



Custom Auros Reporting through Power BI

Megan Pregler

Sr. Engineer – Integrated Product Development

2019 Knowledge Aware Conference – Sept. 25-26, 2019 – Plymouth, MI



Renewed and expanded entire vehicle portfolio in last two years



On Highway



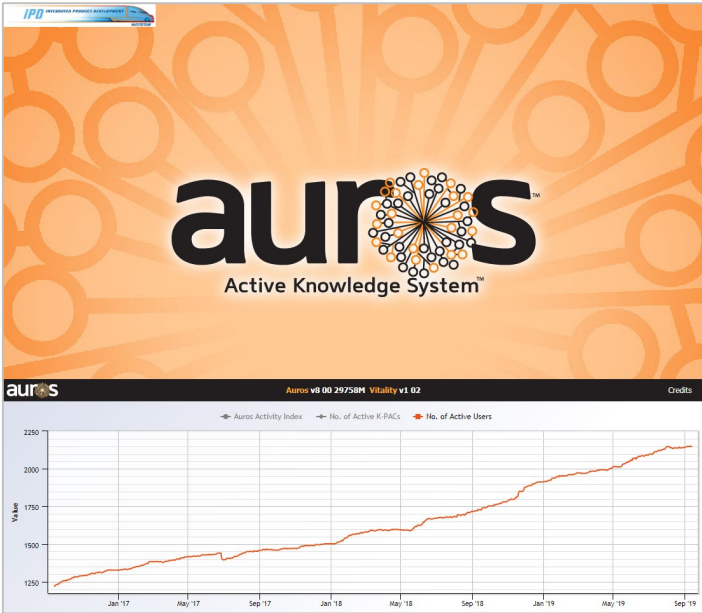
Severe Service



Medium



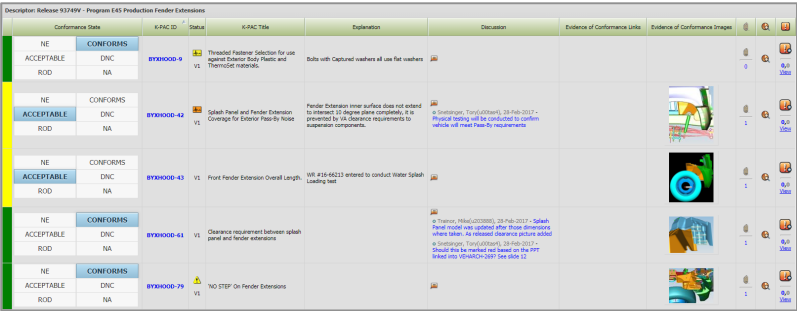
Bus



2,100+ Auros users

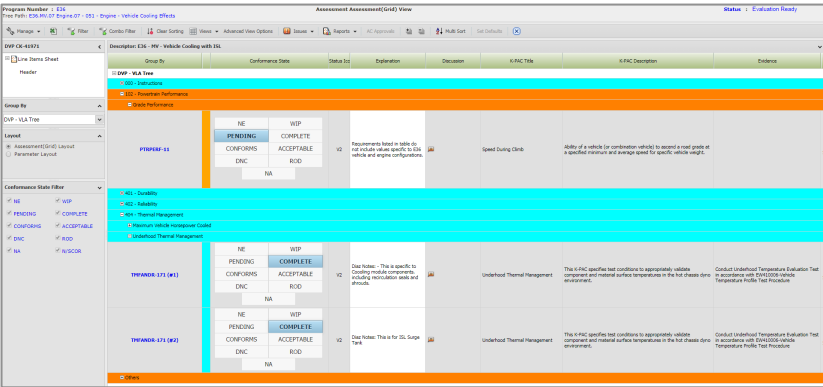
Problem / Background

How to visualize all the activity?



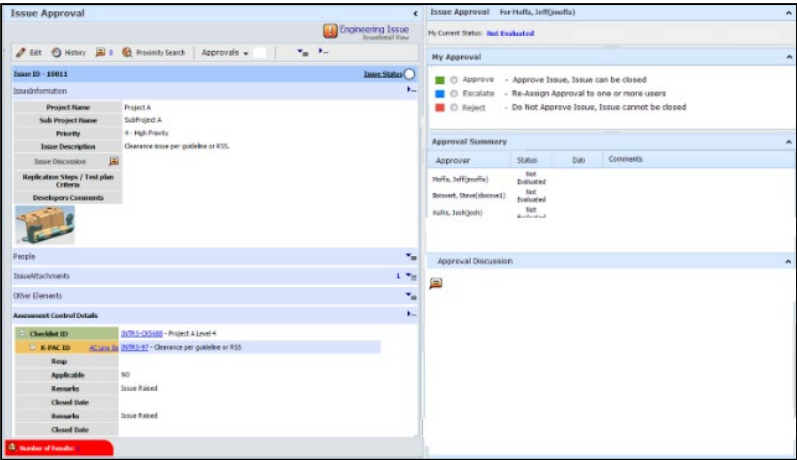
Conformance State	K/RAC ID	Status	K/RAC Title	Explanation	Discussion	Evidence of Conformance Links	Evidence of Conformance Images
NE ACCEPTABLE DNC NA	BYNKH00-4	V1	Threatened Potential Selection for use against Critical Body Panels and Thermocut materials	Built with Captured vehicles of use flat washers			
NE ACCEPTABLE DNC NA	BYNKH00-43	V1	Splash Panel and Fender Extension Coverage for Exterior Plastic Noise	Fender Extension inner surface does not extend to intersect 15 degree plane components, it is prevented by 16 distance requirements to suspension components	Conformance: Tm(20170427), 28-Feb-2017 - Physical testing will be conducted to confirm vehicle will meet Pass-by requirements		
NE ACCEPTABLE DNC NA	BYNKH00-43	V1	Front Fender Extension Overall Length	VE #10-6623 entered to conduct Water Splash testing test			
NE ACCEPTABLE DNC NA	BYNKH00-41	V1	Clearance requirement between splash panel and fender extensions		Vehicle: WMA(20170001), 28-Feb-2017 - Initial Front model was updated after those dimensions were later - as required (internal approval added) - Conformance: Tm(20170427), 28-Feb-2017 - Physical testing will be conducted to confirm vehicle will meet Pass-by requirements		
NE ACCEPTABLE DNC NA	BYNKH00-79	V1	NO STOP On Fender Extensions				

Design Reviews



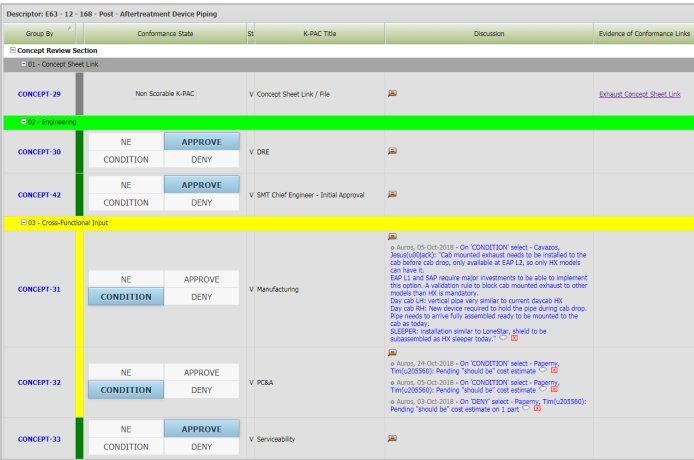
Group By	Conformance State	Status	K/RAC Title	Discussion	Evidence of Conformance Links
DVP - VLA Time	NE PENDING CONFORMS DNC NA	WIP COMPLETE ACCEPTABLE ROD		Speed During Drive	
BYNKH00-43	NE PENDING CONFORMS DNC NA	WIP COMPLETE ACCEPTABLE ROD		Speed During Drive	
BYNKH00-43	NE PENDING CONFORMS DNC NA	WIP COMPLETE ACCEPTABLE ROD		Speed During Drive	
BYNKH00-43	NE PENDING CONFORMS DNC NA	WIP COMPLETE ACCEPTABLE ROD		Speed During Drive	

Design Verification Plans (DVPs)



Issue ID	Project Name	Sub-Project Name	Priority	Issue Description	Replication Steps / Test plan Criteria	People
Issue ID: 13811	Project A	SubProject A	4 - High Priority	Clearance issue per guideline in R30		
Issue ID: 13811	Project A	SubProject A	4 - High Priority	Clearance issue per guideline in R30		
Issue ID: 13811	Project A	SubProject A	4 - High Priority	Clearance issue per guideline in R30		

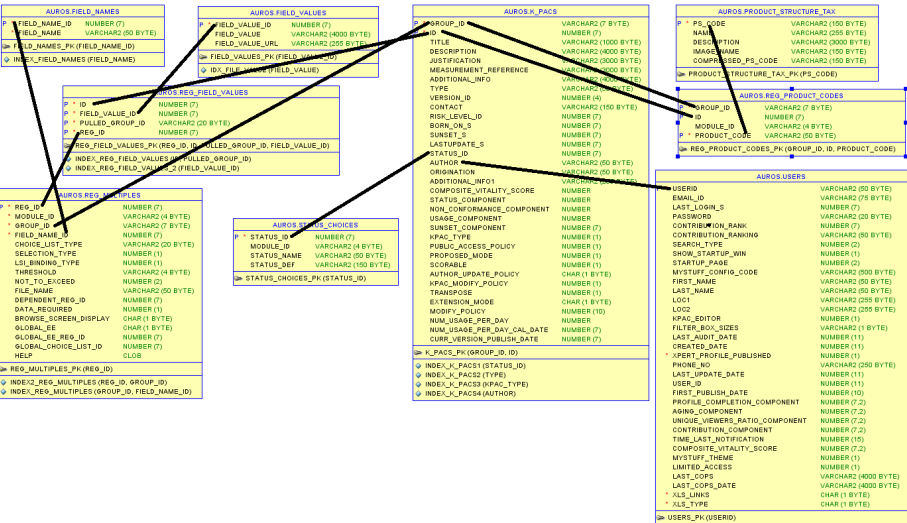
Records of Decision



Concept ID	Conformance State	Status	K/RAC Title	Discussion	Evidence of Conformance Links
CONCEPT-29	NE CONDITION DNC NA	APPROVE DENY	V DRE		
CONCEPT-42	NE CONDITION DNC NA	APPROVE DENY	V SMT Chief Engineer - Initial Approval		
CONCEPT-31	NE CONDITION DNC NA	APPROVE DENY	V Manufacturing		
CONCEPT-32	NE CONDITION DNC NA	APPROVE DENY	V PCB A		
CONCEPT-33	NE CONDITION DNC NA	APPROVE DENY	V Serviceability		

Concept Sheets

Starting Point



- Began with Analytics rep.
- Needed internal capability
- Worked with AurosKS to understand DB structure



Recently Published / Revised K-PACs

- Awareness of new knowledge
- Previously exported list for “newsletter”
- Teams evaluate impact

SMT / Category

All

CoP

All

K-PAC Type

All

Days Since Published

Last

4

Weeks

8/9/2019 - 9/5/2019

Change Type

of K-PACs

New

64

Revision

39

Total

103

Recently Published/
Revised K-PACs

K-PAC ID	Change Type	Link	K-PAC Type	K-PAC Title	Date Current Version Published	Original Date Created	Author
CSFRAME-234	New	Link	Design Practice	5th Wheel Angle - Angle to rail hardware	9/3/2019	06/09/17	Diana Rodriguez
HARNSDR-11	Revision	Link	Design Review Step	Step 10 - Circuit number/name	9/3/2019	01/23/16	Ken Blatnik
HARNSDR-12	Revision	Link	Design Review Step	Step 11 - Circuit color	9/3/2019	01/23/16	Ken Blatnik
HARNSDR-22	Revision	Link	Design Review Step	Step 21 - Applicable AEB review for guidelines and procedures (Design related to Cummins engine) (OEM's must:)	9/3/2019	01/23/16	Ken Blatnik
HARNSDR-5	Revision	Link	Design Review Step	Step 4 - Device to schematic review, if not captured in Step 1 above (pin to pin only)	9/3/2019	01/23/16	Ken Blatnik
HARNSDR-7	Revision	Link	Design Review Step	Step 6 - Connector R/D terminal plating	9/3/2019	01/23/16	Ken Blatnik
HARNSDR-9	Revision	Link	Design Review Step	Step 8 - J1939 topology mapping, identification of terminating resistors in complete topology	9/3/2019	01/23/16	Ken Blatnik
BYCIWBY-374	New	Link	Design Practice	Regulator Carrier Design - Laminated Glass	8/30/2019	03/29/18	Adam Antonios
BYCIWBY-386	New	Link	Informational	Cab: Back panel section / depth / form / structure / assembly	8/30/2019	05/04/18	Martin Dirker
BYCIWBY-394	New	Link	Design Practice	CIW DFMEA P-TYPE: BOM Scrub	8/30/2019	05/25/18	Aaron Rogoff
BYCIWBY-404	New	Link	Design Practice	Cab Roof - Water Management Design and Verification (Day, Extended, and Crew Cab)	8/30/2019	06/22/18	Aaron Rogoff
BYCIWBY-412	New	Link	Design Practice	Analysis of Dynamic Motion of Cab Articulation Study	8/30/2019	07/09/18	Afsar Khan
BYCIWBY-431	New	Link	Design Practice	Design Assessment - Review Design Targets vs. Historic Field Test Issues	8/30/2019	07/31/18	Brian McGreevy

Department & User Work Tracking

Department	K-PAC Status		# K-PACs						
385381-Driver Environment	All		466						
User	K-PAC ID	Link	K-PAC Status	K-PAC Title	K-PAC Author	K-PAC Vitality	Date Created	Date Last Updated	Days Since Updated
Christopher Wessel	BODYWIP-1666		WIP	Sun Visor - Load Deflection	Christopher Wessel	60	9/13/2016	11/14/2016	1025
Gustavo Alisio	BYCABAE-5		Active	Designing Satellite Antenna Mounting Bracket Support Structure and Backing Plates	Nic Cassaday	78	8/5/2013	11/16/2016	1023
Jess Magee	BYCABAE-6		Active	Design guidance for choosing Sunshade to Sunshade Bracket Attachment Fastener Best Practice	Nic Cassaday	82	10/22/2013	11/16/2016	1023
Jigar Patel	BODYWIP-2454		WIP	Standard Design Template	Serge Nikogosian	42	11/14/2016	1/13/2017	965
Lindsey Mateja	BODYWIP-1667		WIP	Sun Visor - Unclipped Strength	Christopher Wessel	60	9/16/2016	1/18/2017	960
Michael Bates	BODYWIP-2171		WIP	Sun Visor Vanity Mirrors	Christopher Wessel	60	10/3/2016	1/30/2017	948
Nic Cassaday	BODYWIP-2172		WIP	Sun Visor Mounting Strength	Christopher Wessel	60	10/3/2016	2/13/2017	934
Sanjeev Vij	BODYWIP-2474		WIP	Instrument Panel HVAC Duct Foam Thickness Design	Sanjeev Vij	53	3/16/2017	3/19/2017	900
Serge Nikogosian	BODYWIP-2173		WIP	Sun Visor - Life Cycle Test	Christopher Wessel	60	10/4/2016	4/17/2017	871

Department	Commit Date Category	AC Count	Last Data Refresh	Yellow AC Line Items	Red AC Line Items	Open ACs
385381-Driver Environment	2. At Risk (0-5 days until commit date)	54	9/5/2019 06:08 AM	22	3	55

Department	User	Vitality	Vitality Range	# K-PACs
		Excellent	81-100	117
		Fair	55-80	220
		Poor	30-54	12
		Too Young	<0	117

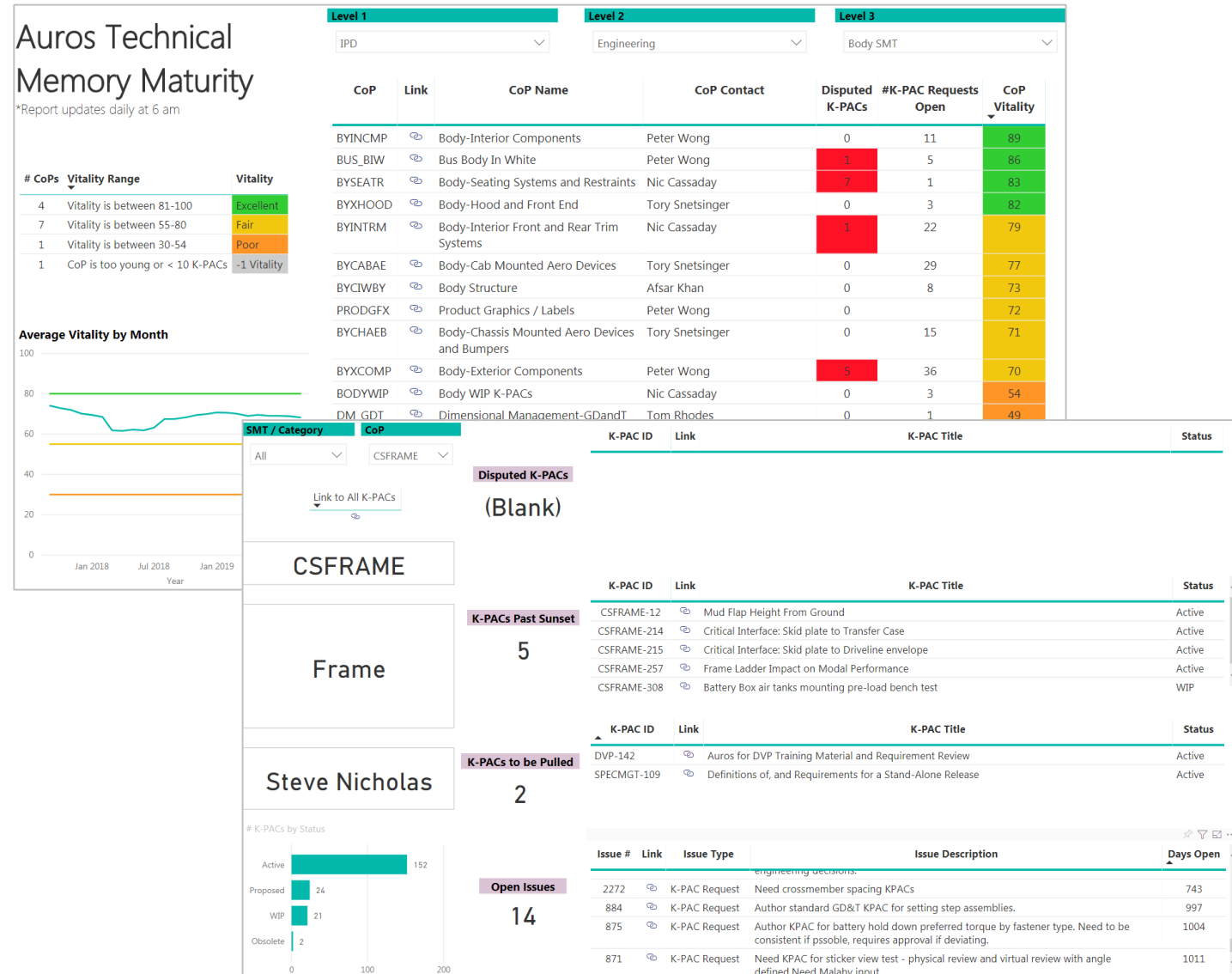
Department	User	Open Assessments
	Christopher Goebbert	
	Christopher Wessel	
	Jess Magee	
	Jigar Patel	
	Lindsey Mateja	
	Michael Bates	
	Nic Cassaday	
	Sanjeev Vij	
	Serge Nikogosian	

Pgm	AC CoP	AC ID	AC Status	Link	% NE	No. of K-PACs	AC Description	AC Creator	Evaluator	Releases	Release Status	Release Owner	Commit Date	Days to Commit
M12	BYSEATR	83264	Evaluation Ready		21 %	212	Release 95140S: RollTek 2.0 Seats. new seat design to improve cost and manufacturing concerns	Nic Cassaday	Sanjeev Vij	95140S	Pending Plan Review	Sanjeev Vij	9/9/2019	4
300	DVP	27366	Evaluation Ready		100 %	11	ROLLTEK PCBL	Megan Pregler	Sanjeev Vij					
841	BYSEATR	57131	Evaluation Ready		67 %	21	PreRelease: Restraints - Release updated buckle change from IMMI per SREA NX Selections to continue CDMs work that was done on 94482C - Assessment 46652	Nic Cassaday	Christopher Goebbert					
NT M - Interior Trim	BYINTRM	64225	Build In Process		97 %	277	PreRelease: Master Instrument Panel Requirement Guidance. Pulled as Reference for Complete New IP	Nic Cassaday	Serge Nikogosian					
E63	DVP	68168	Evaluation Ready		0 %	65	E63 - HX - Seats	Nic Cassaday	Michelle Rodriguez, Christopher Wessel					
SSU	VPDNX11	69504	Evaluation Ready		100 %	7	SSU - User Interface [S1670]	Cindy Taylor	Christopher Goebbert					
SSU	VPDNX11	69507	Evaluation Ready		100 %	7	SSU - User Interface [S1670]	Cindy Taylor	Christopher Wessel					
SSU	VPDNX11	69753	Evaluation Ready		100 %	7	SSU - User Interface [S1670]	Cindy Taylor	Jigar Patel					
SSU	VPDNX11	69946	Evaluation Ready		100 %	7	SSU - User Interface [S1670]	Cindy Taylor	Michael Bates					
SSU	VPDNX11	70106	Evaluation Ready		100 %	7	SSU - User Interface [S1670]	Cindy Taylor	Sanjeev Vij					
SSU	VPDNX11	70127	Evaluation Ready		100 %	7	SSU - User Interface [S1670]	Cindy Taylor	Serge Nikogosian					
E36	DVP	70895	Evaluation Ready		0 %	26	Program E36 DVP Assessment - Engine Air Intake Grille	Tory Snetsinger	Jason Iannotti, Lindsey Mateja,					

- All group responsibilities
 - Across programs
 - Multiple CoPs
- Data to help prioritize & plan
- Integrated Release info
- Expanded beyond Auros
- Status directly from work happening
- Cross-system tracking tool

Auros Technical Memory Maturity

- How “good”/”complete” is Auros
- Utilizes CoP Vitality + other targeted metrics
- Tracks progress over time
- Drills down to details



Concept Sheets

Descriptor: E63 - 12 - 168 - Post - Aftertreatment Device Piping

Group By	Conformance State	St	K-PAC Title	Discussion	Evidence of Conformance Links
Concept Review Section					
01 - Concept Sheet Link					
CONCEPT-29	Non Scorable K-PAC	V Concept Sheet Link / File		Exhaust Concept Sheet Link	
02 - Engineering					
CONCEPT-30	NE	APPROVE	V DRE		
	CONDITION	DENY			
CONCEPT-42	NE	APPROVE	V SMT Chief Engineer - Initial Approval		
	CONDITION	DENY			
03 - Cross-Functional Input					
CONCEPT-31	NE	APPROVE	V Manufacturing	<div>Autos, 05-Oct-2018 - On 'CONDITION' select - Cavaos, Jesus(u00jack): "Cab mounted exhaust needs to be installed to the cab before cab drop, only available at EAP L2, so only HX models can have it. EAP L1 and SAP require major investments to be able to implement this option. A validation rule to block cab mounted exhaust to other models than HX is mandatory. Day cab LH: vertical pipe very similar to current daycab HX</div>	
	CONDITION	DENY			
CONCEPT-32	NE				
	CONDITION				
CONCEPT-33	NE				
	CONDITION				

Program Concept Sheets

Program

Concept Type

Review Phase

SMT

SMT Chief

E63

All

All

All

All

Line Item Approvals

of Concepts

0

674

968

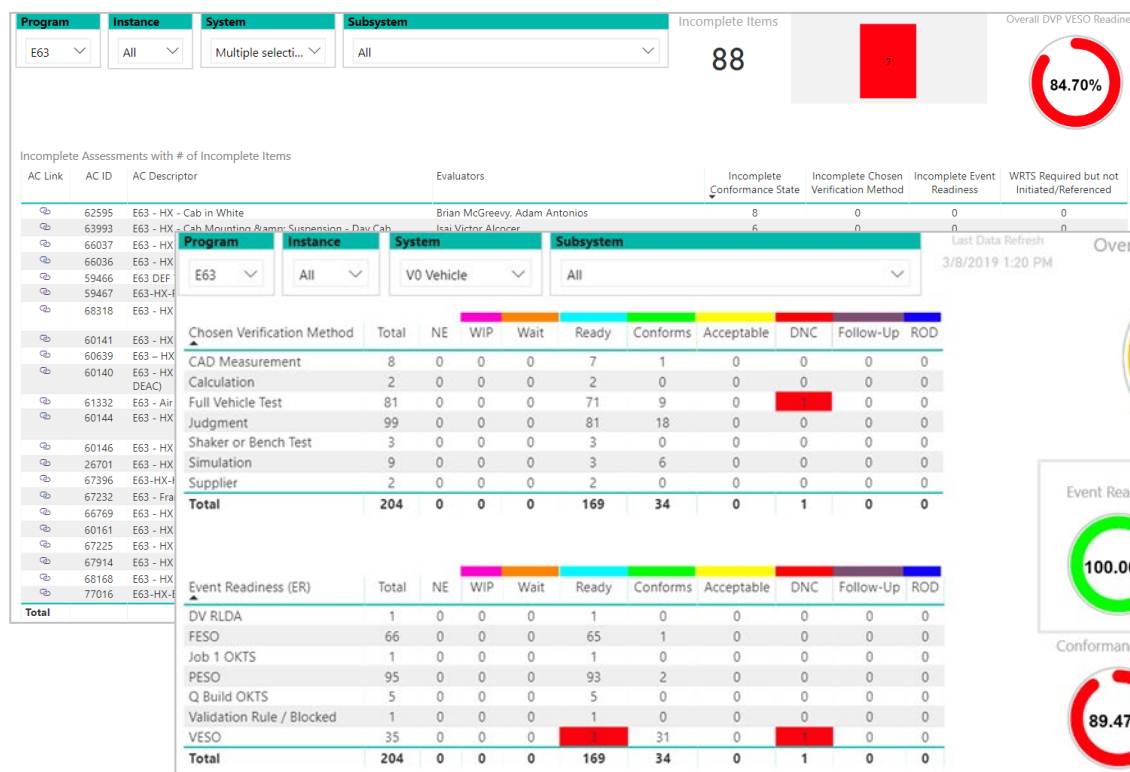
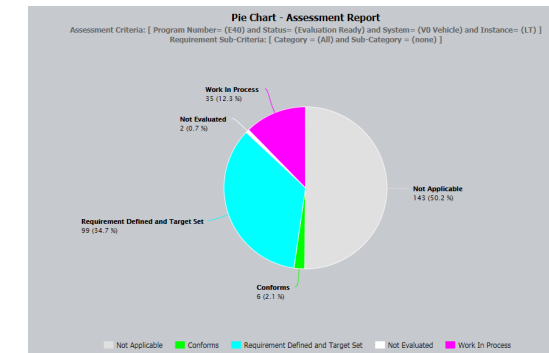
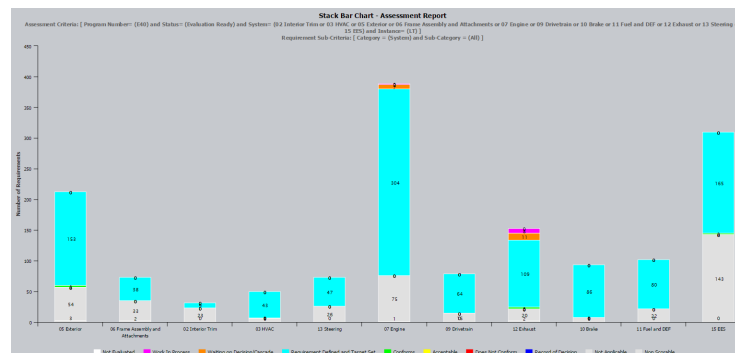
74

ID	Link	Sys/SS	Concept Name	DRE Name	SMT Chief	Pgm	DRE	SMT Chief - Initial	AME	Service-ability	R&Q	Service Parts	Container.	PC&A	Procurement	EPM	SMT Chief - Final	Pgm/Pltfrm Chief	PM
62600		01 - 001	Cab in White	Adam Antonios	Raymond Baggett	E63	G	G	NE	G	G	G	G	Y	NE	NE	NE	NE	NE
62601		01 - 176	Windows/Glass	Adam Antonios	Raymond Baggett	E63	G	G	G	G	G	G	G	G	G	G	NE	G	NE
62602		02 - 011	Seats	Michelle Rodriguez	Michael Bates	E63	G	G	G	G	NE	G	G	Y	NE	NE	NE	NE	NE
62603		02 - 013	Instrument Panel (Master)	Todd Honnigford	Todd Honnigford	E63	G	G	G	G	G	G	G	Y	NE	NE	NE	NE	NE
62604		02 - 170	Interior Trim - Front	Miguel Angel Ramos	Michael Bates	E63	G	G	G	G	G	G	G	G	NE	NE	NE	NE	NE
62606		02 - 171	Interior Trim - Rear	Miguel Angel Ramos	Michael Bates	E63	G	G	G	G	G	G	G	G	Y	NE	NE	NE	NE
62607		02 - 192	Driver Control Module ABR (Master)	Bruno Guillermo Gomez, Keith Kierzek	Christopher Gutierrez	E63	G	G	G	G	G	G	G	Y	NE	NE	NE	NE	NE
62608		02 - 192	DCM - Steering System (Child A)	Bruno Guillermo Gomez	Christopher Gutierrez	E63	G	G	G	G	G	G	G	G	G	NE	NE	NE	NE
62609		03 - 015	Front HVAC Air Handling Modules	Wesley Muntz Jr	Gerald Hoganson	E63	G	G	G	G	G	G	Y	G	G	G	NE	G	NE
62610		03 - 017	HVAC Fluid Transport and A/C Under-Hood Components	Wesley Muntz Jr	Gerald Hoganson	E63	G	G	G	G	G	G	G	Y	NE	NE	NE	NE	NE
62611		05 - 007	Wiper/Washer System	Olga Kugar	Bruce Purvis	E63	G	G	G	G	G	G	G	G	G	NE	G	G	NE
62612		05 - 008	Indirect Vision	Robert Tourville	Bruce Purvis	E63	G	G	G	G	NE	G	G	G	G	NE	NE	Y	NE
62613		05 - 033	Signal and Identification Lighting	Kevin McCormick	Bruce Purvis	E63	G	G	G	G	NE	G	G	Y	G	NE	NE	G	NE
62615		05 - 035	Aerodynamic Devices -Body Mounted	Tyler Holmes	Christopher Schmitt	E63	G	G	NE	G	G	G	G	Y	NE	NE	NE	NE	NE
62616		05 - 038	Cab and Frame Access	Diana Rodriguez, Tyler Holmes	Stephen Koch	E63	G	G	G	G	G	G	G	G	G	G	NE	G	NE
62619		05 - 172	Air Horn	Kevin McCormick, Luis Manuel Gonzalez	Bruce Purvis	E63	G	G	G	G	NE	G	G	G	G	NE	NE	NE	NE
62620		06 - 043	Battery Box (MASTER)	Maresh Jan	Stephen Koch	E63	G	G	G	G	G	G	G	G	NE	NE	NE	NE	NE
62621		06 - 140	Frame	Jeffrey Malahy	Stephen Koch	E63	G	G	G	G	G	G	G	Y	NE	NE	NE	NE	NE
62622		07 - 054	Air Charging	Sergio Cruz	Kevin Flynn	E63	G	G	G	G	G	G	G	Y	NE	NE	NE	NE	NE

- Previously tracked in Excel
 - Manual & inconsistent
- Report established hand-in-hand with new process
- Easily identifies issues
- Tracks status to plan
- Aided in successful adoption of new process

DVP → Program Reporting

- Extremely customized process → needed customized reporting
- Defined explicit expectations
- Helped drive completion
- Incorporated into Gate reviews
- Expanded to all deliverables

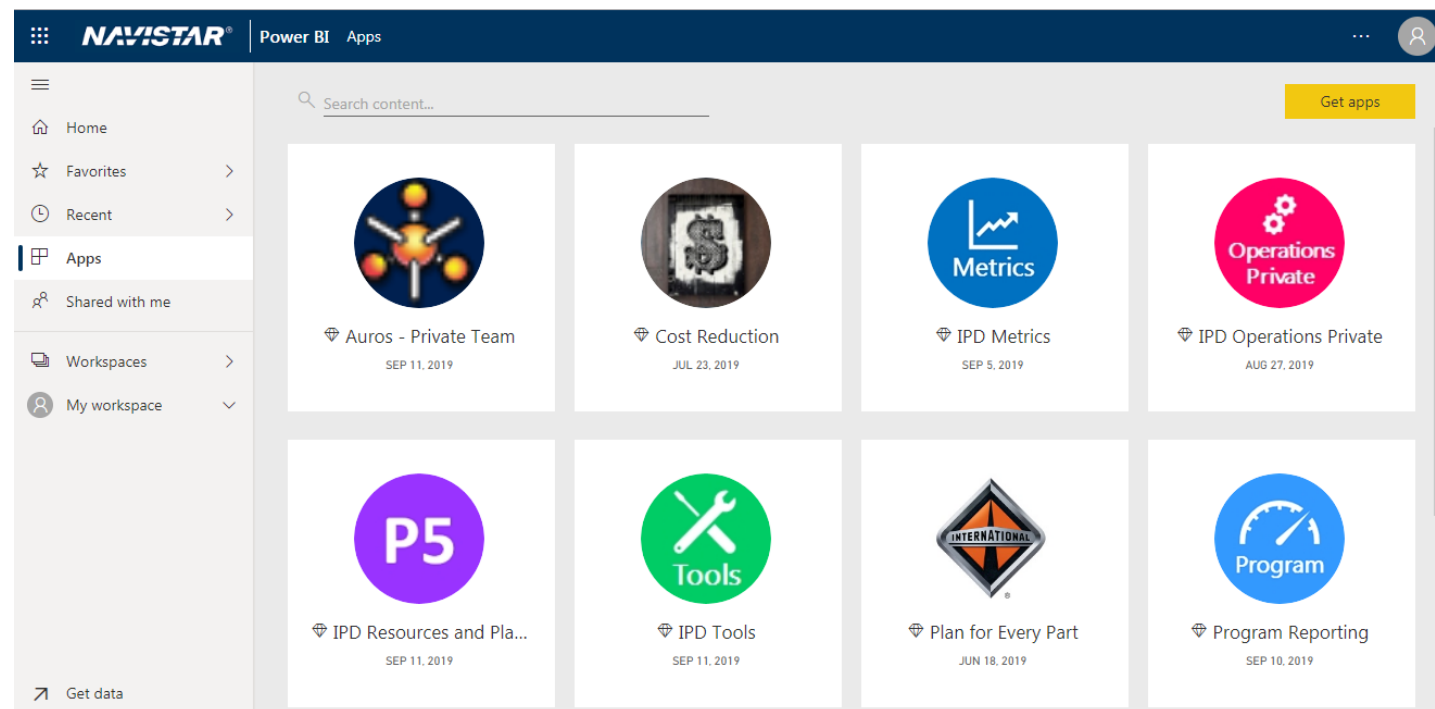


Current State & Future Vision

- Visual management screens



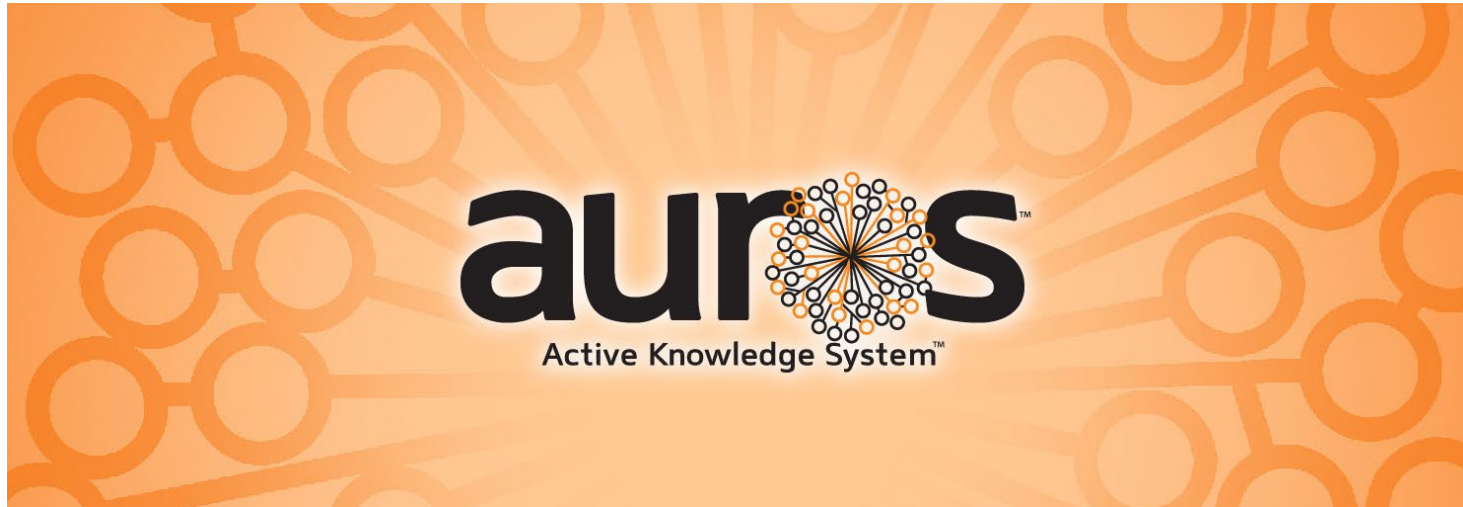
- 15+ Auros-related reports
- 400+ Power BI viewers



Will continue to expand and grow...

Takeaways / Summary

- Increased Auros adoption
- Part of standard work
- Endless possibilities



Questions?