DEVELOPMENT SPRINT REVIEW CALENDAR WEEK 28.21



HIGHLIGHTS:

- FMEA job description finalized
- SBP focus
 - Understand current status
 - Alignment on countermeasures
- PO Commodity PM alignment
 - Lead times systems
- Cross-functional synchronisation points
 - Define governance process on timing
 - Result: organizational change: Process Owner Squad to be transferred into Program Management Squad



- Software release plan overview
 - Synchronized planning
 - Software Level definition
- WLTP measurement and NVH investigation
- Reliability workshop

LOWLIGHTS:

- APQP/Risk assessment Loop 1 Status
 - Next steps available
- PMCS Assessment
 - 100% S0 and 50% S1 assessed
- SVC3 built organization



BLOCKER:

- DVP
 - Amount of vehicles for development finalized
 - $\circ~$ Amount of BIW for development finalized
- Part Quantity Strategy
 - Define strategy for hardware quantity requirements
 - Ordering of parts

LOGISTICS

HIGHLIGHTS:

SOP: Logistics Manual:

- Purpose/scope done
- List of abbreviations done
- Contacts & delivery address 80%
- Logistics requirements 90%
- Transport & delivery 90%
- Order handling 50%
- Documentation 90%

LOWLIGHTS: None BLOCKER: None

PRODUCTION (1/2)

HIGHLIGHTS:

- Contracting
 - Analyze make or buy BOM for body structure done
 - Mismatches between SM and NEVS BOM body structure are identified
 - Preparing FRQ for SVC3 manufacturing will be finished in the sprint.
 - Base for negotiation start-up contract by collection information BOM and paint shop done
- ME
 - Based on the cost analyses, the decisions for paint shop can be done



LOWLIGHTS:

- ME
 - Concentrate on BOM show several questions in case of make or buy at NEVS
- Contracting
 - Risk of additional cost for Sealing, KTL and assembly level

BODY CLOSURE (1/2)

HIGHLIGHTS:

- Sourcing decision hinges: imminent
- Charger Lid complete module > we edge closer to a supplier
- DVP/DV testing > 2x partners interested
- Next phase: new ESP/non-ESP proposals make progress
- E-latch: 2021 decision (brings us to benchmark vehicles > we maybe continue E-latch project in house)

LOWLIGHTS:

BIW: H.1: wrong data/misaligned to communication models

BODY CLOSURE (2/2)

BLOCKER:

- Vacation planning: Closures support available during August. Many other functions unavailable/on vacation
- PMCS:
 - Issues are raised without discussion/no binning process. From wk30: will be closed automatically if not discussed
 - Low priority issues not requiring engineering solutions have heavy focus. From wk30: we work on medium/high prio only



HIGHLIGHTS: SVC3/Series only

- Lightning
 - Update model from headlamp supplier into 3DX once received black box data in the system and package now defined
- Non-PV panels
 - Evaluate impact on cantrail due to new hood surface in hinge area
- Glass:
 - Quote received and all side glass confirmed to be out of Sweden to cut transport cost





LOWLIGHTS:

- Non-PV panels
 - B-pillar assembly strategy discussion with all parties involved
- SVC3 only
 - Perform full front end alignment review



- Welding standard definition moved on
- Update SVC3 tool cost estimation (sheet metals) → Result: No cost/budget increase expected
- Supplier base market analysis for body structure \rightarrow ongoing, but good progress

LOWLIGHTS: None



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HIGHLIGHTS:

SVC3:

- Supplier sourcing (restraints, mirror, sunvisor)
 - To raise PO/nomination letter done
 - To get technical/cost feedback for the sunvisors wip
 - PO sent to the CCB supplier done
 - Sourcing meeting for sunvisors took place on 21.06.2021 done
- Regular meetings with ARRK Interior on I/P, doors, trunk, and console hard points wip
 - To share remaining BIW related interior attachment points wip





LOWLIGHTS:

- PMCS
 - $\circ~$ PMCS pre S0 deliverable checked and judged done

BLOCKER:

- SVC3:
 - $\circ~$ Sunvisor suppliers are missing for the interior development
 - Luggage floor needs to be lowered and the parcel shelf needs to be raised to gain more volume.

INFOTAINMENT (1/2)

HIGHLIGHTS:

SVC3:

- IMX-8 MEK development kit is up and running
- Technical process for antenna count and placement is complete
- Received updated quote from antenna supplier with reduced cost
- Locations for Head-unit, VCM and Ecall are complete
- Phone projection and Instrument Cluster development and certification will be handled by headunit supplier

INFOTAINMENT (2/2)

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LOWLIGHTS:

SVC3:

- The Dev kit required more rework than anticipated, we will discuss acceptable deliverables with supplier to make sure we are on the same page
- Suppliers summer vacation

BLOCKER:

SVC3: Final steering wheel clarification





HIGHLIGHTS: SVC3:

- Steering
 - $\circ~$ Tie rod model freeze w/ sweep zones ok
 - Lower boot design ok
 - $\circ~$ Understand lane keeping requirements and how to integrate 80%
- Brakes
 - $\circ~$ Freeze brake pedal packaging and DVP 80% ~
 - Decide on brake disc material 90%
 - ∘ Software release plan OK
 - Test SVC2 pedal feel OK



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• Knuckle

- Implement NVH requirements from brakes OK
- $\circ~$ Get latest design from TRE after 1st round of FEA OK
- $\circ~$ Update hard quotes for latest design OK
- Update 3D printed option OK
- CAD / PDM
 - $\circ~$ Setup fasteners to supplier catalogue 80%
 - $\circ~$ Start brake pipes design OK
 - $\circ~$ EVP + ESC packaging definition EVP OK. ESC w/ service concerns
 - $\circ~$ SF + Knuckle packaging for suppliers OK





• Suspensions

- $\circ~$ Send updated RFQ OK
- Create welding standard 90%

LOWLIGHTS:

- PMCS being used as a communication tool
- European vacations

BLOCKER:

- Functional safety discussion on ESC
- Cybersecurity definition for steering will require more resources than initially thought

SVC2: Interior light fix in SVC2.1 before Tour SVC3:

- Keyfob concept phase quote -> PO raised and signed
- ADAS official quote received -> PO signed from E/E
- High Voltage Training successfully finished (Level 2 and 3)
- CAD integration with ARRK \rightarrow PO signed from E/E
- Clamp and power management strategy (LV) alignment internal & external
- Started the ECU List for diagnostics
- Telltales for instrument cluster defined for BCM, RCM
- 3 headcount contracts signed

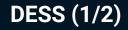
SVC3:

- DTs for some switches missing as the supplier not sourced yet
- Missing peripheral information attached to BCM

Missing peripheral information attached to RCM (Airbags / Pretentioners)

BLOCKER:

SVC3: Headcount (timing)



HIGHLIGHTS:

SVC2:

- OBC Testing was done last week with Casco on Pepper:
 - Charging with 10kW
 - \circ V2L working

SVC3:

- HV training (DEKRA)
- 3 different Rubber Damper Supplier progress with BOGE going well
- 2 Headcount contracts signed



- SVC2: V2V not working
- SVC3:
 - Requirement tool still not implemented and working
 - OBC mechanical freeze not complete

BLOCKER:

SVC3:

- Engine Mount Dampers
 - $\circ~$ 3 suppliers in the running for the dampers
 - This links to kicking off CES for crossbeam/engine mount design
- Headcount

HV BATTERY

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HIGHLIGHTS:

SVC3:

- Review information for connector and EE parts selection required to be sent wip
- Onboarding: new team member joining the HV battery team as lead CAE engineer wip
- Document structure and high level specifications in place for HV Battery Pack SSTS wip

LOWLIGHTS:

SVC3:

- Implement WLTP cycle --> Pedal position --> EDU requested torque --> EDU efficiency map in MATLAB - wip
- Implement vehicle dynamics for available information on vehicle wip

SIMULATION (1/2)

HIGHLIGHTS:

- Complete Vehicle CFD
 - CAD review done
 - Modelling started
- Crash & Safety Sprint 1
 - CAD Review Release G.1, Blockers & Impediments worked out
 - CAE Cross Meeting Crash&Safety done and overview of delivery status worked out

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- $\circ~$ Blocker, impediments & main risks detected \rightarrow Facilitation started
- Simulation Org
 - $\circ~$ HC Planning alignment \rightarrow Feedback open
 - \circ Budget planning alignment → mid-term alignment done
- CAE Activity identification
 - First base line LCO created



LOWLIGHTS:

- CAE Activity identification
 - Due to interface capacities less feedback than expected

PROCESS OWNER (1/3)

HIGHLIGHTS:

- BOM
 - BOM issues tracked individually and resolved
 - MBOM responsibility alignment (again)
- Issue Management
 - Binning meetings have a positive impact on open issues
 - PMCS System updated to 76 % (last sprint 70 %)
- Change Management
 - We are gradually registering more Changes at 3DX
 - Export function for changes already available (format improvements in work)
- Release Management
 - Release of 'valid from' attribute
 - Checklist of BOM release for RFQ

PROCESS OWNER (2/3)

Cost Management

- Approve cost items regarding July and August
- Functional safety is separated from exterior in budget file

LOWLIGHTS:

- BOM
 - BOM viewer issues
- Issue Management
 - Issue updates at 100% not achieved due capacity
- Change Management
 - Approval meeting and Pre-Evaluation meeting need to be set in order to save time collecting the information from Stakeholders

PROCESS OWNER (3/3)

Cost Management

• Liquidity planning for Q3 will not be solved in 4 days. A lot of consolidations with the Product Owner regarding the payment terms of the significant purchase orders

BLOCKER:

- BOM: 3DX issues partly solved
- Issue Management
 - $\circ~$ As last sprint: issue performance can't be shown at 100%
 - Out of date issues without feedback from driver/solver
- Change Management
 - Different perspectives on when-to-start-CM still open
- Release Management
 - low feedback from Project Lead to "valid from" attribute

VIRTUAL VEHICLE (1/2)

HIGHLIGHTS:

- Recruiting ongoing, +1 in September
- Initial Data Exchange Bertrandt CFD (via 3DX)
- Issues resolved
 - Surge Tank and Washer Bottle Package
 - Steering Column vs. Chassis Subframe Integration
- Focus on Frontend
 - Trunk Volume optimization
 - Front Radar Bracket designed
 - 12V Battery Tray optimized (Manufacturing, Heater)
 - HV Wiring OBC, Socket Positioning alignment



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- 3DX coaching new employees
- Model-based definition/drawing strategy defined, additional alignment with body structure
- New package meeting structure in 3DX (issue-driven)

LOWLIGHTS:

- Vacuum Pump and ESC not positioned, unclear if 12V Battery can be mounted with brake booster
- Headcount Competence Cluster
- Cell mapping issue rear hatch/tailgate upper

DESIGN (1/2)

HIGHLIGHTS: SVC3:

- Exterior:
 - Styling Loop 02 ongoing.
 - Styling Release V2 planned for mid next week.
- Interior:
 - Styling loop 02 ongoing. Estimate that about 35 % of styling loop 02 is done. Loop will pause end of July
 - IP and Center Console are progressing well
 - door (window switch area) solved. IP/door transition complicated
 - Greenhouse/headliner not yet touched





- Recruiting:
 - 3 interviews next week for position: Automotive Surface Designer

LOWLIGHTS:

SVC3: Interior component sourcing in general is not synchronized with hardware design and Infotainment/UX. This needs to be improved.

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GENERAL (1/2)

HIGHLIGHTS:

- NVH investigation done
- SVC2 WLTP measurement done
- CAD review done, CAD release H.1 delivered
- Crash & safety sprint 1 accelerated
- SBP Focus
 - Status assessed
 - Constraints included in timing discussion
- Program status WS (SVC3 design release & SVC3 MRD)
 - Program status received
 - Program issues and risks identified
- Process Owner Squad transferred into Program Management Squad



LOWLIGHTS:

- APQP/risk assessment loop 1 status
 - Next steps available
- PMCS assessment
 - $\circ~$ 60% S0 and 65% S1 unassessed
- Part quantity strategy
 - Define strategy for hardware quantity requirements
 - Ordering parts container
- CAD and CAE data quality and late delivery

LOGISTICS

HIGHLIGHTS:

- SOP: logistics manual
 - Done from a technical perspective. Next sprint will be sent for internal stakeholder review.

LOWLIGHTS: None

PRODUCTION

- Contracting
 - Supplier strategy for assembly of all parts BIW is done
 - Final decisions for RFQ SVC3 manufacturing will be finished in the sprint.
 - Corrosion protection: A decision log was done in interdisciplinary meetings with alignment over all involved disciplines

LOWLIGHTS: None

BODY CLOSURE

HIGHLIGHTS:

- Charger lid module:
 - Buy level changed
 - EE compatibility confirmed
 - NEVS desired assembly process
- Change/release process definition/input

LOWLIGHTS: None



HIGHLIGHTS:

- Three new exterior engineers joined the team
- CAD maturity increased

SVC3 / Series only

- 2 Day workshop at RLE Cologne to agree work plan and expectation of data for DR. complete
- Perform full front end alignment review complete



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- Non-PV panels
 - Evaluate impact on cantrail due to new hood surface in hinge area done and 3DX updated
 - B-pillar assembly strategy discussion with all parties involved complete with new brackets added
 - Cantrail new concept feasibility check complete
- Under body panels
 - Front under body panel need to add two push pins against the bumper as third hand and review assy sequence with NEVS - Complete

EXTERIOR (3/3)

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- Glazing:
 - Update and 3D implementation needed of the fixed side windows with new guide pins positions.
 - Nominate supplier complete

Wiper/wash systems:

- Redesign of the aquarium and leaf screen. ongoing
- Update connection to the HVAC ongoing

LOWLIGHTS: None

BODY STRUCTURE

HIGHLIGHTS: SVC3:

- Processing of PMCS issues is ongoing
- Battery package (dimension in x) as required can be realized incl. solution for front connection points
- Grommet for steering column received, concept for implementation in body structure is ongoing
- Space available for accelerator pedal bracket \rightarrow bracket concept in development

LOWLIGHTS: None





HIGHLIGHTS: SVC3:

- Supplier Sourcing (sunvisor, headliner, soft trims, hard trims, seats, 1st aid kit, ESP)
 - $\circ~$ To get technical/cost feedback from for the sunvisors / WIP
 - $\circ~$ To get cost&timing feedback for the sunvisors / WIP
 - Finalized cost&timing feedback is awaited for the headliners / WIP
 - $\circ~$ PO is in internal circulation to be approved for the hard trims / WIP
 - Supplier search for soft trims has been kicked-off due to response delays from the production-intend supplier / WIP
 - 1st aid kit supplier will confirm quote status that was agreed in 2018 after summer vacation/ WIP
 - Seat quotes for SVC3-4-5 are awaited. Current PO covers only the engineering development / WIP





Regular meetings with ARRK Interior on I/P, doors, trunk, and console hard points / WIP
 To share remaining BIW related interior attachment points / WIP

LOWLIGHTS:

- PMCS
 - PMCS Pre S0 deliverable checked and judged done
 - PMCS S0 deliverables checked and questions prepared for PM / planned till the next sprint

BLOCKER: SVC3: Restraints integration has just been kicked-off as of August



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HIGHLIGHTS: SVC3:

- All Infotainment commodities are placed in their correct location in 3Dx and CAD
- Development team received 12 samples of the MATE-AX header connectors from TE, 4 way connectors in one, which will reduce the amount of connectors on the headunit.

LOWLIGHTS: SVC3:

• The rear camera will use ethernet protocol for image delivery. We were working so that like most rear cameras we'll use LVDS. Not a deal breaker it just means level 3 needs to add an ethernet hub to their schematic diagram.

BLOCKER: SVC3: Steering wheel controls confirmation





- General
 - Lead suspension engineer 99%
- Steering
 - Prepare JD VD CAE 100%
 - Include EPS on SW release plan 100%
 - $\circ~$ FuSa ASIL level alignment for EPS 30%

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- Knuckle
 - Publish new loadcases 100%



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• Brakes

- Integrate MeritRnD booster to vehicle CAD 90%
- $\circ~$ Get hard quotes for steel disc 50%
- Freeze calipers and nominate supplier Friday
- SW integration plan w/ requirements for other squads (interdependency) 90%

• CAD / PDM

- $\circ~$ Finalize EVP and ESC position 80%
- PDM attributes (weight / serviceability / valid from) 66%
- Datum system for rolling chassis GD&T 50%



• Suspensions

- Deliver mesh for crash analysis OK
- Start FE loops OK
- Good offer received for aluminum subframe.

LOWLIGHTS:

- S0 / S1 assessment 0%
- Tech alignment HL, JTEKT, TK 20%
- PMCS being used as a communication tool.
- European vacations
- Knuckle DFM studies
- Bolt + torque definition for calipers fastening





BLOCKER:

- Functional safety discussion on ESC and EPS
- Front attachment to CMS



HIGHLIGHTS: SVC3:

- 46/67~ tickets closed this sprint (covers both EE & powertrain)
- Kick-off ARRK CAD integration | BCM, GEM, VCU positioning started
- Keyfob concept phase started | first design will be presented in 4 weeks to the team
- Active cruise control planned for SOP
- Clamp and power management strategy started
- Progress on ECU list for diagnostics

LOWLIGHTS: SVC3:

- DTs for some switches missing as the supplier not sourced yet
- Missing peripheral information attached to BCM
- Missing peripheral information attached to RCM (airbags / pretentioners) → Improved Situation compared to last Sprint
- Suppliers need feedback on cyber security
- PMCS tool and Jira interface

BLOCKER: SVC3:

- DT response (final WK22) (5%/50%/45%)
- Headcount (timing)

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HIGHLIGHTS:

SVC3:

- Review information for connector and EE parts selection required to be sent: WIP
- On boarding lead CAE engineer: WIP
- Document structure and high level specifications in place for HV battery pack SSTS: WIP

LOWLIGHTS: None



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HIGHLIGHTS: CAE Software Acquisition (pre/post-processor)

Expectation: Pre-processor and post-processor in-house available

- Licence Check available
- Quotes available
- Acquisition
 - Pre-processor: IT alignment open

CAE standardization

Expectation:Creating overview of current status and deriving work packages

- Content overview and strategy available
- Overview of current status available
- Work packages available



Complete vehicle CFD

• Modelling in progress

LOWLIGHTS:

CAE activity identification --> LCO

• Due to overall capacity issues too little attention by POs

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BLOCKER: JOB AD: no capacity

HOMOGOLATION & RECYCLING

HIGHLIGHTS:

Homologation

- presentation of homologation basics at all staff meeting
- time schedule

Recycling

- meetings with potential imds service providers to get offers (material compliance)
- new battery regulation draft analysed and first draft of specs for HVB based on new battery regulation

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LOWLIGHTS: None





HIGHLIGHTS:

- SVC3
 - Implementation of SQA targets into generic thermal SSTS (will be used for coolant and refrigerant lines and air ducts)
- SVC2
 - final software update on Salt and Pepper: HVAC unit (flaps, fan, heating, cooling) finally fully functional

LOWLIGHTS: None

VIRTUAL VEHICLE (1/2)

HIGHLIGHTS:

- CAD Reviews completed on 1 day, local export done
- Integration Report (still in work):
- Data Exchange Bertrandt CFD (via 3DX)
- 3DX User Groups created for every Squad and Cluster. Adding groups to approvals and user management simplified
- Concept section sign off process defined
- Cell mapping doors finished
- 3DX coaching new employees 04.08.2021
- New package meeting structure in 3DX (issue-driven) weekly report
- Tools and interfaces overview

VIRTUAL VEHICLE (2/2)

- Issues resolved
 - Ground planes and roadlines Update
 - Hood Hinge Package
 - \circ MSD
 - Trunk Volume (interior feedback for loading objects, NVH and ergonomics necessary)
- Focus on frontend
 - 12V battery tray optimized and uploaded
 - HV wiring OBC, socket positioning alignment

LOWLIGHTS:

- Vacuum pump positioning not optimal from NVH side, but no alternative available
- HV charging cables change to 95 mm² won't work with the current radiator Position

DESIGN (1/2)

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HIGHLIGHTS: SVC3:

- Exterior:
 - Styling Loop 02 ongoing.
 - Styling pre-release V2 released last week. Release V2 planned beginning next week.
 - Overall CAD maturity is difficult to measure. about 80%.
- Interior:
 - Styling loop 02 ongoing. Estimate that about 39% of styling loop 02 is done.
 - IP and center console are progressing well. (85% loop 02 done)
 - Doors 60% loop 02 done
 - Greenhouse / headliner / trims 10% loop 02 done





LOWLIGHTS: Change requests from engineering

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- PMCS Assessment
 - 60% S0 and 65% S1 unassessed
 - Review of deliverables for S0
- Part Quantity Strategy
 - SVC3 BOM for quantities created (basis for order list and SVC3 cost evaluation)

LOWLIGHTS: None



BLOCKER:

- BOM cost reduction investigations (cost per part)
 - OKR per module
- BOM Part Source attribute still with major empty fields
- Check-list for SVC3 DR defined by 20-AUG-21 (CAD/CAE/QUAL/EBOM/ME)
 - \rightarrow some feedback received, but not complete



HIGHLIGHTS:

- SOP
 - Logistics manual 1st review round done. Next step review by legal.

LOWLIGHTS: None

PRODUCTION

HIGHLIGHTS:

- Contracting
 - With a new SAP set up it is maybe possible to generate savings in the invest
 - BOM discussion with NEVS is started and MBOM discussion finalized (Task of NEVS ME)
- ME
 - Timing discussion with NEVS

LOWLIGHTS: None

BODY CLOSURE

HIGHLIGHTS:

- 2x LEs signed contract > hood & doors
- RLE workshop closures

LOWLIGHTS: None



HIGHLIGHTS:

- Non-PV Panels:
 - Solve PMCS issue against rocker. Cut-out required for decking. Tire spat and WAL affected. Done
- Wiper/Wash Systems:
 - Review new smaller motor for package and function Done

LOWLIGHTS:

Non-PV panels:

• Implement new styling surface in rocker and reposition of fixings

BODY STRUCTURE

HIGHLIGHTS:

SVC3:

- Processing of PMCS issues is ongoing and and with satisfactory degree of processing
- Most of interface information are available \rightarrow update body structure work in progress
- Body structure redesigned for integration of the grommet steering column → already in 3Dx available
- Proposal for accelerator pedal bracket in 3Dx available

LOWLIGHTS: None

HIGHLIGHTS: SVC3:

- Supplier sourcing (sun visor, headliner, soft trims, hard trims, seats, 1st aid kit, ESP)
 - $\circ~$ To get technical/cost feedback from supplier for the sun visors / WIP
 - $\circ~$ To get cost & timing feedback from supplier for the sun visors / WIP
 - $\circ~$ Finalized cost & timing feedback is awaited from supplier for the headliners / WIP
 - $\circ~$ PO is in internal circulation to be approved for the hard trims / WIP
 - 1st Aid Kit supplier will confirm quote status that was agreed in 2018 after summer vacation/ WIP
 - Seat quotes for SVC3-4-5 are expected from supplier. Current PO covers only the engineering development / WIP
- Regular meetings with supplier on I/P, doors, trunk, and console hard points / WIP
 To share remaining BIW related interior attachment points / WIP



LOWLIGHTS:

- PMCS
 - PMCS Pre S0 Deliverable checked and judged done
 - PMCS S0 deliverables checked and questions prepared for PM / planned till the next sprint

INFOTAINMENT (1/2)

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HIGHLIGHTS:

SVC3:

- All Infotainment commodities are placed in their correct location in 3Dx and CAD
- All PMCS derivable
- HRS and SRS requirements are being consolidated on our confluence pages
- We received high level phone projection (AA and CP) and Instrument cluster proposals from Level 3 Systems, more refinement and details are needed before submission.
- Level 3 uploaded to the Sono GitHub the Android Automotive 11 software image (Digital team will use with the IMX8 to develop the UI/UX/HMI for the headunit)
- L7 Up loaded the 1st draft schematic layout for the VCM.
- Level 3 delivered the final version System Software Architecture.

INFOTAINMENT (2/2)

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LOWLIGHTS:

SVC3:

- Program delay nomination of speakers, e-call, antenna, USB
- L7 cannot reduce the sleep current for the VCM the unit will use 22 mA in sleep mode, we need request the EE team to increase our overall system current allocation to 30 mA to cover the (VCM, e-call and audio headunit)

BLOCKER:

SVC3:

- No update on steering wheel controls from suppliers
- ADAS team needs to define the output specs for the rear camera (broad reach ethernet, LVDS or coaxial) we need this to finish the IHU schematic





SVC2:

• Final software update on Salt and Pepper: HVAC unit (flaps, fan, heating, cooling) finally fully functional

SVC3:

• Implementation of SQA targets into generic thermal SSTS (will be used for coolant and refrigerant lines and air ducts)

LOWLIGHTS: None

BLOCKER: None





- Brakes:
 - $\circ~$ Booster connection to brake pedal brakes 90%
 - Booster reservoir compatibility w/ foundations brakes 50%
 - \circ Freeze fastener design 80%
 - Finish FuSa system definition 90%
 - ESC timeplan completion OK
- PM
 - PMCS S0/S1 assessment 50%
 - Budget review OK



• Knuckle/Spindle

- Freeze fastener definition 80%
- Prepare rear spindle RFQ OK
- Send rear spindle for quote OK
- Kick-off tire repair kit sourcing OK
- Suspensions
 - SF front extension attachment 90%
 - FUp rear damper attachment CAE runs 90%
 - Finish welding standard tomorrow

CHASSIS (3/4)

• CAD / PDM

- Finalize EVP position Next CAD meeting
- PDM attributes: Serviceability / Sourcing 50%

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- $\circ~$ Move w/ rolling chassis GD&T 95%
- $\circ~$ Finish brake piping design 100%
- $\circ~$ EVP / ESC / TMC interface documents 60%
- Finalize TMC positioning w/ front package OK
- Steering:
 - FuSa system definition 50%
 - $\circ~$ Gd&T for body interface 30%
 - $\circ~$ Analysis of ass'y access 40% ~



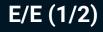
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LOWLIGHTS:

- Knuckle DFM / D2C stalled due vacations
- CAE runs for RTB and SF too slow
- Suppliers on vacation

BLOCKER:

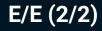
Knuckle DFM / D2C stalled due vacations





SVC3:

- 38/107~ tickets closed this sprint (Covers both EE & Powertrain)
- ARRK CAD integration | brackets for under-hood fusebox, 12V battery and pre-fusebox underway
- All weights up to date in 3DX to current status
- eBOM updated to current status
- 1 headcount contract signed (E/E integration)





LOWLIGHTS:

SVC3:

• Part sourcing attribute took a backseat to other more important topics this sprint, will be scheduled for the next sprint

BLOCKER:

SVC3:

• Headcount (timing)



SVC3:

- Update HV Battery dimensions, mounting concept and BIW cutout, communicate changes to supplier
- Confluence page on positioning of MSD, HV battery pack in BIW and its virtual validation
- Simulation plan for
- According ECE R100 r2, UN 38.3, LV124, vehicle crash pulse.
- Internal planned simulations
- BIW and complete vehicle related
- Define requirements and cost (machine, license, maintenance costs etc.) of performing the simulations.
- Screws BIW-HVB dimension preliminary calculation on static loads





- Implement error calculation for reference and obtained speeds from simulation. Tune PID to meet error specs of ISO 8714.
- Testing the electric motor and battery model, its integration and do some improvements to the model.
- Communicate BMS / battery pack warnings icon for infotainment team (Refer to UN ECE R121)
- Confluence page for simulations why, what, how and work till now
- Release version 1.0 of HV SSTS
- Finalize HV cable size, connector and LV interfaces for battery pack.
- Align battery BoM cost, budget for planned DVP and other development activities
- Finalize the length at 1680 mm

HV BATTERY

LOWLIGHTS:

SVC3:

- Finalize BMS diagnostic list (along with)
- Get quote of complete DVP or part of tests in battery pack DVP
- Release PO for cell storage and testing jig on hold

BLOCKER:

SVC3:

• Internal / external support for defining BMS hardware / Software functionalities.



CAE software acquisition (pre/post-processor)

Expectation:

• Pre-processor and post-processor in-house available

22

Actual achieved

- Licence check available
- Quotes available
 - $\circ~$ Pre-processor: yes
 - Post-processor: WIP by supplier



CAE Standardization

Expectation:

Overview of current status created and start work packages

Actual achieved:

- Content overview and strategy available
- Overview of current status available





CAE DR Checklist

Expectation:

• Creation of a result oriented check-list (part and vehicle level) from all stakeholders for SVC3 design release

Actual achieved:

• Checklist done



LOWLIGHTS:

Crash & Safety Sprint 1

Expectation:

- Full model assembly done in cw 31/32
- Structural crash: results available in cw 32/33

25 (•

Actual achieved

• Finalization full model assembly in cw34

BLOCKER: None

HOMOGOLATION & RECYCLING

HIGHLIGHTS:

Homologation

- Presentation of homologation basics at all staff meeting
- First rough time schedule

Recycling

• Discussion on new process requirements due to new battery draft with IMS squad

26 (

• Master's thesis on recycling process for solar body panels

LOWLIGHTS: None

BLOCKER: None

VIRTUAL VEHICLE (1/2)

HIGHLIGHTS:

- Integration report concept sections and data quality issues added
- Final Data Exchange Bertrandt CFD (via 3DX)
- Concept Section sign off: change actions created
- Issues resolved
 - H points BIW EDU mount
 - Fusebox package
 - Tire envelopes collision front fender
 - Surge tank positioning
 - Washer bottle package check
 - $\circ~$ 2nd row seat collision with BIW

VIRTUAL VEHICLE (2/2)

• Concept for sub-frame Integration, Brake Booster and frunk in work, no showstoppers anymore

28

- Focus on front end
 - 12V Battery tray optimized (new battery position) and uploaded
 - HV wiring OBC, socket positioning alignment
 - Vacuum pump and ESC positioning and bracket in work

LOWLIGHTS:

• New data quality issues since last release (hhost links..)

BLOCKER:

• Scope of release I.1 unclear

DESIGN (1/3)

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HIGHLIGHTS:

SVC3:

- Exterior:
 - Styling loop 02 ongoing. overall around 85% done until end of design release.
 - Styling release V3 (G1 in 3DX) released (every 2 weeks roughly we plan to release a complete updated exterior styling)
 - Change requests now come more from closures / exterior, less from solar. Which means detailed work in gap / flange areas. Changes are still above 1 mm.

DESIGN (2/3)



• Interior:

- Styling loop 02 ongoing. Overall about 60 % done until end of design release.
 - IP 80%
 - Doors 70% (door handles are being overworked, overall concept is working and fixed and confirmed)
 - Greenhouse / headliner / trims 20% done. A pillar: 80%, lower trim: 30 % , upper trim: 15%
- Wallbox

• 3 designs chosen and confirmed by founders, branding and "technik"





LOWLIGHTS:

• Many change requests from engineering

BLOCKER: None

DEVELOPMENT SPRINT REVIEW CALENDAR WEEK 34.21



- Program Timing investigation
 - New naming convention introduced
- Program Timing investigation
 - Supplier communication created for new time plan
 - SVC3/SVC4 Volumes and Purpose

PMCS Assessment

- 60% S0 and 65% S1 unassessed
- Review of deliverables for S0

BOM

Extension EBOM flowchart created



BOM

- Nightletter introduction
- Cost BOM created
- SVC3 BOM created
- Logistic BOM created

BOM Part Source attribute improvement

LOWLIGHTS: None

BLOCKER:

- BOM cost reduction investigations (cost per part)
- Check-list for SVC3 DR defined until 20-AUG-21 (CAD/CAE/QUAL/EBOM/ME)
- BOM Error Report 02-SEP-21

BODY CLOSURE

HIGHLIGHTS:

• Vacation

LOWLIGHTS:

• Supplier/SM vacation periods affect communication

BLOCKER:

• Updated timing summary not available > risk no coordinated communication



SVC3/Series only:

• Bring UBP and WAL's supplier onboard - Done

PV & Non-PV Panels:

- After checking the styling H.1, some issues need to be addressed / solved for rocker and cantrail
- Check implications for tailgate and spoiler if the roof needs to be moved up by 2-3 mm so that there is enough space for the glue bead Done
- Check solution in rear area of the rocker to have the required clearance for decking Done



Bumpers:

• FR bumper-fender connection w/o head lamp fixation (DONE till Friday)

Lighting:

• Finalise fixing strategy for Headlamp (Done)

Wiper/Wash Systems:

- Integrate new parts from DOGA in CAD (filler, motor, fixation points) (DONE)
- Finalize Motor position for front wiper incl. alignment with other squads (body) (DONE)
- Check device transmittal proposals with DOGA Done



Bumpers:

• FR bumper-fender connection w/o head lamp fixation (DONE till Friday)

Lighting:

• Finalise fixing strategy for Headlamp (Done)

Wiper/Wash Systems:

- Integrate new parts from DOGA in CAD (filler, motor, fixation points) (DONE)
- Finalize Motor position for front wiper incl. alignment with other squads (body) (DONE)
- Check device transmittal proposals with DOGA (Done)



PV & Non-PV panels:

- Pillar trims design optimizations on parts, brackets, foams, fixing strategy,
- water management, door harness and grommet locations
- Clarify clash of A pillar/cantrail /fender (WIP feedback cantrail necessary)
- Check to reduce the number of fixings for the rocker

Bumpers

 Check new Body / CMS design and the impact on the FR bumper (WIP - feedback thermal necessary)



Lighting:

- Look at solving interference between headlamp and hood (Not complete, supplier optics team still investigating possible solutions)
- Implement Z support for fascia front from headlamp into CAD (Not complete, WIP to implement into CAD)

BLOCKER: None

- Processing of PMCS issues is ongoing and and with satisfactory degree of processing.
- Most of interface information are available \rightarrow current status 85%.
- 2nd load path -> concept is finalized. Body Structure is updated and 3D data in 3Dx available.
- Optimization of body structure for crash requirements (seat cross member) done.
- Roof cross member front redesigned, but not with final status in 3Dx.
- Preparation mounting concept for tie down hooks and loading floor done. Brackets designed, available in 3Dx in week 35.



LOWLIGHTS:

- Fixing concept sun visor and roof module → currently only a proposal with principal section available (no 3D data) → redesign of the cross member roof front started, but finalization not possible yet.
- Concept front end (cross member body structure, several brackets) not finally defined and designed yet.

BLOCKER: None





- SVC3
 - Supplier Sourcing (Sunvisor, Headliner, Soft Trims, Hard Trims, Seats, 1st Aid Kit, ESP)
 - To Get technical/cost feedback for the Sunvisors / done
 - To Get cost&timing feedback for the Sunvisors / WIP
 - Finalized cost&timing feedback is awaited for the headliners / done
 - PO is in internal circulation to be approved for the Hard Trims / WIP
- Regular meetings with ARRK Interior on I/P, Doors, Trunk, and Console hard points / WIP
- Share remaning BIW related Interior attachment points / WIP





LOWLIGHTS: None

BLOCKER:

• SVC3

• Steering Package (steering column, steering column module and steering wheel)



SVC3:

• All Infotainment commodities are placed in their correct location in 3Dx and CAD

13 (•

- All PMCS deliverable for S0 and S1 at 100%
- Android Automotive 11 software image is released to Sono-Digital team for development.
- Supplier L7 found a way to reduce the VCM current when the module is in sleep mode 10ma vs 20ma
- Sibros and L7 Up loaded the VCM Hardware and Software architecture documentation, schematic layout and the DMFA for the VCM
- Supplier Level 3 delivered the final version of the System block diagram



- Infotainment components are released in 3DX for Version I.1:
- Speakers, Microphones, BT/WiFi/GNSS Antenna, FM/DAB Antenna, ECall Module, USB modules, Displays and VCM Module

LOWLIGHTS:

SVC3

- L7 sleep mode current reduction
- ECall button in discussion

BLOCKER:

No update on steering wheel controls





• Vacation

LOWLIGHTS: None



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HIGHLIGHTS:

- Brakes:
 - $\circ~$ Finish booster connection to brake pedal -90%
 - Nominate brake disc supplier- ok
 - Nominate calipers supplier ok
 - Freeze fastener design -75%
 - Finish FuSa system definition -ok
 - HARA 50%(WIP)
 - $\circ~$ Get flex hoses design from TRE -ok
 - $\circ~$ RFQ for brake piping WIP



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• Knuckle/Spindle

- Nominate knuckle supplier -ok
- $\circ~$ Move w/ knuckle DFM improvements -ok
- Freeze fastener definition -75%
- $\circ~$ 3D model for tire repair kit
- Steering
 - Finish FuSa system definition ok
 - $\circ~$ Gd&T for body interface ok
 - $\circ~$ Analysis of ass'y access ok
 - Approach Cikautxo for ED&T quote alignment -ok

CHASSIS (3/4)

• CAD / PDM

- Finalize EVP position 75%
- PDM attributes: Serviceability 70%
- Finish rolling chassis GD&T OK
- Create package protection for Repair Kit OK

18 (•

- PDM update + BOM review OK
- Suspensions
 - CAE results for SF and RTB OK
 - $\circ~$ Align quotes
 - Implement SF front extension attachment OK
 - $\circ~$ RFQ for springs

CHASSIS (4/4)

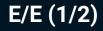
• PM

- Start VD CAE interviews OK
- $\circ~$ Attribute on EBOM of sourcing OK

LOWLIGHTS:

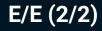
- PMCS S1 assessment 25%
- RFQ for rear damper attachment 0%
- RFQ for rubber accessories 0%
- Summarize final TRE results for steering -0%
- EVP / ESC / TMC / Brakes lines interface documents on Confluence 0%

19 (•



SVC3:

- (Nearly) all Part source attribute updated (Large BOM update 02.09 on TCY839 will have to be re-done)
- (Nearly) all enterprise numbers updated (Large BOM update 02.09 on TCY839 will have to be re-done)





LOWLIGHTS:

SVC3:

• Missing peripheral information attached to BCM

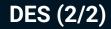
BLOCKER:

SVC3:

• Headcount (timing)

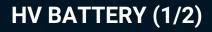


- SVC3
 - Workshop being organised for mid september
 - $\circ~$ ARRK are now looking at some of the mechanical issues we have with the OBC/MCU
 - $\circ~$ feedback on socket positions



LOWLIGHTS:

- OBC Mechanical Freeze
- OBC PLC discussion promising
- Holidays



24 •

HIGHLIGHTS:

SVC3:

- Implement error calculation for reference and obtained speeds from simulation. Tune PID to meet error specs of ISO 8714.
- Update the confluence page of simulation with test results
- Finalize A sample, and get PO
- Finalize key design parameters for B sample
- Sign off BMS diagnostics list and functionalities for B samples
- Get quote of complete DVP or part of tests in battery pack DVP
- Design and DVP review for B sample



LOWLIGHTS:

• Study regenerative braking and implement in system model (this has strong influence on overall energy consumption)

25

- Communicate BMS / Battery pack warnings icon for infotainment team (Refer to UN ECE R121)
- Implementing coast down curve testcase in the model.
- Validating the simulation model with the real data.
- Item definition for FuSA
- Release version 1.0 of HV SSTS

BLOCKER:

• Validating the simulation model with the real data.

LOGISTICS

26 •

HIGHLIGHTS:

- SOP
 - Logistics Service Agreement currently under review.
 - Verified the standards from CM and compared with descriptions on the LM & LSA. All documents are aligned on the way to proceed.
 - New file construction is underway.

LOWLIGHTS: None





- Introduction of Commodity Managers to sprint planning within squads.
- provided data for potential SCCM. (Steering Column Control Module date being reviewed E/E).

LOWLIGHTS:

• Guidance on the HOW of integration into Squads not provided due to How Master time constraints. (Ie: No Time).

BLOCKER:

- Updated timing presentation from Group Sion Project Management to share with suppliers. (Project Management).
- No information on assembly assumptions impacts sourcing of assembly suppliers (Manufacturing).



SVC3/SOP

- SQA:
 - Communication with suppliers on SVC3-Quality (APQP/MLV) requirements initiated
 - Meeting to be arranged with BM Plastics through the solar super squad (kick-off SQA cooperation)
- IMS/PQE
 - Training for Parts identification & traceability (09.09.21)
 - Preparation of the shortened APQP / MLA training (German and English)





LOWLIGHTS:

SVC3/SOP

• SQE \rightarrow 2 positions open

PRODUCTION (1/2)

30 💽

HIGHLIGHTS:

- Contracting
 - $\circ~$ Negotiation about the sealing and KTL is done
 - Various tasks with NEVS are done. Preparation for RFQ SVC3 is started with 2 workshops and preparation of the Annexes of the Start up contract has also started. Preparation with Legal will start next week
 - .Information for the calculation of the Invest for the Nomination Letter are now available.
 - Adapting the timeline of the contracts will be done today
- Organization and Process
 - Cooperation with NEVS turn to NEVS get the driver in different topics

PRODUCTION (2/2)

31 💿

• ME

- $\circ~$ Information to the result out of the NEVS visit was given to different parties
- $\circ~$ Timing Meeting for week 37 is arranged

LOWLIGHTS:

- Contracting
 - Negotiation for BOM level will take place next week
- ME
 - BOM canalize for contracting is actual not possible





Crash & Safety Sprint 1

Expectation

• Assembly finalized & model run-able

Actual achieved

- Model run-able until end of week 35
 - Model still contains minor simulation/cae related issues and a chassis-lowering-effect
 - --> Impact on structural crash results are not expected by ARRK
 - Running model will help solving these issues

SIMULATION (2/9)

Complete Vehicle CFD Expectation

• Very first results expected

Actual achieved

- First test simulation done
- - results not valid -
 - Next steps: Refinement simulation environment

33

- rotating wheels
- rotating fan
- porosity cooling module
- Outlook
 - Analyse and report available on 22. Sept. 2021
 - Meeting invite already sent



LCO Improvements

Expectation:

Load cases/Deliverables with Product Owner aligned

34 (•

- Current result overview updated
- Delivery dates updated

Actual achieved:

- LCO is growing
- LCO is restructured
- still ongoing process



CAE Standardizations

Expectation

- Load case descriptions:
 - Closures & Exterior started
- NVH Modelling Guideline
 - Started

Actual achieved

- Load case descriptions:
 - Closures & Exterior in work
 - Expected date of delivery: 15th September

35 (•

- NVH Modelling Guideline
 - Blocked Competences not available



LOWLIGHTS:

Crash & Safety Sprint 1

Expectation

- Product Owner's response mandatory:
- (Request of cw32/33)
 - $\circ~$ CAD Releases for CAE model build

36 (•

• Part/system masses

Actual achieved

E/E and PWT CAD: no feedback

• \rightarrow Traceability issue



Complete Vehicle CFD Expectation:

• Very first results expected

Actual achieved:

- Unexpected modelling efforts lead to Worst-case-timing
 - $\circ~$ Modelling issues solved
 - (Example: Body Structure-2-Wheel House)
 - Setup simulation environment delayed





BLOCKER:

Crash & Safety Sprint 1

Expectation

• Assembly finalized & model run-able

Actual achieved

• CAE Structural Crash loop will be not performed without Chassis-Front-Subframe-Update



39 (•)

CAE Software Acquisition (Pre/Post-Processor) Expectation

• Pre-Processor and Post-Processor in-house available

Actual achieved

- Licence Check available
- Quotes available
 - Pre-Processor: yes
 - Post-Processor: yes
- Acquisition
 - Pre-Processor: PO pending
 - Post-Processor: Testing licence available already



CAE Standardization

- Modelling Guidelines: NVH
 - NEVS needs software licences
 - no CAE-NVH capacities at NEVS

NVH

- Conti and Vitesco Documents reviewed
- Engine Mounts system evaluation Deeper Issue confirmed
- NVH test campaign Feasible, Budget ok, RFQ in progress

Weight

- Update Input Quality Monitoring Dashboard V5 Complete Vehicle Weight Benchmark
- Crossfunction Topic with CAE Mass list: Details in Jira Story
- Crossfunction Meeting with Interior Squad: Details in Jira Story

LOWLIGHTS:

NVH

- Follow CAD issues on various modules,
- Assist all PO and modules for NVH topic

Weight

• Input source: still missing a lot of Part_Source and weight information in BOM/EBOM, Details in BOM error Report & Input Quality Monitoring Overview Charts

42 (•

- **BLOCKER**:
- Weight
 - Input source

Homologation

• General enquiry KBA regarding type approval started by technical service

Recycling

- meetings with potential imds service providers
- Presentation concerning European Green Deal and impact on resource and recycling laws and how Sono is affected
- uptake recycled content in plastic parts
- put down homologation and recycling requirements in Jira
- internship and Master Thesis on Recycling Process for Solar Body Panels First outline of Research on legal requirements and Market analysis concerning OEM with integrated solar roof / suppliers of free available solar panels

HOMOGOLATION & RECYCLING (2/2)

LOWLIGHTS: None

PROGRAM MANAGEMENT (1/3)

HIGHLIGHTS:

Issue Management

• Kick-off for PMCS Platform transition in CW35 (1 month time estimated)

Change Management Process

- Using Change Actions for DR SVC3 as sign off tool (Agreed with 90% of the Squads Agreement with missing Squads will be done till end of the week).
- Release VTS via 3DX Trials works Process 80% defined.

Release Management

• Release for RFQ work process is created and aligned with Purchasing

PROGRAM MANAGEMENT (2/3)

LOWLIGHTS:

Issue Management

- Feedback from drivers and solvers are time consuming
- There is no automatic warning system implemented yet

Release Management

• EBOM work process draft is created, but downstream information flow and requirements for implementation need to be defined.

PROGRAM MANAGEMENT (3/3)

BLOCKER:

Timing

- Deliverable Risk
 - Risk assessment not possible w/o S0 and S1 input

VTS

- Low feedback on VTS change requests (driver + stakeholder approval)
 Issue Management
- Massive expired issues have not been updated until the end of sprint. Release Management
 - Decision to be made: shall we use Change Action for minor releases.

VIRTUAL VEHICLE (1/2)

HIGHLIGHTS:

- Issues resolved
 - Trunk Volume (Parcel Shelf)
 - $\circ~$ Chassis Integration Rear End
 - Curtain Airbag Integration
 - Fusebox Package
 - Tire Envelopes Collision Rear
 - Fender Package (BIW collision)
- Release Data for I&C and Body Structure

VIRTUAL VEHICLE (2/2)

LOWLIGHTS:

• Vacuum Pump positioning still not fixed

BLOCKER:

- Scope of Release I.1 unclear
- 3DX Update over the Weekend could lead to delays

49 (•





• Vacation

LOWLIGHTS: None

FUNCTIONAL SAFTEY (1/2)

HIGHLIGHTS:

- SVC3
 - $\circ~\mbox{FuSa Timing}$
 - FuSa internal timeline > adjusted to change strategy based on pending feedback by dev squads
 - DR checklist > first draft done
 - FuSa Requirements
 - Connecting FuSa Jira Board to VTS requirements in Jira > started

FUNCTIONAL SAFTEY (2/2)

LOWLIGHTS:

- SVC3
 - Item Definition
 - Missing functional architecture/state diagrams
 - Resource planning
 - Finding resource for FuSa challenging > new round of active sourcing starting

52

BLOCKER:

- SVC3
 - Item Definitions
 - 32 Item Definitions in review by Sono

CYBER SECURITY

HIGHLIGHTS:

SVC3

• Checking min required requirements (in progress)

53 (•

LOWLIGHTS:

- SVC3
 - Group Coordination Meeting
 - $\circ~$ There is no presentation from our side for ESP

BLOCKER:

SVC3

• Time availability in Squads for this topic

REQUIREMENTS

HIGHLIGHTS: SVC3

- VTS with links to Jira tickets
- Roadmap
- Battery SYS.1 requirements

LOWLIGHTS: SVC3

- Group Coordination Meeting
- Requirements Management Tool is not approved.

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BLOCKER: SVC3

• Time availability in Squads for this topic

DEVELOPMENT SPRINT REVIEW CALENDAR WEEK 36.21



Program Timing new naming convention introduced Program Timing

SVC3/SVC4 Volumes and Purpose

PMCS Assessment

- 60% S0 and 65% S1 unassessed
 - Review of deliverables for S0

BOM

Extension EBOM flowchart created



BOM

- Nightletter introduction
- Cost BOM created
- SVC3 BOM created
- Logistic BOM created

BOM Part_Source attribute improvement \rightarrow Registration summary: number of blank parts from 2127 to 1590

LOWLIGHTS: None

BLOCKER:

- BOM cost reduction investigations (cost per part)
- Check-list for SVC3 DR defined until 20-AUG-21 (CAD/CAE/QUAL/EBOM/ME)



HIGHLIGHTS:

- SVC3
 - Supplier Sourcing (Sunvisor, Headliner, Soft Trims, Hard Trims, Seats, 1st Aid Kit, ESP)
 - Get technical/cost feedback for the Sunvisors / done
 - Get cost&timing feedbackfor the Sunvisors / WIP
 - Finalized cost&timing feedback is awaited for the headliners / done
 - PO is in internal circulation to be approved for the Hard Trims / WIP
 - 1st Aid Kit supplier will confirm quote status that was agreed in 2018 after summer vacation/ WIP
 - Seat quotes for SVC3-4-5 are awaited / done
 - Cross functional data status for the completion of Interior Development



- To share remaning BIW related Interior attachment points / WIP
 - Some Seats and Restraints attachments are still open /WIP
 - Sunvisor, Front Upper Light Unit attachments are open /WIP
- PMCS
 - PMCS Pre S0 Deliverable checked and judged Done
 - PMCS S0 deliverables checked and questions prepared for PM / Done



LOWLIGHTS: None

BLOCKER:

- SVC3
 - Steering Package (steering column, steering column module and steering wheel) to be refined as explained in the last sprint
 - Sunvisor supplier and production feasibility suppliers are missing for the Interior Development

HIGHLIGHTS: SVC3:

- Infotainment commodities are placed in their correct location in 3Dx, the only remaining item is the Ecall button
- All PMCS deliverables for S0 and S1 at 100%
- IHU OS software image is released to Sono-Digital team for APP development.
- VCM software, Speakers, Displays, Antennas, Microphones, Cluster design, Phone Projection and USB's
- Supplier Level 3 will deliver final data on 20.09.21
- Infotainment components are released in 3DX for Version H.1:
- We are working with EE (Arber) to increase the power for the VCM (to allow the BT to stay on longer for better response during vehicle wake up)

LOWLIGHTS:

SVC3

- VCM component change (to improve wake up speed)
- Still investigating Ecall button suppliers
- Supplier Level 3 needs to get instrument cluster wire frames to start development

BLOCKER:

SVC3

• No update on steering wheel controls from suppliers



SVC3

• Chassis subframe vs CRFM issue solved

LOWLIGHTS: None

BLOCKER: None

HIGHLIGHTS:

- Brakes:
 - Freeze fasteners definition-100%
 - FUSA Item Definition 100%
 - $\circ~$ DT For ESC & other Sub systems 100%
 - Tech file for Foundation Brake 100%
 - Serviceability attribute 70%
- CAD / PDM
 - $\circ~$ Finalize EVP position 95%
 - PDM attributes: Serviceability 100%





- Knuckle/Spindle/Chassis Accessories
 - Freeze fastener definition 100
 - Confluence Page update 100%
- Steering
 - Finish DFMEA failure modes 100%
 - $\circ~$ Summarize final TRE results for steering 100%
 - HARA Discussion 90%
 - $\circ~$ Steering handover 100%

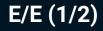
11 💽

LOWLIGHTS:

- RFQ for brake piping Not Started
- Nomination for Knuckle
- Get quotes for tire repair kit
- Handover rear shock mounting plate still on CAE
- Brake lines update & interface 50%
- LCA price increased

BLOCKER:

- LKA, AEB, ACC inputs
- Cybersecurity definitions from Sono
- Ass'y sequence for brake piping: No OH station before marriage. Possible issue for E/E as well.

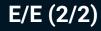




HIGHLIGHTS:

SVC3

- (Nearly) all Part source attribute updated (Large BOM update 02.09 on TCY839 will have to be re-done)
- (Nearly) all enterprise numbers updated (Large BOM update 02.09 on TCY839 will have to be re-done)





LOWLIGHTS:

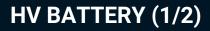
SVC3:

- E/E BOM and PM BOM not matching although eBOM is up to date
- Sourcing
 - DTs for some switches missing
 - $\circ~$ Missing peripheral information attached to BCM

BLOCKER:

SVC3:

- DT Status
- Headcount (Timing)



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HIGHLIGHTS:

- Study regenerative braking and implement in system model (this has strong influence on overall energy consumption)
- Finalize A sample, and get PO
- Sign off BMS diagnostics list and functionalities for B samples
- Set HVB clearances in x and z directions to BIW
- Define a coolant block connection concept for front of the case (outside/inside)



15 💽

LOWLIGHTS:

- Communicate BMS / Battery pack warnings icon for infotainment team (Refer to UN ECE R121)
- Implementing coast down curve testcase in the model.
- Screws BIW-HVB dimension preliminary calculation on static loads
- Define requirements and cost (machine, license, maintenance costs etc.) of performing the simulations.

BLOCKER:

• Get quote of complete DVP or part of tests in battery pack DVP

LOGISTICS



HIGHLIGHTS:

- SOP
 - Logistics Manual 1rst intermediate Version in english confirmed and provided
 - Customs services cost estimation

LOWLIGHTS:

• VAT concept for customs clearance

BLOCKER: None





HIGHLIGHTS: None

LOWLIGHTS:

• Still valid: Guidance on the HOW of integration into squads not provided due to HOW Master's time constraints. (Ie: No time)

BLOCKER: None





HIGHLIGHTS:

SVC3/SOP

- SQA:
 - Participation in chassis, BIW, thermal, solar, interior sprints, E/E, HV Battery, infotainment sprints to identify and kick-off SQA tasks (waiting for powertrain)
 - Supplier Valoe planned PMCS training for Valoe as pilot is to be arranged.
- IMS/PQE
 - $\circ~$ Training on Parts identification & traceability (09.09.21) done
 - Preparation of the shortened APQP / MLA training (German and English) 75% done
 - Content for LCA2 presentation defined





LOWLIGHTS: None

BLOCKER: None

PRODUCTION (1/2)

HIGHLIGHTS:

- Contracting
 - Negotiation for BOM level is done

20 (•

- Organization and Process
 - Beneficial cooperation with NEVS

PRODUCTION (2/2)

21 💽

• ME

- $\circ~$ Visit NEVS and discuss SVC3 criteria and process is done
- $\circ~$ Timing Meeting for week 37 is done

LOWLIGHTS:

- ME
 - BOM finalizing for contracting is actual not possible because analyze of BOM is missing

BLOCKER: None

HIGHLIGHTS:

NVH

- NVH Test organisation in progress vehicle prep Week 38-39, test CW40 or 41 TBD
- Testing scope written
- Engine Mounts Issue Package checked (minor issues) progressing to impact on driveline dynamic envelope
- Supplier met and design alignment on going (taking into account EVP integration and clashing issue with pipe)
- AVAS system integration Launched Sound Package on going

PERFORMANCE REQUIREMENTS (1/3)

Weight

- Update Input Quality Monitoring Dashboard
- Release Sion Weight Status Report September
 - Estimated Weight
 - Approved Weight
 - ChangeLog between August and September (complete vehicle and each module)
 - Benchmark complete vehicle/system level: Curb Weight vs. Battery Capacity/Range/Length/Cargo Volume etc.
 - \circ Interior/Crash Safety supplier Report reviewed → Research in Process

LOWLIGHTS:

NVH

- Follow CAD issues on various modules
- CAE results analysis, LCO updates
- Jira integration of requirements (training on friday 10-09)
- Assist all PO and modules for NVH topic

Weight

 Input source: still missing some Part_Source and weight information in BOM/EBOM, Details in BOM error Report & Input Quality Monitoring Overview Charts

PERFORMANCE REQUIREMENTS (3/3)

BLOCKER:

• NVH

 Jira integration of requirements - need help with my decision how to articulate it for NVH at this stage

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- Weight
 - Input source

HIGHLIGHTS:

Homologation

• General enquiry KBA

Recycling

- Meetings with potential imds service providers
- Presentation concerning European Green Deal and impact on resource and recycling laws and how Sono is affected
- Uptake recycled content in plastic parts internship and Master Thesis on Recycling Process for Solar Body Panels First outline of Research on legal requirements and Market analysis concerning OEM with integrated solar roof / suppliers of free available solar panels

HOMOGOLATION & RECYCLING (2/2)

LOWLIGHTS: None

BLOCKER: None

PROGRAM MANAGEMENT (1/3)

HIGHLIGHTS:

Issue Management

• Kick-off for PMCS Platform transition in CW35 (1 month time estimated)

Change Management Process

• Using Change Actions for DR SVC3 as sign off tool (Agreed with 90% of the Squads - Agreement with missing Squads will be done till end of the week)

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Release Management

• Release for RFQ work process is created and aligned with Purchasing

Cost Management

• Draft structure for new Budget File

PROGRAM MANAGEMENT (2/3)

LOWLIGHTS:

Issue Management

- Feedback from drivers and solvers are time consuming
- There is no automatic warning system implemented yet

Release Management

• EBOM work process draft is created, but downstream information flow and requirements for implementation need to be defined

PROGRAM MANAGEMENT (3/3)

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BLOCKER:

VTS

• Low feedback on VTS change requests (driver + stakeholder approval)

Issue Management

• Expired issues have not been updated until the end of sprint

Release Management

• Decision to be made: shall we use Change Action for minor releases

VIRTUAL VEHICLE (1/2)

HIGHLIGHTS:

12 issues resolved

- CW36
 - PFX SM000545 Subframe package
 - PFX SM000621 Brake Booster Integration
 - PFZ SM000596 Frunk Package Completed
 - PIY SM000823 Tire Envelopes interfere with CD-Pillar and Wheel Arch Liner
 - PFY SM000xxx 12V Battery Positioning and Bracket
 - PFX SM000566 Fender Package
 - PIY SMxxxxxx BCM_PASE

VIRTUAL VEHICLE (2/2)

- CW37:
 - PFX SM000565 Headlamp Integration
 - PFX SM000616 Radar Sensor Integration
 - PFX SMxxxxxx ELECTRIC_COOLANT_PUMPS_ASSY
 - PFZ SM000564 Vehicle Control Unit interference
 - PIX SM000708 HV battery Integration
- Standard Parts Structure created and Responsibility defined in CAD-Guidelines

LOWLIGHTS:

- Integration Report moved to next Sprint
- 3DX Issues after Update

BLOCKER: No alignment on VIN/Tire Pressure Label Responsibility



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HIGHLIGHTS: SVC3

- Exterior
 - Styling Loop 03 ongoing. approximately 87% done
 - detailed work on gap / flanges / over / underflush conditions. part releases of updated overflush condition in hood and a pillar + corrected charging lid gap
- Interior
 - $\circ~$ Styling loop 03 ongoing. Overall about 70 % done
 - IP 85%
 - doors 95%
 - Center console: 90%
 - Greenhouse / Headliner / trims 25% done. A pillar: 80%, lower trim: 30 % , upper trim: 20%

DESIGN (2/2)



- Wallbox
 - community chose design "3"
- LOWLIGHTS: None
- **BLOCKER:** None

FUNCTIONAL SAFTEY

HIGHLIGHTS:

SVC3

- \circ FuSa Process
 - Alignment on Checklist with RLE
 - Alignment on further HARA deliverables with RLE
- FuSa Requirements
 - Connecting FuSa Jira Board to VTS requirements in Jira > done

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- Supplier Management
- Resource planning

LOWLIGHTS: None BLOCKER: None

CRASH & SAFETY

HIGHLIGHTS:

- preSVC3 PedPro status overview is outstanding /WIP
- SVC3Prog PedPro is planned in 3 weeks / WIP
- SVC3Prog Structural Crash status to be reviewed on 21-Sep with Body Structures, Chassis, CTO /WIP

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- preSVC3 Occupant Safety vehicle model is ready with generic restraints / Done
- SVC3Prog Occupant Safety vehicle model is ready with updated interior and available restraints / WIP

LOWLIGHTS: Recruitment is ongoing /WIP

BLOCKER: None