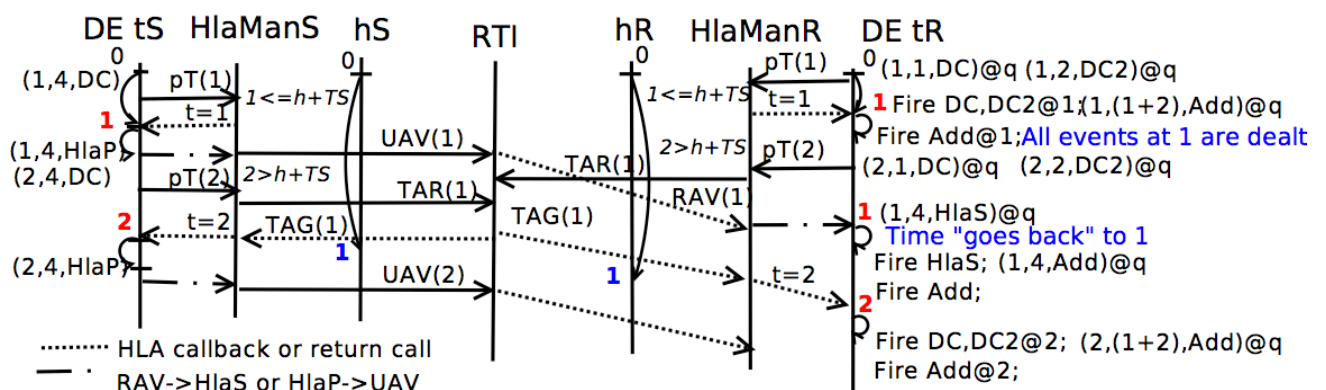
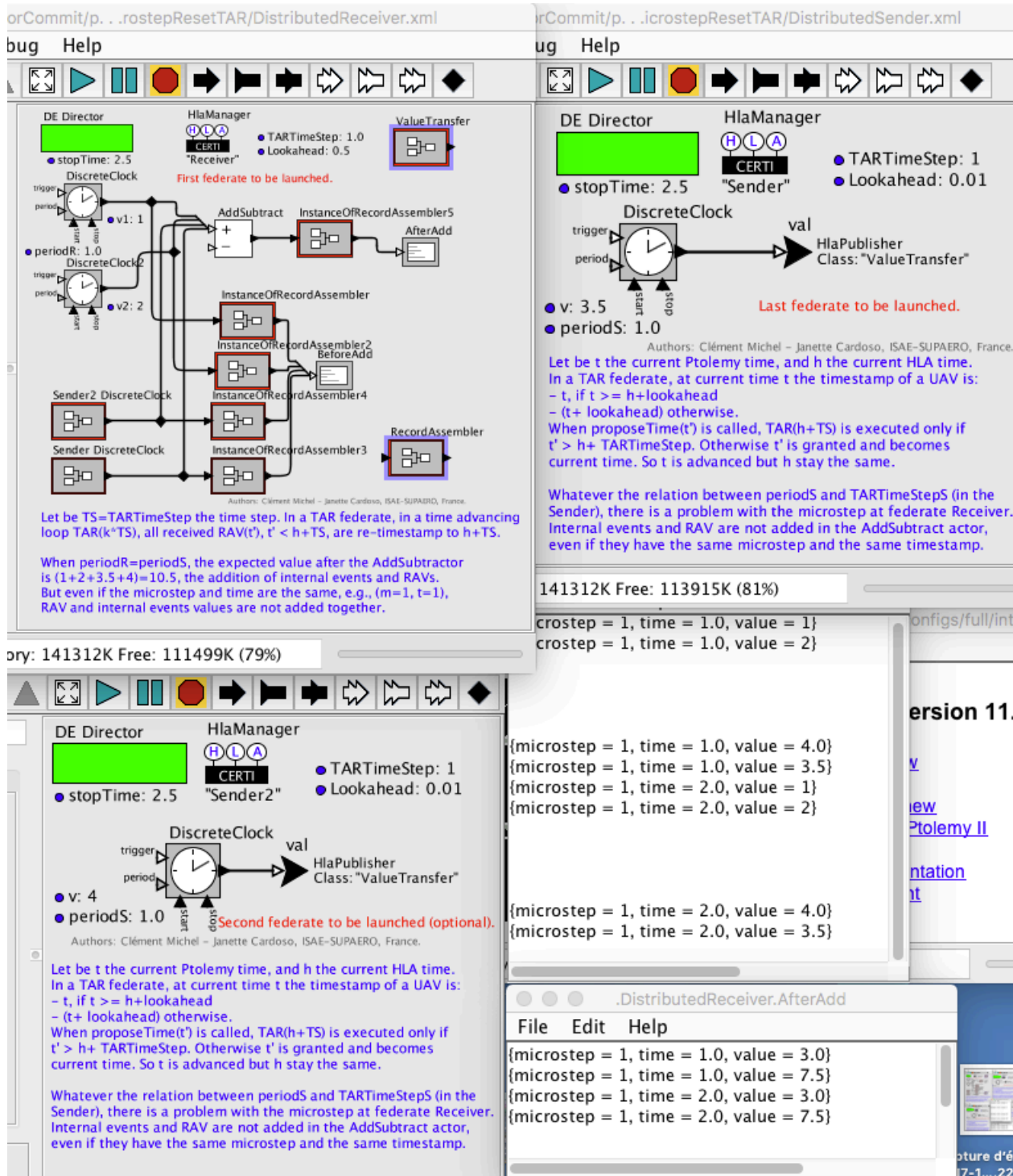


Federation in \$PTII/org/hlacerti/demo/MicrostepReset/MicrostepResetTAR: models
DistributedReceiver.xml, DistributedSender.xml, DistributedSender2.xml
The parameters appear in each model (TS, lah, etc.). TS_Sender= TS_Sender2= TS_Receiver= 1.0



TS_Sender= TS_Sender2= 1.0; TS_Receiver= 2.0

Events sent by Sender and Sender2 with timestamp $t=1$ and $t=2$ will be re-timestamped at federate Receiver to $(t=2, m=1)$ and $(t=2, m=2)$ respectively (m is the microstep).

forCommit/p. .rostepResetTAR/DistributedReceiver.xml

bug Help

DE Director
● stopTime: 2.5

HlaManager
● TARTimeStep: 2.0
● Lookahead: 0.5

ValueTransfer

DiscreteClock
● v1: 1
● periodR: 1.0

DiscreteClock2
● v2: 2

Sender2 DiscreteClock

Sender DiscreteClock

AddSubtract

InstanceOfRecordAssembler5

AfterAdd

InstanceOfRecordAssembler

InstanceOfRecordAssembler2 BeforeAdd

InstanceOfRecordAssembler4

RecordAssembler

InstanceOfRecordAssembler3

Authors: Clément Michel – Janette Cardoso, ISAE-SUPAERO, France.

Let be $TS=TARTimeStep$ the time step. In a TAR federate, in a time advancing loop $TAR(k*TS)$, all received $RAV(t)$, $t' < h+TS$, are re-timestamp to $h+TS$.

When $periodR=periodS$, the expected value after the AddSubtractor is $(1+2+3.5+4)=10.5$, the addition of internal events and RAVs. But even if the microstep and time are the same, e.g., $(m=1, t=1)$, RAV and internal events values are not added together.

forCommit/p. .icrostepResetTAR/DistributedSender.xml

bug Help

DE Director
● stopTime: 2.5

HlaManager
● TARTimeStep: 1
● Lookahead: 0.01

DiscreteClock
● v: 3.5
● periodS: 1.0

HlaPublisher
Class: "ValueTransfer"

Authors: Clément Michel – Janette Cardoso, ISAE-SUPAERO, France.

Let be t the current Ptolemy time, and h the current HLA time. In a TAR federate, at current time t the timestamp of a UAV is:
 - t , if $t \geq h+lookahead$
 - $(t+ lookahead)$ otherwise.
 When $proposeTime(t')$ is called, $TAR(h+TS)$ is executed only if $t' > h+ TARTimeStep$. Otherwise t' is granted and becomes current time. So t is advanced but h stay the same.

Whatever the relation between $periodS$ and $TARTimeStepS$ (in the Sender), there is a problem with the microstep at federate Receiver. Internal events and RAV are not added in the AddSubtract actor, even if they have the same microstep and the same timestamp.

tilforCommit/p. .icrostepResetTAR/DistributedSender2.xml

Debug Help

DE Director
● stopTime: 2.5

HlaManager
● TARTimeStep: 1
● Lookahead: 0.01

DiscreteClock
● v: 4
● periodS: 1.0

HlaPublisher
Class: "ValueTransfer"

Authors: Clément Michel – Janette Cardoso, ISAE-SUPAERO, France.

Let be t the current Ptolemy time, and h the current HLA time. In a TAR federate, at current time t the timestamp of a UAV is:
 - t , if $t \geq h+lookahead$
 - $(t+ lookahead)$ otherwise.
 When $proposeTime(t')$ is called, $TAR(h+TS)$ is executed only if $t' > h+ TARTimeStep$. Otherwise t' is granted and becomes current time. So t is advanced but h stay the same.

Whatever the relation between $periodS$ and $TARTimeStepS$ (in the Sender), there is a problem with the microstep at federate Receiver. Internal events and RAV are not added in the AddSubtract actor, even if they have the same microstep and the same timestamp.

.DistributedReceiver.BeforeAdd

File Edit Help

```
{microstep = 1, time = 1.0, value = 1}
{microstep = 1, time = 1.0, value = 2}

{microstep = 1, time = 2.0, value = 1}
{microstep = 1, time = 2.0, value = 2}

{microstep = 1, time = 2.0, value = 4.0}
{microstep = 1, time = 2.0, value = 3.5}

{microstep = 2, time = 2.0, value = 4.0}
{microstep = 2, time = 2.0, value = 3.5}
```

.DistributedReceiver.AfterAdd

File Edit Help

```
{microstep = 1, time = 1.0, value = 3.0}
{microstep = 1, time = 2.0, value = 3.0}
{microstep = 1, time = 2.0, value = 7.5}
{microstep = 2, time = 2.0, value = 7.5}
```