

	Case Name: Landing Gear	Sector		
	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	
Submitted by	Mayté & Thymo		One of nine std. scenarios	
Date	2017		User defined distributions	
File Name	C2017-06 Landing Gear	Project Control	Automatic tracking	
			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	24
Planned Duration (PD)	320 days*
Budget at Completion (BAC)	€ 11.562.500,00
Renewable Resources	4
Consumable Resources	-

Network Topology	
Serial/Parallel (SP)	70%
Activity Distribution (AD)	71%
Length of Arcs (LA)	71%
Topological Float (TF)	0%

* 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	18,30	14,93	0,9
CRI-rho	20,71	15,01	0,8
CRI-thau	15,56	21,13	3,3

	Resource sensitivity		
	avg (%)	std dev (%)	skew (-)
CRI-r	46,75	30,82	1,1
CRI-rho	44,25	30,29	1,4
CRI-thau	33,25	27,90	1,6

	Time sensitivity		
	avg (%)	std dev (%)	skew (-)
CI	71,6	39,4	-1,0
SI	86,2	25,2	-2,4
SSI	14,3	14,0	0,9
CRI-r	18,2	16,8	1,0
CRI-rho	20,8	17,1	0,8
CRI-thau	16,2	21,8	2,9

2.3. project Control

2.3.2. Tracking description



Tracking Authenticity

Manual tracking was performed over 19 tracking periods with *regular lengths of approximately one month*. 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	731286,57	681239,20	188,79	1,12	1,12	1,15	1,00
std dev	352177,77	393588,90	131,87	0,04	0,06	0,05	0,01
final	874700,00	595000,00	280,00	1,08	1,05	1,12	1,00

2.3.3.2. Time forecasting

PD	320 days	Real duration	285 days	Late	-10,93%
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EAC (t)	Real Accuracy			
Method - PF	avg (d)	std dev (d)	MAPE (%)	MPE (%)
PV - 1	301,58	11,26	9,4	-9,4
PV - SPI	286,47	14,69	12,3	-12,3
PV - SCI	255,37	20,21	18,3	-18,3
ED - 1	304,68	9,79	8,8	-8,8
ED - SPI	286,47	14,69	12,3	-12,3
ED - SCI	270,53	23,95	15,4	-15,4
ES - 1	296,84	16,94	10,3	-10,3
ES - SPI(t)	278,53	13,12	13,9	-13,9
ES - SCI(t)	263,32	19,21	16,8	-16,8

2.3.3.3 Cost forecasting

BAC (€)	€ 11.562.500,00	Real cost	€ 10.687.800,00	Over Budget	-7,56%
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EAC	Real Accuracy			
Method - PF	avg (€)	std dev (€)	MAPE (%)	MPE (%)
1	10831213,32	352177,67	2,3	1,0
CPI	10291330,68	357375,43	3,3	-3,3
SPI	10287916,68	399517,03	3,5	-3,3
SPI (t)	10278038,16	385102,28	3,6	-3,4
SCI	9821004,37	795615,91	8,0	-8,0
SCI (t)	9812902,08	774056,24	8,0	-8,0
0.8 CPI + 0.2 SPI	10289726,89	358186,84	3,3	-3,3
0.8 CPI + 0.2 SPI (t)	10288298,53	361110,51	3,4	-3,3