TMMIN TAM QCC GRAND CONVENTION 2023

26 Agustus 2023

Suggestion System (SS) –



Ikhwan Mutaqin 1426536 Production Control Division

Preface



TMMIN Direction and Strategy



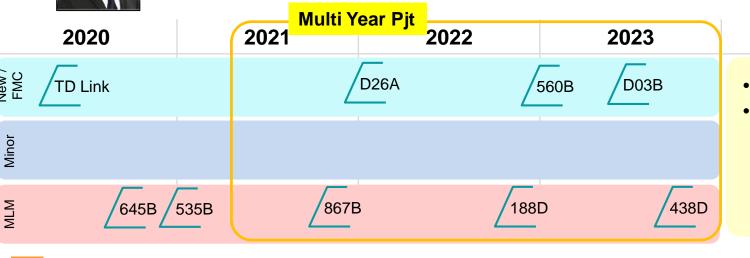


Multi year project : Smooth

: Strong Finish



Secure Electrification & Mobility



2025 onwards

- Electrification
- Mobility



Challenge



Beyond SR #2 (SSC, Automation, Dx)



Maintain fundamental (Quality, etc)

Prepare resource shifting for future



TMMIN Fundamental Quality Review





2019

- Outflow to customer
- Market Monitoring

Noise performance risk

→ Toyota credibility

Unmatch vehicle spec vs harigami

Spec

2020

Back door can't open (Brunei)

- Stop shipment
- Repair 35 units (3 days)

Repair cost > 300 Mio

Unmatch spec Smart key vs spec Easy closer

2021

Mis spec headlining VN

- Big repair 33 units (7 days)
- Cripple 11 units (2 days)

Repair cost > 150 Mio

Unmatch spec Hook Coat vs ECI Implementation

2023

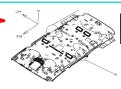
Anti theft warning not function

- Hold shipment
- Repair at port (3 units)

Repair cost > 100 mio & Government trust → export facility

Unmatch equipment C-Best setting vs veh. speg







voce hoving wide

Handling **7 models** (2.226 Spec, 17.801 part no.), entire total process having wide range of risk of mistake→ Review Management Aspect

Division Hoshin Strategic Execution



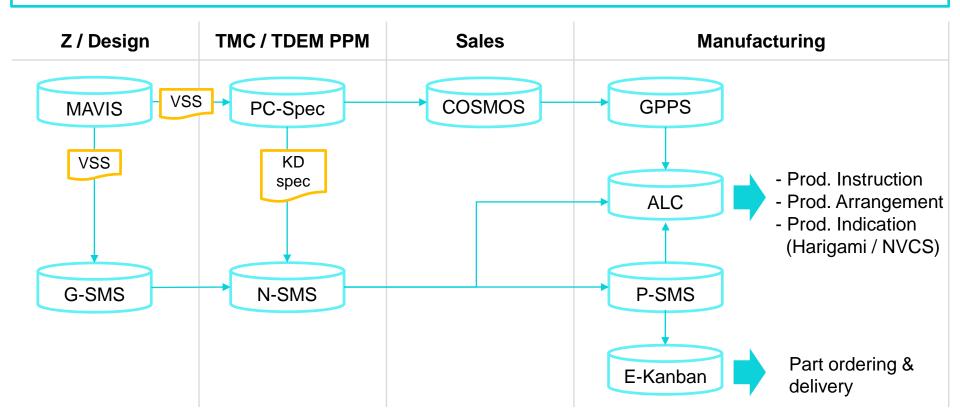
Align with hoshin to secure 3 multiyear project with strong finish, necessary proceed optimation to improve accuracy and efficiency

[PCD Hoshin FY 23/24]

Company Hoshin	Strategic Execution Plan	KPI & Target									
3 Models Multiyear Project Execution with Supply Chain Development											
3 Model Multiyear Project & Hybrid Engine Production	Secure QCS/ SOP of BSUV Vehicle Model: Promote Pjt Management Strategy during QCS & SoP include risk management mitigation Ramp up SoP B-SUV to allign with market demand and sales launching strategy Ensure smooth SOP for E/G BSUV (ICE and Hybrid)	Smooth SOP for TMMIN BSUV Production including NR Engine									
	Secure SOP 2nd Countries for CKD Export BSUV arrangement Strengthen TD CKD Export Project Management, Ramp up SoP B-SUV CKD export to KUO, TMT, & UMWT	Smooth SOP for BSUV CKD Export									
Continues & Consistent struct. ref	form to achieve Competitiveness beyond the best										
HR Transformation towards future role & Business Expansion	Readiness for digital native by prepare knowledge and skill of digitation. Through RPA Training and OJD Completion	100% MP Training for RPA and completion status of OJD									
	Optimize, Expand & Develop System RPA for boosting high Accuracy & efficient process	Productivity up 10% per year									

Vehicle Spec Positioning

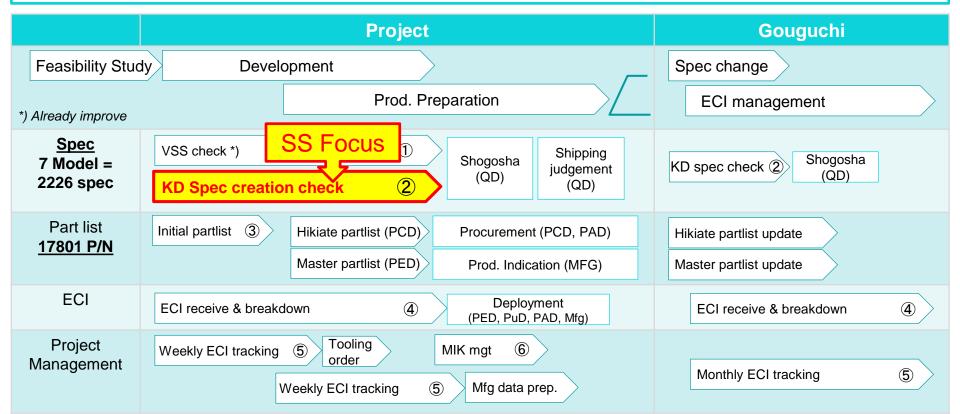
Vehicle Spec (VSS / KD Spec) is critical initial data that influenced following downstream system and process in Manufacturing (Accuracy is MUST)



Spec Management Optimization Roadmap



We create roadmap as **total spec management business process optimation (prod. prep scope)** → Starting for **vehicle spec & KD spec** information



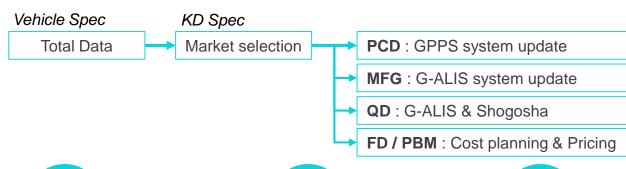
SS Theme



Theme: KD Spec Creation & Check



KD Spec Info consist of production sfx line up include detail spec item for each model.





Accuracy

100% accuracy is MUST

(Back Door can't open)

Stop shipment



Efficiency

Long leadtime process

(L/T: 124 min)



Complexity

Many data combination

(4 data file)



Synergy

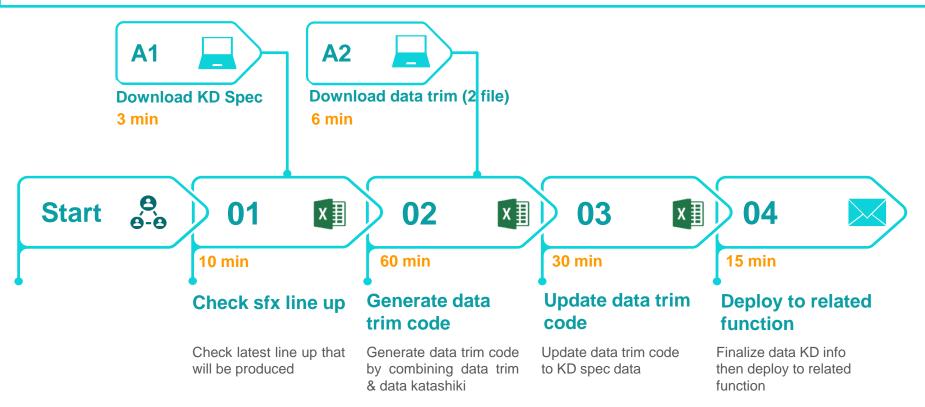
Connected data use

(PCD, Mfg, QD, FD, PBM)

(1) Work Process (before)



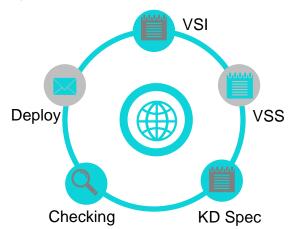
Current process of KD spec creation proceed by manual excel to combine data download from N-SMS system → risk low accuracy & long Leadtime



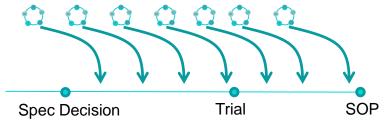
Pain point



01- Cycle & repetitive process



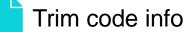
Spec Change Cycle: During PJT 8x + Gouguchi



02- Complex data combination











03- Manual process & Long leadtime





Low Accuracy



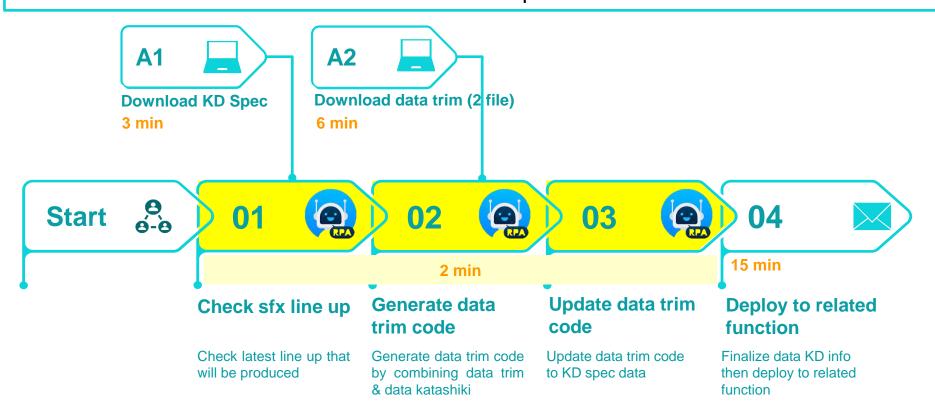
124 min / cycle

Many risk can be occurred that will impact to decrease accuracy → spec mistake

(2) Work Process (after)

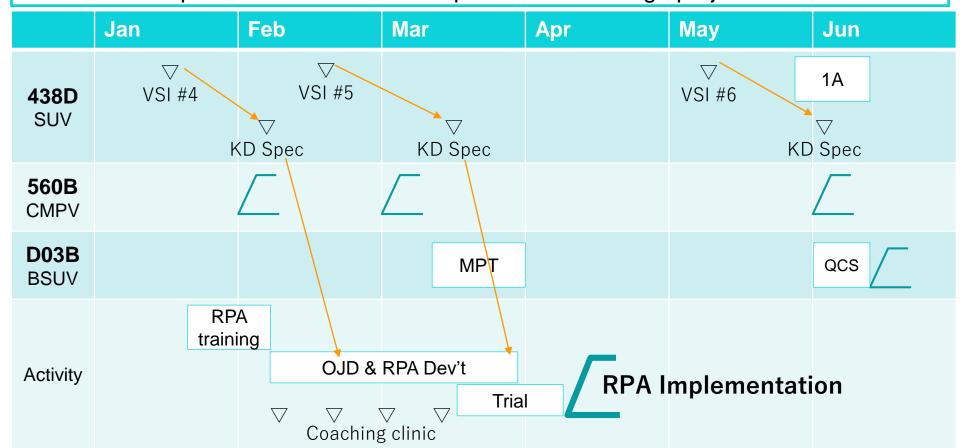


Optimize excel processing by RPA system development → keep 100% accuracy & reduce leadtime process



(3) Activity schedule





(4) Result & Benefit



We can proceed more efficient process during project cycle with keep 100% accuracy

Accuracy- 01

No mistake, 100% stable accuracy

Project	Stage	Result OK
438D	VSI 4	100% 86 spec, 172 sfx
438D	VSI 5	100% 86 spec, 172 sfx
438D	VSI 6	100% 86 spec, 172 sfx



Job Re-allocation - 03

Decrease MH (0,2 MH) can be allocate for other jobs (Sfx optimization & CPT)

02 – Efficient Process

Can reduce process by **cut leadtime 98 min** (80%)

No.	Project	Cycle VSI / KD spec issue
1	D46H	6
2	560B	14
3	D26A	8
4	975W	7

RPA Process

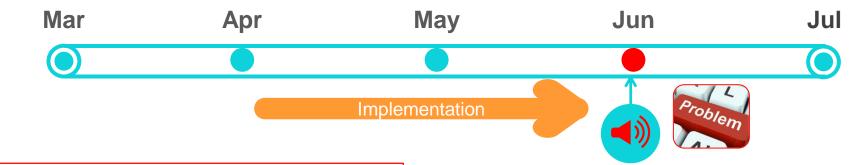


RPA #1

(5) Implementation & PDCA



During implementation, mis-spec problem found for Fortuner model of Jamaica Destination (getsudo prod. scope)



Impact:



Big repair: 8 Hour (HOT) / 4 MP



Replace Parts: 16,7 Mio IDR MH Repair: 3,9 Mio IDR



Postponed shipment

FTR Jamaica mis spec



BSN





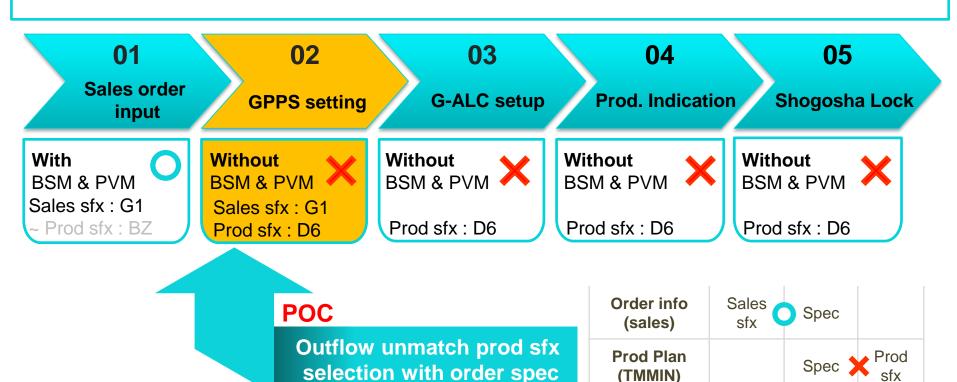




(5.1) PDCA: Current Condition Analysis



Problem: outflow unmatch production suffix selection vs Sales order spec



(5.1) PDCA: Current Condition Analysis



GPPS setting: setup Lot info as basic data of vehicle prod line up include 200 digit that will **linked to prod. system & procurement**.

DH	PSC	SSNo	SubSeries	LotCode	PAMS	ProdSFX	DistCode	CTLKatashiki	Ext	Int	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	 200
•	- 4	: C -		_ • _		AA	****	GGN155L SDTHK	****	FN22	В			*		ı		*	E	G	В	В		ı			В	D
L	ot info sample			AA	****	GGN155L SDTHK	****	FN42	В			*		I		*	E	G	В	В		I			В	D		
D0	D	B2	HS	AP		AP	****	GGN155L SDTHKV	****	LC22	С			*		I		*	Ε	N	В	В		В			В	D
D0	D	B2	HS	AH		AH	****	GGN155L SDTHKV	****	LC22	С			*		I		*	E	N	В	В		В			В	D
D0	D	B2	HS	AC		AC	*****	GGN155L SDTHKV	****	LC22	С			*		L		*	Ε	N	В	В		В			В	D
D0	D	B2	HS	AK		AK	****	GGN155L SDTHKV	****	LC22	С			*		I		*	E	N	В	В		В			В	D
D0	D	B2	HS	AG		AG	****	GGN155L SDTHKV	****	LC22	С			*		L		*	Ε	N	В	В		В			В	D
D0	D	B2	HS	AR		AR	*****	GGN155L SDTHKV	****	LC22	С			*		L		*	Ε	N	В	В		В			В	D
D0	D	B2	HS	AJ		AJ	****	GGN155L SDTHKV	****	LC22	С			*		I		*	Ε	N	В	В		В			В	D
D0	D	B2	HS	AE		AE	****	GGN155L SDTHKV	****	LC22	С			*		I		*	E	N	В	В		В			В	D
D0	D	B2	HS	AB		AB	****	GGN155L SDTHKV	****	LC22	С			*		L		*	Ε	N	В	В		В			В	D
D0	D	B2	HS	AP		AP	****	GGN155L SDTHKV	****	LC42	С			*		I		*	E	N	В	В		В			В	D
D0	D	B2	HS	AH		AH	****	GGN155L SDTHKV	****	LC42	С			*		I		*	E	N	В	В		В			В	D
D0	D	B2	HS	AC		AC	****	GGN155L SDTHKV	****	LC42	С			*		I		*	E	N	В	В		В			В	D
D0	D	B2	HS	AK		AK	****	GGN155L SDTHKV	****	LC42	С			*		I		*	E	N	В	В		В			В	D
									1																			

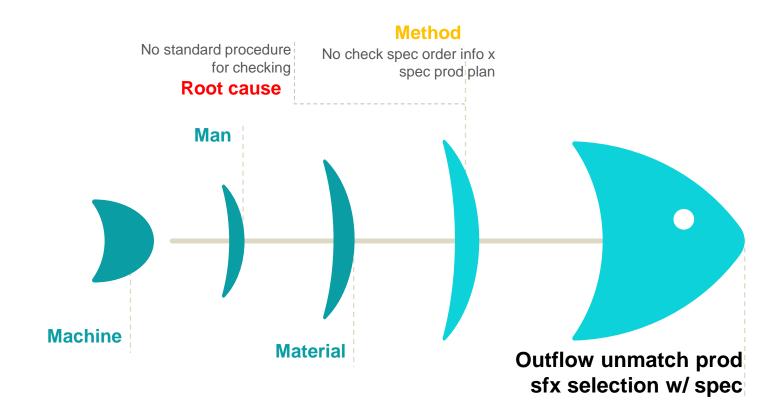
COSMOS (Sales) GPPS (PCD) G-ALC / ALIS (Mfg) Production instruction

E-Kanban (PAD) Part procurement

(5.2) PDCA: Rootcause Analysis



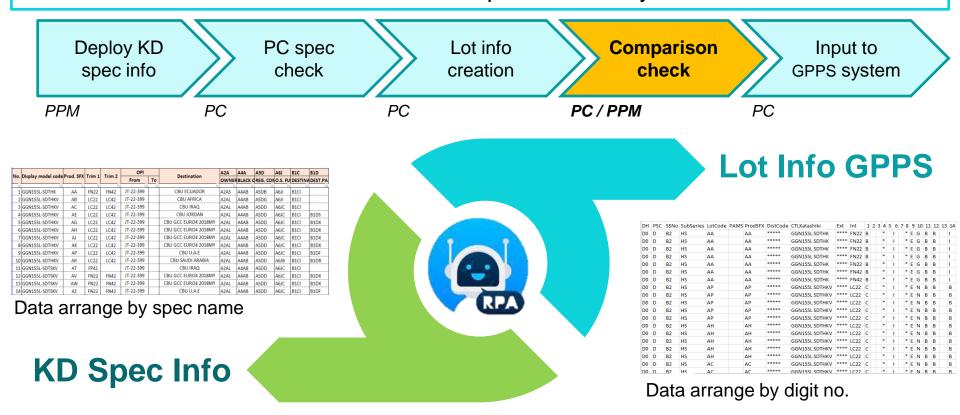
Root cause of outflow unmatch prod sfx selection w/ spec due to **no standard** procedure for checking order spec info vs spec prod plan



(5.3) PDCA: Improvement Idea



Setup standard procedure to check Lot info data vs KD spec info as final confirmation before input to GPPS system



RPA



RPA #2

(5.4) PDCA: Implementation



Implementation of comparison process already done with result no discrepancy found



Comparison data result



	Waka ahild	c£.	Talan and a	Cbi	1	2	3	4	5	6	7	8	9	10	11	12
No.	Katashiki	Sfx	Trim code	Combine	G4G			*		U4F		*	L2G	G4A	D4N	E2F
1	GGN155L-SDTHK	AA	FN22	AAFN22	TRUE											
2	GGN155L-SDTHK	AA	FN42	AAFN42	TRUE											
3	GGN155L-SDTHKV	AB	LC22	ABLC22	TRUE											
4	GGN155L-SDTHKV	AB	LC42	ABLC42	TRUE											
5	GGN155L-SDTHKV	AC	LC22	ACLC22	TRUE											
6	GGN155L-SDTHKV	AC	LC42	ACLC42	TRUE											
7	GGN155L-SDTHKV	AE	LC22	AELC22	TRUE											
8	GGN155L-SDTHKV	AE	LC42	AELC42	TRUE											
9	GGN155L-SDTHKV	AG	LC22	AGLC22	TRUE											
10	GGN155L-SDTHKV	AG	LC42	AGLC42	TRUE											
11	GGN155L-SDTHKV	AH	LC22	AHLC22	TRUE											
12	GGN155L-SDTHKV	AH	LC42	AHLC42	TRUE											
13	GGN155L-SDTHKV	AJ	LC22	AJLC22	TRUE											
14	GGN155L-SDTHKV	AJ	LC42	AJLC42	TRUE											
15	GGN155L-SDTHKV	AK	LC22	AKLC22	TRUE											
16	GGN155L-SDTHKV	AK	LC42	AKLC42	TRUE											
17	GGN155L-SDTHKV	AP	LC22	APLC22	TRUE											
18	GGN155L-SDTHKV	AP	LC42	APLC42	TRUE											
19	GGN155L-SDTHKV	AR	LC22	ARLC22	TRUE											

100%

Result OK no discrepancy

Spec Item

Prod. Sfx



86/86 Items



172/172 Items

(5.5) PDCA: Benefit



Safety

Eliminate safety issue during big repair → Avoid big repair

Quality

- Keep accuracy 100%
- Eliminate mis setup spec
 → avoid mis spec issue

Productivity

- Reduce leadtime 80%
- Reduce job loading
 → allocate to other
 beneficial job

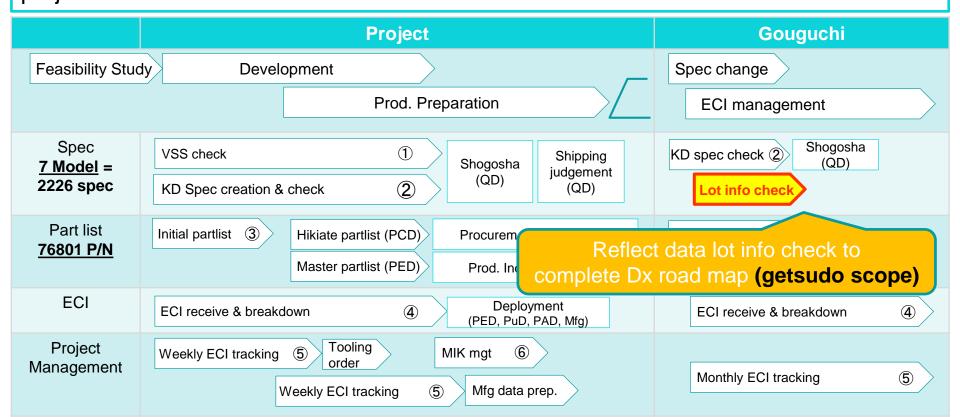
Cost

Avoid repair cost: 20,6 Mio IDR / unit

(5.5) PDCA: Standardization



Update roadmap to add improvement activity → more complete & efficient process for project execution



(6) Next Action



- 1. Continue next RPA for Initial partlist check
- 2. Monitor implementation of PDCA improvement
- 3. Yokoten process to other Model & Plant #2