sampleVR:

$\rho_{s+1}^2 = \epsilon/s, k = -\frac{\log\frac{\alpha}{2}}{\rho_{s+1}^2};$

return $\frac{1}{k}\sum_{t=1}^{k}\nabla f_{i_t}(\omega_{i_m}^s);$

reuseVR:

$\nabla\dot{F} = \frac{1}{m}\sum_{t=1}^{m}\nabla f_{i_t}(\omega_{i_t}^s);$

return $\nabla\dot{F};$