PFB Upchannelisation Question

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From my understanding, given the time stream vector x, the telescope gives us $B^T x$, which is a coarser PFB, and we want Ax, which is the result of a fine PFB. The minimisation procedure gives us:

$$C = (B^T B + \tilde{Q})^{-1} B^T A, \tag{1}$$

which is the coefficient that we apply to $B^T x$ that gives us the fine PFB. So in the end, $CB^T x$ is the closest approximation we have to Ax.

If we run some numbers, however, it seems that the dimension won't match. Say that B^T is a 4-tap, $2n_c = 512$ PFB, and we want A as a 4-tap, $2n_c = 2048$ PFB. Then, A should be of dimension $1024 \times \dim x$, and B^T should be of dimension $256 \times \dim x$. Obviously, they couldn't multiply together, so Eq. (1) doesn't really compute.

I'm not quite sure about what you mean by using several blocks of the short PFB; do you mean that we cut the length of $B^T x$ to what we need?