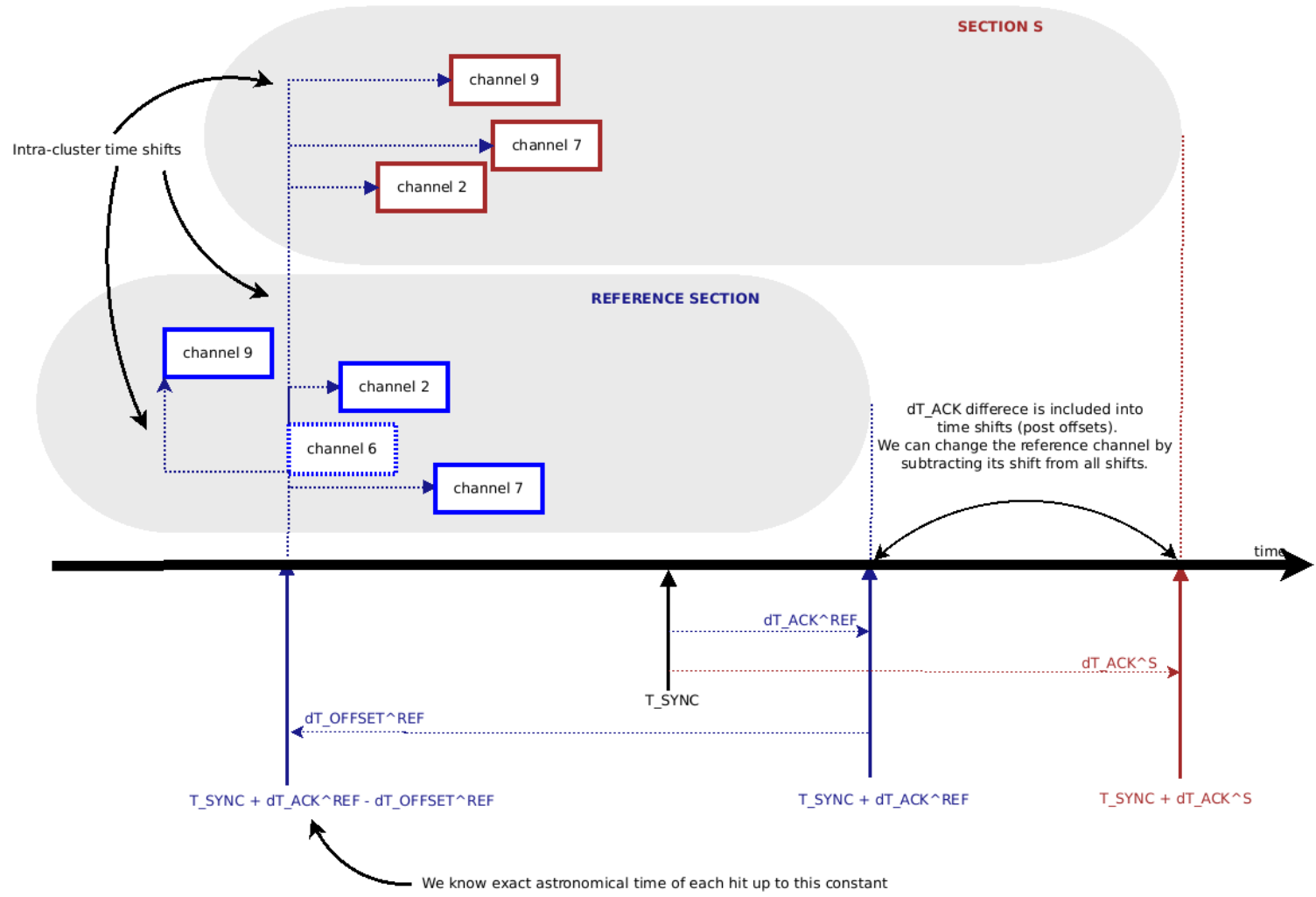
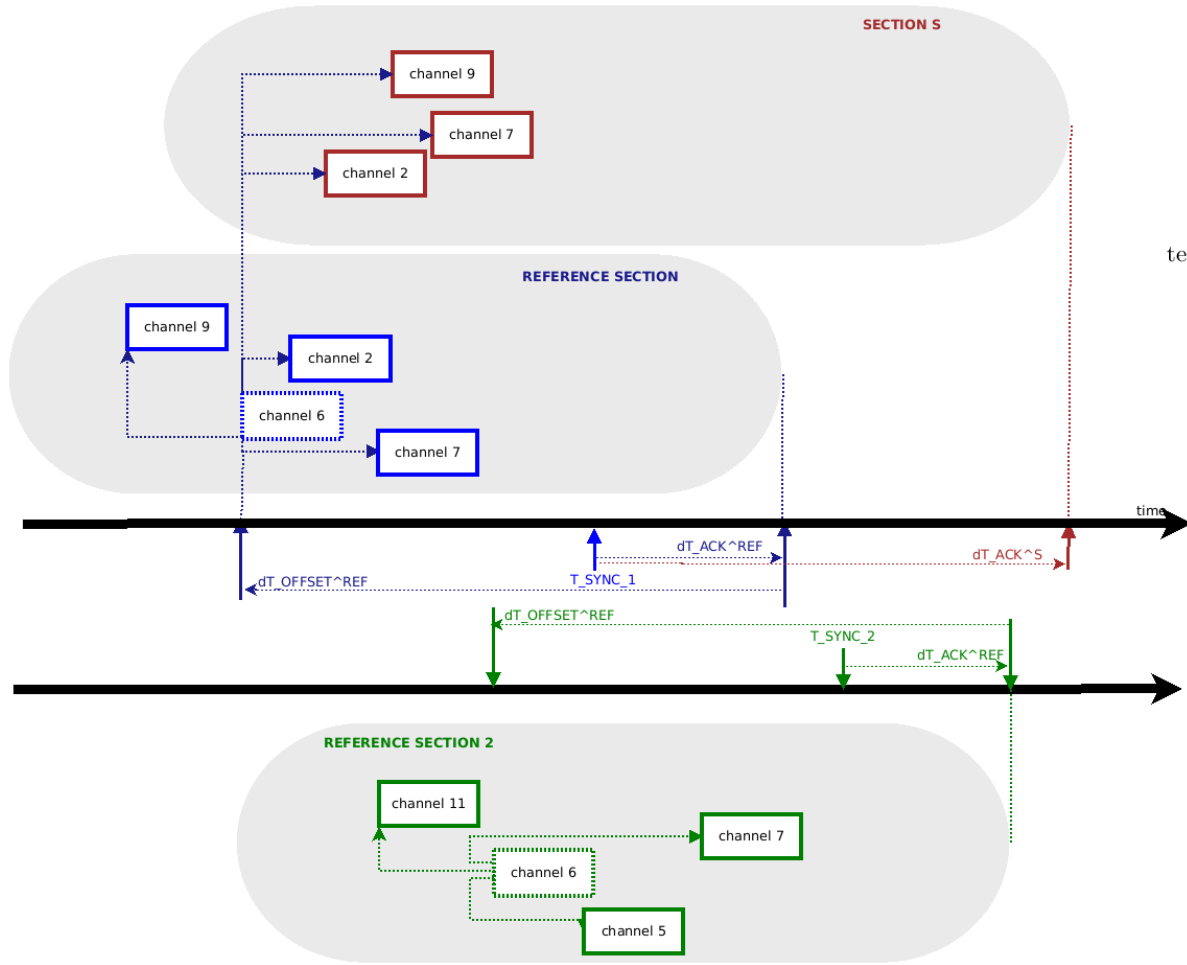


How ack delays are factored into intra-cluster calibration



How ack delays are factored into multi-cluster calibration



If $T_{7,REF}^1$ is astronomical time of hit on channel 7, cluster 1, reference section:

$$T_{7,REF}^1 = T_{SYNC}^1 + \Delta T_{ACK,REF}^1 - \Delta T_{OFFSET,REF}^1 + s_{7,REF}^1 + t_{7,REF}^1$$

$$T_{7,REF}^1 = T_{SYNC}^1 + \Delta T_{ACK,REF}^1 + \hat{t}_{7,REF}^1$$

Then time difference between parallel channels on reference sections for clusters 1 and 2 will be

$$T_{7,REF}^1 - T_{7,REF}^2 = \Delta T_{SYNC}^{1,2} + \Delta \hat{t}_{7,REF}^{1,2} + \Delta T_{ACK,REF}^1 - \Delta T_{ACK,REF}^2$$