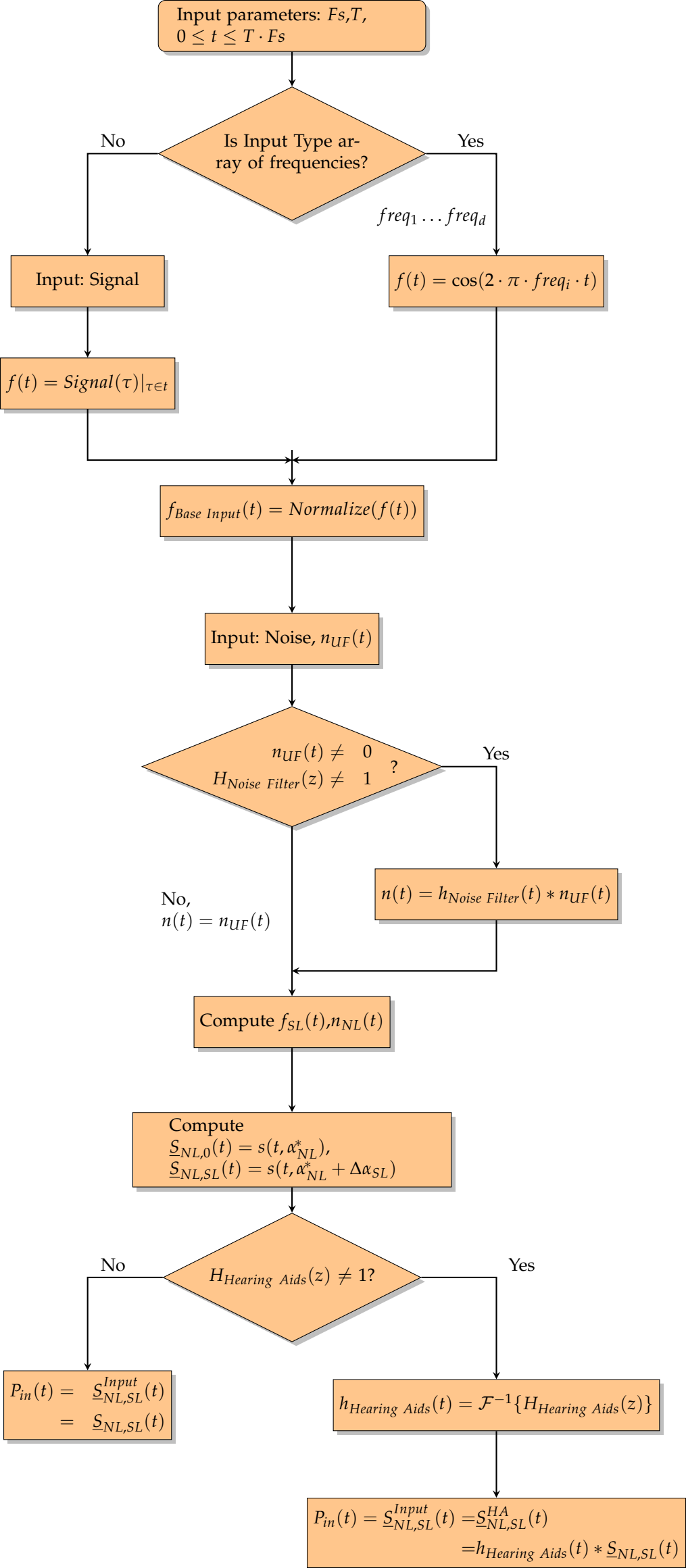
Input parameters: Fs,T, $0 \leq t \leq T \cdot Fs$
Is Input Type array of frequencies?
No
Yes
$freq_1 \ldots freq_d$
Input: Signal
$f(t) = \cos(2 \cdot \pi \cdot freq_i \cdot t)$
$f(t) = Signal(\tau)|_{\tau \in t}$
$f_{Base\ Input}(t) = Normalize(f(t))$
Input: Noise, $n_{UF}(t)$
$n_{UF}(t) \neq 0$
$H_{Noise\ Filter}(z) \neq 1$?
Yes
$n(t) = h_{Noise\ Filter}(t) * n_{UF}(t)$
No, $n(t) = n_{UF}(t)$
Compute $f_{SL}(t)$,$n_{NL}(t)$
Compute $\underline{S}_{NL,0}(t) = s(t, \alpha^*_{NL})$, $\underline{S}_{NL,SL}(t) = s(t, \alpha^*_{NL} + \Delta\alpha_{SL})$
$H_{Hearing\ Aids}(z) \neq 1$?
No
Yes
$P_{in}(t) = \underline{S}^{Input}_{NL,SL}(t) = \underline{S}_{NL,SL}(t)$
$h_{Hearing\ Aids}(t) = \mathcal{F}^{-1}\{H_{Hearing\ Aids}(z)\}$
$P_{in}(t) = \underline{S}^{Input}_{NL,SL}(t) = \underline{S}^{HA}_{NL,SL}(t) = h_{Hearing\ Aids}(t) * \underline{S}_{NL,SL}(t)$