NISSAN
MOTOR CORPORATION

Supplier Master Schedule (SMS)

Key Point(s):

- The Supplier Master Schedule (inc. details) is a document that:
  - Demonstrates how the timing for key design, development and production preparation milestones will support the achievement of QCD targets
  - Monitors overall project timing during supplier internal project meetings

Minimum Content Requirement(s):

- The document shall include:
  - All key milestones for the Nissan project.
  - All key milestones for the part being developed. These shall be in line with the Nissan project milestones
  - Supplier internal project review meeting timing
  - Detail design / drawing preparation timing
  - Testing timing
  - Analysis of Design and Process Potential Failures and Effects timing
  - Production tooling development timing
  - Production gauging development timing
  - Production facilities (Inc. test) installation timing
  - Control Plan development timing
  - Floor plan layout / process flowchart development timing
  - Operation sheets / work instructions development timing
  - Operator recruitment and training timing
  - Capability study timing
  - Packaging development and manufacture timing
  - Logistics systems implementation timing
  - Sub-supplier Management activities timing
  - Appearance approval timing
  - Parts manufacture and submission timing
  - Supplier process audit timing
  - PSW sign-off timing
  - Ramp-up activities timing
- Details sheets should be attached where necessary to provide detailed timing for individual activities e.g. tooling schedule, facility installation & commissioning schedule etc

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Output Document Description

- NISSAN accept supplier's unique format.
- Details sheets should be attached where necessary to provide detailed timing for individual activities when required.

Item	Completion Instructions
Project	Nissan Vehicle / Power train project code and location for which the part is being developed / manufactured.
Special Characteristic	Tick all boxes that apply to the product being developed / manufactured.
Document Reference No./ Version	The Suppliers reference no. and version no. for the document.
Document Revision Date	The date of the latest revision of the document.
Document Origin Date	The date when the document was first issued.
Supplier Name	Supplier Company name.
Supplier Plant	Location at which the product will be produced. Note: If the site supplying off-tool parts for a trial build is different to those supplying off-process parts for a later trial, this should be discussed with Nissan and should be reflected in all project management documentation.
Supplier Code	Unique code to each supplier, issued by Nissan Purchasing Dept.
Author	The name of the person who created / revised the document.
E-mail	The E-mail address of the person who created / revised the document.
Tel No	The telephone number of the person who created / revised the document.
Part Name	The part name or description as identified on the product drawing.
Part No.	As issued by Nissan design department.
Design Note No.	The latest design note number that applies to the product being developed / manufactured.

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Remarks	Any additional remarks / concerns should be noted in this section.
Is this part unique, common, carryover, or pass through	Select the supply parts categories through the drop down box.
Based on PCP finding, is additional tooling / equipment required? Or, are design change going to be added to accommodate additional volume	Select Yes or No from the drop down menu.
Is additional manpower or shifts required to accommodate additional volume?	Select Yes or No from the drop down menu.
Is additional packaging required?	Select Yes or No from the drop down menu.
Vehicle trial production requirement	Enter the following in this section: ➢ Trial schedule: enters MRD date in respective Nissan's milestone schedule (S/VC-lot, ST-Lot, PT1, PT2, SOP) ➢ Quantities: quantities of parts ordered for different milestone event ➢ Tooling status o Prototype o Off Tool / Not Off-Process o Not Off Tool / Off Process o Off Tool / Off Process o Not Off Tool / Not Off Process ➢ Commodity o Body o Trim & Chassis o Powertrain
Supplier Sign-Off	Enter cross functional team member name into this section. Electronic signature is acceptable.
Supplier Project Kick-Off	Enters the start date where supplier kicked off the project, in order to allow the Gantt Chart function to activate.

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Internal Project Review Meetings	Timing of suppliers internal cross-functional project review meetings. The purpose of these meetings is to confirm progress status to the Master timing / detail action plans and make countermeasure plans for project delays and major risks. Item examples to be planned timing for: ➢ VC-Lot shipping judgment ➢ ST-Lot shipping judgement ➢ PT1 shipping judgment ➢ PT2 shipping judgment ➢ SOP shipping judgment ➢ Ramp-up activities judgment ➢ Enters the responsible person, estimated / actual start and end date of a project milestone, and % of actual completion.
Detail Design/Drawing Preparation	Initial design development period and timing for study of Basic Specification, Product Specification and Drawing preparation/submission for approval. Item examples to be planned timing for: ➢ Specification tender release ➢ Basic & production specification study (feasibility study) ➢ Submit PDCT worksheet ➢ Submit drawing(s) / Excel Note with KFD (if applicable) ➢ Design release (D-Note release) #1 ➢ Design release (D-Note release) #2 ➢ Design release (D-Note release) #3 ➢ Enters the responsible person, estimated / actual start and end date of a project milestone, and % of actual completion.

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Testing	Timing for testing as identified on Supplier Test Reports and Design Assurance Plan from Specification Tenders /NDS and Nissan Design meetings. Note: Open test issues should be reported at all Nissan review meetings. If open items remain unresolved by the first Nissan production trial Material Receiving Date (MRD) timing, concessions must be formally requested. Item examples to be planned timing for: ➢ Create and submit test plan ➢ DV level testing completion ➢ PV level testing completion ➢ PV level testing approval ➢ Enters the responsible person, estimated / actual start and end date of a project milestone, and % of actual completion.
Analysis of Failure and Effects	Timing for conducting / completion of Design and Process Potential Failure & Effects Analysis (Design FMEA). Historical Recurrence Prevention data from Warranty and Customer Build concerns shall be reviewed as part of this planned activity. Item examples to be planned timing for ➢ Prepare PFMEA (using DFMEA as a reference) ➢ Initial draft submission to Nissan ➢ Internal project team review & approval of PFMEA ➢ PFMEA review with Nissan at PT1, PT2, and SOP ➢ Final submission of PFMEA for PSW. ➢ Enters the responsible person, estimated / actual start and end date of a project milestone, and % of actual completion.

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Production Tooling	Describe the preparation schedule for the completion of the design, manufacture, inspection & buy off of all tooling including additional tool sets and multi-cavity dies. The schedule shall also include the date of tooling design reviews and trials. Specify the production place of tool/ die (maker name and country name) and trial place. Item examples to be planned timing for: ➢ Toolmaker selection / quoting process ➢ Tool design phase (start and completion date) ➢ Tooling fabrication (start and completion date) ➢ Tooling trial at T0, T1, and T2 with modification timing ➢ T2 level for VC-lot confirmation date ➢ Tooling buyoff ➢ Tooling transfer lead time ➢ Production trial and modification ➢ Location where the tool is fabricated (Domestics or Overseas) ➢ Specify the type of component or assembly tooling ➢ Enters the responsible person, estimated / actual start and end date of a project milestone, and % of actual completion.
Production Gauging	Describe the preparation schedule for the completion of the design, manufacture and inspection & buy off for all gauges including additional gauges. Specify the product location of gauge (supplier name and country name). Item examples to be planned timing for: ➢ Gauge concept design review ➢ Gauge specification & drawing preparation and submission ➢ Gauge concept approval ➢ Gauge fabrication ➢ Gauge certification, R&R study completion. ➢ Enters the responsible person, estimated / actual start and end date of a project milestone, and % of actual completion.

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Production Facilities (inc. Test) Installation	Overview timing of all facilities including, modifications, installation and commissioning at final manufacturing site. Timing details should show schedule from facility design through to facility commissioning. Ensure historical concerns are reviewed and countermeasures built into the activities. Item examples to be planned timing for: ➢ Equipment evaluation and decision ➢ New equipment specification completion ➢ Plan to meet production capacity plan OEE requirement ➢ Equipment fabrication duration ➢ Initial trial and equipment buyoff ➢ Equipment delivery schedule ➢ Equipment trial run T0, T1, and T2. ➢ Final equipment buyoff ➢ Enters the responsible person, estimated / actual start and end date of a project milestone, and % of actual completion.
Control Plan	Timing for deployment of all Design and Process Failure & Effects Analysis items into the development of the pre-production and production control plans and submission / approval of document. Nissan requirement items are as per the DCI for this document. Item examples to be planned timing for: ➢ Control plan preparation (using PFMEA as foundation) ➢ Initial draft submission to Nissan ➢ Internal project team review & approval of Control Plan ➢ Control Plan review / process walk with Nissan at PT1, PT2, and SOP milestone. ➢ Control plan final submission for PSW. ➢ Enters the responsible person, estimated / actual start and end date of a project milestone, and % of actual completion.

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Floor Plan Layout/ Process Flowchart	Overview timing for proposed shop floor layout / process flow. Nissan requirement items are as per the DCI for this document. Timing details should show schedule from Process design through to document completion. Ensure historical concerns are reviewed and countermeasures built into the activities Item examples to be planned timing for: ➢ Process design ➢ Design and design completion of floor layout ➢ Purchasing order and installation of necessary goods ➢ Delivery and delivery completion of equipment ➢ Completion of production process, shipment area ➢ Trial and modification of floor layout
Operation Sheets / Work Instructions	Timing for initial preparation of work instructions and planned updates based on the results of pre-production trials. Item examples to be planned timing for: ➢ Preparation of work instructions for pre-production and production ➢ Updates of work instructions after trial
Operator Recruitment & Training	Timing of recruitment and training activities for trial builds through to Start of production (SOP) requirements. Note: Show how recruitment and training support the planned trial builds. Item examples to be planned timing for: ➢ Study of operators recruitment and training plan ➢ Operator training for each trial ➢ Re-training after trial ➢ Recruitment of new operators ➢ Confirmation of proficiency level
Capability Study	Timing for study plan, evaluation and submission of capability data from off tool throughout supplier internal trials, concluding with data submission to Nissan. Note: Nissan may ask for development capability data for specific parts and projects. Item examples to be planned timing for: ➢ Preparation and submission of process capability study plan ➢ Evaluation of process capability ➢ Submission of process capability result

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Packaging Development and Manufacture	Timing for specification, submission and approval of packaging specification, including timing for trial evaluation and procurement of packaging. Timing should support production trials using final packaging specification where agreed with Nissan. Item examples to be planned timing for: ➢ Study and decision of packaging specification ➢ Selection and decision of packaging maker ➢ Reception of packaging sample and confirmation ➢ Submission of packaging specification sheet for trial ➢ Packaging trial ➢ Preparation of packaging specification sheet ➢ Final packaging trial ➢ Submission of final packaging specifications ➢ Approval by Nissan
Logistics Systems Implementation	Timing for specification, submission and approval of Logistics data, including timing for installation / testing of any electronic data interchange systems.
Sub-Supplier Management	Timing for Sub-supplier activities (including Imposed / Module suppliers) from Sub-supplier selection through to sub-component part approval / PSW submission, with supporting sub-component assurance documents. Item examples to be planned timing for: ➢ Decision of sub suppliers ➢ Submission of Component Supply Chain Chart (CSCC) to Nissan ➢ Evaluation of off tool trial parts ➢ Sub suppliers audit ➢ Evaluation of off process trial parts ➢ Sub supplier ramp up activity
Appearance Approval	Timing for specification, confirmation, evaluation, reiteration activities, and final submission of reports and master samples or plaques. Item examples to be planned timing for: ➢ Confirmation meeting of appearance approval ➢ Submission of application for appearance approval ➢ Tuning ➢ Final quality confirmation meeting ➢ Submission of appearance approval report

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Parts Manufacture & Submission	Timing from start to finish of each internal supplier trial build, any reiteration/ feedback activities and trial builds that are supporting submission of parts to Nissan. Note: Suppliers should liaise with Nissan to confirm Body / Vehicle MRD requirements and timings. Item examples to be planned timing for: ➢ Bill of Material (BOM) preparation ➢ Study and decision of inspection standard ➢ Production of each trial ➢ Inspection of each trial ➢ Modification and inspection after inspection by trial ➢ Supplier Start of Production (SOP)
Supplier Process Audit	Timing for the supplier to validate both his own and sub-suppliers process under Start of Production (SOP) conditions.
PSW Sign-off	Timing for issue of supplier signed-off Parts Submission Warrant (PSW) to Nissan. Confirm submission timing with Nissan.
Ramp up activities	Timing for the planning, commencement and duration of the ramp up activities.
Responsible Person (Supplier)	Name of the person responsible at the supplier for the activity.
Comments	Include any comments relevant to the content of the master schedule or details sheets.
Supplier Sign-off (Manager Level)	Each area with a major involvement in the project will be expected to sign-off the Supplier Master Schedule at a senior level to confirm agreement of all areas to the content of the document.

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