DEVELOPMENT SPRINT REVIEW
CALENDAR WEEK 02.22

GENERAL (1/3)

HIGHLIGHTS:

- Each squad will deliver CAE models derived from SVC3 Design Freeze/Release CAD by 17 Dec 2021 → DONE
- Sealing SVC3 quote submitted → almost all seals will be series tooled
- Body Closure: Smaller parts suppliers nominated
- Dash panel tool is in trial process
- Locator hole in high speed crasher possible → CAE crash simulation positive
- POs for all infotainment parts sent to suppliers (for the exception of antennas)

GENERAL (2/3)

IN PROGRESS:

- Completed Squad Level OKRs 2022 → IN REVIEW
- Body Electronics: Item definition vehicle start almost completed. Was missing information on the vehicle start via the smartphone. This is planned to arrive two weeks later than originally scheduled.
- CAD Integration: Rear LF antenna location needs updated due to trailer hitch complexity
- VCU has a lead time of 16 weeks → Open VCU available from CW19 (w/c 9 May) but standard VCUs could be slightly earlier.

GENERAL (3/3)

LOWLIGHTS:

- Unsourced SSCM holding up I/P, shroud, steering wheel and driver airbag. SCCM supplier sourcing ongoing. Progress on suppliers but still open points to make it work.
- eCall: Waiting on OEM to give approval on supplier nomination
- Final OBC decision for SVC3 needed (affects OBC, Type 2 socket, VCU, harnesses, etc.)

BODY CLOSURE (1/2)

HIGHLIGHTS:

- Risk mitigation to provide parts for SVC3 build
- Sealing SVC3 quote submitted > almost all seals will be series tooled
- Supplier Closures testing
- Smaller parts suppliers nominated

BODY CLOSURE (2/2)

IN PROGRESS:

- PedPro - continuous development
- PB General Assembly: supplier statement is “everything is fine so far”. Focus needed for this area of SVC3 build.

LOWLIGHTS:

- Solar body panel > potential effect on SVC3 vehicle appearance

BODY STRUCTURE (1/2)

HIGHLIGHTS:

- Dash panel tool is in trial process
- Supplier workshop “Retro 2021” → What do we need to change / adjust?
- Locator hole in high speed crasher possible → CAE crash simulation positive
- Meeting CTO / GL with body structure squad
- Compromise proposal from project management regarding standard part strategy

BODY STRUCTURE (2/2)

IN PROGRESS:

- Mixed up SVC3 and SVC4 discussions

LOWLIGHTS: None

INTERIOR

HIGHLIGHTS:

- Cross functional data status for the completion of interior development

IN PROGRESS:

- Overhead console thus headliner design heavily affected by eCall and wiring
- Steering column updates lead to CCB & I/P changes post DR

LOWLIGHTS:

- Unsourced SSCM holding up I/P,s, steering wheel and driver airbag

INFOTAINMENT (1/5)

HIGHLIGHTS:

SVC3

- POs for all infotainment parts sent to suppliers (for the exception of antennas)
- CAE data provided to Interiors team → DONE
- Supplier to deliver crash simulations by 21.01.22

Project/Program Management

- Finalized 2022 headcount planning and job descriptions
- Completed squad level OKRs 2022 → IN REVIEW

INFOTAINMENT (2/5)

Everything else

- Began purchasing test bench & components
- Working with supplier to acquire a head & torso test dummy (audio sound quality)
- Provide EE team IHU device transmittal Information → DONE
- Deliver HU CAE data to Interiors → DONE
- Coordination with wire harness team for display's schematic and cabling → DONE
- Deliver VCM CAE data to interiors → DONE
- Quotation for CAE data for displays from supplier → IN REVIEW
- CAE data of instrument cluster display for crash analysis → IN REVIEW
- Sourcing decision on eCall button → DONE
- Create decisions documentation for eCall sourcing decision → DONE

INFOTAINMENT (3/5)

- Deliver microphone CAE data to interiors → DONE
- Deliver audio system CAE data to interiors → DONE
- Deliver USB CAE data to interiors → DONE
- Position VCM in the new location → DONE
- Discuss with interiors to shorten eCall brackets by (3mm on both sides) 6mm → DONE
- Resolve clash between HVAC and VCM CAD data → DONE
- Test bench components to source → DONE
- Create plan for Infotainment team head count → IN REVIEW
- Overview of ordered SVC3 Parts → DONE
- Complete parking aid item definition → IN REVIEW
- eSIM activation on hologram → DONE

INFOTAINMENT (4/5)

IN PROGRESS:

Infotainment Head Unit

- Currently waiting on supplier to implement revised milestone schedule → IN REVIEW

SVC3

- eCall & VCM are last remaining components to be released: IS-129: Completion of SVC 3 Release → IN REVIEW
- IC Controller/CANbus Monitor Module/Phone Projection Module Proposal Review → IN REVIEW
- CAN.dbc for IHU → IN REVIEW
- Source test bench components → IN REVIEW

INFOTAINMENT (5/5)

LOWLIGHTS:

eCall

- Waiting on OEM to give approval on supplier nomination

CHASSIS (1/7)

HIGHLIGHTS:

- Overall steering development
- Braking development picking up speed
- PO’s for SVC3 parts out
- Decision on supplier
- Calipers → DONE
- Front Brake hose routing to be updated to remove/reduce clash to WAL → DONE
- Add brake line split near firewall → DONE
- Front left brake line to battery + powertrain mount → DONE
- Position brake pipe crowfoot tool → DONE
- Supplier Data for CAE → DONE
- Supplier ESC Proposal Initial Discussion → DONE

CHASSIS (2/7)

- Disc design freeze → DONE
- To get Quote from supplier → DONE
- Pedal Interface alignment with BIW → DONE
- Support the Release and Approval Process → DONE
- Update EVP bracket to new EDU bracket → DONE
- Create bolted joint signoff sheet → DONE
- Determine bolted joint release process → DONE
- LCA → DONE
- Tire, Rim, Valve, Balancing Weight → DONE
- Intermediate Shaft - 2 → DONE
- Subframe Tower failed in CAE, to be improved → DONE
- Improve and Finalize Steering System Layout → DONE
- Steering Commercials - 2 → DONE

CHASSIS (3/7)

- Fastener spec → DONE
- How to handle I shaft before assembly → DONE
- Manufacturing Ergonomics → DONE
- Steering Performance - Nonuniformity and Symmetry → DONE
- FOD seal and Top Hat Design → DONE
- Ergonomics & Safety Alignment → DONE
- CEPS 3D model update - Design Freeze → DONE
- PMCS Issues → DONE
- Meshing Models → DONE
- Intermediate Shaft - 1 → DONE
- Brake Pedal and Throttle Pedal Sweep Zones → DONE
- Nominate supplier for brackets → DONE
- Get supplier final quote → DONE

CHASSIS (4/7)

- Drop Links Development- 2 → DONE
- Knuckle Development- 2 → DONE
- Wrap-up Technical alignment with supplier → DONE
- Get Hard quote from supplier → DONE
- VehicleTimeline information from supplier → DONE
- Rear Spindle Development- 1 → DONE
- Knuckle Development- 1 → DONE
- Brackets Supplier Strategy → DONE
- Marking Standards for the Knuckle Supplier → DONE
- Send RFQ to supplier for ARB → DONE
- Send RFQ to supplier for Drop link → DONE
- Get Spindle Hard quotes → DONE

CHASSIS (5/7)

- Twist Beam Updates - 1 → DONE
- Subframe Updates - 1 → DONE
- Coolant Pump Bracket updates → DONE
- Source Grease Cap for Rear Hub → DONE
- Hub Development- 1 → DONE

CHASSIS (6/7)

IN PROGRESS:

- Sprint 6 Deliverables Brakes → IN REVIEW
- How to route the brake hoses? → IN REVIEW
- Booster feasibility study for SVC 3 → IN REVIEW
- Priorities for design freeze → IN REVIEW
- Get 3x & 1x brake line clip → IN REVIEW
- SVC3 - 1 → IN REVIEW
- Mechanical Steering Gear (MSG) - 2 → IN REVIEW
- General Steering - 2 → IN REVIEW
- Steering Fasteners → IN REVIEW
- CEPS Mechanical - 1 → IN REVIEW

CHASSIS (7/7)

- Suspension dynamics sheet → IN REVIEW
- Suspension Commercials-1 → IN REVIEW
- Chassis Test Validation - 1 → IN REVIEW
- Kickoff PO for parts → IN REVIEW
- DT Document Updation → IN REVIEW

LOWLIGHTS:

- DT Data from supplier → IS BLOCKED
- 1 piece of CEPS needed for LabCar → IS BLOCKED
- ESP speed on RTB and Subframe design. More speed needed.
- CAE results taking longer than expected

E/E (1/6)

HIGHLIGHTS:

- **E/E integration**
  - Body electronics
    - BodyCAN_v13 final release to happen on Friday after the MCU latest updates. After the release all changes will be done with Change Request.
    - ChassisCAN_v03 will be released at the beginning of next week. (80% completed for SVC3).
    - PowertrainCAN has advanced including BMS and OBC new messages. MCU messages to be defined.
    - AVAS software for SVC3 completed and was tested. Bug reports and bug fixing sessions have started.

    - BCM SVC3 Requirements completed. Final Software release to be delivered the first week of march.
    - First SVC3 keyfob was 3D printed. Electronics feasibility was successful. Supplier will send us the model for reference.

- **Wiring Harness**
    - Visit to supplier Headquarter was successful

- **CAD Integration**
    - Updated SCCM CAD received for SVC3
    - Updated Hazard light Switch CAD received for SVC3
    - Updated CAD received for new CCS socket with integrated charging light

E/E (3/6)

- **Overall**
  - Good progress in SVC4 roadmap
  - More SVC3 Requirements have been documented in SionReq Jira project
  - Many tasks that the PM assigned to us were processed and solved.
  - A lean procurement process within the department including all external stakeholders involved (Procurement, Project Engineering, Product Owner, Component Owner, Cost Engineering) was implemented. All stakeholders are up to date. --> Benefit: Cost tracking, error prevention with the help of Poka Yoke, cost savings).

E/E (4/6)

IN PROGRESS:

- **E/E Integration**
  - Body electronics:
    - Steering Wheel Button final concept not completed. Too many stakeholders being involved makes it hard to come to a final design that satisfies them all.
    - Vehicle Network Management (Sleep/Wake Up/Vehicle States) is ongoing. Takes much more time than previously accounted for.

E/E (5/6)

- **CAD Integration**
  - Rear LF antenna location needs updated due to trailer hitch complexity
  - Analysis for Front Crash Sensors show these need moved forward for faster response time
  - VCU location may need updated after analyzing crash analysis

- **Overall**
  - MCU: In order to freeze the MCU, they need help from our department (“HVIL”, “extra wake-up”, etc.)

E/E (6/6)

LOWLIGHTS:

- **E/E Integration:**
  - Body electronics:
    - SCCM Supplier sourcing is still ongoing. Progress on supplier but still open points to make it work.

- **Overall:**
  - Still missing (9 %) and incomplete (30 %) DT’s from Powertrain (supplier), Chassis (supplier), Thermal (supplier), Closures (PV Panel ready this week), Exterior, Infotainment (supplier) and E/E (supplier- hazard light switch feedback tomorrow).

POWERTRAIN (1/3)

HIGHLIGHTS:

- Supplier confirmed they will supply SVC3 VCU H/W parts and quote for series. SVC3 VCU H/W Purchase Order to supplier sent
- EDUs manufactured and ready for shipping. Driveshafts on track for SVC3 MRD. Powertrain Mounts on track for SVC3 MRD.
- Powertrain mounts SVC3 design frozen.
- EDU, Driveshafts and Powertrain Mounts Release in approval phase of Release. (checklist completed).
- Vehicle misuse simulation inputs and misuse cases fully defined → simulation work kicked off.

POWERTRAIN (2/3)

- HV Battery
  - successful handover of HV battery: stand-in team has assigned roles, new folder structure, updated confluence page, List of Open Items with clear actions and internal HV Battery weekly meeting.
  - supplier confirmed that 474 A can be delivered 10 x 20s and Solar charging during HV Battery discharge is possible.

IN PROGRESS:

- VCU has a lead time of 16 weeks → Open VCU available from CW19 (w/c 9 May) but standard VCUs could be a little earlier.
- Towing: ongoing investigation of uprated transmission and lifetime study

POWERTRAIN (3/3)

LOWLIGHTS:

- Headcount (PT and HV Battery).
- HV battery stand in support and new responsibilities are taking a lot of time and slowing sprint activities.

BI-DIRECTIONAL

HIGHLIGHTS:

- PLC module: Project kick off done, weekly meeting set up, functional development (PLC, VCU) started
- PO with supplier in place, for supporting on functional and testing specification of the charging system (OBC, PLC, VCU)
- All Hardware requirements for supplier OBC finalized
- New team member is starting in February, one month earlier than planned.

IN PROGRESS: None

LOWLIGHTS:

- Diagnosis specification open

SIMULATION (1/6)

HIGHLIGHTS:

- Recruiting (ESO-80)
  - Expectation:
    - Hiring 2 new employees until end Q4/2021
  - Actual achieved:
    - One signing, starting 17. Jan. 2022

- Water Mgmt (ESO-100)
  - Expectation:
    - Defining Load Cases
    - Cost indication
    - Time-2-market figured out

SIMULATION (2/6)

    - Actual achieved:
        - Load Cases defined
        - Proper cost indication
        - Time-2-market available
        - Exterior & Body Closures onboarded
        - Next Step: Prioritization

- NVH&Durability Sprint 2 (ESO-70)
    - Expectation:
        - Defining Load Cases
        - Cost indication
        - Timing planned figured out

SIMULATION (3/6)

    - Actual achieved:
        - Content defined, costs available & timeline derived
        - Next Step: Final alignment before quote

- Complete Vehicle Bracket Simulation Strategy (ESO-59)
    - Expectation:
        - Evaluation targets available (acceleration)
        - Evaluation strategy available
    - Actual achieved:
        - Strategy and requirements available
        - Complete Vehicle Bracket Simulation Strategy

SIMULATION (4/6)

IN PROGRESS:

- Gathering E/E status information (ESO-62 & 114)
  - Expectation:
    - Overview available: Items/scenarios to evaluate by E/E Squad
    - What could be simulated?
    - How to simulate?abc
  - Actual achieved:
    - no feedback yet

SIMULATION (5/6)

LOWLIGHTS:

- Expectation:
  - A lot of efforts in regard of developing our LCO
  - Some topics blocked due to capacities
    - Updating LCO
    - Gathering data
- Recruiting (ESO-80)
  - Expectation:
    - Hiring 2 new employees until end Q4/2021
  - Actual achieved:
    - -

SIMULATION (6/6)

- NVH Document nr. 2 (ESO-53)
  - Expectation:
    - Document finalized
  - Actual achieved:
    - 3/4 done
    - Blocked due to HVB capacity issues

- Chassis: Alignment on Load cases (LCO) (ESO-84)
  - Expectation:
    - Simulation content for SVC3 Confirmation Run defined
      - LCO filled
  - Actual achieved:
    - Content not defined
      - Capacity issue of Chassis Squad

NVH (1/2)

HIGHLIGHTS:

- EVP Reports completion
- Reorganization of Sprint and meeting with POs
- Steering design support (air tightness on lower cross member)
- XF - Interior Package Review and reorganization
- Validation plan - DVP integration
- Powertrain Validation Test Plan
- Recruitment on going

NVH (2/2)

IN PROGRESS:

- Jira link to Requirement
- AVAS system integration Launched - Sound Package on going

LOWLIGHTS: None

DESIGN (1/2)

HIGHLIGHTS:

- Update Exterior handle + freeze it → DONE
- Get printed steering wheel → DONE
- Learn Blender → DONE
- Update styling to engineering release → DONE

IN PROGRESS:

- Steering Wheel Switch Alignment → IN REVIEW
- Hazard light switch position → IN REVIEW
- SION grain logo on hatch? → IN REVIEW
- Update steering shroud cover → IN REVIEW
- Update IP to new Steering shroud + lever Task → IN REVIEW
- Sion exterior color matching - need grain / color info from solar → IN REVIEW

DESIGN (2/2)

LOWLIGHTS: None

CRASH & SAFTEY (1/2)

HIGHLIGHTS:

- Closures to deliver CAE models required for Crash & Safety assessments based on Design Release CAD data till 17-Dec-2021 → DONE
- Exterior to deliver CAE models required for Crash Safety assessments based on Design Release CAD data till 17-Dec-2021 → DONE
- Sprint Review CW50 KPI Filling → DONE
- Headcount Plan Update Interior → DONE
- Each squad will deliver CAE models derived from SVC3 Design Freeze/Release CAD till 17-Dec-2021 → DONE
- Infotainment to deliver CAE models required for Crash & Safety assessments based on Design Release CAD data till 17-Dec-2021 → DONE

CRASH & SAFTEY (2/2)

- HV Battery to deliver CAE models required for Crash & Safety assessments based on Design Release CAD data till 17-Dec-2021 → DONE
- Chassis to deliver CAE models required for Crash & Safety assessments based on Design Release CAD data till 17-Dec-2021 → DONE

IN PROGRESS:

- Sprint Process Adjustments → IN REVIEW
- Squad Level OKR 2022 → IN REVIEW
- Latest possible SVC3 hardware (CV, Bucks, BIW) → IN REVIEW
- Individual hardware demands (Bucks+BIW) - Crash and Safety → IN REVIEW
- Hood to be improved to meet PedPro homologation requirements → IN REVIEW

LOWLIGHTS: None

DEVELOPMENT SPRINT REVIEW
CALENDAR WEEK 04.22

GENERAL (1/3)

HIGHLIGHTS:

- All infotainment components are either “APPROVED” or “IN APPROVAL” status for SVC3
- E/E: Good progress in SVC4 roadmap
- Powertrain: All components released for SVC3 except VCU (spec. for DTs outstanding due CW6) and fasteners (BOM submitted to supplier and awaiting offer)
- SVC3 HV battery release
- NVH: Interior package alignment for NVH testing (Step1)

GENERAL (2/3)

IN PROGRESS:

- CAE data and Mesh data for complete Infotainment System received (crash simulations) IN REVIEW
- E/E: PDC sensor integration is still ongoing
- Powertrain: VCU has a lead time of 16 weeks → Open VCU available from CW19 (w/c 9 May) but standard VCUs could be earlier.
- Towing: ongoing investigation of upgraded transmission and lifetime study

GENERAL (3/3)

LOWLIGHTS:

- Unsourced SSCM holding up I/P, shroud, steering wheel and driver airbag
- Unsourced E/E multimedia-ADAS switches holding up steering wheel
- E/E: Headcount: DVP and testing engineers missing

INTERIOR

HIGHLIGHTS:

- Cross functional data status for the completion of interior development

IN PROGRESS:

- Steering column updates lead to CCB & I/P changes post DR

LOWLIGHTS:

- Overhead console thus headliner design affected by eCall and wiring
- Unsourced SSCM holding up I/P, shroud, steering wheel and driver airbag
- Unsourced E/E multimedia-ADAS switches holding up steering wheel

INFOTAINMENT (1/4)

HIGHLIGHTS:

SVC3

- All infotainment components are either “APPROVED” or “IN APPROVAL” status for SVC3 → DONE
- Solved existing BOM errors: IS-123: BOM error → DONE
- POs for all infotainment parts sent to suppliers (for the exception of antennas)
- CAE data and mesh data for complete infotainment system received (crash simulations) → IN REVIEW

eCall

- Received contract for COP-part from OEM; currently in signature loop

INFOTAINMENT (2/4)

VCM

- 2D drawing uploaded to 3DX

Everything else

- Continuing to purchase test bench & components
  - ESD bench mats
  - Power supplies + lead sets
  - Parking aid item definition & HARA review completed.

INFOTAINMENT (3/4)

IN PROGRESS:

- SVC3
  - Missing antenna and front USB DTs → supplier and team in continued loop: PARKED

- Infotainment head unit
  - Alignment required with digital for cluster UI/UX dependencies: → IN REVIEW
  - Currently waiting for supplier side testing to be completed on alpha boards

INFOTAINMENT (4/4)

VCM

- VCM - IHU ethernet connection design still in progress
- IC Controller/CANbus monitor module/phone projection module proposal review → IN REVIEW
- CAN.dbc for IHU → IN REVIEW

LOWLIGHTS: None

E/E (1/4)

HIGHLIGHTS:

- E/E integration
  - Body electronics:
    - BodyCAN V16 was uploaded to confluence page and released → all changes will go through change process
    - Vehicle network management → process defined

- Wiring harness
  - Complete timing for SVC4 roadmap.

- Overall
  - Good progress in SVC4 roadmap

E/E (2/4)

IN PROGRESS:

- E/E integration
  - Body electronics
    - PDC sensor integration is still ongoing

- CAD integration
  - We were not able to release all parts of E/E

E/E (3/4)

LOWLIGHTS:

- E/E integration
  - Body electronics:
    - Prioritization of tasks is difficult, because of a lot of x-functional tasks from other departments
    - Headcount: DVP and testing engineers missing; SCCM Supplier sourcing ongoing. Progress on supplier but still open points to make it work

- CAD Integration
  - Hazard light switch: Does it come with a bezel? → We can not release our part without this knowledge. → Need to clarify with interior
  - No BLS supplier
  - Waiting for complete PCB layout to begin GEM housing design

E/E (4/4)

- Overall
  - Still missing (9%) and incomplete (30%) DTs from powertrain (supplier), chassis (supplier), thermal (supplier), closures (PV panel ready this week), exterior, infotainment (supplier) and E/E (supplier- hazard light switch feedback tomorrow).

POWERTRAIN (1/3)

HIGHLIGHTS:

- All components released for SVC3 except VCU (spec. for DTs outstanding due CW6) and fasteners (BOM submitted to supplier and awaiting offer).
- Issuing contracts for Integration engineer and T&D engineer.
- Labeling for SVC3 agreed with suppliers.
- Engagement from test facility providers for Powertrain validation (quotation phase).

POWERTRAIN (2/3)

IN PROGRESS:

- Too much time invested in 2D drawings sizes (adjustable 2D drawing template required).
- VCU has a lead time of 16 weeks → Open VCU available from CW19 (w/c 9 May) but standard VCUs could be earlier.
- Towing: ongoing investigation of upgraded transmission and lifetime study
- VCU design not released as VCU spec. from supplier outstanding.
- BOM outstanding data (enterprise numbers, fastener torques).
- Definition of part labels: fixed, uniform labeling for Sono Motors
- Difficulties with 3Dx → have delayed constructing --> problem is solved with CAD-team

POWERTRAIN (3/3)

LOWLIGHTS:

- Headcount (PT and HV Battery).
- Standing in for HV Battery is taking up time and impacting other tasks.
- Recruitment for Powertrain and HV Battery taking up time → powertrain recruitment should complete this week.
- Mount damper curves for misuse simulation (critical path for h/w sizing validation and towing capability analysis) → supplier due share end of CW5.

BI-DIRECTIONAL

HIGHLIGHTS:

- Wallbox: supplier will start to develop the Bidirectional Wallbox

IN PROGRESS:

- No off the shelf part for Schuko with plug detection available (high piece price)

LOWLIGHTS:

- Decision on Schuko plug detection for V2L still pending
- No requirements for diagnostic system on vehicle level available

HV BATTERY (1/2)

HIGHLIGHTS:

- A sample installed on lab car and outputting CAN signals → communicate to BMS using correct dbc file
- Tear down of a sample showing BMS, contactor relays, pyro fuse
- SVC3 HV battery release
- 475 A peak current capability confirmed by supplier and planned in DVP
- Cell testing at supplier (dimensions, capacity, charge times)

HV BATTERY (2/2)

IN PROGRESS:

- 13 kg over weight due to structural design change

LOWLIGHTS:

- Headcount
- Internal / external support for defining BMS Hardware / Software functionalities
- Diagnostic Topics-Critical for SVC3 (DTC definition to supplier shall be provided by Sono)
- Software Release Plan (Maturity level)

SIMULATION (1/3)

HIGHLIGHTS:

- CAE Solver
  - Solver defined: Abaqus
  - Purchased: yes
  - Runnable: aimed for February
- HVB Simulation Loop decision
  - Decision taken
  - minor alignments to go
- Modeling of weld lines
  - Decision available
  - Decision shared with main stakeholder (body structure) and main ESP
  - Additional: open question marks and issues-to-solve detected

SIMULATION (2/3)

IN PROGRESS:

- Complete Vehicle Bracket Status
  - List started and available
  - Just a few information available from squads
    → complete content overview (which brackets are to evaluate) not available for now

SIMULATION (3/3)

LOWLIGHTS:

- HV-simulation loop - LV124
  - no results received due to new-years-holidays

NVH (1/2)

HIGHLIGHTS:

- Interior package alignment for NVH testing (Step1)
- Closure package alignment
- Exterior package alignment
- Series-validation vehicle build planning alignment for NVH
- Infotainment package alignment
- Recruitment closing next sprint
- Structural dampeners decision matrix and possible change action to be initiated
- Engine mounts end stops tuning
- Sound designer recon

NVH (2/2)

IN PROGRESS:

- 15+ cards in progress

LOWLIGHTS: None

WEIGHT

HIGHLIGHTS:

- Link to Jira Sprint (StatusReport-CW02 related Jira tickets will be closed on Friday)

IN PROGRESS:

- Jira Link to the Requirement Board still in Work (VTS related topics)
- Jira Sprint view in Weight Management Confluence Page still in Work
- Design Release check related topics will be closed on Friday after the Release meeting; Masses Package tickets will be closed/inReview on Thursday; Weight Table Ticket related topics will be postponed to Sprint CW06.22 because of lacking of Axle Distribution input (which depends on the Masses list)

LOWLIGHTS:

- Input source: BOM attributes Part_Source and estimated Weight

DESIGN (1/2)

HIGHLIGHTS:

- Update exterior handle + freeze it → DONE
- Get printed steering wheel → DONE
- Start stop button position → DONE
- Hazard light switch position → DONE
- Learn blender → DONE
- SION grain logo on hatch? → DONE
- Support ADAS rendering → DONE
- Revise windshield camera cover → DONE
- Sion exterior color matching - need grain / color info from solar → DONE
- Update styling to engineering release → DONE

DESIGN (2/2)

IN PROGRESS:

- Steering wheel switch alignment → IN REVIEW
- Update steering shroud cover → IN REVIEW
- Update IP to new steering shroud + lever task → IN REVIEW

LOWLIGHTS: None

DEVELOPMENT SPRINT REVIEW
CALENDAR WEEK 06.22

GENERAL (1/3)

HIGHLIGHTS:

- Infotainment: sourcing decision on e-Call button → DONE
- Position VCM in the new location → DONE
- Chassis: front brake hose routing to be updated to remove/reduce clash to WAL → DONE
- Chassis: serviceable parts - EBOM update → DONE
- Body electronics and interior interfaces are solved (data, support, CAD)
- SCCM: supplier will send a quote on 18.02.
- Powertrain: standard VCU comes for SVC3 in CW 15
- Bi-directional: new design for charging interface with male type 2 and schuko socket confirmed; V2H works via male type 2 and wallbox, no adapter needed; V2V function to be done over female type 2 adapter.

GENERAL (2/3)

IN PROGRESS:

- E/E: PDC sensor integration is still ongoing
- E/E: Steering wheel buttons layout: discussion to be done more frequently in order to accelerate. → It is progressing.
- Powertrain: Misuse events show higher shock load then target → design review with PT mounts supplier in progress
- Design and E/E: sleeker rear design to include rear-view camera and more half cells. No small rear wiper confirmed.

GENERAL (3/3)

LOWLIGHTS:

- Unsourced SSCM holding up I/P, shroud, steering wheel and driver airbag
- Unsourced E/E multimedia-ADAS switches holding up steering wheel
- E/E: Headcount: DVP and testing engineers missing

BODY STRUCTURE

HIGHLIGHTS:

- SVC3 PO (standard parts & sleeves part 2)
- SVC3 PO (trailer hitch)

IN PROGRESS: None

LOWLIGHTS: None

INFOTAINMENT (1/5)

HIGHLIGHTS:

SVC3

- working with supplier to audio sound quality set-up
- POs for all infotainment parts sent to suppliers (final SVC3 PO for antennas sent out this sprint) → DONE

Infotainment Head Unit

- IC controller/CANbus monitor module/phone projection module proposal submitted for review → DONE

INFOTAINMENT (2/5)

VCM

- Supplier pre-release version received & delivered to Supplier2 Drive for final test.
- eSIM samples to be delivered to the team for final eSIM trial & team for V3 build.

Everything else

- Continuing to purchase test bench & components (submitted requests for):
- Working with supplier to equip audio sound quality test setting
- IC controller/CANbus monitor module/phone projection module proposal review → DONE
- Provide EE team IHU device transmittal information → DONE
- Deliver HU CAE data to Interiors → DONE
- Coordination with WireHarness team for display's schematic and cabling → DONE

INFOTAINMENT (3/5)

- CAN.dbc for IHU → DONE
- Deliver VCM CAE data to Interiors → DONE
- Confirm screw length and torque for VCM → DONE
- Quotation for CAE data for displays from supplier → DONE
- CAE data of Instrument Cluster Display for crash analysis → DONE
- CAN details for all the tell tales list → DONE
- Sourcing decision on eCall button → DONE
- Create decisions documentation for eCall sourcing decision → DONE
- Deliver microphone CAE data to Interiors → DONE
- Deliver audio system CAE data to Interiors → DONE
- Deliver USB CAE data to Interiors → DONE

INFOTAINMENT (4/5)

- Position VCM in the new location → DONE
- Discuss with Interiors to shorten eCall brackets by (3mm on both sides) 6mm → DONE
- Resolve clash between HVAC and VCM CAD data → DONE
- Team’s test bench components to source → DONE
- Create plan for Infotainment team head count → DONE
- Overview of ordered SVC3 Parts → DONE
- Complete parking aid item definition → DONE
- eSIM Activation on Hologram → DONE

INFOTAINMENT (5/5)

IN PROGRESS:

- SVC3
  - Incomplete antenna DTs
- Infotainment head unit
  - Currently waiting for supplier side testing to be completed on alpha boards
- VCM
  - VCM functional requirement still WIP

LOWLIGHTS: None

CHASSIS (1/5)

HIGHLIGHTS:

- Get brake lines ready for sourcing → DONE
- Calipers → DONE
- Front brake hose routing to be updated to remove/reduce clash to WAL → DONE
- Add brake line split near firewall → DONE
- Front left brake line to battery + powertrain mount → DONE
- Position brake pipe crawfoot tool → DONE
- DT data from supplier → DONE
- Supplier ESC proposal initial discussion → DONE
- Booster feasibility study for SVC 3 → DONE
- Disc design freeze → DONE
- To get quote from supplier → DONE

CHASSIS (2/5)

- Pedal interface alignment → DONE
- SVC3 releases - 2 → DONE
- SVC3 steering vehicle DVP → DONE
- Fastener spec → DONE
- Ergonomics & safety alignment → DONE
- Interfaces - clashes → DONE
- Adjustment lever design - inc. lever sweep zones → DONE
- CEPS 3D model update - design freeze → DONE
- CEPS mechanical - 1l → DONE
- Intermediate shaft fastening strategy → DONE
- Nominate supplier for brackets → DONE
- Get quote and timing from supplier → DONE

CHASSIS (3/5)

- Wrap-up technical alignment with supplier → DONE
- Anti roll bar development → DONE
- Brackets supplier strategy → DONE
- Send RFQ to supplier for ARB → DONE
- Send RFQ to supplier for drop link → DONE
- Get spindle hard quotes → DONE
- Suspension dynamics sheet → DONE
- Wrap-up tech alignment → DONE
- Droplinkhard quotes → DONE
- ARB hard quotes → DONE
- CAE mesh of parts → DONE
- Weekly follow-up with supplier → DONE

CHASSIS (4/5)

- Chassis test validation timeplan template → DONE
- Body block test part of ECE R12 → DONE
- Homologation drawings → DONE
- CEPS draft drawing review → DONE
- SVC3 quantities → DONE
- Kick-off PO for parts → DONE
- Preliminary quote for brackets → DONE
- BWI internal gap analysis workout → DONE
- DT document updation → DONE
- Serviceable parts - EBOM update → DONE
- Finalize rear hose/pipe bracket design → DONE

CHASSIS (5/5)

IN PROGRESS:

- Steering fasteners
- Nominate autoline for brackets
- Define test method for rear twist beam
- Rear twist beam development
- Front subframe development
- Suspension commercials
- Chassis test validation
- MSG - 3
- Sign-off list - steering
- General steering - 3
- CEPS mechanical - 2

LOWLIGHTS: None

E/E (1/5)

HIGHLIGHTS:

- E/E integration
  - Body electronics:
    - Body electronics and Interior interfaces are solved (data, support, CAD)
    - Brake light switch with chassis team solved
    - HVAC controlling and feedback strategy defined (thermal, powertrain, Sono Digital and supplier)
    - Roadmap (timing, software release plan) for BCM created
    - Item definition vehicle start finished (review next week) → All item definitions are done
    - LabCar: Confluence page for technical update of LabCar (newsletter) → Useful for PM
    - SCCM: supplier will send a quote on 18.02. (hardware for SVC3 with 90 % functionality possible)

E/E (2/5)

- ADAS:
  - Supplier ADAS GSR component: Dev. kick off
  - Start development of main ADAS components
  - Map Data: possibility to compare two quotes
  - Two offers for test & validation engineers
- Wiring harness:
  - Complete timing for SVC4 roadmap.
- CAD integration:
  - OBC design job ongoing
- Overall:
  - Good progress in SVC4 roadmap
  - Good progress in receiving and creating DTs (no missing, but still incomplete)

E/E (3/5)

IN PROGRESS:

- E/E integration:
  - Body electronics:
    - PDC sensor integration is on going
    - Cross functional work doesn't work via Jira (more slack) → Prioritization is not possible
  - ADAS:
    - E/E: steering wheel buttons layout: discussion to be done more frequently in order to accelerate. → Progressing.
- CAD Integration:
  - We were not able to release all parts of E/E
  - Updated schuko socket for series needed (SVC3 fixed)

E/E (4/5)

LOWLIGHTS:

- E/E integration:
  - Body electronics:
    - Headcount: DVP and testing engineers missing;
    - Testing and commissioning of SVC3 while developing SVC4? → More capacity needed
    - SCCM: Dynamic movements have to be aligned with interior team
  - ADAS:
    - For now no PO for ADAS option 4 possible at the moment

E/E (5/5)

- Overall:
  - Delayed delivery supplier hardware (receiver, antennas) because of separate quote
  - Delay in nomination of supplier for IBS & rainlight sensor, traffic horn - new round next sprint
  - Still missing (0 %) and incomplete (17 %) DTs from powertrain (supplier), thermal (supplier), exterior, infotainment (supplier) and E/E (supplier).

POWERTRAIN (1/2)

HIGHLIGHTS:

- Standard VCU comes in CW 15 (11. April 2022)
- Miss use simulations results received (PT system strength)
- PT crash CAE BOM updated with materials
- VCU DT is complete and VCU hardware can be released for SVC3

POWERTRAIN (2/2)

IN PROGRESS:

- Misuse events show different shock load then target → Design review with PT mounts supplier in progress
- Catia license in 3Dx is slowing progress with CAD and BOM updates

LOWLIGHTS:

- Headcount (PT and HV battery)
- Standing in for HV battery is taking up time
- Recruitment for powertrain and HV battery taking up a significant amount of time -> HV battery recruitment should complete this week.

BI-DIRECTIONAL

HIGHLIGHTS:

- Meeting with suppliers for the bi-directional charging is planned.
- New design for charging interface with male type 2 and schuko socket confirmed; V2H works over male type 2 and wallbox, no adapter needed; V2V function to be done over female type 2 adapter.

IN PROGRESS:

- Type 2 female socket from charging interface will be removed.
- Improvements of DC charging for SVC3 needed.

LOWLIGHTS:

- No requirements for diagnostic system on vehicle level available.
- No requirements for cyber security on vehicle level available.

HV BATTERY (1/2)

HIGHLIGHTS:

- Supplier proposed suitable timing + solution for SVC3 pack delivery despite corona lockdown
- A-sample installed on lab car and CAN signals being received and interpreted with the correct dbc file.
- Tear down of A-sample showing BMS,contactor relays, pyro fuse.
- Cell testing at test facilities progressing (dimensions, capacity, charge times).

HV BATTERY (2/2)

IN PROGRESS:

- Welding process causing tab over temperature and currently the same issue would be seen on B sample → could impact thermal performance → further improvements planned.
- Current pack cell temperature delta during fast charging and heating above target (target should be < 5 degC)

LOWLIGHTS:

- Not enough headcount.
- Internal / external support for defining BMS Hardware / software functionalities → BMS contractor search in progress.
- Diagnostic topics critical for SVC3 (DTC definition to supplier shall be provide by Sono).

SIMULATION (1/2)

HIGHLIGHTS:

- Solver defined
- Purchased: yes
- Runnable: aimed for February
- HVB simulation loop decision
  - Define ESP for HVB simulation loop → Decision taken
  - Quotes to compare available → minor alignments to go

- Modeling of weld lines:
  - perform investigation to compare several possibilities of modeling
  - Decision: how to model weld lines
  - Decision shared with main stakeholder (body structure) and main ESP
  - Additional: open question marks and issues-to-solve detected

SIMULATION (2/2)

IN PROGRESS:

- Complete vehicle bracket status
- Creating a list contains all brackets to simulate
- Gather current simulation status

LOWLIGHTS:

- HV-simulation loop → no results received due to holidays
- Chassis: alignment on load cases
- Simulation content for SVC3 confirmation run defined → content not defined

NVH (1/2)

HIGHLIGHTS:

- Series-validation vehicles build planning alignment for NVH
- Procuring of dedicated materials in progress (PO will be out next sprint)
- Infotainment package alignment
- Sound designers audited, decision and PO next sprint
- Recruitment closed, new starter next sprint, PO support signed
- SVC2 NVH reports officially closed
- Interior support for NVH package series-validation vehicles and series

NVH (2/2)

IN PROGRESS:

- Jira link to requirement - WIP
- DVP update with new vehicle planning
- Most cards have been created this week

LOWLIGHTS: None

DESIGN

HIGHLIGHTS:

- Steering wheel switch alignment → DONE
- Update steering shroud cover → DONE

IN PROGRESS:

- Update IP to new steering shroud + lever task → IN REVIEW

LOWLIGHTS: None

DEVELOPMENT SPRINT REVIEW
CALENDAR WEEK 08.22

GENERAL (1/2)

HIGHLIGHTS:

- Chassis: GD&T concept for SVC3 → Done
- Crash and Safety: Individual hardware demands (bucks+BIW) → Done
- EE/DES: GD&T concept for SVC3 → Done
- SVCs Build planning alignment for NVH / ongoing
- AVAS Sound test (functionality and 1st tone proposals) completed

GENERAL (2/2)

IN PROGRESS:

- Infotainment: GD&T concept for SVC3
- SCCM dbc file received but affects the CAN communication of the vehicle

LOWLIGHTS:

- ACC development decision: after internal reviews, ACC as a feature won’t be integrated into the Sion for now. ACC was always “under review” and therefore never confirmed as a feature on the fact sheet or website. Still a tough decision, as everyone internally really likes the feature. We plan to offer it at a later date.

BODY STRUCTURE

HIGHLIGHTS:

- Series Supplier Sheet Metals
  - LOI signed
  - Visit to Sono office
  - Series quote in place
  - Reduction of sheet metal tooling costs

IN PROGRESS: None

LOWLIGHTS: None

INFOTAINMENT (1/2)

HIGHLIGHTS:

SVC3

- Expected delivery date received and completed
- Analysis of potential rear USB (front USB unchanged) → now 12V outlet as solution in the rear. Customers can e.g. charge their phones via standard adapter there as well

VCM

- Pre-release testing to read firmware versions through UDS and provision testing with temporary certificates have been successful so far.
  - Test results for both to be delivered in the next sprint.

INFOTAINMENT (2/2)

IN PROGRESS:

- Infotainment head unit
  - Currently waiting for supplier side testing to be completed on alpha boards
  - New engineering service provider for eCockpit software development

- VCM
  - VCM functional requirement still WIP
    - Changes are still being made, but priorities on remote commands are established.
  - VCM for SVC3 have an error in the molding, can be fixed manually
    - Changes will be made in tooling to fix for SVC4.

LOWLIGHTS: None

CHASSIS (1/7)

HIGHLIGHTS:

- 3D model from supplier → Done
- To work out calibration / Sw release & DVP plan for SVC 3 delay with BWI → Done
- Mesh data for crash analysis → Done
- Adjust hole size in bracket → Done
- Alignment of interface between with supplier for the EVAC & Fill Process → Done
- Anti Roll Bar -2 → Done
- Body block test part of ECE R12 → Done
- Booster feasibility study for SVC 3 → Done
- Bracket design for hose → Done
- Brackets supplier strategy → Done
- Brake connector pipe design → Done

CHASSIS (2/7)

- Brake lines readiness → Done
- Brake pedal supplier booster → Done
- Brake pipe design → Done
- BWI internal gap analysis workout → Done
- CAE mesh of parts → Done
- CEPS 2D release → Done
- Chassis test and validation time plan template → Done
- Clip design → Done
- ESC proposal initial discussion → Done
- Cost agreement after the final design → Done
- Create 3D model for BIW reinforcement bracket → Done
- Development activities → Done

CHASSIS (3/7)

- Disc design freeze → Done
- Droplink hard quotes → Done
- DT data from supplier → Done
- DT document update → Done
- Durability profile inputs → Done
- DVP test numbers agreement → Done
- Supplier coil spring drawing approval & MRD dates for SVC3 → Done
- Fastener spec → Done
- Freeze CAN matrix for first SWR for LabCar → Done
- GD&T model for rear axle finalization → Done
- Generate test loads based on VRLDA → Done
- Get 3x & 1x brake line clip → Done

CHASSIS (4/7)

- Get feedback from BIW team / supplier→ Done
- Get spindle hard quotes → Done
- Homologation drawings → Done
- Hose connector design → Done
- Implement brake line clips → Done
- Interface agreement from the stakeholders → Done
- Interface requirement for brake pedal switch → Done
- Intermediate shaft fastening strategy → Done
- Kickoff PO for parts → Done
- Kickoff spindle testing discussion → Done
- Knuckle stiffness target alignment → Done
- Knuckle testing-road load data → Done

CHASSIS (5/7)

IN PROGRESS:

- 2D drawings for strut and shock absorber supplier - review and feedback → In progress
- Align with supplier for ESC functions → In progress
- BOM for sub frame - material alignment → In progress
- CEPS mechanical - 2 → In progress
- Chassis test and validation - 1 → In progress
- Define test method for rear twist beam → In progress
- Feasibility check to add spring plastic sleeve → In progress
- Finalize brake hoses & pipes → In progress
- Front coil spring design confirmation → In progress
- Front subframe development -1 → In progress
- General steering - 3 → In progress

CHASSIS (6/7)

- Homologation - M → In progress
- Longitudinal motion control alignment → In progress
- Nominate Autoline for brackets → IN PROGRESS
- Rear axle spindle mounting plate machining & welding sequence → IN PROGRESS
- Rear twist beam development -1 → IN PROGRESS
- Requirement and its management - M → IN PROGRESS
- Requirements for Interfaces → IN PROGRESS
- RFQ release for rear coil spring for supplier → IN PROGRESS
- S - align development of other ECUs and ESC → IN PROGRESS
- Share prio joint request sheets → IN PROGRESS
- Sion chassis history → IN PROGRESS
- Software and functional timeline - S → IN PROGRESS

CHASSIS (7/7)

- Steering fasteners → IN PROGRESS
- Steering vehicle DVP to be confirmed → IN PROGRESS
- SVC3 build-1 → IN PROGRESS
- Test and LC development- L → IN PROGRESS
- Getting the booster quote from supplier → IN PROGRESS
- VRDLA - loop 2 (based on MBS update) → IN PROGRESS

LOWLIGHTS:

- Detailed design confirmation for supplier booster & vacuum sensor
- Cybersecurity internal targets

E/E (1/5)

HIGHLIGHTS:

- E/E integration:
  - Body electronics:
    - All components released for SVC3 (EDS-1694)
    - LabCar: Most connectors are now attached to the wiring harnesses
    - BCM software release plan for series finished
    - PACE software release plan for series finished
    - GEM software release plan for series finished

- CAD integration:
  - GEM SVC3 box design progressing rapidly this sprint

E/E (2/5)

- Wiring harness:
  - Internal SVC3 design checklist refinement finished
  - Successful on-boarding of EDS engineer
  - Kick-off production of wiring harnesses at supplier

IN PROGRESS:

- E/E integration:
  - Body electronics:
    - ACC decision has an impact on steering wheel buttons configuration
    - Charging/discharging details not completely defined, affecting Body CAN
    - SCCM dbc file finally received but affects the CAN communication of the vehicle
    - Current brake light switch to be used in the SVC3 only → series intended brake light switch was refused by chassis team

E/E (3/5)

- Wiring harness:
  - Quality of drawings from supplier have no good quality → slow down progress
  - Access to Catia & 3Dx causes time problems
  - Grommets: Did not receive full and updated design from supplier, because of their manufacturing alignment

- CAD Integration:
  - SVC3/SVC4 structure differentiation is causing issues with suppliers and slowing down 3D design
  - New BLS switch may cause close contact / clash condition with thermal, need to review

E/E (4/5)

LOWLIGHTS:

- E/E Integration:
  - Body electronics:
    - Headcount: DVP and testing engineers missing; important for SVC3 commissioning and testing
    - Testing and commissioning of SVC3 while developing SVC4 → Capa
    - SCCM: Dynamic movements have to be aligned with interior team

- Wiring Harness:
  - Understanding the release process → in contact with experts to solve this.
  - BOM issue (missing information from EDS) → solved.

E/E (5/5)

- CAD Integration:
  - SVC3 BOM split, because fixing SVC3 CAD data and meanwhile working on SVC4 → Fully defined SVC3 BOM split would help
  - Recent Catia/3DX update caused some issues with the team → IT tickets raised

POWERTRAIN (1/2)

HIGHLIGHTS:

- Collaboration (driveshafts) very efficient
- Headcount done
- Good progress with validation plan

POWERTRAIN (2/2)

IN PROGRESS:

- Misunderstanding with supplier regarding FEM (Crossbeam)
- Tasks demand more time than planned (supplier work)

LOWLIGHTS:

- CAD license issues → need help here from PM standing in for HV Battery is taking up time FuSa driveshafts → update PPAP
- Define torque value is difficult, because need feedback from supplier

BI-DIRECTIONAL

HIGHLIGHTS:

- We hired a validation engineer, starts in June.
- First OBC samples will be delivered at the end of March
- Meeting with supplier for bidirectional charging planned

IN PROGRESS:

- Risk of not achieving maximum charging speeds with OBC for SCV3.

LOWLIGHTS:

- No requirements for diagnostic systems on vehicle level available.
- No requirements for cybersecurity on vehicle level available.

NVH (1/2)

HIGHLIGHTS:

- SVCs build planning alignment for NVH ongoing
- Interior support for NVH package SVCs and series
- Procuring of dedicated materials in progress, ongoing
- AVAS sound test (functionality and 1st tone proposals) completed
- Sound designers audited, decision in discussion
- Recruitment closed, new starter next sprint, PO signed

NVH (2/2)

IN PROGRESS:

- Jira link to requirement - WIP
- DVP update with new vehicle planning
- POs for NVH equipment in negotiations

LOWLIGHTS: None

WEIGHT

HIGHLIGHTS:

- Link to Jira sprint

IN PROGRESS:

- Jira link to the requirement board still ongoing (VTS related topics still open)
- Jira sprint view in weight management confluence page still ongoing
- PKGO related tickets were postponed to CW10.22 due to priority and current capacity

LOWLIGHTS:

- Input source: BOM attributes Part_Source and estimated weight

DEVELOPMENT SPRINT REVIEW
CALENDAR WEEK 10.22

GENERAL (1/2)

HIGHLIGHTS:

- Infotainment: VCM V3 hardware shipped
- "Find my vehicle" command strategy → Done
- Chassis: freeze CAN matrix for first SWR for LabCar → Done
- ADAS: hired two people for test & validation engineering
- ADAS: cybersecurity kick-off internal alignment
- Kick-off Production of Wiring Harnesses
- Plastic brackets, all defined and ordered.
- Metal brackets, all defined and ordered.
- Powertrain: SVC4 half shaft design decision made to enable tooling kick off.
- Update charging lid Sono logo after community voting→ Done
- Update Sion tailgate logo after community voting → Done

GENERAL (2/3)

IN PROGRESS:

- Body Structure: SVC3 change actions blocks capacity in the body structure squad
- Chassis: align with supplier for ESC functions → In progress
- Chassis: detailed design confirmation for supplier booster & vacuum sensor → In progress
- E/E: good progress in SVC4 roadmap
- E/E: good progress in receiving and creating DT’s (not missing, but still incomplete)
- Fully defined SVC3 BOM split vs SVC4 needs to be created
- SVC3: ongoing risks of delayed supplies due to covid situation in China
- Battery: cell testing at supplier progressing (dimensions, capacity, charge times)

GENERAL (3/3)

LOWLIGHTS:

- Drawing upload in 3DX not possible
- Cybersecurity internal targets
- ADAS: only hardware with CAN communications with basic functionality (all ECUs) of ADAS in SVC3 → less time for testing
- FuSa driveshafts → update PPAP

BODY STRUCTURE (1/2)

HIGHLIGHTS: None

IN PROGRESS:

- SVC3 change actions blocks capacity in the body structure squad
- SVC3 data updates not finished yet
- Strategy change of E-Coating drain holes (Because of new know-how input, we changed from the opinion “We can have dry areas in the profiles” to “It is not possible to seal the inside of the profiles”)
- Ongoing body structure job interviews
- Additional PO needed for supplier, because body structure parts were missed in the sent data

BODY STRUCTURE (2/2)

LOWLIGHTS:

- Drawing upload in 3DX not possible
- Reduced activities on SVC4 topics, because of SVC3 workload
- Open positions not filed yet

INFOTAINMENT (1/4)

HIGHLIGHTS:

SVC3

- Engineer Service Provider (ESP) selected for Track 1 for head unit development

VCM

- VCM V3 hardware shipped
- VCM environment test phase 1 complete
  - Thermal cycling, low temperature storage and operation, high temperature endurance - PASS
- Tentative revision of SW release plan to include May 1st pre-release from Supplier to accommodate core functionality for Solstice Day.
  - Official SW release plan to be released on April 1st.

INFOTAINMENT (2/4)

- "Find my vehicle" command strategy → Done
- Change action for parent BOM items (for fasteners) → Done
- Check SVC3 product in 3DX → Done
- Cost analysis for rear USBs for consideration of removal → Done
- Define “Unlock/Lock Doors” remote commands → Done
- Define “Vehicle Preconditioning” on SION REQ → Done
- Draft VCM boundary diagram → Done
- eSIM shipping to supplier → Done
- Fix VCM SVC3 manufactured part error → Done
- GD&T concept for prototype → Done
- HU detailed design document → Done
- HVAC CAN messages → Done

INFOTAINMENT (3/4)

- Microphone DT updated → Done
- Organize and send over files/documentation to send to ESPs → Done
- Revise VCM SW release plan → Done
- Sprint cross-functional: recognize the current status of descriptions that can be used for the development handbook → Done
- SVC3 - System maturity levels → Done
- SVC3 expected delivery date → Done
- Update Antenna DT with correct part number & images → Done
- Vehicle Access & Start Workshop → Done

INFOTAINMENT (4/4)

IN PROGRESS:

- VCM
  - VCM functional requirement
    - 2 P0 commands still need to be finalized: stop charge & remote mobilization
- Create overview CTS, MTS, SSTS [for initial assessment] → In Progress

LOWLIGHTS: None

CHASSIS (1/8)

HIGHLIGHTS:

- 1 piece of CEPS needed for LabCar → Done
- 2D drawings for strut and shock absorber supplier - review and feedback → Done
- 3D models are missing → Done
- Adjust hole size in bracket → Done
- Body block test part of ECE R12 → Done
- BOM for sub frame - material alignment → Done
- Bracket design for hose → Done
- Bracket drawings→ Done
- Brackets → Done
- Brake connector pipe design → Done
- Brake hoses & pipes → Done

CHASSIS (2/8)

- CAE mesh of parts, unassigned → Done
- CEPS 2D release → Done
- Chassis test and validation time plan template → Done
- Clip design → Done
- Communicate change to supplier → Done
- Create bolted joint request sheet → Done
- Create vacuum hose → Done
- DFMEA software user's decision → Done
- DVP test numbers agreement with supplier development phase wise → Done
- Supplier coil spring drawing approval & MRD dates for SVC3 → Done
- Fastener spec → Done
- Feasibility check to add spring plastic sleeve → Done

CHASSIS (3/8)

- Freeze CAN matrix for first SWR for LabCar → Done
- Front sub frame DVP test numbers, sequence of tests & no. of samples definition. → Done
- Generate test loads based on VRLDA → Done
- Get 3x & 1x brake line clip → Done
- Get feedback from BIW team / supplier → Done
- Homologation drawings → Done
- Hose connector design → Done
- Implement brake line clips → Done
- Implement supplier models in 3DX - 2 → Done
- Intermediate shaft fastening strategy → Done
- Kickoff PO for parts → Done
- Kickoff spindle testing discussion → Done

CHASSIS (4/8)

- Knuckle testing-road load data → Done
- Pedal design for SVC3 → Done
- Provide updated bolt loads in vehicle coordinate system for chassis hard points → Done
- RACI chart OEM - supplier → Done
- Rear spring pad RFQ release → Done
- Refine T&D plan → Done
- RFQ release → Done
- Series timeline for spindle → Done
- Serviceable parts - EBOM update → Done
- Sign-Off list - steering → Done
- Spindle drawing approval for SVC3 definition. → Done
- Static loads Input → Done

CHASSIS (5/8)

- Steering gear part breakdown → Done
- Steering history → Done
- Sub frame GD&T model release to supplier → Done

IN PROGRESS:

- 2D drawings for strut and shock absorber supplier - review and feedback → In progress
- Align with supplier for ESC functions → In progress
- Brake lines readiness → In progress
- CAE rear axle to body bracket → In progress
- CEPS mechanical - 2 → In progress
- Chassis test and validation - 1 → In progress
- Define test method for rear twist beam → In progress

CHASSIS (6/8)

- Detailed design confirmation for supplier booster & vacuum sensor → In progress
- Finalize brake hoses & pipes → In progress
- Front coil spring design confirmation supplier → In progress
- Front strut & rear shock development-1 → In progress
- Front sub frame development -1 → In progress
- General steering - 3 → In progress
- Homologation - M → In progress
- K&C physical measurement -to fix agency & quotation → In progress
- L - E/E static and dynamic test for sign off - Brakes → In progress
- Longitudinal motion control alignment → In progress
- Nominate supplier for brackets → In progress
- Rear axle spindle mounting plate machining & welding sequence → In progress

CHASSIS (7/8)

- Rear coil spring development -1 → In progress
- Rear coil spring development with supplier → In progress
- Rear spring pad development -1 → In progress
- Rear spring pad supplier discussion and freeze proposal → In progress
- Rear twist beam development -1 → In progress
- Requirement and its management - M → In progress
- Requirements for interfaces → In progress
- S - align development of other ECUs and ESC → In progress
- Share priority joint request sheets → In progress
- Sion chassis history → In progress
- Software and functional timeline - S → In progress
- Steering fasteners → In progress

CHASSIS (8/8)

- Steering vehicle DVP to be confirmed → In progress
- Suspension tuning development plan-1 → In progress
- SVC 3 logistics confirmation → In progress
- SVC3 build-1 → In progress
- Test and LC development- L → In progress
- To get the booster quote from supplier → In progress
- VD inputs from supplier → In progress

LOWLIGHTS:

- Cybersecurity internal targets

E/E (1/4)

HIGHLIGHTS:

- ADAS:
  - Hired two people for test & validation engineering
  - ADAS provides status of individual DTs for SVC4
  - Cybersecurity kick-off internal alignment

- Wiring Harness:
  - Internal SVC3 design checklist refinement finished
  - Successful on-boarding (EDS Engineer)
  - Kick-off “Production of Wiring Harnesses”

E/E (2/4)

- CAD Integration:
  - Harness release process is defined
  - Supplier SVC3 box design is almost complete
  - Solved: new BLS switch may cause close contact / clash condition with thermal
  - Plastic brackets, all defined and ordered.
  - Metal brackets, all defined and ordered.

IN PROGRESS:

- Overall:
  - Good progress in SVC4 roadmap
  - Good progress in receiving and creating DT’s (no missing, but still incomplete)

E/E (3/4)

- E/E Integration:
  - ADAS:
    - Missing plan for first stage of integration in SVC3
    - Need for more communication in the squad

- CAD Integration:
  - SVC3 BOM split is confusing and stops working, because fixing SVC3 CAD data and meanwhile working on SVC4 → Fully defined SVC3 BOM split would help!
  - Difficulty in SVC3/SVC4 structure differentiation is causing issues with suppliers and slowing down 3D Design → it is still not defined from CAD competence cluster

E/E (4/4)

LOWLIGHTS:

- E/E Integration:
  - ADAS:
    - Only hardware with CAN communications with basic functionality (all ECUs) of ADAS in SVC3 → less time for testing
    - Software release plan from other ECUs is necessary to work
    - dbc file approach in Gid lab → alignment with all stakeholders (one format) → meeting with all stakeholder

POWERTRAIN (1/2)

HIGHLIGHTS:

- In person validation meeting with PTB at Munich site
- VCU series quotation received verbally
- Timing plan (strength targets, CAE, design freeze, validation) agreed with supplier for powertrain mounts and cast parts to support SVC3 and SVC4
- SVC4 half shaft design decision made to enable tooling kick off
- SVC3 - System maturity levels

POWERTRAIN (2/2)

IN PROGRESS:

- Tasks demand more time than planned (supplier work)
- Solution for missing chassis CAN on VCU still WIP (3 options being explored)
- Powertrain lifetime test duration driving high validation cost → exploring options to reduce duration/cost
- Working on solution for clash of EDU envelope with steering column gear

LOWLIGHTS:

- CAD license issues → need help here from PM standing in for HV Battery is taking up time FuSa driveshafts → update PPAP
- Define torque value is difficult, because need feedback from supplier

BI-DIRECTIONAL

HIGHLIGHTS:

- DTs finalized

IN PROGRESS:

- SVC3: Ongoing risks of delayed supplies due to COVID-19 situation in China
- SVC3: DC charging still to be confirmed by OBC supplier

LOWLIGHTS:

- Not mature requirements for diagnostic systems on vehicle level available
- Not mature requirements for cybersecurity on vehicle level available

HV BATTERY (1/2)

HIGHLIGHTS:

- New team members started as Powertrain Project Engineer and as BMS engineer in CW9 → onboarding and handovers in progress
- Supplier working on plan to provide 2 x BOMs for B sample beta packs to support first vehicle builds on time → SM team pushing hard on this
- Cell testing at supplier progressing (dimensions, capacity, charge times)
- HV battery pack DVP close to being finalized
- HV battery workshop being kicked off Friday CW11 to review key design issues and up train team
- Cell tab over temperature caused by supplier HV cables and not cell tab welds
- HV battery sprints using Jira board will restart properly from CW12

HV BATTERY (2/2)

IN PROGRESS:

- Latest timing from supplier does not meet build timing for 2 marketing vehicles and 6 other SVC3s (impacted by lockdowns in China): Working on plan with supplier to improve timing
- Cell temperature delta issue during charging and heating → In review

LOWLIGHTS:

- Headcount
- Diagnostic topics critical for SVC3 (DTC definition to supplier shall be provided by Sono)

WEIGHT

HIGHLIGHTS:

- Link to Jira sprint

IN PROGRESS:

- Jira link to the requirement board still ongoing (VTS related topics still open)
- Jira sprint view in weight management confluence page still ongoing
- PKGO related tickets were postponed to CW10.22 due to priority and current capacity

LOWLIGHTS:

- Input source: BOM attributes Part_Source and estimated weight

NVH (1/2)

HIGHLIGHTS:

- Prototype build planning alignment for NVH ongoing
- Detailed NVH test plan writing started
- Design support NVH topics (brackets and Mounts)
- Interior support for NVH package prototypes and series
- Procuring of dedicated materials in progress (1/2)
- NVH dedicated equipment procurement started (1/2)

NVH (2/2)

IN PROGRESS:

- Jira link to requirement - WIP
- DVP update with new vehicle planning
- POs for NVH equipment in negotiations

LOWLIGHTS: None

DESIGN (1/2)

HIGHLIGHTS:

- Interior grains → Done
- Moss plexiglass for SVC3 → Done
- Progress on design quality template → Done
- Sprint cross-functional: recognize the current status of descriptions that can be used for the development handbook → Done
- Start steering wheel switch surfaces → Done
- Update Charging Lid Sono logo → Done
- Update Sion Tailgate logo → Done

DESIGN (2/2)

IN PROGRESS:

- Gap bumper front light → In progress
- Freeze color & trim for interior SVC3 vehicles → In progress
- Update grille styling → In progress

LOWLIGHTS: None

CRASH & SAFETY (1/5)

HIGHLIGHTS:

- Abolition of HVAC and interior air ducts for IPs intended to be used in sled testing → In review
- Accessibility issue on B-pillar weld → In review
- CAE models for IAC/MOLD → In review
- Crash vehicle usage - crash sensing - SVC3-11 + 12 → In review
- Crash/safety CAE - SVC3 status review - Low Speed → In review
- Crash/safety CAE - SVC3 status review - PedPro → In review
- DEBUG passenger seat model → In review
- Headcount plan update interior → Done
- Side crash - pole - structural integrity of rocker → In review
- SVC3 ECE R-14 2SR → In review

CRASH & SAFETY (2/5)

- SVC3 ECE R-145 2SR → In review
- SVC3 ECE R-17 2SR → In review
- SVC3 integration 1SR model → In review
- SVC3 integration 2SR model → In review
- Tack weld (Heftnaht) on z-bar → In review
- Vehicle and buck availability → In review

CRASH & SAFETY (3/5)

IN PROGRESS:

- Alternative seat attachment concept → In progress
- Assessment of new weld line pattern on rear CMS → In progress
- Charger Lid - requirement "functional after ls crash" → In progress
- Crash/Safety - results to LCO → In progress
- Crash/Safety - SVC3 DR status reporting → In progress
- Crash/Safety CAE - SVC3 status review - Occ. Safety → In progress
- Crash/Safety CAE - SVC3 status review - OccSafety - PMCS Issue list → In progress
- Crash/Safety CAE - SVC3 status review - Seats & Restraints → In progress
- Crash/Safety CAE - SVC3 status review - Sensoring → Backlog
- ECE R-14 Safety belt anchorage points → Backlog
- Front Crash - all - general improvement of front crash results → In progress

CRASH & SAFETY (4/5)

- General - weight reduction → In progress
- Headliner clip resistance - evaluation of current development state → In progress
- Homologation issue - seats → In progress
- Keyhole opening for headliner clip in roof header → In progress
- Material & joining validation → In progress
- Material card creation EH227AE and JSP Arpro 30gl foam → In progress
- RCAR optimization exterior → Backlog
- Rear crash - ECE R-34 - reduce door cut shortening → In progress
- Seat lever - requirement and evaluation → To be done
- Side crash - barrier - integrity lower B-Pillar patch → In progress
- Side crash - barrier load cases - failure in DIW → In progress
- Side crash - pole - failure in DIW → In progress
- Update door-in-white → In progress

CRASH & SAFETY (5/5)

- Side crash - pole - failure upper B-Pillar patch → In progress
- SM-6-220 - stress/strain-curve from supplier → Backlog
- Status update with body structures release 0.1 → In progress
- SVC3 body structure component testing → In progress
- SVC3 CMT welding validation → In progress
- SVC3 crash/safety status available on confluence → Backlog
- SVC3 ECE R-14 1SR → In progress
- SVC3 ECE R-145 1SR → In progress
- SVC3 ECE R-17 1SR → In progress
- SVC3 O'S Status with updated firing times (TTF) → In progress
- SVC3 point joining technology validation → Backlog

LOWLIGHTS: None

DEVELOPMENT SPRINT REVIEW
CALENDAR WEEK 12.22

GENERAL (1/3)

HIGHLIGHTS:

- Headcount: DVP and testing engineers contracted (key for SVC3 commissioning and testing)
- SCCM SVC3 SW release is finished and delivered to Sono with the components for testing
- Vehicle start via app and key fob are almost finished (only small details to be aligned between E/E and Sono Digital and the supplier)
- Body Structure: Updates for SVC3 are released in 3DX
- Logistics: Carrier's quotation for the Supply Chain of PV labels - V2
- Crash & Safety: Charger Lid – requirement "functional after a crash" → Done

GENERAL (2/3)

IN PROGRESS:

- SVC3: Feedback supplier: Sono number system needs update, because for supplier is it hard to sort the single part to sub-assemblies (only with CAD system possible)
- Body Electronics: BCM SW has bugs on the functional implementation → Time intensive & slows down the LabCar progress
- Powertrain: Assembly manual for powertrain
- DCU (Distribution & Charging Unit): Resolve all errors in SVC3 order book
- Logistics: Evaluation of a packaging station inside SONO
- Freeze color & trim for interior SVC3 vehicles → In progress
- Crash & Safety: HV Safety - Crash - AVAS, 12V Battery, DCU→ In progress

GENERAL (3/3)

LOWLIGHTS:

- Communication that Sono will change to the newest Catia Version (2022) too late. Our ESP’s cannot switch in a few days.
- SVC4: Renaming of the new SVC4 3DX data was in some areas not adapted → 2 days needed for correction of naming
- DCU (Distribution & Charging Unit): Software release plan for SVC3 vehicles
- Logistics: SVC3 L-BOM data populating → Parked

BODY STRUCTURE (1/2)

HIGHLIGHTS:

- SVC3
  - Updates for SVC3 are released in 3DX → Body structure
  - Supplier visit → SVC3 build status check
- SVC4
  - SVC4 CAD updates can start → 3DX base is done
  - Change request from other squad are in Jira right now

BODY STRUCTURE (2/2)

IN PROGRESS: None

LOWLIGHTS:

- High workload → Some topics cannot proceed

E/E (1/3)

HIGHLIGHTS:

- E/E Integration:
  - Body Electronics:
    - BCM SVC3 SW release is finished and delivered to Sono for testing
    - SCCM SVC3 SW release is finished and delivered to Sono with the components for testing
    - Vehicle start via app and key fob are almost finished (only small details to be aligned between E/E and Sono Digital and their supplier)
    - E/E commissioning and DVP Plan is defined
    - Media gateway proposal send to supplier
    - GEM SVC3 release is finished

E/E (2/3)

- ADAS: TARA (Threat Analyses and Risk Assessment) development is in progress (for cybersecurity req's)
- CAD Integration: BOM split in SVC3 and SVC4 helps a lot
- Review CAD and release GEM for SVC3
- BMS input/output diagram

IN PROGRESS:

- E/E Integration:
  - Body Electronics:
    - BCM SW has bugs on the functional implementation → Time intensive & slows down the LabCar progress
    - SVC3 vehicle sleep strategy ongoing

E/E (3/3)

- ADAS:
  - Refining plan for first stage of integration in SVC3
  - Improving communication in the squad
- Wiring harness:
  - Not good enough quality of the drawings→ Slows down progress
  - Access to Catia & 3Dx causes time problems
  - Grommets: Did not receive full and updated design from supplier, because of their manufacturing alignment
- CAD Integration:
  - CAD release takes a lot of time

LOWLIGHTS: None

POWERTRAIN (1/2)

HIGHLIGHTS: None

IN PROGRESS:

- Assembly manual for powertrain
- Design verification
- Follow-up meeting with supplier on environmental quote
- Integrate HV battery into reviews with suppliers
- Package investigation movement envelope EDU
- Powertrain assembly – tolerance chain investigation
- Powertrain provides status of individual DTs for SVC4
- Review misuse simulation results

POWERTRAIN (2/2)

- Select test facility provider
- SVC3 powertrain system test facilities
- SVC3 provision of assembly instructions
- Torque value definition

LOWLIGHTS:

- CAD end stop – check – blocked
- Switch module CAD design for LabCAR – blocked

DCU (DISTRIBUTION & CHARGING UNIT) (1/2)

HIGHLIGHTS:

- We renamed the OBC to DCU (Distribution & Charging Unit)
- DTs finalized

IN PROGRESS:

- Create tickets for supplier
- Diagnostic requirements
- EE DVP plan for SVC3
- DCU Hiring Development Engineer
- DCU resource planning

DCU (DISTRIBUTION & CHARGING UNIT) (2/2)

- DCU state machine
- Resolve all errors in SVC3 order book
- Update DCU tech spec

LOWLIGHTS:

- Adapter V2V and V2L
- Test standards - E/E - DESS
- Software release plan for SVC3 vehicles

LOGISTICS (1/4)

HIGHLIGHTS:

- Tasks for the closings Q1/22
- Carriers quotation for the Supply Chain of PV labels - V2
- Decision / contract for a LOG quotation tool
- Collect requirements – market vehicle
- Collect requirements – test vehicle
- Logistics clerk – recruiting
- Loading / transport details for PV labels + connection boxes
- Contract global transportation insurance → In review

LOGISTICS (2/4)

IN PROGRESS:

- Create shipping documents templates
- Onboard intern
- Transport cost estimation for PV labels (V2) + package details provided
- PDS test phase
- Evaluation of a packaging station inside SONO
- Fix the current translation EN → DE from the logistics manual
- Screening - Inventory Management Expert
- SVC3 parts transportation from third party countries
- Start the classification of the parts

LOGISTICS (3/4)

- Enter information on critical parts for packaging
- Estimation for the Inventory for series production
- Decision matrix for After Sales LSP
- Define list of critical parts with special packaging requirements
- Categorize new parts in the InfoRecord_Bom
- Define packaging approval process
- Process documentation – goods receiving
- VIN & invoice for the car (SVC3) which is planned to be transported to US → Backlog
- Define the list of parts that requires packaging specifications → Backlog

LOGISTICS (4/4)

LOWLIGHTS:

- SVC3 L-BOM data populating → Parked
- Legal review of the logistics manual (checking German version about legal wording) → Parked

DESIGN

HIGHLIGHTS:

- gap bumper front light → Done
- grille styling → Done

IN PROGRESS:

- Freeze color & trim for interior SVC3 vehicles → In progress

LOWLIGHTS: None

CRASH & SAFETY (1/5)

HIGHLIGHTS:

- Abolition of HVAC and interior air ducts for IPs intended to be used in sled testing → Done
- Accessibility issue on B-pillar weld → Done
- CAE models for IAC/MOLD → Done
- Charger lid – requirement "functional after a crash" → Done
- Crash vehicle usage - crash sensing - SVC3-11 + 12 → Done
- Crash/Safety CAE - SVC3 status review – Low Speed → Done
- Crash/Safety CAE - SVC3 status review – Occ. Safety → Done
- Crash/Safety CAE - SVC3 status review – Occ. Safety - PMCS Issue list → Done
- Crash/Safety CAE - SVC3 status review – PedPro → Done
- Headcount plan update interior → Done

CRASH & SAFETY (2/5)

- Keyhole opening for headliner clip in roof header→ Done
- Side crash – barrier – integrity lower B-pillar patch → Done
- Side crash – Pole – failure upper B-pillar patch → Done
- Side crash – pole – structural integrity of rocker → Done
- Tack weld (Heftnaht) on Z-bar → Done
- Update Door-In-White → Done
- Updated frontend cross-member → Done
- Vehicle and buck availability → Done
- Alternative seat attachment concept → In review
- DEBUG passenger seat model → In review
- Headliner clip resistance - evaluation of current development state → In review
- Material card creation for supplier [product 1] and supplier 30gl foam → In review

CRASH & SAFETY (3/5)

- SVC3 ECE R-14 2SR → In review
- SVC3 ECE R-145 2SR → In review
- SVC3 ECE R-17 2SR → In review
- SVC3 integration 1SR model → In review
- SVC3 integration 2SR model → In review
- Update seatbelt model due model v004 → In review

CRASH & SAFETY (4/5)

IN PROGRESS:

- Crash/Safety – results to LCO → In progress
- Crash/Safety – SVC3 DR status reporting → In progress
- Crash/Safety CAE – SVC3 status review - Seats & Restraints → In progress
- Slight delay interior parts for testing → In progress
- HV safety – crash - AVAS, 12V Battery, DCU → In progress
- Lashing Eye 01V089 → In progress
- Material & Joining Validation → In progress
- Status update with body structures release → In progress
- Supplement SVC3 ECE R-17 1SR → In progress
- SVC3 body structure component testing → In progress

CRASH & SAFETY (5/5)

- SVC3 CMT welding validation → In progress
- TL471 Due Care → In progress
- Crash/Safety CAE - SVC3 status review – sensoring → Backlog
- ECE R-14 Safety belt anchorage points → Backlog
- Joining technology replacement and reduction → Backlog
- OOP tests airbags requirements → Backlog
- Pre-simulation of component tests → Backlog
- SM-6-220 - Stress/Strain-curve from supplier → Backlog
- SVC3 Crash/Safety status available on confluence → Backlog
- SVC3 point joining technology validation → Backlog

LOWLIGHTS: None