



فرآیند جامع آنالیز تاخیرات در پروژه

بخش چهارم:
مقدمه: آنالیز تاخیرات همزمان
(Concurrent Delays)

ارائه دهنده:

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What we will learn?

- ❑ Meaning of concurrent delays
 - ❖ General concepts
 - ❖ SCL Protocol
 - ✓ Meaning
 - ✓ True concurrent delay
 - ✓ More common usage
 - ❖ AACE Recommended Practices
 - ✓ AACE 10S-90
 - ✓ AACE 29R-03
 - Literal
 - Functional
 - ❖ ASCE Standard ANSI/ASCE/CI 67-17 (Schedule Delay Analysis)

What we will learn?

❑ Dealing with concurrent delays

❖ Legal implication

- ✓ U.S. law
- ✓ English law
- ✓ Scots law
- ✓ Canadian law
- ✓ Hong Kong law
- ✓ Australian law
- ✓ FIDIC
- ✓ AIA A201-2017
- ✓ Other contracts
- ✓ SCL Protocol
- ✓ AACE 29R-03
- ✓ ASCE Standard ANSI/ASCE/CI 67-17 (Schedule Delay Analysis)

What we will learn?

☐ Dealing with concurrent delays

❖ Practical implication

- ✓ General concept
- ✓ Separate critical path
- ✓ Same critical path

❖ My choice

- ✓ Contemporaneous
- ✓ Forensic

☐ Pacing delays

Meaning of Concurrent Delays

(General Concepts)



Concurrent delays – Introduction

☐ Few contract includes:

1. A **definition** of “**concurrent delay**”
2. **How** concurrent delay should be **resolved**?

☐ How concurrent delays **affect** a **contractor’s entitlement** to:

1. Time extensions
2. Additional compensation
3. Responsibility for liquidated damages



Concurrent delays – Introduction

❑ Controversial issue, why?

*There is also a **lack of understanding** in the industry concerning the concept of concurrent delay.*

1. **Meaning:** **Because** there are **different meaning** of **concurrent delay** itself
2. **Analyzing:** **Because** there are **different views** on the **correct approach** when **analyzing** entitlement to **ETO** and **compensation**

SCL Delay Protocol – CP 10: Concurrent delay – effect on EOT

(۳۰-د)

در اجرای مفاد این ماده برای تمدید مدت پیمان، تأخیرهای همزمان ناشی از عوامل مختلف درج شده در بند الف، فقط یک بار محاسبه می‌شود.

(۳۰-الف-۹)

هرگاه کارفرما نتواند تعهدات مالی خود را در مواعید درج شده در اسناد و مدارک پیمان انجام دهد.

چگونه مشکل را در انواع مختلف حل خواهید نمود؟

Concurrent delays – Some of the scenarios



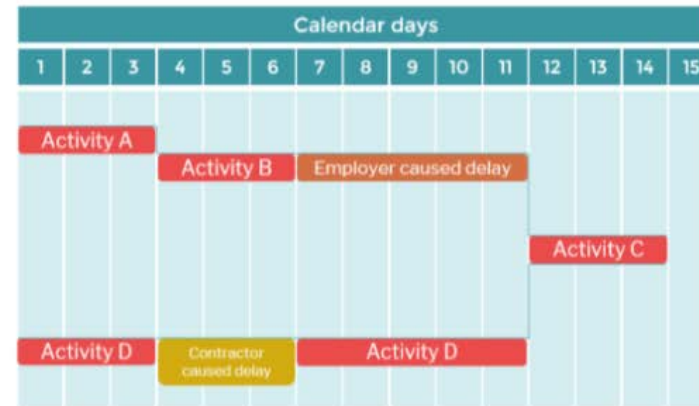
Scenario A



Scenario B



Scenario C

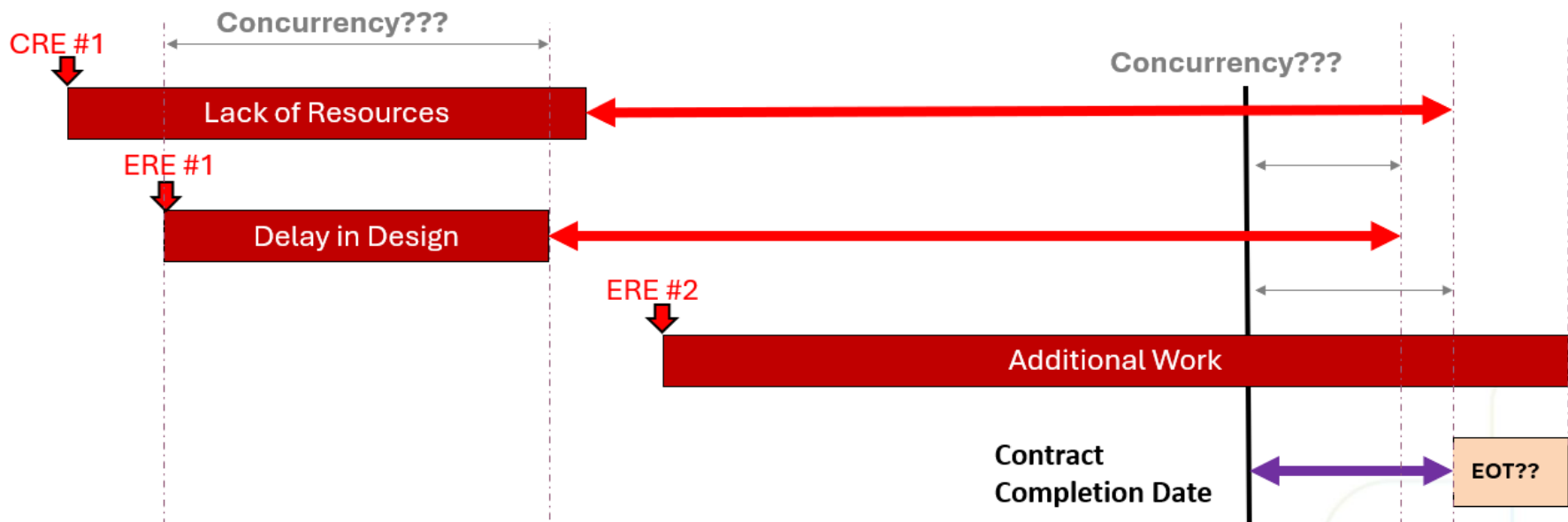


Scenario D

Concurrent delay event scenarios

Compensation? EOT? Concurrent? What would you do? Why?

Concurrent delays – Some of the scenarios



Compensation? EOT? Concurrent? What would you do? Why?

Meaning of Concurrent Delays

(SCL Protocol)

Definition

❑ **Concurrency** is very complex issue because:

1. **Meaning** of concurrent delay
2. Correct approach to **deal with** the concurrent delay

- ✓ **Protocol** provides **guidance** in order to organize and resolve concurrent delays in an agreed manner as part of the **overall delay analysis**.
- ✓ **Protocol** takes different competing arguments and represents what the **Protocol** considers to be the most appropriate solution.



Meaning of concurrent delay

❑ There are two views in SCL Protocols

1. True concurrent delay (تأخیر همزمان حقیقی)

❖ Strict approach

2. More common usage of concurrent delay (Keating's “overlapping” concurrent delay) (کاربرد رایج تر)

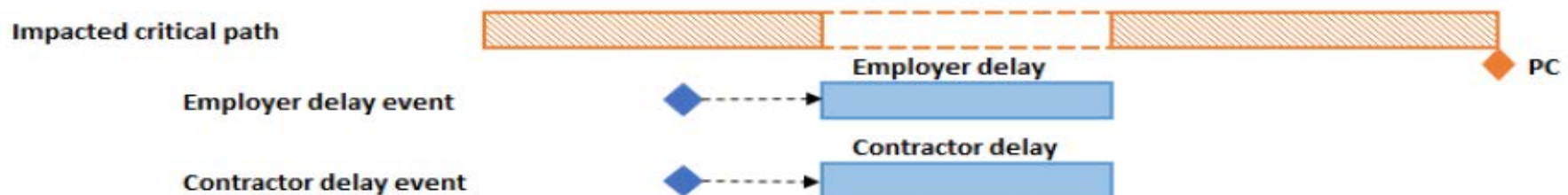
❖ Less strict approach

Let's see the difference!

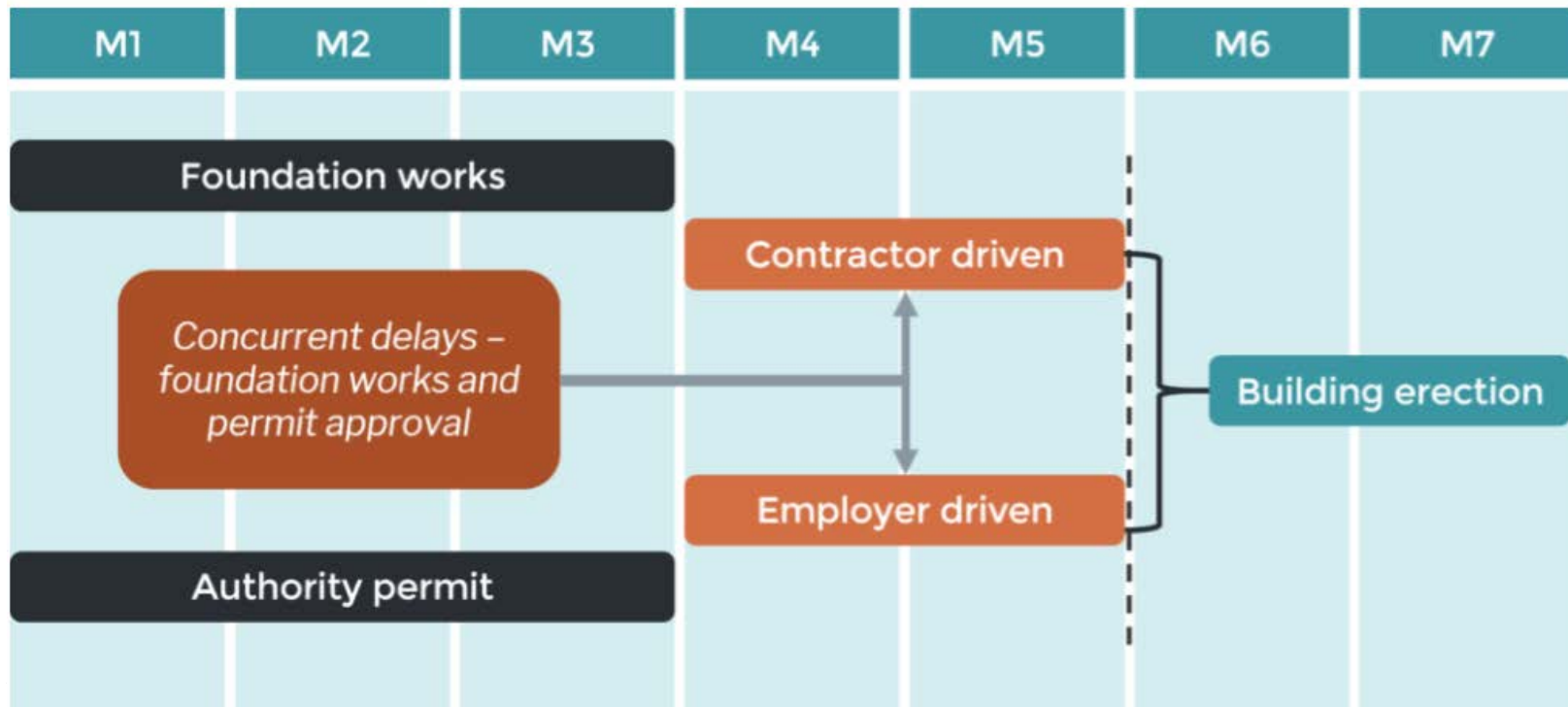


Meaning of concurrent delay – True concurrent delay

1. **Occurrence** of two or more delay events at the **same time**, one an Employer Risk Event, the other a Contractor Risk Event (**some contract uses approximately**)
 2. Sharing the **same start and finish dates**
 3. The **effects** are **felt at the same time**
 4. **Both** should lead to delay to **completion**
- ☐ It is **unlikely to occur** and **argued** by some (**Keating on construction contracts, 2016**) that this narrow definition is possibly **too limited for practical application**.



Meaning of concurrent delay – True concurrent delay

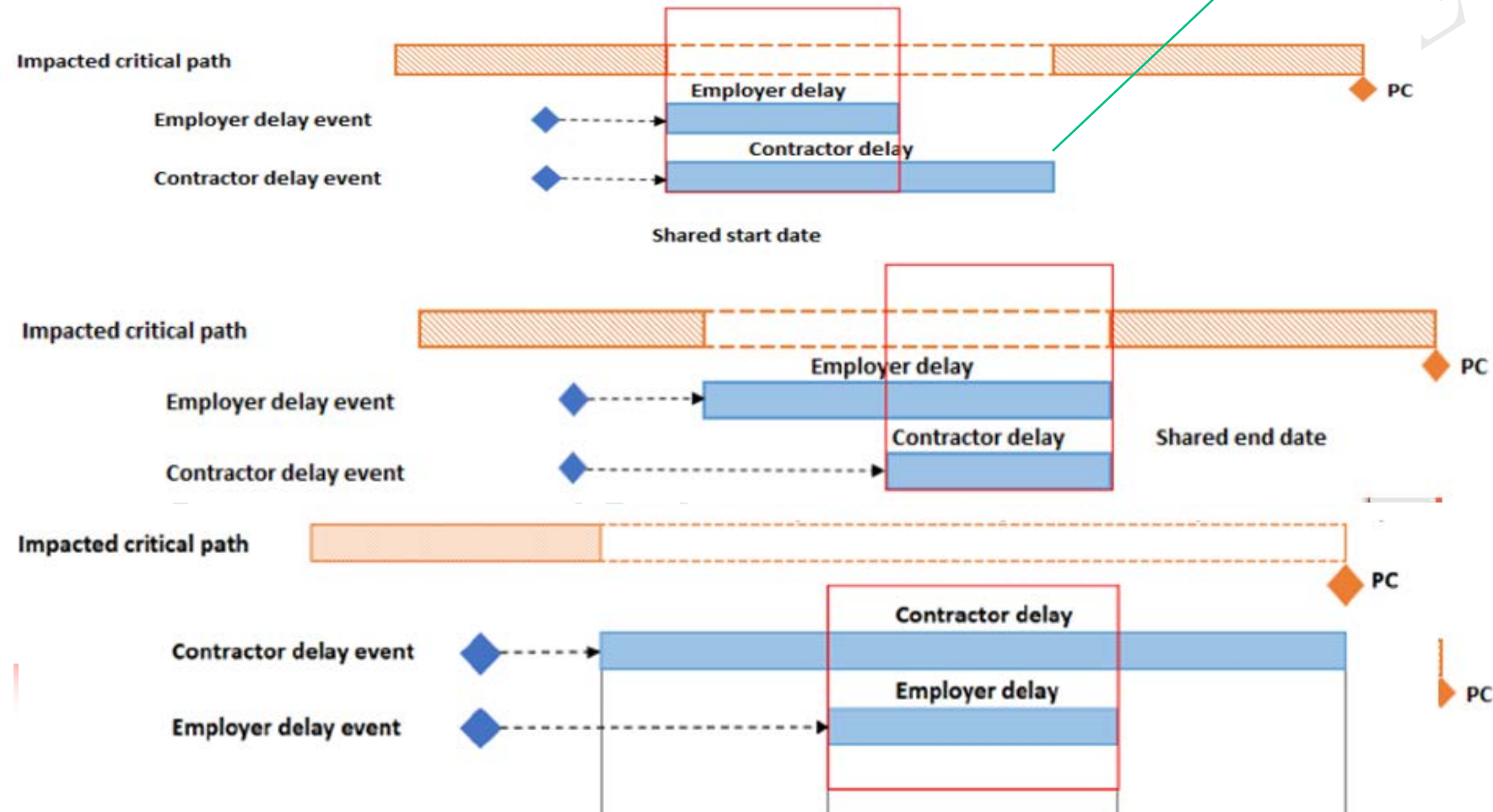


Meaning of concurrent delay – More common usage

1. Two or more delay events **arise** at **different times**, but
2. **Effects** of them are felt at the **same time**
3. **Both** should lead to delay to **completion**

Many call this “true concurrent delay”
Do you know why?

Period of overlapping delay = concurrent delay



Meaning of concurrent delay

*In both cases, concurrent delay **does not become an issue** unless each of an **employer risk event** and a **contractor risk event** lead or will lead to **delay to completion**.*



Meaning of concurrent delay

Hence, for concurrent delay to exist, **each of** the Employer Risk Event and the Contractor Risk Event **must be an effective cause of Delay to Completion** (not merely **incidental** to the Delay to Completion)



Meaning of concurrent delay

- ❑ **Employer Delay** to Completion does **not exonerate the Contractor** for **all its delays** **prior** to that Employer Delay to Completion occurring.
- ❑ The **effect of the Employer Delay** should be assessed as described in **Core Principle 5** and **any EOT determined** due should simply be added to the contract completion date.



Meaning of concurrent delay

❑ In particular, the Protocol recognizes that **delay analysis is rarely precise down to the day,**

therefore the **application of common sense** requires that the **margin for inaccuracy should be **taken into account** in reaching a conclusion on concurrency.**



Meaning of concurrent delay

❑ **Protocol** says that concurrent delays have **both**

1. **Practical** implications (تبعات عملیاتی)
2. **Legal** implications (تبعات حقوقی)

We will talk about that later!

Meaning of Concurrent Delays

(AAACE Recommended Practices)

- ❑ In the **United States**, one of the technical references that is **commonly-cited** in **delay claims** is AACE International Recommended Practice **(RP) 10S-90**, entitled Cost Engineering Terminology. RP 10S-90, however, does **not offer one single definition** of concurrent delays.

Let's see the definitions!



❑ Concurrency:

- ❖ Degree to which **independent activities** may be, or are performed at the **same time** (**fully** or **partially**).
- ❖ Degree to which
 - ✓ Phases,
 - ✓ Stages, or
 - ✓ Activitiesmay be overlapped.

(June 2007)



AACE 10S-90 – Meaning of concurrent delay

1. **Two or more delays** that take place or **overlap** during the **same period** (**Keating**), either of which **occurring alone** would have **affected the ultimate completion date**.
2. Concurrent delays occur when there are **two** or **more independent causes** of delay during the **same time period** (**Functional**)

The “same” time period from which concurrency is measured, however, is **not always literally within the exact period of time**.

*For delays to be considered concurrent, **most courts do not require** that the period of concurrent delay **precisely match**.*



AACE 10S-90 – Meaning of concurrent delay

3. **True concurrent delay** is the occurrence of **two or more delay events at the same time** (*Literal*)

one an employer risk event, the other a contractor risk event and the **effects of which are felt at the same time.**

- ❖ The term “**concurrent delay**” is often used to describe the situation where two or more delay events **arise at different times**, but the **effects of them are felt** (in whole or in part) at the same time.

To avoid confusion, this is more correctly termed the “concurrent effect” of sequential delay events.



AACE 10S-90 – Meaning of concurrent delay

4. Concurrent delay occurs when **both the owner and contractor delay** the project or when either party delays the project during an **excusable but non-compensable** delay (e.g., abnormal weather).
 - ❖ The delays need **not occur simultaneously** but can be on **two parallel critical path chains** (*separate critical path*)
5. The condition where **another delay-activity independent** of the subject delay is **affecting the ultimate completion** of the chain of activities (*same critical path*).

Which one?



AACE 29R-03 – Contract

- ❑ The **existence of a contractual definition** is a **major factor** on the determination of concurrency.
- ❑ As stated in the previous subsections, **contracting parties are free to mutually agree** on any method or procedure **as long as** those agreements are **legally enforceable**.
- ❑ Therefore, the general rules, exceptions, and considerations in this **RP are applicable** to the extent that they **do not directly contradict contractual definitions** and specifications.

What **pre-requisite requirements** needed before evaluation?



AACE 29R-03 – Pre-requisites of concurrent delay

1. Two or more delays that are **unrelated**, **independent**, and would **have delayed** the project even if the **other delay did not exist** (*both on critical path*)
2. Two or more delays that are the **contractual** responsibility of **different parties**, but one may be a **force majeure event** (*different parties*)
3. The delay must be **involuntary** (*not pacing*); and,
4. The **delayed work** must be **substantial** and **not easily curable** (*mitigation with no cost could not have been done*)

What **types of concurrent delays** exist based on these requirements?



AACE 29R-03 – Types of concurrent delay

❑ Whether concurrency is determined literally or functionally:

1. Literal concurrency

- ❖ Happening at the same time
- ❖ Like “**true concurrency**”
 - ❖ Under this theory, if the **first delay started on day one**, and the **second delay started on day two**, they would **not be concurrent** – the delay associated with the first event would **create float in the entire project** so the **second delay could not also** be on the **co-critical path**.

2. Functional concurrency

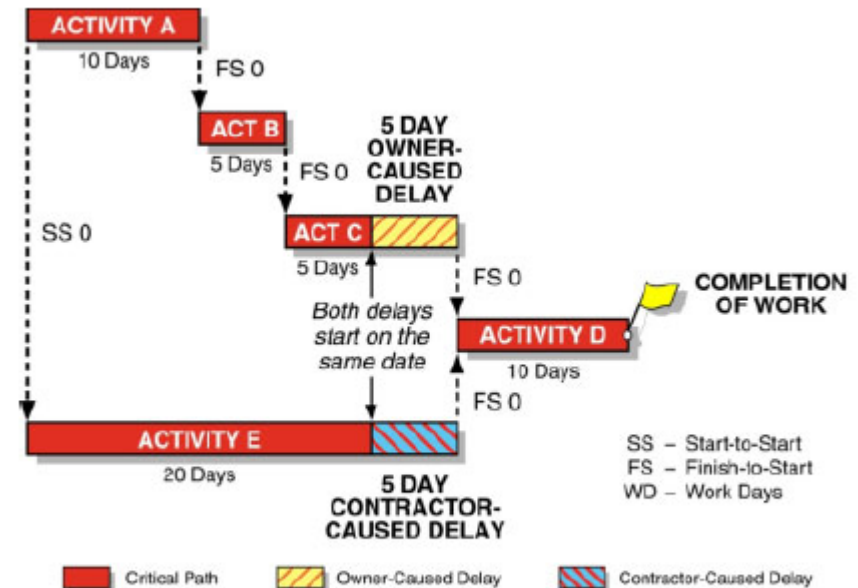
- ❖ Happening within the same analysis period (usually a month)
- ❖ “**Concurrent effects**”



AACE 29R-03 – Literal concurrency

- ❑ **Literal concurrency** occurs when two or more **delay-causing events** occur at the **same time**.

Illustration of Literal Concurrent Delays



The two 5 WD delays are literal, concurrent delays because they both started on the same day and are of equal duration.

AACE 29R-03 – Functional concurrency

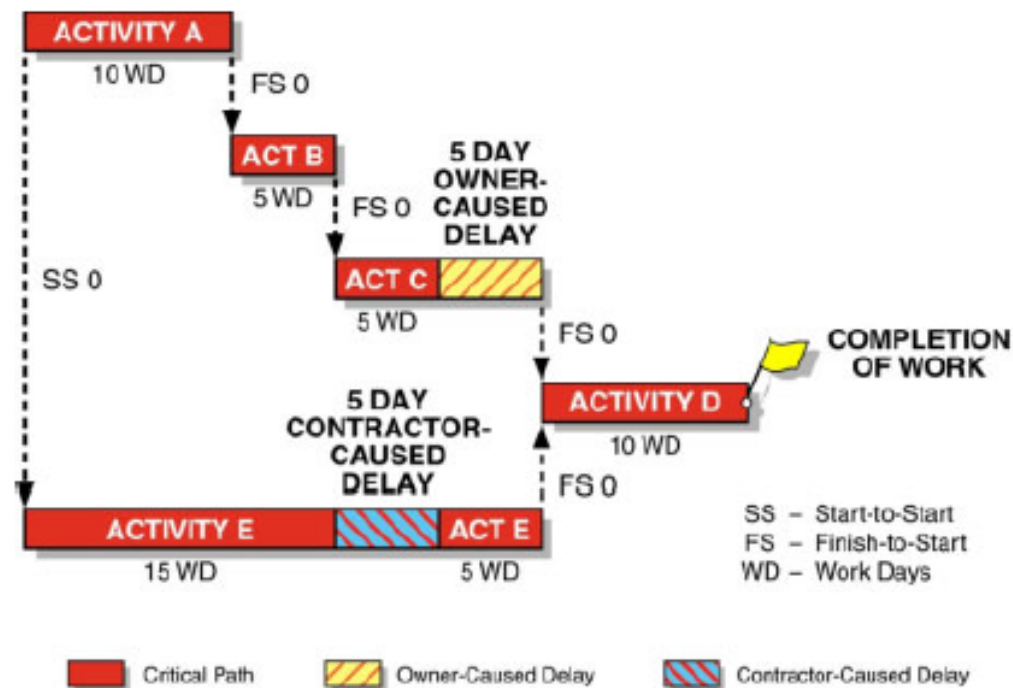
- ❑ **Functional concurrency** occurs when the **separate network paths**, on which the delays reside, **concurrently impact** the completion of work date

- ❖ Accordingly, the **functional application** of concurrent delay theory does **not necessarily** require the delay events to **occur at the same time**.

Be careful!

This is different compared to Keating Theory!

Illustration of Functional Concurrent Delays



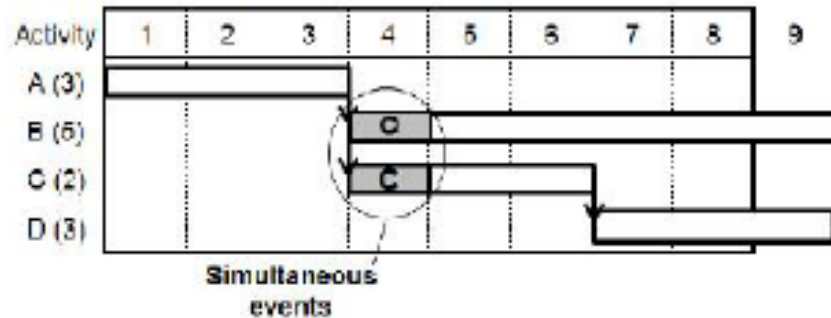
The two 5 WD delays are functionally concurrent because they both have the same effect on the completion of work, but occurred at different times during the schedule period being examined.



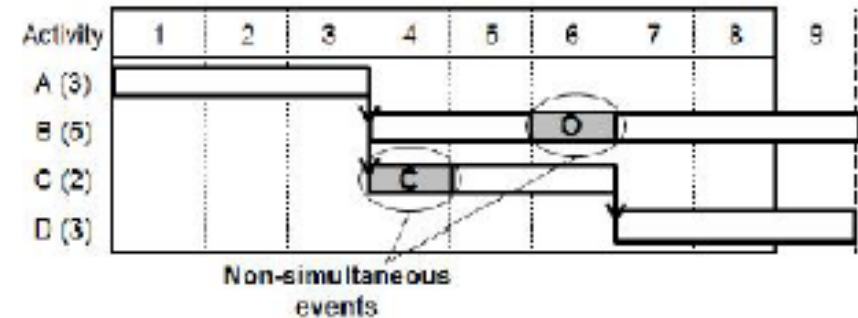
AACE 29R-03 – Functional concurrency

- ❑ **Functional concurrency** is a much **more liberal** application of the concurrent-delay theory,
 - allowing for the analyst to **identify concurrent delays simply**
 - if the **two delays occur within the same measurement period** for the delay analysis.
- ❑ Typically, a **delay-analysis measurement period** is a **month**, or the **time between schedule updates**.
 - ❖ Theoretically, a delay that occurred during the **first 5 days of the month** and a delay that occurred during the **last 5 days of the month** could be considered **concurrent**.

AACE 29R-03 – Functional vs. Literal



a) True concurrent delays



b) Concurrent effects



AACE 29R-03 – Functional vs. Literal

- ❑ **Literal** will result in **fewer concurrent** delays
- ❑ **Literal** will need **day-to-day delay analysis**
- ❑ **Functional** is more **liberal** in identifying and quantifying concurrency
- ❑ **Functional** will result in **more concurrent delays**, **less compensation** for both parties
- ❑ **Functional** theory recognizes the **real-world limitations** of exactly measuring delays
- ❑ **Contemporaneous** analysis is **more functional**.
- ❖ **Forensic** analysis is more likely to be **literal** in nature.

Remember the SCL Protocol approach?

*Employer Delay to Completion **does not exonerate** the Contractor for all its delays **prior** to that Employer Delay to Completion occurring.*

Is it against “functional theory?”

Meaning of Concurrent Delays

(ASCE ANSI/ASCE/CI 67-17)

ASCE Standard ANSI/ASCE/CI 67-17 (Schedule Delay Analysis) – Meaning of concurrent delay

❑ **8.1 Concurrent delay** can be described as a situation where

1. **Two or more critical delays** are occurring
2. At the **same time** during **all or a portion** of the delay **time frame** in which the delays are occurring (*same time not same period, NOT FUNCTIONAL*)
3. It could be on **same or separate critical paths**
4. **Does not need** to have the **same start or finish dates** (*Keating with one exception*)
 - ❖ The standard has **no clear position** regarding the **time interval between delay events**, but it could be understood that it requires both events **literally** "occurring at the same time".

Is **functional theory** applicable here?

Is it **more consistent** with **SCL Protocol** or **AACE**?

ASCE Standard ANSI/ASCE/CI 67-xx (Schedule Delay Analysis) – Meaning of concurrent delay

❑ Draft: 2024.11.22

ASCE STANDARD ASCE/CI

67-XX

Schedule Delay Analysis

ASCE Standard ANSI/ASCE/CI 67-xx (Schedule Delay Analysis) – Meaning of concurrent delay

❑ Draft: 2024.11.22

6 CONCURRENT DELAY

In general terms, concurrent delay can be described as a situation where two or more critical delays are occurring at the same time during all or a portion of their duration.

پیش نویس دستورالعمل تمدید مدت پیمان ناشی از تاخیرات

فنی

(سازمان برنامه و بودجه)

۶- تاخیرات همزمان

- ۱-۶ به دو یا چند رویداد تاخیر که در یک زمان آغاز و به طور همزمان رخ می‌دهند و اثر هم‌زمانی را ایجاد می‌نمایند، تاخیرات همزمان گفته می‌شود، تاخیرات همزمان، باید شرایط زیر را دارا باشد:
- حداقل یک رویداد تاخیر متعلق به هریک از طرفین پیمان باشد؛
 - وقوع تاخیر از سوی طرفین غیر عامدانه باشد؛
 - هر یک از رویدادهای تاخیر حداقل در یک مسیر بحرانی وجود داشته باشد؛
 - رویدادهای تاخیر نباید به یکدیگر وابسته باشند.

در صورت وقوع تاخیرات همزمان، این تاخیرات مجاز شمرده شده و صرفاً تمدید زمانی اعطا می‌گردد.

- ۲-۶ حسب مورد ممکن است، زمان اتمام رویدادهای تاخیر در تاخیرات همزمان، همزمان نباشد، در این صورت مابه‌ازای مدت مازاد تاخیر هر یک از طرفین پیمان، مطابق با ضوابط رسیدگی، مجاز یا غیرمجاز تلقی می‌گردد.
- ۳-۶ برای تجزیه و تحلیل تاخیرات همزمان، لازم است پیمانکار در خصوص تغییرات طبق بند ۸-۲ عمل نموده و سپس نتایج مورد بررسی قرار گیرد.

۴-۶ ضوابط اعلان و رسیدگی به تاخیرات همزمان، مطابق با مفاد پیش بینی شده در بند ۴ می‌باشد.

۵-۶ لازم است در لایحه تحلیل تاخیرات، تاخیرات همزمان به صورت مجزا مشخص گردد.

So far you have learned what concurrent delay means!

BUT

HOW COULD WE DEAL WITH THIS?

EOT, Compensation, Liquidated damages, etc.?

Let's see this from two perspectives:

- 1. Legal implication**
- 2. Practical implication**

Dealing With Concurrent Delays

(Legal Implication)

Concurrent delays in Long International document - Introduction

- ❑ This company includes **International Experts** in **Claims Analysis**, **Dispute Resolution**, and **Project Management** for Process, Oil & Gas, Pipeline, Power, Industrial, Infrastructure, and Building Construction Projects.
- ❑ **Long International Inc.** has **many different offices** throughout the **world** even in the **Middle East**, but **main office** located in **USA**.
- ❑ We want to talk about the document **provided** by Long International Inc. in **2015**.

About the Author



Richard J. Long, P.E., is Founder and CEO of Long International, Inc. Mr. Long has over 40 years of U.S. and international engineering, construction, and management consulting experience involving construction contract disputes analysis and resolution, arbitration and litigation support and expert testimony, project management, engineering and construction management, cost and schedule control, and process engineering. As an internationally recognized expert in the analysis and resolution of complex construction disputes for over 30 years, Mr. Long has served as the lead expert on over 300 projects having claims ranging in size from US \$100,000 to over US \$2 billion. He has presented and published numerous articles on the subjects of claims analysis, entitlement issues, CPM schedule and damages analyses, and claims prevention. Mr. Long

Concurrent delay in various legal jurisdictions

- ☐ U.S. law
- ☐ English law
- ☐ Scots law
- ☐ Canadian law
- ☐ Hong Kong law
- ☐ Australian law
- ☐ FIDIC
- ☐ AIA A201-2017
- ☐ Other contracts
- ☐ SCL Protocol
- ☐ AACE 29R-03
- ☐ ASCE Standard ANSI/ASCE/CI 67-17 (Schedule Delay Analysis)

❑ U.S. courts and **arbitration** proceedings offer **three approaches** to the handling of **concurrent delay**:

1. **Time but no money**; or
2. **Apportionment**; or
3. **Responsibility** based on a **critical path delay analysis**

These depend on the meaning of concurrent delays...

when delays are **concurrent**, the decision will be taken based on one of the **above items**



U.S. law – Time but no money

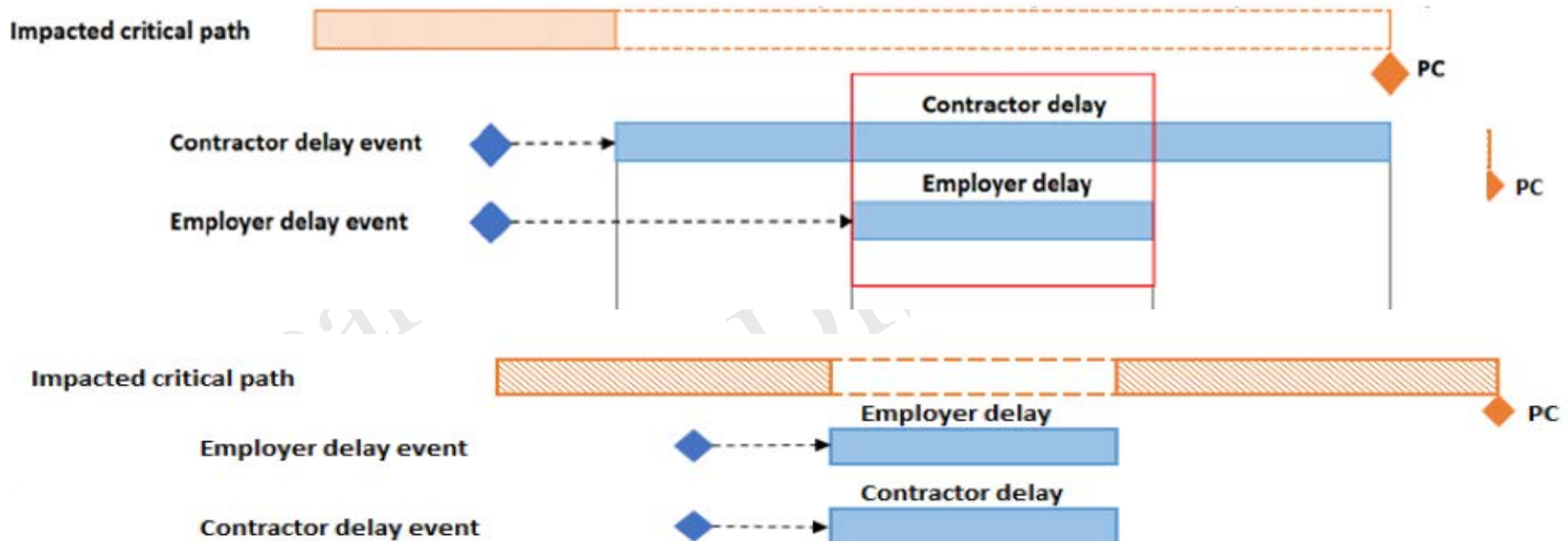
- ❑ “Time but no money” principle traces back to **early 1900s U.S.** cases when a **strict rule against apportionment** applied.
 - ❖ The **courts** could **not apportion** “with any degree of **certainty**.”



U.S. law – Apportionment

- ❑ Basically entails the **allocation** of the **time** and **money** effects of the delay to project completion **based on**

relative causative potency or significance of the competing causes of delay



Is it possible in all cases? How? Let's see!



U.S. law – Apportionment

- ❑ Under this approach, **responsibility for concurrent delay** is apportioned between the employer and the contractor based on what is **fair and reasonable**.
- ❑ **Apportionment** may mean a contractor can get a **partial**, but **not full amount** of time relief for concurrent delays to the works.
- ❑ The rationale for this approach is that the **parties should share risk and responsibility** for concurrent delay.

At face value, this might **seem a fair and sensible** solution.

Is it?



U.S. law – Apportionment

❑ However, there are **some difficulties** with it:

1. There is the **practical problem** of having to make an **apportionment**.
 - ❖ This may **not be straightforward**, and it offers **little certainty**.
2. It is **questionable** whether **one party** can be regarded as **more culpable**.
3. It is **doubtful** that words like **“fair and reasonable”** are **sufficient** to create a power of apportionment?
4. It **conflicts** with the **prevention principle** (*this is the most known term in U.K.*)
 - ❖ If a **contractor is awarded less** than a full EOT as a result of an apportionment, they will be **exposed to LDs**
where they **have been prevented** from completing the works on time.

What the **U.S. courts** have been done to **overcome** these problems?



U.S. law – Apportionment

Thus, U.S. courts will apportion delay damages when?

❑ **Evidence** permits the segregation of costs resulting from each party's causes

❖ **Courts** will **not allow** for **apportionment**

if the **segregation** of delay costs is **impossible**.

Apportionment approach is still not accepted in many of English courts!

We will see!



U.S. law – Critical path delay analysis

- ❑ Critical path delay analysis offers an **alternative to apportionment** in that it offers the **best evidence** of **cause-effect analysis** of time impacts, as explained later in **practical implication**.

U.S. law – Critical path delay analysis

Let's see some U.S. Cases...

U.S. law – Blinderman Case

- ❑ Most courts make this decision in the following:

Where both parties contribute to the delay “neither can recover damage, unless there is in the proof a clear apportionment of the delay and the expense attributable to each party.” Coath & Goss Inc. v. United States, 101 Ct.Cl.702, 714-15 (1944); Commerce International v. United States, 167 Ct.Cl.529, 338 F.2d.81, 90 (1964).

Generally, courts will deny recovery where the delays are “concurrent or intertwined” and the contractor has not met its burden of separating its delays from those chargeable to the Government.

- ❑ Meaning that neither prolongation costs **nor liquidated damages** are recoverable where apportionment is not possible.

SO

An extension of time will only be granted



U.S. law – Hood Plumbing Case

In *Hood Plumbing*,¹⁹ claims were made for delay costs and remission of liquidated damages. There were concurrent delays. It was held in relation to the claim for additional costs:

In order to recover for alleged compensable delay by the Government, a contractor must demonstrate, with a reasonable degree of accuracy, both the extent and cause of such delay. ... When delays by the Government are intertwined or concurrent with delays that are not compensable, neither the Government nor the contractor may recover unless the delays can be separated or apportioned.

With regard to the remission of liquidated damages, it was held that the contractor's delay exceeded the period of delay caused by the government and on that basis, liquidated damages could be assessed. This is not inconsistent with the principle that liquidated damages are not recoverable if delay cannot be apportioned; the assessment made in this case did amount to an apportioning of the delay.

□ Meaning that even though an **EOT** should be **granted** and **LD** should **not be applied** in concurrent delays,

the owner can assess for **LD** and **reduce EOT** if apportionment is doable.



1. **Dominant cause approach**
2. **Malmaison approach**

Prepared by Dr. Alavipour
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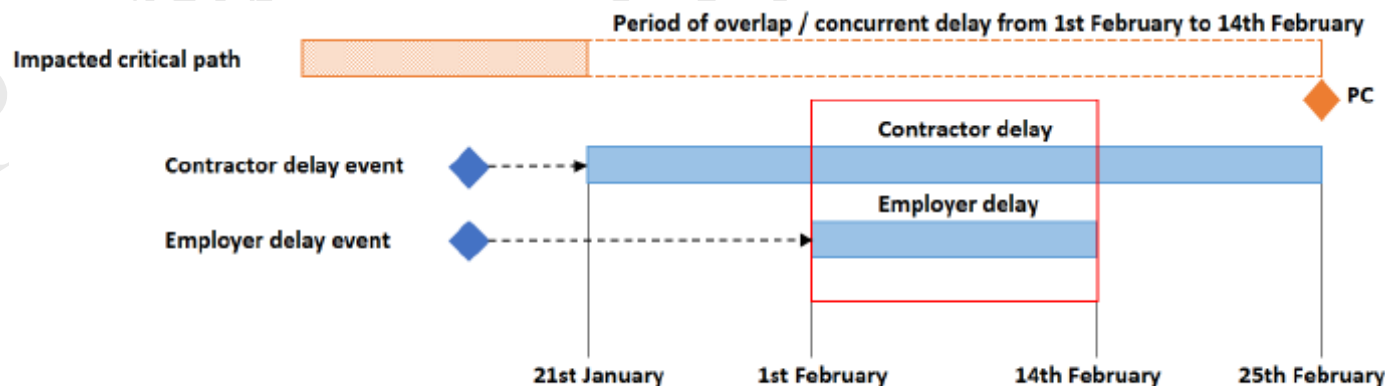


English law – Dominant Cause approach

- During the 1980s and 1990s in the world of construction claims.

"If there are two causes, one the contractual responsibility of the Defendant and the other the contractual responsibility of the Plaintiff, the Plaintiff succeeds if he establishes that the cause for which the Defendant is responsible is the effective, dominant cause. Which cause is dominant is a question of fact, which is not solved by the mere point of order in time, but is to be decided by applying common sense standards".

- It is **most useful** in situations where a delay at **risk of one of the parties**, is contained **wholly within the start and completion dates** of a delay at risk of the other party.

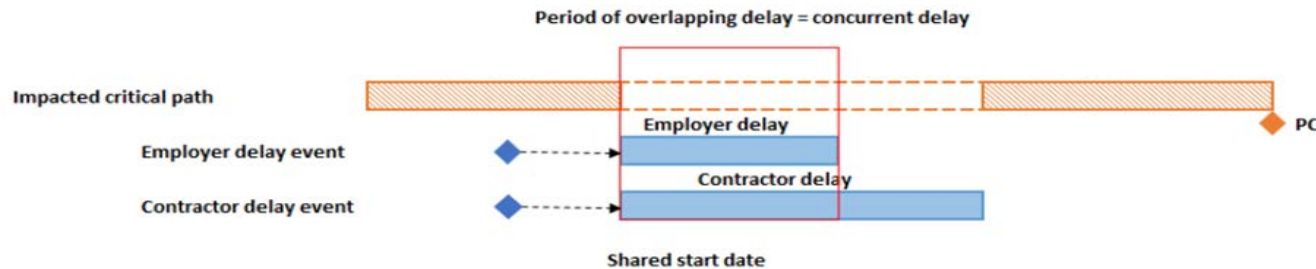




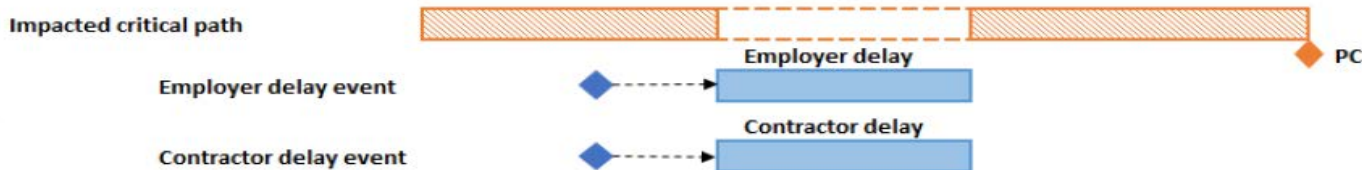
English law – Dominant Cause approach

❑ There are **difficulties**, however, with this approach:

1. First, there is the practical problem of **having to decide which cause is dominant**.



2. Second, it provides **no answer** where the delay events are **equally dominant**.



3. Third, it **conflicts** with the **prevention principle**.

❖ If the **dominant cause** is a **Contractor Risk event**, the contractor will be

1. **Denied an extension of time** and

2. May be exposed to delay damages **even though the employer has also delayed the contractor**.





English law – Dominant Cause approach

Even though the dominant cause approach does not seem to be able to always give a definitive answer of liability, this approach still seems to be relevant and has been supported in

- U.K. (case of Petroleo Brasileiro v ENS 1 Kos Ltd.) and
- Other foreign case law such as South African court.



English law – Malmaison approach

- ❑ The **Malmaison approach**, so called after the case of **Henry Boot Construction v Malmaison Hotel (Manchester) Ltd (1999) 70 Con LR** states that a contractor is entitled to a **full extension of time** for a delay caused by **two or more events**, provided one of them is an **employer's risk event (Relevant Event)** under the contract.

❖ **Relevant event:** *a delay which is caused by the **owner** or **neutral event***

"If there are two concurrent causes of delay, one of which is a relevant event [an employer risk event] , and the other is not, then the contractor is entitled to an extension of time for the periods of delay caused by the relevant event notwithstanding the concurrent effect of the other event."

Let's see an example!



English law – Malmaison approach

❑ To take a **simple example**:

1. If **no work** is possible on a site for a week not only because of **exceptionally inclement weather (a relevant event)**,
2. But also because the **contractor** has a shortage of **labor (not a relevant event)** and
3. If the **failure** to work during that week is likely to **delay** the works **beyond the completion date by one week**,

then the architect is required to **grant an extension of time of one week**.

This approach has been held to be the “generally accepted approach” in resolving issues of ‘true concurrency.’



English law – Malmaison approach – Example

❑ In the **8th edition of Keating**, the learned editors summarized the *Malmaison* approach as follows:

- ❖ *‘Thus it now appears to be accepted that a contractor is entitled to an extension of time notwithstanding the matter relied upon by the contractor is **not the dominant cause** of delay, provided only that it has at least **equal** “causative potency” with all other matters causing delay.*



English law – Malmaison approach – Example

- ❑ To be concurrent, the delays
 1. Must be of approximately "equal causative potency"¹ (*not should be clearly dominant*)
 2. Be felt at the same time.
 - ❖ The **Malmaison decision** stands as authority for the proposition that concurrent delay will
 1. Entitle a contractor to an extension of time to the completion date,
 2. But **not** to its time-related costs

¹ John Marrin QC, *Society of Construction Law UK paper "Concurrent Delay"* (February 2002), p 2.

² *Henry Boot Construction (UK) Ltd v Malmaison Hotel (Manchester) Ltd* [1999] 70 Con LR 32.

How much is that consistent with **SCL Protocol**?

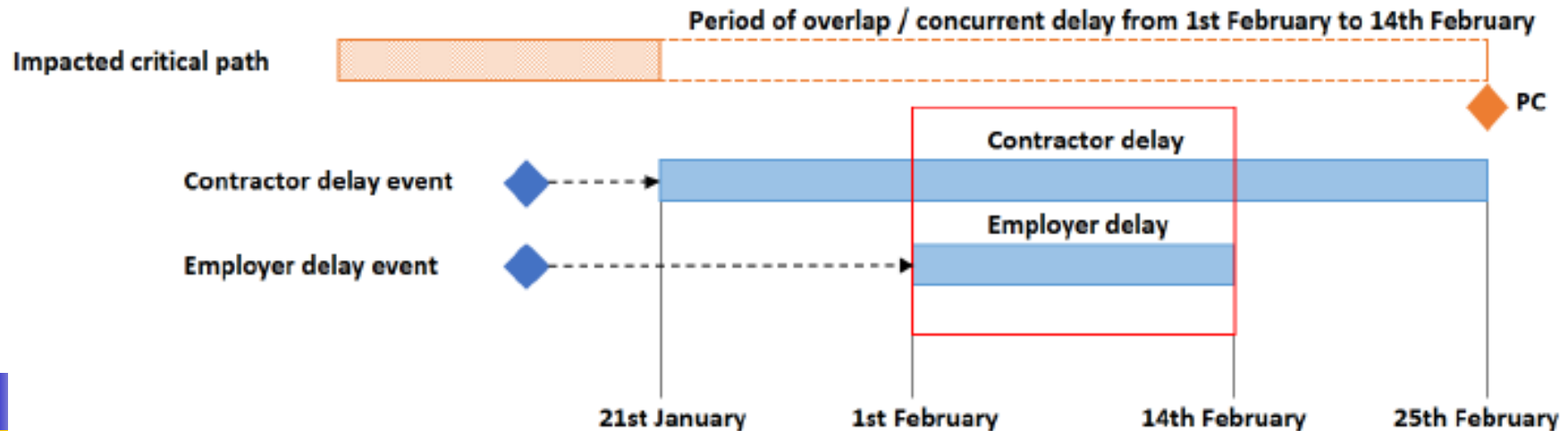
There are **two competing views** as SCL Protocol says!



English law – Malmaison approach – Example

- ❑ A contractor Risk Event will result in **five weeks contractor delay** to completion, from **January 21 to February 25**.
- ❑ **A few weeks later**, Employer Risk Event would result in **Employer Delay** to Completion from **February 1 to February 14**.

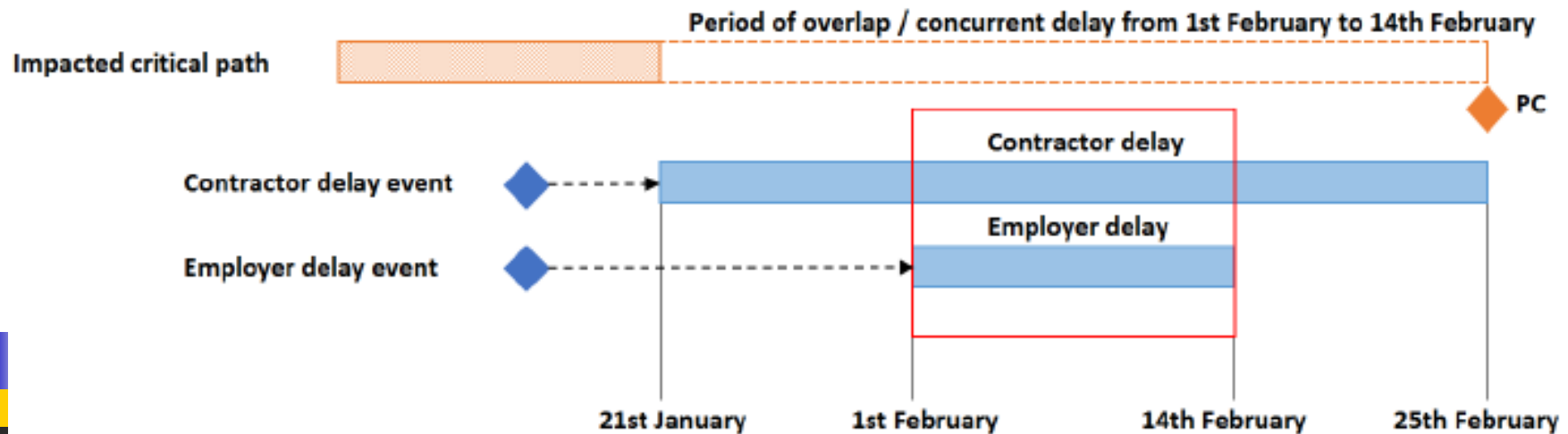
HOW TO ANALYZE? TWO VIEWS



English law – Malmaison approach – Example

View 1

- ❑ Two events are **both effective causes** of delay to completion from **February 1 to 14**, **because** each **would have caused** delay in the **absence of the other**.
 - ❖ This **may be supported** by **some courts**
 - ❖ **Liquidated damages** will **not be payable** for the **time concurrent delay** occurs.
 - ❖ This may be supported by **older English appeal court**.



English law – Malmaison approach – Example

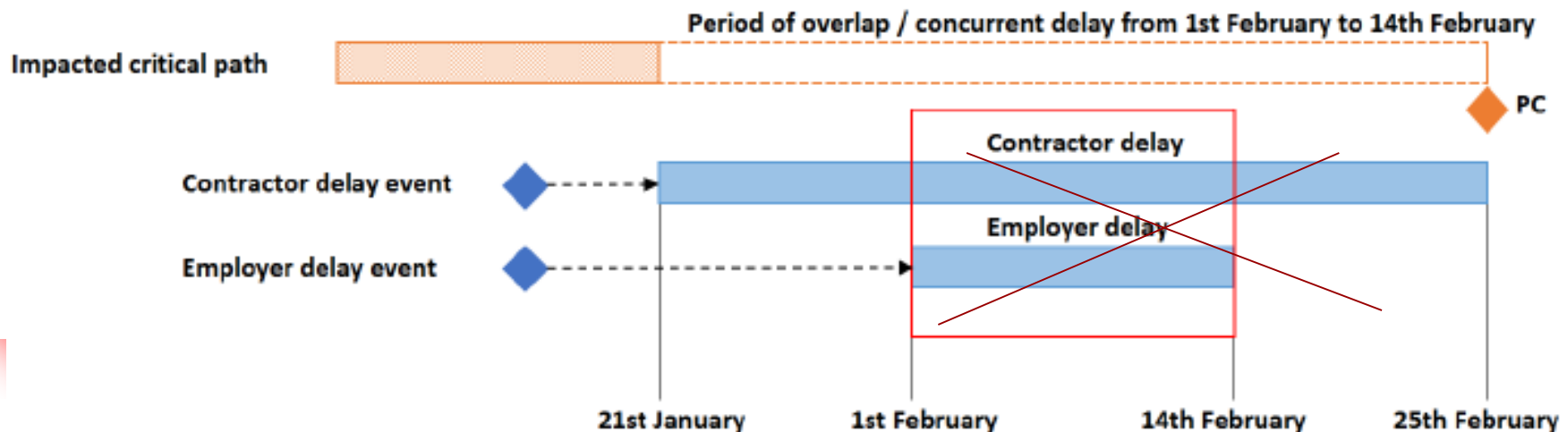
View 2

❑ Because the **works were already in delay** as a result of the contractor delay, the **employer delay** has caused **no further delay** and there is therefore **no concurrency**.

❖ Thus the only effective cause of the delay is the Contractor Risk Event.

✓ This *may be supported* by *some other courts*.

✓ This is the consistent position taken in recent lower level English court decision.





English law – Malmaison approach – Example

What **feature** Malmaison has?

The Malmaison approach has the **advantage** of **not invoking** the prevention principle.

The *Malmaison* approach is adopted by the Society of Construction Law:

Where Contractor Delay to Completion occurs concurrently with Employer [Owner] Delay to Completion, the Contractor's concurrent delay should not reduce any EOT [Extension of Time] due;³⁴



English law – Malmaison approach – Example

The Protocol recommends view 2:

The **Employer Risk Event** should be seen as not causing delay to completion in the **Example** and therefore there is no concurrency.

Let's see a case of law!

English law – Malmaison approach – Example

Facts

Saga (Owners) purchased a cruise ship and contracted with Fincantieri to refurbish the ship. The works were to be completed by 2 March 2012, however completion was not achieved until 16 March 2012. The contract contained a clause that imposed liquidated damages on the Contractor for delay in completing the works "for any reason whatsoever for which the Contractor is, or its employees, agents or sub-contractors are, responsible" capped at €770,000.

The Contractor was responsible for delays between 2 March and 16 March 2012 for a number of reasons. The Owners were responsible for delays from 3 March to 14 March 2012 for reasons concerning the weight of the lifeboats and from 2 March to 10 March 2012 due to requesting additional insulation.

The Contractor tried to rely on the *Henry Boot Construction (UK) Ltd v Malmaison Hotel (Manchester) Ltd* and *Walter Lilly v Mackay* cases, stating that where there are two concurrent causes of delay, one which would be a "relevant event" entitling a contractor to an extension of time and the other not, the contractor is entitled to an extension of time for the relevant event notwithstanding the concurrent effect of the other.



English law – Malmaison approach – Example

Owners' argument

The Owners submitted that the delays were not concurrent delays. They argued that if the Scheduled Completion Date had already been delayed by earlier events for which the Contractor was responsible, the delays for which the Owners were responsible were not to be treated as occurring concurrently. The Owners submitted that because the Contractor's work was already delayed by the Contractor's own delays, any delays for which the Owner bore the responsibility could not have occurred concurrently.

Prepared by Dr. Alavipour
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English law – Malmaison approach – Example

Contractor's argument

The Contractor submitted that the Court should approach the question having regard to the prevention principle. The prevention principle is the established English law doctrine that an owner cannot insist upon the performance of an obligation which the owner prevented the contractor from performing. The principle is invoked to relieve a contractor of liability for liquidated damages and to set a reasonable timeframe for completion where an owner delays a contractor's performance.

The Contractor relied on the fact that the contract did not contain a general extension of time provision for acts of prevention by the Owners. It argued that other provisions in the contract providing that the Owners would only have a claim for liquidated damages where delay to the Scheduled Completion Date was due to a matter for which Contractor was responsible, respected the prevention principle. On that basis, the Contractor submitted that where there are two concurrent causes of delay, one being a delay event entitling the Contractor to an extension of time, and one that would not, the Contractor is entitled to an extension of time. The Contractor argued that in those circumstances it was entitled to an extension of time notwithstanding the concurrent effect of its own delays.



English law – Malmaison approach – Example

Decision

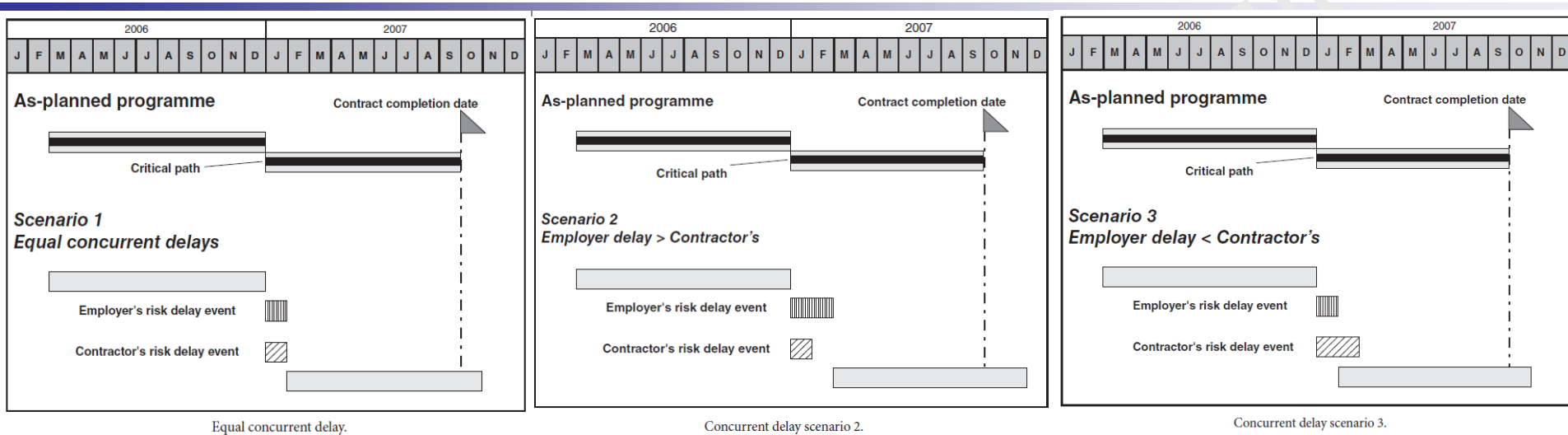
The Court rejected the Contractor's approach awarding liquidated damages to the Owners. The Court held that when the Owners' delays occurred, there were already delays occurring for which the Contractor was responsible. Accordingly, the Contractor could not rely on concurrency to defeat the Owners' claim for liquidated damages.

Referring to the analysis in *Adyard Abu Dhabi*⁴ and *Balfour Beatty Building Ltd*⁵, the Court concluded that unless there is concurrency affecting the completion date, a contractor cannot claim the benefit of it. The Court found that causation must in fact be proved based on the situation as it was known at the time.

Saga Cruises emphasises that causation should always be considered when assessing concurrent delay. A contractor should not be entitled to the benefit of an owner's delay event if it was already in delay, with effect that the owner's event had no actual impact on the completion date. A contractor must prove that an owner's delay event actually caused delay to the completion date.

This is what SCL also believes!

English law – Malmaison approach – Example



All these could be **true concurrent** based on

previous case of law and some references (Delay Analysis in Construction Contracts Book)



English law – Malmaison approach – Variation

What if an **Employer** instructs a variation
where the contractor delay extended the **contract completion**?



English law – Malmaison approach – Variation

What if an **Employer** instructs a variation
where the contractor delay extended the **contract completion**?

Employer may lose its entitlement to liquidated damages
if the **Contractor then accelerates** to recover the Contractor Delay to Completion at its
own cost
and
that results in the **variation** (an Employer Risk Event) becoming the **effective cause of**
Delay to Completion.

✓ *So which one is more common in U.K.?*

✓ *Is apportionment acceptable in U.K.?*



English law – New test

✓ So which one is more common in U.K.?

❑ There seems to be a **new development** in English jurisprudence in which a **new test** may be said to have been adopted.

❖ This test has been referred to as the **effective cause test**.

In the case of *De Beers UK Ltd v Atos Origin IT Services UK Ltd* the court has made the following statement:

"The general rule in construction and engineering cases is that where there is concurrent delay to completion by matters for which both employer and contractor are responsible, the contractor is entitled to an extension of time but he cannot recover in respect of the loss caused by the delay. In the case of the former, this is because the rule where delay is caused by the employer is that not only must the contractor complete within a reasonable time but also the contractor must have a reasonable time within which to complete. It therefore does not matter if the contractor would have been unable to complete by the contractual completion date if there had been no breaches of contract by the employer (or other events which entitled the contractor to an extension of time) because he is entitled to have the time within which to complete which the contract allows or which the employer's conduct has made reasonably necessary."



English law – New test

✓ *Is apportionment acceptable in U.K.?*

- ❑ Malmaison approach was made **less certain** after City Inn in 2010 where an **apportionment approach** was adopted by **Scottish case**.

HOWEVER

- ❑ The recent case of Walter Lilly v Giles Mackay and DMW Developments [2012] EWHC 1773 (TCC) reviewed the authorities regarding concurrent delay and brought some clarity by re-stating that:
 - ✓ **Malmaison approach** was consistent with English law, and
 - ✓ There was no place for the apportionment approach.

❑ The **Scottish courts** seem to have approved both the **dominant cause** and **apportionment methods** in John Doyle Construction Ltd v Laing Management (Scotland) Ltd and City Inn Ltd v Shepard Construction Ltd.

❖ In other words,

where there is a **dominant cause**, that will **prevail**, and

if **neither cause is dominant**, the concurrent delay is to be **apportioned**.

❑ Thus, *City Inn* may allow **apportionment** based on the **contractual requirement** to be **“fair and reasonable.”**



Canadian law

- ❑ “Canadian courts do not recognize an all or nothing approach,” and **unlike U.S. courts**, “the Canadian system does not place a high evidentiary burden on a claimant as a prerequisite to apportionment.”

Thus, **Canadian courts** tend to favor apportionment and “do the best they can.”



Hong Kong law

❑ Hong Kong courts have typically applied the **Malmaison approach** to issues of concurrent delay,

although more recent decisions suggest a movement towards the apportionment approach.

Australian law

- ❑ Australian standard forms of contract have attempted to provide a solution to the concurrent delay issue without success because

not all forms are consistent or clear.

1. In fact, **one contract** provides no time extension when the **contractor** is responsible for **concurrent delay**.
2. **Other forms**, such as clause 34.4 in AS 4000-1997 and AS 4902-2000, provide for apportionment in the event of **concurrent delays**.

- ❑ **Absent of a contractual provision**, it has been **suggested** that the “*position under Australian law would reflect the approach of English law by reverting to the common law.*”

However, one author suggests that apportioning delays would be preferable.

FIDIC (International Federation of Consulting Engineers)

- ❑ None of the previous drafted standard form contracts prior to the release of the FIDIC 2017 suites, dealt expressly with **concurrency**.
- ❑ The new FIDIC Red Book 2017 suite of contract, has introduced **Clause 8.5**, which states:

“If a delay caused by a matter which is the Employer’s responsibility is concurrent with a delay caused by a matter which is the Contractor’s responsibility, the Contractor’s entitlement to EOT shall be assessed in accordance with the rules and procedures stated in the Particular Conditions (if not stated, as appropriate taking due regard of all relevant circumstances)”

What kind of rules and procedures would the engineer include in the particular conditions?



FIDIC (International Federation of Consulting Engineers)

- ❑ The new edition, does **not prescribe** a new procedure, but it **prompts** the **engineer/employer**, to **decide on a mechanism or approach** at their discretion, which they want to adopt and to confirm this in the particular conditions of the contract.

The **party assessing** the contractor's claim, will have the freedom to determine in line with **either approach**.

This would appear to be **fertile grounds for dispute!**



AIA (Architect Institute of America)

❑ AIA General Conditions A201-2017

❖ Section 8.3

"If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine."

AIA does not force that delay to be “true concurrent”

AIA does **not focus on “functional theory”**

AIA also prefers “apportionment”

Architect has the **power**

Other contracts

- ❑ The contract usually provide **no direct guidance** as to the **treatment of concurrent delays**.
- 1. Some contracts are **explicit**, stating that neither party is to **receive compensation** when delays are concurrent.
- 2. Some contracts state that when concurrent delay occurs, not only is no delay compensation available to either party, but the contractor is not entitled to a time extension.
 - ❖ This is **rare** and impose **significant risk** if liquidated damages also **apply** in the event of delay.
- 3. If nothing mentioned in the contract, in the **international construction industry**, the contractor would **not** be entitled to compensable delay damages and the owner would **not** be entitled to its actual delay or liquidated damages.



Other contracts

☐ New Mexico DOT contract

The Contractor is not entitled to an extension of Contract Time for any period in which a Non-Excusable Delay is concurrent with an Excusable Delay. When a Noncompensable Delay is concurrent with a Compensable Delay, the Contractor may be entitled to an extension of Contract Time but not entitled to compensation for the period the Noncompensable delay is concurrent with the Compensable Delay.

New Mexico DOT concurrent delay contract language.



SCL Protocol - EOT

- ❑ When **concurrent delay established**, the **contractor** should be **entitled** an **EOT** for the Employer Delay to Completion **using CP**.
 - ❖ **CP 5 = Procedure for granting EOT**
- ❑ The **Contractor Delay** should **not reduce** the amount of **EOT due** to the **Contractor** as a **result** of the **Employer Delay**.
- ❑ **Employer Delay to completion** does **not exonerate** the **contractor** for all its **delays** prior to that **Employer Delay** to completion occurring (**does not allow functional theory**).
- ❑ The **Protocol's approach** to the **treatment of concurrent delay** (**once established**) prevents **arguments** about **whether** an **Employer Delay** acting **concurrently** with a **Contractor Delay**.

SCL Protocol – Compensation and LDs

14. Concurrent delay – effect on entitlement to compensation for prolongation

Where Employer Delay to Completion and Contractor Delay to Completion are concurrent and, as a result of that delay the Contractor incurs additional costs, then the Contractor should only recover compensation if it is able to separate the additional costs caused by the Employer Delay from those caused by the Contractor Delay. If it would have incurred the additional costs in any event as a result of Contractor Delay, the Contractor will not be entitled to recover those additional costs.

- ❑ The **prolongation compensation** will be recoverable **if** the contractor can prove that its **losses** result from the **employer delay**.

In most cases, contractor will be entitled to compensation **only** for any period by which the employer delay **exceeds** the duration of the **contractor delay** (true concurrent delay)



AACE 29R-03 – EOT

“Concurrent delays occur when there are two or more independent causes of delay during the same time period. The same time period from which concurrency is measured, however, is not always literally within the exact period of time. For delays to be considered concurrent, most courts do not require that the period of concurrent delay precisely match. The period of concurrency of the delays can be related by circumstances, even though the circumstances may not have occurred during exactly the same time period.”



AACE 29R-03 – Compensation and LDs

- Typically, when **both** contractor and owner are **concurrently responsible** for an **extended period** of performance,
the contractor is granted an **extension of contract time**
without compensation and
owner forgoes the collection of **LD** damages
No time-related compensation flows from either party to the other.

The SCL Protocol is consistent with Association for the Advancement of Cost Engineering (AACE) International 29R-03's interpretation, when contractor and employer driven issues are attributed to the delay, the contractor is eligible to an extension of contract time with no prolongation costs. Here, the primary purpose of any time extension claim is satisfied, this being for the contractor to avoid any liquidated damages.

ASCE Standard ANSI/ASCE/CI 67-17 (Schedule Delay Analysis) – Compensation and LDs

4.7 FOR A DELAY TO BE COMPENSABLE, IT SHOULD BE THE SOLE CAUSE OF DELAY

1. For compensable delay, the delaying event should be the sole cause of **longest path delay** (no concurrent delays compensable)
 - ❖ Typically, a delay solely caused by the owner is required to qualify as **compensable**.
 - ❖ However, third party delay may be compensable depending on the **provisions of the contract**.
2. For compensable delay, the delay should extend the scheduled completion date of the project.
 - ❖ Activities with *float can fall on the longest path* because of schedule **constraints and multiple calendars** (e.g., weekend non-work restrictions),
 - ❖ *Critical activities can fall on paths of work that are not the longest path* (again because of constraints and multiple calendars).

ASCE Standard ANSI/ASCE/CI 67-17 (Schedule Delay Analysis) – Compensation and LDs

4.7 FOR A DELAY TO BE COMPENSABLE, IT SHOULD BE THE SOLE CAUSE OF DELAY

- ❑ In some cases where **multiple subcontractors or multiple prime contractors** are **simultaneously responsible** for delay,

the **contractor or owner** may **still be able to recover** its costs **split** between the responsible parties ===== *Because this is not a concurrent delay*

as long as the **claiming party** had **no fault** or responsibility for delay during the **period claimed**.

NO CONCURRENT EXISTS

 ASCE Standard ANSI/ASCE/CI 67-17 (Schedule Delay Analysis) – Compensation and LDs

8.2 CONCURRENT DELAY TYPICALLY IS EXCUSABLE BUT NONCOMPENSABLE, MEANING A TIME EXTENSION IS GIVEN BUT NO COSTS ARE RECOVERED BY EITHER PARTY

- ❑ **Liquidated Damages:** For the purposes of assessing liquidated damages, the general rule is that **contractors will not be charged** for critical delays they cause that are concurrent with owner-caused critical delays **that cannot be apportioned** in terms of responsibility and damages.
- ❑ **Compensation:** An **owner will not be responsible** for a contractor's delay damages when the contractor simultaneously caused critical delay that is concurrent with owner-caused critical delay of equal time **that cannot be apportioned**.

This is also consistent with **SCL** and **AACE!**

Does ASCE allows for apportionment?

 ASCE Standard ANSI/ASCE/CI 67-17 (Schedule Delay Analysis) – Compensation and LDs**8.3 CONCURRENT DELAY SHOULD BE APPORTIONED WHERE POSSIBLE**

- ❑ Conditions that **allow** concurrent delays to be **apportioned** include situations where
1. There is **overlapping** of simultaneous delays on the **start or finish of either delay or both**
 2. When one or more of the **simultaneous delays** are **absorbed** partially by **available float** on an activity path **before** they become critical
 3. When one or more of the **simultaneous delays** have **different** start **or** finish dates and **one or more** are **critical activities**

Does it mean “primacy of delay?”

ASCE Standard ANSI/ASCE/CI 67-17 (Schedule Delay Analysis) – Compensation and LDs

8.3 CONCURRENT DELAY SHOULD BE APPORTIONED WHERE POSSIBLE

- ❑ Conditions that **allow** concurrent delays to be **apportioned** include situations where
 - ❖ To consider apportionment of concurrent delays, consideration needs to be given to
 - ✓ Facts,
 - ✓ Criticality,
 - ✓ Timing,
 - ✓ Responsibility for delay,
 - ✓ Duration of delay,
 - ✓ Method used to measure delay, and
 - ✓ Ability to mitigate.

Dealing With Concurrent Delays

(Practical Implication – Concepts)



Practical – General procedure – AACE 29R-03

AACE International's Recommended Practice for forensic schedule delay analysis **recommends** the most adopted international construction industry approach and states the following:

1. **Classify** **each delay event** **individually** and **see** who is **primarily responsible** for the **cause of the delay** (**first column** from the left side in the next slide)
2. **Evaluate** whether **each delay event** is **concurrent** with **other types of delays**.

Practical – General procedure – AACE 29R-03

3. Use the **following Table** to decide whether the concurrent delay is (**second column**):

- ☐ **Excusable or non-excusable**
- ☐ **Compensable or non-compensable** to the owner and contractor

Concurrent Delay Scenarios and Net Effect

Delay Event	Concurrent With	Net Effect
Owner Delay	Another Owner Delay or Nothing	Compensable to Contractor, Non-excusable to Owner
Contractor Delay	Another Contractor Delay or Nothing	Non-Excusable to Contractor, Compensable to Owner
<i>Force Majeure</i> Delay	Another <i>Force Majeure</i> Delay or Nothing	Excusable but Not Compensable to Either Party
Owner Delay	Contractor Delay	Excusable but Not Compensable to Either Party
Owner Delay	<i>Force Majeure</i> Delay	Excusable but Not Compensable to Either Party
Contractor Delay	<i>Force Majeure</i> Delay	Excusable but Not Compensable to Either Party

Practical – General procedure – AACE 29R-03

4. Use the **following Table** to find the net effect (**third column**):

Concurrent Delay Combinations and Net Effect

Delay Event	Concurrent With	Net Effect
<i>Force Majeure Delay</i> • Time • No Compensation for Extended Overhead • No Liquidated/stipulated Damage Assessment	Contractor-Caused Delay • No Time • No Compensation for Extended Overhead • Liquidated/stipulated Damage Assessment	Excusable • Time/No Compensation for Extended Overhead • No Liquidated/stipulated Damage Assessment
<i>Force Majeure Delay</i> • Time • No Compensation for Extended Overhead • No Liquidated/stipulated Damage Assessment	Owner-Caused Delay • Time • Compensation for Extended Overhead	Excusable • Time • No Compensation for Extended Overhead • No Liquidated/stipulated Damage Assessment
Contractor-Caused Delay • No Time • No Compensation for Extended Overhead • Liquidated/stipulated Damage Assessment	Owner-Caused Delay • Time • Compensation for Extended Overhead	Excusable • Time • No Compensation for Extended Overhead • No Liquidated/stipulated Damage Assessment

Dealing With Concurrent Delays

(Practical Implication – Separate Critical Path)

Concurrent delays to separate critical paths – Definition

1. Concurrent delays to separate critical paths

□ Requirements?

1. If the **owner-caused delay** and **contractor-caused delay** affect different activities on **parallel activity paths** which are **equally critical**, and
2. As such the **owner-caused delay** and **contractor-caused delay** would each have delayed the completion date of the project, the **delays** are said to be **concurrent delays to separate critical paths**.

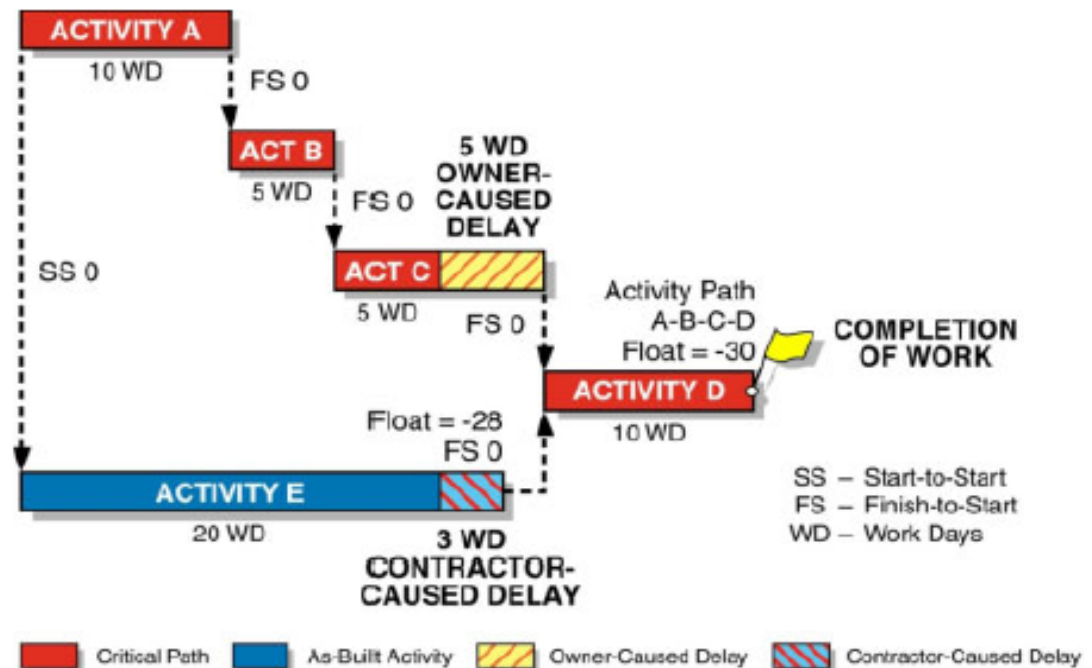


Concurrent delays to separate critical paths

- ❑ Two non-concurrent WD is **compensable** and 5 WD granted for **EOT**.

For periods of concurrent delay, the contractor would not have entitlement to recover its delay costs and, likewise, the owner would not have entitlement to recover its liquidated damages

Concurrent Delays Affecting Activities with Different Float Values



The 3 WD Contractor-caused delay is only partially concurrent with the 5 WD Owner-caused delay.

Concurrent delays to separate critical paths

- ❑ The concept known as **primacy of delay** applies in this situation.
- ❑ The **Contractor's delay to bulk excavation** began before the Owner's delay to the shop drawings.
- ❑ Because of the **delay to excavation**, the Project **had more time** to complete the **shop drawings**, and the **delay to the shop drawings** never became critical.
- ❑ **Bulk excavation** was responsible for a **delay**, and the **Contractor** is not entitled to a **time extension** or **additional compensation**.

*The concept of **primacy of delay** recognizes that **critical delays** create float on **other paths of work**, and typically the terms about the **ownership of float** plays a game.*



Concurrent delays to separate critical paths – Example

- ❑ Say we have a Project with a **CPM schedule**, and in that schedule, there are **parallel critical paths** of work.
- ❑ Figure below shows **Path A** and **Path B**, each with a duration of **40 days**. **Both paths** of work are scheduled to **start the same day**. Therefore, an **analysis** at the **start** of these paths would show that **both paths** are **concurrently critical**.

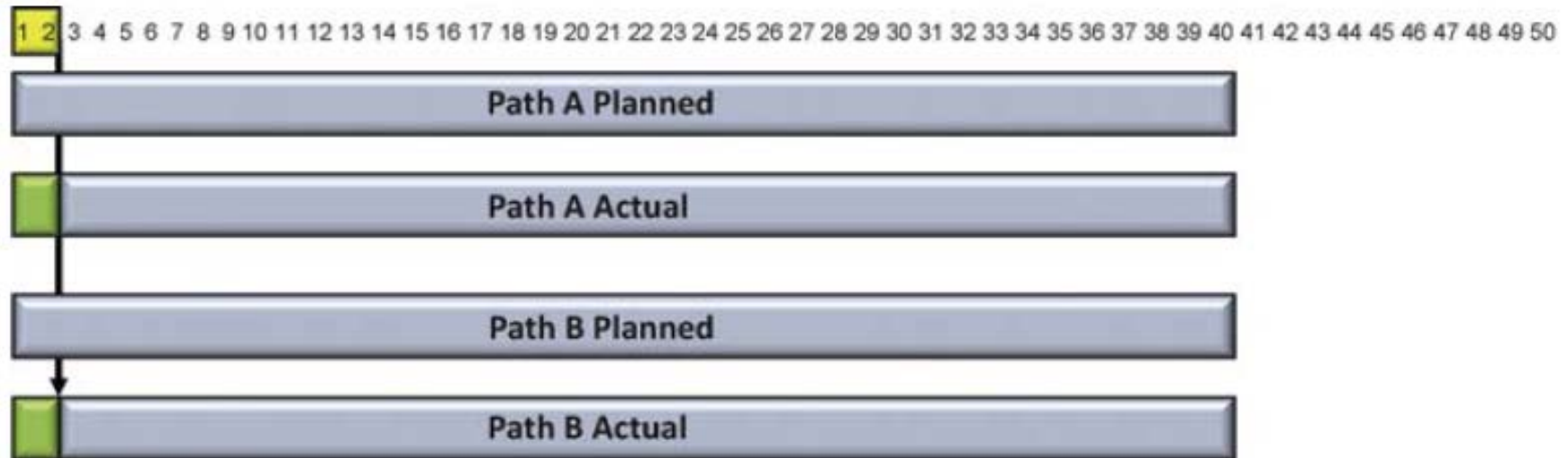
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50



Both Paths A & B, finished 10 days later than originally planned on Day 50.

Concurrent delays to separate critical paths – Example

- Both paths are worked on for the first two days

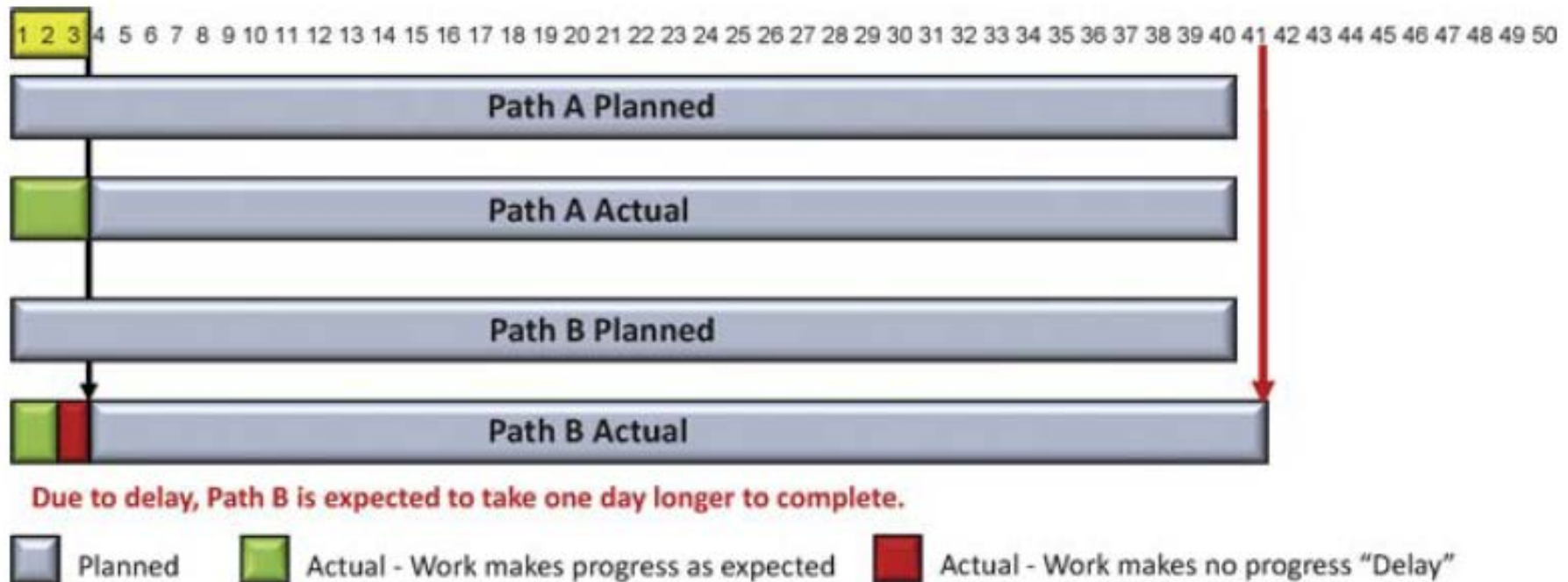


Planned Actual - Work makes progress as expected



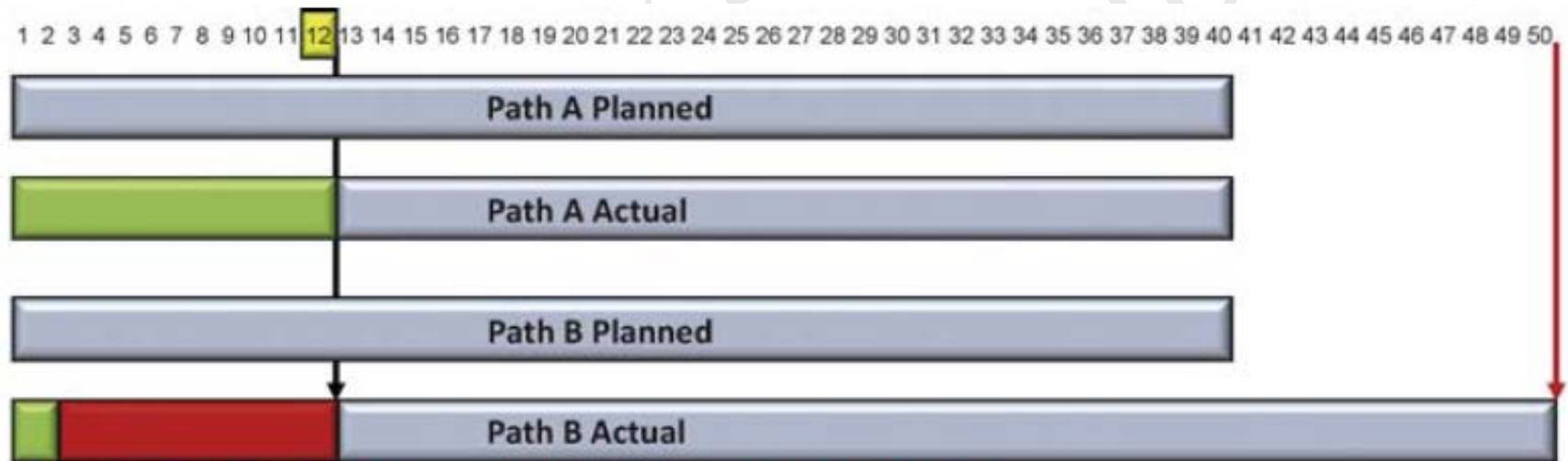
Concurrent delays to separate critical paths – Example

- ❑ Path B stops work because of a design discrepancy.
- ❑ Obviously, Path B is the **longest path** of the two and, for our example, the **sole critical path**.
- ❖ The critical path shifted from Paths A and B to **just Path B**.



Concurrent delays to separate critical paths – Example

- ❑ So at the **end of day 12**, **Path A** is still forecast to **complete on day 40**, and **Path B** is now forecast to **finish on day 50**.
- ❖ At this point in time, **Path A has 10 days of float**.



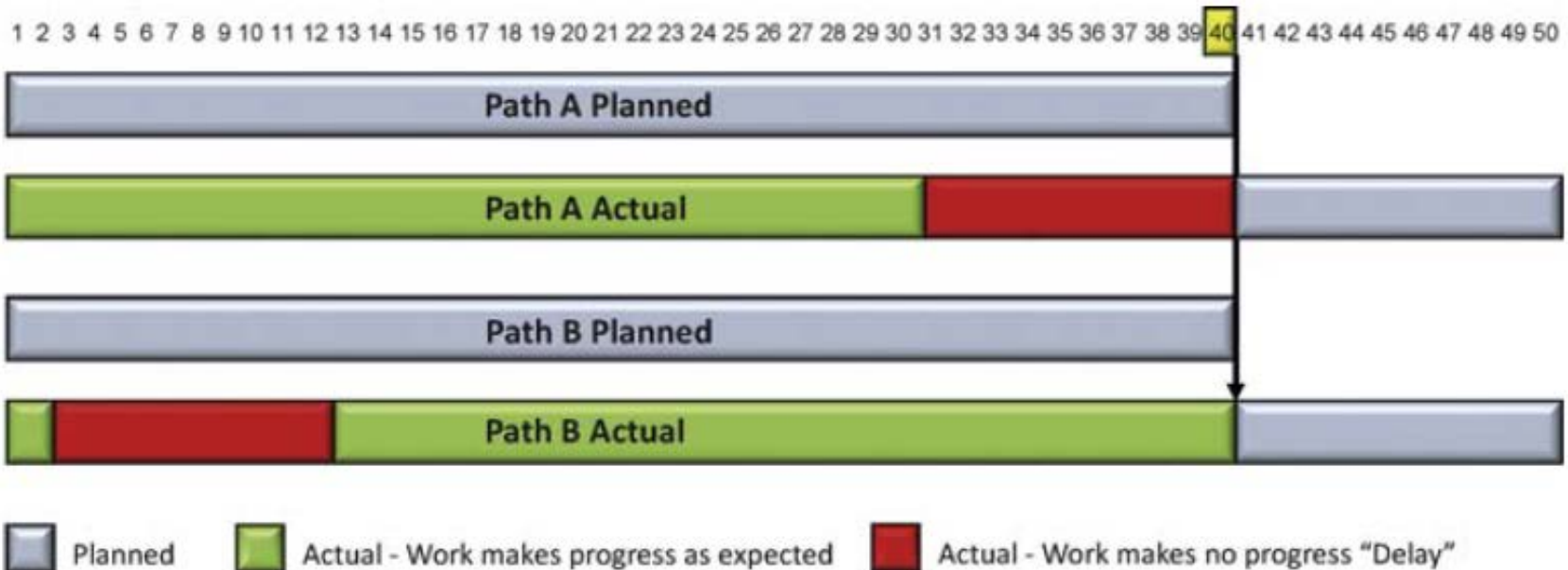
Due to 10-day delay, Path B is expected to take 10 days longer to complete.

Planned
 Actual - Work makes progress as expected
 Actual - Work makes no progress "Delay"

Concurrent delays to separate critical paths – Example

Which one is responsible for 10 days of delays?

- Our **earlier analysis** showed that **Path A** had picked up **10 days of float**. Therefore, **even though it experienced 10 days** of delay, it caused **no overall delay**.

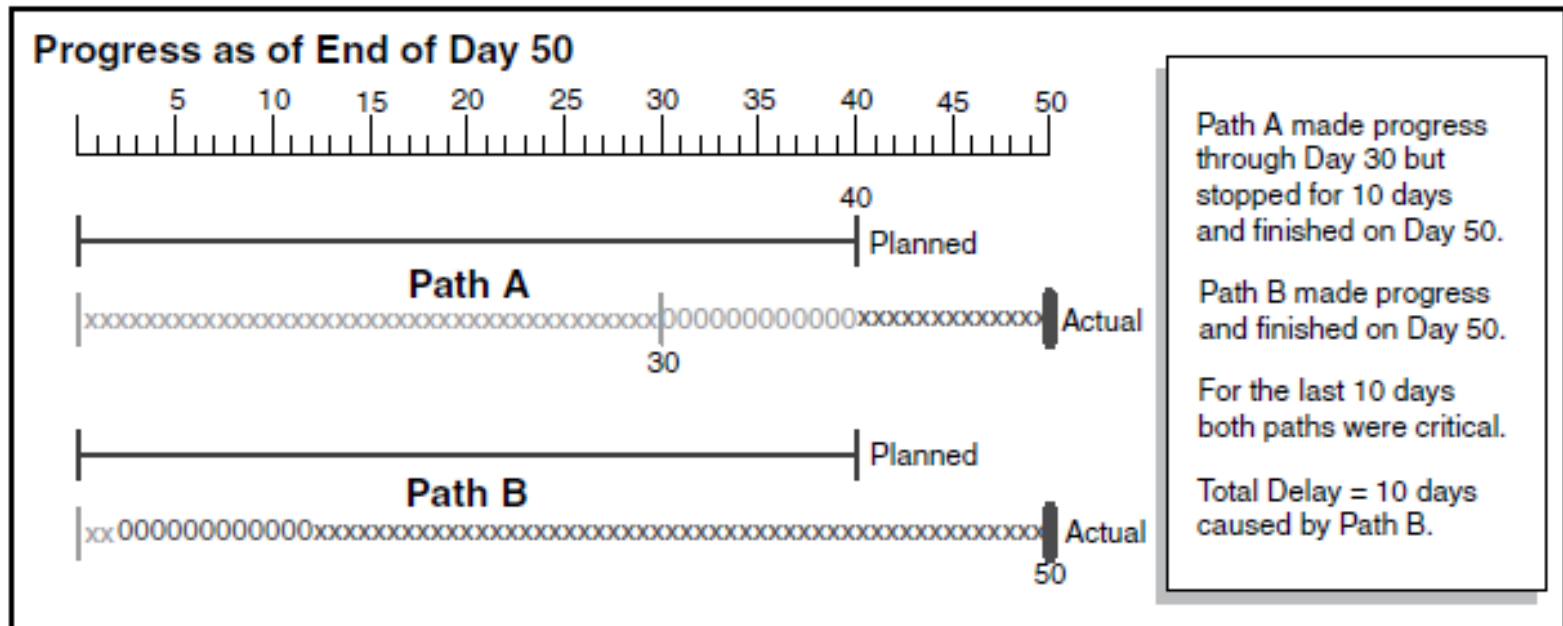




Concurrent delays to separate critical paths – Example

- ❑ If an analyst had solely looked at the start and finish dates of these two paths of activities, the analyst might conclude that they both delayed the Project by 10 days, since they both were scheduled to finish on day 40 and both actually finished on day 50.

BUT.....SEE THE NEXT SLIDE





Concurrent delays to separate critical paths – Example

- ❑ The **more detailed analysis** clearly shows that **this is not the case**.
- ❑ **No delay** was caused by **Path A**, and **all 10 days of delay** were caused by **Path B**.
- ❑ The **analyst** should perform the analysis on a **day-by-day basis** to correctly ascertain the exact activities that caused the delay and the **correct magnitude** of those delays.

Concurrent delays to separate critical paths – Conclusion

The **bottom line** is that analyzing concurrent delays to separate critical paths is best done by using a **technique** to analyze delays that will identify the critical path of the project every day.

Dealing With Concurrent Delays

(Practical Implication – Same Critical Path)



Concurrent delays to the same critical path

2. Concurrent delays to the same critical path

❑ Requirements?

1. If the **owner-caused delay** and **contractor-caused delay** affect the same activity, and
2. As such the **owner-caused delay** and **contractor-caused delay** would each have delayed the completion date of the project, the **delays** are said to be **concurrent**.



Concurrent delays to the same critical path – Example

- ❑ As of the **schedule update of June 1**, **demolition** should be finished on **June 15**, but delayed from **June 1 to June 16** because of **strike** + **concurrently owner failed to obtain a permit**.
- ❑ Two causes of delays are **concurrent** and **run for the same period**.
 - ❖ One **non-excusable** and **non-compensable** (*strike*)
 - ❖ Another is **excusable** and **compensable** (*permit*)

What to do?

Time extension + no compensation

Concurrent delays to the same critical path – Example

- ❑ If compensable and non-compensable delays are **concurrent**, and **unless otherwise** specified in the contract,

neither the owner nor the contractor is **entitled** to delay **damages** if they **cannot** be **separated** by proof.

Dealing With Concurrent Delays

(My Choice)

My recommendation on meaning and how to deal with concurrent delay

- ❑ While **functional theory** is much more **easier** **Primacy of delay** is more **accurate**

It **depends** on you, your project, and your effort could be taken!

1. Contemporaneous analysis (Prospective)

- ❖ No need of functional if you analyze as **late as delay starts**
- ❖ Functional is preferred when you have to analyze **long before a delay starts**

2. After-the-fact (Forensic or Retrospective)

- ❖ AACE approach with apportionment and the adjustment of “primacy of delay”
 - ✓ This principle of “primacy of delay” states that **whatever activity caused the delay first** is the **primary and sole driver** of delay and creates float to the other paths of work
 - Similar to one the **SCL Protocol recommends!**

My recommendation on meaning and how to deal with concurrent delay - Contemporaneous

- ❑ The purpose of **contemporaneous analysis** is more of **business decisions** to manage the **time and claims**

however, the purpose of **forensic analysis** is more **technical proof**

- ❑ The **functional theory** is “closely **attuned** to delay **methodologies** that use modeled **CPM schedules** as their basis and utilize some form of **time impact analysis**.”

- ❑ No need to develop a **separate concurrency analysis**

because there would be **no difference in EOT calculation** if **functional theory** is considered.

❖ The “**primacy of delay**” is **not important** here!

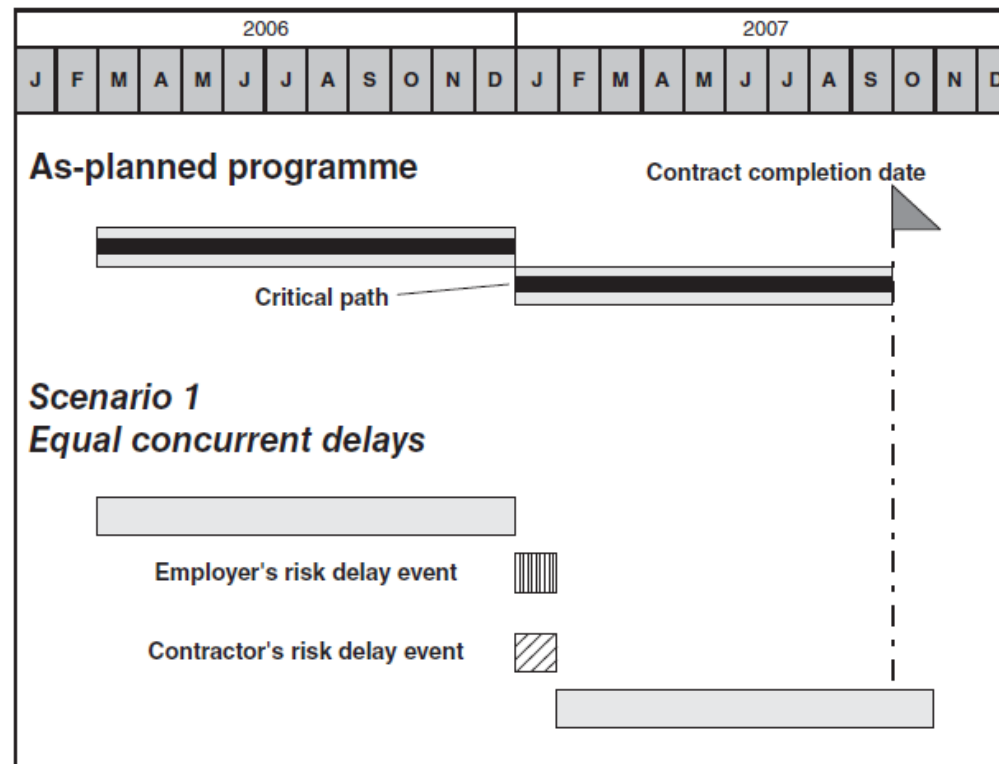
- ❑ The **functional theory** allows that CPM schedules,

even if properly maintained, are **not perfect**, and **near critical delays** may in fact be **concurrent**.”

My recommendation on meaning and how to deal with concurrent delay - Forensic

❑ Scenario 1: Both similar start and finish date (“true concurrent”)

❖ No apportionment

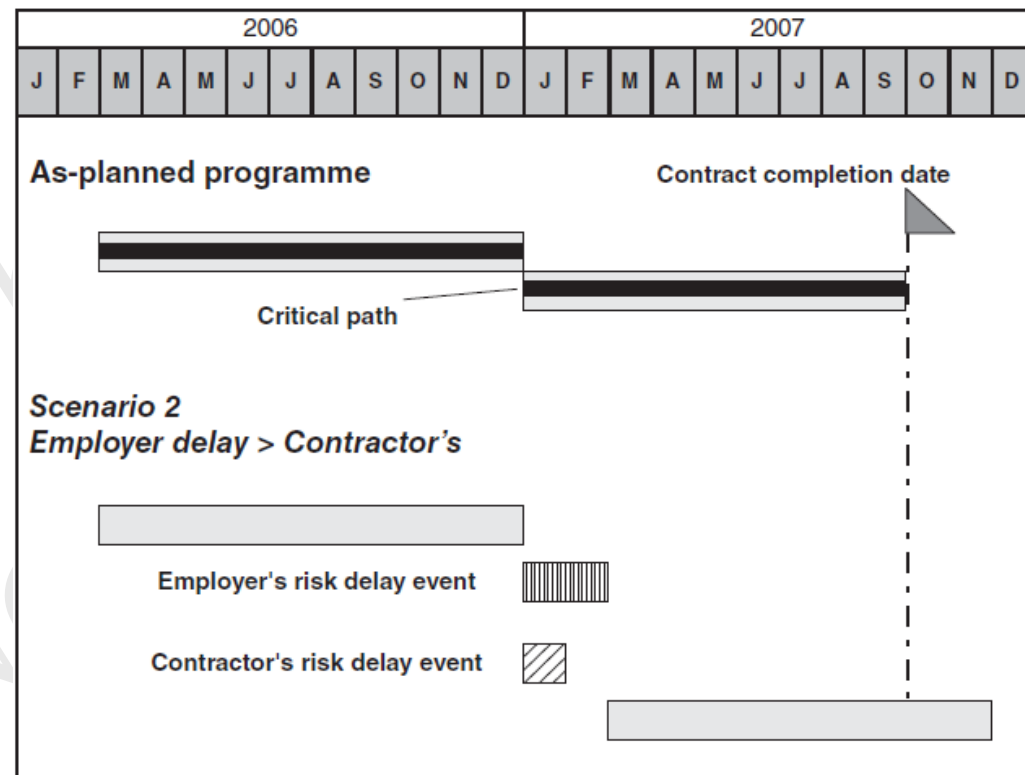


Equal concurrent delay.

My recommendation on meaning and how to deal with concurrent delay - Forensic

❑ **Scenario 2: Same start but different finish date** (*some saying “true concurrent”*)

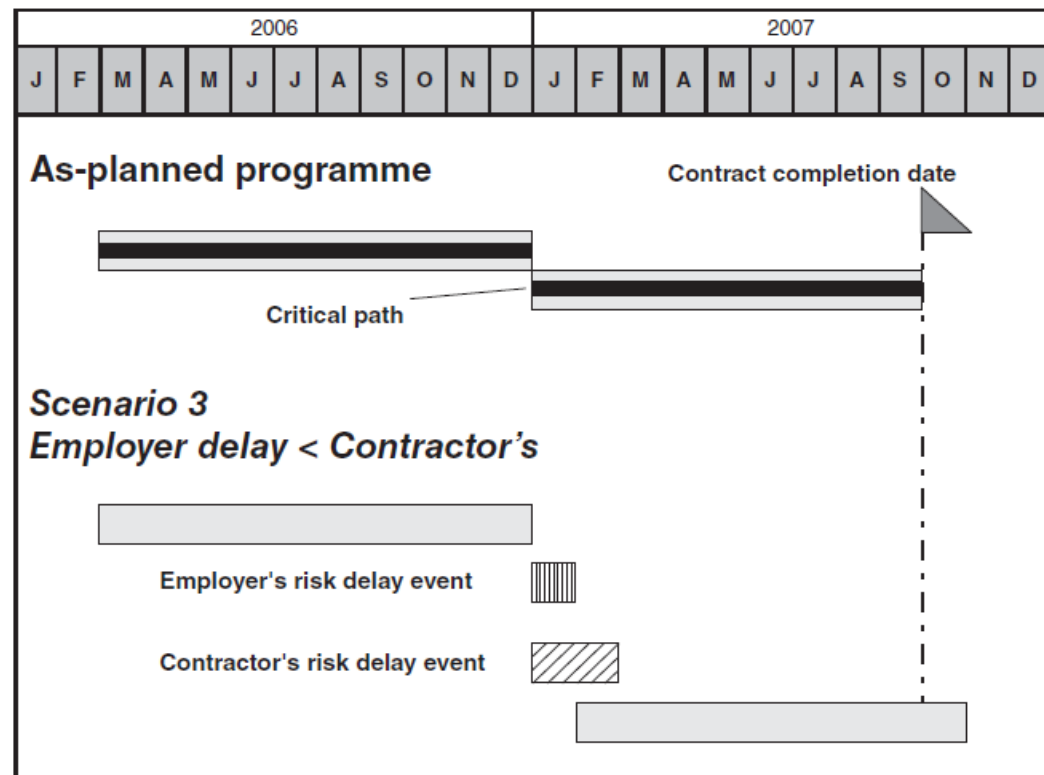
❖ Apportionment with no need of “primacy of delay”



Concurrent delay scenario 2.

My recommendation on meaning and how to deal with concurrent delay - Forensic

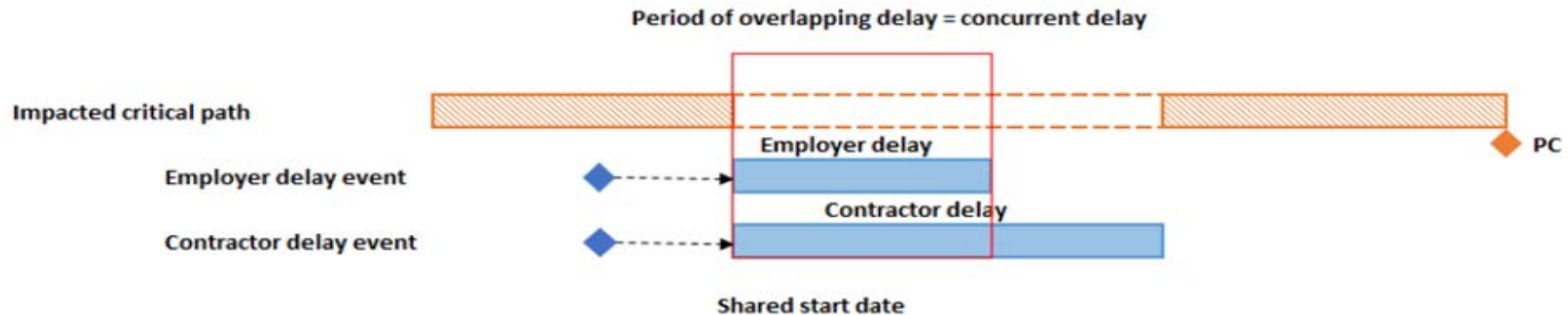
- ❑ **Scenario 3: Same start** but **different** finish date (*some saying “true concurrent”*)
 - ❖ Apportionment with **no need** of “primacy of delay”



Concurrent delay scenario 3.

My recommendation on meaning and how to deal with concurrent delay - Forensic

- ❑ These three Scenarios do not need “Primacy of Delay”
- ❑ If they **start** at the **same point**, the identical period is **concurrent** and the **rest** is not (rest should be summed)



My recommendation on meaning and how to deal with concurrent delay - Forensic

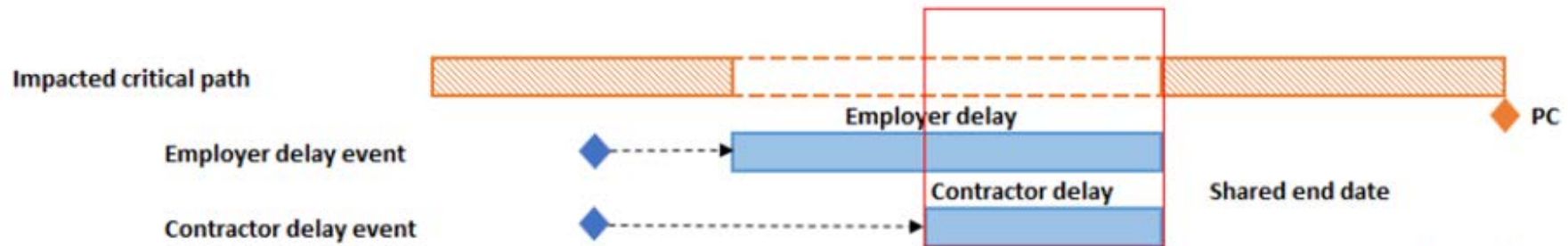
❑ Scenario 4: Different start date, but same finish date

❖ Because of when delays exist on two separate paths

❑ What could be done?

❖ All delays go to the party that starts the delay (*remember the SCL recommendation because it is not true concurrent*)

✓ If you chose this, there is no concurrency



My recommendation on meaning and how to deal with concurrent delay - Forensic

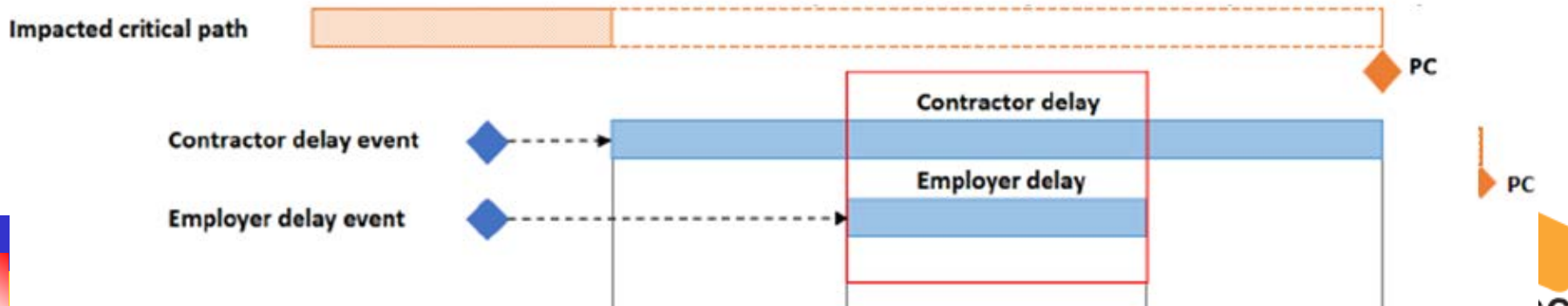
❑ Scenario 5: Having **different start** date and **different finish** date

❖ *Because of when delays exist on two separate paths*

❑ **What could be done?**

❖ All delays go to the party that starts the delay (*remember the SCL recommendation and maybe ASCE approach?*)

✓ If you chose this, there is no concurrency



Question

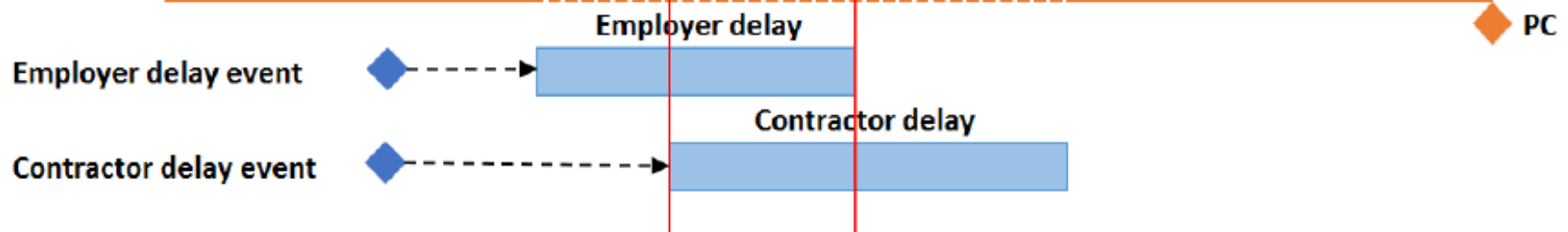
What would you do here?

Critical path



Period of overlapping delay = concurrent delay

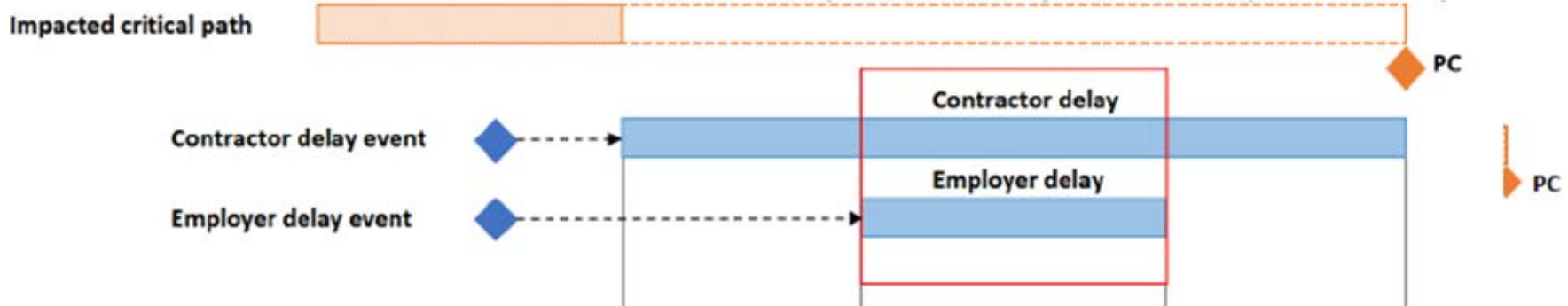
Impacted critical path



My recommendation on meaning and how to deal with concurrent delay - Forensic

What to do about previous scenarios if they were on same critical path?

Use Apportionment



My recommendation on meaning and how to deal with concurrent delay - Forensic

1. No LDs
2. No compensation
3. EOT

ALL

1. SCL
2. ASCE
3. AACE

are **consistent** in this manner

Pacing Delays

موسسه مهندسی و مدیریت ساخت علوی پور (ACEMI)

دفتر آموزش



تهران، بلوار فردوس شرق، مجتمع آبگینه، طبقه سوم اداری، واحد C42



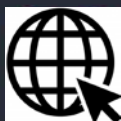
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