

	Case Name: Fontein	Sector	Construction (Civil)	
	OR-AS Operations Research - Applications and Solutions www.or-as.be info@or-as.be	Baseline schedule	Schedule with resources	
			Schedule with costs	
		Risk analysis	Random Simulation	
			One of nine std. scenarios	
Submitted by	Mayté & Thymo	Project Control	User defined distributions	
Date	2018		Automatic tracking	
File Name	C2018-10 Fontein		Tracking based on user input	

1. Project description

Project Authenticity

The project consists of activity, resource and cost data that were obtained directly from the actual project owner.

2. Project properties

2.1. Baseline schedule

General	
# Activities	42
Planned Duration (PD)	99 days*
Budget at Completion (BAC)	€ 115.115,23
Renewable Resources	1
Consumable Resources	-

Network Topology	
Serial/Parallel (SP)	58%
Activity Distribution (AD)	62%
Length of Arcs (LA)	4%
Topological Float (TF)	39%

* Standard eight-hour working days

2.2. Risk analysis

Random simulation by ProTrack was performed using the default symmetric triangular risk distribution profiles.

	Cost sensitivity		
	avg (%)	std dev (%)	skew (-)
CRI-r	6,22	14,81	3,0
CRI-rho	45,66	12,03	-1,7
CRI-thau	82,19	34,71	-1,6

	Time sensitivity		
	avg (%)	std dev (%)	skew (-)
CI	42,9	49,5	0,3
SI	47,7	46,1	0,2
SSI	1,6	2,4	1,4
CRI-r	9,0	14,9	5,3
CRI-rho	17,0	19,9	2,2
CRI-thau	33,9	30,2	1,5

	Resource sensitivity		
	avg (%)	std dev (%)	skew (-)
CRI-r	0,00	0,00	N/A
CRI-rho	50,00	0,00	N/A
CRI-thau	100,00	0,00	N/A

2.3. project Control

2.3.2 Tracking description



Tracking Authenticity

Manual tracking was performed over 24 tracking periods with regular lengths of approximately one week. The Real Duration and Real Cost mentioned in section "2.3.3. Earned Value Management" are based on manual user input.

The tracking information obtained from the project owner and introduced in ProTrack includes actual activity start dates, durations, and costs.

2.3.3. Earned Value Management

2.3.3.1. Performance metrics

	CV (€)	SV (€)	SV(t) (d)	CPI(-)	SPI (-)	SPI(t) (-)	p-factor (-)
avg	0,00	-5406,18	-63,63	1,00	0,95	0,92	1,00
std dev	0,00	8603,44	74,26	0,00	0,08	0,09	0,00
final	0,00	0,00	-167,00	1,00	1,00	0,83	1,00

2.3.3.2. Time forecasting

PD	99 days	Real duration	120 days	Late	21,08%
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EAC (t)	Real Accuracy				
Method - PF	avg (d)	std dev (d)	MAPE (%)	MPE (%)	
PV - 1	140,46	7,42	13,1	-13,0	
PV - SPI	105,88	9,92	13,5	-11,8	
PV - SCI	105,88	9,92	13,5	-11,8	
ED - 1	106,50	8,05	11,3	-11,3	
ED - SPI	108,13	10,42	11,6	-9,9	
ED - SCI	108,13	10,42	11,6	-9,9	
ES- 1	107,92	9,43	10,1	-10,1	
ES- SPI(t)	109,88	11,73	10,9	-8,4	
ES - SCI(t)	109,88	11,73	10,9	-8,4	

2.3.3.3 Cost forecasting

BAC (€)	€ 115.115,23	Real cost	€ 115.115,24	Over Budget	0%
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EAC	Real Accuracy			
Method - PF	avg (€)	std dev (€)	MAPE (%)	MPE (%)
1	115115,23	0,00	0,0	0,0
CPI	115115,23	0,00	0,0	0,0
SPI	116736,98	3021,19	1,3	1,3
SPI (t)	116936,96	2974,43	1,5	1,5
SCI	116736,98	3021,19	1,3	1,3
SCI (t)	116936,96	2974,43	1,5	1,5
0.8 CPI + 0.2 SPI	115387,50	494,79	0,2	0,2
0.8 CPI + 0.2 SPI (t)	115420,14	490,26	0,3	0,3