100-00009	01	<input checked="" type="checkbox"/>	1	●	<input type="checkbox"/>	Cores		Piece	-- --	CS-COLDI										
<b>Resources Lines</b> ^																						
	Code-No.	Var	PTe	Description	Statl	Acti	Remark	Remark	Machir	FID	Form	Fact	Num	Target	Uni	Setti	Worl	HT(a)	ESP	cWage	cprop.	cfix
▶ 1	1500-00001	01	●		●	0			0	1	0	1	1	1	Pcs	0	0	0		0	0	0
2	A9010	01	●	Material supply	●	0			0	1	0	1	1	0.01	min	0	0	0		0	0	0
3	A8330	01	●	Final inspection	●	0			0	1	0	1	1	0.01	min	0	0	0		0.2	0.6	0.2
4	1900-00010	01	●	Packing Instructi	●	0		Max. filling weight mai	0	0	1	1	1	1	Pcs	0	0	0		0	0	0
5	A9000	01	●	Packaging	●	0			0	1	0	1	1	0	min	0	0	0		0.2	0.3	0.1

# Example – Integrated Digitalized Resource Plan

<b>Item-Ident.-No.</b>	1590-00012		RP Var.	01	Last modified on	04-05-2018	dko	04-05-2018														
Equipm. Id.-No.	0800-00013				Pattern number																	
ItemIdNo(Foc)	1100-00007				Description Focus																	
<b>Structure</b> ^																						
	Level	Ident-No.	Va	MI	mU	RS	uC	Group	Description	Calc. per	valid from	Material	Qual.Co.	Draw.-Id-Nc	Info							
1		1590-00012	01	<input checked="" type="checkbox"/>	1	<span style="color:red">●</span>	<input type="checkbox"/>	Fettled Cast ready		Piece	-- --	1.4581	8005-000									
2	A	1500-00001	01	<input type="checkbox"/>	1	<span style="color:red">●</span>	<input type="checkbox"/>	Fettled Cast		Piece	-- --	1.4581	8005-000									
3	AA	1400-00011	01	<input checked="" type="checkbox"/>	1	<span style="color:red">●</span>	<input type="checkbox"/>	Raw Casting		Piece	-- --	1.4581	8005-000									
▶ 4	AAA	1100-00007	01	<input checked="" type="checkbox"/>	1	<span style="color:gray">●</span>	<input type="checkbox"/>	Cores		Piece	-- --	CS-COLDI										
5	AAB	1200-00001	01	<input checked="" type="checkbox"/>	1	<span style="color:red">●</span>	<input type="checkbox"/>	Core Packets		Piece	-- --											
6	AABA	1100-00008	01	<input checked="" type="checkbox"/>	1	<span style="color:gray">●</span>	<input type="checkbox"/>	Cores		Piece	-- --	CS-COLDI										
7	AABB	1100-00009	01	<input checked="" type="checkbox"/>	1	<span style="color:gray">●</span>	<input type="checkbox"/>	Cores		Piece	-- --	CS-COLDI										
<b>Resource plan - 1100-00007</b> ^																						
	Code-No.	Var	PTe	Description	Statl	Activ	Remark	Remark	Machir	FID	Form	Factr	Num	Targe	Uni	Setti	Worl	HT(a)	ESP	cWage	cprop.	cfix
▶ 1	0200-00001	01	<span style="color:gray">●</span>	4-Core Box Mach	<span style="color:yellow">●</span>	0			0	0	0.25	1	1	0.25	Pcs	0	0	0		0	0	0
2	A1010	01	<span style="color:gray">●</span>	Pattern/Tool Rea	<span style="color:green">●</span>	0			0	1	0	1	1	0.01	min	0	0	0		0.3	0.3	0
3	1010-00001	01	<span style="color:gray">●</span>	Coldbox quartz s	<span style="color:green">●</span>	0			0	1	0	1	1	2.5	kg	0	0	0		0	0.283	0
4	A1100	01	<span style="color:gray">●</span>	Core Shooting M	<span style="color:green">●</span>	0			0	1	0	1	1	0.01	min	0	0	0		0.1	0.5	0.3

# Example – Integrated Digitalized Resource Plan

**Item-Ident.-No.** 1590-00012  RP Var. 01 Last modified on 04-05-2018 dko 04-05-2018  
**Equipm. Id.-No.** 0800-00013 Pattern number  
**ItemIdNo(Foc)** 1400-00011 Description Focus

Structure ^

	Level	Ident-No.	Va	MI	mU	RS	uC	Group	Description	Calc. per	valid from	Material	Qual.Co.l	Draw.-Id-No	Info
1		1590-00012	01	<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fettled Cast ready t		Piece	-- --	1.4581	8005-000		
2	A	1500-00001	01	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fettled Cast		Piece	-- --	1.4581	8005-000		
3	AA	1400-00011	01	<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Raw Casting		Piece	-- --	1.4581	8005-000		
4	AAA	1100-00007	01	<input checked="" type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	Cores		Piece	-- --	CS-COLDE			
5	AAB	1200-00001	01	<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Core Packets		Piece	-- --				
6	AABA	1100-00008	01	<input checked="" type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	Cores		Piece	-- --	CS-COLDE			
7	AARR	1100-00009	01	<input checked="" type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	Cores		Piece	-- --	CS-COLDE			

Resource plan - 1400-0001 ^

	Code-No.	Var.	PTe	Description	Statl	Activ	Remark	Remark	Machir	FID	Form	Factc	Num	Target	Uni	Settii	Worl	HT(a)	ESP	cWage
1	0300-00034	01	<input type="checkbox"/>	FAC RP - M-0003	<input checked="" type="checkbox"/>	0			0	0	1	1	1	1	Pcs	0	0	0		0
2	A1010	01	<input type="checkbox"/>	Pattern/Tool Read	<input checked="" type="checkbox"/>	0			0	1	0	1	1	0.01	min	0	0	0		0.3
3	1050-00001	01	<input type="checkbox"/>	Quartz sand clay	<input checked="" type="checkbox"/>	0			0	0	2.354	1	1	52.354	kg	0	0	0		0
4	1100-00007	01	<input type="checkbox"/>		<input checked="" type="checkbox"/>	0			0	1	0	1	1	1	Pcs	0	0	0		0
5	1200-00001	01	<input type="checkbox"/>		<input checked="" type="checkbox"/>	0			0	1	0	1	1	1	Pcs	0	0	0		0
6	A2000	01	<input type="checkbox"/>	Moulding Line H	<input checked="" type="checkbox"/>	0			0	1	0	1	1	0.01	min	0	0	0		0.6
7	1300-00004	01	<input type="checkbox"/>	GX5CrNiMoNb19	<input checked="" type="checkbox"/>	0			0	0	5.667	1	1	56.667	t	0	0	0		0
8	1390-00018	01	<input type="checkbox"/>	RM-1.4581	<input checked="" type="checkbox"/>	0			0	0	5.667	1	1	56.667	kg	0	0	0		0
9	A3100	01	<input type="checkbox"/>	Hand Pouring	<input checked="" type="checkbox"/>	0			0	1	0	1	1	0.01	min	0	0	0		0.3

# Example – Integrated Digitalized Resource Plan

<b>Item-Ident.-No.</b>	1590-00012	RP Var.	01	Last modified on	04-05-2018	dko	04-05-2018													
Equipm. Id.-No.	0800-00013			Pattern number																
ItemIdNo(Foc)	1500-00001			Description Focus																
<b>Structure</b> ^																				
	Level	Ident-No.	Va	MI	mU	RS	uC	Group	Description	Calc. per	valid from	Material	Qual.Co.I	Draw.-Id-No	Info					
1		1590-00012	01	<input checked="" type="checkbox"/>	1	<span style="color:red">●</span>	<input type="checkbox"/>	Fettled Cast ready		Piece	__-__-__	1.4581	8005-000							
▶ 2	A	1500-00001	01	<input type="checkbox"/>	1	<span style="color:red">●</span>	<input type="checkbox"/>	Fettled Cast		Piece	__-__-__	1.4581	8005-000							
3	AA	1400-00011	01	<input checked="" type="checkbox"/>	1	<span style="color:red">●</span>	<input type="checkbox"/>	Raw Casting		Piece	__-__-__	1.4581	8005-000							
4	AAA	1100-00007	01	<input checked="" type="checkbox"/>	1	<span style="color:gray">●</span>	<input type="checkbox"/>	Cores		Piece	__-__-__	CS-COLDE								
5	AAB	1200-00001	01	<input checked="" type="checkbox"/>	1	<span style="color:red">●</span>	<input type="checkbox"/>	Core Packets		Piece	__-__-__									
6	AABA	1100-00008	01	<input checked="" type="checkbox"/>	1	<span style="color:gray">●</span>	<input type="checkbox"/>	Cores		Piece	__-__-__	CS-COLDE								
7	AARR	1100-00009	01	<input checked="" type="checkbox"/>	1	<span style="color:gray">●</span>	<input type="checkbox"/>	Cores		Piece	__-__-__	CS-COLDE								
<b>Resource plan - 1500-00001</b> ^																				
	Code-No.	Var.	PTe	Description	Statl	Acti	Remark	Remark	Machir	FID	Form	Factc	Num	Target	Uni	Settli	Worl	HT(a)	ESP	cWage
▶ 1	1400-00011	01	<span style="color:gray">●</span>		<span style="color:red">●</span>	0			0	1	0	1	1	1	Pcs	0	0	0		0
2	A9010	01	<span style="color:gray">●</span>	Material supply	<span style="color:green">●</span>	0			0	1	0	1	1	0.01	min	0	0	0		0
3	A4000	01	<span style="color:gray">●</span>	Shake out / Knoc	<span style="color:green">●</span>	0			0	1	0	1	1	0.01	min	0	0	0		0.1
4	A4100	01	<span style="color:gray">●</span>	Shot Blasting	<span style="color:green">●</span>	0			0	0	100	1	1	100	kg	0	0	0		0.01
5	A4300	01	<span style="color:gray">●</span>	Fettling	<span style="color:green">●</span>	0			0	1	0	1	1	0.01	min	0	0	0		0.1
6	A8320	01	<span style="color:gray">●</span>	inspection Raw C	<span style="color:green">●</span>	0			0	1	0	1	1	0.01	min	0	0	0		0.2

# Example – Integrated Digitalized Resource Plan

<b>Item-Ident.-No.</b>	1590-00012	RP Var.	01	Last modified on	04-05-2018	dko	04-05-2018
Equipm. Id.-No.	0800-00013			Pattern number			
ItemIdNo(Foc)	1590-00012			Description Focus			

Structure ^

	Level	Ident-No.	Va	MI	mU	RS	uC	Group	Description	Calc. per	valid from	Material	Qual.Co.l	Draw.-Id-No	Info
▶ 1		1590-00012	01	<input checked="" type="checkbox"/>	1	●	<input type="checkbox"/>	Fettled Cast ready t		Piece	- - -	1.4581	8005-000		
2	A	1500-00001	01	<input type="checkbox"/>	1	●	<input type="checkbox"/>	Fettled Cast		Piece	- - -	1.4581	8005-000		
3	AA	1400-00011	01	<input checked="" type="checkbox"/>	1	●	<input type="checkbox"/>	Raw Casting		Piece	- - -	1.4581	8005-000		
4	AAA	1100-00007	01	<input checked="" type="checkbox"/>	1	●	<input type="checkbox"/>	Cores		Piece	- - -	CS-COLDE			
5	AAB	1200-00001	01	<input checked="" type="checkbox"/>	1	●	<input type="checkbox"/>	Core Packets		Piece	- - -				
6	AABA	1100-00008	01	<input checked="" type="checkbox"/>	1	●	<input type="checkbox"/>	Cores		Piece	- - -	CS-COLDE			
7	AARR	1100-00009	01	<input checked="" type="checkbox"/>	1	●	<input type="checkbox"/>	Cores		Piece	- - -	CS-COLDE			

Resource plan - 1590-00012 ^

	Code-No.	Var.	PTe	Description	Statl	Activ	Remark	Remark	Machir	FID	Form	Factc	Num	Target	Uni	Settll	Work	HT(a)	ESP	cWage
▶ 1	1500-00001	01	●		●	0			0	1	0	1	1	1	Pcs	0	0	0		0
2	A9010	01	●	Material supply	●	0			0	1	0	1	1	0.01	min	0	0	0		0
3	A8330	01	●	Final inspection R	●	0			0	1	0	1	1	0.01	min	0	0	0		0.2
4	1900-00010	01	●	Packing Instructio	●	0		Max. filling weight main	0	0	1	1	1	1	Pcs	0	0	0		0
5	A9000	01	●	Packaging	●	0			0	1	0	1	1	0	min	0	0	0		0.2

- Systematic approach from sales to dispatch – less paper work-less meeting- follow-up → No data loss (like excel corrupt etc.)
- Better efficiency – Data confidentiality – less human errors
- Action based on fact data – not just assumptions
- Easy to trace root cause – historical data
- Capture foundry know-how to meet manpower & skill shortage
- Better realistic costing considering not just purchase cost, manpower, machine , electricity etc.
- Easy to attract young talent /engineers
- Improvise OEE, downtime through better planning
- Visualise capacity –bottlenecks → better planning and reliability



- Digitalisation is a prerequisite to achieve Industry 4.0
- Integrated Digitisation allows to interface with machine for real time data capturing
- Tracking of process data wrt. order /customer is must in today's time
- Digitalised system can feed machine action – using IoT
- Allows you to become preventive measurement – reduce scrap, time wastage, material wastage – ultimately lots of cost savings
- Better real time monitoring – better process control
- Email-SMS notification unwanted events /occurrence



**FRP**

CAST IN  
SOFTWARE

Q&A

[info@frpconsulting.in](mailto:info@frpconsulting.in)  
M: +91 - 9824247774



Thank you!