DEVELOPMENT SPRINT REVIEW
CALENDAR WEEK 06.23

GENERAL UPDATE

- This sprint review is a summary of the sprints 48, 50, 52.22 as well as 02, 04 and 06.23
- Sion design freeze done and data transferred to production partner
- SVC4 release status steadily increasing
- First Component and Full Vehicle crash tests fulfilled successfully
- WLTP efficiency status 16.1 kWh / 100 km (with charging losses) and 14.5 kWh/100 km (without charging losses) which confirms the calculated range predictions and shows even more potential
- HV Battery ECE R100 Fire Resistance test done & passed
- First TÜV approval (a §70 exemption) granted for SVC3 test vehicles

BODY CLOSURE

HIGHLIGHTS:

- First off soft tool parts produced for door inner upper panels

IN PROGRESS:

- #savesion campaign related stop causes risks on supplier side
- Production Partner initiated change requests risks tooling scrap
- Solar Body Panels route to series supply to be defined
- Tailgate latch - unable to be activated for testing

LOWLIGHTS:

- Production/testing of series suppliers on hold due to campaign

EXTERIOR (1/2)

HIGHLIGHTS:

- Fender clipping geometry update
- Roof - Add omega clips in the latest Compression Molding (CM) roofs

IN PROGRESS:

- CD-Pillar Cover compression mold feasibility updates
- Update Design Failure Mode and Effect Analysis (DFMEA) on CD-Panel
- Roof - Add Geometric Dimensioning and Tolerancing (GD&T) and measurement points to the solar roof panels

EXTERIOR (2/2)

LOWLIGHTS:

- Several tasks parked due to current situation:
  - Clarification of need for barrier stopper
  - Review measurement plan for underbody components

BODY STRUCTURE

HIGHLIGHTS:

- Component test - Front Structure - ECE R-137 and EU NCAP crash results - GREEN;
- Full vehicle test - ECE R-137 - Frontal structural requirements fulfilled and occupant values - GREEN
- Body in White (BIW) & Closures in White (CIW) A8 Freeze release done

IN PROGRESS:

- All new body in white upcoming change requests have to be processed through Change Management Process

LOWLIGHTS:

- Current cost savings might affect feasibility of design changes

HIGHLIGHTS:

- 3DX attributes are filled
- Cost BOM has been updated and aligned with purchase.
- Decision made for Rollo!
- Freeze status

IN PROGRESS: None

LOWLIGHTS:

- Paused working on finalizing development due to current situation.
- Unable to conduct Geometric Dimensioning and Tolerancing (GD&T) with suppliers.
- This impacts e.g. trunk area, instrumental panel (IP), Center Console (CC), cross car beam (CCB)
- Supporting POs

INFOTAINMENT

HIGHLIGHTS:

- New supplier nominated for Infotainment Head Unit (IHU)
- New supplier nominated for USB interface
- Samples of the IHU received for testing

IN PROGRESS:

- Kickoff with new IHU supplier delayed due to current cost savings
- Availability of IHU and displays spare parts limited
- More IHU awaited from old supplier awaited for SVC3 vehicles

LOWLIGHTS:

- Risk of program uncertainties impacting timings and relations

THERMAL

HIGHLIGHTS:

- Solve compressor over-pressure issue
- SVC3-01 rework cabin temperature sensor to new position
- Heater positioning released for Series

IN PROGRESS:

- CAD Work for the misalignment in the air duct
- SVC3-01 rework for check valves in surge tank feed lines + restrictor in bleed line
- Heater Hardware Integration with 6.4 KW Power

LOWLIGHTS:

- Preparation release AC Compressor Brackets / Isolators
- Compressor decoupling elements and brackets positioning and series design released for Series

CHASSIS (1/2)

HIGHLIGHTS:

- Beginning correlating Virtual and real-life Road Load Data - showing high confidence correlation so far. Due to be completed before CW10
- Successful activation of the column safety mechanism during full-vehicle crash test
- SVC4 CAD Design freeze completed, ready to release and begin change management
- Wheel bolt testing plan aligned with supplier

CHASSIS (2/2)

IN PROGRESS:

- Wheel speed sensors do not provide rotation direction signal - steering supplier to evaluate impact on software development
- State of Charge (SoC) issue with durability vehicle at partner facilities in Spain
- Preparing Steering SVC3 vehicle for power steering calibration testing at steering supplier - progressing well, but not yet complete

LOWLIGHTS:

- Steering supplier nomination still outstanding - development work reduced
- SoC issue blocks further durability testing - support from other squads required to resolve
- Awaiting section cuts of twist beam from supplier to evaluate benchmark displacement test failure

HIGHLIGHTS:

- E/E Integration
  - Vehicle Electronics & Controls:
    - SVC3-06 & SVC3-07 completely finished the Commissioning
    - SVC3-04 finished the Yellow Board Commissioning without issues
    - SVC3-08 start the commissioning
    - Plan for time investment for SVC3 commissioning vs. SVC4 development
  - ADAS:
    - Front Radar Bracket - reviewed and approved.
    - Time to Lock issue was solved with the help of the Break Team.

E/E (2/5)

- Wiring Harness:
  - Harness Design frozen in time, manufacturing drawings getting completed one by one
  - Grommet design updated according to vehicle assembly requirements and improved component manufacturing
  - Electrical Distribution System (EDS) dynamic testing defined and scheduled at external testing facility
  - New Supplier Technical Assistance (STA) engineer on board and fully integrated to EDS team
- CAD Integration:
  - Camera Field of View (FOV) and bracket topic resolved
  - Attributes all added for SAP
  - Additional safety relevant harness Channels designed
  - Addition of EDS designers ensures brackets are updated for harness optimisation

E/E (3/5)

- Overall:
  - Successful Roadmap Trainings for whole Group Sion

IN PROGRESS:

- E/E Integration:
  - Vehicle Electronics & Controls:
    - Infotainment Head Unit (IHU) Software is not optimized yet and slows development down
    - Window regulators for the passenger doors are not working
    - Prioritization issues due to overload of Functional Safety and Cyber Security teams

E/E (4/5)

    - ADAS
        - Cyber Security proposal potentially could impact timing
        - First ADAS milestone delayed due to missing Infotainment Headunit (IHU) requirements
        - NCAP functions cost more than anticipated and indicated in the price offered by the supplier. Re-negotiations needed.
- Wiring Harness:
    - Worldwide material procurement issue could force us to use alternative components and raw materials
- CAD Integration:
    - EE design not yet frozen / finalized for SVC4
    - Schuko Socket supplier nomination still not done

E/E (5/5)

LOWLIGHTS:

- E/E Integration:
  - ADAS:
    - Infotainment Head Unit (IHU) Software development slows ADAS down
    - No functional IHU for Rear view Camera (RVC) Development
    - Capacity issues and paused recruitment causes overload in the teamsing GSat sensor analysis from supplier
- CAD Integration:
  - Majority of Design Release Checklists not yet completed / stored in correct area
  - Missing GSat Sensor analysis from supplier CES → waiting for SVC3 crash results

POWERTRAIN (1/2)

HIGHLIGHTS:

- WLTP efficiency status 16.1 kWh / 100 km (with charging losses) and 14.5 kWh/100 km (without charging losses) which validates range target of 305 km and more
- Powertrain budget status now better than targeted
- All Powertrain parts frozen for SVC4
- True HVB voltage results during continuous current and peak current communicated.
- MCU costs brought significantly down

POWERTRAIN (2/2)

IN PROGRESS:

- Towing topic still in discussion with supplier
- Instrumentation of SVC3-01 still open (flow meters, shunt sensors)
- MPPT Central Unit (MCU) series requirements still open (software conformance, 12 V requirements)
- Device Transmittal (DT) alignment and update between Electric Drive Unit (EDU) / Distribution and Charging Unit (DCU) / HV Battery required (mismatch of continuous current)

LOWLIGHTS: None

BIDIRECTIONAL

HIGHLIGHTS:

- SVC4 first SW release with AC charging and DCDC functionalities implemented
- SVC4 2nd SW release with DC charging requirement definition on track

IN PROGRESS: None

LOWLIGHTS:

- SVC4 availability of next samples delayed by 1,5 month because of connector lead times
- SVC3 DC charging release delayed because of missing equipment

HV BATTERY

HIGHLIGHTS:

- Design freeze for SVC4
- Achieving the range targets → shown by tests
- ECE R100 Fire Resistance test done & passed

IN PROGRESS:

- Fine Tuning/ optimization of thermal management (preconditioning etc)
- Battery/vehicle Integration

LOWLIGHTS:

- Inclusion of Design Validation Plan (DVP) results into development
- Delays in Design Validation Plan (DVP) timeline

HIGHLIGHTS:

- Aluminum / Plastic AC compressor bracket simulation
- Closures Dynamics - Doors
- Sealings - Deformation over Compression Behaviour

IN PROGRESS:

- Modeling of weld lines defined and aligned with body structure

LOWLIGHTS:

- Simulation content for SVC3 Confirmation Run not defined due to capacity limitations

NVH

HIGHLIGHTS:

- SVC3 NVH measurements reporting to package owners
- SVC4 Release support
- SVC3 NVH status published and corrective actions engaged for SVC4

IN PROGRESS:

- Mounts measurements synthesis
- Sound design Choice activities

LOWLIGHTS:

- Equipment calibration process

WEIGHT MANAGEMENT

HIGHLIGHTS:

- Seats Weight Update, graphic histograms using Python based on 3DX-export.

IN PROGRESS:

- Center of gravity (CoG) update for Masses Package List still in Work.

LOWLIGHTS: None

HOMOLOGATION AND RECYCLING

HIGHLIGHTS:

- Recycling:
  - talks with suppliers and recyclate suppliers to enhance recyclate content in Sion
  - talks with recyclers and energy service providers to find recycling and 2nd life solutions for the HV Battery
- Homologation:
  - Procedure agreed with the authority, government and designated technical service for special approval for test vehicles
  - First TÜV approval (a §70 exemption) granted for SVC3 test vehicles
  - Successful inspection and obtaining of an approval of a test vehicle

IN PROGRESS: None

LOWLIGHTS: None

VIRTUAL VEHICLE COMPETENCE

HIGHLIGHTS:

- Data Freeze and Transfer
- Increase in Data quality
- CAD Support in Re-Design of the Trunk, CAD Support in BiW

IN PROGRESS: None

LOWLIGHTS:

- Capacity issues in CAD Support
- Release status

FUNCTIONAL SAFETY

HIGHLIGHTS:

- Gap analysis ISO 26262 SGS TÜV
- Align date for Gap Analysis with vendor

IN PROGRESS: None

LOWLIGHTS:

- Redefinition FuSa Processes
- Current situation regarding current cost savings impacting interaction with suppliers

HIGHLIGHTS:

- Crash/Safety - Results to Loadcase Overview (LCO)
- Crash/Safety - SVC3 Design Review (DR) Status Reporting
- Status Update with Body Structures Release 0.1

IN PROGRESS: None

LOWLIGHTS:

- Seat supplier not able to perform a homologation test, back up plan under development