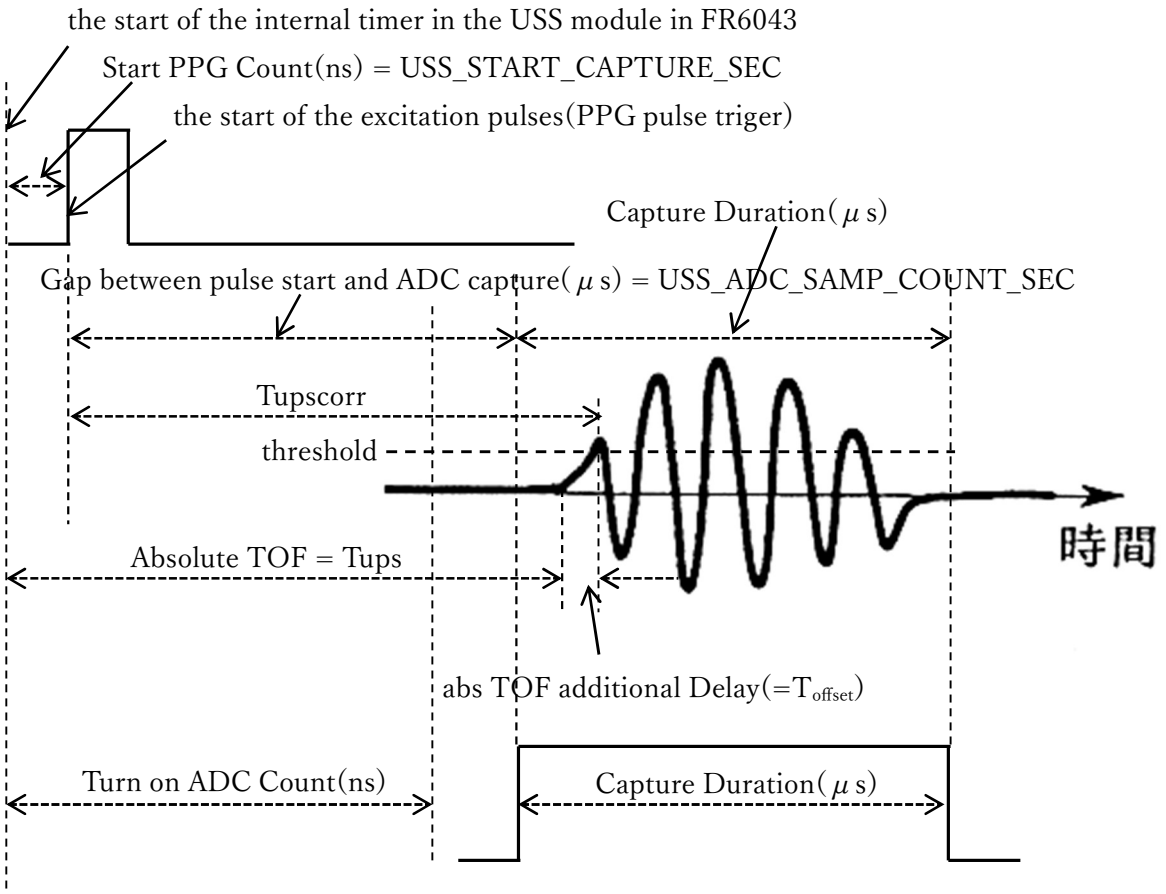

- *Start PPG Count (ns)*: sets the delay between the start of the internal timer in the USS module in FR6043 and the start of the excitation pulses (PPG pulse trigger). TI recommends setting this to 10000 (for 10 µs).
- *Turn on ADC Count (ns)*: sets the delay between the start of the internal timer in the USS module in FR6043 and enables the sigma-delta high-speed ADC. TI recommends setting this to 5000 (for 5 µs).

The upstream absolute time of flight is thus given by Equation 13.

$$T_{ups}^{abs} = T_{prop} + T_{upscorr}^{i_k} - T_{offset} \quad (13)$$

In this equation, T_{proop} is the propagation time that is specified using `#define USS_ACOUSTIC_LENGTH` in USS_userConfig.h and is maintained in USS_Meter_Configuration.acousticLength as part of the application meter configuration. It corresponds to the approximate propagation time for ultrasound in the given meter. Typically T_{proop} is 35 to 40 µs. T_{offset} corresponds to the number of cycles to back track from the lobe corresponding to the index i_K and is a function of the threshold η. In the USS Software Library, T_{offset} is set to 5 µs and can be modified using the user configuration `#define USS_ALG_ADC_ADDITIONAL_CAP_DLY`. It is maintained in the variable USS_Algorithms_User_Configuration.ADCAdditionalCaptureDelay.

The calculations of acquisition and tracking for the upstream direction are repeated for the downstream direction. The software keeps track of another index i_K for the downstream data for each burst j.