crowrider

WELCOME!

EVM

PM BASICS

A CrowRider class

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What is Earned Value?

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Earned Value?

Project Baseline

We are here

Wk	1	2	3	4	5	...	10
Vol:	10	20	30	40	50		100
Cost:	5	10	15	20	25		50

EVM Weekly Report

	Volumes	Unit cost	EVM Data
PLAN	50	0.5	PV=25
ACTUAL	45	0.6	AC=27

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Earned Value?

	Vol.	Unit cost	EVM Data
PLAN	50	0.5	PV=25
ACTUAL	45	0.6	AC=27
Earned Value	45	0.5	EV = 22.5

Previous Report

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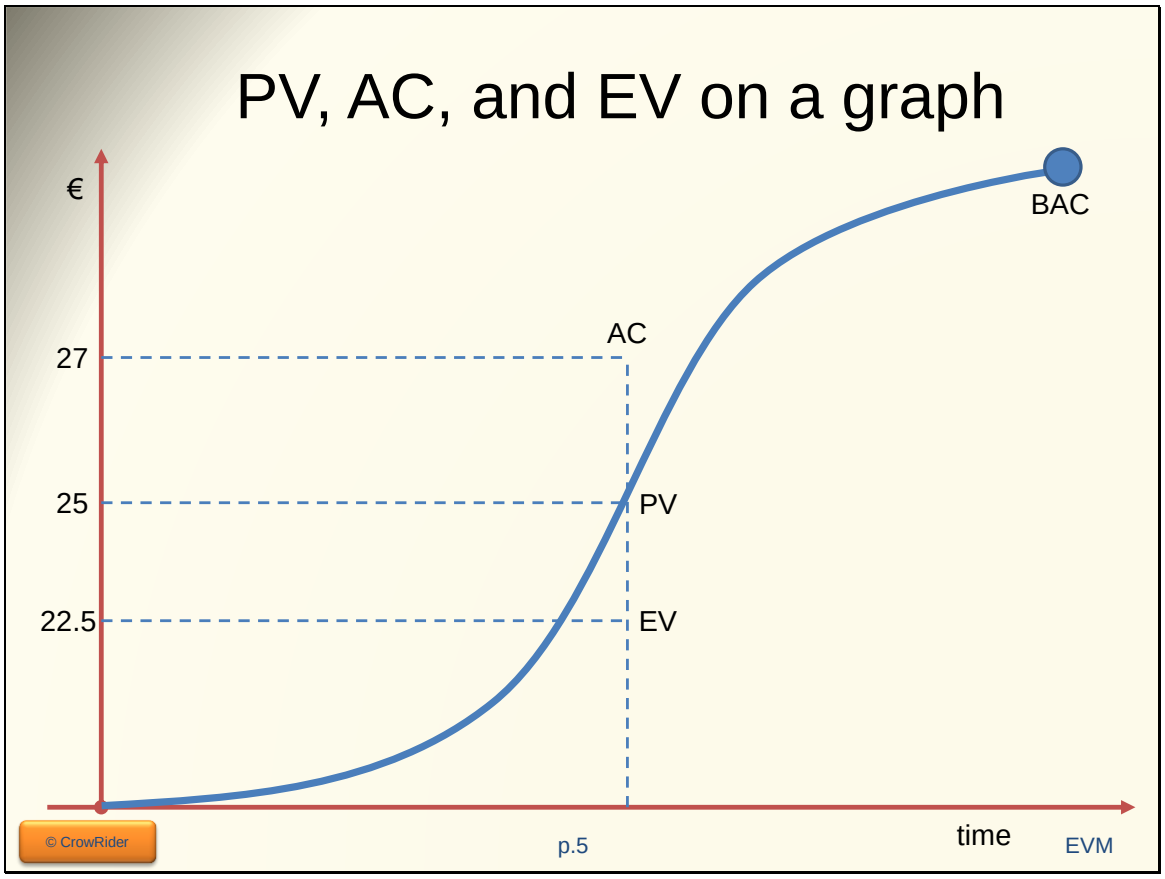
PV, AC, and EV on a graph
€
27
25
22.5
AC
PV
EV
BAC
time
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p.5
EVM

Earned Value Analysis:

Metrics and KPIs

SV and CV

SPI and CPI

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EV metrics and KPIs

	Vol.	Unit cost	EVM Data
PLAN	50	0.5	PV=25
ACTUAL	45	0.6	AC=27
Earned Value	45	0.5	EV = 22.5

EV - PV = SV

EV - AC = CV

EV / PV = SPI

EV / AC = CPI

SV, CV:
> 0 «good», < 0 «bad»

SPI,CPI:
> 1 «good», < 1 «bad»

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Examples:

EVM Metric	Formula	Value	Status
SV	**EV – PV**	22.5 – 25 = -2.5	Late
CV	**EV – AC**	22.5 – 27 = -4.5	Over Budget
SPI	**EV / PV**	22.5 / 25 = 0.90	Late
CPI	**EV / AC**	22.5 / 27 = 0.83	Over Budget

SV, CV: > 0 «good», < 0 «bad»

SPI, CPI: > 1 «good», < 1 «bad»

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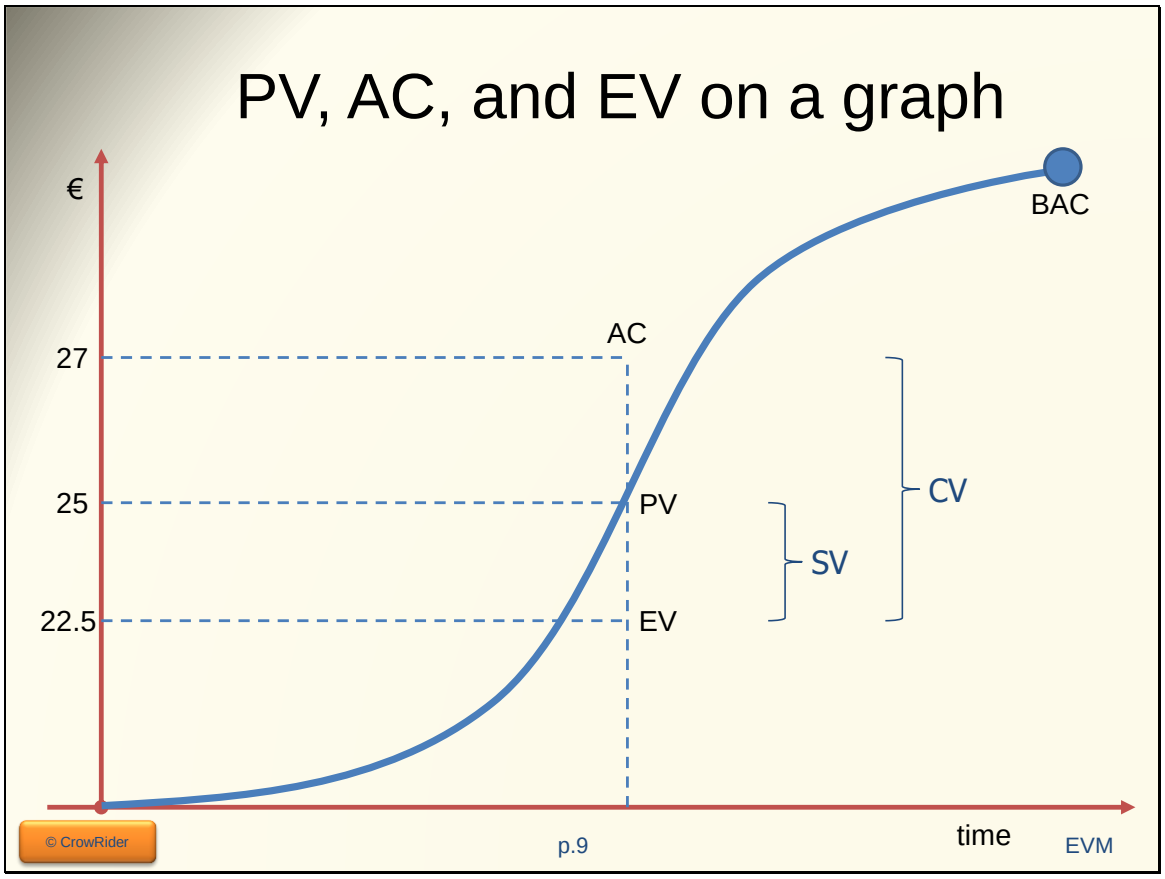
PV, AC, and EV on a graph
€
27
25
22.5
AC
PV
EV
BAC
CV
SV
time
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p.9
EVM

Earned Value Analysis:

the
Estimate At Completion
(EAC)

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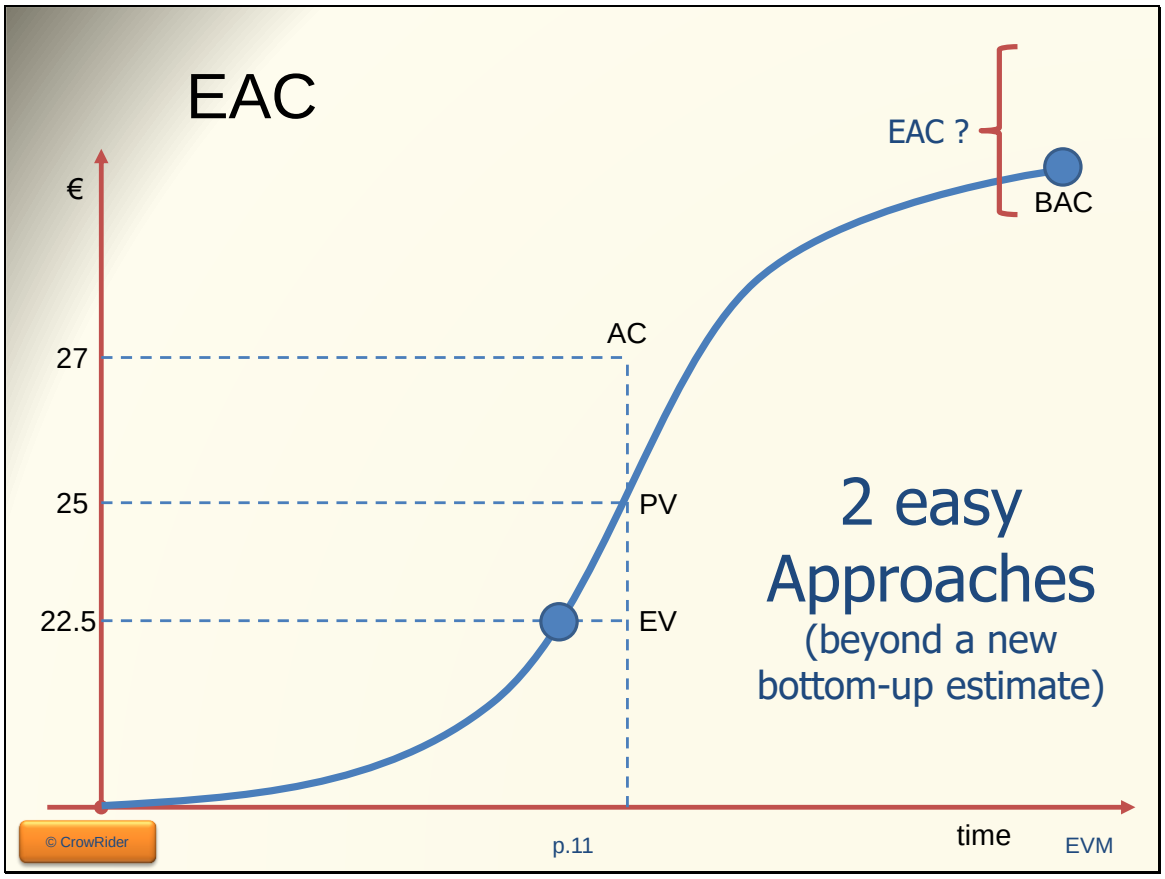
EAC
€
27
25
22.5
AC
PV
EV
EAC ?
BAC
2 easy Approaches
(beyond a new bottom-up estimate)
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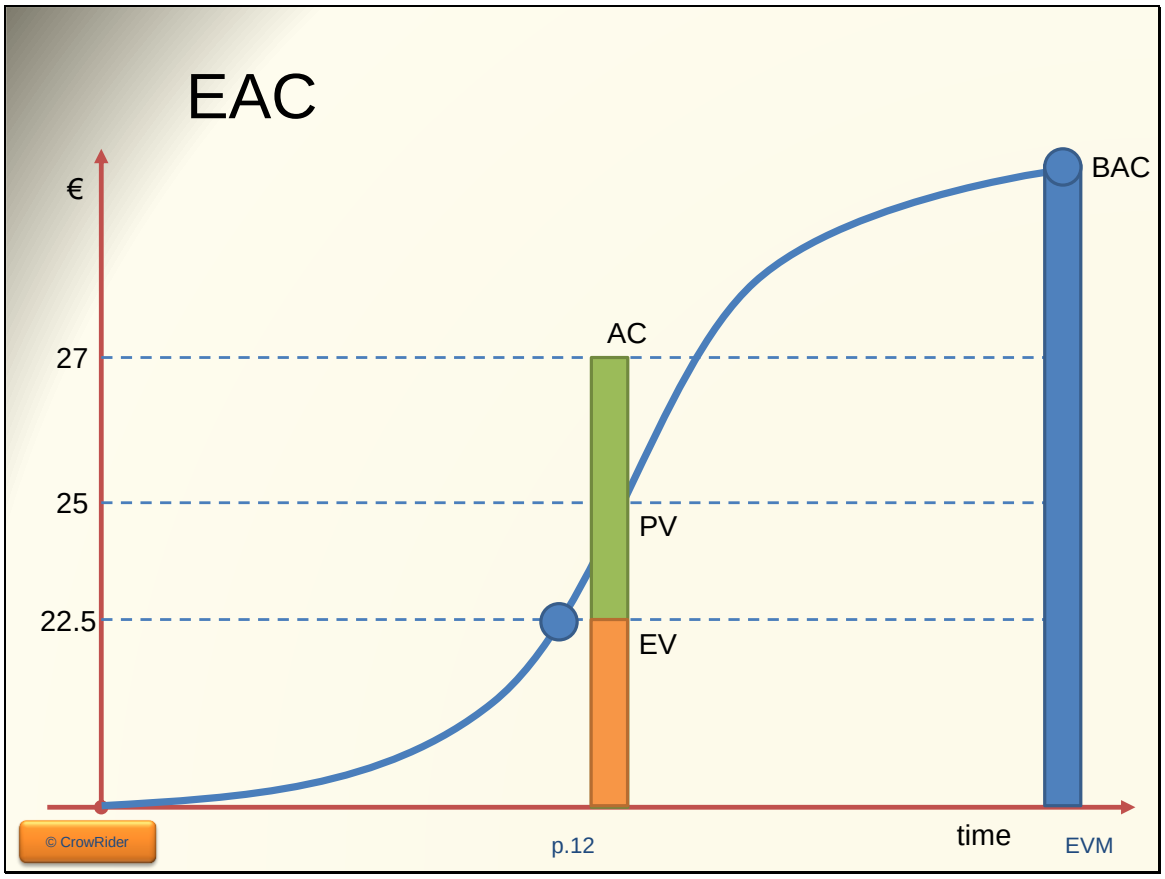
p.11
time
EVM


EAC
€
27
25
22.5
AC
PV
EV
BAC
time
EVM
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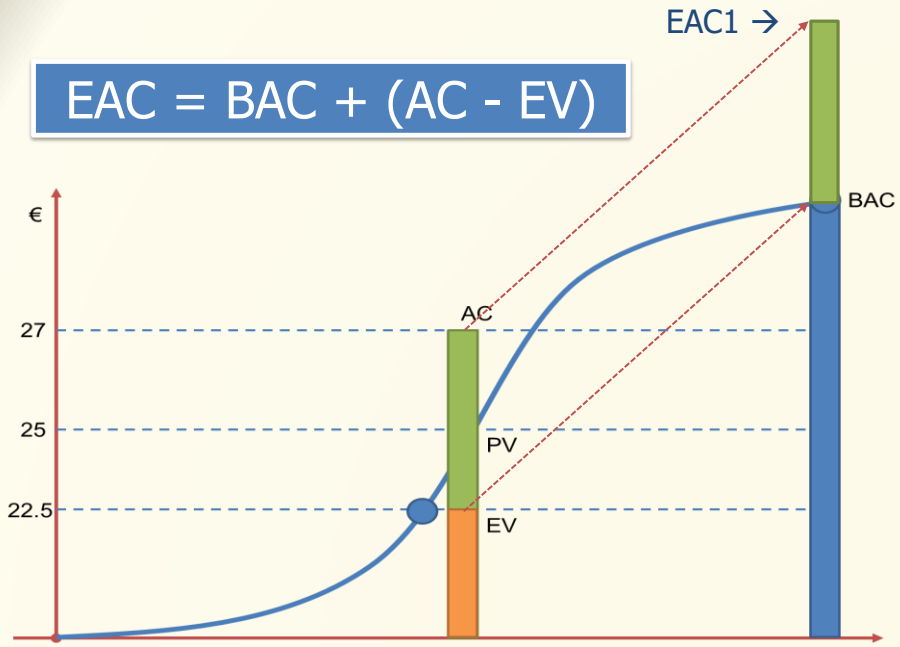
EAC 1… we can fix it!

EAC = BAC + (AC - EV)



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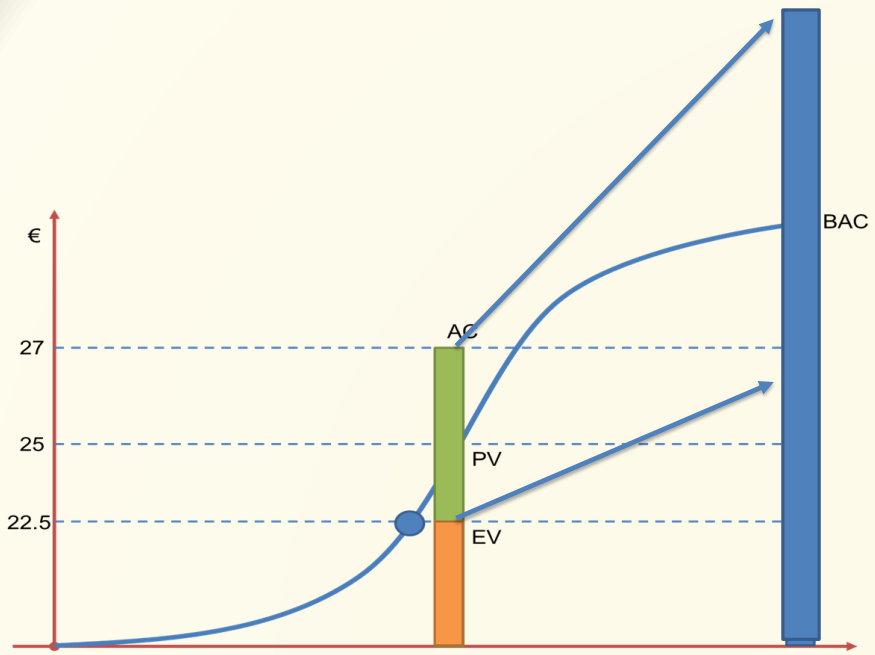
EAC 2… we cannot fix it!



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EAC 2… we cannot fix it!

EAC/BAC = AC/EV

EAC = BAC*(AC/EV)

EV/AC = CPI

EAC = BAC/CPI

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EAC 1 and 2

EAC = BAC + (AC - EV)

EAC = BAC/CPI

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oh,… and EAC 3

EAC1 can also be re-written in the following way:

EAC1 = BAC + (AC - EV) = **AC + BAC - EV**

Remember EAC2: EAC2 = BAC/CPI

Including both CPI and SPI creates a worst-case schenario (if both are < 1):

EAC 3:

EAC = AC + (BAC – EV)/(CPI*SPI)

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Earned Value Analysis:

the
To Complete Performance Index
(TCPI)

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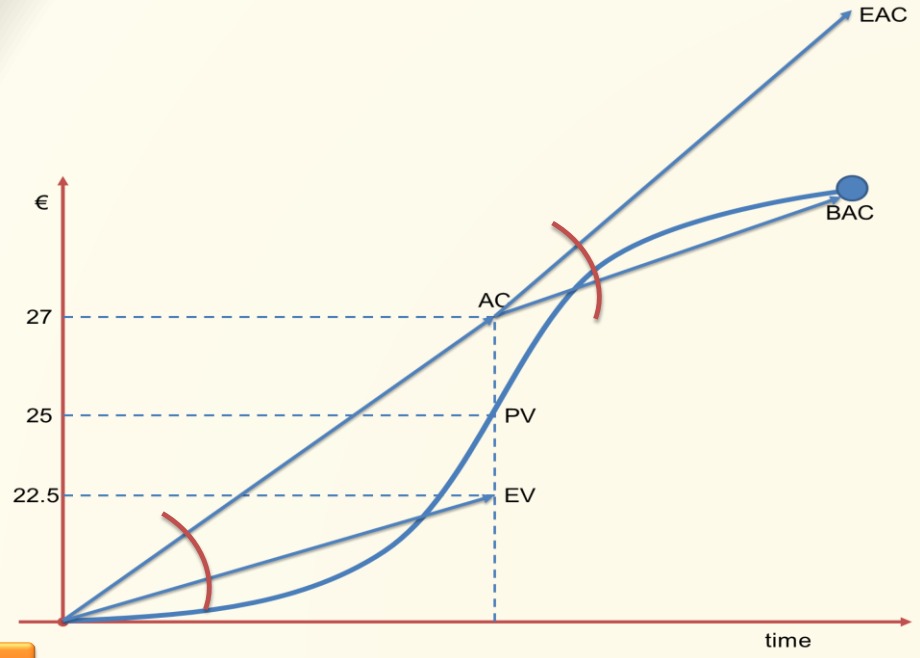
TCPI
To Complete Performance Index



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TCPI

CPI
=
EV (work done) / AC (money spent)

TCPI
=
BAC-EV (work left to complete)/
BAC-AC (money left to spend)

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TCPI

TCPI = BAC-EV / BAC-AC

But… If an EAC has already been approved?...

TCPI = BAC-EV / **EAC**-AC

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Earned Value Analysis:

in practice,
an example with multiple work packages

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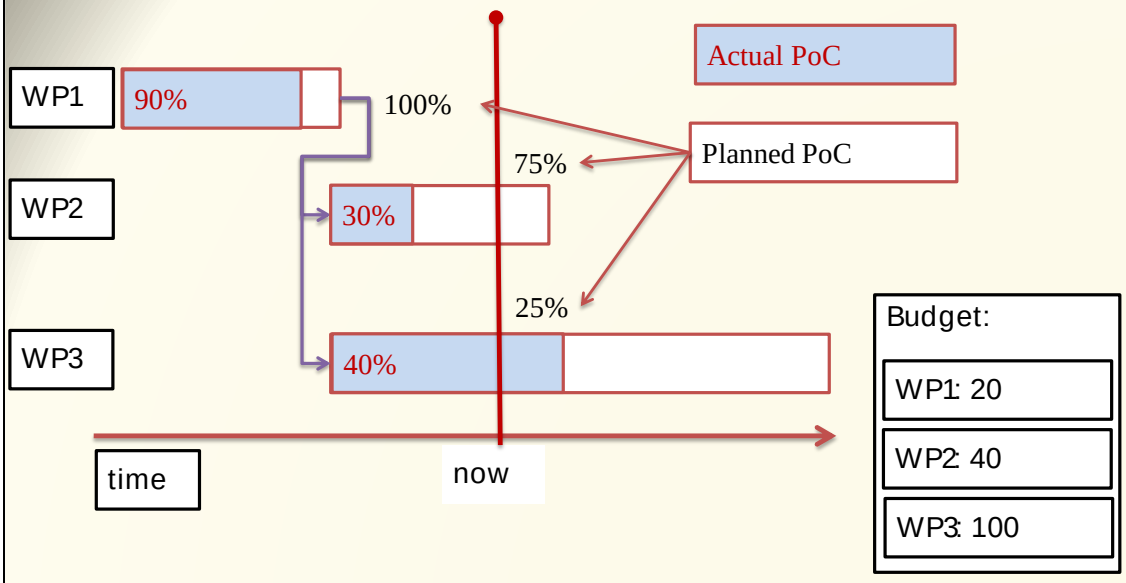
EV with multiple Work Packages



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EV with multiple Work Packages

		PV		EV
WP1	20*100%	20	20*90%	18
WP2	40*75%	30	40*30%	12
WP3	100*25%	25	100*40%	40
Tot Project	**Sum=**	**75**	**Sum=**	**70**

SV	70-75	-5
SPI	70/75	0.933

Negative SV,
or
SPI < 1
= Project is late

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EV with multiple Work Packages

Assuming the following actual costs (AC) had been incurred:

		EV	AC
WP1	20*90%	18	20
WP2	40*30%	12	10
WP3	100*40%	40	55
Tot Project	**Sum=**	**70**	**85**

CV	70-85	-15
CPI	70/85	0.823

Negative CV,
or
CPI < 1
= Project is
over budget

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Earned Value Analysis:

about estimating
Percentage Of Completion
(POC)

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The trouble with Estimating Work Completed

Has anyone ever told you: “the work is at 90%”.... And then it stayed that way for weeks?

– Avoid subjective evaluation of PoC.
– There are some guidelines which can help...

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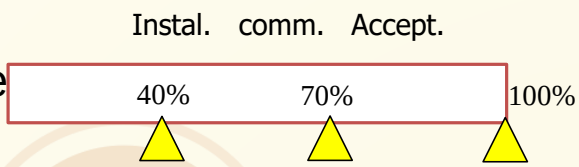
Estimating Work Completed

– Weighted Mile

With predefined % allocations

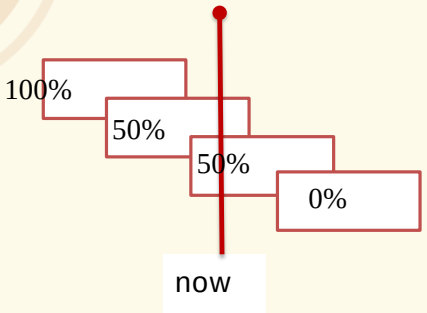


Fixed Formula:

With predefined Start/End % allocations, for example:

0%/100% also: 20%/80%

50%/100% or: 25%/75%



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THANK YOU!

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