

IBA-ICP WEEKEND 12/13-MAY-2018

SESSION 4: FORENSIC SCHEDULE ANALYSES – SCIENCE, ART OR MYTH?

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BIO



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FOUR Basic Families of Forensic Schedule Analysis (FSA)

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TWO FSA GUIDES

- **AACE** has identified 9 methodologies, in **four Families**
- **Society of Construction Law** has identified 6 methodologies, in **five Families**
- **The methodologies attempt minimize and illuminate Expert decisions from the FSA mechanics**

SCL – DELAY DISRUPTION PROTOCOL

		Method of Analysis	Analysis Type	Critical Path Determined	Delay Impact Determined	Requires	
6.6.a		Impacted As-Planned Analysis	Cause & Effect	Prospectively	Prospectively	<ul style="list-style-type: none"> Logic linked baseline programme. A selection of delay events to be modelled. 	
6.6.b		Time Impact Analysis	Cause & Effect	Contemporaneously	Prospectively	<ul style="list-style-type: none"> Logic linked baseline programme. Update programmes or progress information with which to update the baseline programme. A selection of delay events to be modelled. 	
6.6.c		Time Slice Windows Analysis	Effect & Cause	Contemporaneously	Retrospectively	<ul style="list-style-type: none"> Logic linked baseline programme. Update programmes or progress information with which to update the baseline programme. 	
6.6.d		As-Planned versus As-Built Windows Analysis	Effect & Cause	Contemporaneously	Retrospectively	<ul style="list-style-type: none"> Baseline programme. As-built data. 	
6.6.e		Retrospective Longest Path Analysis	Effect & Cause	Retrospectively	Retrospectively	<ul style="list-style-type: none"> Baseline Programme. As-built programme. 	
6.6.f		Collapsed As-Built Analysis	Cause & Effect	Retrospectively	Retrospectively	<ul style="list-style-type: none"> Logic linked as-built programme. A selection of delay events to be modelled. 	

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AACE 29R-03 (2011)

Observational	As-Planned As-Built	Single Base	As-Planned As-Built (MIP 3.1)
		Multiple Base	As-Planned As-Built (MIP 3.2)
	Windows (Contemporaneous Period Analysis)	Contemporaneous As-Is	Contemporaneous Period Analysis (MIP 3.3)
		Bifurcated Contemporaneous	Bifurcated CPA (MIP 3.4)
		Recreated/Modified	Recreated CPA (MIP 3.5)
Modeled	Time Impact Analysis	Single Base	Impacted As-Planned (MIP 3.6)
		Multiple Base	Retrospective TIA (MIP 3.7)
	Collapsed As-Built	Single Simulation	Collapsed As-Built (Single) (MIP3.8)
		Multiple Simulation	Collapsed As-Built (Multiple) (MIP3.9)

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FOUR FAMILIES

DDP2	Common Name	RP29R-03
Name		Name
As-Planned v. As-Built Windows	APAB	Observational / Static / Gross
Time Slice Analysis	Windows	Observational/Dynamic/Periodic
Time Impact Analysis	TIA	Modeled/Additive/Multiple Base
Collapsed As-Built	CAB	Modeled/Subtractive/Single Base

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AS-PLANNED AS-BUILT

- Compares the as-planned schedule to the as-built, establishes an as-built critical path, and determines what events actually drove project completion.

As-Planned Schedule

- Accepted/approved baseline schedule from the project.
- Unaltered CPM network.

As-Built Schedule

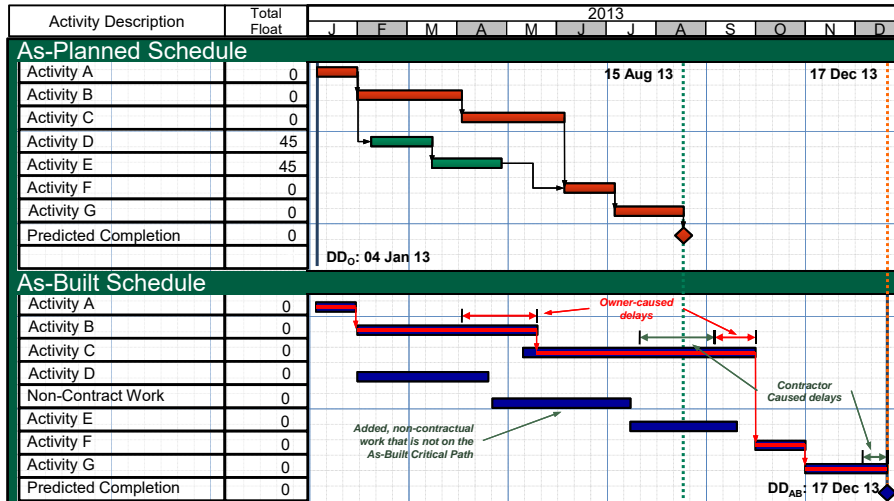
- Fully statused Update or recreated (Daily Specific As-Built).
- Contains both parties' delays.
- Often associated with "**total time**" Sophisticated implementations are **not total time**.

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AS-PLANNED AS-BUILT



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WINDOWS (CPA)

- Compares two schedules with successive data dates in order to determine the driving critical path activities (“causal activities”).

Beginning of Period Schedule

- Most recently accepted schedule with a data date prior to the event.
- Schedule may also be updated to the day prior to the event.
- Does not contain the fragnet.

End of Period Schedule

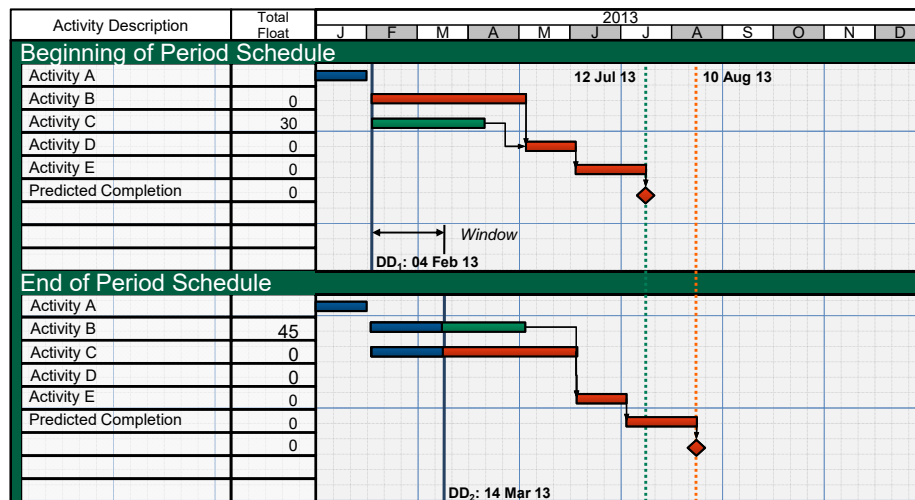
- Schedule which is logically identical to the Pre-Impact Schedule, except for progress.
- Does not need the fragnet (though it may be inserted with actual dates for record keeping).
- Recalculated as of the next appropriate data date.

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WINDOWS (CPA)



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TIME IMPACT ANALYSIS (TIA)

- Takes a delay event, using its actual duration, and inserts it into the unimpacted schedule to show that event's alleged impact on the contractor's original plan.

Unimpacted Schedule

- Impacted As-Planned uses the original baseline schedule as the unimpacted schedule.
- Retrospective TIA typically uses one of the updated schedules, though implementations vary.

Impacted Schedule

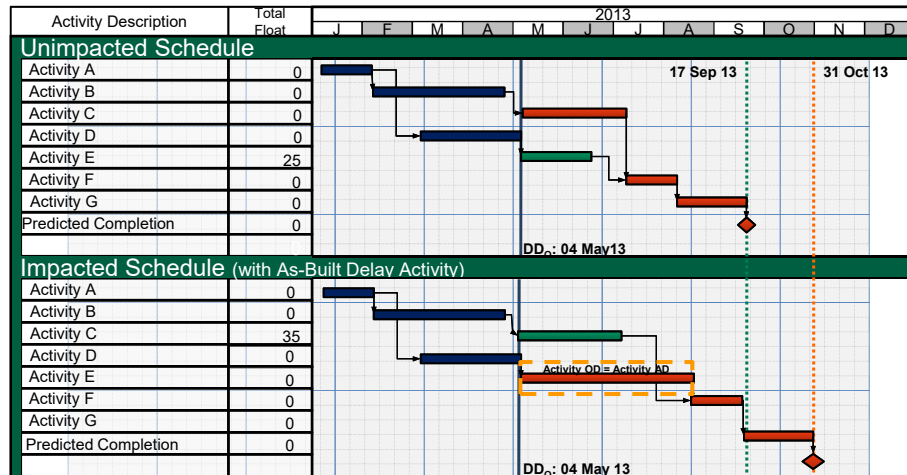
- Schedule with an identical data date, and which is logically identical to the Unimpacted Schedule, except for the As-Built Activity.
- As-Built Activity is inserted into the network, logically tied into the impacted activity.

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TIME IMPACT ANALYSIS (TIA)

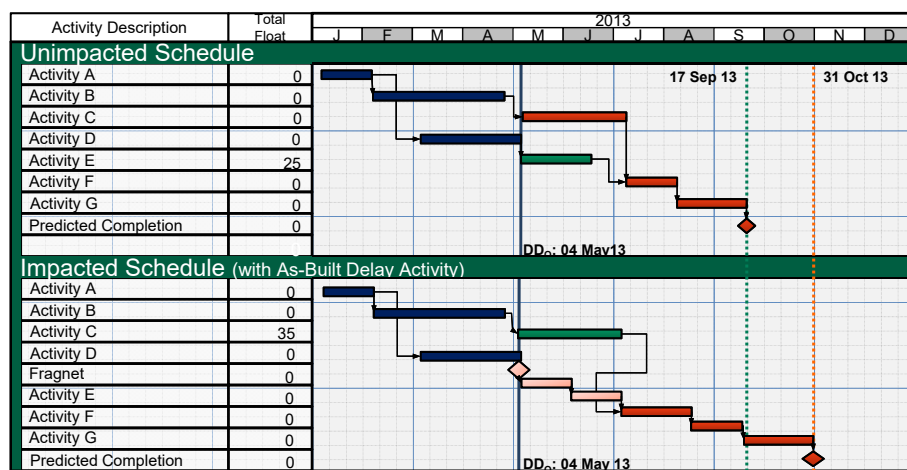


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TIME IMPACT ANALYSIS (TIA)



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COLLAPSED AS-BUILT

- Recreates a CPM model starting with the as-built schedule, then deletes selected delay activities.

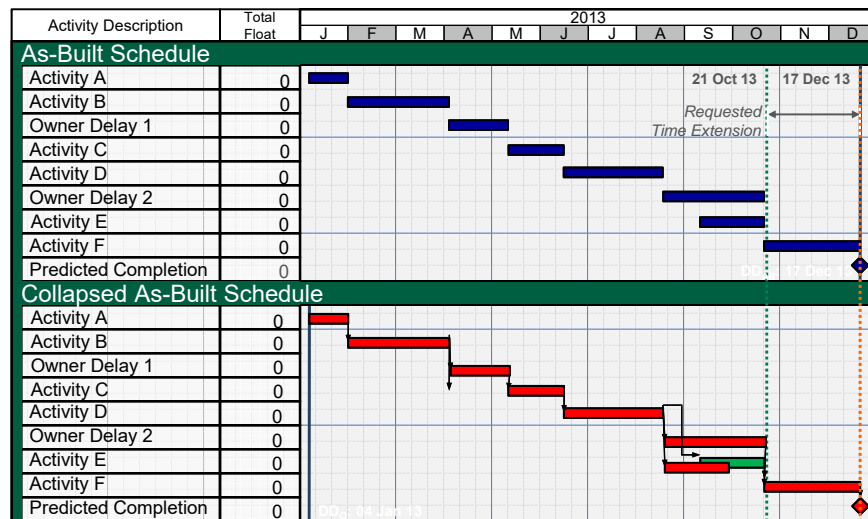
Collapsible As-Built

- Schedule created with a Data Date equal to NTP, original durations equal to actual durations, and ES logic.
- Also contains activities representing delays.
- ABCP is calculated.

Collapsed As-Built

- Delay activities are dissolved, in reverse order.
- Schedule is recalculated after each dissolution.
- What would have happened “but for” the dissolved events.

COLLAPSED AS-BUILT



Why do we get different results?

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