

SOP PS-001: Schedule Development (by Phase)

PS-001 | v01

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1. Purpose & Scope

This SOP defines the standard process for developing project schedules across all phases of a capital project lifecycle, from concept through to completion and close-out. It establishes minimum requirements for schedule content, development sequence, review gates, and quality criteria at each phase.

Scope: Applicable to all Faolan-managed or Faolan-reviewed projects with a contract value above ZAR 10 million or any project where a schedule is a contractual deliverable. Applies to internal schedulers, discipline planners, and contractor schedule submissions.

Out of scope: Schedule updating and progress measurement (refer SOP PS-002), resource loading (refer SOP PS-003).

2. Definitions & Abbreviations

Term	Definition
WBS	Work Breakdown Structure
OBS	Organisational Breakdown Structure
CBS	Cost Breakdown Structure
CPM	Critical Path Method
LOD	Level of Detail (schedule hierarchy level)
FID	Final Investment Decision
FEED	Front-End Engineering and Design
EPC	Engineering, Procurement, and Construction
BEP	Basis of Estimate/Plan — the documented scheduling assumptions and methodology
Milestone	A zero-duration activity representing a significant event or deliverable
Float	Total float available on an activity before it impacts the project end date
BL	Baseline (approved schedule used for performance measurement)
AACE	Association for the Advancement of Cost Engineering
Class 1-5	Schedule classes per AACE 91r-16, aligned to project development maturity

3. Roles & Responsibilities (RACI)

Activity	Project Manager	Lead Planner	Discipline Planner	Controls Manager	Client / PMO
Define WBS and coding structure	A	R	C	C	C
Develop schedule at each phase	A	R	C	C	I
Write Basis of Plan (BEP)	A	R	I	C	I
Conduct internal schedule review	A	R	C	R	I
Submit schedule for client review	A	I	I	R	A
Approve baseline schedule	C	I	I	C	A
Issue schedule to contractors	A	R	I	C	I
Maintain schedule register	I	R	I	R	I

R = Responsible, A = Accountable, C = Consulted, I = Informed

4. Procedure

4.1 Phase 1 — Concept (Class 5 Schedule)

1. Receive project initiation package from Project Manager.
2. Define the project scope narrative — confirm what is and is not in scope.
3. Establish a top-level WBS (Level 1-2 maximum) aligned to the scope narrative.
4. Identify major phases: Engineering, Procurement, Construction/Installation, Commissioning, Close-out.
5. Populate a milestone schedule listing key phase gates (FID, FEED complete, award EPC, mechanical completion, handover).
6. Assign durations based on comparable historical projects or parametric benchmarks. Document all assumptions in the BEP.
7. Apply an overall schedule contingency (refer to AACE 91r-16 Class 5 guidance) — typically 4-20% on total duration.
8. Present schedule to Project Manager and Controls Manager for review.
9. File signed-off schedule in the project schedule register.

Decision point: If project proceeds to FEED, trigger Phase 2 schedule development.

4.2 Phase 2 — Pre-FEED / FEED (Class 4-3 Schedule)

1. Review and update the WBS to Level 3 (minimum) incorporating engineering packages, procurement lots, and construction areas.
2. Obtain engineering scope and deliverables lists from discipline leads. Validate against WBS.
3. Develop logic network: define activity sequencing for all engineering, procurement, and construction activities.
4. Input durations based on engineering man-hours (from estimate) and historical productivity benchmarks.
5. Identify all procurement items with long lead times (typically >12 weeks). Flag for early action.
6. Run forward and backward pass to identify the critical path.
7. Validate critical path with Project Manager and discipline leads. Adjust logic where technically unsound.
8. Document all constraints, lags, and assumptions in the BEP.
9. Carry out internal quality review against criteria in Section 8 (minimum 10 checks).
10. Submit to client/PMO for review. Incorporate comments and resubmit if required.
11. Upon approval, establish as the FEED baseline schedule.

Decision point: FID approval triggers Phase 3 (EPC) schedule development.

4.3 Phase 3 — EPC (Class 2 Schedule)

1. Decompose schedule to Level 4-5 (activity level) for all EPC scope.
2. Engineering: one activity per major deliverable (IFC drawing, specification, data sheet package).
3. Procurement: separate activities for requisition, inquiry, bid evaluation, purchase order, expediting milestones, delivery to site.
4. Construction: activities by work package, area, and discipline. Align to construction sequence and access logic.
5. Commissioning: pre-commissioning checklists, system completion, start-up, performance testing.
6. Load resource assignments for critical path activities (minimum). Full resource loading preferred.
7. Run schedule analysis: float distribution, critical path, near-critical path (float less than 10 working days).
8. Confirm schedule is achievable given resource plan and site access constraints.
9. Conduct formal baseline review (Project Manager, Controls Manager, Lead Planner). Resolve open issues.
10. Obtain client approval of baseline. Record approval in schedule register.
11. Lock baseline. Any subsequent changes require formal change control (refer SOP PS-008).

Decision point: Construction completion triggers Phase 4 schedule close-out.

4.4 Phase 4 — Close-out

1. Confirm all activities are 100% complete or have been formally closed via change control.
2. Record actual start and finish dates for all Level 3 and above activities.
3. Calculate schedule growth (approved baseline duration vs. actual duration) and variance.
4. Document root causes of major variances in the project close-out report.
5. Archive the final schedule (including baseline and all approved revisions) to the project archive.
6. File a lessons-learned entry in the project register for any schedule class non-conformances or recurring issues.

5. Inputs and Outputs

Stage	Inputs	Outputs
Concept	Project initiation package, scope narrative, comparable project data	Class 5 milestone schedule, BEP
Pre-FEED/FEED	Scope definition document, engineering deliverables list, estimate	Class 4-3 CPM schedule, BEP (updated)
EPC	Detailed scope, engineering packages, procurement strategy, construction method statement	Class 2 baseline schedule, resource histogram, BEP (final)
Close-out	Progress records, change register	Final as-built schedule, variance analysis, lessons learned

6. Tools and Templates

Tool / Template	Purpose
Primavera P6 (preferred) or MS Project	Schedule development and maintenance
Faolan BEP Template (TMP-PS-001)	Documenting scheduling basis and assumptions
WBS Dictionary Template (TMP-PS-002)	Defining WBS element scope and coding
Schedule Register (TMP-PS-003)	Tracking schedule submissions, revisions, and approvals
Faolan Schedule Review Checklist (TMP-PS-010)	Internal quality review

7. References

Reference	Description
AACE 91r-16	Schedule Development: Scheduling — Developing the Project Schedule
AACE 10S-90	Cost Engineering Terminology
PMI PMBOK 7th Ed.	Project Management Body of Knowledge — Scheduling chapter
Sasol Tier 4 QMS 801P Vol A	Project Planning requirements (Concept and Pre-FEED)
Sasol Tier 4 QMS 801P Vol B	Project Planning requirements (FID and FEED)
Sasol Tier 4 QMS 801P Vol C	Project Planning requirements (EPC execution)
Sasol Tier 4 QMS 801P Vol D	Project Planning requirements (Commissioning)
Sasol Tier 4 QMS 801P Vol E	Project Planning requirements (Close-out)
Barrick CPS4 PC PD 02001	Capital Projects Standard — Schedule Development requirements

8. Quality Criteria / Checklist

The following minimum checks apply before any schedule is submitted for review or approval:

#	Check	PASS criteria
1	WBS alignment	All activities are coded to a valid WBS element
2	Logic completeness	No open-ended activities (every activity has at least one predecessor and one successor, except project start milestone and project end milestone)
3	Constraints	All date constraints are documented in the BEP with justification
4	Critical path	A single, continuous critical path exists from start to finish
5	Durations	No activity exceeds 2 reporting periods in duration without justification (LOE activities excepted)
6	Milestones	All contractual and phase gate milestones are present
7	BEP	BEP is current, approved, and references this schedule version
8	Resources	Critical path activities have resources assigned (EPC phase minimum)
9	Schedule class	Schedule class is consistent with project phase (AACE 91r-16)
10	Baseline approval	Evidence of client/PMO approval is on file before baseline is locked

9. Revision History

Version	Date	Author	Description
v01	2026-04-03	Tracker (#2)	Initial draft — Phase 1 SOP Sprint

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