HOW is the Schedule IQ Score™ (v1.0) Calculated?

Comprehensive

Aligned

Narrative Score: The number of points given to the narrative checklist.

Schedule Sign-offs: The number of stakeholders who have signed off on the schedule.

Formulaic

Subjective Durations: Activities designated as physical work whose durations are missing a formula and whose criticality factor is ≤ the near-criticality threshold, divided by all activities designated as physical work whose criticality factor is ≤ the near-criticality threshold.

Improper Detail: Incomplete activities designated as physical work with durations outside the recommended range, divided by all incomplete activities designated as physical work. The recommended range by level for each activity according to its calendar is: 2-12 months for level 1, 6 weeks-6 months for level 2, 2-6 weeks for level 3, and ≤ 2 weeks for level 4.

Complete

Missing WBS: The number of activities without a WBS element divided by the total number of activities.

Missing Codes: The number of activities without a code divided by the total number of activities.

Resourced

Upcoming Overages: The number of time units (e.g., days) that resource levels exceed limits within 13 periods (e.g., weeks) after the data date, divided by the total number of time units with resources assigned within 13 periods after the data date.

Missing Resources: The number of activities designated as physical work without a resource divided by the total number of activities designated as physical work.

Conforming

Breaching Finish Dates: Finish milestones or benchmarks that fall after their respective contract dates.

Breaching Start Dates: Start milestones or benchmarks that fall before their respective contract dates.

Off-base Delays: Delay activities that are NOT modeling weather, and that are present in the unprogressed baseline schedule.

Credible

Predictive

Critical Activities: The number of incomplete activities whose criticality factor is ≤ the threshold, divided by the total number of incomplete activities.

Schedule Margin: The project completion date minus the latest early finish date of all activities or milestones divided by the project completion date minus the data date.

Inadequate Float: Activities with merge risk indices ≥ 0.5 divided by the total number of activities. Merge risk indices are calculated as an activity's merge float divided by its total float.

Hidden Delay: Right of the data date, the gap sum of the longest path (i.e., path with the lowest total float) divided by the duration of the longest path.

Flexible

Schedule Gap Index: Right of the data date, the sum of all link gaps divided by the sum of remaining non-critical activity durations.

Risked

Completion Likelihood: The probability of completion as determined by risk analysis.

Resource-flowing

Abnormal Resource Logic: The number of non-finish-to-start links that have been designated as “Resource-Flow” divided by the total number of links designated as “Resource-Flow”.

Weathered

Planned Weather Index: Right of the data date, the number of planned weather days divided by the number of reasonably anticipated weather days.

Well-Built

Logical

Logic Index: The number of valid activity-to-activity links divided by the total number of activities.

Open Ends: Activities that have either no predecessors or no successors divided by the total number of activities.

Dangling Ends: Activities that have only finish-to-finish and/or start-to-finish predecessors or only start-to-start and/or start-to-finish successors, divided by the total number of activities.

Paired Activities: Activities connected by both start-to-start and finish-to-finish links to the same predecessor or successor divided by the total number of activities connected by start-to-start, finish-to-finish, or start-to-finish links.

Inhibiting Logic: Finish-to-finish + start-to-finish links with activity successors and zero-gap divided by the total number of finish-to-finish, start-to-finish, and start-to-start links with activity successors (links with benchmarks excluded).

Phased

Benchmark Frequency: The number of benchmarks with at least one predecessor or successor divided by the total number of years in the schedule.

Calendar-Fit

Secondary Calendar Use: The number of activities designated as physical work assigned to secondary calendars, divided by the total number of activities designated as physical work.

Hierarchical

Missing Hammocks: Activities that aren’t associated with any hammock divided by the total number of activities.

Milestone Density: The number of milestones and benchmarks without contract dates divided by the total number of activities.

Connected

Questionable Logic: Start-to-start and finish-to-finish links with zero lags divided by all start-to-start and finish-to-finish links.

Constraints: The number of activities with constraints divided by the total number of activities.

PDM Logic: The number of non-finish-to-start activity-to-activity links divided by the total number of links.

Improper Leads: The number of negative lags on finish-to-start links that are longer than the predecessor duration.

Redundant Logic: The number of redundant links divided by the total number of links.

Extreme Logic: The number of start-to-finish links divided by the total number of start-to-finish, finish-to-finish, and start-to-start links.

Controlled

Forensic

Hidden Forensic Delay: Left of the data date, the sum of all gaps on the path with the lowest forensic total float.

Breached Gaps: Links that span a period of time less than 0 and which have been actualized, divided by all actualized links.

Statused

Impractical Starts: The number of non-critical activities that start on early dates within 8 periods (for level 3 or 4 schedules) after the data date, divided by the total number of activities within 8 periods after the data date. For level 1 or 2 schedules, within 26 periods after the data date.

Out-of-sequence Work: Actualized critical and near-critical successor activities whose start dates breach the logic tie type, divided by the total number of actualized critical and near-critical activities.

Improper Status: The number of actualized activities right of the data date + the number of non-actualized activities left of the data date.

Re-baselined

Completion Likelihood Index: The completion likelihood in the revised baseline divided by the completion likelihood in the unprogressed baseline.

Trended

Earned Schedule Index: The project duration at which planned percent complete (i.e., resource consumption) should have occurred (in the selected base case file) divided by the elapsed duration from project start to data date. If > 1.0, progress is ahead of schedule. If < 1.0, progress is behind schedule.

Weathered

Actual Weather Index: Left of the data date, the number of actual weather days identified divided by the number of observed weather days according to the selected NOAA weather station(s).

WHY Does the Schedule IQ Score™ (v1.0) Matter?

Comprehensive

Aligned

Narrative Score: A schedule should align with the contractor planning basis. A lack of a narrative, or a low score, may justify withholding acceptance.

Schedule Sign-offs: A schedule should be signed off by *4-5* key stakeholders responsible for delivering the project. Too few or no signatures may represent a lack of credibility.

Formulaic

Subjective Durations: Critical/near-critical physical work activity durations should factor in production rates. Subjective durations are unreliable for schedule analysis unless established by the responsible stakeholder. *≤20%*

Improper Detail: The majority of physical work activity durations should be of appropriate granularity so as to not impair progress measurement. *≤20%*

Complete

Missing WBS: Activities should be developed using the WBS. An incomplete schedule may de-value schedule analysis and further be susceptible to delay and manipulation. *≤5%*

Missing Codes: Codes should be provided to organize, filter, and roll up activities. A lack of organization overcomplicates finding activities and status reporting. *≤5%*

Resourced

Upcoming Overages: The over-demand of key trades should be minimized, since leveling may not be solvable without extending project completion and/or unplanned acceleration. *≤10%*

Missing Resources: *95%* of physical work activities should be loaded with man-hours, crafts or crews, or dollars.

Conforming

Breaching Finish Dates: *Every* contractual finish milestone should fall on or before the respective contract date. A failure may anticipate a breach of contract or false critical paths and visible or latent negative total floats.

Breaching Start Dates: *Every* contractual start milestone should fall on or after the respective contract date. A failure may anticipate a breach of contract or false critical paths and overstated total floats.

Off-base Delays: There should be *no* delays where the data date equals the project start date. Otherwise, total floats are subject to manipulation.

Credible

Predictive

Critical Activities: About *15%-30%* of activities should be critical. A schedule with too many critical activities is more susceptible to delay.

Schedule Margin: The critical path reserves *5%-10%* contingency. Otherwise, it is unlikely to correlate to a reasonable probability of on-time completion.

Inadequate Float: Activities with a high number of merging links should have sufficient total float. Otherwise, the risk of starting later is high due to overruns on multiple merging paths. *≤25%*

Hidden Delay: There should be *0* days of embedded gap on the critical path; margin should be reserved at the end of the critical path.

Flexible

Schedule Gap Index: The ratio of activity-to-activity link gaps to activity durations should be compared as the data date progresses. An unknown or lopsided rate of gap depletion undermines the credibility of the schedule right of the data date. *≥0.50*

Risked

Completion Likelihood: The schedule should support a reasonable probability of completion for the completion date. A likelihood below *75%* is generally considered high risk.

Resource-flowing

Abnormal Resource Logic: Resource-flow links are inherently finish-to-start according to the movement of crew. A resource-flow link that is otherwise should be confirmed for accuracy. *≤5%*

Weathered

Planned Weather Index: Planned adverse weather should be at least 95% of the reasonably anticipated mean for each month. Otherwise, schedule margin may be insufficient and/or the project completion may be delayed. *≥0.95*

Well-Built

Logical

Logic Index: To avoid an overly simple or an overly complicated network, the number of activity-to-activity links should be reasonably relative to the number of activities. *1.25-1.75* for levels 1/2 and *1.5-2.5* for levels 3/4

Open Ends: Activities without a predecessor/successor should be *≤1%*. Unconnected activities make a schedule unreliable for what-if, risk, and delay/disruption analysis.

Dangling Ends: Activities with only finish-to-finish predecessors or only start-to-start successors should be *≤2%*. Any occurrences may corrupt total floats and devalue risk analysis.

Paired Activities: Activities connected by both start-to-start and finish-to-finish links should be *≤5%*. Multiple occurrence may impair logic clarity.

Inhibiting Logic: Zero-gap finish to finish logic should be *≤5%*. If the successor has no other driving predecessor, then the zero-gap FF link is forcing the successor's early start to be later than necessary.

Phased

Benchmark Frequency: There should be *1-2* benchmarks per year for total float allocation. Otherwise, overconsumption of total float by trade contractors early on may prematurely render downstream work critical or near-critical.

Calendar-Fit

Secondary Calendar Use: Multiple calendars should be minimized for physical work activities. Unnecessary calendar variations exacerbate total float breaks and may blur logic chain patterns and critical path continuity. *≤5%*

Hierarchical

Missing Hammocks: Level 3 activities should be traceable to their parent level 2 activities. Loss of vertical traceability undermines schedule reliability. *≤5%*

Milestone Density: Discretionary milestones and benchmarks should be used in a reasonable proportion to the number of activities and schedule level. *5-15%* (levels 1/2), *2-5%* (levels 3/4).

Connected

Questionable Logic: Zero-lag start-to-start and finish-to-finish links should be *≤5%*, since it undermines the use of start-to-start and finish-to-finish relationships.

Constraints: Activities with constraints should be *≤5%*. Too many constraints render the schedule unreliable for what-if and delay/disruption analysis.

PDM Logic: Non-finish-to-start logic should not be overused, since it makes the logic more difficult to be understood by non-schedulers. *≤20%*

Improper Leads: A successor should *never* start before a predecessor.

Redundant Logic: Redundant links should be *≤5%*. Too many redundant links make it difficult to follow relationships and maintain the schedule.

Extreme Logic: Unless otherwise confirmed as reasonable, there should be *no* start-to-finish logic since it is extreme, complex, and difficult to follow.

Controlled

Forensic

Hidden Forensic Delay: Gap on the as-built critical path should be *≤2* days. A broken as-built critical path contains concealed delays that should be made visible.

Breached Gaps: Negative gaps between two actualized activities should be *≤2%*. Any occurrence significantly impairs total float reliability for forensic analysis.

Statused

Impractical Starts: A reasonable number of imminent activities depending on schedule level should not be on early dates. Otherwise, it is not realistically reflecting how the work will unfold. *≤80%* (levels 1/2), *≤60%* (levels 3/4)

Out-of-sequence Work: Out-of-sequence progress should be repaired. Flawed actualized logic may render the schedule unreliable for delay/disruption analysis. *≤2%*

Improper Status: There must be *no* activities left or right of the data date that are inaccurately statused. Flawed actual dates may render the schedule unreliable for delay/disruption analyses.

Re-baselined

Completion Likelihood Index: A revised risk assessment should closely support the initially targeted probability of completion. A lower index suggests significant erosion of total float off the critical path and/or unaddressed delay. *≥0.95*

Trended

Earned Schedule Index: Percent complete (i.e., resource consumption) should progress on schedule. More activities and work effort than planned that are remaining as of the data date may render the balance of the schedule unrealistic. *≥0.95*

Weathered

Actual Weather Index: Actual stoppages should be within 20% of the weather observed by NOAA. Otherwise, it may indicate the station used was not representative of the actual site or a decision to work through abnormal adverse weather. 0.8-1.20

What Metrics (v1.0) Apply to .xer Files? (33)

Comprehensive	Credible	Well-Built	Controlled
Narrative Score	Critical Activities	Logic Index:	Hidden Forensic Delay
Schedule Sign-offs	Schedule Margin	Open Ends	Breached Gaps
Subjective Durations	Inadequate Float	Dangling Ends	Impractical Starts
Improper Detail	Hidden Delay	Paired Activities	Out-of-sequence Work
Missing WBS	Schedule Gap Index	Inhibiting Logic	Improper Status
Missing Codes	Completion Likelihood	Questionable Logic	Completion Likelihood Index
Upcoming Overages	*Abnormal Resource Logic*	*Secondary Calendar Use*	Earned Schedule Index
Missing Resources	Planned Weather Index	Missing Hammocks	Actual Weather Index
Breaching Finish Dates		Milestone Density	
Breaching Start Dates		*Benchmark Frequency*	
Off-base Delays		Constraints	
		PDM Logic	
		Improper Leads	
		Redundant Logic	
		Extreme Logic	

What Metrics (v1.0) Apply to Revised Baselines? (41)

Comprehensive	Credible	Well-Built	Controlled
Narrative Score	Critical Activities	Logic Index:	Hidden Forensic Delay
Schedule Sign-offs	Schedule Margin	Open Ends	Breached Gaps
Subjective Durations	Inadequate Float	Dangling Ends	Impractical Starts
Improper Detail	Hidden Delay	Paired Activities	Out-of-sequence Work
Missing WBS	Schedule Gap Index	Inhibiting Logic	Improper Status
Missing Codes	Completion Likelihood	Questionable Logic	Completion Likelihood Index
Upcoming Overages	Abnormal Resource Logic	Secondary Calendar Use	Earned Schedule Index
Missing Resources	Planned Weather Index	Missing Hammocks	Actual Weather Index
Breaching Finish Dates		Milestone Density	
Breaching Start Dates		Benchmark Frequency	
Off-base Delays		Constraints	
		PDM Logic	
		Improper Leads	
		Redundant Logic	
		Extreme Logic	

What Metrics (v1.0) Apply to Unprogressed Baselines? (35)

Comprehensive	Credible	Well-Built	Controlled
Narrative Score	Critical Activities	Logic Index:	*Hidden Forensic Delay*
Schedule Sign-offs	Schedule Margin	Open Ends	*Breached Gaps*
Subjective Durations	Inadequate Float	Dangling Ends	Impractical Starts
Improper Detail	Hidden Delay	Paired Activities	*Out-of-sequence Work*
Missing WBS	Schedule Gap Index	Inhibiting Logic	*Improper Status*
Missing Codes	Completion Likelihood	Questionable Logic	*Completion Likelihood Index*
Upcoming Overages	Abnormal Resource Logic	Secondary Calendar Use	*Earned Schedule Index*
Missing Resources	Planned Weather Index	Missing Hammocks	*Actual Weather Index*
Breaching Finish Dates		Milestone Density	
Breaching Start Dates		Benchmark Frequency	
Off-base Delays		Constraints	
		PDM Logic	
		Improper Leads	
		Redundant Logic	
		Extreme Logic	

What Metrics (v1.0) Apply to Updates? (39)

Comprehensive	Credible	Well-Built	Controlled
Narrative Score	Critical Activities	Logic Index:	Hidden Forensic Delay
Schedule Sign-offs	Schedule Margin	Open Ends	Breached Gaps
Subjective Durations	Inadequate Float	Dangling Ends	Impractical Starts
Improper Detail	Hidden Delay	Paired Activities	Out-of-sequence Work
Missing WBS	Schedule Gap Index	Inhibiting Logic	Improper Status
Missing Codes	*Completion Likelihood*	Questionable Logic	*Completion Likelihood Index*
Upcoming Overages	Abnormal Resource Logic	Secondary Calendar Use	Earned Schedule Index
Missing Resources	Planned Weather Index	Missing Hammocks	Actual Weather Index
Breaching Finish Dates		Milestone Density	
Breaching Start Dates		Benchmark Frequency	
Off-base Delays		Constraints	
		PDM Logic	
		Improper Leads	
		Redundant Logic	
		Extreme Logic	

What Metrics are Adjusted for Level? (6)

Metric	Level 1/2	Level 3/4
Logic Index	1.25-1.75	1.5-2.5
Impractical Starts	Within 26 periods, ≤80%	Within 8 periods, ≤60%
Subjective Durations	≤20% outside 2-12 months (L1), 6 weeks-6 months (L2)	≤20% outside 2-6 weeks (L3), ≤ 2 weeks (L4)
Missing Hammocks	-	≤5%
Schedule Sign-offs	≥5	≥4
Milestone Density	5%-15%	2%-5%