

**ATTACHMENT RAM-7
DEAVERAGING OPTIMIZER PROGRAM DESCRIPTION**

The following simple example illustrates how the optimizer program determines which wire centers to include in each wire center zone. Suppose the goal is to create two zones from three wire centers. For simplification, assume each wire center has the same number of lines,¹ and that the three wire centers have the following mean costs:

- wire center A -- \$15
- wire center B -- \$25
- wire center C -- \$45

There are three possibilities for putting these three wire centers into two zones as shown in Table 1:

Table 1: Sample Deaveraging Wire Center Combinations

	Zone 1	Zone 2
Option 1	A and B	C
Option 2	A and C	B
Option 3	B and C	A

Table 2 demonstrates the calculations done by the optimizer for these three options.

Table 2: Demonstration of Deaveraging Optimization Methodology

WC	Cost	Option 1			Option 2			Option 3		
		Zone	Avg Cost ¹	Deviation / Mean ²	Zone	Avg Cost	Deviation	Zone	Avg Cost	Deviation
A	\$15	1	\$20	5/15	1	\$30	15/15	2	\$15	0
B	\$25	1	\$20	5/25	2	\$25	0	1	\$35	10 / 25
C	\$45	2	\$45	0	1	\$30	15/45	1	\$35	10 / 45
Average Deviation³				0.18			0.44			0.21

¹ Avg Cost = the average of the wire center costs assigned to the zone (weighted by line counts in each wire center)

² Deviation / Mean = the positive difference between the wire center cost and the average cost of the zone to which the wire center is assigned, divided by the mean for that wire center

¹ if the number of lines is not the same, the calculations portrayed in Table 2 would be weighted by the respective numbers of lines in each wire center

³ Average Deviation = Sum of deviation/mean for individual wire centers
(weighted by number of lines in each wire center) divided by the number of
lines

Given the individual wire center line counts and average loop costs for each wire center, and using the desired number of zones as an input, the optimizer performs the calculations represented in Table 2 for all possible assignments of wire centers and finds the assignment that produces the lowest average deviation. Thus, in the simple example calculated in Table 2, the result would be to group wire centers into zones as arranged in Option 1. The optimizer outputs the corresponding set of wire center assignments to zones.