

3.1.3 Executive SW

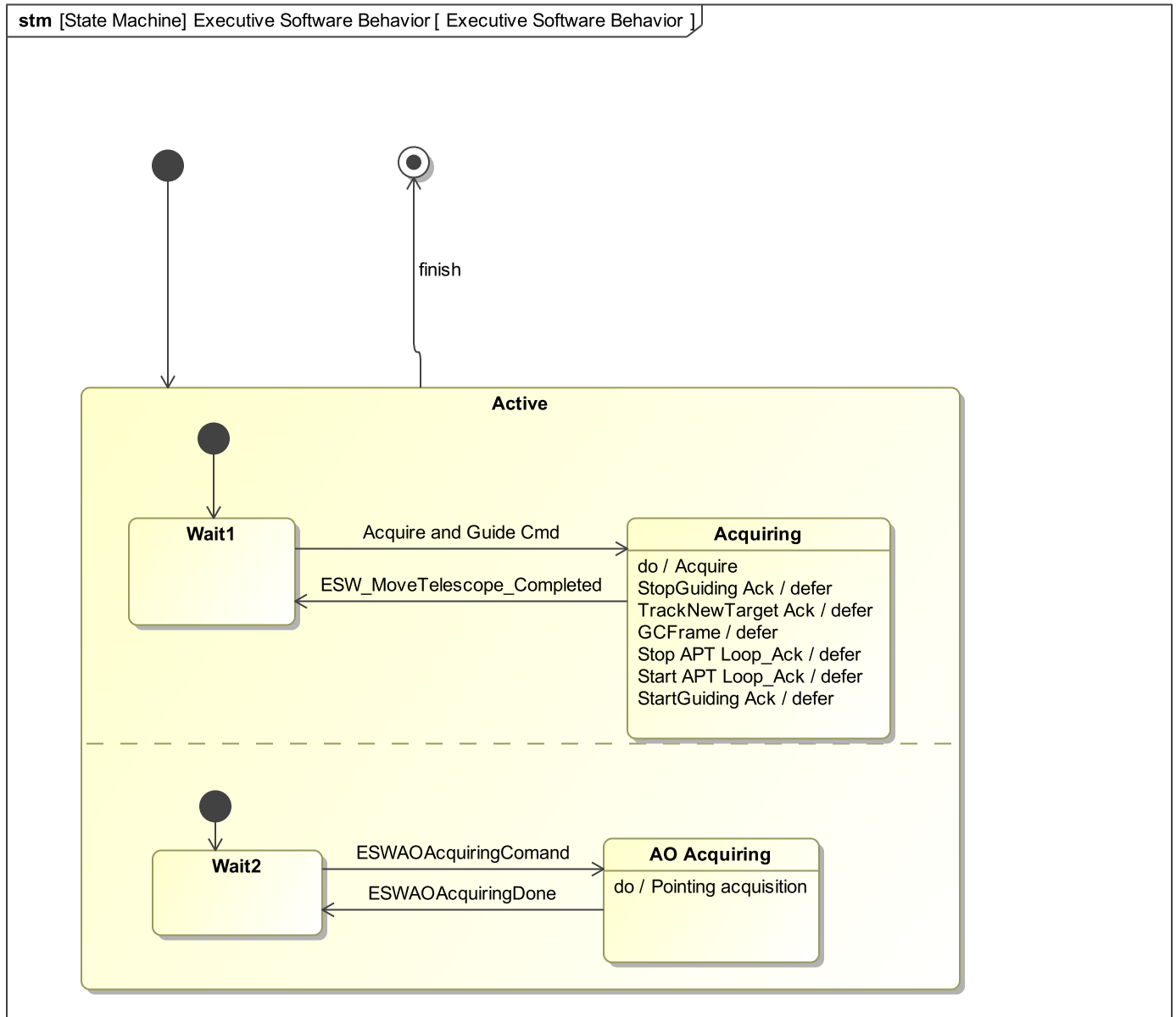


Figure 36. Executive Software Behavior

The Executive Software receives the command Acquire and Guide Cmd and transitions to the state Acquiring where it performs the activity Acquire.

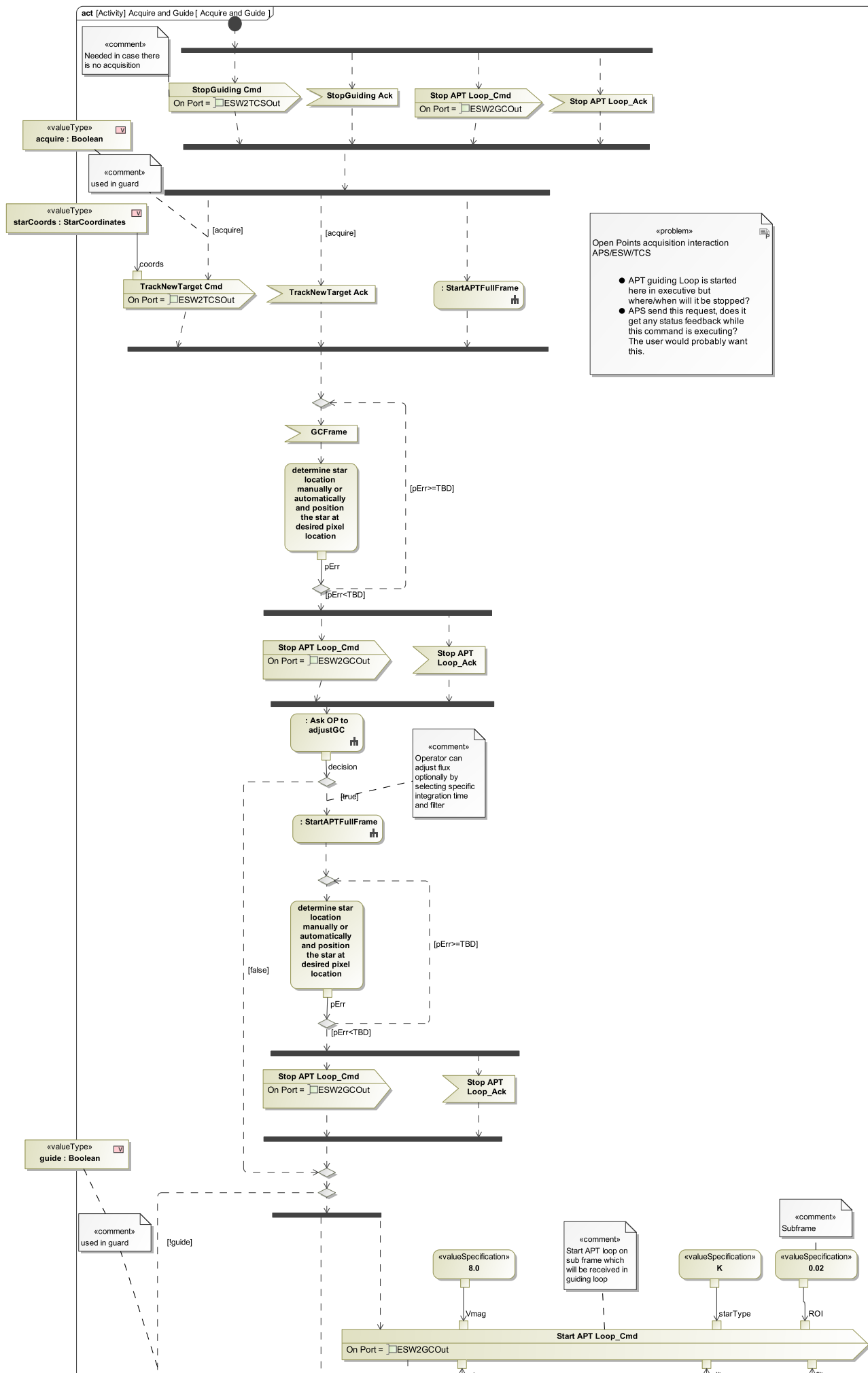


Figure 37. Acquire and Guide

The activity Acquire starts with stopping the guiding loop. If the parameter acquire is set to true a command is sent to TCS in order to slew to a new target and start tracking. In parallel, a command is sent to APS to start the APT loop. The command comprises several parameters which control the APT loop:

- The star magnitude
- The star color
- The region of interest (full frame or sub frame)
- The integration time
- The filter

In the command to start the APT loop the region of interest (ROI) to be read out must be specified. Then either the star magnitude (Vmag) and color is specified in which case APS will determine an optimal filter and integration time to use in order to achieve a TBD SNR and a frame rate as close to 10Hz as possible (but not faster). Alternatively in the command to start the APT loop the filter and integration time can be specified, in which case the frames will be published at a rate up to 10Hz if allowed by the specified parameters.

As soon as the acknowledgment has been received the activity waits for the reception of the full frame images in order to center the star on the detector with a certain pointing error. In an additional step the APT loop parameters can be adjusted, e.g. to take into account the actual flux observed on the detector.

If guiding was requested the APT loop is started using values appropriate for guiding, such as a sub-region of interest of the frame. ESW then sends a command to TCS to start guiding. After receiving the acknowledgment that this command has started, ESW returns a acquire and guide acknowledgment to APS.

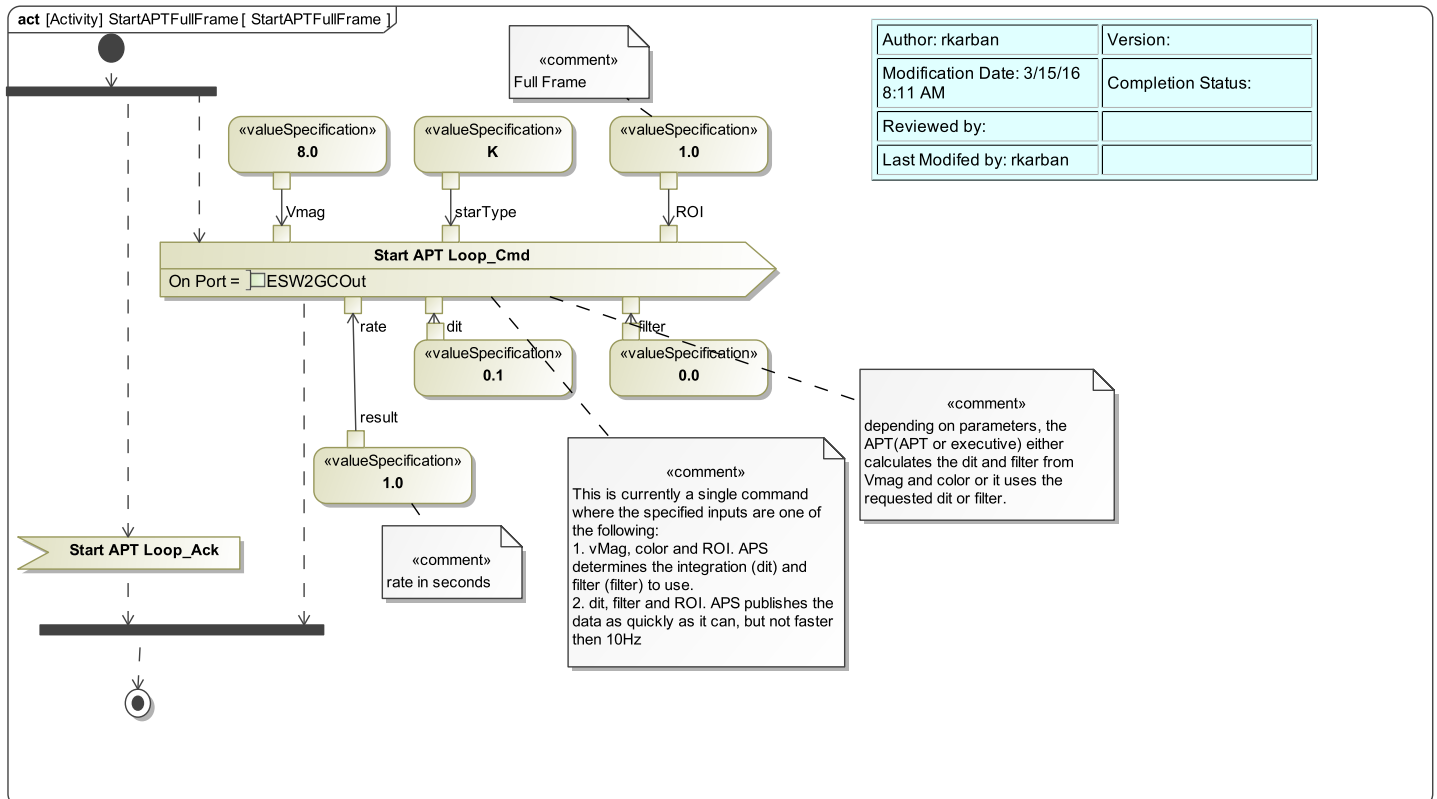


Figure 38. StartAPTFullFrame