- Start from a target-free region
  - Set $DWS(m)$ to 0.
  - Set State to State-A

- Take an A-scan data
- Preprocess each A-scan data and push to Buffer $B_v(m,n)$

Is $B_v(m,n)$ full? 

N

Y

Switch case for background calculation and background removal

State-A

- Silent period, there is no target detection;
- Detection Warning Signal is not active ($DWS(m)=0$)
- Update background signal $b_m(n)$ from last P fuzzy weighted A-scans by (2)

State-B

- There is target detection;
- Detection Warning Signal $DWS(m)$ is active ($DWS(m)=1$).
- Do not update $b_m(n)$

- Obtain target signal Estimate $s_m(n)$ at position $m$ by (3)
- Construct target data image $B_t(m,n)$ given by (4).
- Calculate $e(m)$ using (6)
- Calculate $ADF(m)$ from last R samples of $e(m)$ given by (7),(8),(9)

- Set $DWS(m)$ to 1
- Force to use Case-B for next A-scan processing.

Is detection starting? ($DWS(m-1)=0$ and $ADF(m)>T_A$)

N

Y

Is detection ending? ($DWS(m-1)=1$ and secondary peak is faced in $e(m)$)

N

Y

Is it reached to enough delay (D) to inactivate DWS?

N

Y

- Set $DWS(m)$ to 0.
- Force to use State-A for next A-scan processing