MARTe2-components - Design #1304

Investigate MessageGAM related Thread Blocking.

30.09.2022 18:00 - Pedro Lourenco

Status:	New	Start date:	30.09.2022
Priority:	Low	Due date:	
Assignee:		% Done:	0%
Category:		Estimated time:	0.00 hour
Target version:		Spent time:	0.00 hour

Description

The following issue has been observed multiple times, considering the following architecture:

- Application with 3 threads, T1@10ms, T2@500us and T3@500us
- T1 has a ConstantGAMT1 with two variables 'StatusDoneT2' and 'StatusDoneT3';
- T2 has a MessageGAMT2 which, on a given event A, writes to T1.ConstantGAMT1.StatusDoneT2;
- T3 has a MessageGAMT3 which, on a given event B, writes to T1.ConstantGAMT1.StatusDoneT3;
- Both events A & B can happen simultaneously or within a very small time interval.

Commonly observed issues (see attached printscreens):

- Segmentation Fault;
- EventConditionTrigger Thread in bad termination stage -> Blocked application;

Temporary solution:

- Split ConstantGAMT1 in two ConstantGAM, one for variable 'StatusDoneT2' and another for 'StatusDoneT3' and modify the variable paths on the MessageGAMs accordingly. After this modification, the reported issues were no longer observed (so far).

History

#1 - 30.09.2022 18:03 - Pedro Lourenco

- File MESSAGEST2T3_SEGFAULT.JPG added

- File MESSAGEST2T3_INTERESTING.JPG added

- File MESSAGEST2T3_BADSTAGE.JPG added

The missing files.

Files

MESSAGEST2T3_BADSTAGE.JPG	133 KB	30.09.2022		Pedro Lourenco
MESSAGEST2T3_INTERESTING.JPG	150 KB	30.09.2022		Pedro Lourenco
MESSAGEST2T3_SEGFAULT.JPG	144 KB	30.09.2022		Pedro Lourenco