The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(CDR-3909) The Impact of Undetermined Construction Change Directives (CCDs) on Project Time, Cost, and Contractor Liquidity

Skill Level: Intermediate
TCM Section(s): 6.2. Asset Change Management 9.1. Project Cost Accounting
Author(s)/Presenter(s):
Maged Raouf Fayek *Contracting and Construction Enterprises (CCE)*
Khaled M. Aziza, EVP PSP *Delta Consulting Group, Inc.*

Abstract: Undetermined construction change directives (CCDs), including engineer's or project manager's instructions issued without agreed upon cost and time impacts, introduce systemic, compounding risks to schedules, costs, and contractor liquidity. Through comparative case studies under standard contract forms, this paper examines how unresolved directives contribute to schedule instability, acceleration pressures, productivity losses, increased working capital requirements, and cascading cash flow stress across the project.

The paper also explores the strategic behaviors adopted by project stakeholders: contractors may delay execution under the pretext of seeking clarifications, while engineers or owners may employ a 'wait and see' approach or maintain circumstantial silence to avoid immediate accountability for budget overruns or schedule extensions. Such dynamics often result in deferred disputes, reduced project transparency, and increased risk of claims.

These findings provide a basis for evaluating change management approaches in complex capital projects and offer practical recommendations for contract administrators, project managers, owner representatives, and legal professionals operating at the intersection of design evolution, contractual obligations, and financial accountability.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(CDR-4730) Communications Breakdown – The Disconnect Between Contract Administration and Project Controls Regarding Contract Notices

Skill Level: Basic
TCM Section(s): 10.3. Change Management 6.4. Forensic Performance Assessment
Author(s)/Presenter(s):
Michael A. Mac Guinness, CEng *Mac Guinness Industrial Consulting*

Abstract: Engineering and construction contracts require the contractor or employer/engineer to give notice to the other party within a fixed period of time from when they became aware or should have become aware of the event or circumstance that could cause a claim. Failure to give timely notice can have severe consequences including loss of entitlement to compensation and discharging the other party from all liability in connection with the claim.

Contractors often choose not to submit such notices in the interest of “good” relationships with employer management and a desire not to be perceived as “claims oriented”.

Even when notices are issued, they often remain under the contract administrator’s responsibility with little input from project controls until the events begin to have cost or schedule effects.

At a result, these issues cannot be addressed in progress reports or tracked by project controls and their potential cost and schedule implications forecast, monitored and controlled. This then often leads to inadequate record keeping resulting in inability to measure the individual effects of multiple claims and driving a need to make a global or total cost claim.

A method is proposed to coordinate contract administration and project controls so that the issue and tracking of notices becomes a routine reporting and monitoring process for the mutual benefit of contractor and employer and lacking adverse perceptions)

(CDR-4757) Empowering Construction Professionals To Delay Analysis Through AI-Powered Agents

Skill Level: Basic
TCM Section(s): 6.4. Forensic Performance Assessment 11.3. Information Management
Author(s)/Presenter(s):
Dr. Vijayeta Malla *Bechtel*
Teja Pulla, CCP CEP EVP PRMP PSP *Princeton University*

Abstract: With the demand for assimilating massive amounts of data to prepare delay claims for the respective parties for capital projects, widespread enterprise use of AI-based agents is deemed imminent. There has been an innate misconception of being entirely dependent on the AI-based agents for the forensic schedule delay analysis. However, the AI agent would enable automation of the labor-intensive documentation portion, while maintaining the construction professional's responsibility for forensic analysis and expert judgment. This paper demonstrates using an AI-based agentic tool for claims report preparation processes, such as assimilating schedule information, updates, fragnet mapping, narrative drafting, exhibit preparation, and consistency checks. The paper shares the building of a data pipeline, a data model, core prompts, and a pilot project to demonstrate a claims report prepared. This study provides a practical application to automate repetitive processes for construction projects' routine claims, disputes, and litigation-based problems in the construction projects. The above mentioned process enables construction professionals to devote time to core expert delay analysis, forensic judgment, and claims leadership.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(CDR-4765) Tunneling Productivity and Site Conditions in FIDIC Underground Contract (Emerald Book)

Skill Level: Intermediate
TCM Section(s): 6.2. Asset Change Management 6.4. Forensic Performance Assessment
Author(s)/Presenter(s):
Luís Otávio P. Rosa *Taroba Engenharia*
Beatriz Vidigal Xavier da Silveira Rosa *Taroba Engenharia*

Abstract: The FIDIC Contract for Underground Works or Emerald Book preserves the fundamental FIDIC principle of balanced risk allocation between the parties and faces the difficulty of predicting, with any degree of certainty, ground conditions for the entire length of the underground work. Costs of excavation and lining depend on the physical underground conditions and will be measured and paid for using the unit rates stipulated in the contract. The geotechnical baseline report (GBR) is the contractual document that describes in advance the expected underground conditions to be encountered during the execution of the works and defines the ground-related risks between the owner or employer and the contractor. The owner's risks include those differing site conditions arising from unforeseen physical ground conditions, obstacles, contamination, and adverse reactions to the excavation and soil support processes, while the contractor's risks include those associated with the execution of the works with extended deadlines and cost reimbursement. This article presents the basic principles related to excavation productivity and ground conditions using FIDIC Underground Contract, that reduces claims and disputes in tunneling. Excavation and lining activities are constantly monitored and adjusted, with milestones dates being increased or reduced in line with the contractor's actual productivity rates.

(CDR-4766) Functional Concurrency – A Bridge Too FAR

Skill Level: Advanced
TCM Section(s): 6.4. Forensic Performance Assessment 6.2. Asset Change Management
Author(s)/Presenter(s):
Nickolas Florez, CFCC *Construction Contract Services LLC (CCSI)*

Abstract: Federal contract specifications provide for non-compensable time extensions when concurrent delay exists and is used commonly as an owner defense to compensable time extension claims. Interestingly, there are two separate United Facilities Guide Specifications (UFGS) for scheduling in use by the Department of Defense (DoD) for military construction projects. They are UFGS 01 32 01.00 10 Project Schedule, used by the Army (USACE) and UFGS 01 32 17.00 20 Cost-Loaded Network Analysis Schedules (NAS), used by the Navy (NAVFAC). Both scheduling specifications address project delay but do so differently. This paper discusses the differences in the DoD scheduling specifications regarding the prescribed delay analysis methodology, but more specifically, how functional theory is defined and specified for use within the Navy specification and how the language of the Navy specification is often improperly applied in practice, resulting in an overreach (a bridge too far) of the functional theory concept. This paper briefly outlines the industry accepted principles of concurrent delay and defines the difference between literal and functional theory. With that as a background, this paper then looks at the Navy specification regarding functional theory and how the specification, as written, can be misinterpreted and used in a manner that is inconsistent with industry norms and recommended practice. Real examples and case law citations will be used to demonstrate proper methodologies to assess and quantify functional concurrency, providing a practical and clear guidance for use by federal contracting officials and contractors alike.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(CDR-4768) Learning Curve and Loss of Productivity in Construction

Skill Level: Basic
TCM Section(s): 6.4. Forensic Performance Assessment 10.2. Forecasting
Author(s)/Presenter(s):
Luís Otávio P. Rosa *Tarobá Engenharia*

Abstract: Learning curve reflects increase of labor productivity due to familiarity with the project and repetition of activities. Mathematical models, parameters estimation and field studies are used for estimating and forecasts for production. This paper presents productivity impacts in claims, due to some factors as interruptions, delays, out-of-sequence, disruptions and new activities that change learning curve of labor. Some recovery of productivity can be obtained with training and other actions as re-assignment or management efforts. Use of learning curve can be a solution for loss of productivity calculation with comparison of estimated and as-built production related to each claim factor or impacted period, especially when detailed registers are available, including a combined effect in construction.

(CDR-4792) The Resource Riddle: Quantifying Resource-Driven Delay

Skill Level: Advanced
TCM Section(s): 6.4. Forensic Performance Assessment
Author(s)/Presenter(s):
Timothy A. Hampson, PE CCP PSP *Ankura Consulting Group*
Brandon Boles *Ankura Consulting Group*

Abstract: Resource-driven delays can significantly distort true schedule performance, often exceeding what contemporaneous updates indicate. When critical resources are not fully identified or incorporated into the schedule at the outset, constraints can emerge rapidly and without clear warning, creating delays that even well-managed projects struggle to absorb.

A structured retrospective review grounded in contemporaneous documentation, resource-utilization data, and earned-progress records provide a clear, defensible understanding of the true schedule impact. Establishing systematic processes for identifying resource-related risks at key decision points, and for managing work under constrained conditions, is essential to minimizing avoidable delay. By doing so, parties ensure the schedule reflects actual operating conditions and supports informed, timely decision-making.

This paper outlines a method for evaluating both prospective and retrospective delay resulting from resource constraints. It demonstrates how contemporaneous, resource-based analysis can be used to quantify the impact of restricted resources on forecasted completion. The paper also explains how to assess delays attributable to resource limitations, including the loss of planned work opportunities and discrete impacts.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(CDR-4807) Disruption Claims on Design Projects – A Framework

Skill Level: Basic
TCM Section(s): 6.4. Forensic Performance Assessment 6.2. Asset Change Management
Author(s)/Presenter(s):
Gaurav Vir Singh, CCP *AtkinsRéalis*
Ahmed Adham, PEng *AtkinsRéalis*
Ghazal Moshiri
Lisa Silander

Abstract: Disruption is a major challenge in engineering and construction projects, which most often is displayed through the loss of productivity, schedule slippage, and cost overruns, wherein an identifiable delay event cannot be established. Unlike the traditional delay analysis, disruption scenarios are categorized by cumulative variances that change or impact on the planned chronology of work, the resource utilization, and eventually the efficiency, i.e. SPI/CPI of the project. This paper scrutinizes disruption and focuses on analytical tools/ techniques that quantify the impact, utilizing the baseline/ updated project schedules as a benchmark. Indicators such as excessive fragmentation of tasks, resource stacking, and productivity variance analysis shall be given emphasis. In this paper, processes, namely comparative schedule analysis, earned value variance analysis, fragmentation analysis, and resource utilization & density analysis, will be utilized. Case studies from engineering projects will be elaborated to reveal concealed disruptions and how to represent them to the stakeholders. The paper will address concerns related to documentation, causation, and responsibility allocations between stakeholders. Finally, inclusion of forensic schedule analysis with productivity assessment will propose a structured framework for objective identification, analysis, and presentation of disruption claims on engineering projects. The findings aim to support planners and project controllers to develop defendable claims and to enhance project efficiency to manage the disruption proactively.

(CDR-4808) Best Practice or Best Guess? An Evaluation of MCAA Factors

Skill Level: Intermediate
TCM Section(s): 10.1. Project Performance Assessment 10.3. Change Management
Author(s)/Presenter(s):
Adam Troscinski *Spire Consulting Group LLC*
Shakil Karmali *Spire Consulting Group LLC*
Eric O'Brien *Spire Consulting Group LLC*

Abstract: MCAA factors are often used by both contractors and forensic analysts to estimate labor hours lost due to disruptive conditions experienced on construction projects. While the use of MCAA factors has generally been historically accepted within the industry and legal world, recent caselaw has seen courts disfavor the use of MCAA factors by forensic analysts to quantify loss of productivity claims. This paper will examine the strengths and limitations of MCAA factors, identify circumstances in which their use is appropriate, and provide best practices for their application.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(CDR-4812) Two Applications of Linear Scheduling Techniques for Complex Delay and Causation

Skill Level: Intermediate
TCM Section(s): 7.2. Schedule Planning and Development 6.4. Forensic Performance Assessment
Author(s)/Presenter(s):
Andrew Leavitt, PE *Ankura Consulting Group*
Timothy A. Hampson, PE CCP PSP *Ankura Consulting Group*
Michael Cleary, PE *Ankura Consulting Group*
Brian Celeste, PE CCP CFCC PSP *Ankura Consulting Group*

Abstract: Forensic schedule analysis (FSA) in complex construction projects is often highly technical, making findings difficult for broader audiences to interpret. While FSA includes essential detail, it may not convey a clear or compelling narrative on its own. To bridge this gap, analysts can leverage intuitive visual representations that distill intricate data into accessible, persuasive insights. Effective visuals not only clarify the underlying analysis but also help decision makers grasp the significance of delays quickly and confidently.

Linear schedules offer a powerful complement to traditional CPM scheduling bar charts by clearly depicting planned work, highlighting delays, and supporting causation analysis. While widely used in horizontal construction, their ability to present progress and sequencing intuitively makes them an effective tool for conveying delay dynamics across a broad range of project types.

Central to both visual representations in FSA and the use of linear schedules as a complement to bars charts is the technique of plotting progress of work as a function of time and location. Linear scheduling techniques can depict work progress and sequencing in an intuitive manner.

This paper examines two applications of linear schedule techniques. The first application shows how linear schedules can be used to supplement CPM schedules and graphically illustrate delay and disruption within forensic schedule analyses. The second application demonstrates how linear schedules can be utilized to extend beyond supporting causation, by providing a practical means to identify, quantify, and communicate delay.

(CDR-4815) Evaluating the Cost of Acceleration on Construction Projects

Skill Level: Intermediate
TCM Section(s): 6.4. Forensic Performance Assessment 7.6. Risk Management
Author(s)/Presenter(s):
Saimir Bici, PSP *Trauner Consulting Services*
Michael P. Ryan, PE PSP *Trauner Consulting Services*

Abstract: When projects fall behind schedule, contractors are often pushed to accelerate the work. This could mean working longer hours, adding new team members, or even stacking trades. While these efforts may help the schedule, they often have negative side effects, such as labor inefficiency, site congestion, and higher costs. The parties are often forced to take immediate action without a formal change order, which makes it harder for the parties to reach agreement on the costs of the additional efforts.

This paper will explain how to track and prove the actual costs of acceleration. First, it will cover the definition of acceleration and how the two different categories, directed and constructive, are handled from a contractual and litigation perspective. It will then examine the principal categories of acceleration impacts, including labor inefficiency, equipment and material impacts, and overhead impacts. Next, it will illustrate how to use different techniques to connect schedule changes directly to added costs in a reasonable and appropriate manner. Finally, it will present case studies from previous assignments to provide advice on how to identify schedule compression and the actions that the parties can take to mitigate any negative consequences of acceleration.

The following sessions are tentatively scheduled for the technical program.

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(CDR-4827) What Motivates Settlement of Construction Disputes, Claims and Litigation

Skill Level: Intermediate
TCM Section(s): 10.3. Change Management 10.1. Project Performance Assessment
Author(s)/Presenter(s):
Greg Holness, PE Esq. *FTI Consulting*

Abstract: It is not unusual on construction projects for a contractor to submit a claim or request for additional compensation and/or an extension of time. Invariably it is analyzed and discussed, and, in most cases, the parties come to a resolution. Those claims that are not settled during construction, can become a bit of a project of their own – for the contractor to continue to pursue what they feel is equitable, they often are required to engage lawyers and consultants, and it is not atypical for key project staff to continue to focus time and efforts on the dispute long after the physical work has been completed. This paper is not about the process of how to develop or analyze claims. Instead, it is an examination of what motivates parties to settle or not settle construction disputes. While many disagreements involve parties holding ostensibly viable, albeit diametrically opposed, interpretations of the key facts and/or contract language, most have available “off ramps” from the protracted and costly process that results from the choice to not settle. Some parties settle early, others settle late, and still others choose not to settle at all. Why the difference? Based upon the author's more than three decades of experience resolving construction claims as either the ultimate decision-maker or in the role of consultant or attorney advising those making the final decision, this paper discusses possible answers to that question by looking at a number of real-world motivations that impact how these dispute decisions are made.

(CDR-4828) A Tale of Two (or More!) Methods: A Case Study Comparing Loss of Productivity Analyses

Skill Level: Advanced
TCM Section(s): 10.1. Project Performance Assessment 10.3. Change Management
Author(s)/Presenter(s):
John A. Armstrong, PSP *Civic CM*
Matthew Marzilli, PSP *Civic CM*

Abstract: The quantification of lost productivity is one of the most contentious and challenging aspects of construction claims. While numerous methodologies exist, a lack of comprehensive, real-world data often forces experts to rely on methods that may not be the best fit for the circumstances, leading to disputes over their applicability and reliability. What if a project existed with records so meticulous that multiple industry-standard quantification methods could be applied and their outcomes directly compared?

This paper presents a unique case study of a large-scale construction project that maintained exemplary project records, providing a rare opportunity for a side-by-side "apples-to-apples" comparison of several widely accepted loss of productivity quantification methodologies. By applying techniques such as the measured mile, industry-specific studies, and other common approaches to the same robust dataset, this analysis moves beyond theoretical debates.

The study reveals interesting and sometimes surprising divergences in the results, providing critical insights into the inherent biases and sensitivities of each method. The findings will equip practitioners with a deeper understanding of how the choice of methodology can significantly influence the outcome of a claim. More importantly, this paper offers pragmatic, data-driven advice on selecting the most appropriate and defensible methodology for a given set of facts, ultimately empowering stakeholders to navigate complex productivity claims with greater confidence and clarity.

The following sessions are tentatively scheduled for the technical program.
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(CDR-4829) A Dynamic Approach to Extension of Time Claims: Integrating Contractual Entitlement with Forensic Delay Analysis

Skill Level: Intermediate
TCM Section(s): 6.4. Forensic Performance Assessment
Author(s)/Presenter(s):
Khaled M. Aziza, EVP PSP *Delta Consulting Group, Inc.*
Smita Yamgar, CCP PSP *Delta Consulting Group, Inc.*

Abstract: Extension of time (EOT) claims are among the most common sources of dispute in construction projects; yet their success depends not only on contract compliance, such as timely notices and substantiations, but also on demonstrating how delay events affect the project's critical path.

Traditional forensic delay analysis methodologies that rely on static scheduling models frequently fail to capture the dynamic nature of projects and the evolving critical path. By contrast, a dynamic analytical framework that incorporates schedule updates, activity dependencies, and sensitivity to delay events produces more precise, transparent, and defensible results.

This paper explores the often-overlooked concept of critical path sensitivity, the degree to which small changes in near-critical activities can shift the controlling path and alter EOT entitlement, and links these technical considerations to contractual entitlement, showing how failure to recognize critical path sensitivity can affect responsibility for delay and entitlement to EOT under common conditions precedent, such as notice and time-bar clauses.

Through comparative analysis of forensic methodologies and drawing from case law in the United States, the paper shows how contemporaneous criticality and sensitivity-informed evaluation improve the objectivity and defensibility of EOT determinations.

(CDR-4832) Learning Curve and Loss of Productivity Claims in Construction

Skill Level: Basic
TCM Section(s): 6.4. Forensic Performance Assessment
Author(s)/Presenter(s):
Amar Majid *Delta Consulting Group, Inc.*
Dr. Tong Zhao, PE CCP CFCC PSP *Delta Consulting Group, Inc.*

Abstract: One commonly recognized factor affecting labor productivity in the construction industry is the impact of learning curves (LC). Loss of productivity claims related to learning effects are not uncommon; however, successfully asserting such claims can be particularly challenging. To prevail, a claim must satisfy the requirements of entitlement, causation, and quantification. First, it must be shown that the contract provides a basis for claiming productivity losses due to LC impacts resulting from owner-responsible actions or events. Second, there must be a clear and demonstrable causal link between those actions or events and the disruption or extension of the learning process. Finally, the resulting productivity loss must be quantified with reasonable accuracy. This paper reviews relevant research on learning effects and LCs and uses case studies to examine key considerations in substantiating productivity loss claims associated with learning disruptions.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(CDR-4836) Ten Construction Defect Cases And Lessons Learned For The Construction Industry

Skill Level: Basic
TCM Section(s): 6.4. Forensic Performance Assessment 11.4. Quality and Quality Management
Author(s)/Presenter(s):
Neil D. Opfer, CCP CEP PSP FAACE *University of Nevada, Las Vegas*

Abstract: Construction defects with construction projects are an all-too often occurrence across the industry. This presentation concerns ten construction projects that had substantial construction defects wherein this writer worked as a consultant. Numerous other projects could be cited but these ten projects cover key issues in this area. These examples are termed cases because they ended up in litigation. These cases, for the most part, settled out before trial or were decided at arbitration so most of these issues were never widely publicized for the benefit of learning these lessons. The projects selected are from the residential and commercial sectors. Defects in these projects were the result of mistakes made in design, construction, and/or oversight inspection on these projects. Costs, where noted, are those adjusted via a cost index to current costs at January 2025 [2]. In the most severe case, a partially-completed reinforced-concrete tower that reached 27 stories of its 49-story design height was completely demolished due to defective reinforcing-steel installation. The total loss was US$420 million. The two special inspectors here, it was later found, did not understand how to read rebar drawings. Incorrect rebar installation on 15 floors of this mixed-use building was only accidentally discovered during a site visit by the structural engineer. The history of construction has seen numerous improvements in design, construction, and inspection practices brought about by learning from failures. It is hoped that this paper will contribute to better practices.

(CDR-4838) Beyond the Analysis – How to Best Present a Construction Claim for Quick Resolution

Skill Level: Intermediate
TCM Section(s): 10.3. Change Management 10.1. Project Performance Assessment
Author(s)/Presenter(s):
Andrew J. Palmer *Diales*
Michelle McMillan, PEng *Diales*

Abstract: Often the primary focus of a claim document is the productivity analysis, or delay analysis, and the resulting quantum calculations. However, the chances of a successful claim are greatly increased if the claim presents a logic driven argument and effectively communicates complex analyses and their results to both technical and non-technical audiences. The focus of this paper is to use the experience of the authors and their colleagues, the psychology of good communication, and the science of logic and argumentation, to provide advice on how to structure and present a claim in a manner that can be both convincing to and easily understood by a variety of audiences, thereby resulting in a quicker and more successful resolution of the claim.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(CDR-4844) Redefining Comparable Work in Loss of Productivity Analyses

Skill Level: Intermediate
TCM Section(s): 6.4. Forensic Performance Assessment 10.4. Project Historical Database Management
Author(s)/Presenter(s):
Benjamin Winsor, PE *Aperture LLC*
Aaron Radack *Aperture LLC*

Abstract: The measured mile method described in Association for the Advancement of Cost Engineering (AACE) International Recommended Practice (RP) 25R-03 is widely regarded as the preferred technique for quantifying loss of productivity in construction claims and has been generally accepted by both U.S. and international courts and arbitrations. However, it cannot be applied when an unimpacted period of comparable work does not exist within the subject project. In such circumstances, practitioners often rely on productivity data from other projects, commonly referred to as project comparison studies. Current industry guidance is inconsistent as to what constitutes project comparability.

The use of the term comparable project can be misleading. The most critical factor is not overall project comparability, but the comparability of the work activities being performed. Productivity on a given scope of work is primarily driven by task-level attributes such as technical complexity, execution strategy, and site conditions. By focusing on work-level comparability, more reliable baseline productivity ranges can be established and defended against challenges that a comparison is an “apples to oranges” exercise.

This paper proposes to reframe project comparison studies as comparable work studies and then provides a structured framework for the use of comparable work—rather than comparable projects—when a measured mile cannot be developed. The framework prioritizes work-level similarity, suggests minimum documentation requirements, and introduces a transparent attribute-based approach for screening and ranking candidate comparable work packages. Loss of productivity is then quantified by applying measured productivity rates from selected comparable work packages, consistent with measured mile principles. The objective is to improve consistency, transparency, and defensibility in productivity loss analyses while avoiding reliance on broad project comparisons or subjective productivity adjustment factors.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(CDR-4854) Blockchain's Potential Future in Construction Dispute Resolution

Skill Level: Intermediate
TCM Section(s): 6.4. Forensic Performance Assessment 10.3. Change Management
Author(s)/Presenter(s):
Dr. Wael El Ghandour *Saudi Aramco*
Belkacem Foura *Saudi Aramco*
Ahmed Baageel *Saudi Aramco*
Abdullah Al Ghamdi *Saudi Aramco*

Abstract: Blockchain and smart contract technologies offer transformative potential for construction dispute resolution, tackling key challenges such as fragmented documentation, payment delays, and lengthy resolution times—often exceeding 18 months. This paper proposes a four-component framework: (1) blockchain-enabled BIM systems for tamper-proof data management, (2) smart contracts for early dispute detection and escalation, (3) decentralized dispute platforms (DDPs) for handling routine issues, and (4) hybrid arbitration mechanisms to ensure legal validity.

A review of existing literature on blockchain, BIM, smart contracts, and online dispute resolution suggests that blockchain integration can reduce disputes by 30–50%, cut resolution times from 18 months to 6–9 months, and lower costs by 40–60%. Case evidence supports these insights, with results showing a 75% reduction in forensic review time, 93% faster payment processing, and 82% faster resolution using DDPs.

The implementation roadmap outlines phased adoption: short-term pilots (0–24 months), mid-term platform rollout (2–5 years), and long-term autonomous systems (5+ years). It also addresses governance, legal alignment, and workforce development. While blockchain does not replace forensic analysis, it improves data authenticity. Strategic actions include initiating focused pilots, creating standardized smart contract templates, integrating with BIM, and prioritizing skills development to enable industry transformation.

(CDR-4872) A Comparison of MIP 3.3 and 3.4 - Enhancements to MIP 3.3 For More Reliable Analysis

Skill Level: Advanced
TCM Section(s): 6.4. Forensic Performance Assessment 7.2. Schedule Planning and Development
Author(s)/Presenter(s):
John Jackson *YA Group*

Abstract: This paper compares method implementation protocols (MIPs) 3.3 and 3.4 from AACE Recommended Practice 29R-03, both of which are observational, dynamic, and retrospective methods using contemporaneous project schedules to evaluate delay. MIP 3.3 (contemporaneous as-is), as presented in the current protocols, analyzes schedule updates without modification, relying on changes in projected completion dates to assess delay. MIP 3.4 (contemporaneous split) separates each update into progress and revision components to isolate delay causation.

A key weakness of the published MIP 3.3 is its failure to distinguish delay due to lack of progress on the critical path from revisions caused by subsequent logic revisions or duration changes. As a result, the analysis may obscure whether the project is truly behind due to execution, or merely compressed through scheduling changes. This paper proposes an enhancement to MIP 3.3: segregating actual critical path progress during each analysis window from downstream schedule compression.

This adjustment preserves the objectivity of using contemporaneous data while improving transparency. It may also avoid the subjectivity inherent in MIP 3.4's bifurcation process. The paper concludes that an enhanced MIP 3.3 offers a more reliable and defensible framework for forensic delay analysis when critical path performance is clearly isolated from schedule manipulation.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(CDR-4889) Keeping Pace Without Tripping Over Yourself

Skill Level: Intermediate
TCM Section(s): 6.4. Forensic Performance Assessment
Author(s)/Presenter(s):
Dakus Gunn *Delta Consulting Group, Inc.*
Christopher J. Brasco *Watt, Tieder, Hoffar & Fitzgerald, LLP*
Matthew D. Baker *Watt, Tieder, Hoffar & Fitzgerald, LLP*

Abstract: A party faced with a critical path delay for which it is not responsible may consider whether to pace its own work during the pendency of such delay. However, a party who paces its work can risk creating the perception of concurrent delay. This paper will provide practical guidance to parties attempting to mitigate losses while preserving their rights concerning a critical path delay for which they are not responsible. The authors will review AACE's recommended practices as they relate to evaluating pacing, parent delays, and the review of near-critical paths in conjunction with relevant case law bearing on these concepts. Finally, the authors will address case studies where pacing was effectively utilized and when it was a smokescreen for actual concurrent delay.

(CDR-4898) Reverse Measured Mile: An Iterative Multivariable Analysis for Productivity Loss Claims Without Unimpacted Periods in Construction Projects

Skill Level: Intermediate
TCM Section(s): 10.3. Change Management 9.2. Progress and Performance Measurement
Author(s)/Presenter(s):
José Castillo Salas, PSP *Metacontrol Ingenieros*
Félix Soto, CFCC EVP PRMP PSP *Metacontrol Ingenieros*

Abstract: Loss of productivity claims pose significant challenges in construction projects where execution is continuously affected by disruptive events. In such circumstances, all execution periods are impacted, making the identification of unimpacted or baseline periods infeasible. Under these conditions, conventional forensic productivity analysis approaches, including the measured mile, fail to provide reliable results.

This paper introduces the reverse measured mile, a forensic approach developed to quantify productivity losses in projects executed entirely under impacted conditions. The methodology reconstructs a theoretical "without impact" productivity reference using exclusively contemporaneous and verifiable project information derived from impacted periods. The analysis is based on identifying and relating project-specific conditions that materially influence productivity and are directly linked to disruptive events, without relying on assumed efficiencies or external benchmarks.

The application of the reverse measured mile is demonstrated through a real-world construction project case study. The approach enables the estimation of should-have-been productivity and the objective quantification of productivity losses attributable to external impacts. The results indicate that the reverse measured mile provides a transparent, conservative, and technically defensible basis for evaluating loss of productivity claims, offering a practical alternative for dispute resolution where traditional productivity analysis methods are not applicable.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(CDR-4902) A Primer for Extensions of Time Under NEC Contract

Skill Level: Basic
TCM Section(s): 10.3. Change Management
Author(s)/Presenter(s):
Félix Soto, CFCC EVP PRMP PSP *Metacontrol Ingenieros*
Abel Sabogal *Lima Airport Partners*

Abstract: This paper introduces the fundamental requirements to obtain extensions of time under the New Engineering Contract (NEC) framework, a contract form widely adopted in construction and engineering projects. The NEC framework includes specific provisions to manage delays and a structured approach to deliver schedules during project execution. The purpose of this paper is to provide an overview of the procedures, legal considerations, and common causes that justify the request for an extension of time. Key clauses and mechanisms for requesting, evaluating, and granting such extensions are explored, with particular attention to the roles and responsibilities of both the contractor and the project manager. Case studies and practical examples from the author's own experience illustrate how these NEC contract clauses apply in real-world scenarios. This primer serves as an introduction to extensions of time under NEC contracts, offering a clear understanding of how to navigate these processes to support the successful delivery of claims under NEC contracts.

(CDR-4903) Shining a Light on the MCAA Loss of Productivity in the 21st Century

Skill Level: Intermediate
TCM Section(s): 6.4. Forensic Performance Assessment 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Dr. Hatem Ibrahim, PE *Delta Consulting Group, Inc.*
Christopher M. Burke *Varela, Lee, Metz & Guarino, LLP*
Dakus Gunn *Delta Consulting Group, Inc.*

Abstract: The Mechanical Contractors Association of America (MCAA) labor factors are an industry study used to calculate loss of productivity. These factors, introduced in 1971, are a recognized tool in identifying disruption factors that cause productivity loss and provide factors to estimate a loss of productivity claim. Recent decisions from courts reflect that the MCAA factors can be persuasive when tied tightly to project-specific facts and contemporaneous records. However, they are typically only considered when better primary methods (e.g., measured mile) are not feasible, and/or are deployed by an expert who can explain the model's basis and avoid double-counting or mis-estimating. These MCAA factors must be adapted with care, supported by contemporaneous records, and explained as a specific "fit" for the specific project at issue. These limitations are more prevalent as better record-keeping and project data are available to support the use of preferred methods. This paper will discuss the foundation and history of the MCAA factors, the key elements of causation and direct linkage of project impacts to the MCAA factors, and how, in the 21st century, they can retain relevance when applied with an understanding of their limitations. This discussion will be supported by a case study to demonstrate an application in modern-day mega-project construction.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(CDR-4920) Forensic Schedule Acceleration Analysis Considerations

Skill Level: Intermediate
TCM Section(s): 6.4. Forensic Performance Assessment 10.3. Change Management
Author(s)/Presenter(s):
Dr. Wael El Ghandour *Saudi Aramco*
Belkacem Foura *Saudi Aramco*

Abstract: This paper introduces a forensic methodology for evaluating schedule acceleration in construction project management, distinguishing it from traditional time extension and productivity loss assessments. It outlines a structured framework for identifying and validating acceleration efforts, emphasizing their impact on project timelines, labor efficiency, and cost implications. The study explores both directed and constructive acceleration, clarifying their legal and operational distinctions from recovery, mitigation, and deceleration scenarios. It also examines partial versus full acceleration and highlights how compressed schedules can generate cascading productivity losses and resource inefficiencies. The analysis addresses the interplay between acceleration, extension of time (EOT), and loss of productivity (LOP), reinforcing the need for detailed source documentation and forensic schedule review. Emphasis is placed on cumulative impact assessments and the contractual basis for acceleration entitlement. To support practitioners, the paper proposes a decision-making flowchart that aligns forensic procedures with contractual obligations and real-world project conditions. A case study involving a large-scale gas processing facility illustrates the practical application of the methodology, demonstrating how forensic analysis can substantiate acceleration-related claims in complex, delay-impacted environments.

(CDR-4923) Consequences of Engineer/Architect Delay in Determination of Contractor's Claims

Skill Level: Advanced
TCM Section(s): 6.4. Forensic Performance Assessment 10.1. Project Performance Assessment
Author(s)/Presenter(s):
Kareem M. Khattab, PE PSP *Ventia*
Dr. Rania Fayed *Hill International, Inc.*

Abstract: Generally, construction contracts require contractors to complete the works by a specified date in accordance with an agreed schedule for an agreed price. However, a contractor's ability to achieve this objective can be impacted by factors outside its control. One of these critical factors is the engineer/architect's failure to issue its determination for an extension of time entitlement within a specified time frame. This failure or procrastination promotes uncertainty of the contract completion date and ultimately abuses the contractor's rights under the contract. In this event, the contractor appears to have two choices, either work towards the completion date it considers it is entitled to at the risk of the employer/owner imposing liquidated damages or accelerate the work in an endeavour to achieve the original completion date, with the hope of trying to recover its costs later. Both choices may cause significant impacts on project time and cost and may lead to further disputes between the parties. This paper delves into the reasons for the failure of the engineer/architect to provide its determination within the specified time frame and the consequence of such failure on the project's time and cost as well as the recommendations to mitigate such risk.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(CDR-4936) Owner Implied Obligations in Construction Contracts

Skill Level: Advanced
TCM Section(s): 10.1. Project Performance Assessment 7.6. Risk Management
Author(s)/Presenter(s):
James G. Zack, Jr. CFCC FAACE Hon. Life *James Zack Consulting LLC*

Abstract: A construction contract is defined as a legally binding agreement between two or more parties, creating mutual obligations that are enforceable at law. It involves an offer, acceptance, and consideration, and is most often formalized in writing, although oral agreements may also be construed to be contracts. Construction contracts are most often drafted by owners or their design professionals and typically protect owners and their interests. As a result, construction contracts most often include clauses that contractors must comply with. However, construction contracts do not often include many of the owner's obligations or include them in various ambiguous ways. As a result, a body of law in the United States has been created that deals with an owner's "implied obligations." This paper explores implied obligations that many owners and contractors do not fully understand and offers potential risk mitigation practices related to these implied obligations. The paper identifies commonly litigated owner implied obligations, explains claim pathways, and proposes mitigation controls.

(CDR-4945) Delay Denied, Impact Approved: Surviving No Damages for Delay Clauses

Skill Level: Advanced
TCM Section(s): 6.4. Forensic Performance Assessment 9.2. Progress and Performance Measurement
Author(s)/Presenter(s):
Garrett P. Johnson, PSP *Project Control, Inc.*
James G. Zack, Jr. CFCC FAACE Hon. Life *James Zack Consulting, LLC*

Abstract: No damage for delay (NDFD) clauses are enforceable in many U.S. jurisdictions, preventing contractors and subcontractors from recovering compensation for owner-caused delays. However, these clauses typically do not bar recovery for damages that arise from disruption, loss of productivity, or cumulative impacts, provided those damages are not framed as delay-related.

This paper offers practical guidance on how to distinguish and substantiate impact claims versus delay claims, with an emphasis on later-phase cost impacts that may survive NDFD stipulations. Drawing from judicial interpretations and real-world case studies, it highlights common pitfalls and best practices. The paper also demonstrates how to align claims methodology with AACE Recommended Practices 25R-03 (Lost Productivity) and 29R-03 (Forensic Schedule Analysis) to support recovery efforts and expert testimony.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(CDR-4948) Between Hardball and Handshake: How International Contractors Weigh Rights and Relationships in Construction Claims

Skill Level: Advanced
TCM Section(s): 6.4. Forensic Performance Assessment 10.3. Change Management
Author(s)/Presenter(s):
Mohamed Mahmoud *Politecnico di Milano*
Ahmed Hossameldein Ibrahim *Roads & Transport Authority (Dubai)*
Ahmed Soliman *AS-PMC*
Hazem Khalil *Hill International*

Abstract: Construction disputes arising from contractual claims represent an inevitable and economically significant challenge in international project delivery, with average dispute values reaching USD 42.8 million and dispute occurrence likelihoods in complex projects. Contractors navigating claim disputes face a fundamental strategic dilemma: pursuing aggressive enforcement of contractual rights through formal mechanisms and third-party adjudication versus prioritizing relationship preservation through collaborative concessions and negotiated settlements. This paper presents a comprehensive analysis integrating empirically-validated contingency frameworks derived from analysis of 13 contractors' actual dispute resolution experiences with contemporary behavioral research in construction negotiation and dispute management. The analysis demonstrates that neither contractual enforcement ("hardball") nor relationship-focused accommodation ("handshake") approaches prove universally superior; rather, optimal outcomes emerge through dynamic, contextually-calibrated strategy selection. The paper identifies seven primary drivers of contractor behavioral strategy adoption (evidence favorability, time pressure, trust relationships, reputation concerns, shadow of the future, disputed amount relative to contract value, and procedural fairness), examines how these drivers operate internationally and within the distinctive Middle Eastern construction context, and provides practical diagnostic frameworks enabling contractors and owners to match behavioral strategies to specific project conditions. Particular attention is addressed to the Middle Eastern region's distinctive institutional characteristics, including hybrid legal systems combining Sharia law with civil and international standards, relationship-centric decision-making norms, and government procurement authority that substantially modify strategic effectiveness. The research demonstrates that effective dispute resolution requires sophisticated understanding of psychological factors, power dynamics, trust development, and institutional constraints beyond traditional contract interpretation. Contemporary literature increasingly emphasizes that successful negotiation integrates cooperative and competitive elements, leverages emotional intelligence and mindfulness, and adapts strategies across dispute lifecycle stages. For international contractors operating in concentrated markets and government-dependent construction sectors, relationship capital and reputational considerations often exceed individual claim recovery value, creating long-term incentives for balanced approaches combining contractual clarity with relational patience.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(CDR-4975) Questions for the Job Team: How to Effectively Follow Up Windows Analysis Observations

Skill Level: Advanced
TCM Section(s): 9.2. Progress and Performance Measurement 6.4. Forensic Performance Assessment
Author(s)/Presenter(s):
Greg M. Hall, PSP *Kiewit Corporation*

Abstract: The 2025 revision to Recommended Practice 29R-03 has added a significant amount of instructional material for each forensic schedule analysis (FSA) method. To sustain that momentum, this paper focuses on one critical aspect of retrospective observational FSA (or a "windows" analysis) which is often overlooked: What to do with observations once they are made.

Identification of each change in variance is the engine that drives successful windows analysis. But schedule files will only convey that a duration has changed, a relationship has been modified, or actual progress has deviated from planned relationships. The identification of the source of variance within the CPM schedule is only the first step. The research into that source's root cause, magnitude, and documentation is required for a full picture of causation and quantum of changes to the plan.

This paper will look at real-world examples of observed variance in a windows analysis, the crafting of questions to the people who experienced, documented, and managed the causal events, and how the feedback from those primary sources can be used to reconstruct a fair and equitable adjustment to the contract.

(CDR-4979) Collaborative Master Schedule: Development, Monitoring, Analysis, and Reconciliation

Skill Level: Intermediate
TCM Section(s): 2.4. Project Control Process Map 2.2. Total Cost Management Process Map
Author(s)/Presenter(s):
Eric Anthony, CFCC PSP *SOCOTEC USA*

Abstract: Collaborative Master Schedule: Development, Monitoring, Analysis, and Reconciliation is a practical application intended to improve project results for all stakeholders. A comprehensive master schedule is a shared platform used to effectively monitor activity timing and interdependencies. The master schedule is developed by the owner, engineering, contractor, and supplier stakeholders working closely together to align expectations, allocate resources, and identify potential constructability issues. The monitoring phase features transparent progress reporting through routine updates that document achievements, challenges, and resolutions while highlighting the stakeholders' concerted production efforts. During the analysis phase, stakeholders engage in unified schedule reviews and CPM modeling to proactively address schedule impacts. The collaborative approach extends through project closeout, where the planned versus actual outcomes are reconciled in a final review to provide valuable insights and historical data for future projects.

This technical paper demonstrates the claims and dispute resolution (CDR) advantages of collaborative project implementation using a master schedule to enhance stakeholder communication, improve performance tracking, mitigate schedule impacts, and facilitate continuous process improvement.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(CDR-4990) Using AI to Assist in the Evaluation of Claims

Skill Level: Intermediate
TCM Section(s): 6.4. Forensic Performance Assessment 10.1. Project Performance Assessment
Author(s)/Presenter(s):
Sami F. Kaissieh *Trauner Consulting Services*
Mark F. Nagata, PSP *Trauner Consulting Services*

Abstract: This paper explores how artificial intelligence (AI), particularly tools like ChatGPT Plus, is transforming the evaluation of construction contract claims by automating repetitive tasks and improving data collection and interpretation. This paper presents practical applications of AI rather than theoretical concepts, drawing on real-world consulting experience to show how it was used to shorten the time required to complete labor- and time-intensive analyses that have traditionally been handled by consulting staff.

This paper includes two case studies. The first case study used an AI tool to identify and collect weather-impacted workday information from years of daily reports. The second case study used AI tools to quickly develop graphics from contemporaneous documentation to track project events for demonstration purposes. The paper also outlines limitations of AI tools, including accuracy concerning scanned PDFs, inconsistent interpretation of embedded content, and the need for repeated prompt refinement. Emphasis is placed on maintaining human oversight, ensuring objective and complete document inputs, and understanding the risks of overreliance on AI-generated conclusions.

Ultimately, the paper demonstrates that AI does not replace professional judgment; rather, it enhances traditional forensic schedule analysis by accelerating data processing, enabling clearer visualization of project events, and supporting more efficient and comprehensive claim evaluations. A practical roadmap for integrating AI into construction consulting workflows is provided, highlighting where AI adds value and where expert analysis remains essential.

(COM-4853) (Presentation Only) Section Leadership Meeting

Author(s)/Presenter(s):
Ghaith Al-Hiyari, CCP *Turner & Townsend*
Eric G. Cannon, PSP *Moss & Associates*

Abstract: TBD

(COM-5012) (Presentation Only) AACE Canada Meeting

Author(s)/Presenter(s):
Diana Nada *Turner & Townsend*
Rami Daniel, CCP *D2 Global*

Abstract: TBD

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(COM-5013) (Presentation Only) Asset Planning & Management Subcommittee Meeting

Author(s)/Presenter(s):
Fred J. Wellman
Lucas Keeton CCT, CST *Secretariat*

Abstract: TBD

(COM-5014) (Presentation Only) Building Information Modeling Subcommittee Meeting

Author(s)/Presenter(s):
John B. Newman, CCP CEP *Hill International*

Abstract: TBD

(COM-5015) (Presentation Only) Claims & Dispute Resolution Subcommittee Meeting

Author(s)/Presenter(s):
Roger Nelson, PE CFCC PSP *Spire Consulting Group LLC*
Moj Kesheh, PSP *FTI Consulting*

Abstract: TBD

(COM-5016) (Presentation Only) Contract Management Subcommittee Meeting

Author(s)/Presenter(s):
Avinash A. Gaikwad *AG Consultancy WLL*

Abstract: TBD

(COM-5017) (Presentation Only) Cost Estimating Subcommittee Meeting

Author(s)/Presenter(s):
Shoshanna C. Fraizinger, CCP FAACE *Arup*
David Waggoner

Abstract: TBD

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(COM-5018) (Presentation Only) Data Science & Advanced Analytics Subcommittee Meeting

Author(s)/Presenter(s):
H. Lance Stephenson, CCP FAACE Hon. Life *AECOM*
Michael A. Pink *SmartPM Technologies, Inc.*

Abstract: TBD

(COM-5019) (Presentation Only) Decision & Risk Management Subcommittee Meeting

Author(s)/Presenter(s):
Francisco Cruz, PE CCP *PMA Consultants. LLC*
Dr. Luis Henrique Martinez *Clearway Energy*

Abstract: TBD

(COM-5020) (Presentation Only) Planning & Scheduling Subcommittee Meeting

Author(s)/Presenter(s):
Matthew Freih, PE PSP *AECOM*
Janet Bradford, PSP *Garney*

Abstract: TBD

(COM-5021) (Presentation Only) Productivity, Performance, & Earned Value Subcommittee Meeting

Author(s)/Presenter(s):
Michael F. Marcell, EVP PSP *K2 Consulting*
Gino Napuri, EVP

Abstract: TBD

(COM-5022) (Presentation Only) Program & Project Management Subcommittee Meeting

Author(s)/Presenter(s):
Abbas Shakourifar, PSP *FTI Consulting*

Abstract: TBD

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(CSC-4738) Predictive Portfolio Cash Flow S-Curves Derived from AI Ensembles and Markov Chains

Skill Level: Advanced
TCM Section(s): 2.2. Total Cost Management Process Map 2.4. Project Control Process Map
Author(s)/Presenter(s):
Alan Mosca *nPlan*

Abstract: Cost engineers struggle to merge schedule risk and cash-flow forecasting. Building on probabilistic cash-flow theory, this paper presents a methodology that generates delay forecasts using artificial intelligence (AI) ensembles, maps activity costs to simulated schedule scenarios, and produces percentile-band S-curves for individual projects and portfolio roll-ups. The approach employs deep learning ensemble models for duration forecasting, Markov chain simulation for capturing inter-project correlations, and generative schedule models for creating realistic alternative execution paths. A water utility case study involving 330 projects with a total value of $3.3 billion demonstrates that the P90 cash-out profile predicted a peak negative cash position of $340 million—27% higher than deterministic forecasts of $245 million. This finding prompted an accelerated bond issuance that avoided costly short-term borrowing. The technique closes a long-standing gap between planning and treasury functions and offers regulators a transparent audit trail of risk-adjusted cash needs.

(CSC-4810) Facilitating Schedule Impact Justifications Through Trust: Owner - Contractor Alignment with Federal Project Schedule Specifications

Skill Level: Intermediate
TCM Section(s): 7.2. Schedule Planning and Development 4.1. Project Implementation
Author(s)/Presenter(s):
Trevor J. Fluet, PSP *US Army Corps of Engineers*
Autumn Hall *Capo Projects Group*

Abstract: Federal construction projects frequently incorporate UFGS 01 32 01.00 10 to govern schedule development, baselines, and progress updates. While the specification defines requirements for maintaining schedule integrity, it is often misinterpreted in ways that diminish the schedule's value, for example, by disallowing justified logic or duration changes rather than approving them to reflect the current and accepted project plan.

This paper provides a practical perspective for both owners and contractors on overcoming challenges and fostering a culture of trust in the schedule. Drawing from lessons learned on multiple federal projects, the paper outlines high-level best practices for maintaining schedule accuracy, aligning expectations, and promoting transparency between parties. Outcomes include more timely approval of schedule updates, improved confidence in time impact analyses, and fewer disputes related to time extensions. Unlike previous work that focuses on contractor compliance or detailed workflow templates, this paper emphasizes shared responsibilities and cultural practices that enable the schedule to function as a living, reliable tool for project success.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(CSC-4864) Effective Change Management Strategies to Document Schedule and Cost Changes

Skill Level: Basic
TCM Section(s): 10.3. Change Management 9.2. Progress and Performance Measurement
Author(s)/Presenter(s):
Libardo E. Orejarena *EBC Inc.*
Abbas Saifi, CCP EVP PSP *EBC Inc.*

Abstract: Change management provides a crucial framework for navigating the inevitable shifts in project schedules caused by factors such as scope changes, unforeseen conditions, or deficient planning at the project's outset. This paper outlines key strategies for reflecting on and managing these changes effectively through a collaborative, transparent approach to build trust among the parties involved. By implementing a formal change management approach in the schedule and a consistent float calculation process, organizations can ensure that all schedule and cost modifications are properly approved and documented in the project. This approach recognizes that communication is a key component for the success of this process. A clear and compelling justification for schedule and cost changes helps to mitigate resistance and maintain trust among all stakeholders. Ultimately, effective change management transforms schedule slippage from a series of disruptive events into controlled, transparent, and collaborative processes that sustain the project alignment with the contract requirements.

(CSC-4886) Seven Cardinal Rules for Successful Project Cost Control

Skill Level: Basic
TCM Section(s): 9.2. Progress and Performance Measurement 10.1. Project Performance Assessment
Author(s)/Presenter(s):
Ghaith Al-Hiyari, CCP *Turner & Townsend*

Abstract: Cost control is a fundamental component of project management in capital projects. Owner organizations strive to manage limited funds efficiently while gaining a comprehensive understanding of their project performance. This includes continuous assessment of their evolving status and the forecasted final landing positions of their capital projects cost. Effective cost control enables timely and informed decision-making, increasing the likelihood of positive results for capital project investments.

This paper aims to define and outline seven essential best practices for cost control from the perspective of owner organizations. It will clarify common industry misconceptions and highlight practices that contribute to robust cost control. Additionally, the paper will compare indicators of successful cost control with symptoms of ineffective practices within the capital projects environment.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(DEV-4758) (Panel Discussion) Women in Project Controls

Author(s)/Presenter(s):
Stephanie Kers *Canadian Natural Resources Ltd*

Abstract: The field of project controls is evolving at a rapid pace, with increasing demands for innovation, adaptability, and inclusive leadership. Women in Project Controls are not only rising to meet these challenges but are also shaping the future of the profession through their diverse perspectives, resilience, and ability to bridge technical expertise with human-centered leadership. This fireside chat will bring together leaders from AACE's international regions with past Outstanding Women in Project Controls Award winners for an engaging and dynamic conversation.

Through candid dialogue, our panelists will share insights on leading through change, navigating career growth in complex industries, and driving cultural and organizational impact. They will explore themes such as building influence in male-dominated environments, mentoring the next generation of project professionals, and leveraging emotional intelligence to strengthen teams and outcomes.

By highlighting personal journeys and collective strategies, this session aims to spark inspiration, offer practical takeaways, and celebrate the trailblazers who are shaping a more inclusive future for project controls. Bringing together a panel of international WPC representatives offers a unique opportunity to learn from each other, share common experiences, and be a catalyst for thought leadership.

(DEV-4863) Talk, Track, Deliver: Communication as the Backbone of Construction Projects

Skill Level: Intermediate
TCM Section(s): 11.3. Information Management 11.2. People and Performance Management
Author(s)/Presenter(s):
Kim Forbes, PSP *MBP*
Ghaith Al-Hiyari, CCP *Turner & Townsend*
Rami Daniel, CCP *D2 Global*
Duan van der Merwe *Delta Consulting Group, Inc.*
Lucia Vernon *Quantum Global Solutions*

Abstract: In construction, communication can make or break a project. With so many moving parts, the right message must reach the right people at the right time. This paper examines the everyday tools and habits that keep projects running smoothly, from written and electronic exchanges to on-site conversations. The paper will dive into the core topics of construction communication: sharing status updates, coordinating complex activities, and keeping teams, managers, and leadership aligned. Beyond the jobsite, the paper explores strategies for working with clients, regulators, and stakeholders where clarity, trust, and accountability are non-negotiable. Communication doesn't end when the message is sent. Archiving and retention practices make sure that critical decisions and approvals don't get lost in the shuffle. This paper will also highlight practical indexing methods to improve retrieval speed and reliability. Readers will gain real-world strategies to streamline communication, minimize misunderstandings, and build stronger connections that support successful project delivery.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(DEV-4868) Construction Scheduling is the Best Job in the World!

Skill Level: Basic
TCM Section(s): 0.0. General Reference
Author(s)/Presenter(s):
Ronald M. Winter, PSP FAACE *Schedule Analyzer Software*
Kevin Elvrum *OnTrack Scheduling, Inc.*

Abstract: This light-hearted paper attempts to explain why a career in construction scheduling is a good option. Or great option. It is not for everyone. In fact, most people would not consider it a great career. That is partially because they do not understand the option. Aptitude is essential to the career choice. If a person has the aptitude, then the work will be considered easy and enjoyable. Because less than 20% of the population has a real aptitude for scheduling, there is a huge demand for the craft. This demand results in above average monetary compensation.

Best of all, the career is fulfilling. You are invited to be a part of some great and interesting endeavors. To be part of some important teams with some awesome individuals. After the project is completed, you are able to look back with pride at a job well done.

(DEV-4881) An Integrative Trust Capital Model for Schedule and Cost Control

Skill Level: Intermediate
TCM Section(s): 11.2. People and Performance Management 10.2. Forecasting
Author(s)/Presenter(s):
Akinlolu (Akin) I. Oni, CCP *Eftex Group*

Abstract: For schedulers, cost engineers, contract analysts, project controllers, risk professionals, and project managers, trust is often viewed as intangible - yet it directly determines data quality, forecast credibility, and stakeholder alignment. This paper reframes trust not as a “soft” factor, but as trust capital: a measurable and critical resource that drives performance in high-stakes projects.

Drawing on real-world cases from deepwater oil and gas, LNG, mining, and infrastructure megaprojects across multiple cultures, this paper explores how mistrust eroded decision-making agility, while high-trust environments produced faster approvals, sharper time and cost estimates, and more resilient risk responses. It introduces the trust capital equation, a practical model linking credibility, transparency, and consistency to measurable project success indicators.

Readers will gain practical tools to assess their team’s current trust baseline, strengthen their credibility with executives and sponsors, and establish trust-centered practices that improve reporting accuracy, risk management, and cross-functional collaboration.

Ultimately, this paper demonstrates that trust is not a soft skill at the margins - it is the hard currency of sustainable schedule, cost, contract, and risk control.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(DEV-4932) From Chaos to Clarity: Streamlining Project Controls Communication in High Stakes Projects

Skill Level: Basic
TCM Section(s): 11.3. Information Management 11.2. People and Performance Management
Author(s)/Presenter(s):
Sudhakar R. Pulagam, PEng CCP EVP *Accenture*
Tracy Leung, PEng *Ontario Power Generation*

Abstract: Effective project controls communication is a critical success factor for large-scale, long-duration, high-cost, and high-risk projects. In industries such as energy, infrastructure and other sectors with significant capital investments and high public impact, the consequences of poor communication can be severe – leading to costly disputes, project delays and misinformed decision-making. Despite the availability of advanced reporting tools and data visualization platforms, communication failures persist due to lack of context, insufficient structure and a failure to tailor information to diverse stakeholder needs.

Project controls professionals are key translators and communicators through the project lifecycle and engage in various areas of project management, including cost, schedule, risk, and quality management. The focus of this paper is to provide actionable solutions to tackle the chaos in communication that commonly happens on high stakes projects. It identifies practical approaches to improve communication on a mega project with different stakeholder groups such as owners, vendors, internal teams, and regulators, to ensure that information is not only available, but also meaningful, actionable, and aligned with project success.

(DEV-4956) Preparing for Generation Integration – Bridging the Gap to Generation App

Skill Level: Basic
TCM Section(s): 11.2. People and Performance Management 10.3. Change Management
Author(s)/Presenter(s):
Cyrene L. Stolk, CCP *Fluor*

Abstract: In today's fast-paced and competitive business environment, it is crucial for companies to constantly evolve and adapt to innovative technologies and methods to remain successful. This is especially true within the engineering, procurement and construction management (EPCM) industry, where project management and project controls are key elements to the success of any project.

While these technologies offer measurable gains in efficiency and insight, adoption often stalls due to generational assumptions and age-based bias – particularly toward seasoned professionals.

This paper examines how ageism and generational stereotypes have evolved within the EPCM sector and how they now pose a strategic risk to digital transformation, talent retention and knowledge continuity. Drawing on adult learning principles, industry research and practical implementation experience, the paper proposes a structured, phased framework to support inclusive adoption of innovative project controls technology across all generations.

The framework emphasizes psychological safety, relevance-driven training, reverse mentoring, phased implementation and post-deployment support. Rather than positioning digital tools as replacements for experience, the approach integrates deep domain expertise with modern technology to enhance decision-making and organizational resilience.

The paper provides actionable guidance for EPCM leaders, project controls managers and transformation teams seeking to improve adoption outcomes, reduce generational friction and future-proof their workforce.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(DSAA-4773) Generative AI, AI Agents, and Agentic AI: Transforming PMOs and Project Controls

Skill Level: Intermediate
TCM Section(s): 11.3. Information Management 8.1. Project Control Plan Implementation
Author(s)/Presenter(s):
Dr. Prasad S. Kodukula *Illinois Tech*
J. Gustavo Vinueza *The Ferryfield Group*

Abstract: Artificial intelligence (AI) is no longer a speculative concept; it is actively reshaping how projects are planned, monitored, and governed. In the context of project management offices (PMOs) and project controls, three distinct but complementary AI paradigms are emerging as particularly impactful: generative AI, AI agents, and agentic AI. Each represents a different level of autonomy, responsibility, and integration within project management workflows. This paper examines how these three AI technologies influence core project controls functions.

Generative AI is positioned as a cognitive support tool, excelling content generation, reporting, and the translation of complex analytical outputs into executive-ready insights. AI agents, by contrast, are task-oriented systems designed to execute predefined processes—such as data validation, metric calculation, and report assembly—within clearly bounded governance rules. Agentic AI represents a further step in autonomy, enabling systems to proactively monitor project conditions, evaluate scenarios, surface emerging risks, and recommend actions aligned with predefined objectives.

Through a series of applied case studies, the paper illustrates how these AI paradigms operate both independently and in combination. Agentic AI is shown to enhance scenario exploration, early risk sensing, and adaptive decision support, while AI agents ensure repeatability and operational discipline across project control processes. Generative AI complements both by accelerating communication, documentation, and organizational learning across portfolios.

By the conclusion, readers are provided with a pragmatic framework to assess where each AI paradigm—generative, agent-based, or agentic—can be responsibly deployed within their organizations. Rather than advocating full automation, this work emphasizes augmented decision-making, positioning AI as an enabler of better judgment, improved foresight, and more resilient project outcomes. The objective is to equip PMO leaders, project managers, and project controls professionals, with a clear roadmap for integrating AI into daily practice while preserving transparency, governance, and professional accountability.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(DSAA-4793) Advancing Project Controls Through Integrated Reporting – Part 1: Enhancing Construction Project Outcomes via Data Visualization and Structured Reporting

Skill Level: Intermediate
TCM Section(s): 11.3. Information Management 9.2. Progress and Performance Measurement
Author(s)/Presenter(s):
Ahmed Montaser, EVP *Aecon*
Tom Nierodzik *Aecon*

Abstract: In today's complex construction landscape, project teams are inundated with data yet often struggle to transform this information into actionable insights. Critical decisions are too frequently delayed or based on incomplete analysis, resulting in missed opportunities for risk mitigation, diminished transparency, and suboptimal project outcomes. There is a pressing need for integrated reporting strategies that can bridge the gap between raw data and effective decision-making at all project stages. The paper establishes the foundational role of structured data and systematic reporting in supporting proactive decision-making and optimizing project outcomes. It explores the application of analytics for trend identification, risk mitigation, and strategic guidance throughout the project lifecycle. A central theme is the use of visual communication tools, including dashboards, charts, and infographics to effectively translate complex data into accessible insights for non-technical stakeholders. The paper further examines principles for designing impactful visual reports and addresses the technical requirements for incorporating these tools into existing project control systems. This paper is the first in a series that will further explore merging cost and schedule metrics within visual dashboards and their integration into building information modeling (BIM) environments, demonstrating how these advancements support strategic planning and efficient project delivery.

(DSAA-4821) Building Smarter: Harnessing Artificial Intelligence for Construction Oversight

Skill Level: Intermediate
TCM Section(s): 11.3. Information Management 10.2. Forecasting
Author(s)/Presenter(s):
Avi Schwartz *Deloitte Services LP*
Eric Dembert *Deloitte Services LP*
Bryan Kaplan *Deloitte Services LP*
Jeff Johannsen *Deloitte Services LP*

Abstract: In the dynamic field of construction project management, early risk mitigation is paramount to facilitating successful, on-time, and on-budget delivery; however, many projects continue to experience significant cost and schedule overruns. Furthermore, the industry has largely shifted from paper-based to digital, generating substantial amounts of data that could help to deliver current projects, continuously refine oversight, and benchmark future projects.

This paper presents innovative approaches to harness this newly available data and leverage artificial intelligence (AI) to predict cost and schedule growth throughout construction delivery, as well as forecast potential weather impacts on project schedules. It provides readers with benefits, challenges, and key considerations for developing these models and demonstrates how construction project managers can leverage AI-driven insights to identify and assess risks earlier, empowering their teams to implement mitigation solutions before those risks materialize. The paper concludes with case studies illustrating the real-world application of these AI models, highlighting their effectiveness in improving project outcomes and reducing uncertainties. Ultimately, this approach aims to equip cost management, project controls, project managers, construction executives, and other professionals involved in construction delivery with advanced tools to supplement professional judgment and continue progressing the industry toward more confident and efficient delivery.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(DSAA-4841) Topographic Visualization Tools for Exploring and Presenting Monte Carlo Simulation Results

Skill Level: Basic
TCM Section(s): 7.6. Risk Management 10.2. Forecasting
Author(s)/Presenter(s):
Holly K. Parkis *SMA Consulting Ltd.*

Abstract: Integrated cost and schedule risk analysis using Monte Carlo simulation modelling is a best practice for construction project management; however, decision-makers and project leads can face challenges in understanding and applying the results. Traditional visualizations such as histograms and tornado graphs are used extensively for presenting project risk information to teams, but these tools are constrained in their ability to communicate the full depth of analysis that integrated simulation modelling can support.

This paper presents advanced tools for deriving additional benefit from existing data with a focus on decision-making as it relates to project budgets and affordability through exploration of the "probability space" defined by a simulation model. This family of risk topography tools has been developed to help project owners understand the conditional probabilities of exceeding selected budget limits by a certain value and how probabilities of budget outcomes may conditionally shift depending on subproject outcomes. This paper will outline the methodology for producing these visualizations and discuss use cases for how they can be a major asset in setting and refining project budgets and contingency requirements.

(DSAA-4843) False Confidence - The Risk of AI Hallucinations

Skill Level: Intermediate
TCM Section(s): 11.3. Information Management
Author(s)/Presenter(s):
Arth Patel *Amtrak*
Vishwambhara Kumbharathi, CEP PSP *Amtrak*

Abstract: Artificial intelligence (AI), particularly large language models (LLMs), are rapidly entering construction cost estimating and project controls, promising faster data synthesis, earlier decision support, and standardized workflows. Yet these same systems can produce hallucinations: confident, fluent, but factually incorrect or fabricated assertions. Hallucinations differ from ordinary software defects in that they are opaque (difficult to trace), highly persuasive (professional tone, formatted outputs), and contextually embedded (surrounded by otherwise correct content). In high stakes estimating contexts, this combination creates a systemic risk of false confidence that can propagate into budgets, contingencies, bids, and claims.

This paper explains why hallucinations occur and how they manifest in estimating practice; offers tight narrative examples from other industries to show real world consequences; and proposes a defense in-depth mitigation framework aligned to NIST's AI Risk Management Framework (AI RMF 1.0), ISO/IEC 23894 (AI risk management), and ISO/IEC 42001 (AI management systems). The paper concludes with an implementation roadmap and a practitioner checklist that embeds human in the loop validation, data provenance, structured prompting, retrieval augmented generation (RAG), and auditability into everyday estimating workflows.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(DSAA-4856) From Business as Usual to AI Business Readiness: Why Project Controls Holds the Key

Skill Level: Intermediate
TCM Section(s): 11.3. Information Management 1.2. Purpose and Uses of the TCM Framework
Author(s)/Presenter(s):
Libby J. Goyco-de-Vera, PSP *CDM Smith*

Abstract: Artificial intelligence (AI) is rapidly transforming how organizations analyze data, forecast outcomes, and support decision-making. However, many AI initiatives fail to deliver sustainable value because the organizational conditions required for reliable automation (structured data governance, financial discipline, and strategic alignment) are not yet fully established. Within capital project environments, these conditions are closely aligned with the core functions of project controls.

This paper presents a conceptual framework that positions project controls as a foundational capability for AI business readiness in the architecture, engineering, and construction (AEC) industry. The framework is derived through synthesis of three sources: established governance principles embedded in AACE International's Total Cost Management (TCM) Framework, contemporary literature on AI adoption and data governance, and longitudinal professional observations drawn from large portfolios of capital projects.

Building on this foundation, the paper introduces two complementary models. The first is the AI Readiness Framework, which defines three organizational prerequisites for effective AI enablement: data readiness, budget capability, and strategic alignment. The second is the Empower-Execute-Elevate (E^3) Framework, which provides an operational pathway for translating these readiness conditions into controlled implementation and enterprise performance improvement. The proposed frameworks are further informed by a structured, experience-based diagnostic assessment used to evaluate AI readiness across data, budget, and strategic dimensions.

A qualitative case illustration based on long-term project controls practice across hundreds of capital projects illustrates how disciplined baseline management, change control, and integrated performance monitoring produce structured and traceable data environments. The observed implementation patterns were identified across multiple independent capital project environments of varying scale, including both small and large portfolio contexts. The consistency of these patterns across organizational sizes supports their transferability and indicates practical scalability of the proposed framework. These governance practices were observed to scale effectively across larger enterprise portfolios and to remain resilient during operational disruptions such as the COVID-19 pandemic.

Observed implementation patterns indicate that organizations applying project controls rigor to data readiness are better positioned to support scalable AI adoption and reduce the risk of failed implementations. Project controls disciplines inherently produce the structured, auditable, and context-rich data environments required for reliable advanced analytics and AI-enabled decision systems. Rather than replacing project controls, AI adoption may increasingly depend on the governance structures that project controls establish.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(DSAA-4875) Beyond Metrics: Utilizing AI Agents for Construction Schedule Quality Analysis

Skill Level: Advanced
TCM Section(s): 11.3. Information Management 7.2. Schedule Planning and Development
Author(s)/Presenter(s):
Matthew Jackson, PSP *Atlas Works, LLC*

Abstract: When developing a construction schedule, there are several methods that can be implemented to identify quantitative aspects of schedules, but analyzing a schedule's qualitative aspects is a laborious task yet vital to project success. This qualitative phase ranges from studying the project plans, scope, and other critical information and then ensuring the schedule "makes sense" – it has relevant activities, sequencing, detail, and practicality that cannot be captured by metrics.

This paper evaluates an agent-based AI framework developed by the author to assist in qualitative baseline schedule review. The framework uses large language models to read construction drawing sets, generate scope documentation, and conduct schedule analyses across twelve review domains including procurement, critical path, inspections, and project scope. It was tested on three construction schedules of varying type and complexity, with AI-assisted findings compared against manual expert reviews of the same schedules.

Across the three case studies, the framework matched 74.9% of expert findings with a 4.9% false positive rate, while reducing review time by 48%. Novel findings by the AI framework alone averaged 19.8%. These results suggest the framework is a useful supplement to expert judgment in qualitative schedule review. It is not a replacement but may help professionals cover more ground with greater consistency and warrants future study.

(DSAA-4931) Controlling the Uncontrollable: How Data Management Shapes Project Success

Skill Level: Intermediate
TCM Section(s): 11.3. Information Management
Author(s)/Presenter(s):
Sudhakar R. Pulagam, PEng CCP EVP *Accenture*
Eric Vyskocil *Laurentis Energy Partners*

Abstract: Robust data management is a critical element for project controls and is especially important today in the project's world in environments such as mega projects and small projects, those critically dependent on the quality, consistency, and governance of data.

This paper explores the intersection of data management and the project controls domain, highlighting how proper project data management structures support effective forecasting, risk assessment, and performance measurement. This paper also examines the critical link between robust data management practices and positive project outcomes.

With the trending of implementation of AI solutions, without robust data management frameworks, AI models may amplify inaccuracies and compromise critical decision-making.

Drawing on real-world examples, it demonstrates the challenges organizations have in building data systems that are AI-ready, reduce project cost overruns, enhance transparency, and improve decision-making at scale. Ultimately, it reframes data management as a strategic discipline that empowers organizations to control the uncontrollable and achieve greater project certainty, whether in mega-projects or repeatable initiatives.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(DSAA-4942) AI-Driven Proposal Evaluation: Preventing Claims Through Efficient Analysis

Skill Level: Intermediate
TCM Section(s): 11.3. Information Management 10.3. Change Management
Author(s)/Presenter(s):
Alexandre Arnaldo Sonntag *VALE SA*
Luiz Cláudio de Magalhães Mendonça Santos, EVP *VALE SA*
Maria Eduarda Almeida *VALE SA*

Abstract: This showcase highlights the application of artificial intelligence (AI) to enhance the evaluation of proposals in an important competitive bidding process for projects. Traditionally, proposal analysis relies heavily on manual review, increasing the risk of oversights and ambiguities that can lead to future claims. By integrating AI-based tools into the evaluation workflow, the team identified discrepancies, contract misalignments, and risk factors early—before contract award.

Key benefits included improved consistency, faster assessments, and reduced bias. Natural language processing enabled scope verification and alignment, while predictive analytics flagged structural weaknesses within proposals. By benchmarking against historical data, AI helped prevent recurrent issues and guided evaluators to potential future claims.

This case study illustrates how AI transforms project controls into a proactive shield against disputes and inefficiencies, exemplifying the concept of human-computer "superminds" where the combination of human expertise and artificial intelligence creates outcomes superior to either working alone. The lessons learned offer a replicable blueprint for professionals seeking to strengthen competitive procurement processes and ensure robust contract foundations.

(DSAA-5007) Building a Bridge to AI: A Strategic Assessment Framework

Skill Level: Intermediate
TCM Section(s): 11.3. Information Management
Author(s)/Presenter(s):
Kaylyn Mickelsen, PSP *Qualus Consulting*
Joseph Lozada *Qualus Consulting*
Stephanie L. Zerkel *Qualus Consulting*
Cheryl Nowak *Qualus Consulting*

Abstract: At the open DSAA subcommittee session at the 2025 Conference, most attendees indicated they do not believe they are working with good data. To successfully implement advanced analytics in project delivery, organizations must first ensure their data is ready. This paper and presentation will outline a comprehensive AI readiness assessment, guiding the audience through key steps including documenting the current state, identifying pain points, analyzing AI/ML use cases, designing the supporting architecture, and developing both a risk analysis and change management strategy. It will conclude with a practical roadmap for implementation. This topic has been included in previous DSAA papers and presentations but has not been featured as a main topic. This paper will create a starting point for individuals to understand how to identify opportunities to improve data and how to effectively influence the organization to make the necessary changes. Real-world case studies will illustrate how organizations can align with AACE's DSAA recommended practices and position their project delivery team for the future.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(EST-4728) A Structured Approach to Scope-to-Cost Traceability in Estimating

Skill Level: Basic
TCM Section(s): 7.3. Cost Estimating and Budgeting 7.1. Project Scope and Execution Strategy Development
Author(s)/Presenter(s):
Abdulrahman Abdullah Bu Ali *Saudi Aramco*

Abstract: Inaccurate cost estimates are often driven by a lack of alignment between project scope narratives and corresponding estimate sheets, leading to scope gaps, missed elements, and potential cost overruns. This paper presents a practical approach to address this recurring issue by introducing a scope traceability coding system that enhances the integrity and completeness of cost estimates. The proposed method involves assigning a unique code to each scope element in the narrative during the scope development phase. These codes are then cross-referenced and embedded within the cost estimate sheets as an extra layer of cross reference to the work breakdown structure and code of accounts (COA), creating a direct and traceable link between scope and cost. The process requires active collaboration: the engineer writing the narrative is responsible for assigning the codes based on scope content and tabulating them next to the quantified scope of work, which is the material take-off, while the estimator validates those codes into the estimate. This dual review mechanism not only ensures full scope coverage but also streamlines estimate reviews and reduces the risk of omissions. Case studies from capital projects demonstrate how this coding system improved accuracy, transparency, and review efficiency. The paper also outlines implementation considerations, challenges in change management, and recommendations for integrating this system within existing estimating workflows.

(EST-4732) Beyond the Basis of Estimate: The Art of Preparing and Delivering "The Final Estimate Package"

Skill Level: Intermediate
TCM Section(s): 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Hetali Doshi Joglekar *RIB U.S. Cost*
Douglas W. Leo, CCP CEP FAACE Hon. Life

Abstract: The basis of stimate (BOE) provides the technical documented foundation for an estimate, but it is only the starting point for the broader cost development process. It's true purpose becomes clear only when the project's assumptions, methodologies, and scope interpretations are organized into a complete client-ready final estimate package (FEP). This FEP expands the BOE into a structured, decision-ready document for the client that clarifies the project's scope, estimated pricing logic, outlines cost drivers, and presents a transparent view of anticipated accuracy, risk exposure, and potential opportunities. Rather than serving as a simple summary for cost reporting numbers, the FEP becomes the primary narrative that helps reviewers understand how the cost was developed and how it reflects the project's design maturity and objectives.

This paper presents a framework for turning a BOE into a complete and defensible FEP. It describes the core components of a complete package, including estimate summaries, detailed cost breakdowns (direct and indirect costs including markups), process of aligning the estimate packages with AACE® International recommended practices on estimate classifications, reconciliation reports (previous and current estimate comparisons), risk and contingency analyses (risk studies and reserved funds), benchmarking reports (project comparisons), an escalation strategy (cost increase plans), supporting documentation (vendor quotes, design drawings, takeoffs), digital standards (templates), and formatting.

The authors aim to empower emerging estimating professionals, particularly those new to the profession, by equipping them with the skills and confidence necessary to prepare and deliver final estimate packages that clearly convey the cost story behind the final project estimated costs and provide a reliable, defensible decision-making tool. By following this structured approach, the estimators can prepare and deliver final work packages that demonstrate enhanced credibility and contribute to successful project outcomes.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(EST-4736) Estimating Data Warehouse

Skill Level: Intermediate
TCM Section(s): 10.4. Project Historical Database Management 11.3. Information Management
Author(s)/Presenter(s):
Abdulmajeed S. Alosaimi, CEP *Saudi Aramco*
Sherif S. Hefny, CEP *Saudi Aramco*
Thabo C. Mongale *Saudi Aramco*

Abstract: The capital project estimating process is a critical function in enabling sound investment decisions. However, traditional methods often suffer from fragmented data sources, manual data handling, and inconsistent formats which is leading to inefficiencies, errors, and delayed decision-making. This paper presents a transformative project led by Saudi Aramco to develop an estimating data warehouse powered by robotic process automation (RPA). The initiative unified previously scattered estimating data into a centralized and structured repository, overcoming fragmentation and enabling seamless integration.

The data model for this project is based on a layered architecture inspired by the Medallion framework, which organizes the data flow into clear, manageable stages, including bronze, silver, and gold layers. The data is structured using a dimensional modeling methodology, following the Kimball approach, with fact tables, dimension tables, surrogate keys, and slowly changing dimensions (SCD). The design principles ensure the model is reliable, maintainable, and aligned with business needs, including separation of concerns by layer, minimal transformations in early stages, traceability, consistency and reusability. The extracted data includes historical estimating data from previous projects, such as costs, quantities, and productivity metrics, as well as benchmarking data from industry sources, including cost indices, productivity benchmarks, and best practices.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(EST-4750) Structured Pre-Bid Alignment Framework for Single-Source LSTK Procurement in Oil and Gas Mega-Projects

Skill Level: Intermediate
TCM Section(s): 7.3. Cost Estimating and Budgeting 3.3. Investment Decision Making
Author(s)/Presenter(s):
Abdullah N. Alabdulkarim, CEP *Saudi Aramco*
Ibrahim N. Alquraishi *Saudi Aramco*
Mohammed S. Alghamdi *Saudi Aramco*
Husain Ali Al-Omani, CCP CEP DRMP EVP PSP

Abstract: In certain instances, single source lump sum turnkey (LSTK) procurement methodology is applied for the execution of strategic, technical, and schedule-driven objectives of oil and gas mega projects. The absence of a bidding process in this methodology eliminates the most important cost validation process, which adds cost and schedule risks to the owner of the project. In most instances, the traditional procurement controls are not sufficient to address the risks associated with the single source LSTK procurement methodology.

The objective of this study is to develop a structured pre-bid estimate basis alignment framework to address the cost and commercial risks associated with the single source LSTK procurement methodology. This study is focused on the pre-bid process of aligning the project team members, i.e., the owner, the engineering consultant, and the lump sum turnkey contractor, with specific emphasis on the execution strategy, scope definition, quantity reconciliation, productivity assumptions, and cost structure. This process does not result in any contractual language; instead, it is a process of developing a basis of understanding arrived at in good faith to support the owner estimate as well as the contractor's proposal.

This study also aims to emphasize the benefits of the pre-bid alignment process for cost engineers and project controls practitioners in mega-project development.

(EST-4754) Activity Production is the Thread that Holds Everything Together

Skill Level: Intermediate
TCM Section(s): 7.2. Schedule Planning and Development 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Anand Vatsav Gorthi, PE PSP *WSP*

Abstract: Activity production is a key factor in determining project cost and time estimates. The author aims to demonstrate how activity production is used to evaluate and adjust these estimates. Additionally, the author will share personal examples of how production evaluation has helped in reviewing and refining estimates at various stages of design development.

The author will further illustrate how production evaluation has facilitated review for remainder scope in active projects.

The author would illustrate how this fundamental concept is often overlooked leading to inconsistency amongst various processes, further leading to misplaced/inconsistent expectations.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(EST-4783) Operational Estimating: Application of the Operative Result Methodology in Estimating

Skill Level: Advanced
TCM Section(s): 8.1. Project Control Plan Implementation 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Ruben M. Bazalar *Bechtel Corporation*

Abstract: This paper introduces operational estimating as an estimating approach in which the cost estimate is deliberately structured to function as an execution-phase cost control baseline. Conventional estimating practice often exhibits a structural discontinuity between estimating, planning, scheduling, and cost control, resulting in the progressive abstraction of execution assumptions once construction begins. Operational estimating addresses this disconnect by preserving execution-oriented structure throughout the estimating and control lifecycle.

The approach is demonstrated through the integration of a phased program work breakdown structure (WBS), unit price analysis (UPA), quantity take-offs, and schedule-based time phasing within the operative result framework. By embedding production logic, resource requirements, and execution assumptions directly into the estimating structure, the estimate remains analytically intact as it transitions into execution. This continuity enables systematic traceability from planned scope and unit costs to executed work, supports validation of estimating assumptions against actual performance, and establishes a structured basis for conciliation between estimated and incurred costs.

An illustrative application drawn from a high-rise residential project in Lima, Peru demonstrates how early operational structuring of the estimate enhances cost transparency, improves interpretability of deviations, and strengthens execution-phase cost control throughout the project lifecycle.

(EST-4785) Development of Factored Cost Estimates for Biorefineries

Skill Level: Advanced
TCM Section(s): 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Dr. Mirela Tsagkari, CEP *Boehringer Ingelheim*

Abstract: The concept of biorefinery refers to facilities that process different biomass types through thermal, chemical, biological, and physical processes, to generate fuels and a range of chemical products. Biorefineries are often first-of-a-kind (FOAK) facilities, utilizing novel and yet-to-be-commercialized technologies, with frequent modifications in scope and design being a common occurrence. Biorefinery owners and technology licensors need to identify the most cost-effective process technologies during the research and development phase, prior to front-end loading, to support strategic business decisions. Engineering contractors must prepare proposals and bids on a credible and defensible cost outcome. Early-stage capital cost estimation parametric methods (Class 10/Class 5) have been published for biorefineries [1]. The paper applies parametric factorial methods based on minimal input to estimate the costs of a real FOAK sustainable aviation fuel production biorefinery and compares them against a semi-detailed cost estimate developed at the end of front-end design.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(EST-4818) The Case for Adding a Risk Analysis Step to Your Estimating Process

Skill Level: Intermediate
TCM Section(s): 7.3. Cost Estimating and Budgeting 7.6. Risk Management
Author(s)/Presenter(s):
Nicole Johnson, CEP *MBP*
Rachel A. Fleming *MBP*

Abstract: This paper explores the critical distinction between uncertainty and risk in cost estimating, emphasizing their implications for project planning and decision-making. While traditional estimate classifications and contingency allowances attempt to address risk, they often fail to capture the full spectrum of uncertainty and are not probabilistic. Incorporating a quantitative risk analysis (QRA) step as part of the estimating process enables estimators to align estimates with an owner's desired confidence level by considering both systemic and specific risks. Various QRA methods are briefly discussed, referencing established AACE recommended practices (RPs) and the Total Cost Management (TCM) framework for method selection. A parametric method example illustrates how QRA can be efficiently integrated into estimates, even in early project phases. Ultimately, this paper advocates for embedding QRA into the estimating process to enhance informed decision-making.

(EST-4823) Deconstructing Location Factors: An Estimating Framework for Megaprojects

Skill Level: Advanced
TCM Section(s): 3.2. Asset Planning 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Chantalle Penalosa *Techne PMC Inc*
Sandra Troke *Techne PMC Inc*

Abstract: Megaprojects have developed into high risk, often remote and regionally constrained environments. Estimating in the absence of regional data relies on leveraging a known reference region and refining costs with location factors. While location factors are broadly applied to normalize estimates across regions, there is no universally accepted world base reference. This paper explores the challenges of applying location factors to megaprojects, where the scale of magnitude amplifies regional limitations and where labor, logistics and market cycles govern cost variance. Approaching this complexity by differentiating between cost components rather than relying solely on published location factor indices decreases the risk of underestimating and oversimplifying cost drivers. It introduces a defensible framework to improve transparency in FEL-1 and FEL-2, recommending strategies and adjustment methodologies for facilitating stakeholder agreement on the impact of location factors.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(EST-4824) Ontology of Cost Databases from Project Actuals to Structure Rail Infrastructure Data for Intelligent Estimating

Skill Level: Intermediate
TCM Section(s): 7.3. Cost Estimating and Budgeting 3.2. Asset Planning
Author(s)/Presenter(s):
Vishwambhara Kumbharathi, CEP PSP *Amtrak*
Patrick Stears *Amtrak*
Varun Shah *Amtrak*

Abstract: In rail infrastructure sector the projects are capital intensive and with billions spent annually on infrastructure maintenance and upgrades across United States it is important to leverage insights from historical data and project actuals. Rail infrastructure projects generate vast amounts of cost data during execution, yet much of the information remains underutilized because of inconsistent structures or data siloed systems. This paper introduces the development of a structured, semantic framework (cost ontology) for organizing and interpreting actualized project data.

By defining classes such as labor, equipment, materials, activities, and assets, in conjunction with modeling their relationships and contextual attributes, ontology transforms fragmented records into a machine-readable knowledge base.

The ontology enables consistent [SP1.1][KV1.2]classification, benchmarking, and analytics through the process of mapping relationships between cost elements, construction activities, assets (e.g., track, signaling, stations), and contextual factors (e.g., night work, access restrictions), With the use of historical data, this paper will outline a methodology for building and evolving such a cost database ontology, including data extraction from project records and normalization strategies.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(EST-4831) Extending AACE Estimate Classification to the Micro Level: A Pressure Vessel-Focused Exploration

Skill Level: Intermediate
TCM Section(s): 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Atiq Akbar Shaikh *BP*

Abstract: AACE International's recommended practices (RPs) such as RP 17R 97, Cost Estimate Classification System, and RP 18R 97, Cost Estimate Classification System – As Applied in Engineering, Procurement, and Construction for the Process Industries, establish cost estimate classification frameworks at an industry wide (macro) level, with technical definition maturity as the primary determinant of estimate class. While these RPs provide comprehensive guidance for process industries as a whole, they do not expand in detail on how estimate classification principles apply to specific micro level components within that broader ecosystem.

This paper explores that gap by examining pressure vessels, one subset of process equipment, to demonstrate how select engineering deliverables from the RP 18R 97 estimate input checklist and maturity matrix directly influence cost outcomes. In doing so, the paper proposes a conceptual micro level methodology for extending estimate classification thinking deeper into individual equipment categories. The intent is to stimulate discussion on whether AACE's existing RPs could evolve to include more granular engineering deliverables and maturity criteria for process equipment, thereby offering a more refined framework for estimating accuracy within highly specialized segments of process industry projects.

This paper identifies different technical parameters that impact the cost of pressure vessels, and which engineering deliverable decides the value of technical parameter. At the end of this paper, the readers will have a better understanding of how engineering deliverables impact project costs, and how the engagement with various cross-functional teams is important for forecasting overall project costs.

(EST-4834) From Guesswork to Governance: A Structured Approach to Professional Service

Skill Level: Intermediate
TCM Section(s): 10.1. Project Performance Assessment 10.4. Project Historical Database Management
Author(s)/Presenter(s):
Dr. Ali Montaser, PEng CCP EVP PSP *Accenture*
Marc Anthony, PEng *Bechtel Mining and Metals*

Abstract: Professional services (PS) for mega-projects/programs often rely on legacy norms or consultant-driven assumptions that lack transparency and scalability. Such practices create inefficiencies, cost overruns, and governance gaps in resource allocation. This paper introduces a structured methodology to benchmark and govern PS staffing, addressing the persistent challenge of determining the "sweet spot" between under-resourcing and over-resourcing. The study utilizes the Federal Transit Administration (FTA) public cost database of over 60 rail and transit projects, supplemented by comparative analyses of international projects and programs. Professional services ratios were benchmarked against global norms and correlated with project attributes such as budget, delivery model, risk profile, and phase of work. Statistical comparisons were applied to test consistency.

Results show that staffing ratios scale predictably with project size and complexity but diverge significantly under certain delivery models. The structured methodology provides a governance framework for estimating, validating, and adjusting PS resources, offering organizations a replicable way to align staffing with project attributes. Evidence-based ratios improve fiscal accountability, enhance predictability, and reduce reliance on ad hoc assumptions, enabling more disciplined and efficient delivery of capital projects/programs.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(EST-4840) Parametric vs. ANN Estimation of Preconstruction Effort for Pavement Rehabilitation

Skill Level: Intermediate
TCM Section(s): 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Dr. Nigel Blampied *San José State University*
Dr. Tariq Shehab *California State University, Long Beach*
Dr. Elhami B. Nasr *California State University, Long Beach*
Laxmi Sindhu Samudrala *San José State University*

Abstract: All highway agencies rehabilitate their pavement at regular intervals to counteract pavement deterioration. They need reliable cost estimates to forecast rehabilitation costs and manage those costs throughout the project development process. Several models have been developed to assist in estimating, but they focus on the construction phase. This article presents additive exponential, linear, and multiplicative exponential parametric regression models for estimating the preconstruction cost on highway pavement rehabilitation projects and compares them with prior artificial neural network (ANN) models for the same data set. The dataset is provided by the California Department of Transportation (Caltrans) and is available for public use. This research is also contractually funded by Cal State, and the State of California. It reaffirms findings that ANN models generally provide a better fit than parametric models for conceptual cost estimating based on two studies. It also finds that regression can provide a good fit and has some practical advantages. The research is not only unusual in focusing on preconstruction costs, but also in comparing all three types of parametric model, since most work on parametric estimates has considered only linear regression models. In addition to providing Caltrans with tools to manage its costs, this study provides an example that may be more widely applied on other project types and by other agencies. The projects data utilized in this study is available for public use.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(EST-4859) Lang Factor (Part 1): An Evidence Based Understanding and Use of a Controversial Tool for Estimating

Skill Level: Advanced
TCM Section(s): 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Christopher L. Kinney *ESTIMATEUR LLC*
John G. McConville, CCP *COMPASS International*
Roger Farish, PE *ROMAN Consulting Group*

Abstract: The Lang factor, introduced in 1947, remains widely referenced by cost estimators, engineers, and project professionals as a rapid method for generating process plant cost estimates. Hans J. Lang proposed a cost model applying a multi-discipline cost assembly factor to major industrial process equipment, including compressors, pumps, vessels, and heat exchangers, to approximate total plant costs, supported by charts of labor and material relationships. He acknowledged that his factors were based on limited data and were intended to be "somewhat more dependable than an outright guess." Importantly, the outside battery limits scope represented in his work does not reflect the comprehensiveness of modern greenfield facilities.

Since Lang's original publications, numerous authors have proposed alternative multipliers, often ranging from two-thirds to twice Lang's values. Even today, sources such as Google AI Overview and Wikipedia present inconsistent definitions of the Lang factor. Meanwhile, construction practices have changed significantly. Cost indices show that overall plant costs have increased nearly eightfold since 1947, while the equipment-to-total cost ratio has declined by approximately thirty percent, making early multipliers unreliable.

AACE International currently recognizes Lang-type factoring methods for Class 5 process plant estimates with characteristic accuracy ranges of minus fifty percent to plus one hundred percent. This paper reviews published Lang-type models, evaluates their continued relevance for modern projects, and provides practitioners with an evidence-based understanding of the limits of the traditional Lang factor and guidance on when its use is no longer credible in modern Class 5 estimating. This is the first in a two-part series. Part 2 builds on these findings to explore enhancements needed for credible use in modern Class 5 estimating.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(EST-4860) Lang Factor (Part 2): A Framework for Supplementing Equipment Factored Estimates (EFE)

Skill Level: Advanced
TCM Section(s): 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Christopher L. Kinney *ESTIMATEUR LLC*
John G. McConville, CCP *COMPASS International*
Roger Farish, PE *ROMAN Consulting Group*

Abstract: This presentation explores enhancements needed to develop credible Class 5 estimates for modern industrial process plants, extending traditional Lang-type factoring methods to address the full spectrum of project costs.

The discussion begins with the role of AACE International's Recommended Practice 18R-97, Cost Estimate Classification System for the Process Industries, as a framework for evaluating factored estimates. Attention is given to the essential elements of an effective estimate plan, including required deliverables and their maturity. Tools such as a prioritized business strategy checklist, comprehensive scope-of-work checklists, estimating roadmaps, block flow diagrams, equipment P&ID sketches, and preliminary process equipment specifications are introduced to illustrate how a sound foundation improves estimate quality.

This presentation also addresses ISBL and OSBL considerations, adders required to close gaps in scope coverage, and the development of the estimate basis document necessary to capture methodology, assumptions, escalation, contingency, and accuracy range. It concludes with a mockup of a comprehensive Class 5 hybrid parametric/equipment-factored estimate for a typical U.S. Gulf Coast greenfield specialty chemical plant. This example demonstrates how factored estimating, when supplemented with additional cost components, can support credible and defensible early estimates

This presentation offers practitioners a framework for supplementing factored estimates with additional scope and cost components, enabling the rapid development of credible and defensible Class 5 estimates.

This is the second in a two-part series. Part 1 reviewed the origins and limitations of Lang-type factors; Part 2 builds on those findings to demonstrate their appropriate application in modern Class 5 estimating.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(EST-4879) AACE Cost Estimation Guidelines Applied to the Development of a New Product for the Energy Market

Skill Level: Intermediate
TCM Section(s): 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Giancarlo Magni *Baker Hughes*
Francesco Pescatori *Baker Hughes*
Marco Mandolini *Università Politecnica Delle Marche*
Nour Cherif Benmaza *Università Politecnica Delle Marche*
Giulio Marcello Lo Presti *Baker Hughes*

Abstract: Baker Hughes is an energy technology company that deploys advanced technologies to serve energy and industrial companies. A structured process is in place to develop new products for the Energy market, with sequential design stages from conceptual design through commercialization and mandatory review points throughout program development.

Each design stage requires the capability to estimate the future cost of the product under development, to provide an expected accuracy range, and to specify the level of confidence in cost estimates, using reliable estimating methods. The accuracy of cost estimates is expected to increase as the program progresses.

A new internal procedure has been released in the Baker Hughes Industrial & Energy Technology (IET) segment to guide the preparation of cost estimates. It incorporates AACE guidelines on cost estimate classification and introduces an accuracy range based on both the level of design definition and the novelty of the newly designed product.

A cost risk analysis approach has been introduced to move from point cost estimates to statistical cost distributions and quantify the risk associated with cost estimates.

To support cost engineers throughout the cost assessment of new products, Baker Hughes has developed a software tool, the Digital Value Tool (DVT), designed to manage and optimize the full process, ensuring consistency and repeatability.

The paper describes how AACE Cost Engineering guidelines have been applied in the Baker Hughes IET segment and included in the DVT software, to support the development of new products

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(EST-4897) Smarter Estimates Start Here: Using QRA and Classification Strategies that Deliver Clarity and Control

Skill Level: Intermediate
TCM Section(s): 7.3. Cost Estimating and Budgeting 7.6. Risk Management
Author(s)/Presenter(s):
Shoshanna C. Fraizinger, CCP FAACE *SCFI Strategic Solutions*
Larry R. Dysert, CCP CEP DRMP FAACE Hon. Life *Conquest Consulting Group*

Abstract: This paper reinforces the critical importance of integrating quantitative risk analysis (QRA) into estimate development, particularly when establishing contingency and accurately communicating cost estimate accuracy. As emphasized in AACE's Professional Guidance Document 02, single-point estimates without QRA often lack credibility and fail to reflect the true extent of cost and schedule risk exposure.

This paper reviews fit-for-purpose QRA methodologies, with practical guidance on selecting the appropriate techniques based on project scope, phase, and complexity. In addition, the paper addresses the common need to apply multiple AACE estimate classification RPs within a single project. Complex capital programs, such as those involving rail and transit, frequently encompass distinct components (e.g., vertical infrastructure governed by 56R-08 and transit systems addressed by 98R-18). This necessitates a segmented classification strategy, consistent with the flexibility and context-driven estimate structuring advocated in AACE's Professional Guidance Document No. 01.

Finally, the paper explores strategies for clear, risk-informed communication of estimate results to project stakeholders. Misinterpreting or oversimplifying estimate accuracy can lead to flawed decisions and misaligned expectations. Drawing on guidance from RP 104R-19, the paper presents actionable approaches for effectively conveying the accuracy, uncertainty, and limitations of an estimate to non-technical and executive audiences.

Together, these themes advance a more rigorous, risk-aware, and stakeholder-aligned estimating practice, consistent with the principles of AACE's Total Cost Management framework.

(EST-4914) Quantity-Based Metrics for Benchmarking Capital Projects

Skill Level: Intermediate
TCM Section(s): 7.3. Cost Estimating and Budgeting 3.3. Investment Decision Making
Author(s)/Presenter(s):
Yuteck Chuong, PE CCP *Kiewit*

Abstract: Project benchmarking is a powerful tool of estimating which aims to improve project performance through a systematic approach. It is used to validate the estimate, compare with internal and external similar projects, identify variance, detect and analyze trends.

There are different levels of metrics that are applicable at different project stage gates. The quantity-based metrics are used primarily at FEL 3 gate before the final investment decision (FID). Construction productivity and engineering productivity metrics at the discipline level are the main quantity-based metrics.

The keys to successfully deploying quantity-based metrics are knowing the project scope, using a common cost breakdown structure (CBS), and having a project historical database.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(EST-4919) Escalation and Volatility in Project Cost Forecasting: Practical Strategies in an Unstable Market

Skill Level: Intermediate
TCM Section(s): 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Jigar Thakkar *Exponent*
Matthew Grant, PE *Exponent*
Roger Farish, PE *ROMAN Consulting Group*

Abstract: Construction markets are experiencing elevated cost volatility driven by material price fluctuations, skilled labor shortages, supply chain disruptions, and trade related uncertainty. Traditional escalation approaches that rely on simplified rates or long term averages are increasingly insufficient under these conditions, contributing to budget overruns, contractual misalignment, and reduced forecast reliability. This paper examines escalation as a time dependent, market driven risk and discusses practical strategies for improving project cost forecasting in unstable market environments. A risk based escalation framework is presented that emphasizes cost category specific escalation, schedule coupled modeling, and scenario based estimating to better reflect exposure to volatility in materials and labor. The paper also discusses the role of contractual mechanisms, including index linked pricing and economic price adjustment provisions, in aligning escalation assumptions with commercial risk allocation. Practical application considerations and an illustrative project example are included to support implementation without prescribing a rigid methodology. The paper concludes by highlighting the importance of governance and ongoing monitoring to ensure escalation assumptions remain aligned with evolving market conditions throughout the project lifecycle.

(EST-4949) The Intersection of Model Based Systems Engineering (MBSE) and Cost Estimating

Skill Level: Intermediate
TCM Section(s): 3.2. Asset Planning 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Stephen Koellner *Augur Consulting*
Daniel Larison *Augur Consulting*

Abstract: Model based systems engineering (MBSE), and more broadly digital engineering, is becoming a more widely adopted practice within federal/defense acquisition. The motivations behind this adoption are to produce more effectively engineered systems and reduce the likelihood of costly rework in the later stages of system design and integration. Cost estimators and other project control professionals are most effective when fully integrated within the overarching systems engineering & project management (SEPM) team. What do MBSE and project control practitioners have in common? The answer is that both are interdisciplinary professionals with significant overlap in goals and processes. An unfortunate reality is that neither is regularly well-integrated with the other, despite the many philosophical and procedural commonalities. Through this topic, a sample case study based upon a fictional program and selected projects will be presented to illustrate how these skillsets can operate in conjunction to produce more accurate and credible cost estimates as well as more dynamic and rapid evaluation of architecture/design alternatives.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(EST-4967) Factored Estimating for Emerging Technologies: Leveraging Carbon Capture Industry Experience for Early-Stage Cost Estimation

Skill Level: Intermediate
TCM Section(s): 7.3. Cost Estimating and Budgeting 3.3. Investment Decision Making
Author(s)/Presenter(s):
Jordan J. Beckel, CCP CEP *Svante*

Abstract: Projects involving new technologies present additional challenges during early-stage cost estimation. Early-stage estimates often rely on historical project cost data—but what happens when such data doesn't exist because the project incorporates novel technologies or processes?

Early-stage cost estimation is a critical component of project planning, particularly in industries adopting emerging or unproven technologies. Traditional early stage estimating methods depend on historical cost data and well-established benchmarks. However, when such data is unavailable, especially for projects involving novel equipment or process, estimators must utilize multiple approaches. One such method is equipment-factored estimating, which uses known or estimated equipment costs and associated factors to project total installed costs for standard equipment types, while applying semi-detailed estimating techniques for new or unique equipment.

This paper explores the unique challenges of applying equipment-factored estimating in early project phases where technology maturity is low and data scarcity is high. Key issues include uncertainty in equipment costs for new technologies and the difficulty of applying historical factors to unfamiliar systems. Drawing on experience from the carbon capture industry, the paper outlines practical strategies to improve estimate reliability.

By addressing these challenges and offering structured guidance, this paper aims to support project teams in generating early stage estimates for technologically innovative projects.

(EST-4971) Demystifying Estimate Accuracy: Misuse of AACE Recommended Practices in the Process Industry

Skill Level: Intermediate
TCM Section(s): 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Martin R. Darley, CCP FAACE *Independent Consultant*

Abstract: AACE International's recommended practices (RPs) are foundational tools for cost engineers and estimators, yet they are frequently misquoted or misapplied—particularly within the process industry. The paper will examine key RPs such as 18R-97, Cost Estimate Classification System – As Applied in Engineering, Procurement, and Construction for the Process Industries and 104R-19, Communicating Expected Estimate Accuracy, highlighting common pitfalls in their interpretation and implementation. The paper will show how estimate accuracy should be communicated across project phases and stakeholder groups. Failure to make this distinction continues to erode estimate credibility, distort capital decision-making, and undermine governance across the project lifecycle. The paper will also address the perennial question: How accurate can an estimate truly be? By unpacking the nuances of estimate classification, contingency, and risk, reader will gain actionable insights to improve transparency, credibility, and decision-making in their estimating practices, including FEL maturity and benchmarking analytics and reference to the en vogue application of AI.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(EST-4988) Using Installation Work Packages (IWPs) To Produce Detailed and Accurate Estimates

Skill Level: Basic
TCM Section(s): 7.3. Cost Estimating and Budgeting 7.2. Schedule Planning and Development
Author(s)/Presenter(s):
Bryce J. Daniels, PSP *Ankura Consulting Group*

Abstract: Construction cost estimates predict future costs as result of taking on a specific construction endeavor. Having a comprehensive understanding of work to perform is not only a minimum prerequisite during estimate development, it is a leading contributor to estimate accuracy. An effective approach to enhance the quality of an estimate can be achieved through review of the installation work package (IWP). A thorough review of the IWP allows the estimator(s) to conceptualize the intricacies of the work scope. This paper explains how conceptualizing the planned construction work through IWP review strengthens the estimator's understanding of construction work nuances and unleashes enhanced estimate detail and accuracy.

Although construction cost estimates are a prediction of forecasted costs, estimates are sometimes found to be within acceptable range of later-received contractor bid amounts. Despite this, construction cost estimates are not a guarantee of, nor synonymous with, actual costs incurred and therefore, forecasted cost and actual cost concepts should never be conflated. Whether one is an entry-level estimator or one with more than 10 years of experience, this technical paper will provide guidance on how to apply effective techniques in the development of high-quality estimates.

(EST-4993) AI-Aware Influences on Cost Estimate Maturity

Skill Level: Intermediate
TCM Section(s): 7.3. Cost Estimating and Budgeting 7.6. Risk Management
Author(s)/Presenter(s):
Vishwambhara Kumbharathi, CEP PSP *Amtrak*
Saumil H. Maniar, PE *PMA Consultants, LLC*

Abstract: AACE International's Cost Estimate Classification System aligns estimate purpose with project maturity to support stage-gate decisions. Estimates traditionally progress from Class 5 to Class 1 as scope definition, engineering detail, and cost data increase, with accuracy refined through risk analysis and documented in the basis of estimate.

The growing use of artificial intelligence is transforming this process. Applications such as automated quantity extraction, machine learning–based parametric modeling, and real-time probabilistic analysis can accelerate estimate maturity and provide continuous confidence updates. However, they also introduce challenges related to data integrity, model reliability, and transparency that must be addressed to maintain credibility.

This paper examines how AI may influence the classification of estimates and decision-making practices. It proposes an "AI-aware" framework with three dimensions: information fitness index (IFI), model risk grade (MRG), and automation level (AL) to integrate AI while preserving governance, accountability, and decision confidence.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(EST-4999) Risk Tolerance, Not Risk Exposure: Why Contingency Estimates Rarely Reflect True Uncertainty

Skill Level: Basic
TCM Section(s): 7.6. Risk Management 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Luke M. Wallace *Independent Project Analysis*
Elijah S. Moretti *Independent Project Analysis*

Abstract: Despite the established methodology of AACE International's (AACE's) estimate classification system and associated target accuracy ranges, numerous projects classified as "Class 3" [1] experience deviations exceeding anticipated accuracy ranges. A central problem identified is that contingency estimates consistently fail to adequately address common risks, such as project size, complexity, and definition gaps. While estimate classification is often misapplied, Independent Project Analysis Inc's (IPA's) research demonstrates that even with the appropriate classification, contingency remains insufficiently adjusted to account for these underlying circumstances. Analysis of data from IPA's database reveals a statistically significant correlation between these risks and the errant contingency estimates. This investigation highlights the need for estimators to apply risk-driven quantitative risk analysis (QRA) that rigorously assesses and quantifies these broader risks to ensure that the contingency derived from the QRA accurately reflects the true uncertainty in their projects. At a minimum, contingency estimates can be validated just like any other estimate item.

The investigation also highlights a potentially bigger issue—that businesses are often unaccepting of the true risk profile of a project when that risk is too high for the economics to work. This behavior is perfectly rational, but it places estimators in an impossible situation. Artificial limits on contingency do nothing to prevent risk occurrence, they simply mask it, and in the long run, businesses lose anyway. The challenge for estimators is to find a way to convey the real nature of the uncertainty to their businesses. While all projects have at least some degree of uniqueness, empirical data is still the most effective communicator.

This research provides a foundational understanding of the status of industry QRA and resultant contingency estimates and recommendations that QRA methods incorporate the study of empirical risks.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(EVM-4772) Leveraging Earned Value Management to Support Causation Analysis in Project Disruptions

Skill Level: Intermediate
TCM Section(s): 6.4. Forensic Performance Assessment 9.2. Progress and Performance Measurement
Author(s)/Presenter(s):
Dr. Hatem Ibrahim, PE *Delta Consulting Group, Inc.*
Khaled M. Aziza, EVP PSP *Delta Consulting Group, Inc.*
Suleiman Al Rai, PE PSP *Delta Consulting Group, Inc.*

Abstract: Project disruptions that lead to out-of-sequence work, acceleration, and rework frequently impact labor productivity and pose challenges to schedule performance and cost control, often escalating to disputes that require a robust causation analysis. Earned value management (EVM) can support such analyses as it provides performance metrics that serve as contemporaneous indicators of efficiency loss, allowing for the correlation of productivity declines with disruptive events. While EVM depends on reliable baseline data and cannot fully capture qualitative factors, when combined with other forensic methods, it remains a powerful and defensible tool for supporting disruption claims and converting performance data into persuasive evidence of causation.

This paper examines how EVM can be leveraged as a forensic framework to support such causation analysis and outlines a practical framework to demonstrate cause-and-effect linkages. Case examples illustrate the application of this approach on projects, showing how disruption windows were identified and linked to documented events utilizing EVM metrics.

(EVM-4775) Earned Time Management: A Stand-Alone Alternative to EVM for Schedule Management

Skill Level: Advanced
TCM Section(s): 9.2. Progress and Performance Measurement 10.1. Project Performance Assessment
Author(s)/Presenter(s):
Dr. Prasad S. Kodukula *Illinois Tech*

Abstract: Accurate measurement of schedule performance remains a persistent challenge in project control. Traditional earned value management integrates cost and schedule, but its schedule performance index is cost-derived, can distort true time performance, and converges to 1.0 near project completion, limiting its forecasting usefulness. Earned schedule expresses schedule performance in time units but still relies on cost-based constructs such as planned value and earned value and is typically applied at aggregate levels. Earned duration management removes cost dependence but does not fully integrate network logic or critical-path–driven forecasting.

This paper introduces earned time management (ETM), a task-level, network-based approach that measures schedule performance entirely in time units using baseline task durations and reported progress. ETM evaluates schedule efficiency as the ratio of earned time to actual time and extends naturally from tasks to paths, including the controlling critical path at any status date. It supports finish-to-start, start-to-start, finish-to-finish, and start-to-finish relationships, including lags and leads, and enables path-based forecasting of project completion. Relying solely on schedule data, ETM is transparent, practical, and readily implementable in standard scheduling tools, with terminology and formulations aligned with EVM to facilitate seamless adoption by project control professionals.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(EVM-4799) Don't Roll the Dice, Choose the Right EVT to Measure Project Success

Skill Level: Basic
TCM Section(s): 2.4. Project Control Process Map 6.1. Asset Performance Assessment
Author(s)/Presenter(s):
Paula M. Ellsworth, EVP *Parsons Corporation*
James D. Vervilos, CCP EVP PRMP PSP *Parsons Corporation*

Abstract: When push comes to shove, a fixed formula earned value technique (EVT) fails to provide the true status on how well a WBS element or series of activities is performing. Several fixed formula concepts exist in popular EIA EVMS nomenclature. The one this paper focuses on, yet not excluding the effects of the others, is the 50-50. This method is a gamble and only right prior to the start of the activity, at the exact monetary midpoint of effort (no way to tell when this occurs through) and at the end when final assessment of the remaining 50% is allocated. This effort does not earn the performance. Further discuss the pros, cons, and managerial fallacies associated with this ill-advised method. The challenges will be exposed, and promote more accurate methods utilizing percent complete, QBDs or steps. Proper earned value is predicated upon a realistic initial plan, proper resource management, regular status, and recovery where variance thresholds are exceeded. It tells management how well one is doing, or not doing, and where help is needed, at every step in time from initiation through completion. Under the 50 50 method, one can truly go way off track quickly. The 0-100 method is like a milestone having duration, with no EV, CPI, nor SPI until It's done. What seems to be an up-front convention to make planning easier and remove the burden of performance assessment becomes a recipe for disaster on longer duration activities. The authors advocate for moving away from fixed formula to physical scope measurement.

(EVM-4820) Reviving Earned Value Management: From Illusion to Insight

Skill Level: Intermediate
TCM Section(s): 2.4. Project Control Process Map 9.2. Progress and Performance Measurement
Author(s)/Presenter(s):
Jessica Edwards *Brindley Engineering*

Abstract: Earned value management (EVM) is widely recognized as a foundation in project controls methodology intended to integrate scope, schedule, and cost to support objective performance measurement and informed decision-making. While EVM theory is still considered sound, it's a practical application that has many times drifted from its original purpose. Increasingly, EVM systems are over-instrumented, rigidly standardized, and refined for compliance rather than insight. This paper explores how EVM implementations can lose their decision-support functionality and be reduced to administrative exercises focused on simply feeding software and satisfying reporting requirements. Through a detailed real-world reporting example, this paper demonstrates how excessive granularity, misaligned incentives, and tool-driven behavior erode the meaning of earned value metrics. The conclusion of the paper provides recommendations for restoring EVM's purpose by refocusing systems on material drivers, management questions, and actionable insight.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(EVM-4873) Bridging EVM Quality Blindness: Integrating Risk Indicators for Better Performance Assessment

Skill Level: Advanced
TCM Section(s): 9.2. Progress and Performance Measurement 7.6. Risk Management
Author(s)/Presenter(s):
Dr. Ashraf Salem, PEng *WSP*
Reham Botros, PEng *WSP*

Abstract: Project performance assessment has conventionally depended on earned value management (EVM) to evaluate cost and schedule efficiency. While EVM provides valuable insights into project progress, it is often criticized for its blindness to the quality of work performed. This limitation poses substantial risks, as projects may appear healthy and successful in terms of cost and schedule performance while including inherent defects or rework requirements. This paper argues that EVM's quantitative focus on cost and schedule can hide underlying quality-related issues, leading to potentially misleading project health indicators. This paper examines the intersection between project risk management and the shortcomings of EVM in capturing quality performance. It explores how risks associated with poor quality, hidden defects, and inadequate workmanship can misrepresent earned value indicators, leading to misleading conclusions about project health. Through conceptual analysis and case-based evidence, the paper highlights how integrating quality-driven risk indicators into EVM frameworks can provide a more holistic view of project performance. The proposed approach highlights linking risk registers with earned value metrics to account for quality-related uncertainties, consequently reducing the gap between reported progress and actual project outcomes. By addressing EVM's quality blindness, this research contributes to more reliable decision-making, proactive risk mitigation, and sustainable project success.

(EVM-4930) The Key to Earned Value Management Success – The Control Account Manager

Skill Level: Intermediate
TCM Section(s): 2.4. Project Control Process Map 8.1. Project Control Plan Implementation
Author(s)/Presenter(s):
Kyle Palmer, CCP EVP PRMP *K2 Inc.*
Dan Melamed, CCP EVP FAACE *US Department of Energy*

Abstract: Successful earned value management (EVM) fundamentally depends on people. At the core of EVM is the control account manager (CAM), the individual responsible for transforming EVM data into meaningful project decisions. This paper explores how strengthening the role of CAMs can improve the reliability and impact of EVM, which ultimately leads to better project performance.

Systemic project issues such as vague role definitions, weak scope, schedule, and cost alignment can undermine the ability of the CAM to perform. Conversely, organizations that establish well-defined CAM responsibilities along with disciplined integration across scope, schedule, and cost better position their projects for success. This structured alignment fosters ownership and accountability of work scope and supports proactive variance analysis and corrective action implementation. By emphasizing the CAM's role as a driver of project success rather than an administrative obligation, this paper offers a fresh perspective for organizations seeking higher EVM maturity resulting in more reliable positive project outcomes.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(EVM-4984) High Schedule Total Float May be an Ineffective Management Process

Skill Level: Intermediate
TCM Section(s): 9.2. Progress and Performance Measurement 10.1. Project Performance Assessment
Author(s)/Presenter(s):
Robert C. Loop, EVP PSP *EVMS Support Services*
Ramon J. Torres Guzman, PSP *Draper and Associates*

Abstract: Total float is defined as the amount of time in workdays between the activity and the longest/critical path. Most US federal government owners define high total float between 44 days and 10% of remaining duration. The reason for this is as activities are more distant from the critical path, they project critical path may not flex with status. Normally it is expected that the critical path changes over the life of the project. When total float is excessive over these thresholds it can also mask performance issues. This paper will examine two projects with excessive total float. 10% is the typical total float threshold and for excessively the paper is using greater than 50% total float in excess. Both projects had excessive cost growth, and the reader will see the management impact of the total float. The premise is the high levels of schedule total float can mask true performance and should be avoided. The paper will discuss the logical bases for the thresholds and soundness of the schedule theory. It will end with best practices of managing with schedule float. The principles will apply to all projects using float to manage.

(EVM-4998) Self-Assessment Maturity Model for Earned Value Management

Skill Level: Basic
TCM Section(s): 2.4. Project Control Process Map 10.1. Project Performance Assessment
Author(s)/Presenter(s):
Dr. Sarmad Kiani, CCP EVP PSP *Toronto Transit Commission*
Ernesto Llorens, CCP *Toronto Transit Commission*

Abstract: This paper develops a practical self-assessment maturity model, SAMM-EVM, for organizations implementing earned value management (EVM) systems within project controls. The model provides a structured, verifiable method for assessing EVMS implementation quality.

SAMM-EVM is structured around the universal plan-do-check-act (PDCA) continuous improvement cycle, organizing core EVM processes into four distinct phases: Planning & Establishing Baseline (P); Actuals Recording & Performance Measurement (D); Variance Analysis & Internal Performance Reporting (C); and Managing Project Changes & Reporting Management Decisions (A). This PDCA-aligned lifecycle enables granular phased measurement of maturity within each stage, and the framework is robustly mapped to standards including EIA-748 , DOE CAG , DOD EVMSIG , and AACE TCM .

The model utilizes a dual-dimension assessment where organizational maturity is assessed at the process level using generic process indicators, and project maturity is assessed at the attribute level, quantifying technical compliance and rigor. Both organizational and project assessments leverage a detailed validated five-level maturity framework. This comprehensive approach provides management with granular, actionable intelligence that correlates EVMS capability directly to improved project performance outcomes across the entire project lifecycle, designed for total cost management professionals.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(IND-5023) Industry Showcase

Author(s)/Presenter(s):
TBD

Abstract: TBD

(IND-5024) Industry Showcase

Author(s)/Presenter(s):
TBD

Abstract: TBD

(IND-5025) Industry Showcase

Author(s)/Presenter(s):
TBD

Abstract: TBD

(IND-5026) Industry Showcase

Author(s)/Presenter(s):
TBD

Abstract: TBD

(IND-5027) Industry Showcase

Author(s)/Presenter(s):
TBD

Abstract: TBD

(IND-5028) Industry Showcase

Author(s)/Presenter(s):
TBD

Abstract: TBD

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(IND-5029) Industry Showcase

Author(s)/Presenter(s):
TBD

Abstract: TBD

(IND-5030) Industry Showcase

Author(s)/Presenter(s):
TBD

Abstract: TBD

(IND-5031) Industry Showcase

Author(s)/Presenter(s):
TBD

Abstract: TBD

(IND-5032) Industry Showcase

Author(s)/Presenter(s):
TBD

Abstract: TBD

(IND-5033) Industry Showcase

Author(s)/Presenter(s):
TBD

Abstract: TBD

(IND-5034) Industry Showcase

Author(s)/Presenter(s):
TBD

Abstract: TBD

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(OTH-4846) (Presentation Only) Life Sciences Forum

Author(s)/Presenter(s):
Dr. Mirela Tsagkari, CEP *Boehringer Ingelheim International GmbH*

Abstract: TBD

(OTH-4847) (Panel Discussion by the Power Forum) Do We Still Need a PMO?

Author(s)/Presenter(s):
Eric Vyskocil *Laurentis Energy Partners*
Sedat Akkaya *Hydro One Networks Inc.*

Abstract: The project management office (PMO) or project management center of excellence (PMCOE) is a department commonly established in many organizations to assist it in executing projects efficiently and successfully under standardized processes. The structure and responsibilities may vary depending on the size and nature of the organization and the projects that it executes. Despite the similarities in the types of projects executed by organizations in the power generation, transmission and distribution, there are significant differences across them when it comes to how or if they have established a centralized PMO and the responsibilities it shoulders.

With the number of projects either ongoing or planned to increase electricity generation , transmission and distribution, there is an urgent need for the industry to demonstrate its ability to deliver them successfully. Does the PMO still hold a critical role in this or are there other, better ways to deliver successful projects? And if it is still needed, what should its structure and responsibilities be?

(OTH-4848) (Panel Discussion by the Transit Forum) From High Speed to Light Rail: Project Controls Considerations Across the Spectrum of Transit Projects

Author(s)/Presenter(s):
Ghaith Al-Hiyari, CCP *Turner & Townsend*

Abstract: TBD

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(OWN-4776) Scalable Project Controls Framework for Owners: Quick Wins to Strengthen Cost, Schedule, and Risk Management

Skill Level: Intermediate
TCM Section(s): 8.1. Project Control Plan Implementation 9.2. Progress and Performance Measurement
Author(s)/Presenter(s):
Glauber Francisco Alves *Yara International*

Abstract: Owner organizations in capital projects often face unique challenges in establishing strong cost and schedule controls early, particularly when relying on diverse contractors and joint ventures, while also operating under strict budget and resource constraints. This paper presents a practical case study demonstrating how widely available tools, such as SharePoint, Power Automate, Planner, and Lists, can be leveraged by owner teams to implement a scalable project controls framework without heavy custom systems or large external support.

The approach starts by putting structure around the basics: a clear project controls plan, standard registers, consistent data fields, and simple governance routines that make status and ownership visible. With a reliable SharePoint-based database in place, the team then used automation to reduce manual follow-up and improve consistency in reporting and escalations.

(OWN-4782) On the Development of a Pharmaceuticals Owner's Cost Estimation Framework Using a Systems Approach

Skill Level: Intermediate
TCM Section(s): 7.3. Cost Estimating and Budgeting
Author(s)/Presenter(s):
Dr. Mirela Tsagkari, CEP *Boehringer Ingelheim*

Abstract: In 2022 a major pharmaceuticals owner company faced a growing capital projects portfolio which compelled the adoption of the front-end loading system for optimal planning and design. Cost estimation was then introduced as an integral activity with dedicated requirements, estimation processes and methods within CapEx management to ensure consistent investment decisions. Given the complexity and the variability of the capital assets, a systems approach was adopted to develop an overall cost estimation framework through front-end planning phases across capital projects on a global basis. The paper demonstrates the roadmap to establishing a cost estimation culture with associated activities and deliverables within project execution, as well as the development of the estimate validation systems to review estimate quality specific to pharmaceutical capital projects. The framework adopts a concurrent digitalized approach with AI-assisted cost data collection, estimate data warehousing, interactive dashboards and CapEx KPI reports which are shared within and beyond the CapEx organisation, but align with the overall company digitalization strategy.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(OWN-4814) Railway Network Programs (Part 3 – Asset Management)

Skill Level: Advanced
TCM Section(s): 3.2. Asset Planning 2.3. Strategic Asset Management Process Map
Author(s)/Presenter(s):
Dr. Ali Montaser, PEng CCP EVP PSP *Accenture*
Marifran Mihura, PEng *Metrolinx*

Abstract: Modern railway network programs face growing pressure to deliver safe, reliable, and resilient service while managing aging, asset-intensive systems under constrained funding, limited access windows, and heightened regulatory scrutiny. This paper (Part 3 of the railway network programs series) examines asset management as a foundational capability for sustaining long-term railway performance and protecting capital investment. Building on the challenges and integration principles established in Parts 1 and 2, the paper positions asset management as a core program input rather than a post-construction activity.

The paper introduces a structured, lifecycle-based framework that integrates asset hierarchy, inventory management, asset assessment, obsolescence analysis, state of good repair (SOGR) evaluation, and prioritization to support more reliable and defensible capital planning. It underscores how deferred maintenance and fragmented asset information contribute to growing investment backlogs, elevated operational risks, and inefficiencies in whole-life asset costs. The paper also reviews regulatory and policy frameworks across North America, Europe, Australia, and Canada, illustrating the global transition toward performance-based, evidence-driven asset management and stewardship.

Drawing on international standards and real-world railway experience, the paper demonstrates how integrated asset management, supported by digital systems and project controls practices, enables defensible investment decisions, improved forecasting, and sustainable network outcomes. The paper provides practical guidance for aligning capital delivery with long-term asset stewardship in complex railway environments.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(OWN-4845) From Assessment to Action: The Expected Beneficial Life Approach

Skill Level: Intermediate
TCM Section(s): 3.2. Asset Planning 3.3. Investment Decision Making
Author(s)/Presenter(s):
Robert Coslett *Deloitte Transactions and Business Analytics LLP*
Justin Aird *Deloitte Transactions and Business Analytics LLP*
Eric Dembert *Deloitte Transactions and Business Analytics LLP*
Margaret Lucey *Deloitte Transactions and Business Analytics LLP*

Abstract: Aging infrastructure faces a significant crossroads as deferred maintenance, rising repair costs, and failing facilities threaten the reliability of real property. Facility management has long used condition indexes (CI) and facility condition indexes (FCI) to analyze infrastructure health, yet these metrics often fall short of providing actionable guidance, as evidenced by portfolio scores that dip below target ranges. This limitation is particularly pronounced in large, aging portfolios, where the complexity and scale of assets make it difficult to translate condition data into clear investment strategies. Asset management professionals encounter this uncertainty and inefficiency when prioritizing facility projects, resulting in deferred maintenance and suboptimal resource allocation. The need for decision-support tools is increasingly urgent as organizations strive to extend asset lifespans and control costs amid growing infrastructure challenges.

This paper introduces expected beneficial life (EBL) as a transformative concept for asset management decision-making. By leveraging existing data components used to create CI and FCI, EBL extends these data points to forecast the remaining years before a facility's costs surpass the cost to replace it, enabling organizations to improve data-driven decision-making. Implementation strategies and specific considerations are discussed to illustrate how EBL bridges the gap between assessment and action, and its usage. This approach may empower organizations to move beyond traditional CI, supporting more predictable costs and strategic planning for long-term asset longevity.

(OWN-4871) Owners' Role in Capital Project Success: From Excellence to Chaos

Skill Level: Basic
TCM Section(s): 3.1. Requirements Elicitation and Analysis 3.2. Asset Planning
Author(s)/Presenter(s):
Andre Augusto Choma *Deloitte Services LP*

Abstract: Capital and infrastructure projects play a critical role in driving business growth and improving societal well-being. Yet, despite their strategic importance, many owners continue to face cost overruns, schedule delays, and underperforming assets. The root causes are often linked to insufficient attention during the early development phases, where strategic alignment, scope definition, and governance should establish the foundation for success.

This paper examines common failure patterns observed in recent project assessments conducted by the author across industrial and infrastructure sectors. The analysis highlights how weak front-end loading (FEL), lack of stage-gate discipline, and inadequate owner decision-making contribute to lost value.

By contrasting successful and underperforming projects, the paper demonstrates how structured development, accountability, and governance improve predictability and outcomes. The technical content aims to equip owners with practical insights into closing maturity gaps, reducing risk exposure, and ensuring capital investments deliver the intended long-term value.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(OWN-4877) Business and Engineering Alignment for Capital Project Success

Skill Level: Basic
TCM Section(s): 3.2. Asset Planning 3.3. Investment Decision Making
Author(s)/Presenter(s):
Stephen L. Cabano, FAACE *Pathfinder, LLC*

Abstract: As capital projects grow in scale and complexity, aligning project and engineering decisions with the owner's business objectives has become more critical than ever. Too often, this alignment is overlooked early in the project lifecycle, leading to unrealistic expectations that project teams will intuitively make the "right" decisions—without a clear understanding of what the business is actually willing to invest in. This disconnect frequently results in unnecessary overdesign ("gold plating") or failure to meet key business goals.

To address this issue, many industry sectors have implemented structured front-end planning processes that facilitate early collaboration between business leaders, engineering, operations, and other key stakeholders. These processes help define and gain consensus on essential project attributes such as future expansion requirements, design life, maintenance and reliability philosophies, and other factors that directly influence business outcomes.

Recognizing this persistent gap across industries, the Construction Industry Institute (CII) has sponsored ongoing research to better define and institutionalize these alignment practices. This presentation will share recent CII findings and explore how improved early-stage alignment can drive both project and business success.

(OWN-4882) Redefining Project Success: An Owner-Centric Value Realization Framework

Skill Level: Intermediate
TCM Section(s): 3.3. Investment Decision Making 6.1. Asset Performance Assessment
Author(s)/Presenter(s):
Akinlolu (Akin) I. Oni, CCP *Eftex Group*

Abstract: In many capital-intensive industries - oil & gas, refining, mining, and IT - projects are hailed as “successful” when scope, schedule, and budget targets are met. Yet too often, these projects quietly fail to create sustainable value. Stakeholders are left with a troubling reality: the project was delivered, but the business case was denied.

This paper challenges conventional definitions of project success, extending the lens far beyond closeout to focus on enduring business and operational outcomes. Building on decades of owner’s project delivery leadership, across six continents, and evidence-based research - including insights from practitioner experience documented in ‘The Operation Was Successful, but the Patient Died’ [14] and aligned with AACE TCM Chapter 2.1 principles on total cost management processes, the author reveals why value erosion persists despite strong execution, and how to reverse the trend.

Readers will gain both a mindset shift and a practical roadmap for success that endures: robust front-end alignment, risk-informed governance, continuity of empowered teams, and post-handover performance assurance. The paper also introduces clear decision criteria, fit-for-purpose checklists, and frameworks that equip practitioners to define and measure success across the full lifecycle.

Readers will receive actionable tools to ensure projects evolve into operable, value-generating assets; thus transforming the focus from project management success to true business (project management and product) success.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(OWN-4885) Reducing the Costs of Conflicts in Design Documents in Theme Park Construction Projects

Skill Level: Intermediate
TCM Section(s): 7.6. Risk Management
Author(s)/Presenter(s):
Lan Zhang *Century 3 (Shanghai) Inc.*
Zhitao Fan *Century 3 (Shanghai) Inc.*
Yannan Chen *Century 3 (Shanghai) Inc.*

Abstract: At construction sites, general contractors may claim cost overruns attributed to design errors that are ultimately paid by the owner. Without careful control, projects can run over budget. However, no systematic model has been provided in the relevant literature to mitigate the cost impacts of design errors and the associated claims. This study begins with an analysis of contractors' claims arising from design errors. The authors then identify the most common causes of design errors and consider mitigation methods that could be implemented ahead of an actual claim as well as during and after a claim to develop a model to reduce the cost impacts of design errors and address possible errors systematically. The authors also report the results of a case study conducted to demonstrate the application of the model. The proposed approach can be implemented to assist project teams on behalf of developers to control costs within a specified budget.

(OWN-4916) (Panel Discussion) Organizational Readiness: How AACE and CII Can Transform Capital Project Success

Author(s)/Presenter(s):
Noé H. Saenz *Burns & McDonnell*
Michael P. Pappas *CII*
Stephen L. Cabano, FAACE *Pathfinder, LLC*
Michael Kobylka, II CAE *AACE International*

Abstract: Capital projects consistently fail not due to poor technical execution, but because organizations lack the readiness to effectively integrate front-end planning with project governance and controls implementation. Research shows that most capital project failures originate in boardroom decisions, not field execution, highlighting a critical gap in organizational preparedness. While the Construction Industry Institute (CII) has established robust front-end planning (FEP) methodologies and the Association for the Advancement of Cost Engineering (AACE) has developed comprehensive project control practices, these powerful tools often fail when applied by organizationally misaligned and unprepared teams. The missing link is organizational readiness - the foundation that enables effective integration between business and project planning, and controls implementation. This groundbreaking panel brings together industry experts familiar with the work of both AACE and CII to explore how organizational readiness assessment can bridge the gap between project governance and project controls systems. We will examine how readiness evaluation during front-end planning creates the organizational foundation necessary for effective stakeholder engagement, scheduling, cost management, estimating, and risk assessment throughout the project lifecycle. The session will include facilitated group exercises where attendees share their organizational readiness challenges and project experiences, enabling peer-to-peer learning and feedback for potential collaboration between AACE and CII.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(OWN-4921) Lessons Learned from a Large Scale PMIS Implementation Across a 4,000-User Organization

Skill Level: Intermediate
TCM Section(s): 4.1. Project Implementation 8.1. Project Control Plan Implementation
Author(s)/Presenter(s):
Francisco Cruz, PE CCP *PMA Consultants, LLC*
Ernesto Toxqui, EVP *PMA Consultants, LLC*
Daniel Posada *PMA Consultants, LLC*

Abstract: Project management information systems (PMIS) have emerged as critical enablers of efficiency and transparency in large organizations, yet their successful deployment remains fraught with technical, contractual, and organizational challenges. This paper draws on a comprehensive scope of work and examines the end-to-end implementation of a PMIS across an enterprise environment that encompasses over 4,000 concurrent licenses. The presented case study underscores the importance of rigorous gap analysis, clearly defined implementation requirements, and robust contracting frameworks. Early identification of process-to-software misalignments, addressed through iterative validation workshops, proved essential for curbing inadequate training alignment, communication gaps, poor data mapping, and adoption issues.

Launched under a hybrid waterfall-and-agile delivery model, the rollout encountered significant delays stemming from protracted contract negotiations, ambiguous service-level agreements, and vendor-management complexities. A multi-stage testing regimen that includes unit, system-integration, and mock-migration trials, uncovered critical defects in data-migration planning and application programming interface integrations prior to go-live. Performance benchmarking further highlighted the necessity of proactive scalability planning and close vendor oversight to address change-fatigue.

A series of lessons learned is presented: (1) embedding continuous gap assessment into governance structures to maintain alignment; (2) structuring contracts around milestone-based deliverables with explicit performance metrics; (3) investing in change-management and “train-the-trainer” programs to accelerate user adoption; and (4) leveraging iterative feedback loops to refine processes and accelerate value realization. These insights will offer a blueprint for practitioners embarking on large-scale PMIS implementations within complex organizational settings.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(OWN-4965) The Power of Project Controls: A Case Study of Third-Party Project Controls Services for Scheduling Delay and Forecast Advisory Services

Skill Level: Intermediate
TCM Section(s): 8.1. Project Control Plan Implementation
Author(s)/Presenter(s):
Owen Noritoshi Nakadai *JGC Corporation*

Abstract: There are many construction projects where the owner's project controls are technically inadequate due to a lack of personnel with the necessary technical expertise, or the project is a first-time venture into a new field. Owners in situations applicable to the aforementioned circumstances often underestimate the value of project controls in terms of mitigating delays, offering forecast solutions, and holistic evaluations of the project. These challenges are compounded by the need for greater oversight, contractor and subcontractor performance evaluation and analysis, and client overconfidence. Although a rigorous project controls organization is recommended from the beginning of all projects, there are situations where this is not always possible. AACE has recommended practices such as 48R-06, 52R-06, and 53R-06 which apply to these situations and this case study. This paper demonstrates the best practices and approaches taken as a third-party project controls service for a project in the mid-procurement to early construction phase to advise a client holistically in addition to the AACE recommended practices mentioned above. In this case study, applying the recommended practices above led to greater transparency in contractor forecasts, an overall holistic delay analysis, and early intervention preventing further delays.

(OWN-4997) Key Considerations for Implementing EVMS in Owner Organizations

Skill Level: Advanced
TCM Section(s): 9.2. Progress and Performance Measurement 7.7. Procurement Planning
Author(s)/Presenter(s):
Dr. Sarmad Kiani, CCP EVP PSP *Toronto Transit Commission*
Ernesto Llorens, CCP *Toronto Transit Commission*

Abstract: Implementation of earned value management systems (EVMS) within owner organizations is examined through a representative case study grounded in EIA-748 and related AACE recommended practices . A gap analysis was conducted across six categories to identify implementation challenges: one strategic category and five technical categories (1. Organization; 2. Planning, Scheduling, and Budgeting; 3. Accounting Considerations; 4. Analysis and Management Reports; and 5. Revisions and Data Maintenance). It was revealed that challenges are primarily driven by a lack of strategic alignment rather than technical deficiencies alone. Key implementation challenges and considerations include ensuring scalability and proportionality, matching contract management to EVMS specifications, and understanding the function of project delivery systems.

Following this assessment, the analysis focuses on three strategic considerations: (1) the correlation between optimal performance measurement baseline (PMB) timing and project delivery methods (PDM); (2) the selection between unified versus distinct EVMS frameworks; and (3) the integration of EVM requirements across diverse contract types. Comparison tables illustrate how these factors allow EVMS to be adapted based on specific PDM and contractual structures. Actionable insights are provided for total cost management professionals by highlighting real-world challenges and strategic alignment without the use of proprietary data.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(PM-4755) Beyond Compliance: Independent Reviews for Better Project Delivery

Skill Level: Advanced
TCM Section(s): 9.2. Progress and Performance Measurement 7.6. Risk Management
Author(s)/Presenter(s):
Alex Bachowski, PE PSP *Long International*
Blaine J. Guidry, PE *U.S. Army Corps of Engineers*

Abstract: Independent project reviews (IPRs), mandated by the U.S. Department of Energy's (DOE) Order 413.3B, provide independent validation of scope, cost, schedule, and risk maturity for the DOE Office of Science's multibillion-dollar research facilities and infrastructure projects. IPRs stress-test cost estimates, schedule logic, and risk registers under expert review prior to critical decision (CD) approvals.

Amid inflationary pressures, supply chain disruptions, and heightened oversight of capital spending, IPRs have become an essential project controls mechanism. They reduce the probability of flawed baselines, improve decision quality, and demonstrate disciplined stewardship of public investment.

The lessons extend well beyond the federal space. The IPR model shows how independent, structured peer review can benefit any large capital project by challenging assumptions, identifying systemic risks, and disseminating best practices in estimating, scheduling, and risk management. This paper highlights how adopting IPR principles can strengthen project governance and increase the likelihood of delivering complex projects on time, within budget, and in alignment with strategic priorities in alignment with AACE recommended practices for cost, schedule, and risk assurance.

(PM-4794) Challenges in the Development of a Roadmap for a Mega-Scale Theme Park

Skill Level: Intermediate
TCM Section(s): 7.2. Schedule Planning and Development 7.7. Procurement Planning
Author(s)/Presenter(s):
Lan Zhang *Century 3 (Shanghai) Inc.*
Yi Fang *Century 3 (Shanghai) Inc.*
Zhenyu Qiang *Century 3 (Shanghai) Inc.*
Haochen Zhang *Century 3 (Shanghai) Inc.*

Abstract: A well-designed roadmap for the development of a new theme park provides the project team with a clear path to execute their key tasks. However, in practice, roadmaps often include unachievable tasks or out-of-sequence activities that lead to delays in the project. This paper begins with a review of the relevant literature and develops a framework for such roadmaps based on previous studies. The authors analyze the duration of major activities and benchmark them against similar projects. A three-layer roadmap model is proposed that considers task sequencing, duration, and stakeholder reliability. The model which includes EPC buyoff, owner companies' establishment and funding injection is validated through a case study of a real mega-scale theme park. Thus, the proposed approach provides systematic guidelines to successfully complete such projects.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(PM-4803) Bringing Predictability to Capital Projects: The Strategic Role of the Project Integrator

Skill Level: Intermediate
TCM Section(s): 9.2. Progress and Performance Measurement 11.2. People and Performance Management
Author(s)/Presenter(s):
Tino Sciortino *Techne PMC Inc*
Anthony Martiniello *Techne PMC Inc*

Abstract: Large-scale capital projects can present significant challenges for an owner, as today's projects have become increasingly complex and demanding. Owner organizations and project execution partners often find themselves working in silos, leading to potential gaps between engineering, procurement and project controls.

The purpose of this paper is to explain the concept of the project integration team and its strategic role in driving successful outcomes over the course of a project, in addition to delivering value and predictability to owner organizations. The project integration team acts as the focal point between the owner, the execution partners and other key stakeholders; delivering integrated reporting and standardized estimation, planning and risk processes aligned with industry best practices.

Leveraging practical experience from the energy and resource sectors, this paper explores the required skillset, key responsibilities and hierarchy of the project integration team within specific project delivery models. It touches on how this role can support owners with capital project delivery from conception to execution, in order to drive informed decision-making and improve overall project predictability. As a result, owner organizations can close critical gaps in project governance, reduce risk exposure, and greatly enhance the likelihood of delivering capital projects on time and within budget.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(PM-4811) Digital Transformation in Capital Projects Through a Fit-for-Purpose PPM Solution

Skill Level: Advanced
TCM Section(s): 9.2. Progress and Performance Measurement 7.2. Schedule Planning and Development
Author(s)/Presenter(s):
Camila Nathália Santos *Vale Base Metals*
João Victor Ferreira Carvalho *Vale Base Metals*
Luiz Cláudio de Magalhães Mendonça Santos, EVP *Vale Base Metals*

Abstract: Mining capital portfolios often suffer fragmented oversight when disconnected controls artifacts are dispersed across multiple systems. The result is avoidable reconciliation effort, delayed governance, and weakened traceability from baseline to forecast across stage gates—particularly in multi-billion-dollar programs spanning diverse geographies and delivery models.

This paper presents a replicable, governance-first methodology for building an integrated project portfolio management (PPM) ecosystem grounded in AACE's Total Cost Management (TCM) Framework. The approach unifies a clearly defined controls operating model—roles, cadences, decision rights, and escalation paths—with a minimum canonical data model and lineage-preserving integration patterns that convert heterogeneous sources into consistent, auditable portfolio reporting.

A mining-owner case study demonstrates phased migration from a low-code prototype to a coded platform with measurable gains: reporting cycle time reduced from 12 to 4 days, manual effort per project per cycle cut from 8 to 1 hour, and lineage completeness reaching 90% across governed KPIs, alongside improved governance routine adherence. Outcomes are reported with explicit measurement windows, metric definitions, and stated limitations. The method is tool-agnostic and adaptable to varying data maturities, providing practitioners an immediately usable pathway to stronger governance, comparability, and traceability—while establishing an analytics-ready foundation for future predictive extensions.

(PM-4842) Using System Dynamics to Prevent Change and Project Failure

Author(s)/Presenter(s):
H. Lance Stephenson, CCP FAACE Hon. Life *AECOM*
Dr. Stephen P. Warhoe, PE CCP CFCC FAACE Hon. Life *Arcadis*

Abstract: This paper investigates the role of system dynamics in analyzing project failure. Projects often fail due to complex interactions among multiple variables, such as scope changes, resource allocation, and decision-making delays. By leveraging system dynamics, this study reveals the causal relationships that contribute to project failures and provides insights into how organizations can better manage and prevent changes to mitigate these risks. The paper presents a comprehensive framework for identifying key failure points, demonstrating how system dynamics can model the feedback loops and delays that exacerbate project risks. Key Points Covered:"¢Application of system dynamics to map and analyze the causal relationships leading to project failure."¢Strategies for integrating system dynamics into change management to predict and address potential project risks."¢A case study highlighting the effectiveness of system dynamics in identifying critical failure points and improving project outcomes.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(PM-4861) Maturing Project Controls to Fit Your Organization

Skill Level: Intermediate
TCM Section(s): 9.2. Progress and Performance Measurement 11.2. People and Performance Management
Author(s)/Presenter(s):
Kimberly D. Kozak, PE PRMP *AECOM*

Abstract: Project teams often rely on basic project controls elements of cost and schedule reporting and risk monitoring to track and manage project performance. While these core elements can be applied on a smaller scale without a fully developed framework; larger programs that lack an integrated project controls platform face greater challenges. The issue is not simply defining a vision for reporting key performance indicators (KPIs); it is guiding stakeholders toward a practical implementation strategy that aligns with the team's management capabilities, meets sponsor expectations, and promotes continuous improvement through training.

Building on AACE International recommended practices, this article provides guidelines for evaluating current project controls tools and identifying modifications needed to balance oversight, efficiency, and flexibility. Whether building from scratch or adapting existing practices, the goal is to provide a clearer line of sight by having full and complete access to data and drivers that influence outcomes.

Identifying the right level of project controls for an organization involves: defining strategic objectives and benchmarking existing processes; standardizing key processes to ensure consistency and accountability; promoting adoption of changes to build internal competency; implementing controls first on priority projects to demonstrate value early; and establishing regular performance reviews and updating processes as needed.

By tailoring project controls maturity to fit the organization, teams can improve decision-making, strengthen stakeholder confidence, and ensure that investments in oversight deliver measurable value.

(PM-4867) The Ten Biggest Lies in Project Controls

Skill Level: Intermediate
TCM Section(s): 7.2. Schedule Planning and Development 9.2. Progress and Performance Measurement
Author(s)/Presenter(s):
Christopher W. Carson, CEP DRMP PSP FAACE *ARCADIS*
Glen R. Palmer, CFCC PSP FAACE *GR Palmer Consulting Services*

Abstract: Project and construction managers are not always accurate, or might not be completely truthful, in their informal assessment of a project's status, their own experience, and many other issues. The areas affected by the "untruths" (read; "lies") range from, planning & scheduling, project costs and project team capabilities, complicated by varying perspectives from knowingly telling a lie to really believing that it's true. Since project controls and cost engineering analysis relies on accurate information, the failure to provide accurate, objective, and honest information to the analysts can reduce the value of recommendations based on the analysis. This elevates the need to recognize the inaccuracies and mitigate the impact on analysis in order to provide reliable action items.

The authors will discuss the ten biggest lies that they have heard from these project and construction managers. In addition to the identification, the paper will also discuss proactive actions to mitigate the problems related to the falsehoods, using lessons learned from project controls and forensic analysis/dispute resolution.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(PM-4901) Engineering the End-of-Life: A Practical Framework for Value-Driven Downstream Facility Decommissioning

Skill Level: Advanced
TCM Section(s): 7.3. Cost Estimating and Budgeting 7.4. Resource Planning
Author(s)/Presenter(s):
Roszie Yanty Rahmat, CEP *Petroliam Nasional Berhad (Petronas)*
Mahathir Mohamad *Petroliam Nasional Berhad (Petronas)*
Hisham Mohamad *Universiti Teknologi PETRONAS*
Dr. Aizat Akmal A. Mohamad Beddelee *Universiti Teknologi PETRONAS*
Azmer Saifullah Azlan *Petroliam Nasional Berhad (Petronas)*

Abstract: The global decommissioning market is projected to grow significantly, reaching nearly USD 60 billion by 2031, driven by ageing infrastructure, environmental regulations, and the energy transition. While upstream decommissioning has matured, downstream decommissioning (DD) remains fragmented and underexplored, leaving a critical knowledge gap and operators exposed to uncertainty, as demand accelerates. This paper introduces a governance-focused practical framework for DD, designed to integrate risk-sharing, regulatory compliance, sustainability, and cost-effectiveness, delivering value while enabling resilience in the context of today's BANI (brittle, anxious, nonlinear, incomprehensible) environment. The framework integrates structured methodologies with risk analysis, governance practices, and multi-stakeholder collaboration. It leverages qualitative and quantitative methodologies, including real field decommissioning site studies, exploratory engineering analysis, stakeholder consultation, and cost-benefit assessments to address uncertainty while ensuring regulatory compliance, sustainability, and cost efficiency. By positioning DD as a future-ready project management discipline, this research highlights three contributions: (1) engineering resilience through structured frameworks that balance sustainability and cost; (2) embedding governance and shared-risk models to build trust and accountability; and (3) driving competitiveness through standardisation and data-driven decision-making. The proposed framework provides project practitioners with actionable strategies to reduce risk, enhance estimate assurance, and deliver value-driven outcomes in the evolving global decommissioning market.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(PM-4934) How to Manage Successful EPC Oil & Gas Projects with Competitive and Risk Management Strategies

Skill Level: Intermediate
TCM Section(s): 7.6. Risk Management 2.3. Strategic Asset Management Process Map
Author(s)/Presenter(s):
Arnaldo Maria Angelini, CCP *TERNA*
Apolostolos Chatzisymeon *Nomitech Limited*
Sean T. Regan, CCP CEP EVP PSP FAACE *LGM International*
Grigorios Anagnostopoulos, CCP *Energean*

Abstract: As a result of the escalating energy prices resulting from the expanding economies and the conflicts in Ukraine and Gaza, there has been a remarkable rise in oil and gas exploration initiatives in several countries.

Global experience from around the world indicates that both brownfield and greenfield oil & gas projects continue to face unreliable costs and schedules. Up to 60% of projects fail to achieve their intended cost and schedule objectives because of the prevailing economic uncertainties and project risks.

The authors will illustrate that it is critical for oil & gas companies to implement not only the most effective practices of project and risk management, but also competitive strategies prior to venturing into a new exploration/development area.

The study aims to showcase the present methods employed to mitigate risks for engineering, procurement, and construction (EPC) contractors and owners throughout the project life cycle, including proposal, detail engineering, procurement, construction, and commissioning.

This paper employs several case investigations examining both successful and unsuccessful projects. This analysis will show the advantages and mistakes made by project teams, as well as the consequences of not conducting an in-depth examination of the competitive advantage in the country.

(PM-4938) Reducing Cost Associated with Absenteeism: Through Employee Motivation

Skill Level: Intermediate
TCM Section(s): 11.2. People and Performance Management 9.2. Progress and Performance Measurement
Author(s)/Presenter(s):
Dr. Tanya M. Williams, EVP *Bottoms Up Budgeting*

Abstract: This paper explores the link between workplace health initiatives and employee involvement in wellness activities in the absence of formal incentive programs. While many organizations assume that participation in wellness programs relies on financial or structural incentives, qualitative evidence indicates that employees continue to engage in wellness behaviors even without formal programs. This research investigates the organizational, behavioral, and leadership factors that support voluntary wellness participation, drawing on French and Raven's power theory. A case study from the government contracting sector shows that intrinsic motivation, leadership communication, and workplace culture are stronger drivers of participation than financial incentives. The paper ends with practical suggestions for project and operations leaders on using communication, environmental design, and non-monetary motivators to boost employee well-being, attendance, and productivity, in line with AACE International's goals for performance improvement and cost savings.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(PM-4968) Decision Intelligence for Project Leaders: When Data Isn't Enough

Skill Level: Advanced
TCM Section(s): 7.6. Risk Management 7.2. Schedule Planning and Development
Author(s)/Presenter(s):
Andre Luiz Siqueira Marques, EVP PSP *Alvarez & Marsal*

Abstract: In contemporary data-driven project environments, leaders are usually confronted with a complexity ceiling—a discouraging excess of metrics and forecasting models that, ironically, hinder swift decision-making. Decision intelligence (DI) is an engineering discipline that applies data science through the integration of social science insights, decision theory, and managerial science to treat decisions as engineered products. By coupling computational technologies such as machine learning, natural language processing, and semantic reasoning with formal structures, DI establishes a shared decision-design vocabulary enabling stakeholders to collectively map cause-and-effect relationships.

This paper talks about common cognitive fallacies—optimism bias, anchoring, and illusion of control—and suggests straightforward ways to offset their impact. It also positions decision intelligence within the project controls framework, showing how DI enhances planning, monitoring, and control activities through structured decision design.

(PS-4729) Achieving Schedule Recovery Through Effective use of Short and Medium Term Schedules

Skill Level: Intermediate
TCM Section(s): 9.2. Progress and Performance Measurement 11.2. People and Performance Management
Author(s)/Presenter(s):
Michael A. Mac Guinness, CEng *Independent Consultant*

Abstract: When projects fall behind schedule causing delay to the completion date, planned dates become, or appear to become, unachievable. At this point, a recovery schedule showing how the project can achieve the contracted completion date will be required. Where there are significant disputes regarding responsibility for the causes of delay, agreement on a recovery schedule can take months.

During this period while the initial schedule is often considered obsolete, but the recovery schedule is not yet approved, there frequently develops an attitude that “there is no schedule” and work proceeds in an unfocused manner as if drifting, pending issue of the recovery schedule.

This view that “there is no schedule” is wrong. There is always a schedule. The initial schedule defined the sequence of works which must be followed even if the dates are obsolete. When delay occurs, whomever is responsible, the contractor has a duty to mitigate the effects of the delay event(s).

This duty is discharged by ensuring the optimal productivity of its manpower and equipment given constraints on availability of manpower skills, construction equipment, IFC drawings, construction materials, access, permits, etc. and thereby maximising the achievable progress. Lookahead schedules (three month and two week) and/or detailed activity schedules can be used effectively to define optimal achievable interim weekly and monthly recovery targets.

Five case studies are reviewed to illustrate the use of short and medium term schedules and/or detailed activity schedules the primary method of planning recovery.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(PS-4752) From Clauses to Critical Paths: The Contract Manager's Role in Schedule Management and Delay Analysis

Skill Level: Basic
TCM Section(s): 7.2. Schedule Planning and Development
Author(s)/Presenter(s):
Selvaraj Ramasamy, CCP *Parsons Corporation*

Abstract: While schedulers drive logic-based planning, contract managers define the contractual framework that governs how schedules are developed, updated, and defended. Their influence is critical in shaping obligations, notice provisions, and entitlement conditions that directly affect time-related project risk.

This paper explores how contract managers can strengthen both schedule credibility and contractual defensibility by aligning technical scheduling practices with contractual requirements. It presents a practical framework for collaboration with schedulers across the project lifecycle – from baseline establishment and progress monitoring to change evaluation and forensic delay analysis.

Drawing on AACE recommended practices such as RP 91R-16 (Schedule Development) and RP 29R-03 (Forensic Schedule Analysis), key topics include contract-compliant baselines, contemporaneous updates, time impact analysis, and windows analysis.

Attendees will gain insights on interpreting and applying contract clauses within schedule management, supporting defensible delay claims, and reducing disputes. By integrating contractual and scheduling expertise, contract managers can elevate their role as strategic partners – enhancing project performance while safeguarding commercial interests.

(PS-4767) Portfolio Scheduling: Do You Have All The Puzzles?

Author(s)/Presenter(s):
John Holincheck *ACUITY International*
Sylvia M. Donado *Clarity Partners, LLC*

Abstract: Management at portfolio and programmatic levels requires different considerations to ensure strategic alignment, benefits realization, as well as resource and performance optimization. As project implementation gets more complex in our rapidly changing times, a greater level of attention needs to be paid to the management of cost, time, and resources. Ensuring all components are considered thoroughly at a portfolio & programmatic level are crucial for informed decision making by stakeholders and help bridge the gap between strategy and implementation by streamlining communication & collaboration. In this paper the authors will expand on previously published AACE PS-3805 “Scheduling: Do you have all the Puzzle Pieces?[CH1.1]” beyond the individual project level to include considerations at portfolio and programmatic levels.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(PS-4839) Bringing Common Sense to Canada's Scheduling Chaos

Skill Level: Intermediate
TCM Section(s): 7.2. Schedule Planning and Development
Author(s)/Presenter(s):
Ashleigh Marshall, PSP *Delta Consulting Group, Inc.*
Duan van der Merwe *Delta Consulting Group, Inc.*
Anja Heim, EVP *Ellis Don*

Abstract: Schedules form the basis for execution of a project, and are a key tool used to communicate, implement, and manage a project to completion. Yet, this guiding purpose of a project's schedule has become obscured by failures in implementing or processing contract requirements that are either too vague or unclear, cumbersome or unrealistic, compounded by the failure to apply sound scheduling fundamentals and best practices. As a result, disputes in the Canadian construction industry are increasingly rooted in the creation of unrealistic and/or unreliable schedules. These schedules, which are meant to guide project execution, frequently fail to reflect the practical realities of construction, leading to conflicts between owners, contractors, and other stakeholders. Despite the availability of advanced scheduling tools and best practices, the industry continues to rely on impractical schedule specifications that don't reflect the actual needs of the project, ultimately rendering the schedules useless and sacrificing project performance.

This paper addresses how scheduling has arrived at this point of chaos and how project parties can strive towards more common-sense scheduling for the betterment of the project. From the perspective of construction industry professionals, and through the lens of a Canadian case study with a focus on Canadian Construction Documents Committee (CCDC) standard forms of contract, the paper will discuss the underlying issues and how to bridge the gap between contract requirements, best practices, and more realistic and achievable schedules.

(PS-4849) Converting MPP Files to P6 While Maintaining Schedule Integrity

Skill Level: Intermediate
TCM Section(s): 6.4. Forensic Performance Assessment 9.2. Progress and Performance Measurement
Author(s)/Presenter(s):
Aaron Fackler, PSP *Vertex*
Rachel Domingo, PSP *Vertex*

Abstract: The migration of schedules between Microsoft Project (MPP) and Primavera P6 is increasingly common in both active project management and forensic schedule analysis. While some schedulers may find MPP to be more accessible and easier to learn, the authors feel that P6 is a much more robust platform with many tools for planning, scheduling, and analysis. These differences create situations where MPP was initially used but the demands of the project or post-project analysis require P6's advanced capabilities. Their structural differences in handling data dates, logic ties, float, and activity sequencing can lead to discrepancies that must be recognized, understood and managed carefully.

This paper presents a case study of a large, multi-building residential apartment complex that suffered damage from heavy precipitation and high winds during construction. A contractor-developed MPP schedule was converted to P6 to support delay analysis and claims preparation. Through close collaboration with the contractor's scheduler and review of project documents, the authors corrected issues with the existing MPP schedules, converted the MPP schedules to a P6 format, and conducted a critical path method (CPM) delay analysis. The discussion highlights practical lessons learned for contractors, consultants, and claims professionals, emphasizing strategies to preserve schedule integrity and critical path accuracy when schedules are migrated across platforms. These insights underscore the importance of understanding software differences and maintaining robust collaboration to mitigate risks in claims and dispute resolution.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(PS-4851) Modeling Predictable Risks in Scheduling: A Hybrid Strategy for Weather Risk Events

Skill Level: Intermediate
TCM Section(s): 7.2. Schedule Planning and Development
Author(s)/Presenter(s):
John A. Ficca, PSP *Toscano Clements Taylor*
David A. Chigne Tataje, CCP CEP PSP *Toscano Clements Taylor*

Abstract: Project teams frequently face a polarized modeling decision when addressing predictable recurring risks such as seasonal weather: should anticipated weather be represented as a contingency allowance placed near project completion, or should it be embedded directly into the baseline schedule through calendar-based modeling? Although both approaches are used in practice, each can introduce distortions when applied in isolation. AACE Recommended Practice 84R-13 cautions that end-loaded weather allowances can distort float behavior and critical path logic, producing interim schedule dates that are operationally unrealistic.

In practice, these distortions can propagate across multiple aspects of project planning. When weather allowances are concentrated at the end of the schedule, downstream trades may appear to mobilize earlier than realistically required, creating challenges in manpower planning, subcontractor coordination, procurement timing, and project cash-flow forecasting. Conversely, while calendar-based modeling improves the realism of schedule projections, it may introduce management challenges if the distinction between operational non-work time, contingency, and management reserve is not clearly understood.

This paper proposes a structured framework for representing predictable weather exposure within CPM schedules while preserving conceptual clarity between operational conditions and risk reserves. The proposed strategy integrates: (i) transparent calendar-based modeling for weather-sensitive activities, (ii) governance-aligned treatment of contingency and management reserve consistent with established risk-management principles, and (iii) explicit differentiation between predictable operational exposure and discrete risk events. A comparative case application demonstrates how this integrated approach improves schedule realism, strengthens CPM traceability, and enhances the reliability of interim milestones used for resource planning, procurement coordination, and financial forecasting.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(PS-4878) Federal Planning Pitfalls: Practical Strategies for Developing a Defensible Baseline Schedule

Skill Level: Intermediate
TCM Section(s): 7.2. Schedule Planning and Development 6.4. Forensic Performance Assessment
Author(s)/Presenter(s):
Alexander Bachowski, PE PSP *Long International*
Nickolas Florez, CFCC *Construction Contract Services LLC (CCSI)*

Abstract: Federal government construction projects, particularly those under the Department of Defense, require baseline schedules that meet stringent contractual, procedural, and technical standards. Project controls professionals without prior government contracting experience often underestimate the depth and rigor of these requirements, which can result in baseline rejection, delays, and increased dispute risk.

This paper begins by outlining the primary scheduling specifications used in federal contracts, namely UFGS 01 32 01.00 10 Project Schedule and UFGS 01 32 17.00 20 Cost-loaded Network Analysis Schedules (NAS) and schedule-related UFGS specifications for pricing and payments, quality control, and submittals.

This paper then examines a sampling of high-impact pitfalls observed in the planning and early execution phases of federal construction projects. Examples include: (1) overlooking government pre-bid questions and answers (Q&A) and solicitation amendments; (2) not meeting early turnover and partial acceptance requirements; (3) misunderstanding government-furnished materials/equipment; (4) failing to comply with detailed agency and Unified Facilities Guide Specifications (UFGS) requirements; (5) not considering weather and seasonal restrictions; and (6) omitting mandated submittal review durations and approval dependencies.

Each topic is supported by real-world lessons learned and accompanied by specific, actionable measures that project controls professionals can implement to prevent or mitigate these pitfalls in preparation of a realistic, contract-compliant, and defendable baseline schedule.

(PS-4880) Beyond Ambiguity: A Systematic Framework for Schedule Lag Justification

Author(s)/Presenter(s):
Robert Brian Noveras Villanueva, PSP *MJ Consultants Ltd.*

Abstract: Schedule lags (and negative lags, commonly termed leads) are routinely introduced to represent sequencing assumptions, partial handovers, curing periods, access windows, and production-rate offsets. Although convenient, relationship lags can reduce transparency, distort float calculations, and complicate updates and forensic analyses. Building on widely used schedule quality guidance and forensic scheduling principles, this paper proposes a systematic, auditable framework for classifying, justifying, documenting, governing, and validating schedule lags throughout the schedule life cycle. The framework distinguishes process-driven lags from contingency lags, establishes minimum documentation requirements, and recommends modelling alternatives (explicit activities or fragmentation) where practicable. An illustrative impact simulation example shows how process-driven lags embedded in start-to-start relationships can prevent intended downstream movement when only selected activity durations are adjusted for productivity loss. The paper concludes with implementable controls—lag registers, reporting, standard logic patterns, and quality checks—to reduce ambiguity and improve schedule integrity and forensic defensibility.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(PS-4910) RP 91R-16 Schedule Development as a Practical Guide to Improve Communication at the Construction Jobsite

Skill Level: Intermediate
TCM Section(s): 7.2. Schedule Planning and Development
Author(s)/Presenter(s):
Ramon J. Torres Guzman, PSP *Draper and Associates*
M. Tahir Khattak, PE *PROMAC Consulting*

Abstract: This case study examines the practical application of AACE International's Recommended Practice 91R-16, Schedule Development, as a tool to improve communication and coordination on a construction jobsite. Focusing on a real-world project environment, the study is organized into two parts that reflect key phases of schedule-related management: schedule development and schedule enforcement.

Part I: Planning and Schedule Development details how the initial baseline schedule was created in alignment with RP 91R-16 guidelines. It outlines how integrating construction logic, subcontractor input, and site constraints led to a schedule that served not only as a planning document but also as a platform for early coordination. The development phase emphasizes the importance of involving field personnel and key stakeholders from the outset to ensure the schedule reflects real-world execution conditions.

Part II: Planning the Schedule Management and Enforcement of the Plan illustrates how the project team implemented a structured approach to manage, monitor, and enforce the schedule throughout the job. Using tools recommended in RP 91R-16, such as schedule reviews, look-ahead meetings, and variance analysis, the team maintained open lines of communication and proactive risk response. The study highlights how schedule management transformed from a passive reporting function into an active communication strategy that kept all jobsite participants aligned.

By framing schedule development and enforcement as communication tools, this case study demonstrates how RP 91R-16 can bridge the gap between planning and execution, ultimately improving jobsite collaboration and project performance.

(PS-4926) From Instruction to Impact - Using Prospective TIA for Accurate Calculation of Overlapping Excusable Delays in Change-Driven Projects

Skill Level: Intermediate
TCM Section(s): 10.3. Change Management
Author(s)/Presenter(s):
Abhishek Verma, PSP *MASIN*

Abstract: In current practice, contractors often omit defining actual delay dates in time impact analysis (TIA), relying solely on total time impact, which risks double-counting delays in future overlapping changes. By identifying the dates of delay for each change event, the method prevents duplication of excusable delays when multiple variations with overlapping impacts occur, thereby improving accuracy and fairness in both contractor claims and owner evaluations. This results in a transparent, defensible analysis that improves change management, strengthens claim validity, and reduces disputes by giving owners and contractors a clear, agreed-upon record of each change's impact.

This paper presents a structured prospective TIA methodology, aligned with AACE Recommended Practice 52R-06, to assess the impact of changes issued throughout the life of a project. Upon receiving the change request or instruction from the owner, the contractor must review its time and cost impact and formalize it as a variation. After reviewing the change request, a schedule fragnet is developed. The most recent accepted schedule update prior to the date of instruction is selected and impacted with this fragnet. Comparing the original and impacted schedules determines the total time impact to the project and dates of delay.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(PS-4939) Validate Your Plan Before Validating Your Schedule

Skill Level: Basic
TCM Section(s): 7.2. Schedule Planning and Development
Author(s)/Presenter(s):
Aldo Dórea Mattos, FAACE *Aldo Mattos Consulting*

Abstract: There are many techniques available in the marketing devoted to schedule validation, such as DCMA 14-point assessment and GAO guidelines, to name a few. By focusing on the relationship between tasks, float size, critical path and resource loading, these techniques implicitly assume that the plan of work is properly reflected in the hundreds of tasks interconnected in the schedule. This is, however, where many schedules fail: the plan is often incomplete, obsolete, not realistic and generated with inaccurate data. This paper shows how to effectively validate the plan before validating the schedule. The steps involve checking the workflow, assessing the validity of the production rates considered in deriving durations, validating the calendar and the resources. It is a kind of constructability test done before preparing the schedule. Examples are shown.

(PS-4940) Standardized WBS and Schedules for Complementary Oil and Gas – Exploration and Production (E&P)

Skill Level: Basic
TCM Section(s): 7.2. Schedule Planning and Development 8.1. Project Control Plan Implementation
Author(s)/Presenter(s):
Gustavo Rukuiza Czekay *Petroleo Brasileiro S.A. (Petrobras)*

Abstract: The purpose of this paper is to present a case study about WBS and schedule standards developed for types of complementary and maintenance oil and gas – exploration and production (E&P) projects implemented at Petrobras E&P deep waters area, optimizing the way projects are planned and controlled, making better interfaces between project scheduling and project quantitative risk analysis, avoiding project planning problems during planning FEL revision group check gates beyond project execution.

Primavera P6 schedules for major Petrobras E&P projects at Petrobras are developed according to processes and standards aimed at the company's own project development methodology, which is related to approving projects system according to its phases (approval gates).

The precedence network of this schedule as well as its critical path with allowances and contingencies need to be defined so that the selected alternative can be planned in detail before its execution.

With all detailed information and principal project schedule characteristics, WBS and schedule standards take place, calculating the weights between WBS elements. Then, the principal activities for an integrated EPC project are selected and inserted, considering time, cost, duration, precedence network and weight standards, segmented by principal E&P disciplines to support and mitigate quantitative risk analysis problems. This optimizes and speeds up the way schedules are created, generating a more realistic view of the possible impact of risks in NPV and IRR calculations, strategic variables for project portfolio management.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(PS-4944) From Complexity to Clarity: A Practical Approach to Schedule Harmonization

Skill Level: Basic
TCM Section(s): 7.2. Schedule Planning and Development
Author(s)/Presenter(s):
Carlo Beneduzzi Medalha *Vale Base Metals*
Ana Luiza de Oliveira Guimarães *Vale Base Metals*
Luiz Cláudio de Magalhães Mendonça Santos, EVP *Vale Base Metals*

Abstract: This paper introduces a practical and scalable methodology for schedule standardization in large capital projects. The approach is based on aligning three core elements: deliverables, work breakdown structures (WBS), and logical sequencing. By simplifying and unifying these components across projects, organizations can achieve greater consistency, comparability, and efficiency in schedule development and control. The methodology was developed and applied across multiple projects, demonstrating improvements in schedule transparency, stakeholder alignment, and reporting reliability. Unlike approaches that rely heavily on proprietary tools or complex analytics, the proposed framework emphasizes simplicity and replicability, making it accessible to diverse project teams. Implementation considerations, limitations, and lessons learned are discussed to support practical adoption in capital project environments.

(PS-4959) Integrating AI and Visual Analytics for Schedule Integrity: A Hybrid Approach to CPM Review

Skill Level: Intermediate
TCM Section(s): 7.2. Schedule Planning and Development 9.2. Progress and Performance Measurement
Author(s)/Presenter(s):
Michael S. Pytlik, EVP PSP *mcfa (M.C. Fuhrman & Associates, LLC)*
Amir Hosein Fazel Bakhsheshi, PSP *Luster National*

Abstract: Schedule integrity reviews traditionally rely on deterministic critical path method (CPM) screening techniques, which are often time-intensive and may fail to detect constructability gaps until execution constraints arise. This paper introduces a hybrid review approach that integrates targeted AI-assisted screening with visual analytics in Power BI to expedite the identification of high-risk schedule elements and enhance claim-readiness. The method uses standardized prompts to flag aggressive or inconsistent durations, missing approval gates, long-lead procurement exposures, and third-party access constraints. Flagged items are compiled into a watchlist and validated through logic tracing, contract requirement checks, and update-to-update trend monitoring. A case study involving a heavy civil schedule demonstrates that this approach prioritizes reviewer effort, increases transparency into procurement and approval drivers, and facilitates objective, evidence-based forecast discussions within routine update governance.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(PS-4972) Integrating Visual Aids to Look-Ahead Schedules to Improve Communication

Skill Level: Basci
TCM Section(s): 7.2. Schedule Planning and Development
Author(s)/Presenter(s):
Ronald M. Winter, PSP FAACE *Schedule Analyzer Software*
Avraham (Avi) Frank, PSP *TYLin*
Ahmad Dardoon *TYLin*

Abstract: Look-ahead schedules are a powerful tool used by construction project teams for forecasting and tracking actual project progress and the remaining plan. Unfortunately, on many construction projects, the look-ahead schedules are not consistently updated, do not include accurate project information, are not well maintained, and (worst of all) are not clearly understood by project stakeholders. This leads to misalignment between the master project schedule, look-ahead schedules, forecasted remaining plan, and actual field progress.

This paper provides an overview of effective methods for bridging this gap by using visual aids to enhance the schedule management look-ahead plans. Using actual construction projects, and examples of effective visual aids, this paper shares methods to effectively manage look-ahead schedules. The paper provides a system for effectively managing look-ahead schedules at all stages of a project, from project initiation to project closeout. Lessons learned from actual projects illustrate how to best communicate the look-ahead schedule data to all project stakeholders.

(PS-4992) Detailed Scheduling Made Easy: Using Task Sequenced Leveled Logic on Level 4 Schedules with the Effort of Level 3

Author(s)/Presenter(s):
Paul T. Reeser, PE *Elegant Project Solutions*

Abstract: This paper presents a structured methodology for developing and maintaining a Level 4 schedule with an effort comparable to that typically required for a Level 3 schedule. The approach utilizes resource leveling to sequence repetitive crew-based activities, replacing traditional finish-to-start (FS) logic for tasks performed by the same crew. This enables rapid resequencing and significantly reduces the effort required for schedule updates and what-if analyses.

The paper also introduces a Microsoft Excel-based tool to preserve total float integrity and maintain logic traceability when applying leveling techniques. Additional methods include integrating cost and quantity data for streamlined statusing, using fragnets to standardize activity development, and applying strategic coding structures to improve reporting.

These combined techniques enable the development of detailed, dynamic schedules without the administrative burden typically associated with Level 4 scheduling.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(PS-5001) A Practical Review of RP 52R-06 Prospective Time Impact Analysis, from a Contractor's View

Skill Level: Basic
TCM Section(s): 6.4. Forensic Performance Assessment 10.3. Change Management
Author(s)/Presenter(s):
Janet Bradford, PSP *Garney*

Abstract: Schedule delay is a recurring condition in construction projects and requires timely, methodical evaluation to support equitable resolution and continued project execution. One of the most widely accepted methods for prospective schedule delay evaluation is the Time Impact Analysis (TIA), as defined by AACE International Recommended Practice (RP) 52R-06, Prospective Time Impact Analysis – As Applied in Construction.

This paper provides a practical technical review of RP 52R-06, with emphasis on its application during active construction. Using a representative case study, the paper illustrates the step-by-step implementation of a prospective TIA, including selection of the appropriate unimpacted schedule, development and insertion of schedule fragnets, quantification of delay, and allocation of responsibility. Additional considerations such as multiple impacts within a single update period, contractor-caused delay, and concurrency are also examined. The objective of this paper is to demonstrate the effective application of RP 52R-06 as a proactive schedule management and delay quantification tool when applied in accordance with industry best practices.

(PS-5010) (Panel Discussion) P6 Cloud Implementation for Contractors

Author(s)/Presenter(s):
Anthony J. Gonzales, FAACE *Spire Consulting Group LLC*

Abstract: TBD

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(RISK-4731) Cost Readiness Levels for Contingency Determination and Lifecycle Monitoring

Author(s)/Presenter(s):
Jareth Reeves *Kaleido*
Jake Williams

Abstract: The AACE estimate classification system measures the completeness of project definition deliverables but does not assess whether the estimate built on those are fit for the decisions being made. Maturity is not the same as readiness: two estimates at the same class can differ substantially in data quality, risk treatment, and commercial position, yet the classification system provides no structured basis for differentiation. This paper explores cost readiness levels (CRLs) as an assurance layer complementing the AACE classification system. The problem is most consequential on mega programs in delivery that require management of an evolving environment across the full delivery lifecycle, not an accurate estimation at a single point in time.

CRL assesses estimate fitness-for-purpose across six dimensions (Method, Data Quality, Uncertainty and Risk, Benchmarking, Scope Definition, and Contract Type Alignment) that bounds the assessed readiness by the least reliable dimension. The framework is demonstrated through an illustrative case study with a three-way view combining CRL assessment with base weight and contingency weight at work package level reveals where contingency risk concentrates. A lifecycle trajectory tracks readiness development against proximity to commitment at decision gates, providing a leading indicator of contingency adequacy and determination of contract risk allocation. The paper concludes with recommendations for evidence-based assurance and a research agenda for outturn calibration and readiness review integration into capital project stage-gate governance.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(RISK-4735) Insights Gained from Hatch's QRA Database[

Skill Level: Advanced
TCM Section(s): 7.6. Risk Management 10.4. Project Historical Database Management
Author(s)/Presenter(s):
Matthew Schoenhardt, PEng *Hatch Ltd.*
Loic Reny *Hatch Ltd.*
Greg I. Ramsay *Hatch Ltd.*
Dr. Mohammadjavad (Moe) Arabpour Roghabadi *Hatch Ltd.*
Behrooz Golzarpoor *Hatch Ltd.*
Lise Bouchard, CCP *Hatch Ltd.*

Abstract: All contingency setting methods start with AACE International (AACE) RP40 "Contingency Estimating Principles," with the foremost rule, like all project controls, being fit for purpose. The fit for purpose direction provides professionals a degree of latitude when performing quantitative risk analysis (QRAs). Within AACE there are numerous different methods of conducting QRAs, including AACE RPs:

- Parametric options 42R, 113R and 119R;
- Simulation-based options such as 44R, 57R, 65R, 118R and 123R; and,
- Combination parametric and simulation of 117R.

Within some circles there is much debate over the advantages and disadvantages of each option. Some have declared certain methods best, with or without time caveats, while others may have vested interests, and still others who continue to relying on AACE 17R Cost Estimate Classification systems (and its industry specific recommended practices) to anchor what a "typical" contingency ought to be.

Often what is lacking is simple aggregated data on the results of QRAs by method.

At Hatch, its global team of risk management professionals completes QRAs around the world for all types of projects and at all different levels of development and execution. Being client-focused, Hatch is not wed to a single AACE methodology. While Hatch advises clients on which methodology best suits their project's current needs and budget, it ultimately follow the client's direction. Hatch routinely completes multiple QRA methods for a single QRA report and frequently completes multiple QRAs on projects as they progress through their development stages. A trove of data!

This paper will explore the results of Hatch's QRA dataset to present the methods used, the predictive ranges achieved, and the insights gained from analysis. This is a must-attend session for QRA professionals interested in seeing real data on how the industry is performing in QRAs.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(RISK-4777) Fit-for-Purpose Project Risk Management as a Driver of an Organization's Strategic Advantages

Skill Level: Intermediate
TCM Section(s): 7.6. Risk Management 9.2. Progress and Performance Measurement
Author(s)/Presenter(s):
Tatyana Kalita *Atilak*

Abstract: This paper examines a set of interconnected topics demonstrating how a well designed and embedded project risk function can strengthen an organization's strategic position, protect financial performance, and optimize profitability. It explores the distinct yet interrelated roles of risk management and risk oversight, outlines optimal organizational models for integrating risk management with estimating, cost, scheduling, and finance, and discusses the value of aligning project and enterprise risk management. Readers will gain practical guidance on building a right sized project risk function, breaking down functional silos, integrating project controls, and elevating risk insights to support informed executive level decision making.

(RISK-4779) AI-Enhanced AACE Framework for Mitigating Cognitive Biases in Capital Projects

Skill Level: Intermediate
TCM Section(s): 7.6. Risk Management 3.3. Investment Decision Making
Author(s)/Presenter(s):
Igor Adolfo de Avila *IGOR AVILA - Gestão de Projetos Ltda*
Carlos Fernando Feu Rodrigues *Carlos Fernando Feu Rodrigues*

Abstract: This paper presents a methodology to mitigate the systemic cognitive biases, such as the planning fallacy and overconfidence, that lead to cost and schedule overruns in capital projects. The proposed approach integrates the procedural governance of the recommended practices (RPs) from AACE International with the computational power of artificial intelligence (AI) to enhance decision quality through "decision hygiene." The framework structures itself around three methodological pillars: applying the "outside view" to calibrate estimates (RP 114R-20), formalizing decision analysis to evaluate alternatives (RP 133R-23), and systematically quantifying uncertainty to set contingencies (RP 57R-09). AI acts as a human augmentation tool, operationalizing these pillars by processing large volumes of historical data, calibrating subjective probabilities, and executing complex probabilistic risk analyses. Through three demonstrative examples, the paper illustrates how this synergy among human judgment (for context and validation), the structure of the RPs (for governance), and AI analysis (for scale and objectivity) can yield more realistic estimates, more robust decisions, and defensible contingency allocation. The examples demonstrate how AI-enhanced reference class forecasting can reveal significant gaps between intuitive estimates and data-calibrated probabilistic forecasts, exposing systematic underestimation. However, the paper emphasizes that AI's effectiveness depends critically on high-quality historical databases and rigorous human validation to avoid "artificial ignorance," thereby promoting better project outcomes.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(RISK-4809) Program-Level Risk Management: A Case Study in Integrated Risk Management and Quantitative Assessment

Skill Level: Intermediate
TCM Section(s): 7.6. Risk Management
Author(s)/Presenter(s):
Chloe E. Edwards *AECOM*
Yasaman Shahtaheri *AECOM*
Veronique Huynh *AECOM*

Abstract: Effective risk management on programs is essential to achieving objectives, particularly for complex, multi-project environments. Compared to project-level risk approaches, which address risk in isolation, program risk management adopts a strategic and integrated approach that enhances cross-project coordination, scalability, and alignment with broader program objectives. From the initiation stage, developing a structured framework through a program risk management plan that outlines objectives, processes, tools, and outcomes can enhance overall program performance. The program risk management plan is also a key tool to define the alignment between project-level risk assessments and the overarching program risk assessment, which is a common question that arises when starting a program.

This paper presents a case study of an active water program to demonstrate how a program-level risk assessment can improve overall project delivery and program performance. The case study captures examples of the key risks that were identified and a summary of the quantitative risk assessment that evaluates contingency and schedule.

A major focus of this paper is the importance of developing a risk management plan tailored to program objectives, how to align risk management across projects, and identifying the appropriate risk assessment approach according to the program control needs. The paper also presents the results of the quantitative risk assessment at the P80 confidence level, which estimated a 2.5-year delay for program closeout and a 12% cost increase for risk. Building on insights from past programs and projects, risk control strategies were developed in accordance with program needs. This paper describes how to interpret the results of the quantitative risk assessment for risk-informed decision making, prioritization of risk management, and escalation of project-level risks.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(RISK-4819) Risk Management During an Industrial Shutdown by Maturity Model Framework

Skill Level: Advanced
TCM Section(s): 7.6. Risk Management 8.1. Project Control Plan Implementation
Author(s)/Presenter(s):
Carlos Fernando Feu Rodrigues *Carlos Fernando Feu Rodrigues*
Igor Adolfo de Avila *IGOR AVILA - Gestão de Projetos Ltda*

Abstract: This article presents a practical application of risk management during the shutdown of a metal coil factory. The analysis covers the main sources of uncertainty and risk associated with the complexity of services, the transportation and assembly of large equipment, the technical performance of new equipment integrated into the production line, and working conditions. Aspects related to worker safety, environmental impacts, and the organizational environment in which the activities were carried out are also evaluated.

The risk management model adopted was based on the "Roadmap to Risk Management Maturity," published in 2019 by the Association for the Advancement of Cost Engineering (AACE), authored by Dr. David T. Hulett [1], later formalized as AACE Recommended Practice No. 132R-23 [2]. The methodology was applied in a structured manner during the industrial shutdown and incorporated specific and systemic risk concepts, in accordance with AACE RP 42R-08 [3] guidelines.

The methodological approach was enhanced by integrating concepts related to heuristics and cognitive biases, as defined by Daniel Kahneman, with an emphasis on availability, representativeness, anchoring, affectivity, and recognition heuristics, among others applicable to the case study.

The case study also contributes as a form of reflection for the continuous advancement of AACE recommended practices, addressing an application of risk management during the short period of a maintenance shutdown, which is in line with the relevant guidelines, as discussed in AACE Recommended Practice No. RP 112R-20 [4] and 116R-21 [5]. Overall, the article highlights the importance of adopting a formal and systematic risk management framework to ensure a consistent and effective approach, especially during the execution phase of industrial shutdowns.

(RISK-4826) Structured Risk Assessment Methods for Quantitative Analysis: Risk Bowtie Method

Skill Level: Intermediate
TCM Section(s): 7.6. Risk Management
Author(s)/Presenter(s):
Justin Jacobsen, PRMP PSP *MBP*

Abstract: Quantitative risk analysis depends on how well risks are defined. When risk descriptions are vague or inconsistent, project teams struggle to trace cost and schedule uncertainty back to its source, and subject matter expert input becomes unreliable. Many risk registers rely on short, simplified statements that blur causes, conditions, and impacts. The result is weaker estimates and less useful analysis.

Bowtie analysis addresses these problems by integrating fault tree and impact tree logic in a single visual structure.
The bowtie structure links upstream causes and triggering conditions to a clear project-level risk event, then maps the full range of potential impacts. This makes the causal logic explicit and keeps the focus on risks that directly affect project objectives. By separating external factors from proximate risk events, the approach helps teams avoid disjointed registers and ineffective mitigation strategies.

The paper reviews common weaknesses in current risk description practices, demonstrates bowtie construction through a detailed material availability example, and presents implementation guidance, including criteria for when visual definition provides sufficient value over conventional text statements.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(RISK-4852) Contingency Management Framework for Multi-Project Programs

Skill Level: Advanced
TCM Section(s): 7.6. Risk Management
Author(s)/Presenter(s):
Rachel A. Fleming *MBP*
Albert Brier *Dokainish & Company*
Roger Bradfield *Dokainish & Company*

Abstract: Despite the prevalence of multi-project programs in capital development, the industry lacks normalized best practices and formal recommendations for assessing, utilizing, and tracking contingency funds at the program level. This gap creates uncertainty in managing risk and maintaining appropriate reserves across interconnected projects.

This paper addresses this challenge by developing an enhanced contingency management framework for programs carrying both project-level contingency and program-level management reserves. The methodology integrates existing literature, AACE recommended practices (RP) and conceptual demonstrations to establish an integrated method of modeling risk impacts within a program environment. Through a comparative study, this paper examines how independently estimated project-level results compare to program-level results at selected confidence intervals following integration, revealing significant impacts on reserve sizing and funding adequacy. Based on these findings, this paper provides practical guidance for allocating and expending cost contingency to ensure appropriate funding levels.

The resulting framework identifies key strengths and limitations of integrated contingency management, providing program managers and risk professionals with actionable insights for improved decision-making. By establishing clearer methodologies for dual-level contingency reserves, this work contributes to more resilient program outcomes and provides a foundation for future RP development in program-level risk management.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(RISK-4883) AI-Enabled Early Warning Systems for Petroleum Investment Governance and Valuation

Skill Level: Intermediate
TCM Section(s): 7.6. Risk Management
Author(s)/Presenter(s):
Akinlolu (Akin) I. Oni, CCP *Eftex Group*

Abstract: Petroleum investments remain highly vulnerable to schedule slippage, cost overruns, and value erosion. While most traditional forecasting methods highlight risks' materiality after they emerge, they rarely provide actionable early warning. This paper introduces a practical, integrated framework that combines probabilistic valuation, governance discipline, and AI-enabled forecasting to identify early warning signs of investment distress before they materialize.

The emphasis is on practical application rather than theory. Three models - a Bayesian adaptive schedule forecast, an AI-based cost estimation model, and a probabilistic valuation tool - are applied to petroleum project case studies. Results demonstrate that these methods outperform traditional risk assessment by providing detection windows 5 to 9 months earlier than conventional earned value controls for schedule and cost deviations, enabling executives and project teams to act before material risks escalate.

Key conclusions include:
• Early warning systems embedded in governance frameworks increase accountability and improve decision quality.
• AI-enhanced forecasting reduces false alarms while capturing complex schedule-cost interactions overlooked by conventional methods.
• Proactive "project health checks" improve investment confidence, even under volatile market conditions.

Unlike prior post-mortem–focused studies, this work advances a forward-looking, governance-driven approach that equips total cost management professionals with tested tools to protect capital value and enhance petroleum project resilience.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(RISK-4890) Embedding Predictive AI in Capital Project Portfolios: A Case Study From Over 3000 Projects

Skill Level: Advanced
TCM Section(s): 7.6. Risk Management
Author(s)/Presenter(s):
Rhys B. Phillips *nPlan*
Dev Amratia *nPlan*

Abstract: In infrastructure project delivery, success is often constrained by slow, manual project controls processes. From planning through execution, organisations face challenges in synthesising data, forecasting risks, and making informed decisions across complex portfolios in a timely manner. Traditional project controls rely heavily on retrospective reporting, fragmented tools, and periodic reviews—resulting in delayed interventions, poor visibility, and missed opportunities to improve outcomes. In the context of more ambitious capital programmes, tighter regulatory frameworks, and ambitious energy transition-related targets, this approach is no longer fit for purpose.

This paper explores what it means for a major infrastructure owner to adopt artificial intelligence for portfolio forecasting and risk management not as an add-on, but as a standard element of programme delivery. By embedding probabilistic AI-driven forecasting as a foundational capability within governance, assurance, and strategic interventions, organisations can move from reactive project-level monitoring to proactive, portfolio-wide management of systemic risk. The paper focuses not only on the analytical methods, but on the organisational implications: how programme leadership manages change, how project controls roles are augmented to look forward rather than backwards, and how project controls teams become more scalable and effective in a modern project delivery environment.

The case of Anglian Water, a major water and utilities provider in the UK, provides a concrete demonstration of the impact of portfolio-wide AI in action. In delivering its highly ambitious AMP8 programme, which sees Anglian Water go from 700 projects in the previous funding period to over 3000 projects in the current cycle, integrated AI-driven forecasting has been deployed to evaluate resilience across its multi-billion-pound capital investment portfolio. This adoption enabled the executive team to identify systemic vulnerabilities, rectify portfolio-wide risks, and make better-informed strategic decisions. Crucially, it marked a cultural shift: AI was no longer treated as an experimental overlay, but as an embedded capability shaping capital project governance at scale.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(RISK-4892) Bridging the Gaps: Identifying Overlooked Risk Drivers with Machine Learning and Monte Carlo

Skill Level: Advanced
TCM Section(s): 7.6. Risk Management
Author(s)/Presenter(s):
J. Gustavo Vinueza *The Ferryfield Group*

Abstract: Quantitative risk analysis (QRA) for capital projects commonly relies on Monte Carlo simulation to quantify uncertainty in cost and schedule outcomes. While probabilistic simulation provides a robust framework for uncertainty propagation, traditional approaches to risk driver identification—such as variance-based sensitivity analysis—often assume homogeneous project behavior and marginal effects, potentially obscuring structural heterogeneity and context-dependent risk mechanisms.

This paper proposes an integrated analytical framework that combines Monte Carlo simulation with data-driven diagnostic techniques to improve risk driver identification and interpretation. Unsupervised learning is used to identify structurally distinct project contexts, while supervised, interpretable tree-based methods are applied to assess conditional driver relevance within those contexts. Importantly, machine learning is not employed for predictive forecasting, but as a structural diagnostic layer to support interpretation, validation, and refinement of probabilistic modeling assumptions.

Application to empirical project data demonstrates that aggregating heterogeneous projects can mask materially different risk behaviors and distort tail-risk estimates. By explicitly linking structural segmentation to conditional driver analysis, the framework enables more context-aware Monte Carlo modeling and more defensible interpretation of sensitivity results.

The contribution of this work lies in reframing machine learning from a predictive tool into a diagnostic instrument for quantitative risk analysis, strengthening the empirical foundation of probabilistic risk models while preserving transparency, governance, and alignment with established practices.

The following sessions are tentatively scheduled for the technical program.

Subject to change. Rev. April 30, 2026 at 11:19

(RISK-4906) Building Risk Modelling Maturity to Improve Project Decision-Making

Skill Level: Basic
TCM Section(s): 7.6. Risk Management 3.3. Investment Decision Making
Author(s)/Presenter(s):
Doug Oldfield *The Ferryfield Group*

Abstract: Quantitative risk analysis (QRA) is widely applied on capital projects, yet it is often treated as a compliance-driven activity undertaken to satisfy governance or contractual requirements rather than to improve decision-making. As a result, technically sound analyses may deliver limited practical value, while deterministic targets and implicit assumptions about risk continue to dominate project decisions.

This paper argues that the value derived from QRA depends primarily on the maturity of its application, not on analytical sophistication alone. Drawing on AACE International recommended practices, including 117R-21, 122R-22, and 57R-09, the paper presents a practical, maturity-based framework focused on the questions that risk models should be able to answer to support effective decisions. Ten decision-critical insights are defined, illustrating how mature risk models improve cost and schedule predictability, contingency setting, forecast confidence, and governance assurance.

Through synthesis of established guidance and generalized case-based lessons, the paper demonstrates how organisations can move beyond box-ticking analyses and integrate probabilistic risk outputs with project controls and governance processes, strengthening confidence in project decision-making under uncertainty.

(RISK-4912) Confidence: What Stakeholders Want and What We Need from QRA

Skill Level: Advanced
TCM Section(s): 7.6. Risk Management 3.3. Investment Decision Making
Author(s)/Presenter(s):
John K. Hollmann, CCP CEP DRMP FAACE Hon. Life *Validation Estimating LLC*
Francisco Cruz, PE CCP *PMA Consultants, LLC*

Abstract: The primary outputs of project quantitative risk analysis (QRA) are probabilistic distributions of cost and schedule duration. The most common uses for these outputs are to 1) inform investment decision-making by providing cost and timing inputs to net present value (NPV) or to similar decision models, and 2) support project cost risk funding/budgeting and schedule baseline decisions. The latter decisions typically establish cost and schedule contingency, management reserves, and escalation. As most decision-makers are not statistical experts, the communication of these outputs often relies on a simplified language of accuracy and ranges to convey the essence of the distribution, while keeping in mind the risk story behind it.

The concept of accuracy and the statistics behind it (e.g., confidence level and interval), typical cost estimate accuracy expectations, and QRA methods are addressed in various AACE recommended practices (RPs) that will be reviewed. However, those RPs do not speak to understanding stakeholder and decision-maker risk tolerance or to translating those tolerances to specific statistical confidence criteria or policy in different contexts (e.g., How reliable are QRA outputs? Is the capital project sustaining or strategic? Does the policy apply to a program or to a portfolio?).

This paper provides guidance on factors that play into organizational risk appetite and tolerance. It also provides recommendations on how analysts can communicate and work with management on issues such as considering the confidence level at which general management reserve should be funded, if at all; whether project contingency should be funded at P50 or the mean and why; or if concern is warranted in relation to outcomes above the high range and whether more should be considered. The paper is intended to help organizations raise their risk management maturity and assist individuals in raising their competency from risk analyst to valued expert advisor.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(RISK-4937) Portfolio Capability Risk Assessment: Integrating Planning Maturity, FEL, and Monte Carlo Simulation

Skill Level: Intermediate
TCM Section(s): 3.3. Investment Decision Making 7.6. Risk Management
Author(s)/Presenter(s):
Rodrigo Amoedo Quireza *Braskem S/A*
José Bruno de Holanda da Silva *Braskem S/A*

Abstract: In competitive environments, portfolio decisions must balance strategic alignment with the ability to execute pre-determined annual goals within fiscal-year constraints. Although many projects are multi-year, organizations often target year-specific scope realization to capture partial, planned benefits of the annual portfolio selection. Portfolio management, through the domain of capacity and capability, selects the most suitable portfolio in terms of efficient use of the organization's resources. Therefore, effective portfolio management is vital for organizations to meet strategic goals while optimizing finite resources. Traditional project selection often relies solely on strategic alignment and expected outcomes, neglecting factors like planning maturity and resource efficiency.

This paper proposes and validates a quantitative approach that integrates planning maturity, front end loading (FEL) status, and Monte Carlo simulation to forecast portfolio cash realization and risk of unspent funds or shortfalls. Using organizational historical data and internal process documentation, standards, and data repositories, we define feasibility drivers, statistically screen their significance, and fit bounded probability distributions by FEL stratum. The model samples project level variations and aggregates them to portfolio outcomes over 5,000 iterations, producing credible ranges for year end execution. Validation shows that actual results largely fall within simulated bands, enabling proactive governance actions such as advancing higher maturity projects, rephasing disbursements, and coordinating turnaround dependencies. It improves predictability, strengthens resource utilization, and supports effective decision making under finite capacity constraints.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(RISK-4952) Accuracy Range and Contingency with Recommended Practice 119R-21 and eSBM Method

Skill Level: Advanced
TCM Section(s): 7.6. Risk Management
Author(s)/Presenter(s):
Alexandre Rabello David *Petroleo Brasileiro S.A. (Petrobras)*

Abstract: The parametric models for systemic risks developed by the RAND Corporation and Mr. John Hackney, presented in AACE's recommended practices 42R-08 [1], 43R-08 [2], and AACE 119R-21 [3], are the best references determined on real data and accessible to cost engineering professionals for quantifying accuracy range and contingency.

Despite the robustness of the studies carried out and the quality of the results obtained by RAND and Mr. Hackney, the calibration of variables according to characteristics typically related to systemic risks remains a challenging barrier to be overcome by those wishing to use these or similar models.

Another methodology, recognized worldwide, is called eSBM (Enhanced Scenario-based Method for Cost Risk Analysis) [4]. It is not a parametric model, but rather a methodology that can be used to produce consistent results based on simpler calibrations.

With the publication of Recommended Practice 119R-21 [3], AACE International began offering accuracy range and contingency values as references for different types of projects and degrees of complexity.

In this paper, presented is a simplified approach for obtaining accuracy ranges, with the respective probability distribution curves and contingency, according to the desired confidence level, through the application of the eSBM method [4], based on the information and guidelines provided in Recommended Practice 119R-21 [3]. The methodology described provides a risk-driven quantification approach for cost contingency where more rigorous methods are not possible or justified, such as early in the project development cycle or for lower capex projects.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(RISK-4954) A Risk-Based Option Analysis Tool for Project Decision Making

Skill Level: Intermediate
TCM Section(s): 7.6. Risk Management 3.3. Investment Decision Making
Author(s)/Presenter(s):
André Luiz Cintra Leal de Souza *VALE SA*
Kumar Abhishek *VALE SA*
Ana Luiza de Oliveira Guimarães *VALE SA*
Luiz Cláudio de Magalhães Mendonça Santos, EVP *VALE SA*

Abstract: This paper presents a risk-based option analysis tool designed to support informed selection of the optimum underground mining method between two competing alternatives (sublevel caving, SLC, and sublevel stopping, SLS) for a capital project exceeding USD 1.5 billion. The objective is to quantify and compare the variability range of lifecycle project economic outcomes for each option, enabling decision-makers to understand both downside exposure and upside potential under uncertainty. The study introduces an innovative approach by integrating multiple commonly techniques:

1. Estimate ranging based on study maturity and industry-referenced accuracy ranges, refined through structured expert judgment.
2. Input validation via benchmarking and review by subject-matter experts (SMEs) to calibrate uncertainty bands and key assumptions.
3. Monte Carlo simulation of economic evaluation variables across the full project lifecycle (Capex, sustaining capital/Susex, and Opex), integrated with production and grade drivers to generate probabilistic NPV and IRR distributions for each option.
4. Input data validation through benchmarking and review by subject matter experts (SMEs); and
5. Monte Carlo simulations applied to key economic evaluation variables, including Capex, Susex, Opex, total production, and ore grade revenues.

This multi-layered methodology enables a robust probabilistic analysis of project outcomes, accounting for the interdependencies and concurrent variability of critical parameters. Unlike conventional deterministic assessments – typically limited to single-variable or narrow sensitivity analyses – this approach models the combined effects of multiple risks and uncertainties on net present value (NPV) and internal rate of return (IRR).

The paper emphasizes the importance of incorporating risk-adjusted metrics into early-stage project decisions and demonstrates how a structured, data-driven framework – enhanced by probabilistic modeling – can significantly improve decision-making in complex, large-scale capital projects. Adaptable to diverse business contexts, this methodology offers a valuable tool for leaders seeking greater transparency, confidence, and strategic alignment in project evaluations.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(RISK-4973) How Following the Recommended Practice 57R-09 Strengthens Quantitative Risk Analysis

Skill Level: Advanced
TCM Section(s): 7.6. Risk Management 10.1. Project Performance Assessment
Author(s)/Presenter(s):
Dr. David T. Hulett, FAACE *Hulett & Associates, LLC*
Keith D. Hornbacher *Hornbacher & Associates*
Waylon T. Whitehead *sCurve Solutions*

Abstract: Several important issues commonly encountered in conducting an integrated cost and schedule risk analysis (ICSRA) may not commonly be addressed by practitioners. This paper identifies some of these issues and shows how following practices found in recommended practice (RP) 57R-09 (sometimes shortened to "57R") could strengthen the risk analysis process.

This paper identifies nine common issues encountered in performing an ICSRA that the practices described in RP 57R address.

(RISK-4976) The Ignored Cost: Crime in the Construction Industry

Skill Level: Basic
TCM Section(s): 7.6. Risk Management 7.7. Procurement Planning
Author(s)/Presenter(s):
Liam McVeigh *Quantum Global Solutions*

Abstract: Almost everyone who works in the construction industry has anecdotes of theft or fraud which they have encountered or heard about. Crime in construction is, of course, a covert activity, so it is difficult to find data which gives a clear picture of how big a problem crime may be. Many crimes go undetected. And even those which are discovered, many may not be prosecuted, simply to avoid bad publicity. What this paper seeks to do is explore the scale of the problem of crime in construction, examine why the construction industry is so susceptible to crime and provide a practical guide to the identification of common construction crimes. In particular, this paper explores practical ways crime can be detected to allow practitioners in the construction industry avoid becoming victims of crime. In addition, if a crime can be proven then the cost of that crime is usually covered by the contractor's all-risk insurance policy which may provide an avenue for cost recovery.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(RISK-5005) Implementation of Quantitative Risk Analysis on a Critical Dam Safety Project

Skill Level: Intermediate
TCM Section(s): 7.3. Cost Estimating and Budgeting 7.6. Risk Management
Author(s)/Presenter(s):
Chirag Mehta, PE *Nimble Minds Consulting LLC*

Abstract: Dam safety projects are inherently complex, with the potential for substantial cost and schedule impacts stemming from design modifications, regulatory re-approvals, and contractor performance. This paper details the application of quantitative risk analysis (QRA) to a large-scale dam seepage mitigation project, demonstrating how probabilistic methods can enhance governance and decision-making in the face of significant uncertainty.

Following major shifts in the execution strategy, a rigorous QRA framework was implemented to restore financial and operational confidence. Using Monte Carlo simulation, the project team quantified cost and schedule risks across a range of factors, including technical, regulatory, environmental, and construction uncertainties. This was achieved through structured workshops and three-point impact estimates.

The modeling approach adhered to industry-aligned estimation guidelines, yielding confidence levels and sensitivity analyses that identified critical risk drivers. These drivers included construction delays, unforeseen natural events, contract interpretation, and regulatory approval timelines. The findings from this analysis informed the development of targeted mitigation and contingency strategies, empowering stakeholders to make more informed decisions.

This case demonstrates how practical QRA, through transparent quantification and scenario modeling, supports robust governance, enhances assurance, and improves both financial resilience and technical performance on high-visibility infrastructure projects. Attendees will gain practical insights into embedding risk-based thinking into capital programs to deliver safer, more predictable outcomes.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(TCM-4904) Megaproject Overruns: Failure of the Change Management System or Just Part of the "Game"?

Skill Level: Intermediate
TCM Section(s): 10.3. Change Management 8.1. Project Control Plan Implementation
Author(s)/Presenter(s):
Pablo Ganora Huidobro *Teck Resources*

Abstract: Megaprojects in mining and infrastructure have consistently faced severe cost and schedule overruns, with recent studies reporting average capital expenditure increases of more than 40% and delays exceeding 50% [1]. While external disruptions such as global crises, supply chain volatility, and regulatory changes have contributed to these outcomes, internal project control weaknesses often play an equally decisive role. This paper examines whether recurrent overruns are simply inherent to the complexity of megaprojects, or rather evidence of systemic failures in change management practices.

Through a comparative review of international standards from AACE International, the Project Management Institute, and the Construction Industry Institute, combined with an analysis of a real large-scale copper mining megaproject in Chile, this study identifies four critical systemic failures: late identification of changes, fragmented responsibility, insufficient dedicated resources, and inefficient approval processes. These failures are not unique to a single project but represent common patterns across underperforming megaprojects.

The paper proposes an adaptive framework built on three integrated pillars: origin-based change classification, digital traceability platforms, and dedicated cross-functional change teams. The framework addresses the identified failures while aligning with industry best practices. The conclusions provide actionable recommendations for project owners and practitioners, demonstrating that overruns are not an inevitable "part of the game" but rather preventable outcomes of systemic breakdowns in change management governance.

The paper also emphasizes the critical role of early warning mechanisms within the change management process, enabling timely intervention, risk mitigation, and informed decision-making to prevent cost and schedule overruns.

(TCM-4905) Developing a Technology Stack for Integrated Preconstruction

Skill Level: Intermediate
TCM Section(s): 11.3. Information Management 8.1. Project Control Plan Implementation
Author(s)/Presenter(s):
Amanjeet Singh *Barry Wehmiller Design Group*
Chris Fortin *Barry Wehmiller Design Group*

Abstract: Collaborative project delivery methods continue to expand across the construction industry, increasing the importance of early decision-making, risk transparency, and lifecycle alignment. In response, Integrated Preconstruction has emerged as a unifying practice that extends beyond traditional estimating to align cost, schedule, constructability, and risk during early project phases. While prior AACE literature has documented the organizational and process transformations required to adopt integrated preconstruction, comparatively limited guidance exists on how to intentionally develop and govern the supporting technology ecosystem.

This paper presents a conceptual framework for growing integrated preconstruction capabilities and identifies the current technology ecosystem required to support such development. Representative software solutions are referenced across key capability areas to demonstrate practical application without implying endorsement or exhaustiveness. A technology selection process is summarized, and future development opportunities are discussed. The intent is to support practitioners in moving from fragmented technology adoption toward a cohesive preconstruction ecosystem consistent with TCM principles.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(TCM-4918) Strategic As-Built Management: Turning Closeout Documentation into a Cost-Control Advantage

Skill Level: Intermediate
TCM Section(s): 11.3. Information Management 11.4. Quality and Quality Management
Author(s)/Presenter(s):
Jigar Thakkar *Exponent*
Brigitte Perera, CCP *Exponent*

Abstract: Delayed and incomplete as-built documentation in large-scale utility capital projects is often perceived merely as a project closeout hurdle. Such delays create cascading impacts across the asset's lifecycle, driving hidden costs, reducing operational efficiency, and complicating regulatory compliance. Inaccurate or late records can force operational decisions based on unreliable data, introducing safety and financial risks that persist long after project completion.

Drawing on recent utility infrastructure programs, this paper examines the tangible and intangible financial burdens of prolonged as-built submission and delayed system integration. These include extended project carrying costs, higher administrative overhead, warranty disputes, deferred revenue recognition, and heightened operational risks from inaccurate asset information.

The paper also outlines practical strategies to address these challenges: early and continuous data capture, standardized digital workflows, improved stakeholder coordination, and the use of project controls data to validate as-builts before handover. Case examples illustrate how these measures accelerate closeout, improve compliance, and enhance asset readiness.

By quantifying these often-overlooked costs and presenting proven mitigation techniques, this paper aims to elevate the value of proactive as-built management as a strategic cost-control tool; delivering measurable savings, faster revenue realization (contractors/construction crew), and improved lifecycle performance for utility owners.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(TCM-4941) Leveraging AI for Post-Investment Reviews: A Smarter Approach to Capturing Lessons Learned

Skill Level: Intermediate
TCM Section(s): 11.3. Information Management 1.2. Purpose and Uses of the TCM Framework
Author(s)/Presenter(s):
Alexandre Arnaldo Sonntag *VALE SA*
Luiz Mendonca *VALE SA*
Maria Eduarda Almeida *VALE SA*

Abstract: Traditional post-investment reviews (PIRs) fail to deliver meaningful organizational learning despite their widespread use in capital projects. Manual PIR processes suffer from three fundamental constraints: cognitive biases that distort stakeholder perspectives, fragmented data across enterprise systems preventing comprehensive analysis, and resource-intensive manual workflows that limit analytical depth. These limitations leave critical lessons buried in unstructured data, causing organizations to repeatedly make the same costly mistakes.

This paper presents an AI-enhanced PIR framework that systematically addresses these constraints through a dual-layered analytical approach. Natural language processing analyzes stakeholder interviews using sentiment analysis, topic modeling, and causal extraction to identify patterns in qualitative feedback. Machine learning algorithms then validate these findings against quantitative project data—costs, schedules, change orders, and performance metrics— providing objective evidence that reduces the influence of human cognitive bias by introducing systematic, data-driven cross-validation at every stage of the analytical process. The framework acknowledges that AI systems carry their own forms of bias — including training data bias, selection bias, and algorithmic bias — and addresses this through mandatory human expert review of all outputs before any finding is accepted as a recommendation..

Implementation at Vale Base Metals on a major mining development project demonstrates quantifiable benefits: analysis time reduced by 85% while uncovering systemic issues overlooked by traditional methods. The AI system identified inadequate front-end engineering maturity, fragmented procurement processes, and organizational continuity gaps as the most substantiated contributing patterns—findings that human reviewers had missed while attributing problems to external factors.

This case study demonstrates how AI augments human expertise to transform post-investment reviews from retrospective administrative exercises into proactive strategic tools, converting organizational reflection into competitive advantage.

The following sessions are tentatively scheduled for the technical program.
Subject to change. Rev. April 30, 2026 at 11:19

(TCM-4995) Breaking the Silos: Risks of Fragmentation and Power of TCM Integration

Skill Level: Intermediate
TCM Section(s): 1.2. Purpose and Uses of the TCM Framework 11.2. People and Performance Management
Author(s)/Presenter(s):
Shoshanna C. Fraizinger, CCP FAACE *Arup*
Douglas W. Leo, CCP CEP FAACE Hon. Life *Consertus*

Abstract: While the AACE Total Cost Management (TCM) Framework provides a comprehensive, integrated approach to asset and project management, many organizations continue to apply its component processes (such as estimating, planning, cost control, and risk analysis) in operational silos.

This paper explores the systemic risks and inefficiencies that emerge when these processes are executed in isolation, rather than as part of a unified framework. Drawing on case study examples and lessons learned from real-world project environments, the discussion highlights the operational, financial, and governance consequences of fragmented TCM implementation. Key focus areas include misalignment between estimates and schedules, poor contingency justification, disjointed risk responses, and the erosion of performance measurement integrity. The paper further examines how organizational maturity, decision quality, and stakeholder confidence are adversely impacted when integration is absent. Finally, practical strategies are proposed for reinforcing cross-functional alignment, enabling continuous improvement, and leveraging the full value of the TCM Framework as an integrated system rather than a collection of independent tools.