



DEVELOPMENT SPRINT REVIEW

CALENDAR WEEK 28.21

GENERAL (1/3)

HIGHLIGHTS:

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

GENERAL (2/3)

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

LOWLIGHTS:

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

BLOCKER:

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

HIGHLIGHTS:

SOP: Logistics Manual:

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

LOWLIGHTS: None

BLOCKER: None

PRODUCTION (1/2)

HIGHLIGHTS:

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

PRODUCTION (2/2)

LOWLIGHTS:

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

BLOCKER: None

BODY CLOSURE (1/2)

HIGHLIGHTS:

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

LOWLIGHTS:

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



BODY CLOSURE (2/2)

BLOCKER:

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

EXTERIOR (1/2)

HIGHLIGHTS: SVC3/Series only

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

EXTERIOR (2/2)

LOWLIGHTS:

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

BLOCKER: None

BODY STRUCTURE

HIGHLIGHTS: SVC3:

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

LOWLIGHTS: None

BLOCKER: None

INTERIOR (1/2)

HIGHLIGHTS:

SVC3:

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

INTERIOR (2/2)

LOWLIGHTS:

- PMCS
 - PMCS - pre S0 - deliverable - checked and judged - done

BLOCKER:

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

INFOTAINMENT (1/2)

HIGHLIGHTS:

SVC3:

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

INFOTAINMENT (2/2)

LOWLIGHTS:

SVC3:

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

BLOCKER:

SVC3: Final steering wheel clarification

CHASSIS (1/3)

HIGHLIGHTS: SVC3:

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

CHASSIS (2/3)

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

CHASSIS (3/3)

- Suspensions
 - Send updated RFQ – OK
 - Create welding standard – 90%

LOWLIGHTS:

- PMCS being used as a communication tool
- European vacations

BLOCKER:

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

E/E (1/2)

HIGHLIGHTS:

SVC2: Interior light fix in SVC2.1 before Tour

SVC3:

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

E/E (2/2)

LOWLIGHTS:

SVC3:

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

Missing peripheral information attached to RCM (Airbags / Pretentioners)

BLOCKER:

SVC3: Headcount (timing)

DESS (1/2)

HIGHLIGHTS:

SVC2:

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

SVC3:

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

DESS (2/2)

LOWLIGHTS:

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

BLOCKER:

SVC3:

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

HV BATTERY

HIGHLIGHTS:

SVC3:

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

LOWLIGHTS:

SVC3:

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

BLOCKER: None

SIMULATION (1/2)

HIGHLIGHTS:

- Complete Vehicle CFD
 - CAD review done
 - Modelling started
- Crash & Safety Sprint 1
 - CAD Review Release G.1, Blockers & Impediments worked out
 - CAE Cross Meeting - Crash&Safety done and overview of delivery status worked out
 - Blocker, impediments & main risks detected → Facilitation started
- Simulation Org
 - HC Planning alignment → Feedback open
 - Budget planning alignment → mid-term alignment done
- CAE Activity identification
 - First base line LCO created

SIMULATION (2/2)

LOWLIGHTS:

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

BLOCKER: None

PROCESS OWNER (1/3)

HIGHLIGHTS:

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

PROCESS OWNER (2/3)

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

LOWLIGHTS:

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

PROCESS OWNER (3/3)

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

BLOCKER:

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

VIRTUAL VEHICLE (1/2)

HIGHLIGHTS:

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

VIRTUAL VEHICLE (2/2)

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

LOWLIGHTS:

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

BLOCKER: None

HIGHLIGHTS: SVC3:

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

DESIGN (2/2)

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

LOWLIGHTS:

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

BLOCKER: None