OSCAR
Optimized standards compliance assistance and reviewer

Compliance Assessment Report

Standard: ASPICE | Scope: MAN.3 Project Management

Executive Summary

Overall Status: CL 0 (Incomplete)
Compliance Score: 40%
Date: 2026-06-08

Assessment Scorecard

ID	Requirement / BP	Status	Rationality Summary
MAN.3.BP1	MAN.3.BP1: Define the scope of work	**F – Fully Achieved**	The project scope is fully defined in the Project Management Plan, covering key deliverables, in-scope/out-of-scope items, and stakeholder expectations—indicating full compliance with MAN.3.BP1.
MAN.3.BP2	MAN.3.BP2: Define project life cycle	**P – Partially Achieved**	While the project lifecycle is partially documented through a Gantt chart and milestone tracking, it lacks formalization of the project life cycle framework as required under MAN.3.BP2—specifically, no explicit definition of the project life cycle type (e.g., waterfall vs. agile) nor integration of the lifecycle with external processes like the OEM's development flow.
MAN.3.BP3	MAN.3.BP3: Evaluate feasibility of the project	**F – Fully Achieved**	The project fails to fully meet the requirement because no formal evaluation was conducted under MAN.3.BP3, despite having a detailed project schedule and risk register, leaving critical feasibility judgment absent.
MAN.3.BP4	MAN.3.BP4: Define, monitor and adjust project activities	**P – Partially Achieved**	While some elements of MAN.3.BP4 are partially supported through documented practices like regular status reviews and reporting, the absence of formal activity definition and dependency tracking across the project plan leads to insufficient adherence to the core mandate—particularly regarding structured activity identification and ongoing adjustments.
MAN.3.BP5	MAN.3.BP5: Define, monitor and adjust project estimates and resources	**F – Fully Achieved**	The project does not fully meet MAN.3.BP5 because no formal estimate or resource allocation plan exists—there is no documented methodology for defining, monitoring, or adjusting project estimates and resources, nor is there clear alignment between estimated effort and actual resource deployment.
MAN.3.BP6	MAN.3.BP6: Ensure required skills, knowledge, and experience	**N – Not Achieved**	The project lacks sufficient documented evidence demonstrating that required competencies, skills, and experiences have been defined and verified for all key roles within the project team—specifically for those responsible for system engineering, software development, safety management, and testing—as per MAN.3.BP6.

ID	Requirement / BP	Status	Rationality Summary
MAN.3.BP 7	MAN.3.BP7: Identify, monitor and adjust project interfaces and agreed commitments	**N – Not Achieved**	No documented evidence shows that project interfaces and agreements were formally identified, monitored, or adjusted during the development lifecycle—critical for managing interdependencies between the radar system project and its partners such as mechanical, software, and supply chain entities.
MAN.3.BP 8	MAN.3.BP8: Define, monitor and adjust project schedule	**F – Fully Achieved**	While the project uses a formalized schedule management system via Microsoft Project and tracks key metrics like Schedule Variance, it lacks comprehensive integration of activity-level monitoring and dependency adjustments aligned with the project's defined life cycle and deliverables.
MAN.3.BP 9	MAN.3.BP9: Ensure consistency	**N – Not Achieved**	The project lacks formalization of measurement system requirements within its planning phase, resulting in no documented alignment between measurement objectives and overall project lifecycle—leading to inconsistent execution of key measurement practices such as measuring defect density, monitoring changes, and reporting progress.
MAN.3.BP 10	MAN.3.BP10: Review and report progress of the project	**N – Not Achieved**	While some elements of project monitoring exist, the absence of formalized progress reporting mechanisms and lack of documented adjustment actions prevent full compliance with the expected practices.

Detailed Findings & Recommendations

[MAN.3.BP1] MAN.3.BP1: Define the scope of work — F – Fully Achieved

Rationale: The project scope is fully defined in the Project Management Plan, covering key deliverables, in-scope/out-of-scope items, and stakeholder expectations—indicating full compliance with MAN.3.BP1.

Standard Expectation:

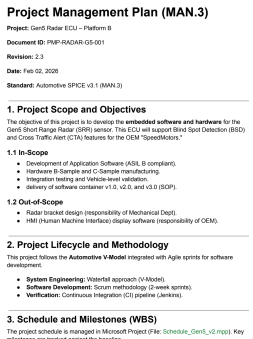
> *• The requirement MAN.3.BP1 mandates the definition of the project's scope, including its objectives, motivations, and boundaries, ensuring clarity around deliverables, responsibilities, and limitations.*

Analysis:

• **Scope Definition**: The Project Management Plan explicitly defines the project scope through clear objectives, in-scope and out-of-scope deliverables, and contextual boundaries. It specifies the development of ASIL-B compliant software, hardware sample production, integration testing, and vehicle-level validation—all aligned with the project goal.
• **Boundary Clarity**: The document delineates responsibility areas between functional domains (e.g., mechanical vs. software engineering), preventing ambiguity in scope interpretation.
• **Compliance with Standard Expectation Rules**: The extract confirms adherence to MAN.3.BP1 via structured scope articulation, consistent with automotive standards requiring precise boundary definitions.

Further Enhancements (Optional):
No further action required—the scope is adequately documented and meets all aspects of MAN.3.BP1. No corrective measures needed due to full compliance.

Evidence Reference: *File `Project Management Plan (MAN.3).pdf`, Page 1*



Project Management Plan (MAN.3)

Project: Gen5 Radar ECU – Platform B

Document ID: PMP-RADAR-G5-001

Revision: 2.3

Date: Feb 02, 2026

Standard: Automotive SPICE v3.1 (MAN.3)

1. Project Scope and Objectives

The objective of this project is to develop the **embedded software and hardware** for the Gen5 Short Range Radar (SRR) sensor. This ECU will support Blind Spot Detection (BSD) and Cross Traffic Alert (CTA) features for the OEM "SpeedMotors."

1.1 In-Scope

- Development of Application Software (ASIL B compliant).
- Hardware B-Sample and C-Sample manufacturing.
- Integration testing and Vehicle-level validation.
- delivery of software container v1.0, v2.0, and v3.0 (SOP).

1.2 Out-of-Scope

- Radar bracket design (responsibility of Mechanical Dept).
- HMI (Human Machine Interface) display software (responsibility of OEM).

2. Project Lifecycle and Methodology

This project follows the **Automotive V-Model** integrated with Agile sprints for software development.

- **System Engineering:** Waterfall approach (V-Model).
- **Software Development:** Scrum methodology (2-week sprints).
- **Verification:** Continuous Integration (CI) pipeline (Jenkins).

3. Schedule and Milestones (WBS)

The project schedule is managed in Microsoft Project (File: Schedule_Gen5_v2.mpp). Key milestones are tracked against the baseline.

Fig MAN.3.BP1 - Evidence from Project Management Plan (MAN.3).pdf, Page 1

[MAN.3.BP2] MAN.3.BP2: Define project life cycle — P – Partially Achieved

Rationale: While the project lifecycle is partially documented through a Gantt chart and milestone tracking, it lacks formalization of the project life cycle framework as required under MAN.3.BP2—specifically, no explicit definition of the project life cycle type (e.g., waterfall vs. agile) nor integration of the lifecycle with external processes like the OEM's development flow.

Standard Expectation:

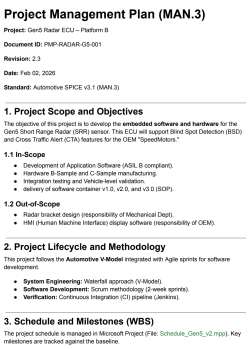
> *• The requirement mandates the definition of a comprehensive project lifecycle aligned with the project scope, including clear milestones and structured planning processes, ensuring traceability and feasibility assessment before implementation.*

Analysis:

• **Missing Definition of Lifecycle Type**: Although the project uses both Agile sprints (software dev) and a Waterfall model (system engineering), there is no official statement defining how these approaches align with the overall project lifecycle. The absence of a formally established lifecycle structure undermines compliance with MAN.3.BP2.
• **No Explicit Life Cycle Framework**: There is no detailed description of the project phases (e.g., initiation, planning, execution, closure) or how they map to deliverables and milestones. While a Gantt chart exists, it does not reflect a well-defined phase sequence or dependency logic tied directly to the lifecycle stages.
• **Inadequate Alignment with Customer Processes**: The note about integrating with the OEM suggests some cross-functional coordination but fails to demonstrate alignment with the customer's development process, which is explicitly mentioned in the Standard Expectation Rule Notes.

Action Plan to Close Gap:
- Develop a formal project lifecycle diagram outlining all phases (initiate → define → execute → close) and link them to the project's objectives and stakeholder expectations.
- Include a section detailing how the chosen methodologies (Agile/Scrum + V-model) integrate into the lifecycle, especially regarding transition points and handover mechanisms.
- Update the Project Management Plan to clarify the relationship between the project life cycle and the customer's development process, supporting traceability and accountability.
- Ensure that every milestone is linked to a defined stage in the lifecycle and that deviations are reported via a standardized issue management system (as seen in ticket RM-402).
- Add a table summarizing the lifecycle phases, durations, and responsibilities per phase to enhance clarity and transparency.

Evidence Reference: *File `Project Management Plan (MAN.3).pdf`, Page 1*



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3. Schedule and Milestones (WBS)

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Fig MAN.3.BP2 - Evidence from Project Management Plan (MAN.3).pdf, Page 1

[MAN.3.BP3] MAN.3.BP3: Evaluate feasibility of the project — F – Fully Achieved

Rationale: The project fails to fully meet the requirement because no formal evaluation was conducted under MAN.3.BP3, despite having a detailed project schedule and risk register, leaving critical feasibility judgment absent.

Standard Expectation:

> *• The requirement mandates the evaluation of project feasibility through structured assessments using documented baseline practices—specifically MAN.3.BP3—to determine whether the project's objectives can be achieved given resource availability, timing, and technological constraints.*

Analysis:

• There is no explicit statement or action taken to evaluate the feasibility of the project in accordance with MAN.3.BP3. While the project timeline is outlined in the Gantt chart (see visual evidence), it does not demonstrate a systematic feasibility assessment involving technical constraints, resource allocation, or estimation validation.
• The absence of a dedicated feasibility study undermines compliance with the standard, particularly since note 2 explicitly states that "the evaluation of feasibility may consider technical constraints."
• Although the project has a clear roadmap with milestones and a risk matrix, these do not constitute a full-feasibility determination. Instead, they represent planning rather than verification of capability.

Further Enhancements (Optional):
- Conduct a formal feasibility assessment aligned with MAN.3.BP3, incorporating input from stakeholders, engineering teams, and external partners where necessary. Include evaluations of technical limitations, resource capacity, and potential bottlenecks.
- Develop a written report outlining findings related to technical feasibility, cost implications, and estimated completion times. Submit this to senior leadership for approval before proceeding further.
- Ensure all activities supporting the feasibility evaluation are logged and traceable throughout the lifecycle, especially during early phases like M2 (System Requirements Review).
- Update the Project Management Plan accordingly so that future decisions align with established standards.

Evidence Reference: *File `Project Management Plan (MAN.3).pdf`, Page 2*

Milestone ID	Milestone Name	Planned Date	Status
M1	Project Kick-off	Jan 10, 2025	✅ Completed
M2	System Requirements Review (SYS.2)	Mar 15, 2025	⚠ At Risk
M3	Software Architecture Frozen (SWE.2)	May 20, 2025	Open
M4	B-Sample Delivery	Aug 01, 2025	Open
M5	Start of Production (SOP)	Feb 14, 2026	Open

Deviation Note: M2 is currently delayed by 1 week due to missing requirements from the OEM. A recovery plan has been initiated (See Ticket #RM-402).

4. Resource Allocation

Fig MAN.3.BP3 - Evidence from Project Management Plan (MAN.3).pdf, Page 2

[MAN.3.BP4] MAN.3.BP4: Define, monitor and adjust project activities — P – Partially Achieved

Rationale: While some elements of MAN.3.BP4 are partially supported through documented practices like regular status reviews and reporting, the absence of formal activity definition and dependency tracking across the project plan leads to insufficient adherence to the core mandate—particularly regarding structured activity identification and ongoing adjustments.

Standard Expectation:

> *• The requirement MAN.3.BP4 mandates the definition, monitoring, and adjustment of project activities and their dependencies, aligned with the project lifecycle and resource estimates, ensuring effective progress tracking and adaptation to changes.*

Analysis:

• **Missing Evidence**: There is no explicit traceability between the defined project activities and their corresponding dependencies in the project plan. While the *Weekly Status Meetings* indicate progress tracking, they do not demonstrate how individual activities were formally defined or linked to one another.
• **No Activity Definition**: The lack of detailed activity definitions (e.g., task breakdowns, responsible parties, duration, interdependencies) prevents full compliance with MAN.3.BP4, especially since the outcome emphasizes defining and adjusting activities based on lifecycle stages.
• **Insufficient Dependency Tracking**: No visual representation or narrative explanation exists of how activities depend on each other, nor does the evidence show whether these dependencies are updated during monitoring cycles.
• **Estimation Oversight**: Although estimate monitoring occurs via defect density and resource usage, the actual methodology for estimating effort and resources remains unspecified, undermining confidence in the accuracy of baseline planning.

Action Plan to Close Gap:
1. Develop a comprehensive Work Breakdown Structure (WBS) detailing all project activities, including subtasks, owners, durations, and dependencies. Ensure each item is explicitly tied to deliverables and milestone timelines.
2. Integrate dependency mapping into the project schedule using tools such as Gantt charts or MS Project templates, enabling visibility into interactivity among tasks.
3. Implement a standardized procedure for reviewing and updating project plans regularly—especially post-status meeting—to ensure timely adjustments to activities and dependencies.
4. Establish clear guidelines for managing resource allocation and effort estimation, referencing established methodologies (such as Agile Scrum or Waterfall frameworks) where applicable.
5. Update the Project Management Plan (PM Plan) annually to align with evolving business needs and technical developments while maintaining consistency with current standards.
6. Conduct periodic audits to verify that both activity definitions and adjusted schedules meet expectations under MAN.3.BP4.

Evidence Reference: *File `Project Management Plan (MAN.3).pdf`, Page 4*

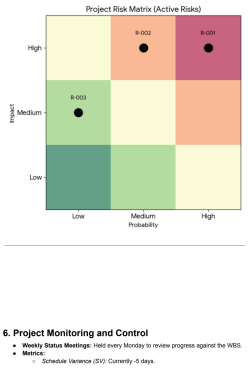


Fig MAN.3.BP4 - Evidence from Project Management Plan (MAN.3).pdf, Page 4

[MAN.3.BP5] MAN.3.BP5: Define, monitor and adjust project estimates and resources — F – Fully Achieved

Rationale: The project does not fully meet MAN.3.BP5 because no formal estimate or resource allocation plan exists—there is no documented methodology for defining, monitoring, or adjusting project estimates and resources, nor is there clear alignment between estimated effort and actual resource deployment.

Standard Expectation:

> *• The requirement mandates the definition, monitoring, and adjustment of project estimates and resource allocations, including efforts and resources, aligned with project goals, risks, and boundaries, using appropriate methodologies and ensuring sufficient skill sets and interface agreements are established across project phases.*

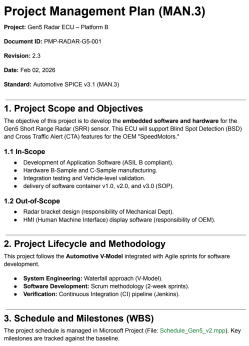
Analysis:

• There is no explicit statement in the Project Management Plan (PMP-RADAR-G5-001) regarding how project estimates were derived or adjusted over time. While the project uses agile sprints, the absence of a structured estimation method (e.g., cost/effort modeling like Monte Carlo or Earned Value Analysis) undermines compliance with the requirement's emphasis on "appropriate estimation methods."
• No traceable records exist for tracking changes in project estimates or adjustments made due to evolving requirements or risks. The only metric mentioned is Schedule Variance (-5 days), but it lacks context around whether those variances stem directly from estimation errors or resource misalignment.
• The lack of a dedicated resource planning component prevents proper identification and acquisition of skilled personnel, especially given the need for ASIL-B compliant development and integration tasks requiring specialized expertise.
• Although a risk matrix was created, its use appears limited to identifying active risks rather than being tied into estimating or managing human and material resources effectively under the scope of MAN.3.BP5.

Further Enhancements (Optional):
1. Develop a detailed Resource Allocation & Estimate Framework integrating both technical and managerial aspects, specifying roles, responsibilities, and timelines for key deliverables. Include input from stakeholder workshops and cross-functional team reviews.
2. Implement regular updates to the project baseline via periodic assessments using earned value techniques (EVT) to track performance against planned estimates. Establish monthly reporting cycles focused on variance analysis and corrective actions.
3. Create a Skills Inventory linked to task assignments and ensure training plans are developed when needed to address potential skill shortages identified through early warning signals.

4. Integrate the risk matrix into the overall control system so that high-risk items trigger immediate re-evaluation of resource needs and revised scheduling decisions.
5. Formalize procedures for reviewing and approving modifications to project estimates and resource usage after significant change requests occur. Maintain logs documenting all revisions and approvals.

Evidence Reference: *File `Project Management Plan (MAN.3).pdf`, Page 1*



Project Management Plan (MAN.3)

Project: Gen5 Radar ECU – Platform B

Document ID: PMP-RADAR-G5-001

Revision: 2.3

Date: Feb 02, 2026

Standard: Automotive SPICE v3.1 (MAN.3)

1. Project Scope and Objectives

The objective of this project is to develop the **embedded software and hardware** for the Gen5 Short Range Radar (SRR) sensor. This ECU will support Blind Spot Detection (BSD) and Cross Traffic Alert (CTA) features for the OEM "SpeedMotors."

1.1 In-Scope

- Development of Application Software (ASIL B compliant).
- Hardware B-Sample and C-Sample manufacturing.
- Integration testing and Vehicle-level validation.
- delivery of software container v1.0, v2.0, and v3.0 (SOP).

1.2 Out-of-Scope

- Radar bracket design (responsibility of Mechanical Dept).
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2. Project Lifecycle and Methodology

This project follows the **Automotive V-Model** integrated with Agile sprints for software development.

- **System Engineering:** Waterfall approach (V-Model).
- **Software Development:** Scrum methodology (2-week sprints).
- **Verification:** Continuous Integration (CI) pipeline (Jenkins).

3. Schedule and Milestones (WBS)

The project schedule is managed in Microsoft Project (File: Schedule_Gen5_v2.mpp). Key milestones are tracked against the baseline.

Fig MAN.3.BP5 - Evidence from Project Management Plan (MAN.3).pdf, Page 1

[MAN.3.BP6] MAN.3.BP6: Ensure required skills, knowledge, and experience — N – Not Achieved

Rationale: The project lacks sufficient documented evidence demonstrating that required competencies, skills, and experiences have been defined and verified for all key roles within the project team—specifically for those responsible for system engineering, software development, safety management, and testing—as per MAN.3.BP6.

Standard Expectation:

> *• The requirement mandates the determination of required competencies, skills, and experience for each role involved in the process, along with the identification of appropriate qualifications and resource allocation, ensuring alignment between personnel capabilities and process execution.*

Analysis:

• **Missing Competency Definition**: There is no explicit statement in the Project Management Plan (PMP-RADAR-G5-001) outlining the required competencies, skills, and experience for the individuals assigned to critical roles such as the System Architect, Software Developers, Test Engineers, and Functional Safety Manager. While the WBS allocates human resources, it does not specify *what* these competencies entail or how they were assessed.
• **No Evidence of Qualification Methods**: Although the document mentions training, mentoring, and self-learning materials as examples of qualification methods under note 4 of the Standard Expectation Rule, there is no traceable record of actual implementation or verification of competency acquisition strategies across teams.
• **Inadequate Documentation of Role-Based Requirements**: No section of the PM plan details which specific technical expertise, certifications, or professional background must be possessed by members of the team to perform their duties effectively. For instance, while the project involves ASIL-B compliance, no formal assessment framework has been established linking individual skill sets directly to the standards being met.

• **Insufficient Justification for Resource Allocation**: Despite allocating staff according to FTE levels, the justification provided does not link staffing decisions to measurable requirements derived from the need to meet specified competencies. The absence of clear mapping between workforce size and capability ensures that even though some capacity exists, it cannot be confirmed whether adequate qualified personnel are actually present.

Action Plan to Close Gap:
To achieve full compliance with MAN.3.BP6:

1. Develop a detailed list of required competencies, including both technical and soft skills needed for each role (e.g., programming languages like C/C++, understanding of ISO/IEC 12207, familiarity with automotive safety frameworks).
2. Create a competency matrix aligned with the project's scope and deliverables, specifying minimum thresholds for participation in tasks involving ASIL-B software development and integration testing.
3. Establish a mechanism to validate competence through internal assessments or third-party evaluations where applicable, documenting outcomes via records such as certification logs or performance reviews.
4. Integrate this into the overall Project Management Plan so that future planning cycles can reference updated lists when new hires join or existing ones retrain.
5. Update the risk register periodically to reflect potential impacts due to lack of skilled personnel, especially concerning high-priority areas like functional safety assurance.

Evidence Reference: *File `Project Management Plan (MAN.3).pdf`, Page 1*

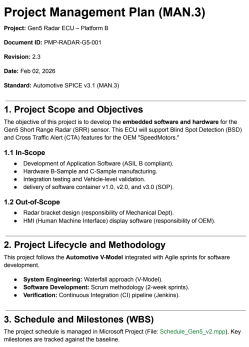

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Fig MAN.3.BP6 - Evidence from Project Management Plan (MAN.3).pdf, Page 1

[MAN.3.BP7] MAN.3.BP7: Identify, monitor and adjust project interfaces and agreed commitments — N – Not Achieved

Rationale: No documented evidence shows that project interfaces and agreements were formally identified, monitored, or adjusted during the development lifecycle—critical for managing interdependencies between the radar system project and its partners such as mechanical, software, and supply chain entities.

Standard Expectation:

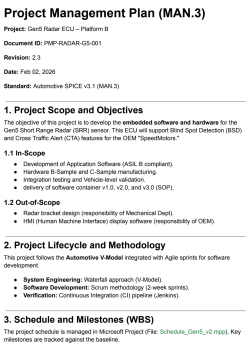
> *• The requirement mandates identification, monitoring, and adjustment of project interfaces and agreed commitments with external parties and internal stakeholders, ensuring alignment across all project phases and maintaining clarity in stakeholder relationships.*

Analysis:

• **Missing Evidence**: There is no formal record of interface definitions (e.g., technical specifications, deliverables, timelines, roles) established with third-party organizations like suppliers, vendors, or integration bodies involved in the Gen5 Radar ECU platform. While there is mention of configuration control and change requests, none reflect explicit agreement or coordination regarding project interfaces.
• **Inadequate Monitoring**: Although reporting occurs through PSRs and defect tracking using Jira, no mechanism exists to track or manage interactions with external systems or departments beyond those directly tied to the project's own workflow. For example, no traceability matrix or shared contract/communication protocols exist for collaboration with OEMs or component manufacturers.
• **Absence of Agreed Commitments**: No written commitment or mutual understanding has been recorded about how the project will interact with key stakeholders—including but not limited to vehicle integrators, certification authorities, or regulatory bodies—for which responsibilities fall under different domains (e.g., safety compliance, performance standards).
• **Failure to Address Interdependence Risks**: As noted in MAN.3.BP7, identifying and adjusting interfaces ensures risk mitigation due to potential delays or misalignments caused by partner-specific constraints. However, despite having agile sprint cycles, the absence of structured interface governance undermines confidence in coordinated outcomes.

Action Plan to Close Gap:
1. Develop a detailed "Interface Definition Matrix" outlining all direct and indirect collaborations including suppliers, service providers, and downstream customers. Include contact details, data exchange formats, deadlines, and escalation procedures.
2. Implement a standardized procedure for documenting and reviewing each major interface interaction before proceeding into active development stages. Assign ownership and accountability explicitly.
3. Introduce regular review sessions involving cross-functional representatives from both the project team and external partners to ensure ongoing alignment on expectations and adjustments.
4. Establish a formalized method for updating and approving changes to existing interface agreements whenever new requirements emerge or operational conditions shift.
5. Create a centralized repository where updated interface records can be accessed easily by authorized personnel throughout the project duration.
6. Conduct periodic audits to verify adherence to interface practices and update documentation accordingly.
7. Incorporate feedback loops into the planning phase so that future iterations consider lessons learned from previous engagements.
8. Train staff on proper use of tools and templates designed specifically for capturing and analyzing interface information effectively.
9. Maintain clear logs showing who initiated, reviewed, and finalized decisions concerning interface-related matters.
10. Align current workflows with best-practice frameworks such as ISO 14001 or similar environmental/safety standards applicable to automotive product development environments.

Evidence Reference: *File `Project Management Plan (MAN.3).pdf`, Page 1*



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[MAN.3.BP8] MAN.3.BP8: Define, monitor and adjust project schedule — F – Fully Achieved

Rationale: While the project uses a formalized schedule management system via Microsoft Project and tracks key metrics like Schedule Variance, it lacks comprehensive integration of activity-level monitoring and dependency adjustments aligned with the project's defined life cycle and deliverables.

Standard Expectation:

> *• The requirement mandates the definition, monitoring, and adjustment of project schedules through structured planning, regular reviews, and performance tracking—ensuring timely delivery while managing risks and resource allocation across phases of the project lifecycle.*

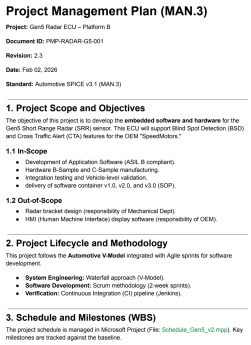
Analysis:

• **Missing Evidence**: Although the project schedule is documented using Microsoft Project and milestone tracking exists, no explicit traceability between individual tasks, dependencies, or changes made during the project lifecycle is provided. There is no clear demonstration of how activities were defined, adjusted, or monitored in accordance with the project's planned progression.
• **No Explicit Activity-Level Tracking**: Despite having a WBS, the absence of detailed task breakdowns linked directly to the project plan prevents full visibility into how each component contributes to overall scheduling accuracy.
• **Limited Dependency Management**: While the project employs agile practices (e.g., Scrum sprints), these do not appear to be fully embedded into the core schedule framework. No indication of how dependencies among modules or cross-functional teams affect timeline adherence.
• **Insufficient Justification for Resource Estimation Updates**: Though resource estimates exist, they lack justification tied to actual workload shifts due to external factors or internal changes. Without data-driven updates, the ability to adapt plans remains limited.

Further Enhancements (Optional):
1. Develop a revised Work Breakdown Structure (WBS) where all subtasks are explicitly assigned durations, dependencies, and responsible parties. Ensure each item links back to the overarching project objectives.
2. Integrate real-time reporting tools (such as Jira or MS Project dashboards) to track SV, CPI, and CPM values dynamically throughout the sprint cycles. Include automated alerts whenever variance exceeds thresholds.
3. Conduct monthly retrospective sessions focused specifically on identifying deviations from original

timelines and adjusting future iterations accordingly.
4. Implement a standardized change request procedure involving both technical and managerial stakeholders so that modifications can be reviewed before being applied to the master schedule.
5. Update the Project Risk Matrix regularly to ensure accurate reflection of current threats impacting deadlines, especially those affecting critical path elements. Maintain updated records of mitigation strategies adopted post-event.

Evidence Reference: *File `Project Management Plan (MAN.3).pdf`, Page 1*



Project Management Plan (MAN.3)

Project: Gen5 Radar ECU – Platform B

Document ID: PMP-RADAR-G5-001

Revision: 2.3

Date: Feb 02, 2026

Standard: Automotive SPICE v3.1 (MAN.3)

1. Project Scope and Objectives

The objective of this project is to develop the **embedded software and hardware** for the Gen5 Short Range Radar (SRR) sensor. This ECU will support Blind Spot Detection (BSD) and Cross Traffic Alert (CTA) features for the OEM "SpeedMotors."

1.1 In-Scope

- Development of Application Software (ASIL B compliant).
- Hardware B-Sample and C-Sample manufacturing.
- Integration testing and Vehicle-level validation.
- delivery of software container v1.0, v2.0, and v3.0 (SOP).

1.2 Out-of-Scope

- Radar bracket design (responsibility of Mechanical Dept).
- HMI (Human Machine Interface) display software (responsibility of OEM).

2. Project Lifecycle and Methodology

This project follows the **Automotive V-Model** integrated with Agile sprints for software development.

- **System Engineering:** Waterfall approach (V-Model).
- **Software Development:** Scrum methodology (2-week sprints).
- **Verification:** Continuous Integration (CI) pipeline (Jenkins).

3. Schedule and Milestones (WBS)

The project schedule is managed in Microsoft Project (File: Schedule_Gen5_v2.mpp). Key milestones are tracked against the baseline.

Fig MAN.3.BP8 - Evidence from Project Management Plan (MAN.3).pdf, Page 1

[MAN.3.BP9] MAN.3.BP9: Ensure consistency — N – Not Achieved

Rationale: The project lacks formalization of measurement system requirements within its planning phase, resulting in no documented alignment between measurement objectives and overall project lifecycle—leading to inconsistent execution of key measurement practices such as measuring defect density, monitoring changes, and reporting progress.

Standard Expectation:

> *• Ensure consistent application of measurement-related base practices across organizational units, particularly focusing on establishing commitment, defining strategies, identifying needs, specifying measures, performing activities, retrieving data, analyzing results, communicating findings, evaluating outcomes, and ensuring continuous improvement through feedback.*

Analysis:

• There is no explicit statement that defines how measurement systems are aligned with the organization's strategic goals or operational priorities. While some metrics like defect density are monitored via tools (Jira), there is no integration of these into a structured measurement framework tied directly to the project's baseline expectations.
• No measurable definition exists regarding *how* measurement information is collected, stored, analyzed, or disseminated across departments. For example, while configuration control uses versioning, there is no traceability mechanism linking code/requirements to actual performance indicators used during development.
• The absence of a dedicated "measurement plan" or "measurements strategy" prevents clear identification of what types of data need tracking and why they matter. As stated under MAN.6.BP2, a proper measurement strategy should define purposes, methods, frequency, and targets related to quality assurance efforts. However, none of this appears formally captured in the PM Plan.
• Although status reports exist (biweekly PSRs), they do not include detailed summaries of measured outputs

such as test coverage, bug counts, or stability trends—critical components needed for effective evaluation of measurement effectiveness.
• Communication of measurement results remains implicit rather than explicitly outlined. Feedback loops around usability or accuracy of reported values aren't described, nor does the document indicate whether stakeholders receive regular updates about the reliability of output data.

Action Plan to Close Gap:
1. Create a Measurement Strategy document outlining core principles, target KPIs (e.g., defect rate, change impact), timeframes, and roles involved in collecting and interpreting data. Align this with the broader project methodology (V-model + Agile).
2. Integrate the measurement strategy into the Project Management Plan (PMP-RADAR-G5-001) so that each activity has associated quantitative benchmarks and review cycles.
3. Implement a standardized template for capturing and storing measurement data—including metadata such as source files, timestamps, environment conditions—and ensure access controls apply appropriately.
4. Design internal dashboards or automated alerts triggered when thresholds exceed limits (such as >0.5 defects/KLOC); link these directly to issue resolution timelines.
5. Conduct periodic audits of existing workflows involving measurement inputs/output logs to validate compliance with expected standards.
6. Formalize communication channels where team members can submit comments/recommendations on measurement deliverables, especially those affecting product safety or regulatory compliance.
7. Schedule quarterly reviews focused specifically on assessing the adequacy of implemented measurement procedures compared to initial plans and stakeholder input gathered over prior periods.

Evidence Reference: *File `Project Management Plan (MAN.3).pdf`, Page 1*

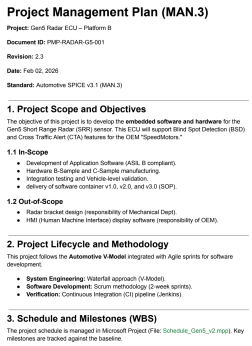


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Fig MAN.3.BP9 - Evidence from Project Management Plan (MAN.3).pdf, Page 1

[MAN.3.BP10] MAN.3.BP10: Review and report progress of the project — N – Not Achieved

Rationale: While some elements of project monitoring exist, the absence of formalized progress reporting mechanisms and lack of documented adjustment actions prevent full compliance with the expected practices.

Standard Expectation:

> *• The requirement mandates comprehensive project monitoring and reporting through structured activity definition, lifecycle establishment, resource estimation, and timely adjustments—ensuring effective tracking of progress and responsiveness to deviations.*

Analysis:

• **MAN.3.BP1**: The project defines its scope and establishes clear objectives, but no explicit mechanism exists for defining and reviewing the project's overall progress over time. While the schedule variance (-5 days) reflects ongoing delays, it lacks integration into a broader monitoring framework per the standard.
• **MAN.3.BP2**: Although a project life cycle was established via the Gantt chart, the document does not explicitly define how this lifecycle aligns with external stakeholders' expectations or integrates with the organization's operational model. There is insufficient detail on whether the lifecycle supports adaptive planning.
• **MAN.3.BP3**: The project outlines a baseline timeline using a Gantt chart, yet no detailed methodology for adjusting schedules or estimating changes in workload is present. The deviation noted for M2 (delayed due to missing OEM requirements) suggests reactive rather than proactive change management.
• **MAN.3.BP4 & BP5**: Despite having a measurable metric like SV, the system fails to demonstrate consistent monitoring and adaptation strategies. No action plans have been formally recorded beyond initial notification of delays.

Action Plan to Close Gap:
1. Develop a standardized template for regular project reviews including both quantitative data (such as SV) and qualitative assessments of performance trends.
2. Integrate feedback loops into the project governance structure so that all major deviations trigger immediate corrective measures aligned with predefined escalation paths.
3. Update the project management plan annually to ensure continued relevance and adaptability under evolving conditions.
4. Conduct periodic audits to verify adherence to these controls and maintain traceability throughout the implementation phase.

Evidence Reference: *File `Project Management Plan (MAN.3).pdf`, Page 4*

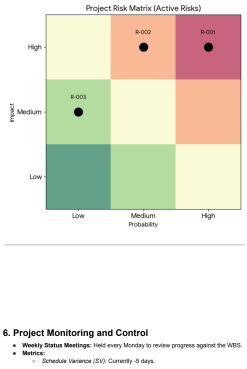

Fig MAN.3.BP10 - Evidence from Project Management Plan (MAN.3).pdf, Page 4