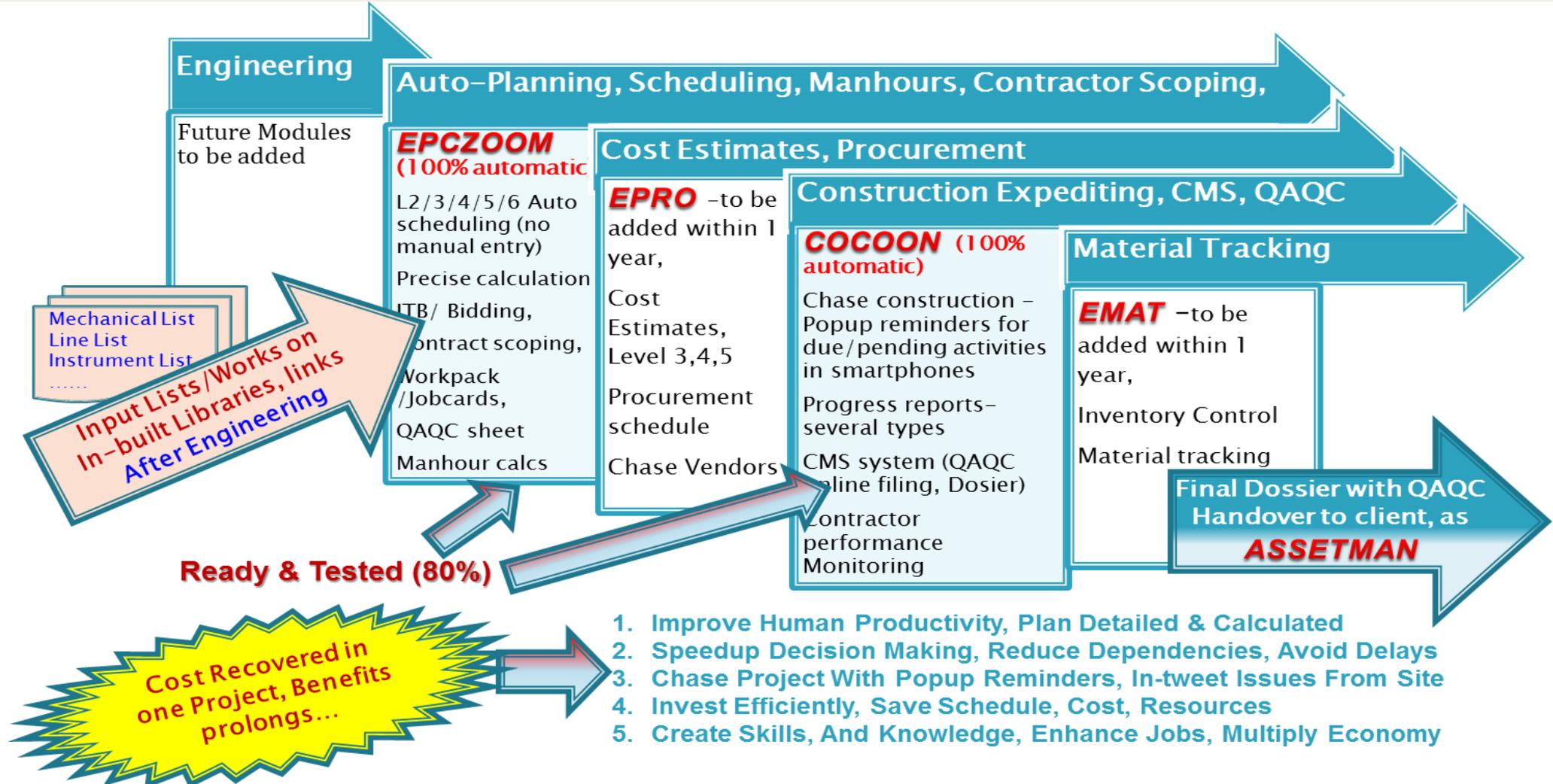


**REVOLUTIONIZES
EPC PROJECT
MANAGEMENT...**

.....ADVANTAGE AI ML

PROJECT SIMULATOR – AN OVERVIEW

Pro-chase = Planing Simulations + Project Chaser



Early Planning with Micro Details

Don't Plan == Plan to Fail

Don't Plan in Micro Details == Plan to Delay Projects

People get busy thinking what to do- how to do

Pro-Chase does 80% of Brain works of

HO Planning Teams,

& Site Execution teams



**Fully
Customizable**

**Automate
Schedule@
Level 3,4,5,6**

Bidding Support
*L5 details during
Tendering*

**Automate
Workpacks**

**Inbuilt
Engineering
Calculations**

**24X 7
Dashboards,
EVM, DCMA14**

**Micro Chase
@L5_24X7
In-Field Control**

**Precision
Estimates
Benchmarking**

**Automate
Test-Packs
*With Flange
/Weld details***

**Automate
Systemization**

**Standardis
Contracts**

**Automate
QA/QC
ITR's**

What Prochase does for you.....

- 1 > Auto Creates Test Packs,**
- 2 > Auto Develop System Reports,**
- 3 > Auto Develop WBS Reports,**
- 4 > Auto Develop L1 to L5 Schedule**
- 5 > Auto Creates ITRs/QAQC forms**
- 6 > Chases Activities via Email or User Dashboard**
- 7 > Fetches Actual Progress to get REALTIME Schedule Progress from the ground**
- 8 > Auto creates Look Ahead 3D/3W/3M**
- 9> Assess Teams, Subcons Performance**
- 10> Highlights Issues on Real Time Dashboard**
- 11> Reduces Planning Efforts upto 80%**
- 12> Automate WorkPacks, with manpower Machine tools, safety**
- 13> Delay analysis**
- 14> EVM , DCMA 14 Analysis**
- 15> Recovery Schedule automated**

L-5, the
true controller
at the ground



Schedule Levels in Construction (Hierarchy)

Level	Description	Typical Use	Detail Level	Audience	Responsibilities
L0 (Level 0)	Master Project Plan (High-Level) Contract Mile stones Schedule	Shows major phases/milestones (e.g., "Design Complete," "Construction Start," ,Completion, Commissioning, and "Handover").	Very high-level, no tasks.	Executives, Clients, Investors	Enables Funds, and Project Management teams
L1 (Level 1)	Summary Schedule Critical Milestones	Breaks L0 into key stages (e.g., "Foundation," "Structural Work," "Major MEP deliveries").	Major deliverables, ~5-20 tasks.	Senior Management, Project Sponsors controlled	Enables E,P,C Execution teams and engage subcontracts
L2 (Level 2)	WBS or System level Control Schedule	WBS, Building, or System level completions, major MEP PO, Arrival, Erection, MCC, SCC, RFSU	Used for project control, ~50-500 tasks. Mostly independent , parallel works	Project Managers, Displine Manager /Lead Engineers Controlled	Enable execution, achieve Progress, provide man, machineries, materials , engineering deliverbaes, subcontracts and POs
L3 (Level 3)	Sub WBS, Sub system Level Execution Schedule or Major Activity Categories	Itemized details within system, Building and WBS (e.g., Slab works, "HVAC Installation"), Panels or equipment installations.	Dependant Discipline, subcontract or Vendor Integration matters for Daily/weekly planning, subcontractor tasks.~500-2,000	Site Engineers and Subcontractor, vendor controlled	Mobilize, man, machine, materials, and prepare method statements and track logistics -Achieve Progress
L4 (Level 4)	Micro-Schedule (Equipmen wise, detailed sequenc eof activities, integrating multi displimnes)	Task-level breakdown (e.g., "Rebar frames for Slab 1, Electrical conduite, or cable pulling, Compressor rotor Alignment").	Used for short-term execution.Discipline, subcontract or vendor to control progress independantly, to meet L3 level dependency~2,000-20,000 tasks	Field Supervisor, foreman controlled	On ground Actions: conversion of Plan in Paper to Real Life Assets-Achieve Progress
L5 (Level 5)	Subcon's Micro-Schedule (Equipmen wise, detailed sequenc eof activities, integrating multi displimnes)	Hourly/daily tasks, crew assignments, material tracking. Who, when, where, what, how explained	Used for short-term execution.Discipline, subcontract or vendor to control progress independantly, to meet L3 level dependency ~ 20,000-200,000 tasks	Field Technicians, Sub-subcontractors or labor supervisor controlled	Day-to-day Plan-do-Act: Conversion of Plan in Paper to Real Life Assets-Achieve Progress

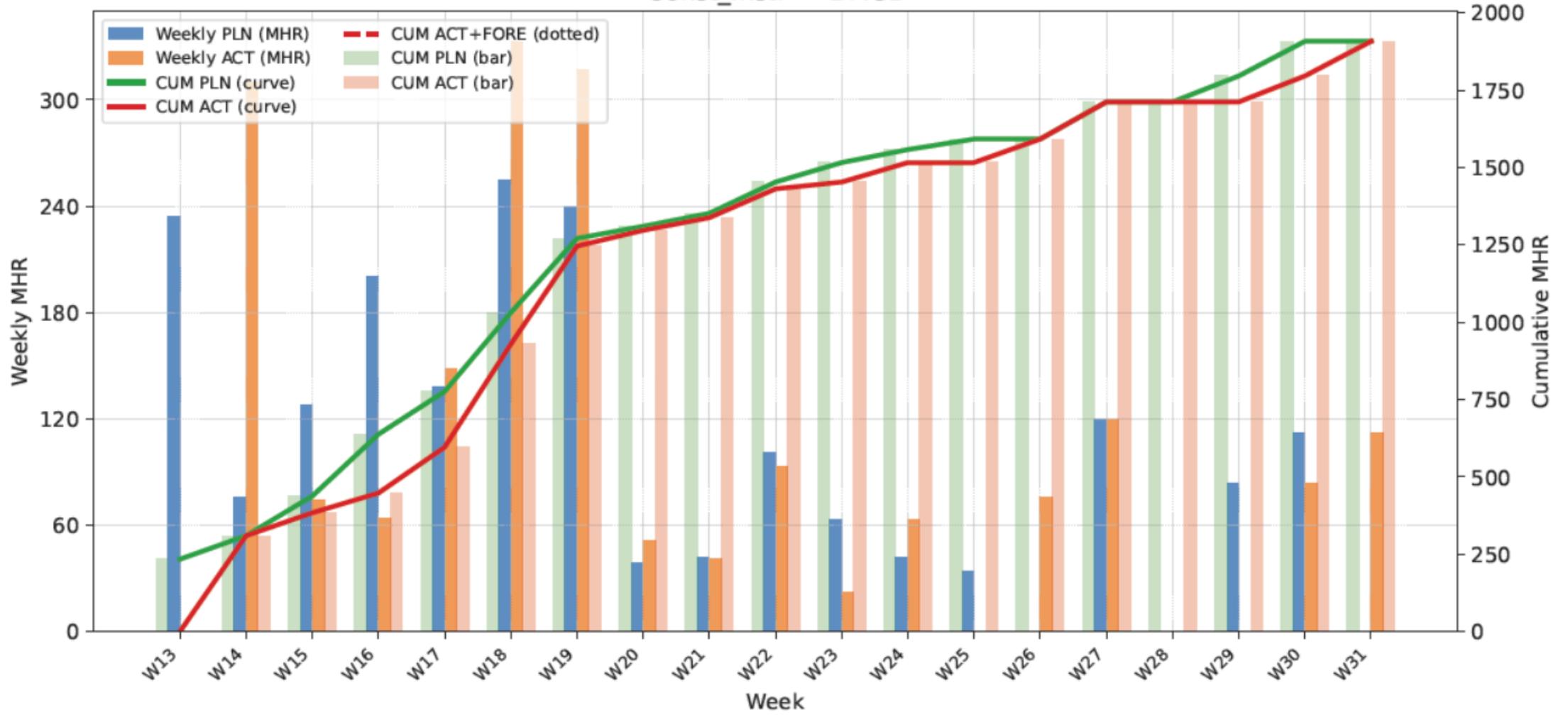
REPORT SAMPLES



PLAN L-5 & CHASE

**ON DAILY- HOURLY
BASIS, SUING YOUR
DASHBOARDS...**

Const_Instr — DMC1



Week	W13	W14	W15	W16	W17	W18	W19	W20	W21	W22	W23	W24	W25	W26	W27	W28	W29	W30	W31
Weekly PL	234.00	76.00	128.00	200.00	138.00	255.00	240.00	39.00	42.00	101.00	63.00	42.00	34.00	0.00	120.00	0.00	84.00	112.00	0.00
Weekly AC	0.00	310.00	74.00	64.00	148.00	333.00	317.00	51.00	41.00	93.00	22.00	63.00	0.00	76.00	120.00	0.00	0.00	84.00	112.00
CUM PLN	234.00	310.00	438.00	638.00	776.00	1031.00	1271.00	1310.00	1352.00	1453.00	1516.00	1558.00	1592.00	1592.00	1712.00	1712.00	1796.00	1908.00	1908.00
CUM ACT	0.00	310.00	384.00	448.00	596.00	929.00	1246.00	1297.00	1338.00	1431.00	1453.00	1516.00	1516.00	1592.00	1712.00	1712.00	1712.00	1796.00	1908.00
CUM ACT+F	0.00	310.00	384.00	448.00	596.00	929.00	1246.00	1297.00	1338.00	1431.00	1453.00	1516.00	1516.00	1592.00	1712.00	1712.00	1712.00	1796.00	1908.00

Develop L3, L4, L5 Schedule within a Day...

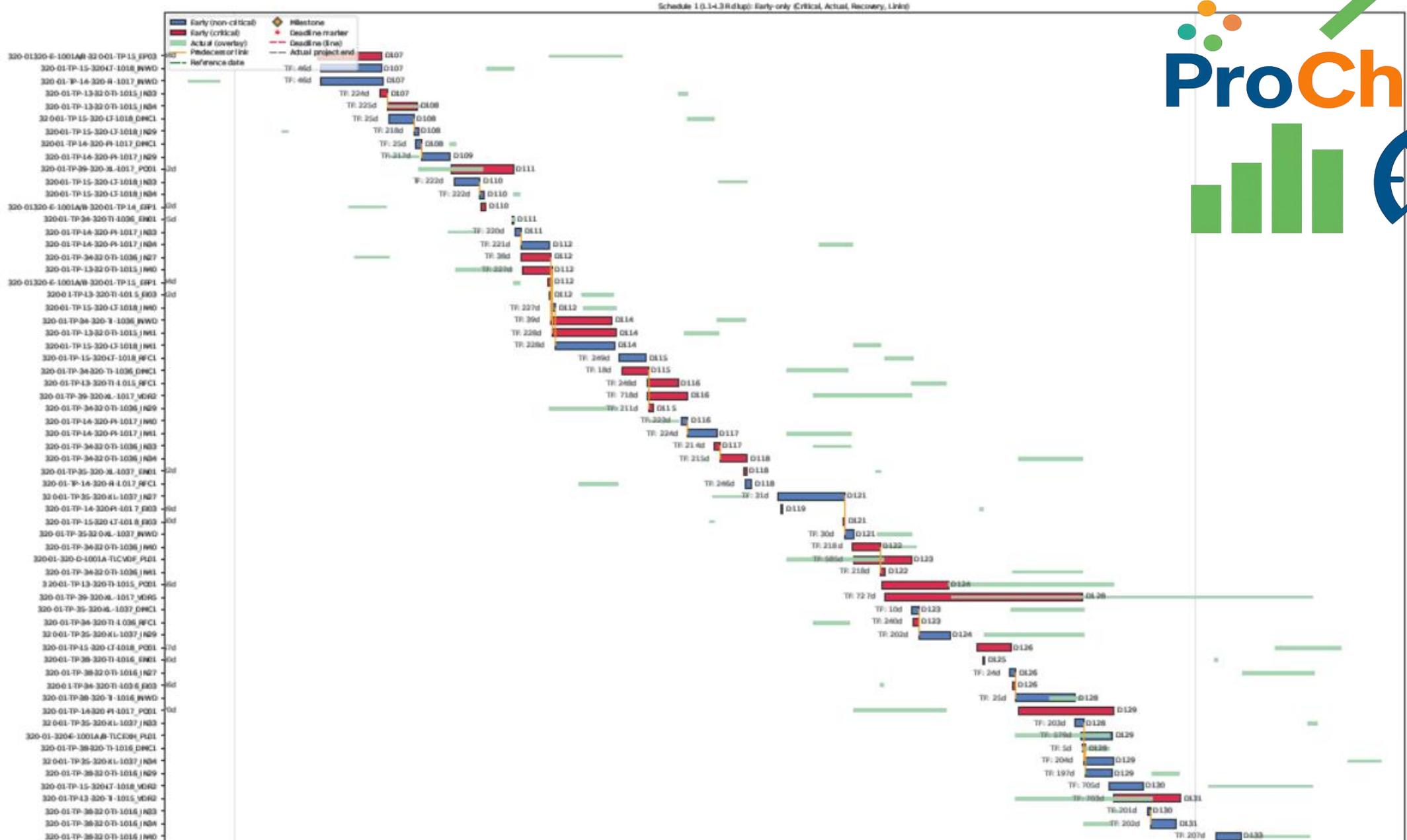
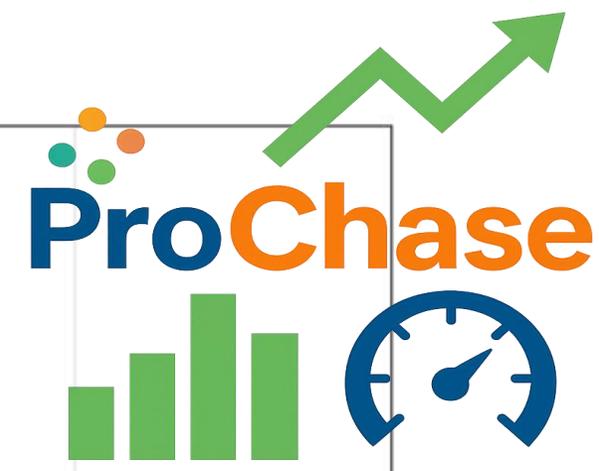
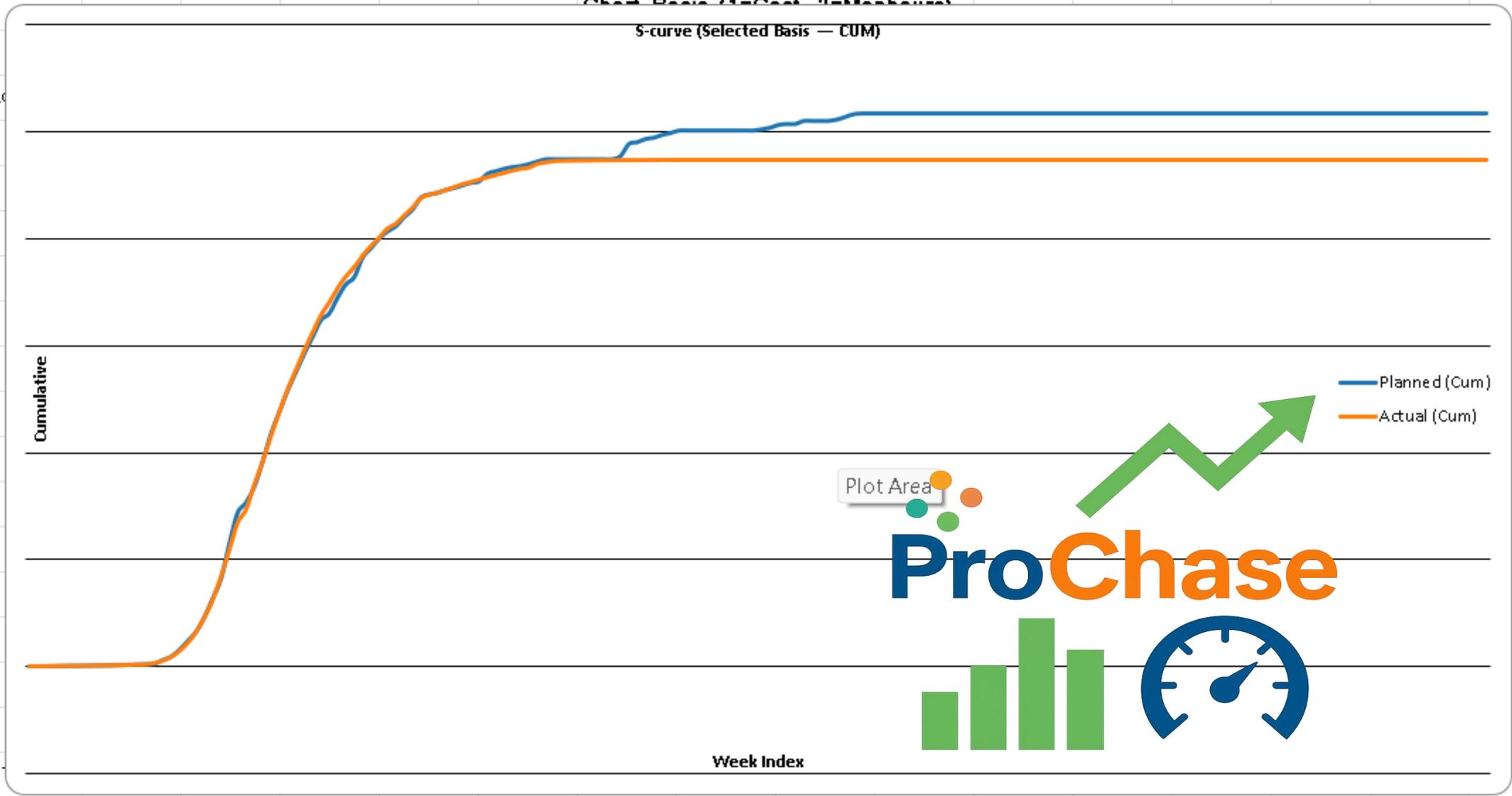
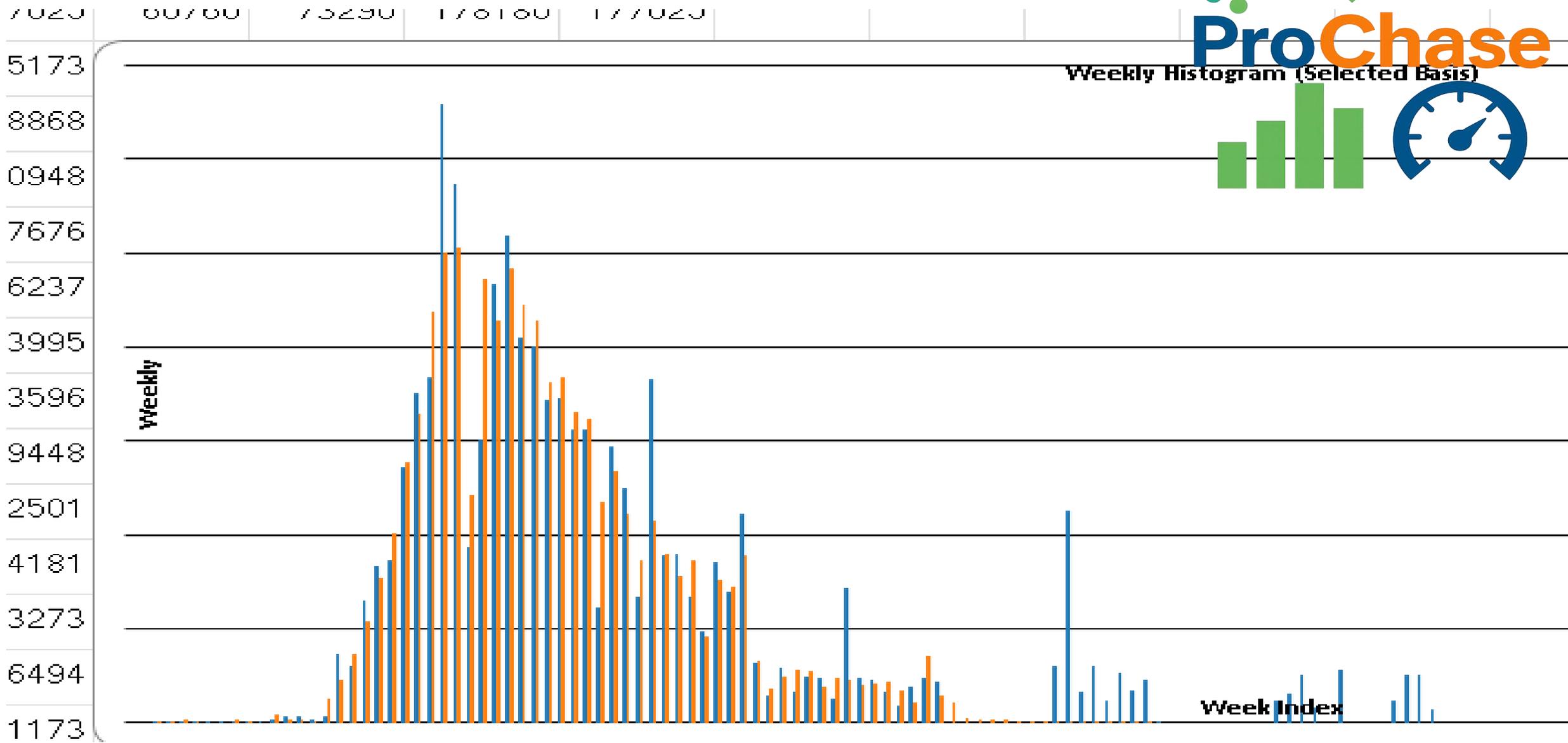


Chart Basis (1st Cost - 2nd Month)

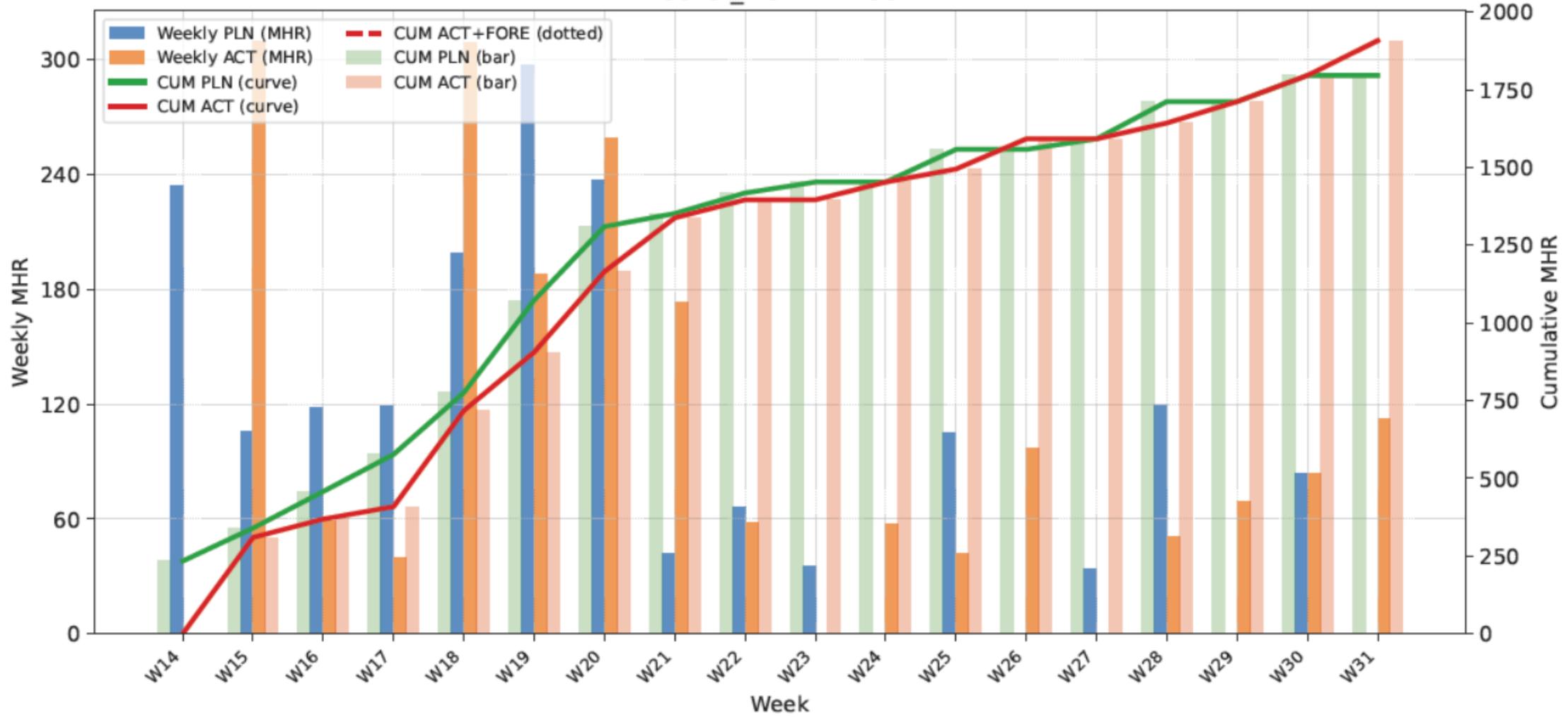
S-curve (Selected Basis — CUM)

Mt Planned	Ac
19	2000
38	4000
76	6000
95	8000
95	10000
95	12000
33	14000
52	16000
52	18000
28	22000
56	28000
94	34000
23	38000
27	44000
.5	117420





Const_Instr — IN39



	W14	W15	W16	W17	W18	W19	W20	W21	W22	W23	W24	W25	W26	W27	W28	W29	W30	W31
Weekly PL	234.00	106.00	118.00	119.00	199.00	297.00	237.00	42.00	66.00	35.00	0.00	105.00	0.00	34.00	120.00	0.00	84.00	0.00
Weekly AC	0.00	310.00	59.00	40.00	309.00	188.00	259.00	173.00	58.00	0.00	57.00	42.00	97.00	0.00	51.00	69.00	84.00	112.00
CUM PLN	234.00	340.00	458.00	577.00	776.00	1073.00	1310.00	1352.00	1418.00	1453.00	1453.00	1558.00	1558.00	1592.00	1712.00	1712.00	1796.00	1796.00
CUM ACT	0.00	310.00	369.00	409.00	718.00	906.00	1165.00	1338.00	1396.00	1396.00	1453.00	1495.00	1592.00	1592.00	1643.00	1712.00	1796.00	1908.00
CUM ACT+FO	0.00	310.00	369.00	409.00	718.00	906.00	1165.00	1338.00	1396.00	1396.00	1453.00	1495.00	1592.00	1592.00	1643.00	1712.00	1796.00	1908.00

EVM SUMMARY

Data Date	2025-04-07 11:37:49
BAC	10336352
PV	9982742.03
EV	9064239.46
AC	9064239.46
SV (EV-PV)	-918502.57
CV (EV-AC)	0
SPI (EV/PV)	0.908
CPI (EV/AC)	1
EAC (BAC/CPI)	10336352
ETC (EAC-AC)	1272112.54
VAC (BAC-EAC)	0
Planned Start	2023-10-21 00:00:00
Planned Finish	2025-09-08 12:12:00
Planned Duration (d)	688
Forecast Finish	2025-09-02 13:06:00
SPI(t) time-based	1.041

Actual cost is not available , hence assume dequal. Alternatively it can be proportionated to actual durations and work efficiencies, but that's is not as per PMI standard.



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Yogah Karmasu Kaushalam!
Excellence comes thru Practices

DCMA 14-POINT SUMMARY

Point	Metric	Target	Pass
01 Missing pred/succ links	0.0%	≤ 5%	TRUE
02A Leads (FS strict)	0.0%	0	TRUE
02B Leads (FS tol -8h)	0.0%	0	TRUE
03 Lags (positive lag)	2.8%	≤ 5%	TRUE
04 FS relationship share	99.3%	≥ 90%	TRUE
05 Hard constraints (heuristic LLI lock)	0.0%	≤ 5% (heuristic)	TRUE
06 High float (>44d)	76.5%	≤ 5%	FALSE
07 Negative float	0.0%	≤ 0%	TRUE
08 Long durations (>44d)	0.5%	≤ 5%	TRUE
09 Invalid/Missing Dates	0.8%	≈ 0%	TRUE
10 Resources coverage	100.0%	≈ 100%	TRUE
11 Missed tasks	0.3%	≤ 5%	TRUE
12 CPLI	100.0%	>= 1.00	TRUE
13 Critical Path Integrity	100.0%	Exists & logical	TRUE
14 BEI (Actual/Planned completes)	95.1%	≈ 1.00	TRUE
15 SPI(t) time-based	104.1%	>= 1.00	TRUE
16 Out-of-Sequence Progress	57.4%	≈ 0%	FALSE

Total Flots: high because not all systems, and WBS covered, so final mechanical completion and hand over could not be linked to system mechanical completion and handover. Once this is done, flot will be very less.



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CONSTRUCTION CONTROL

In-situ Project Chase thru' Discipline and Contractor 's

Personalized Dashboards



Mechanical Dashboard

PROJECT CHASE BEGINS.....

LOOKAHEADS...



Lookahead 3D
3

Lookahead 3W
13

Lookahead 3M
50

Pending Activities
65

Viewing Lookahead: my_schedule1_lookahead_new.xlsx

wbsno	act_descr	prefixed_act_code	prefixed_preds	early_strt_dt	early_fin_dt	delay_reason	action_party	fore_strt_dt	fore_fin_dt	status	delayed
002.99.002.05.2	Issue PO	320-E-1002-999-TI-1047_PO01	320-E-1002-999-TI-1047_CB01	2024-03-22T12:12:00	2024-03-23T10:24:00	same as above	0	2024-03-22T12:12:00	2024-03-27T13:56:22	Not due yet; planned start in 49 days.	0
002.99.002.05.2	Issue PO	320-E-1002-999-TI-1046_PO01	320-E-1002-999-TI-1046_CB01	2024-03-22T12:12:00	2024-03-23T10:24:00	same as above	0	2024-03-22T12:12:00	2024-03-27T13:56:22	Not due yet; planned start in 49 days.	0
002.99.002.05.2	Issue PO	320-E-1002-999-TI-1047_PO01	320-E-1002-999-TI-1047_CB01	2024-03-22T12:12:00	2024-03-23T10:24:00	same as above	0	2024-03-22T12:12:00	2024-03-27T13:56:22	Not due yet; planned start in 49 days.	0
002.99.002.05.2	Issue PO	320-E-1002-999-TI-1046_PO01	320-E-1002-999-TI-1046_CB01	2024-03-22T12:12:00	2024-03-23T10:24:00	same as above	0	2024-03-22T12:12:00	2024-03-27T13:56:22	Not due yet; planned start in 49 days.	0
002.99.003.04.3	Item dispatched, Packing list Issued	320-E-1002-999-TI-1046_DL01	320-E-1002-999-TI-1046_CB01	2024-04-15T10:24:00	2024-04-16T13:06:00	same as above	0	2024-04-15T10:24:00	2024-04-16T13:06:00	Not due yet;	0



EARNED VALUE COUNTER
...1,620,786 ManHrs Earned

PENDING ACTIVITIESHIGHLIGHTED

Lookahead 3D
3

Lookahead 3W
13

Lookahead 3M
50

Pending Activities
65

Pending Activities **UPDATED BY USER WITH DELAY REASONS & ACTION PARTY**

← Back

I Fin Dt	Fore Strt Dt	Fore Fin Dt	Status	Delayed Days	Delay Reason	Action Party	Criticality
yyyy <input type="checkbox"/>	23-03-2024 <input type="checkbox"/>	29-07-2024 <input type="checkbox"/>	Not due yet; planned start in 50 days.	0	R1_COMPANY: REAL TIME UPDATES 24X7....	2	
yyyy <input type="checkbox"/>	28-03-2024 <input type="checkbox"/>	29-03-2024 <input type="checkbox"/>	Not due yet; planned start in 55 days.	0	-- Select Reason		
yyyy <input type="checkbox"/>	07-03-2024 <input type="checkbox"/>	07-03-2024 <input type="checkbox"/>	Not due yet; planned start in 34 days.	0	-- Select Reason		
yyyy <input type="checkbox"/>	02-04-2024 <input type="checkbox"/>	16-09-2024 <input type="checkbox"/>	Not due yet; planned start in 60 days.	0	-- Select Reason		

REAL TIME UPDATES 24X7....

- Select Reason --
- R1_COMPANY: Document/procedure/MS approval pending
- R2_COMPANY: Document/procedure/MS PTW pending
- R3_COMPANY: Regulatory approval or NOC pending
- R4_CONTRACTOR: Document/procedure/MS submission/approval pending
- R5_CONTRACTOR: Manpower not available
- R6_CONTRACTOR: Subcontracting pending
- R7_CONTRACTOR: Predecessor activity not finished
- R8_CONTRACTOR: Management directives unclear/under discussion
- R9_SUBCONTRACTOR: Manpower not available
- R10_SUBCONTRACTOR: Tools/Machineries not available
- R11_SUBCONTRACTOR: Method statement not submitted
- R12_SUBCONTRACTOR: Temporary fittings/materials not ready
- R13: Contractual issue between contractor and subcontractor
- R14: Contractual issue between company and contractor
- R15: High non-temperatures/winds
- R16: High rains/floods at site
- R17: Labour strikes

MAINTAIN THE PUSH....

**EARNED VALUE COUNTER
...1,620,786 ManHrs Earned**



CONTRACTOR's Performance

Summary by Disc (completed basis: actual_dur_days>0 OR act_fin_dt not blank)

Disc	act_code_total	completed_act_code	avg_actual_dur_days	avg_eff	probability_density
Civil	7	7	1.49	0.95	0.076
Commissioning	16	16	0.87	1.05	0.078
Const_Instr	43	43	0.73	1.24	0.092
Const_mech	9	9	1.78	0.92	0.08
Construction	5	5	1.33	0.8	0.083
Electrical	4	4	1.02	1.05	0.061
Eng_Instrument	6	6	0.7	1.32	0.08
Instrument	2	2	0.37	1.5	0.06
Logistics	5	5	10.68	0.85	0.105
Mechanical	9	9	27.24	0.8	0.12
PMT	10	10	1.05	0.9	0.096
PNT	1	1	2.87	0.55	0.062
Piping	8	8	3.1	0.79	0.103
Process	4	4	1.32	0.75	0.085
Procurement	6	6	1.36	0.89	0.097
QAQC	5	5	1.04	1.05	0.072
Scaffolders	1	1	1.98	0.53	0.042
Vendor	20	20	1.43	0.9	0.095
const_piping	36	36	1.22	0.85	0.106
vendor	2	2	1.36	1.04	0.054



CONSTRUCTION

ACTIVITY

CORRELATIONS

WITH TEAMS

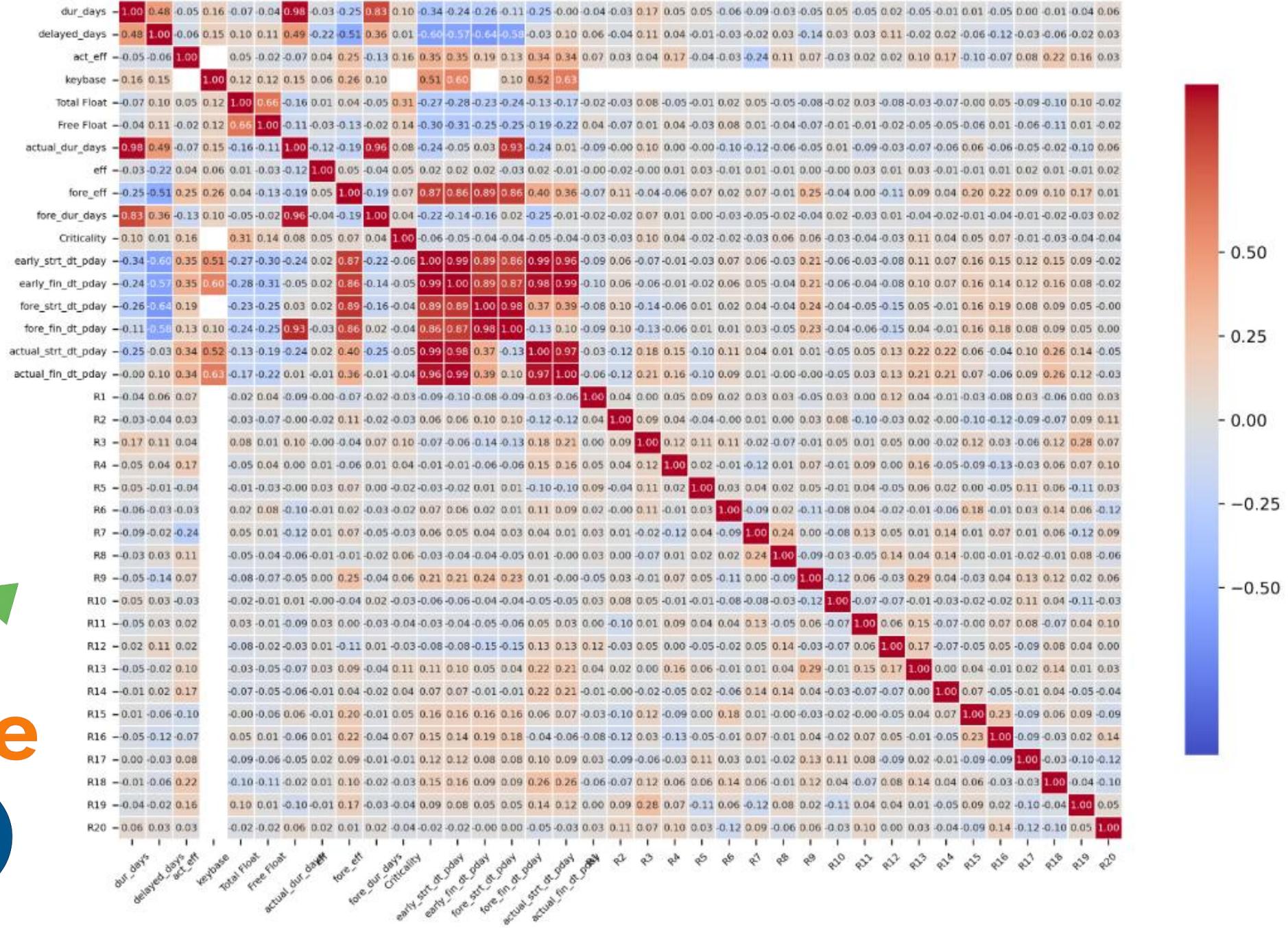
AND

DELAY

ANALYSIS



Heatmap of Correlation Matrix (Employee Dataset)



TEST PACK REPORT

SYSTEM NO	SUBSYSTEM NO	TESTPACK NO	LINE NO	INLINE VALVES NO	ONLINE INSTRUMENTS
sysno	subsysno	tpsno	Line_no	inv_online	inm_online
<input type="checkbox"/> 1221	<input type="checkbox"/> 1221-03	<input type="checkbox"/> 1221-03-tps-01	<input type="checkbox"/> 1221-GN-1017-2-03G0N--	<input type="checkbox"/> 1221-PV -9401 _A	(blank)
			<input type="checkbox"/> 1221-GN-1019-2-03G0N--	<input type="checkbox"/> 1221-PV -9401 _B	(blank)
			<input type="checkbox"/> 1221-GN-1051-3-03G0N--	<input type="checkbox"/> 1224-SDV -9005	(blank)
			<input type="checkbox"/> 1221-GN-7026-2-03G0N--	<input type="checkbox"/> 1221-BDV -9501	1221-FO -9501
		<input type="checkbox"/> 1221-03-tps-02	<input type="checkbox"/> 1221-GN-1011-12-06G0N-PP	<input type="checkbox"/> 1221-PV -9101 _B	(blank)
			<input type="checkbox"/> 1221-GN-1013-20-06G0N-PP	<input type="checkbox"/> 1221-PV -9101 _A	1221-FE -9101, 1221-FT -9101, 1221-PY -9101 _B, 1221-PY -9101 _A
			<input type="checkbox"/> 1221-GN-1018-12-06G0N-PP	<input type="checkbox"/> 1221-PV -9201 _B	(blank)
		<input type="checkbox"/> 1221-03-tps-04	<input type="checkbox"/> 1221-GN-1001-20-15B0N-PP	<input type="checkbox"/> 1221-SDV -9002	1221-PI -9002, 1221-PT -9001, 1221-PT -9003, 1221-PDT -9004, 1221-PTZ -9701, 1221-PTZ - 9702, 1221-PTZ -9703, 1221-XI -9001
			<input type="checkbox"/> 1221-GN-1002-3-15B0N-PP	<input type="checkbox"/> 1221-FO -9001	(blank)
			<input type="checkbox"/> 1221-GN-1009-20-15B0N-PP	<input type="checkbox"/> 1221-HV -9001	(blank)
			<input type="checkbox"/> 1221-GN-1012-20-15B0N-PP	<input type="checkbox"/> 1221-HV -9002	1221-HY -9002
	<input type="checkbox"/> 1221-04	<input type="checkbox"/> 1221-04-tps-04	<input type="checkbox"/> 1221-HC-8003-4-06G0N--	<input type="checkbox"/> 1221-SDV -9502	1221-LV -9017, 1221-LY -9017
	<input type="checkbox"/> 1221-06	<input type="checkbox"/> 1221-06-tps-01	<input type="checkbox"/> 1221-WN-6001-4-03G0N-PP	<input type="checkbox"/> 1221-SDV -9401	1221-LV -9402
<input type="checkbox"/> 1222	<input type="checkbox"/> 1222-04	<input type="checkbox"/> 1222-04-tps-01	<input type="checkbox"/> 1440-GG-1313-2-01A1-	<input type="checkbox"/> 1440-PV -9011 _B	(blank)
	<input type="checkbox"/> 1222-07	<input type="checkbox"/> 1222-07-tps-01	<input type="checkbox"/> 1224-WN-6004-2-01A3N-PP	<input type="checkbox"/> 1224-FE -9001	1224-PI -9003, 1224-FT -9001, 1224-LV -9001
			<input type="checkbox"/> 1224-WN-6010-2-01A3N-PP	<input type="checkbox"/> 1224-FE -9002	1224-PI -9006, 1224-FT -9002, 1224-LV -9003

Testpacks - Flange and Weld_Volume Details: Precisely Estimate Manpower, Cost and Durations

ASTM A312, A358, A778, A53, A106, API 5L ASME/ANSI B36.19 B36.10 & ASME 16.47 53-57

System/Subsystem/Line Number	Flange joints	Flange Bolt Counts	Weld Joints	Weld Volumes (Cm^3)
Note: True Cost & Schedule is more proportionate to Bolt counts and Weld volumes, not Dia-inch, correcting rating/spec effects				
Row Labels	Sum of Line_flange_joint	Sum of Line_flange_bolts	Sum of Line_weld_joints	Sum of Line_weld_vol_cm3
[-] 1221	339	3108	468	33875
[-] 1221-01	257	2236	358	26935
[-] 1221-01-tps-01	22	280	34	3900
1221-GN-1002-15B0N	6	24	6	72
1221-GN-1009-15B0N	8	128	14	1914
1221-GN-1010-15B0N				
1221-GN-1012-15B0N	8	128	14	1914
[-] 1221-01-tps-02	44	240	46	980
1221-GN-1003-15A3N	6	24	7	78
1221-GN-1006-15A3N	11	88	13	672
1221-GN-1008-15A3N	10	40	9	38
1221-GN-1065-15A3N	6	24	4	60
1221-GN-1101-15A3N	5	40	9	112
1221-GN-7027-15A3N	6	24	4	20
[-] 1221-01-tps-03	102	1088	144	12899
1221-GN-1011-06G0N	12	144	11	1288
1221-GN-1013-06G0N	12	192	19	2697

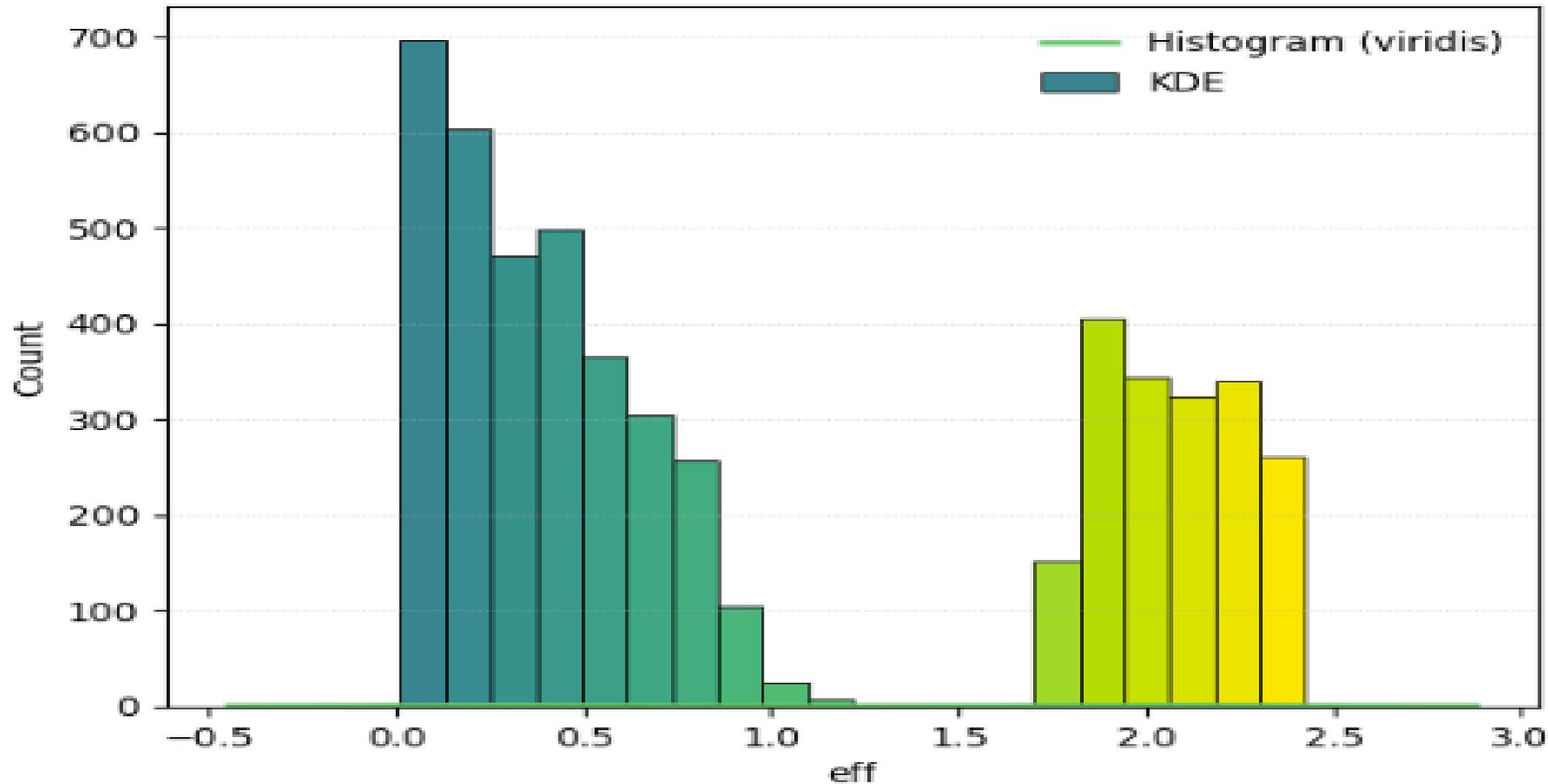
MOCK PROJECT : BETA-1 : SYSTEM REPORT

Syst No	Subsys_No	Equipment No	Equipment valves	Instrument on Equipment	Test Packs	Lines in TestPacks	Inline Valves	Inline Instrument
1221	1221-03	1221-D-9003		1221-LAHH -9015, 1221-LALL -9015, 1221-LG -9018, 1221-LIZ -9015 _A, 1221-LIZ -9015 _B, 1221-LT -9017, 1221-LTZ -9015, 1221-PI -9501, 1221-PT -9601, 1221-TI -9017, 1221-TW -9017	1221-03-tps-05	1221-HC-8045-03G0N		
1221	1221-04	1221-D-9004		1221-PI -9006, 1221-PI -9007, 1221-PI -9008, 1221-PI -9009, 1221-XI -9002, 1221-XI -9002	1221-04-tps-01	1221-DC-13001-15A3N		
1223	1223-03	1223-PM-9001A/B		_A	1223-03-tps-02	1223-HC-8034-01A3	1223-SDV -9101, 1223-FV -9103, 1223-SDV -91700	1223-FE -9103, 1223-FT -9103, 1223-FY -9103, 1223-FE -9104, 1223-FTZ -9104, 1223-PT -9105, 1223-PTZ -9106, 1223-TW -9105, 1223-TT -9105, 1223-FT -91700, 1223-PT -91700, 1223-TW -91700, 1223-TT -91700
1224	1224-01	1224-D-9001A/B			1224-01-tps-01	1224-GF-1018-01G0N	1224-PSV -9101	
1224	1224-01	1224-D-9001A/B			1224-01-tps-01	1224-GF-1019-01G0N		
1224	1224-01	1224-D-9001A/B			1224-01-tps-01	1224-GF-1020-01G0N		1224-PDI -9101, 1224-FE -9101, 1224-FT -9101, 1224-FE -9103, 1224-FTZ -9103
1224	1224-01	1224-D-9001A/B			1224-01-tps-01	1224-GF-1025-01G0N	1224-FE -9102	1224-PDI -9102, 1224-FT -9102, 1224-FE -9104, 1224-FTZ -9104

Activity Efficiencies Plot

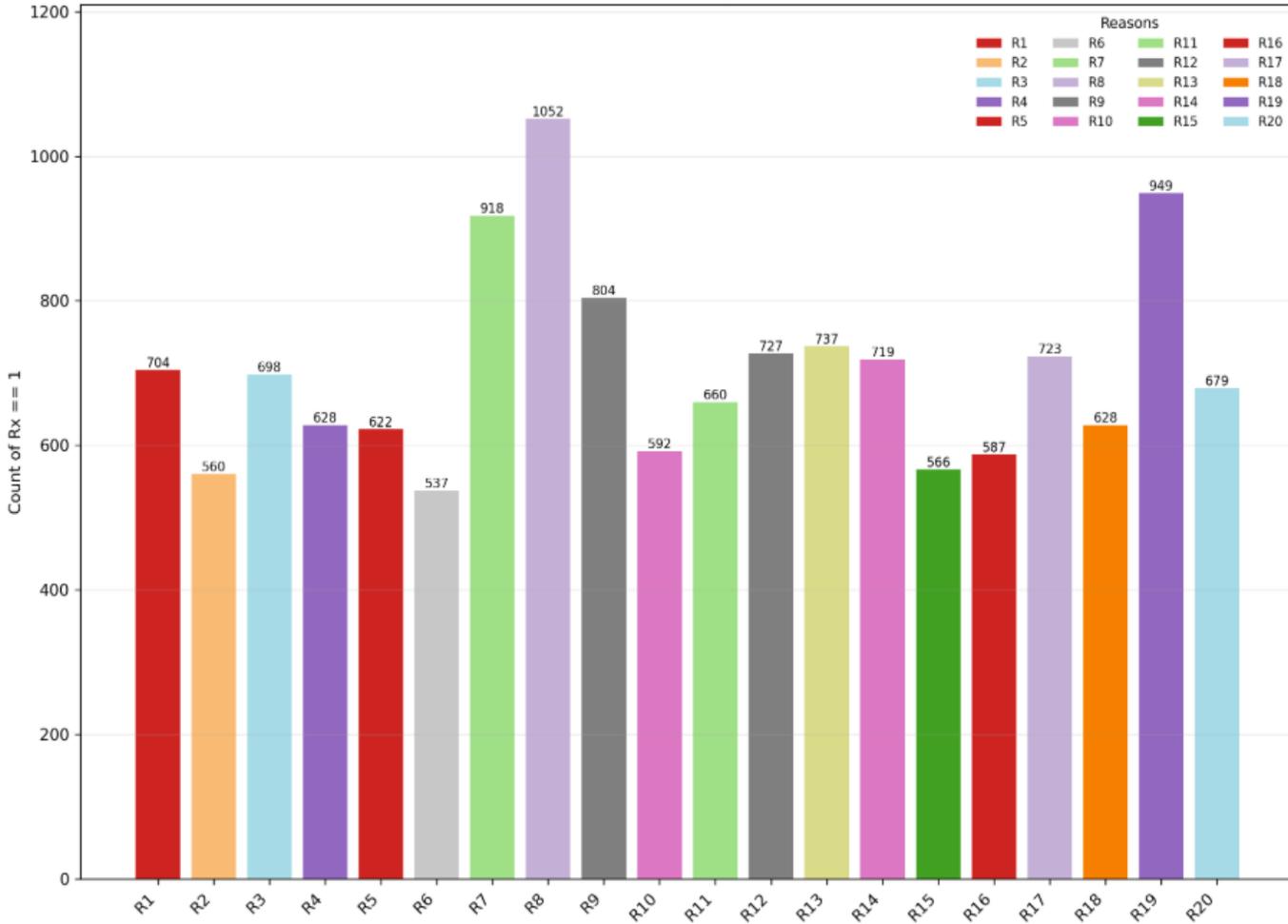
Monitor Fabrication, Erection, Completion, Commissioning...

Histogram: Activity Efficiencies (viridis, vivid)



DELAY ANALYSIS

Delay Reason Analysis Report



Saved:
- Delay_Reason_Analysis_Report.pdf

Analyze what is delaying project: L5 Activity level:

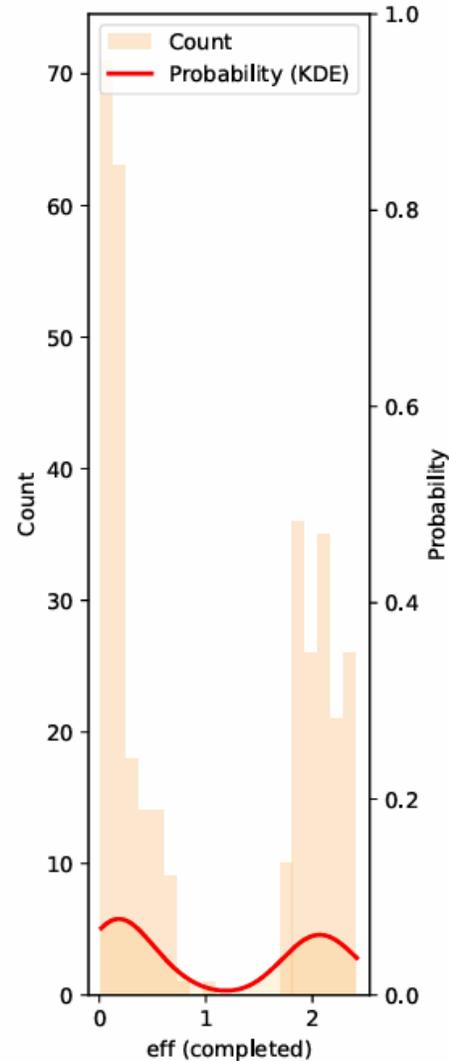
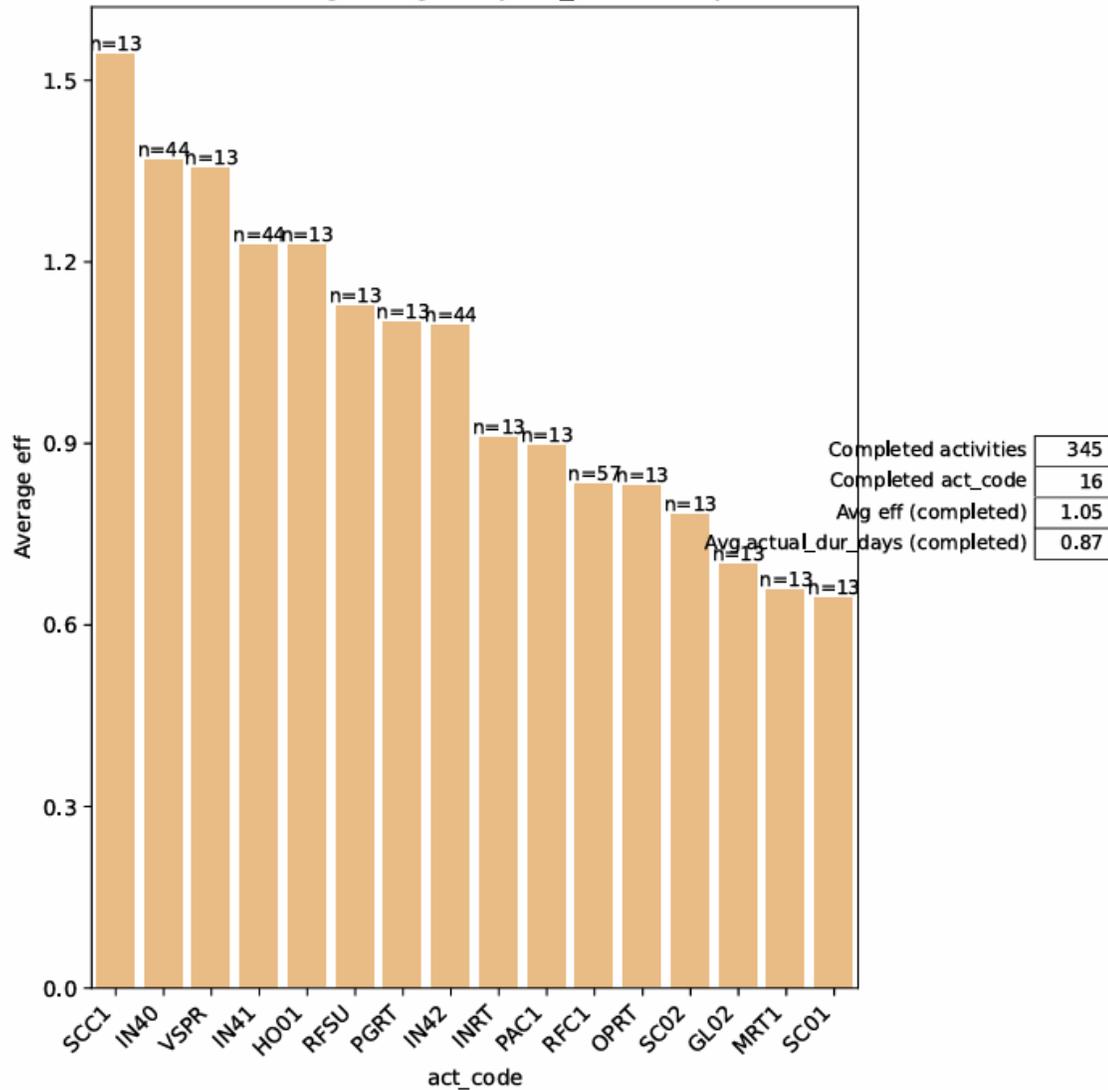
- "R1_COMPANY: Document/procedure/MS approval pending",
- "R2_COMPANY: document/procedure/MS PTW pending",
- "R3_COMPANY: regulatory approval or NOC pending",
- "R4_CONTRACTOR: Document/procedure/MS submission/approval pending",
- "R5_CONTRACTOR: Manpower not available",
- "R6_CONTRACTOR: subcontracting pending",
- "R7_CONTRACTOR: predecessor activity not finished",
- "R8_CONTRACTOR: Management directives unclear/under discussion",
- "R9_SUB-CONTRACTOR: Manpower not available",
- "R10_SUB-CONTRACTOR: Tools and Machineries/crane/DG set etc not available",
- "R11_SUB-CONTRACTOR: Method statement not submitted",
- "R12_SUB-CONTRACTOR: temporary fittings/scaffolds/materials not ready",
- "R13_Contractual issue between contractor and subcontractor",
- "R14_contractual issue between company and contractor",
- "R15_high Non temperatures/winds",
- "R16_high rains/floods at site",
- "R17_labour strikes",
- "R18_Safety training delayed",
- "R19_vendor not available",
- "R20_specialty parts damaged/re order delay",

Search google for Paper published: wetting risk premium using Monte Carlo Simulations by Pramendra srivastava

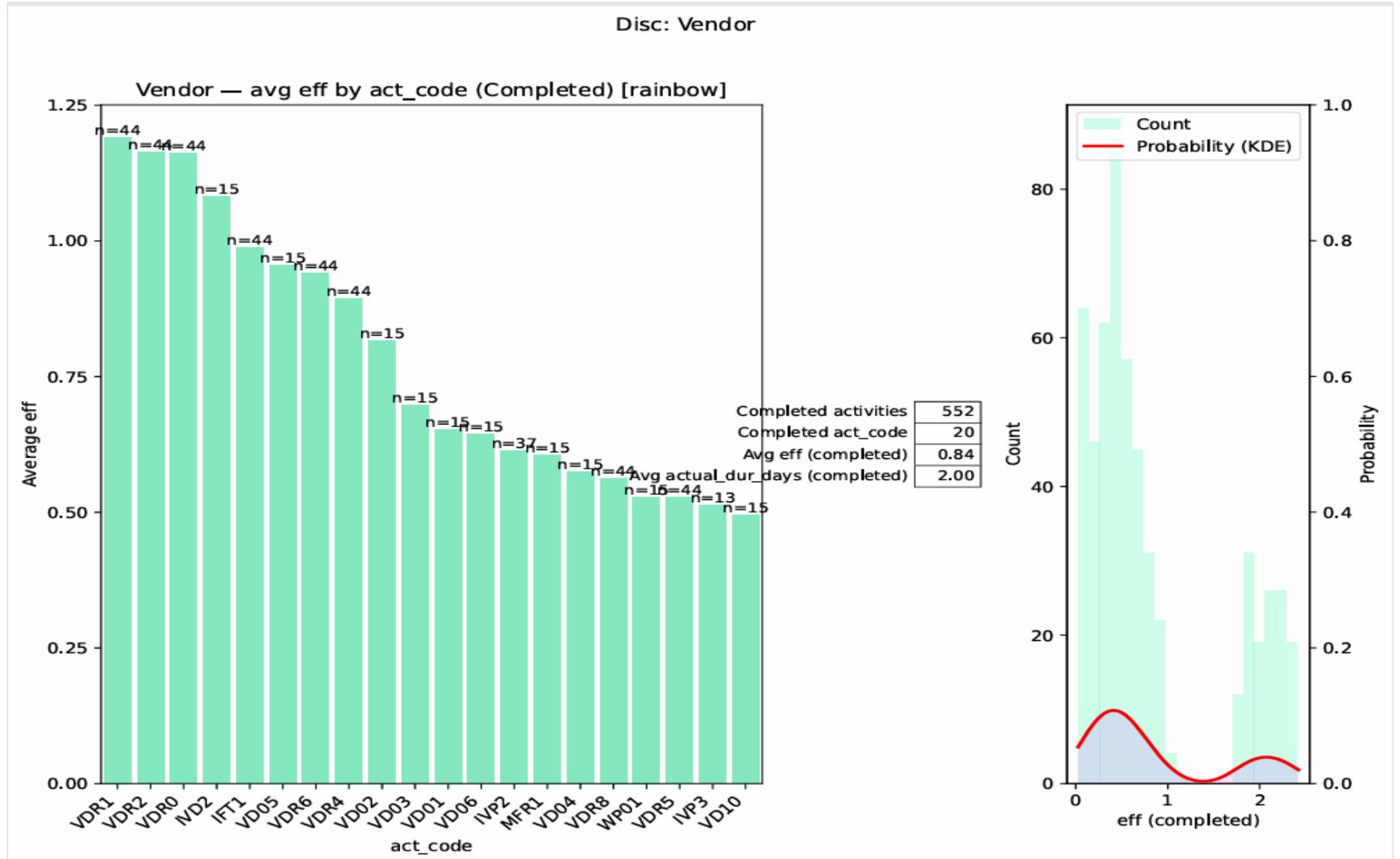
DISCIPLINE's Performance

Disc: Commissioning

Commissioning — avg eff by act_code (Completed)



CONTRACTOR's Performance



PROCHASE – IT IS NOT CMS, IT IS PMS

How it works ?...Follow steps A-B-C-D

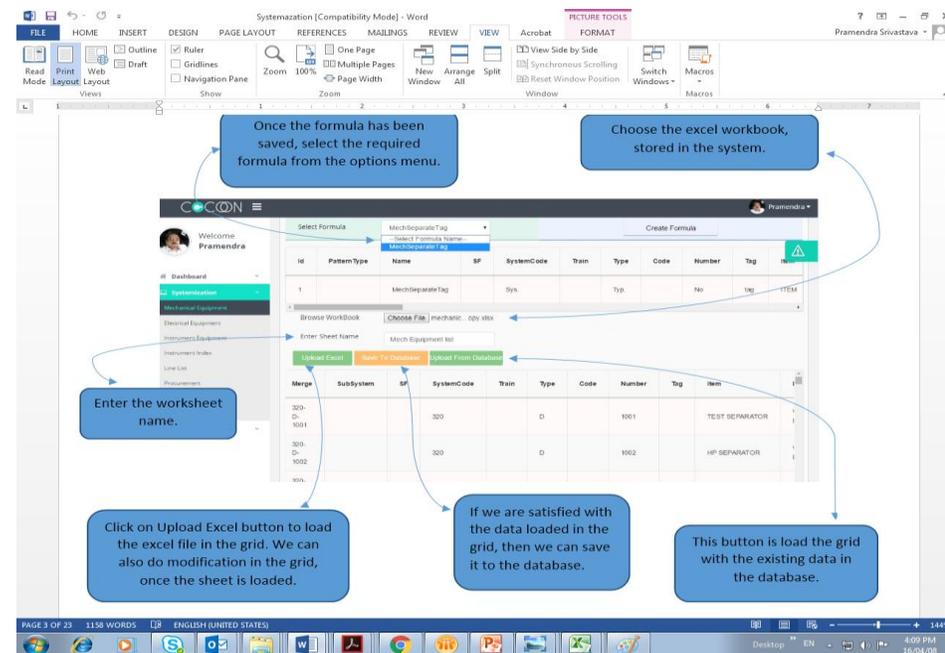
A. Load Data:

- ✓ Load Mechanical lists
- ✓ Load Electrical lists
- ✓ Instrument List..Etc..
- ✓ Civil/Structure list
- ✓ MTO's
- ✓ L1& LLI Dates
- ✓ Key base Entries (several)

*EPCZOOM
requires original
.xls native files
of lists*

B. Process Data:

- ✓ Automatic Test pack generation
- ✓ Automatic Systematization
- ✓ Automatic Scheduling (Level 3,4,5)
- ✓ Automatic Job cards Creation
- ✓ Automatic Work pack Creation
- ✓ Automatic QA/QC check sheet generation
- ✓ Automatic Progress Reporting – live
- ✓ Field tabs for Lead to directly update status
- ✓ Daily reports and Popup Reminders



ID	Pattern Type	Name	SP	System Code	Train	Type	Code	Number	Tag
1		MechSeparator-Tag	Sys.			Typ		No	tag
300-D-1001				300	D			1001	TEST SEPARATOR
300-D-1002				300	D			1002	HP SEPARATOR

EPCSIM – STANDARDIZES ITB, AUTOMATES PROJECTS...

C. EPC Bid Packaging/ Reports:

- ✓ System Report & Tagged List of components
- ✓ Test pack reports
- ✓ Detailed Schedule –level 3, 4, 5, 6
- ✓ WorkPacks:
 - ✓ Jobcards
 - List of Activities, with start/End dates
 - QA/QC checksheets
 - Manpower Resource Histograms
 - Tools & Machineries
 - Safety PPEs
 - Data table for MSProject /Primaver
- ✓ Resource Histograms, and manpower calcs
- ✓ Contractor's /Sub contractor Scoping:
 - List of Activities, with start/End dates
 - Manpower Resource Histograms
 - Tools & Machineries
 - Safety PPEs
 - Data table for MSProject /Primavera.
- ✓ Additional customized reports using several filters



CheckList

Company Logo		TC-C-01 Comm Prep Telecoms Equipment Rack	
Contractor Logo	Commissioning Preparation Telecoms Equipment Rack		Deztek Logo
Item/Tag No.	340-P-1004-A	Description	LEAN SOLUTION CIRCULATION PUMP CENTRIFUGAL PUMP (OH2)
Checklist No.	TLCROT_340-P-1004-A_CV-M-15	Sub-System No	340-47
Drawing No./Rev	MTDF-PR-340-PID-1014	Sub con/ vendor	
Location		MC DATE Planned/ Actual	Not Available/ Not Available
Manufacturer		Model No.	
Serial No.			

Sno	Items	OK	NA	PL
1	Concrete quality and testing dossier in place: <ul style="list-style-type: none"> - Summary Report from concrete testing (slump, air, density and compressive strength.) - Cement Report (Production Certificate) - Aggregate Reports (spot checked.) - Concrete Placement Report including temperature readings. - QC Reports / Deviation / SQ / NCR 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Construction joints prepared according to latest AFC drawings and specification,	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	Location of permanent embedment plates verified. (As built embedment list)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	Curing of concrete surface.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	All concrete surface repairs are done and reported according to specification.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Job Card ROT/GTD

Select Sheet Type: TLCROT Select Tag No: 340-P-1004-A

Company Logo		JC_340-47_TLCROT_340-P-1004-A	
Contractor Logo	Print (Job card + Schedule of Activities + Checksheets+JSA)		
Item/Tag No.	340-P-1004-A	Description	LEAN SOLUTION CIRCULATION PUMP CENTRIFUGAL PUMP (OH2)
Schedule of Activities	340-47_TLCROT_340-P-1004-A	Subsystem No	340-47
Drawing No/rev	MTDF-PR-340-PID-1014	Sub con/ vendor	
Location.		MC DATE Planned/ Actual	11/19/2015 4:04:49 AM 11/28/2015 4:29:18 PM
Manufacturer		Model No	
Capacity, m3/hr		Operating Pressure	-5.7 108
		Operating Weight, tons	2.4
		Crane Capacity required, tonnage	3
		Decision	

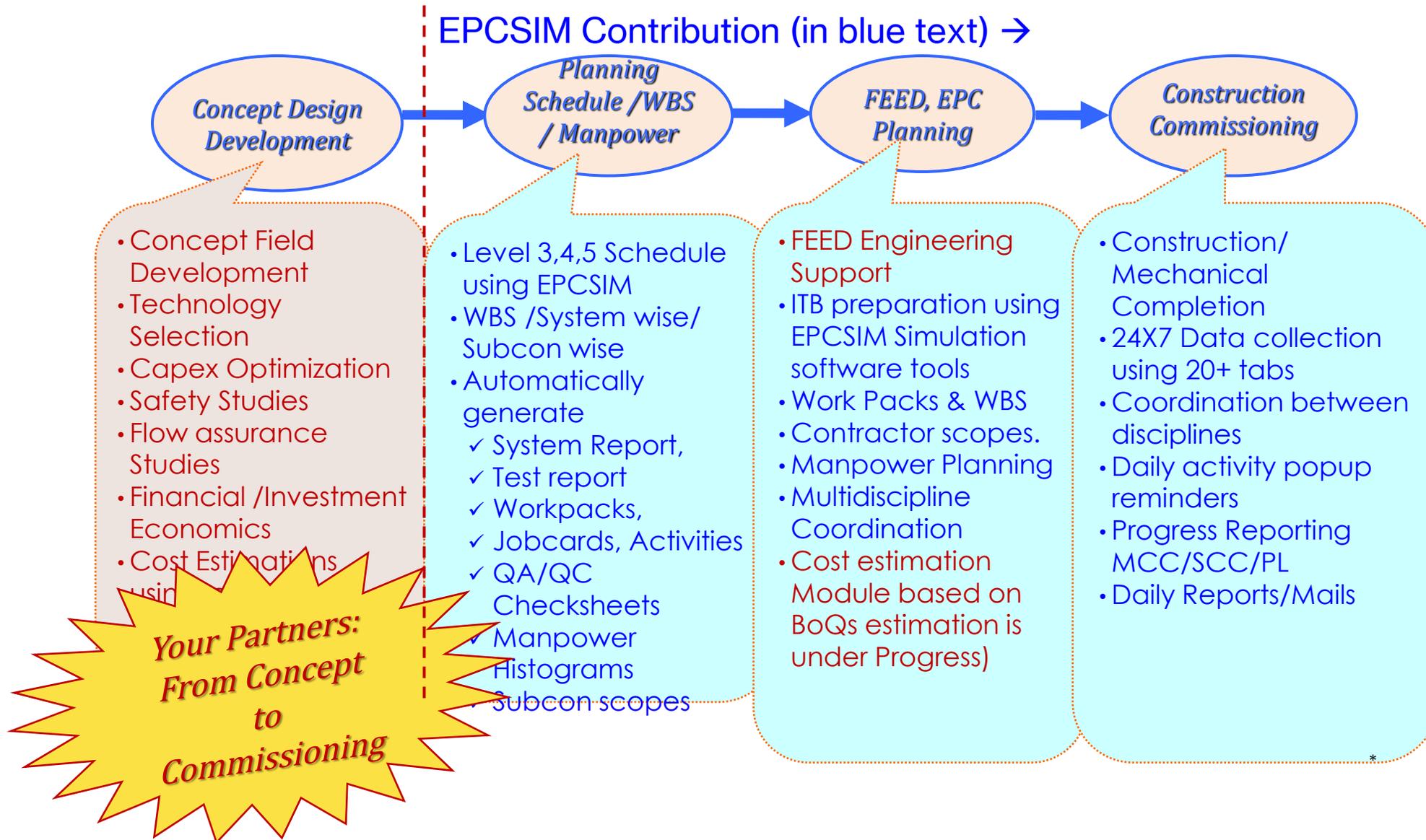
LAN Messenger: Deepika Kapoor is offline.

EPCSIM AUTOMATES.....

- ✓ Customized Libraries to maintain EPCC USP
- ✓ Exports Work packs/Job cards/QAQC /Progress Report document in hierarchically foldered structure.
- ✓ QAQC Paperless, but printable
- ✓ Minimize Nuisance delays by level-5/6, multidisciplinary, mulit-subcontract integration.
- ✓ Optimizes Schedule/Calculatedly advise catchup schedule,
- ✓ **Develop Construction Cost & schedule estimates**
- ✓ Induces High Project Management efficiency, Saves risk of Project delays
- ✓ **Saves schedule 10-20%, Costs 5-10%**
- ✓ EPCSIM takes 75% of the Brain work of Planners, Contract managers, Construction managers, QAQC Managers and Project managers.



PROJECT MANAGEMENT SERVICES EPCSIM SIMULATION RENDERS...



PLANNING & MANAGEMENT ISSUES

1. Quantification of works, and breakdowns not easy
2. Subcontract scoping –often poorly covered
3. Quick and accurate tender estimates of Costs, manhours, and schedules not possible.
4. Too much bounded rationality comes along with
 - Thick margins owing to lack of detailed planning OR
 - limited integration between activities
 - Main contractor limit it to Level 2 or 3Schedule’ –
 - unplanned delays OR
 - Loss of work efficiencies,
5. Difficult to monitor and control predecessors & successors @ Level 4,5,6
6. Activity wells in isolation – No or Little calculation/ integration at level 4,5,6.
7. Micro level planning is important to integrate an optimized Construction schedule.
8. Inefficiencies and high contingencies risks bids / project award
9. Unable to develop MOC basis for contracts- often a grey area.

CONSTRUCTION ISSUES

Some examples:

- “We cannot install instrument stanchion is missing” – 3 days gone to get stanchion.
- “We cannot weld 30 fittings in spools in just 2 days, need at least 4 days”
- So what if Dia inch is just 24. “We cannot weld 12” fittings,1500# in 2 days. Weld volumes is high and WPS requires more time.
- “We cannot re-instate this test pack in 2 days, There are so many bolted fittings”.
- “We cannot install these spools, waiting for main equipment first”.
- “Equipment is waiting, but Crane tonnage is not sufficient”. Bigger crane is awaited.
- “What about piping in system 120, its ready? Sir, We did not have priority list for Spool fabrication. Sub-Contractor decided sequence at its own.
- “Sir our team is idling at site for clearance to install insulation, else change order for over stay”
- “I cannot clear for insulation, because tracers, pending”.
- “Tracers got damaged as during Gross leak a flange leaked and we needed to replace gasket”
- Why tracer installed before gross leak? Sir, we had to meet scheduled target, and it was due. Contractor was going to another site as per schedule.
-Thousands of them.....



Together
we can...
Change
the World
Thank you

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