

# Online Trust Update Flow

## Runtime observations (ONLINE)

### Data-plane evidence

forwarding outcomes  
(success / failure)

### Beta update

posterior mean  
(estimate)

### EWMA smoothing

reduce short-term  
noise

### Control-plane evidence

RPL control traffic  
(DIO/DAO etc.)

### Anomaly / deviation score

rank/metric deviation  
(implementation-defined)

### Stability signal

parent/rank changes  
(window W)

## Routing decision (ONLINE)

### Trust aggregation

produce  $T_{total}$  from available signals

### Penalty & parent selection

apply  $..(T_{total})$  to the BRPL metric  
... preferred parent / forwarding choice

Offline log parsing (if used) is for evaluation/diagnostics only and is not part of the online routing loop.