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#### Prospective TIA Methodology

- Well established in industry
  - AACE RP for Time Impact Analysis
  - Supported by case law in general
- Clearly specified in many contracts
  - Army Corps of Engineers contracts
  - Navy & other Federal contracts
  - Departments of Transportation
  - Many private contracts



#### Good use for predictions

- Modeled approach
- Easily understandable
- Future is unknown
- Risk is shared
- Uses power of network calculations
- Durations can be calculated
- Logic is in keeping with project

#### Good use in negotiations

- Can be clearly stated and shown
- Graphical support

inds of Change

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- Durations and logic can be reviewed
- Clear process that can be checked
- Most discussions center around duration calculation or insertion points
- Enables partnering in discussions about risk and effects



- Timing important
  - Prepared contemporaneously and prior to impact of analyzed problem
  - Project status is known
  - Other impacts are known
  - Concurrent issues are known
  - Must be done rapidly without fail



#### Failure of process

- Late production of the TIA, so that impacts have already been felt and risk is no longer shared between Contractor and Owner
- Faulty methodology used in the TIA, so it cannot be approved or takes multiple review and rejection cycles to get approval
- Production of a incomplete TIA through failure to consider other concurrent delays



#### Failure of process

- Failure to recognize an impact event, so the TIA is not produced
- Production of an overly pessimistic TIA, which is not negotiated timely or at all
- Uncooperative Owner representative's failure to consider submittal of TIA
- Rejection by an Owner's representative who wants to wait to see what happens
- No party treats time like they do money
- Prospective TIAs often serve as the basis for a Contractor's acceleration claim



- Preparing a Prospective Contemporaneous Time Impact Analysis during project (see AACEi RP)
  - Update the schedule
    - Progress update
    - Update logic to model the project
    - Identify any slippage as baseline
    - Identify any concurrent delay events
  - Confirm schedule is an accurate model of current project
  - Design and develop a fragnet to represent impact event
  - Insert fragnet
  - Make logic connections
  - Recalculate schedule
  - Identify changes to milestones
  - Identify delays to Critical Path



- Why is an alternative process important?
  - Problem becomes competing types of analysis
    - An ongoing delay event analysis still prospective
    - A completed delay event, in a forensic manner
    - In general, there is no clear consistent approach followed
  - As the period updates roll on, more impact events occur
  - Multiple events overlap and create concurrent problems
  - The sheer volume overwhelms the project team
  - Relationships suffer through misunderstandings and distrust
  - TIAs are typically used to support acceleration claims, real or not



#### Resolution

- Always prepare a contemporaneous TIA
- Leave the fragnet in the schedule
- Disconnect the logic so it cannot drive the logic
- Filter out so it is not visible if necessary
- Identify the successors to the fragnet
- Set up filters and layouts so the fragnet and its successors can be isolated and shown
- Update the fragnet along with the rest of the schedule so it will maintain a good as-built



#### Analysis – Part 1

- Once the impact is known
  - Use the original schedule with inserted fragnet (the TIA)
  - Display the fragnet and its successors
  - Target or show Baseline to future update schedule with actual progress
  - Compare predicted performance with actual performance
  - Set up layouts to show slippage bars
  - Identify actual slippage in successor activities

• Updated schedule with fragnet inserted, not tied in logically

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Fragnet inserted, tied logically & calculated – PTIA submittal ٠

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	1CW190	Release halted work	1	-22	30SEP03	30 SEP03								Release	halted work
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• TIA Schedule with target to future update with impact event complete – TIA not tied in logically, just used for comparison

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1CW100	Verify wall tilt problem (halt work)	2	150	19AUG03A	20AUG03			Verify wall tilt problem (halt work)
1CW110	Request direction for repairs	3	150	21AUG03	25AUG03			Request direction for repairs
1CW180	Structural engineer site visit	1	150	26AUG03	26AUG03			Structural engineer site visit
1CW120	Design repair concept	4	150	27AUG03	02SEP03			Design repair concept
1CW130	Review & mobilize for repair	2	150	03SEP03	04SEP03			Review & mobilize for repair
1CW140	Install steel braces	2	150	05SEP03	08SEP03			install steel braces
1CW150	Install guying devices	4	150	09SEP03	12SEP03			💼 Install guying devices
1CW160	Straighten tilted wall	10	150	15SEP03	26SEP03			Straighten tilted wall
1CW170	Verify tilt correction	1	150	29SEP03	29SEP03			Verify tilt correction
1CW190	Release halted work	1	150	30 SEP03	30 SEP03			Release halted work
1C0055	F/R/P Loading Dock SOG LvI-1 (Area-1C)	3	8	19AUG03	21AUG03	23SEP03A	25SEP03A	F/R/P Loading Dock SOG LvI-1 (Area-1C)
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Prospective TIA – Inserted Fragnet – Targeted to Actual Progress Next Period

Vinds of Change

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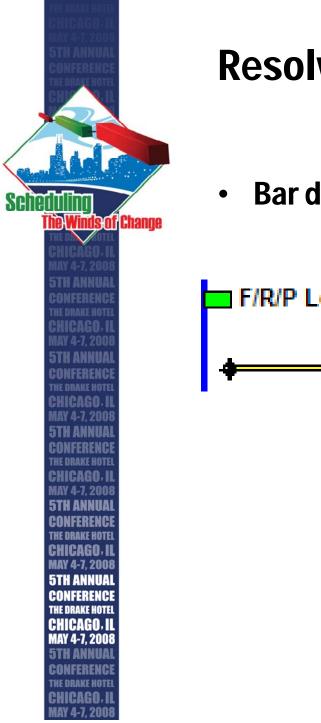


- Tips
  - Set up a bar called "slippage"
  - Set Start point to the current Early Finish
  - Set Finish point to the Target Early Finish
  - The bar shows the slippage from the original completion to the actual completion
  - Add labels as necessary

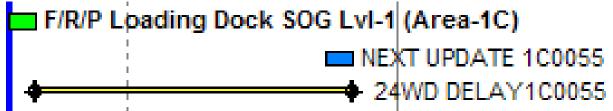


#### • Slippage Bar

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**Bar details** 





#### Analysis Part 2

- Resources the best way to analyze for acceleration
  - Absolutely critical that resources are tracked
  - If schedule is not resource loaded, load all affected activities
  - Load resources in fragnet activities
  - Must provide a plan for resource use for all activities that will be affected
  - This allows tracking of actual against planned



#### Analysis Part 2

- Increase in resource consumption over plan is one of the ways to confirm acceleration
- If actual resources are no greater than planned resources, then gains in completion over the TIA are
  - Not due to acceleration
  - Not supportive of acceleration claims just because the actual completion dates are earlier than the predicted dates in the original TIA
  - Possibly due to a variety of factors



- Analysis Part 2
  - Other possible factors
    - Good project management actions such as strong monitoring of subcontractors
    - Owner actions such as redefining of Milestone completions
    - Elimination or reduction of time contingencies built into logic or durations
    - Fixing poor logic or logic that does not model the project sequencing
    - Luck



#### Conclusions

- Good way to track unresolved TIA issues
- Allows for concurrent issues to be tracked because
  - The modeling does not affect the schedule
  - Multiple models might have a cumulative effect if tied in logically, but in this case, there is still a paper trail
  - The TIAs can be reviewed at any time once the impact event is actualized
  - The TIAs provide a good as-built record of the changes
  - There is not additive impact induced in the schedule
- Owners should not object since there is no forced modeling
- The resource tracking also helps isolate acceleration



#### Conclusions

- Keeps track of potential delay events
- Submit TIAs as the events are identified so prospective resolution is still possible
- Takes into account simple delay
- Takes into account concurrent delay
- Allows review of acceleration risks
- Promotes good Construction and Project Management
- Allows for fair, objective, and thorough resolution of the issues that tend to be very contentious
- Maintains good as-built data



**Questions?** 

**Recommendations?** 

War Stories?

Gripes?



#### Resolving an Unapproved Prospective Time Impact Analysis (or What to Do When Your Prospective TIA Expires)

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