

	Case Name: Gas Pipeline	Sector	Construction (Industrial)	
	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	Rojin & Forough	Project Control	User defined distributions	
Date	2020		Automatic tracking	
File Name	Gas Pipeline		Tracking based on user input	

## 1. Project description

Project Authenticity

The project consists of *activity* data that were obtained directly from the actual project owner.

## 2. Project properties

### 2.1. Baseline schedule

General	
# Activities	13
Planned Duration (PD)	58 days*
Budget at Completion (BAC)	€ 37,536.00
Renewable Resources	-
Consumable Resources	-

\* Standard eight-hour working days

Network Topology	
Serial/Parallel (SP)	75%
Activity Distribution (AD)	77%
Length of Arcs (LA)	0%
Topological Float (TF)	22%

### 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	30.77	46.2	1.3
CRI-rho	31.31	31.7	0.9
CRI-thau	8.69	15.4	1.9

	Resource sensitivity		
	avg (%)	std dev (%)	skew (-)
CRI-r	N/A	N/A	N/A
CRI-rho	N/A	N/A	N/A
CRI-thau	N/A	N/A	N/A

	Time sensitivity		
	avg (%)	std dev (%)	skew (-)
CI	30.8	46.2	0.9
SI	31.3	31.7	0.9
SSI	8.7	15.4	1.9
CRI-r	20.4	21.0	1.0
CRI-rho	27.8	21.9	0.4
CRI-thau	28.6	32.5	1.7

### 3. Project control

#### 3.1 simulated forecast accuracy

simulated EAC (t) accuracy		
Method - PF	MAPE (%)	MPE (%)
PV - 1	4.75	4.11
PV - SPI	6.2	2.87
PV - SCI	8.15	3.36
ED - 1	3	2.75
ED - SPI	4.95	1.6
ED - SCI	5.83	1.75
ES- 1	3.61	3.26
ES- SPI(t)	4.2	2.35
ES - SCI(t)	5.1	2.46

simulated EAC accuracy		
Method - PF	MAPE (%)	MPE (%)
1	1.59	-0.37
CPI	2.46	0
SPI	3.66	-1.99
SPI (t)	3.2	-1.8
SCI	5.02	-1.86
SCI (t)	4.53	-1.66
0.8 CPI + 0.2 SPI	2.56	-0.4
0.8 CPI + 0.2 SPI (t)	2.5	-0.35