



# **DEVELOPMENT SPRINT REVIEW**

## **CALENDAR WEEK 44.22**

## GENERAL UPDATE

- Progress with production partner regarding re-usable racks, business case provided
- NVH testing SVC3 at body in white (BIW) supplier first phase completed, subjective assessment completed
- SVC3 weight status full on target
- Another 11 battery packs shipped from battery supplier for SVC3 fleet
- Fill rate of SVC4 release management accelerating
- Increasing CapEX (+19%) due to higher level of details, still within projected timeline
- Increasing risk of delaying nomination of series production line builder due to dependency on external financing

## BODY CLOSURE (1/2)

### HIGHLIGHTS:

- Four new suppliers in nomination process
- 90% CAD data maturity achieved
- Onboarding extrusion supplier for SVC3.3 & SVC4.1 and technical support
- Direct control established part supply from series supplier for SVC3.3
- Physical testing of SVC3 closures progressing, e.g. window regulator stiffness of doors

## BODY CLOSURE (2/2)

### IN PROGRESS:

- Challenges with prototype parts for SVC4

### LOWLIGHTS:

- Still facing SVC3-05 delays

## HIGHLIGHTS:

- Tooling for headlights (pre-series and series) nearly ready
- Tooling for rear bumpers ready to mold first parts in December

**IN PROGRESS:** None

## LOWLIGHTS:

- Adding more attributes in CAD causes extra efforts

## BODY STRUCTURE

**HIGHLIGHTS:** None

**IN PROGRESS:** None

**LOWLIGHTS:**

- limited progress due to project dependencies

### HIGHLIGHTS:

- Headliner, greenhouse, lower trims, sunvisors parts sent to Crash & Safety testing laboratory
- Parts have been delivered to Italy for testing
- Start stop button design finalization and position confirmation

### IN PROGRESS:

- SVC4 tool release is delayed due to changes from harness team and cost reduction activity
- Geometric dimensioning and tolerancing (GD&T) for greenhouse, lower trims under finalization
- Upcoming integration of hands-on/hands-off sensor in steering wheel

### LOWLIGHTS:

- Passenger airbag (PAB) switch off light design is not progressed until styling data is received to the instrument panel (IP) team
- Delivery interior lighting LED parts for validation vehicles still pending (expected delivery week 12-2023)



### HIGHLIGHTS:

- Need and process to change to alternative new designated head unit supplier internally aligned
- Parts for Crash & Safety SVC3 are arriving
- Reworked successfully delivery units at assembly partner

### IN PROGRESS:

- Request of clear definition of technical requirements for alternative supplier delaying nomination process, but could potentially reduce onboarding and scoping efforts
- Ways of working of integrated team (hardware & software) needs to be optimized to strengthen output

### LOWLIGHTS:

- Instrument cluster (IC) and in-vehicle infotainment (IVI) display further development is in progress with regards to mounting strategy based on Interior team feedback.

### HIGHLIGHTS:

- Heater series device transmittal (DT) available
- Cabin pressure relief flaps supplier nominated, cost savings due to almost carryover part availability
- Front air duct supplier nominated
- Refrigerant pipes supplier nominated

### IN PROGRESS:

- Heater positioning released for series
- Preparation release front air intake by supplier

### LOWLIGHTS:

- Timeplan thermal regarding supplier lead times for SVC4 and Series need to be adjusted
- PO process causes more efforts and delays

## HIGHLIGHTS:

- Software maturity for electronic stability control (ESC) timeline plan aligned and signed off
- Logistics evaluation for potential new brake booster supplier finalized
- SVC4 release plan

## IN PROGRESS:

- Management of requirements needs to be improved
- Software and functional timeline
- Provision of checklist for foundation & slip control system to certify that SVC3 vehicles meeting design requirements

### LOWLIGHTS:

- Brake booster quote of current supplier blocked
- Design concept for wheel speed sensor (WSS) of alternative supplier making slow progress

## HIGHLIGHTS:

- E/E Integration
  - Plan for time invest for SVC3 commissioning vs. SVC4 development finished
- ADAS:
  - Time to Lock issue was solved with the help of the Brake team
- Wiring Harness:
  - Two new engineering partners on board
- CAD Integration:
  - Camera FOV and bracket topic resolved
  - Attributes all added for SAP
  - Additional safety relevant harness channels designed

**IN PROGRESS:**

- E/E Integration:
  - Vehicle electronics & controls: infotainment head unit SW is not reliable
  - Vehicle electronics & controls: ADAS milestones delayed because of missing requirements
- Wiring Harness:
  - Exact scope of SVC3.x High Voltage (HV) battery upgrade unclear, full system review required
  - New CAN gateway required
- CAD Integration:
  - Missing schuko socket supplier nomination effects CAD integration



## LOWLIGHTS:

- ADAS:
  - Outstanding nomination of infotainment head unit (IHU) supplier, blocks ADAS development
- CAD Integration
  - Majority of design release checklists not yet completed
  - Missing GSat sensor analysis from supplier

## HIGHLIGHTS:

- Finalize mounts strength targets and file computer aided engineering (CAE) reports / evidence

## IN PROGRESS:

- End of life (EOL) - Definition of work content and equipment needed for series production

## LOWLIGHTS:

- Vehicle control unit (VCU) testing of supplier at assembly partner need to be aligned

## HIGHLIGHTS:

- Water jacket risk assessment done

## IN PROGRESS:

- DC charging test plan - facility and date

## LOWLIGHTS:

- Distribution and charging unit (DCU) E/E design validation plan (DVP) behind track

### HIGHLIGHTS:

- Create a new CAN message to gateway electronic control unit (ECU) for transmitting the fault category signal to Infotainment head unit (IHU)
- C1 pack CAD model frozen for SVC4
- Battery management system (BMS) state machine proposal
- Delivery of remaining battery packs for SVC3 vehicles

### IN PROGRESS:

- Update of sub-system technical specification (SSTS)
- C1 pack & battery management system (BMS) design validation plan (DVP) finalization
- Writing of user manuals & definition of usage restrictions for SVC3 vehicles
- SVC4 release

**LOWLIGHTS:** None

## HIGHLIGHTS:

- Presentation of peak performance of simulations vs validation testing

## IN PROGRESS:

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

**LOWLIGHTS:** None

### HIGHLIGHTS:

- NVH Testing SVC3 at body in white (BIW) supplier first phase completed, subjective assessment completed
- Road noise objective characterisation on track 50% completed
- Design Support: body structure, wiper bracket, interior package, static load and SVC4 model
- Sound design progress - Final set for choice of acoustic vehicle alert system (AVAS) before community survey - preparations for auditory warnings development
- Powertrain NVH testing support - Results received, end of life (EOL) testing ongoing

### IN PROGRESS:

- NVH status format definition
- Test plan for SVC3 on going (20%)

### LOWLIGHTS:

- Paused activities due to testing campaign



## HIGHLIGHTS:

- Update the measurement result SVC3 prototypes and Sion weight status report, weight status on target

**IN PROGRESS:** None

**LOWLIGHTS:** None

# HOMOLOGATION AND RECYCLING

## HIGHLIGHTS:

- Recyclability glazings - part 2 / check with supplier
- Create BOM for use of recyclates
- Contact HV battery 2nd life provider

**IN PROGRESS:** None

**LOWLIGHTS:** None

**HIGHLIGHTS:** None

**IN PROGRESS:** None

**LOWLIGHTS:** None

## HIGHLIGHTS:

- SVC3: Checking min required requirements progressing

**IN PROGRESS:** None

**LOWLIGHTS:** None

## HIGHLIGHTS:

- Evaluation of new potential IHU

**IN PROGRESS:** None

## LOWLIGHTS:

- FuSa timing to be adjusted
- Test alignment with chassis team behind plan

## HIGHLIGHTS:

- Crash/Safety - Results provided to load case overview
- Crash/Safety - SVC3 design review (DR) status reporting
- Status update with body structures release 0.1

## IN PROGRESS:

- Homologation issues with seats
- Material and joining validation to finalized

## LOWLIGHTS:

- SVC3 cosmetic molding technology (CMT) welding validation