

$$\bullet \quad 1 + k \frac{A(s) K(z)}{1 - A(s) K(z)} = \frac{1 - A(s) K(z) + k A(s) K(z)}{1 - A(s) K(z)} = \frac{1 + (k-1) A(s) K(z)}{1 - A(s) K(z)}$$

$$\bullet \quad \frac{k A(s)}{1 - A(s) K(z)} \cdot \frac{1 - A(s) K(z)}{1 + k \frac{A(s) K(z)}{1 - A(s) K(z)}} = \frac{k A(s)}{1 - A(s) K(z)} \cdot \frac{1 - A(s) K(z)}{\frac{1 + (k-1) A(s) K(z)}{1 - A(s) K(z)}} = \frac{k A(s)}{1 + (k-1) A(s) K(z)}$$

$$\Rightarrow a_z = \frac{1 - A(s) K(z)}{1 + (k-1) A(s) K(z)} d + \frac{k A(s)}{1 + (k-1) A(s) K(z)} a_{z,ref}$$

$$= P^{-1} [1 - A(s) K(z)] d + P^{-1} A(s) a_{z,ref}$$

$$\boxed{a_z \cdot P = [1 - A(s) K(z)] d + A(s) a_{z,ref}}$$