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NetPoint®

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NETPOINT® WITH NETRISK™ & SCHEDULE IQ™

THE NEED

The vast majority of construction scheduling software uses a combination of spreadsheets and Gantt charts for developing and depicting Critical Path Method (CPM) schedules. While this paradigm works for the expert scheduler, it is not conducive to collaboration, and it is prohibitively difficult for non-scheduling experts to understand. Furthermore, a number of drawbacks intrinsic to CPM prevent schedulers from being able to produce the most realistic and reliable schedules possible.

FIGURE 1: TYPICAL SCHEDULING APPLICATION WITH SPREADSHEET AND GANTT CHART

As a result, a team may rely on a preliminary process or tool, such as sticky notes, to facilitate collaborative planning; however, sticky notes lack the interactivity or automation of scheduling applications. Entering them into scheduling software requires a duplication of effort and may result in potential variations to the schedule. Consequently, the project team often loses understanding and stakeholder buy-in suffers. Attempts to stay informed and communicate the schedule are often made using drawing or slideshow applications (e.g. PowerPoint, Visio, etc.); however, these tools produce only static, momentary snapshots, which are extremely cumbersome to update.

THE TECHNOLOGY

NetPoint® provides a dynamic, visual interface conducive to touch and gestural input. Activities are drawn directly on a time-scale and may be placed on the same row or arranged automatically using codes or the WBS. Such control of the presentation makes it easier to communicate the plan to any type of audience. Underneath the hood, activities are governed by the Graphical Path Method® (GPM®), an evolution of CPM that keeps the schedule updated in real-time, bypassing the need to manually recalculate the network.

FIGURE 2: A NETPOINT® SCHEDULE SHOWING HOW ACTIVITIES CAN BE PLACED ON THE SAME ROW. ACTIVITIES IN RED ARE CRITICAL, AS DEFINED AS TOTAL FLOAT < 0.

PLANNED DATES

GPM® permits activities to be placed anywhere within their total float range, without using a constraint and reducing total float. Activities have a new property called drift: the number of time units an activity can gain before affecting the start of the project. Planned dates allow projects to be planned forward or backward, allowing schedules to be built more naturally and with more flexibility than CPM.

FORENSIC FLOAT

In CPM, the ability to calculate floats is lost when actual dates are entered. Not only does GPM® retain this ability, but it's inherent to the GPM® algorithm. Once activities are completed, float becomes hypothetical: how much could an activity have been delayed. In GPM®, this is called forensic float, and it continues to refresh even as the schedule is updated right of the data date, correctly depicting the as-built schedule along with the as-built critical path. This can be particularly useful when analyzing a schedule for delays after the project has started or finished.

FIGURE 3: EXT. MASONRY WALLS SHOWN ON “PLANNED DATES” WITHOUT A CONSTRAINT AND WITH 5 DAYS OF “DRIFT” AND 4 DAYS OF FLOAT

NETRISK™

NetRisk™ is a module that runs within NetPoint® for performing qualitative and quantitative GPM® risk analysis using Monte Carlo simulation. Whereas CPM forces activities to start on early dates, resulting in unrealistic completion distributions, NetRisk™ allows activities to float as a function of random sampling and decision rules, accurately modeling the real world where activities are delayed to take advantage of total float. The result is a more realistic model and simulation results.

FIGURE 3: A SCHEDULE SIMULATED USING CPM (THE RED LINE) PREDICTED AN 80% CHANCE OF COMPLETION BY 10/1/2012. THE SAME SCHEDULE SIMULATED USING GPM (THE ORANGE LINE), WHICH ALLOWED ACTIVITIES TO BE PLACED LATER THAN THEIR EARLY DATES, PREDICTED A 52% OF COMPLETION BY 10/1/2012. HENCE THE “EARLY BIAS” OF CPM SIMULATION.

SCHEDULE IQ™

Schedule IQ™ is an application that runs inside NetPoint® for analyzing and determining the reliability of schedules. The application can also analyze Primavera P6 (.xer) files directly, and it offers over 150 metrics including the DCMA 14-point Assessment. Furthermore, it introduces the Schedule IQ Score™, the most comprehensive schedule reliability rating system on the market derived from the industry-leading Core Traits of a Reliable Schedule protocol. In addition, Schedule IQ™ includes a one-of-a-kind feature-set for planning and analyzing weather thanks to integrated NOAA historical weather data functionality.

THE BENEFITS

NetPoint® with NetRisk™ & Schedule IQ™

- An intuitive, visual interface that facilitates collaborative planning
- Ground-breaking scheduling innovations encapsulated in GPM®
- The most realistic and accurate schedule simulations possible
- Comprehensive schedule reliability scoring
- Visual depiction of schedule variances
- Single integrated solution for planning, scheduling, schedule risk analysis, and schedule metrics analysis

STATUS

NetPoint® and GPM® have been awarded 4 patents (no's. 8249906, 8400467, 8531459, 8751280) and have additional patents pending.

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REVIEWERS

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