„adjusted" variance of AUC:

$$\sigma^2(\tau) = \int_0^\tau \frac{\left[\int_t^\tau S(x)\,dx\right]^2 h(t)}{P(\text{Censoring} \geq t)}\,dt$$

1. define: – $S_0(t)$; $S_1(t)$; $h_0(t)$; $h_1(t)$;
   – integration limit $= \tau$; total time $= t_{total}$
   – accrual time $= t_{Accr}$ = time at which accrual finishes. Determines administrative censoring.
   – accrual function: $Accrual(t)$
   – loss function $L_0(t)$; $L_1(t)$. Determines loss-to-FU censoring

2. get $RMST_{0,1}(\tau) = \int_0^{\tau} S_{0,1}(t)\,dt$

3. get censoring-adjusted $\sigma^2_{RMST_0}(\tau)$ which is the censoring adjusted variance of the AUC for $S_0(\tau)$. Same for $\sigma^2_{RMST_1}$.

   3.1. define function $PNotCens(t)$ describing the probability of censoring occuring only after t regardless of event:

   $$PNotCens_0(t) = P_0(\text{censoring} \geq t)$$
   $$= L_0(t) \times Accrual\left[\min\left(tAccr, t_{total}\right)\right]$$

   $PNotCens(t)$ is therefore the product of
   $P(\text{administrative censoring after } t) \times P(\text{loss-to-FU after } t)$

   3.2. $$\sigma^2_{RMST_0}(\tau) = \int_0^{\tau} \frac{\left[\int_t^{\tau} S_0(x)\,dx\right]^2 h_0(t)}{PNotCens_0(t)}\,dt$$

4. $\Delta = RMST_0 - RMST_1$

5. $\sigma^2_{\Sigma} = 2\,\sigma^2_{RMST_0} + 2\,\sigma^2_{RMST_1}$

6. $$\frac{\sigma_{\Sigma} \times qnorm(1-\alpha/2) + \sigma_{\Sigma} \times qnorm(\beta)^2}{\Delta^2} = n$$