



DEVELOPMENT SPRINT REVIEW

CALENDAR WEEK 18.22

HIGHLIGHTS:

- SVC3 part robustness for Crash and Safety
- Definition of thermal bracket for connection to lower central bracket
- Visited contract manufacturer and checked dependencies for in- and outbound logistics
- Side doors concepts and modification SVC4 → Done
- Geometric dimensioning and tolerating concept for SVC3 → Done
- Virtual build → Done
- Check PVC sealing concept with body structure → Done
- Prepare design release for 90% tool kickoff with supplier → Done
- Receive feedback from simulation supplier regarding open grille surface → Done
- Cantrail update required due to B-pillar noise vibration harshness (NVH) improvement → Done
- Supply the final design for the air duct to ensure the feasibility of the bumper design → Done

GENERAL (2/3)

- Deviation training for all squads → Done
- Bump stop design confirmed by supplier
- Received and assessed offer from trailer hitch supplier → Done
- Rear spindle development → Done

IN PROGRESS:

- BOM analysis – updating existing BOM with all squads
- Solve existing BOM errors with all squads → In review
- Check necessity for measurement equipment → In progress
- State of hot spots on solar panels → In progress
- Project Management Control System (PMCS) S1 deliverables 100% assessment → In progress
- Migrate PM risk control matrix Group Sion to Project Management Control System (PMCS) → In progress

LOWLIGHTS:

- Fixing wiring harness, position of holes and studs
- Adaptive cruise control (ACC) development decision needed
- Infotainment head unit (IHU) software development slows ADAS down
- Risk of delamination for second sets of SVC3 solar body panels at higher temperatures still exists, counter measurements under development for following SVC3 sets
- Ongoing investigation of potential design optimizations of body structure for industrialization, cost down program and tolerance concept → Potentially impact costs and timing

BODY CLOSURE (1/2)

HIGHLIGHTS:

- Front door modification for simulation → Done
- Re-link the DOOR (dynamic object-oriented requirements) official data with WIP → Done
- Front door supplier integration → Done
- New glass design for SVC4 → Done
- Strike bracket correction → Done
- Side doors concepts and modification SVC4 → Done
- Fill supplier confirmation tailgate gas strut → Done
- Package dimensions inner panel → Done

BODY CLOSURE (2/2)

IN PROGRESS:

- Update logistics costs
- Provide all parts for bulk (Batch) 1 for general assembly
- Coordination SVC3-03 and SVC3-05
- Crash and Safety SVC3 material simulations
- Coordination SVC3-09 & 10, vehicles part-approval

LOWLIGHTS:

- Measuring SVC3 parts weight
- Part tracking efficiency
- Creating timeline for SVC4

HIGHLIGHTS:

- Visit supplier to check front bumpers → Done
- Check and adapt rear bumper fasteners acc. to new position → Done
- Cantrail update required due to B-pillar noise vibration harshness (NVH) improvement → Done
- Cantrail inner interference with body → Done
- Adapt fender-bumper interface (of fender) → Done
- Reposition the license plate lamp → Done
- LabCar part testing → Done
- B-Pillar tool modification → Done
- A-Pillar design optimization → Done
- Inspect SVC3 parts, supplier → Done

IN PROGRESS:

- Create deviations for the SVC3 build → In progress
- Cantrail corrections required after receiving feedback from component supplier → In progress
- Headlamp crash performance → In progress
- Align on electromagnetic compatibility (EMC) topics → In progress
- Headlamp & tail lamp: connector/harness terminal update → In progress
- SVC3 – system maturity levels → In progress
- Verification plan exterior panels → In progress
- Finalize fixation concept for bumpers (screw vs pushpin) → In progress

LOWLIGHTS:

- Provide documents/information about the parts to be delivered by supplier
- Create assembly structure for supplier – SVC4 Lamps
- Analyze SVC3 order book
- Define process how the updates of SVC3 will be implemented
- Torque value definition

BODY STRUCTURE (1/3)

HIGHLIGHTS:

- Duplicate of CAD data for series in 3DX
- Pads and plugs as single parts
- Duplicate of CAD data for SVC4 in supplier system
- Set up SVC4 CAD model in 3DX
- Add bolts for fixing tie down hook
- Check offer from trailer hitch supplier
- Drawings single parts body structure
- SVC3 – system maturity levels
- High voltage (HV) cable channel
- Direct/indirect purchasing attribute sanity check

BODY STRUCTURE (2/3)

IN PROGRESS:

- Fixing trailer hitch and rear crash management system (CMS) to side member
- Cantrail profile as single part
- Door flange panel B-Pillar rear – supplier change
- Fixing front crash management system (CMS) to side member
- Close the positioning holes required for SVC3
- Modification on windshield cross member for feasibility

BODY STRUCTURE (3/3)

LOWLIGHTS:

- Noise vibration harshness improvement of wiper brackets
- Stiffer fixing of the electric drive unit (EDU) to longitudinal
- Investigation model for computer-aided engineering (CAE), dash wall update complete
- Lower dashboard wall supplier changes
- Water channel panel upper Inner – supplier change
- Ongoing investigation of potential design optimizations of body structure for industrialization, cost down program and tolerance concept → Potentially impact costs and timing

HIGHLIGHTS: None

IN PROGRESS:

- Cross-functional data status for the completion of interior development
- Overhead console thus headliner design affected by eCall and wiring
- Steering column updates lead to CCB & I/P changes post DR
- Release completion of the change actions for SVC3
- Timing plan alignment / next steps with suppliers
- Boundary books including calculated status are created
- Body structure tolerances of interface parts are required

LOWLIGHTS: None

HIGHLIGHTS:

- Update antenna DT with correct part number & images → Done
- Head unit (HU) detailed design document → Done
- HVAC CAN messages → Done
- Cost analysis for rear USBs for consideration of removal → Done
- Define vehicle preconditioning for requirements → Done
- "Find my vehicle" command strategy → Done
- Revise vehicle control module (VCM) software release plan → Done
- Define unlock/lock doors remote commands → Done
- Draft vehicle control module (VCM) boundary diagram → Done
- SVC3 – system maturity levels → Done

INFOTAINMENT (2/2)

IN PROGRESS:

- Outlook SVC3-09 & 10 vehicles functionality
- Create inventory for vehicle control unit
- Vehicle is in a safe state for over-the-air (OTA) updates
- Update vehicle preconditioning requirements
- Provide new eCall drawing with updated details
- Antenna connector cable & grommet spec to supplier

LOWLIGHTS: None

THERMAL (1/2)

HIGHLIGHTS:

- Create boundary diagram and interface analysis → Done
- Impact on technical topics due to updated timeline → Done
- Budget to be analyzed and updated based on timeline → Done
- Workshop with R&D squads to review Project Management Control System (PMCS) issues & deliverables → Done
- Time plan thermal regarding supplier lead times for SVC4 and series → Done
- Torque value definition → In review

THERMAL (2/2)

IN PROGRESS:

- Alignments with Interior and BIW team → In progress
- SVC3 provision of assembly instructions → In progress
- PO raised supplier series development → In progress
- Squad level OKR 2022 → In progress

LOWLIGHTS: None

CHASSIS (1/2)

HIGHLIGHTS:

- Kick-off series design for manufacturability (DFM) for spindle → Done
- Finalize spindle testing → Done
- Rear spindle development- 4 → Done
- Initiate SVC4 series knuckle design → Done
- Update knuckle supplier timeline for the project → Done
- Ship parts to supplier for testing → Done
- Finalize knuckle testing details → Done
- Knuckle development- 4 → Done
- Investigate forward movement of sub-frame tower

CHASSIS (2/2)

IN PROGRESS:

- Investigate noise vibration harshness (NVH) feasibility of reducing the size of rear lower control arm (LCA) stiffener → In progress
- Sion chassis history → In progress

LOWLIGHTS: None

HIGHLIGHTS:

- E/E Integration:
 - Body electronics, preparation of the Yellow Board has succeeded
- Advanced driver assistance systems (ADAS):
 - Kicked off ADAS fault tree analysis (FTA)
 - Good progress on ADAS requirements reviews
- Wiring Harness:
 - Overall good performance in providing harnesses for SVC3
- CAD Integration:
 - Virtual built of released parts are going well
 - Assembly instructions are in progress
 - V5 Connector issue is solved

E/E (2/5)

- Overall:
 - Successful roadmap trainings for whole Group Sion
- Wheel speed sensor (WSS) and vacuum sensor electrical interface requirements to brake and suspension supplier
- On-board diagnose (OBD) ground offset voltage
- Schematic wiring harness (w/h) setup for interior lighting

IN PROGRESS:

- CAD Integration:
 - Harness connector instance IDs have been reset → Working with a complete vehicle team to have the node names re-added
 - Errors with bringing SVC3 harnesses across to SVC4 BOM → Probably solved next week
 - Low frequency (LF) antennas need location update for SVC4 after discussions with supplier → Probably solved next week
 - Upgraded a V6 profile in 3Dx for engineering partner
- Low frequency (LF) antenna update for SVC4
- Routing study for SVC4 (DCU) relocation (-Z)
- Reliability targets body electronics - Body Control Module (BCM)
- Park distance control sensor integration
- Create a commissioning plan

LOWLIGHTS:

- E/E Integration:
- Advanced driver assistance systems (ADAS):
 - Infotainment Head Unit (IHU) SW development slows ADAS down
 - User interface/user experience (UI/UX) requirements for rearview camera (RVC) slows ADAS down
 - Getting requirements from infotainment head unit (IHU)
- Wiring Harness:
 - External consultants/partners don't have access to Confluence nor Jira which reduces the team efficiency and communication flow
- CAD Integration:
 - Most of the team unfamiliar with V6 (CAD team will plan to have a one-week training session with each of them)

E/E (5/5)

- Check SVC3 product in 3DX
- Vehicle control unit (VCU) active discharge function request from electronic drive unit (EDU)
- Missing chassis CAN on series vehicle control unit (VCU) hardware
- Continue with rear seats harness routing definition (SVC4)
- Media control unit SVC3 model update in 3DX
- Harness connector instance removal error

HIGHLIGHTS:

- Successful electronic drive unit (EDU) technology roadmap share with supplier → Sharing of requirements for next generation EDUs
- Supplier testing quotation has come down following reviews
- Repositioning torque rod for SVC4
- Update powertrain budget file
- Parts location
- Define chemicals for environmental test procedure and receive updated quote from supplier
- Torque rod movement envelopes

POWERTRAIN (2/3)

IN PROGRESS:

- Torque rod issue under 3 kN load due to offset (side collapse of rod main bushing) → Requires re-designing for next vehicles → Supplier on track to do this
- Quality topics (production part approval process (PPAP) light for SVC3) need more priority with suppliers → E.g. due to lack of focus SVC3 dimensional report not provided for powertrain mounts prior to shipping
- Lifetime study for towing feasibility kicked off by 2 suppliers, but taking time
- Tasks demand more time than planned (supplier work)
- Solution for missing chassis CAN on vehicle control unit (VCU) still work in progress (3 options being explored)
- Investigating solution for clash of DCU to high voltage (HV) battery harness during crash found yet (investigating change to BiW shelf)

LOWLIGHTS:

- No chassis CAN for series vehicle control unit (VCU) from supplier → Solution required → Request quotes from alternative suppliers, not an issue for SVC3
- Cross-functional teams adding tasks to sprint, alignment necessary
- CAD license issues → Need help here from PM
- Standing in for HV battery is taking up a significant amount of time and impacting other tasks
- FuSa driveshafts → Update production part approval process (PPAP)

HV BATTERY (1/2)

HIGHLIGHTS:

- Gather additional information from supplier regarding the cooling plate
- Clarify reliability targets and warranty questions supplier
- Add missing tests to supplier design verification plan sequence

IN PROGRESS:

- Generate a new set of input variables for a second round of aging simulations → In progress
- Arrange shipment of high voltage battery (HVB) pack parts for assembly → In progress
- Review battery management system FuSaCo → In progress
- Battery management system (BMS) design verification plan (DVP) functional tests → In progress

HV BATTERY (2/2)

- Test plan for functional testing of HV pack in Germany → In progress
- Supporting & review of test procedures

LOWLIGHTS: None

HIGHLIGHTS:

- Create presentation for interior absorbers
- Review and conclusions on SVC3/SVC4 solar panels simulations
- Discuss door trim to door panel interface
- Risk assessment buck measurement
- Create presentation of HVAC to dash insulation changes needed for SVC4
- Impact on technical topics due to updated timeline
- Steering column SVC2/SVC3
- Powertrain tuning for clonk management
- Tire specifications data (noise results) to NVH

IN PROGRESS:

- Discuss deadened interface (thickness) to carpet and dash w interior
- Support further development interior sound package for SVC4
- Set up Free-free roof panels model measurements
- Procedure for vehicle testing
- Sound patterns for head unit

LOWLIGHTS: None

WEIGHT MANAGEMENT (1/2)

HIGHLIGHTS:

- Benchmark hood update
- Individual tracking for SVC3 and SVC4 weight status
- Masses package list
- Benchmark update
- SVC4 scopes in Q2
- Structure Sion weight management

WEIGHT MANAGEMENT (2/2)

IN PROGRESS:

- Open topics related to hood (seals and fasteners) were discussed in the Hood SE team meeting and will be taken to next sprint
- Weight update hood parts SVC4 status
- Weight update hood parts
- Masses package list review – GAPs
- Sion weight table scenarios

LOWLIGHTS: None

HOMOLOGATION (1/2)

HIGHLIGHTS:

- Field observation/market surveillance (concept description)
- FuSa project overview, process descriptions
- Product integrity: product safety circle & subsequent processes
- Obtain technical data and descriptions
- Transmission and application to the diagnostic tool set (DTS)
- Obtain type approval drawings (2D, EXT)
- Obtain technical data and descriptions

HOMOLOGATION (2/2)

IN PROGRESS:

- Request quotation for the entire conformity of production (COP) test coverage → In progress
- Generate and archive the information document → In progress
- Update work list → In progress
- Create characteristics matrix → In progress
- Braking – information document → In progress

LOWLIGHTS: None

FUNCTIONAL SAFETY (1/2)

HIGHLIGHTS:

- Set up graphic to show FuSa CC → Done
- Meeting with supplier for HV battery → Done
- Preparation of a document with safety goals, Automotive Safety Integrity Level (ASIL) rating, safe states and external measures for supplier → In review
- Development interface agreement, alignment with Supplier
- Set up graphic to show FuSa CC → Done
- Development interface agreement (DIA) alignment with supplier for SCCM → In Review

FUNCTIONAL SAFETY (2/2)

IN PROGRESS:

- FuSa support request for solar team → In progress
- Solar power/cross-functional Q/A - solar power in crash scenario → In progress

LOWLIGHTS: None

CRASH & SAFETY (1/2)

HIGHLIGHTS:

- Computer-aided engineering (CAE) models for supplier
- Crash/Safety computer-aided engineering (CAE) – SVC3 status review – OccSafety
- Crash/Safety computer-aided engineering (CAE) – SVC3 status review – OccSafety – project management control system (PMCS) issue list
- Updated front-end cross-member
- Crash vehicle usage – crash sensing – SVC3-11 + 12
- Vehicle and buck availability
- Headcount plan update interior

CRASH & SAFETY (2/2)

IN PROGRESS:

- Accessibility issue on B-pillar weld
- Pre-simulation of component tests
- SVC3 CMT welding validation
- SVC3 body structure component testing
- Joining technology replacement and reduction

LOWLIGHTS:

- Delay interior parts for testing