VTCLIENT TIPS

OBJECT UPDATE LIMITS

A common problem that customers experience when working with the VTClient is the initial implementation will work as expected, but as more complexity and features are added, suddenly it stops working. The usual complaint is that they can update 30 or so values, but the rest just don't update/change.

CAN Queues

The root cause of this issue is that there is a limited CAN transmit queue that all of the outbound messages must be put into. The CAN task typically runs every 5ms, and the queue is emptied at that time. However, during a callback or other task, the CAN task isn't running, so as messages are added to the queue, they aren't being sent out. Eventually this queue will fill up, and there is nowhere to put outbound messages.

Return Values

All of the VT update functions include a Boolean return value. This value is true if the update was placed in the CAN queue. If it is false, the message was not placed in the queue, and the update will not happen.

Solutions

1. Increase the CAN queue size. This is useful if you only need an extra message or two to go out in a cycle.
2. Change your update process to update the VT in stages instead of all at once. You can build a state machine to send out a few updates, then on the next task cycle send out more, making sure that the CAN task has had a chance to run in between. You can also create a state machine that sends out each update and checks if it was queued, and then

updates the state counter. This way, you don't have to worry about CAN timing, or the size of the CAN queue itself.

Conclusion

Regardless of which way you decide to solve the problem, checking the return value of your update functions will let you know if your messages are being sent out.

[Document History]

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