



ADeS presentation



a simulator for AADL
v0.2.3

Amélie Schyn
Romain Sezestre
Jean-François Tilman



Agenda

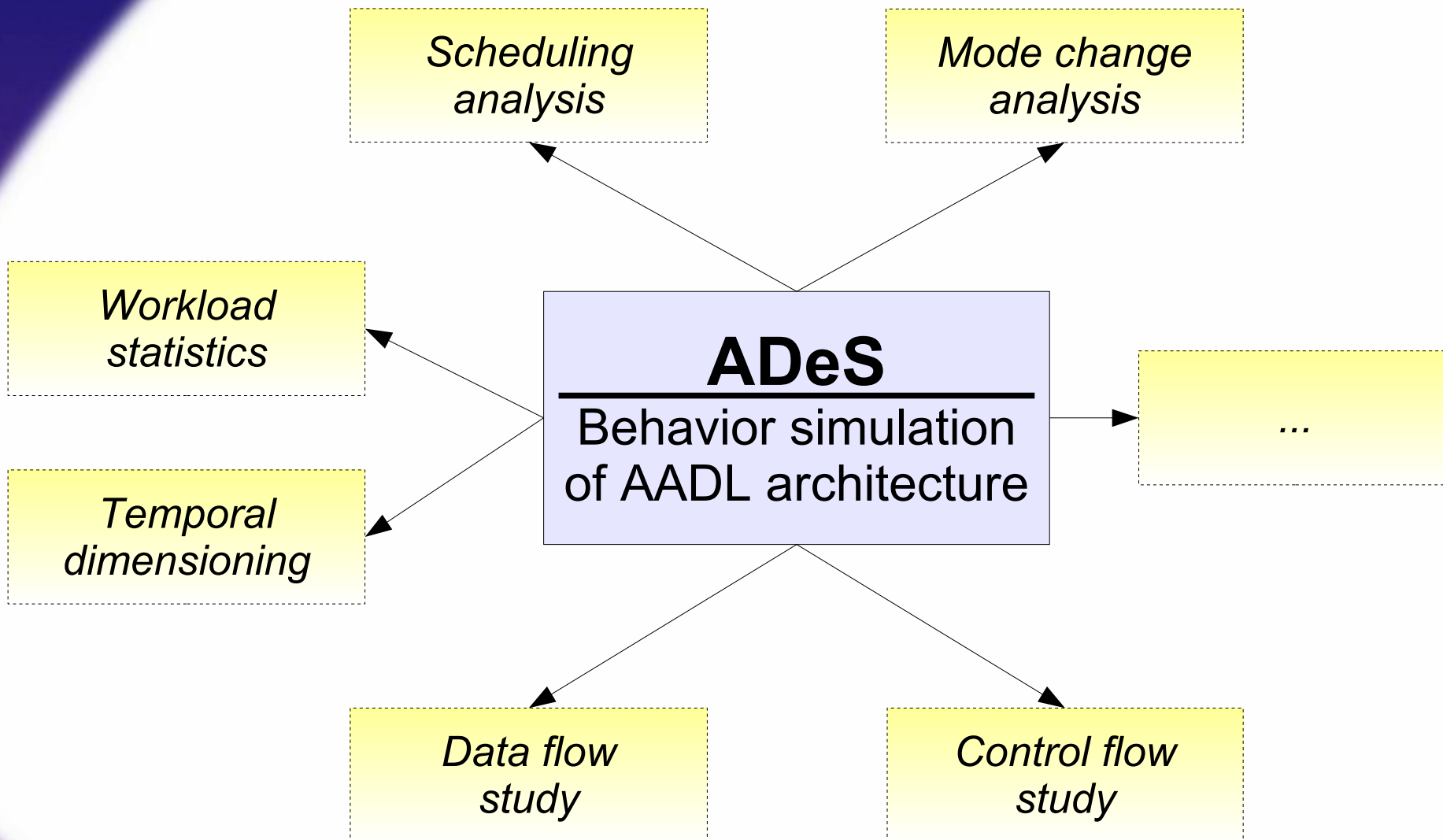
- Objective of the simulation
- Presentation of the tool
- Demonstration
- To go further



Objective of the simulation



Why simulating AADL?





Requirements for a simulator

- Simulation of the full AADL specification with exact compliance with the standard
- Support of behavior descriptions
- Support of AADL extensibility (new properties, new protocols, etc.)
- Integration with other AADL tools
- Storage of the results for post-analyses



Area of the simulation

- Components
 - Individual behavior
- Communication between components
 - Bus & data access
 - Subprogram calls
 - Port connections
- Modes
 - Local mode change
 - SOM change



Part II

Presentation of the tool

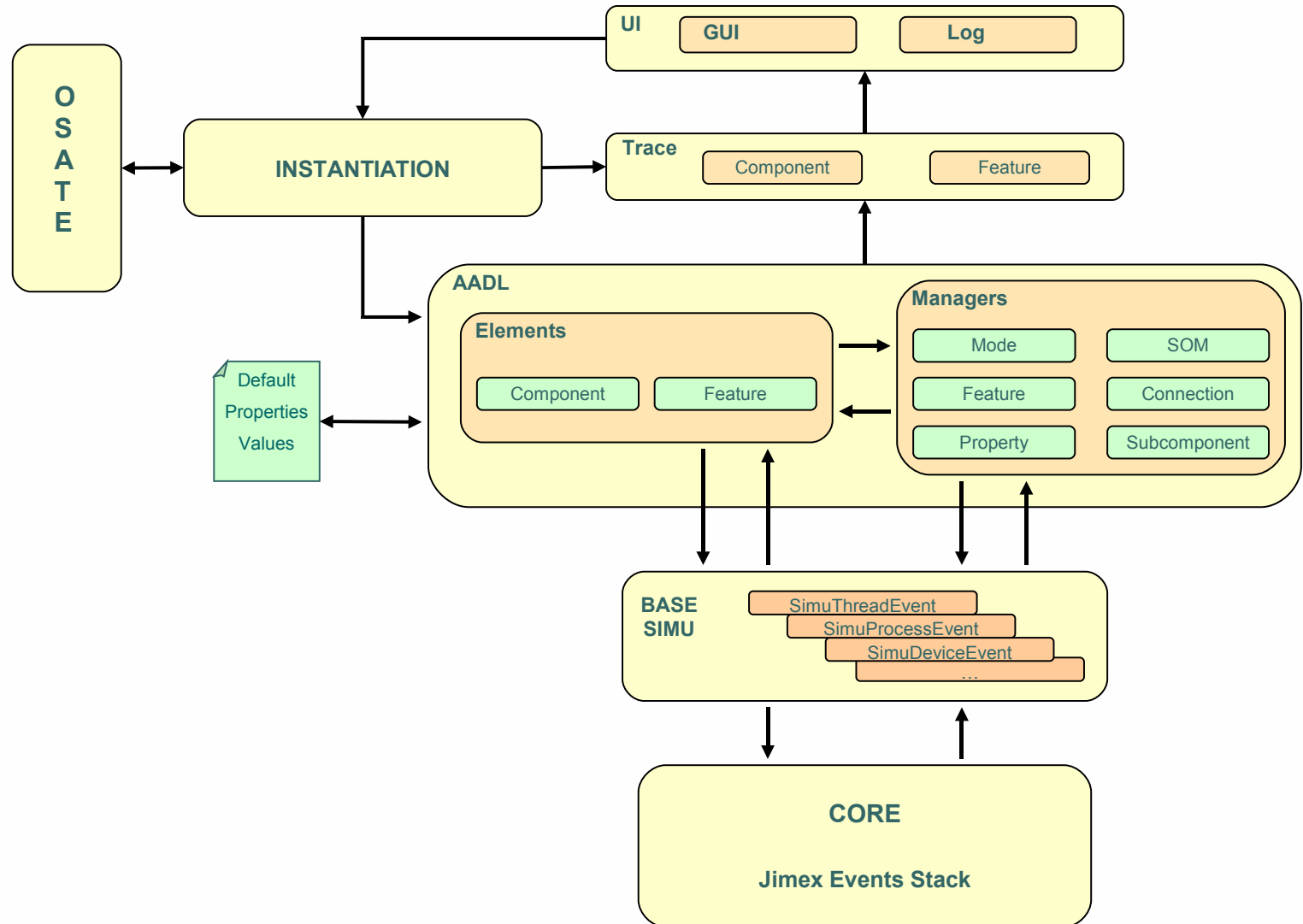


Technical overview

- ADeS
 - Eclipse plug-in
 - Built on OSATE and Topcased
 - Interoperability with AADL tools
 - Under Eclipse Public License

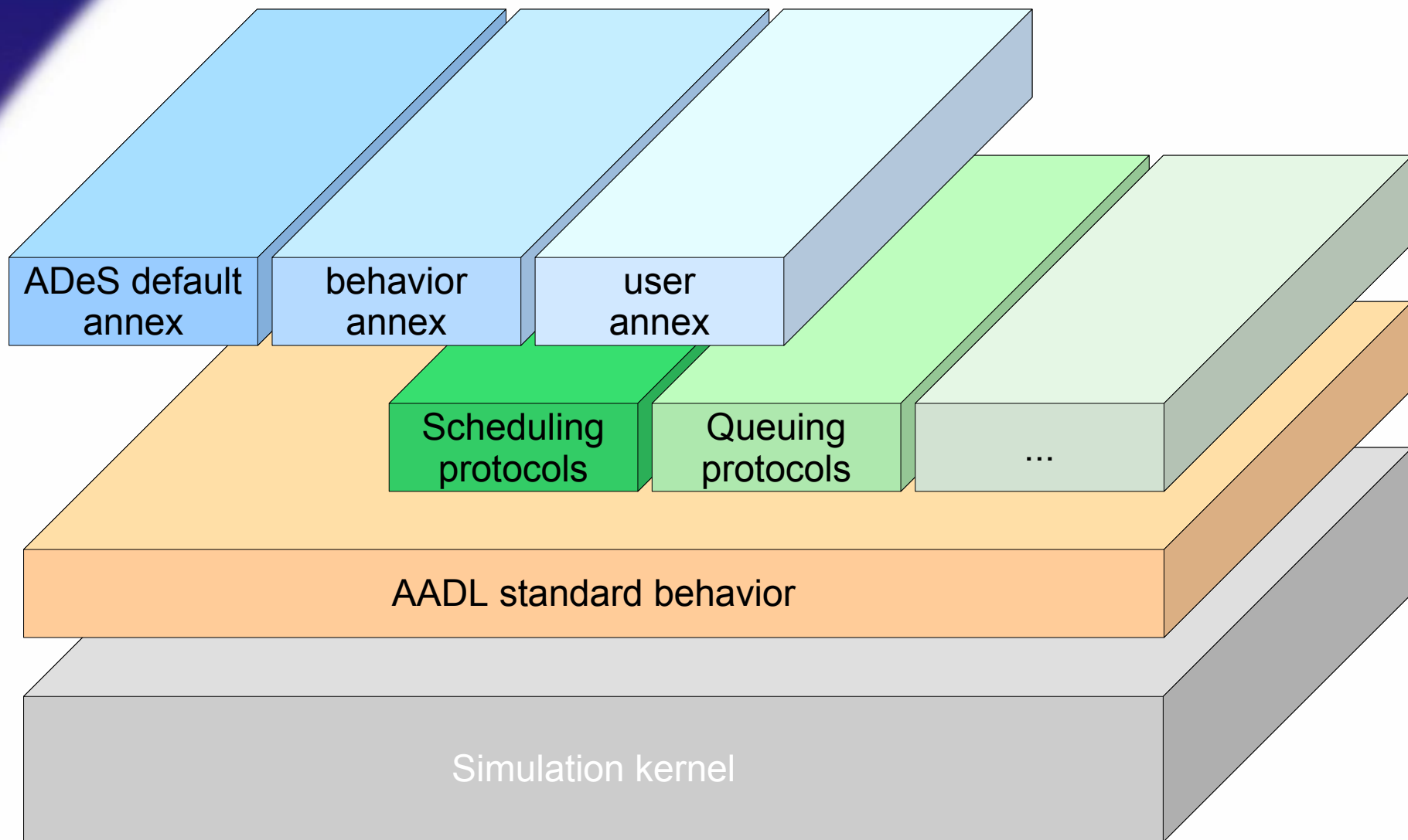


Architecture





Behavior description





ADeS default annex

- Objective: provide a minimal behavior description
- Target: threads, devices, subprograms
- Form: list of sequential actions
- Possible actions:
 - Compute (<duration>)
 - Raise (<port>)
 - Raise (<port>, <data>)

```
annex behavior {**
  t1 {
    compute(10 ms);
    raise(chMode);
  } in modes (normal);
  t1 {
    compute(25 ms);
    raise(chMode);
  } in modes (backup);
**};
```



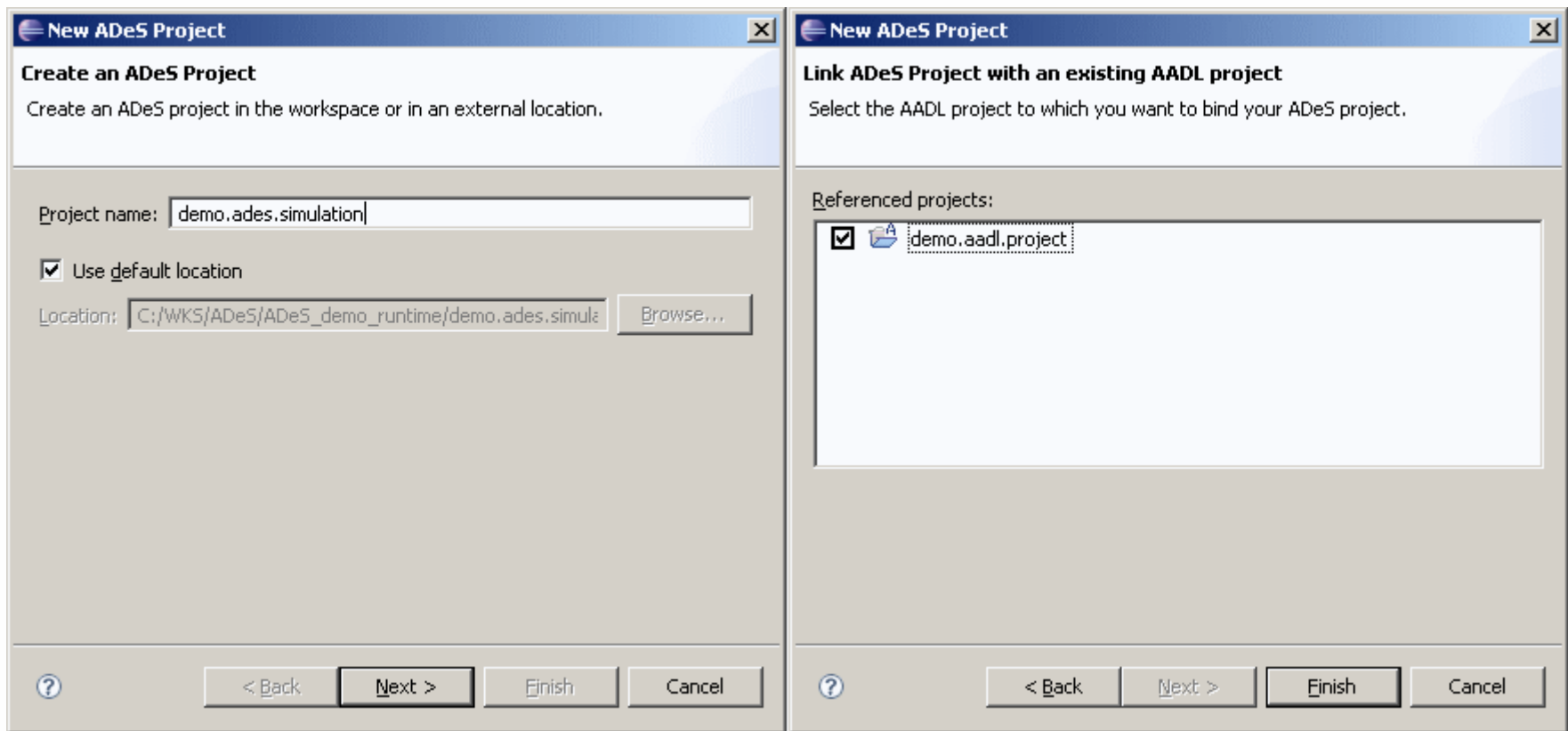
Flexibility and extensions

- Support of AADL annexes
 - Capability to develop new supports
- Capability to add of new protocols
 - scheduling protocols
 - dispatch protocols
 - dequeuing protocols
 - overflow handling protocols
 - queue processing protocols
- Possibility to reuse of the core level for other simulation models



Project creation wizard

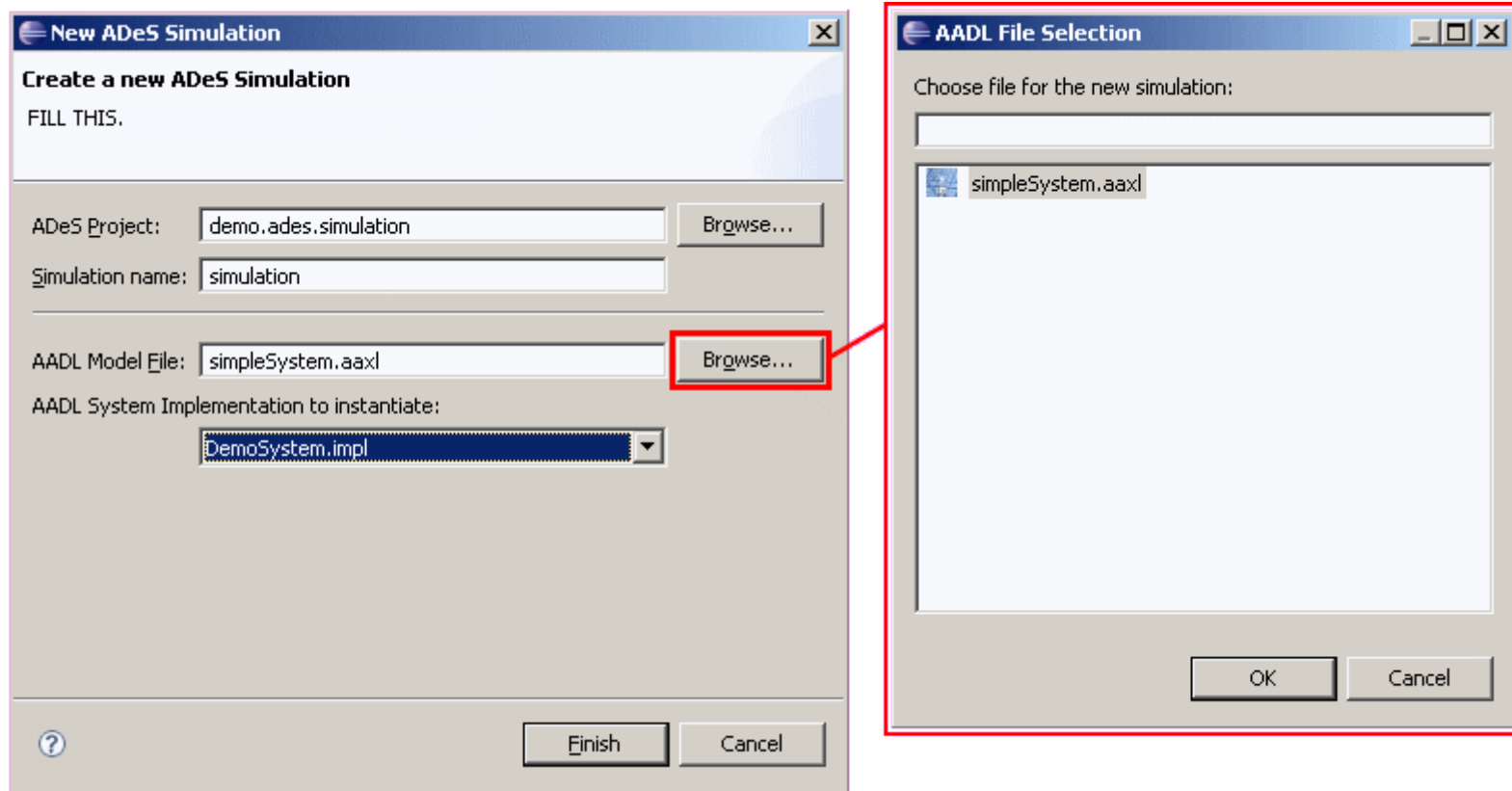
- ADeS simulation project creation wizard





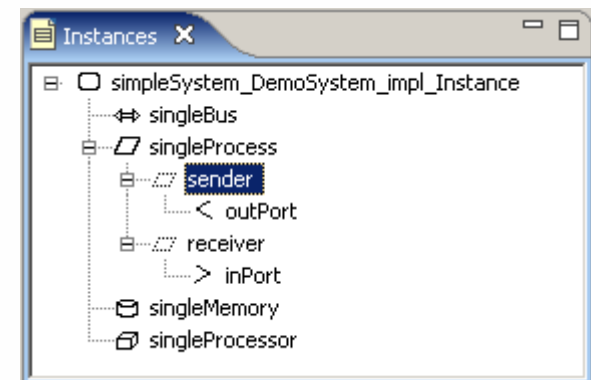
Simulation creation wizard

- ADeS simulation creation wizard





- Instantiated architecture
- Instances attributes



The 'Instances Attributes' window displays a table of attributes for the selected 'sender' instance. The table has two columns: 'Attribute' and 'Value'.

Attribute	Value
Name	simpleSystem_DemoSystem_impl_Instance.singleProcess.sender
State	RUNNING
Actions list	
	compute(10 ms)
	compute(15 ms)
	raise(EVENT(0))[simpleSystem_DemoSystem_impl_Instance.singleProcess.sender.outPort]
Properties	
Dispatch_Protocol	Periodic
Deadline	120 ms
Actual_Processor_Binding	simpleSystem_DemoSystem_impl_Instance.singleProcessor [STOPPED][default]
Compute_Execution_Time	[30 ms..40 ms]
Period	120 ms



- Simulation events display

Event Manager x

Current date: 2 ms (2000000000 ps)

Id	Date	P.	Event Type	Source	Destination
45	7 ms	2	TIME_OUT	timer_simpleSystem_DemoSystem_impl_Instance.singleProcess.sender	timer_simpleSy
51	7 ms	2	TIME_OUT	timer_simpleSystem_DemoSystem_impl_Instance.singleProcess.sender	timer_simpleSy
27	122 ms	2	HYPERPERIOD_ENDED	evg_simpleSystem_DemoSystem_impl_Instance.singleProcess.sender	evg_simpleSys
37	122 ms	8	TIME_OUT	timer_simpleSystem_DemoSystem_impl_Instance.singleProcess.sender	timer_simpleSy
25	152 ms	2	HYPERPERIOD_ENDED	evg_simpleSystem_DemoSystem_impl_Instance.singleProcess.receiver	evg_simpleSys
31	152 ms	8	TIME_OUT	timer_simpleSystem_DemoSystem_impl_Instance.singleProcess.receiver	timer_simpleSy
30	602 ms	4	HYPERPERIOD_END	SOM Manager	SOM Manager

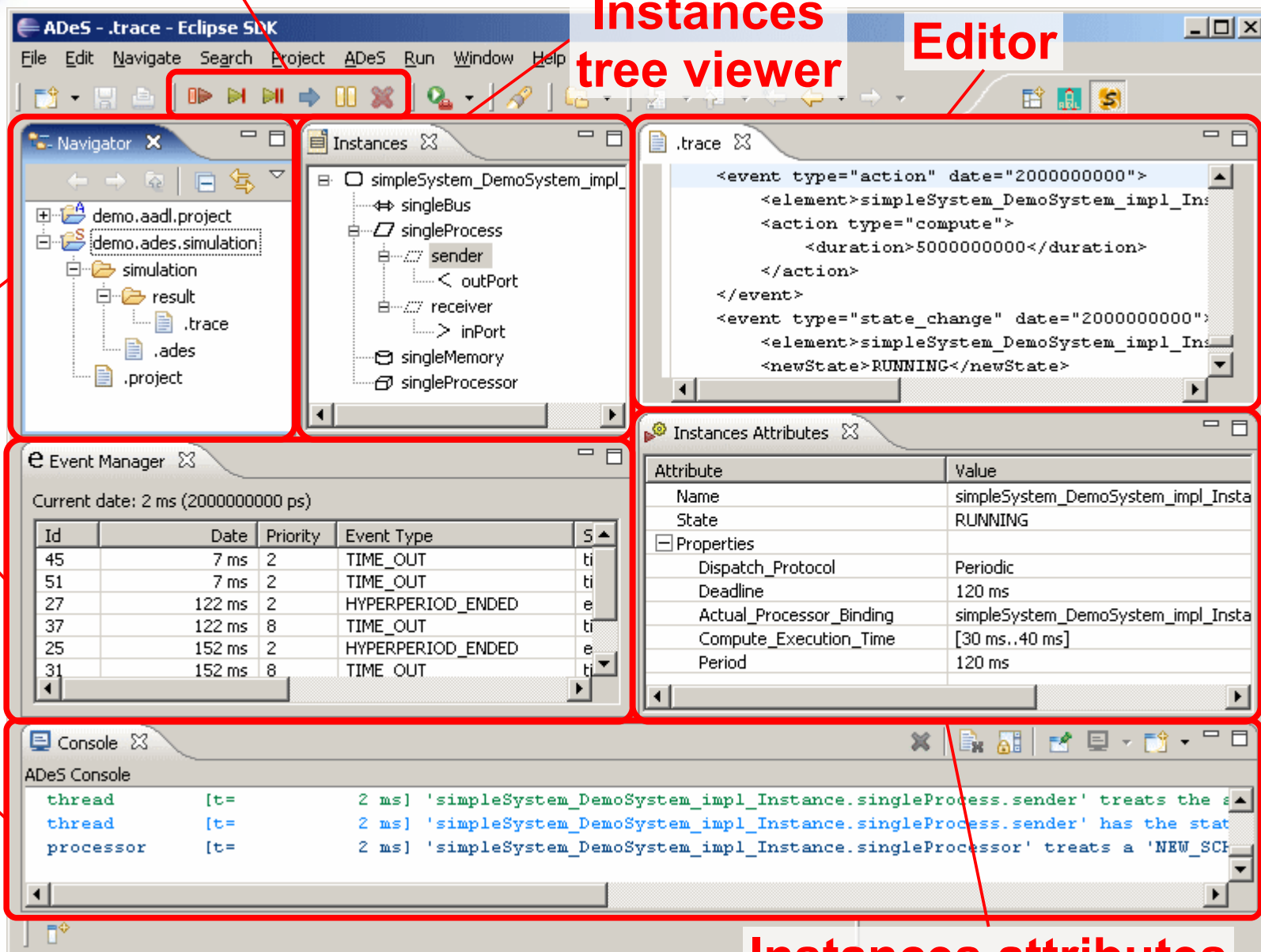
ADeS perspective

ADeS tool bar

Instances tree viewer

Editor

Project navigator



The screenshot shows the ADeS Eclipse IDE interface with several tool windows:

- Navigator:** Shows the project structure for 'demo.aadl.project' and 'demo.adcs.simulation'.
- Instances:** A tree view showing the hierarchy of instances: 'simpleSystem_DemoSystem_impl' containing 'singleBus', 'singleProcess' (with 'sender' and 'receiver' sub-views), 'singleMemory', and 'singleProcessor'.
- Editor:** Displays XML event data, including an action event and a state change event.
- Event Manager:** A table showing simulation events.
- Instances Attributes:** A table showing attributes for the selected instance.
- Console:** Shows log output from the simulation threads.

Simulation events stack

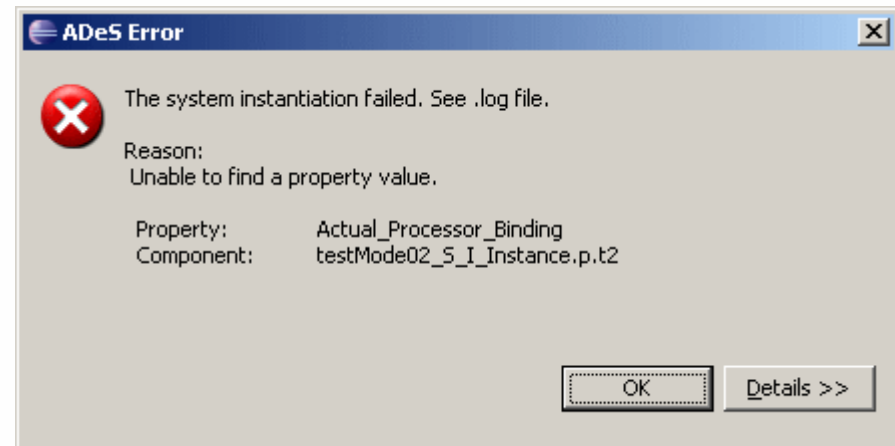
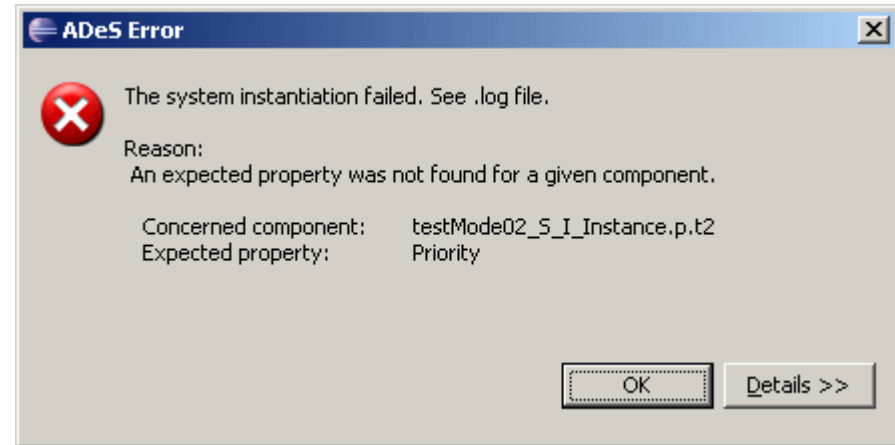
Console

Instances attributes



ADeS errors 1/2

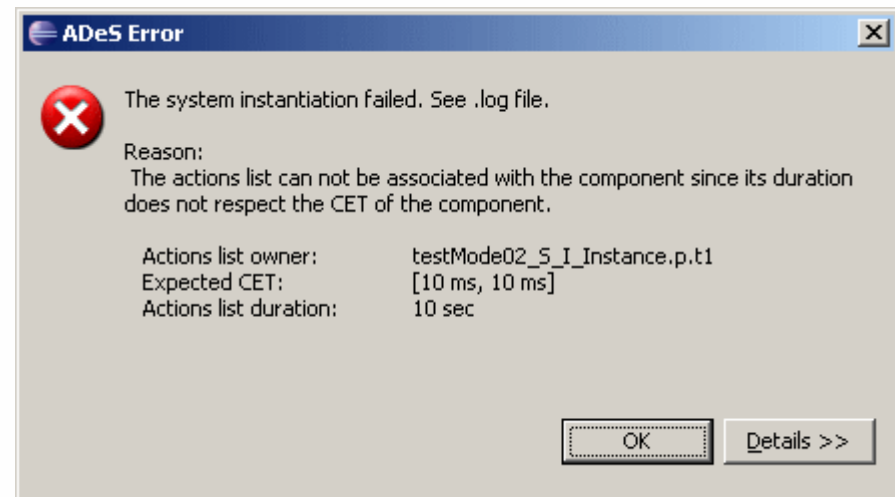
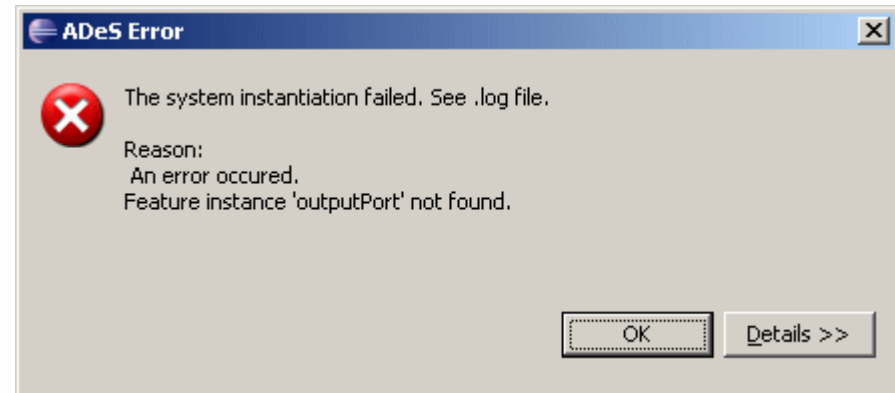
- With a simple scheduling protocol, if a thread has no *priority* property value.
- If a thread is not bound onto any processor.





ADeS errors 1/2

- For a *raise* action inside a *behavior annex*, if feature does not exist.
- If the actions list of a thread does not respect its compute execution time property.





ADeS trace file

- Keep a simulation history
- XML file in simulation project hierarchy
- Content
 - States, modes, properties, subcomponents changes
 - Compute data
 - Simulation events

```
<?xml version="1.0" encoding="UTF-8"?>
<adesSimulationTrace>
  <event type="simu_event" date="0">
    <element>testMode03_S_I_Instance</element>
    <eventLabel>START</eventLabel>
    <eventSrc>testMode03_S_I_Instance</eventSrc>
  </event>
  <event type="state_change" date="0">
    <element>testMode03_S_I_Instance</element>
    <newState>STARTING</newState>
  </event>
  <event type="simu_event" date="0">
    <element>testMode03_S_I_Instance.p</element>
    <eventLabel>HYPERPERIOD_ENDED</eventLabel>
    <eventSrc>testMode03_S_I_Instance.p</eventSrc>
  </event>
  <event type="subcomponent" date="0">
    <element>testMode03_S_I_Instance.p</element>
    <subcomponents>
      <subcomponent>testMode03_S_I_Instance.p.t2</subcomponent>
      <subcomponent>testMode03_S_I_Instance.p.t1</subcomponent>
    </subcomponents>
  </event>
  <event type="simu_event" date="0">
    <element>testMode03_S_I_Instance.p.t2</element>
    <eventLabel>HYPERPERIOD_ENDED</eventLabel>
    <eventSrc>testMode03_S_I_Instance.p.t2</eventSrc>
  </event>
  <event type="properties" date="0">
    <element>testMode03_S_I_Instance.p.t2</element>
    <properties>
      <property value="Periodic" name="Dispatch_Protocol">
      <property value="4000000000" name="Deadline">
      <property value="4000000000" name="Period">
      <property
        value="testMode03_S_I_Instance.proc [STOPPED]"
        name="Actual_Processor_Binding">
      <property
        value="[4000000000..5000000000]"
        name="Compute_Execution_Time">
    </properties>
  </event>
</adesSimulationTrace>
```

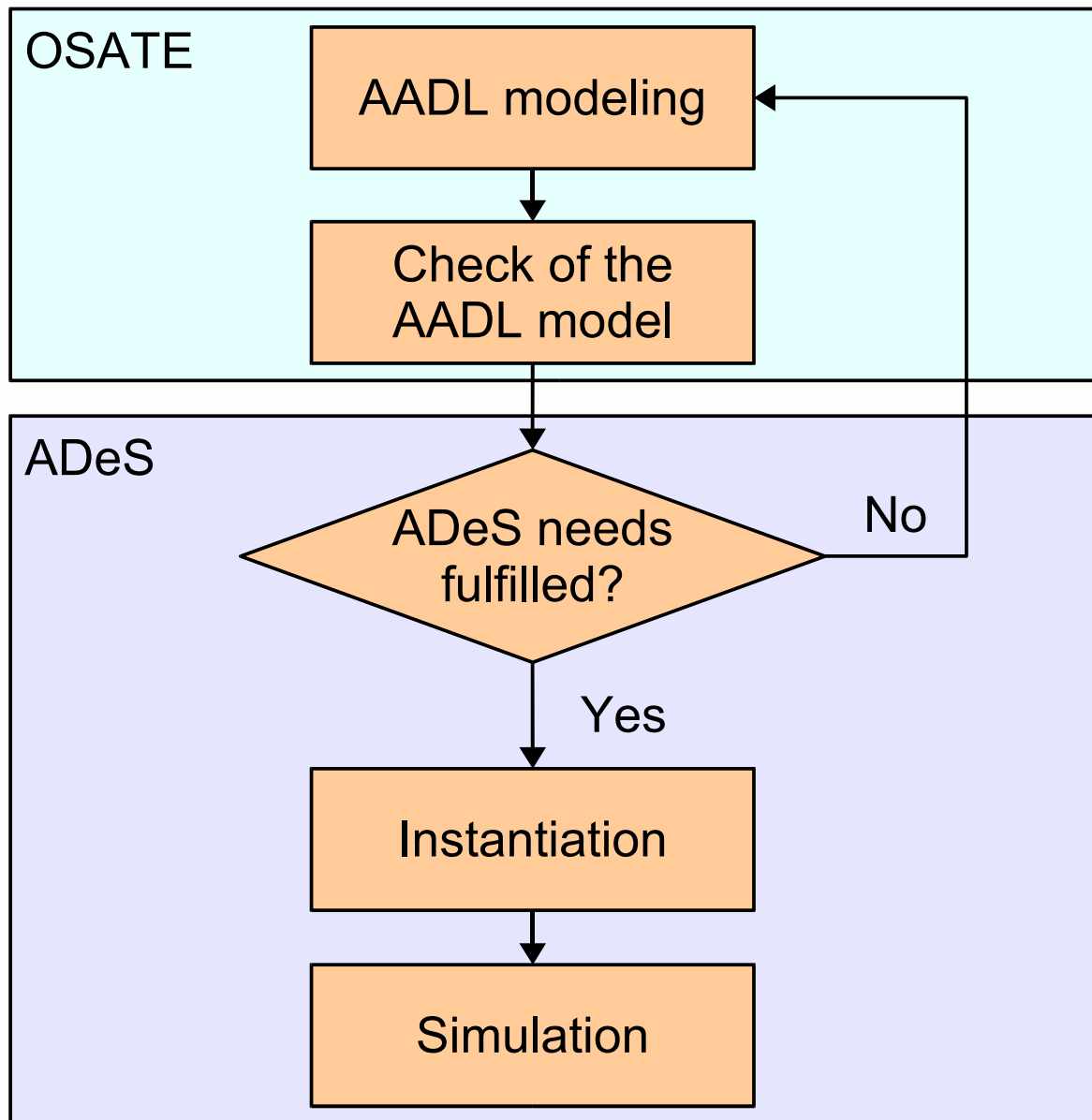


Part III

Demonstration

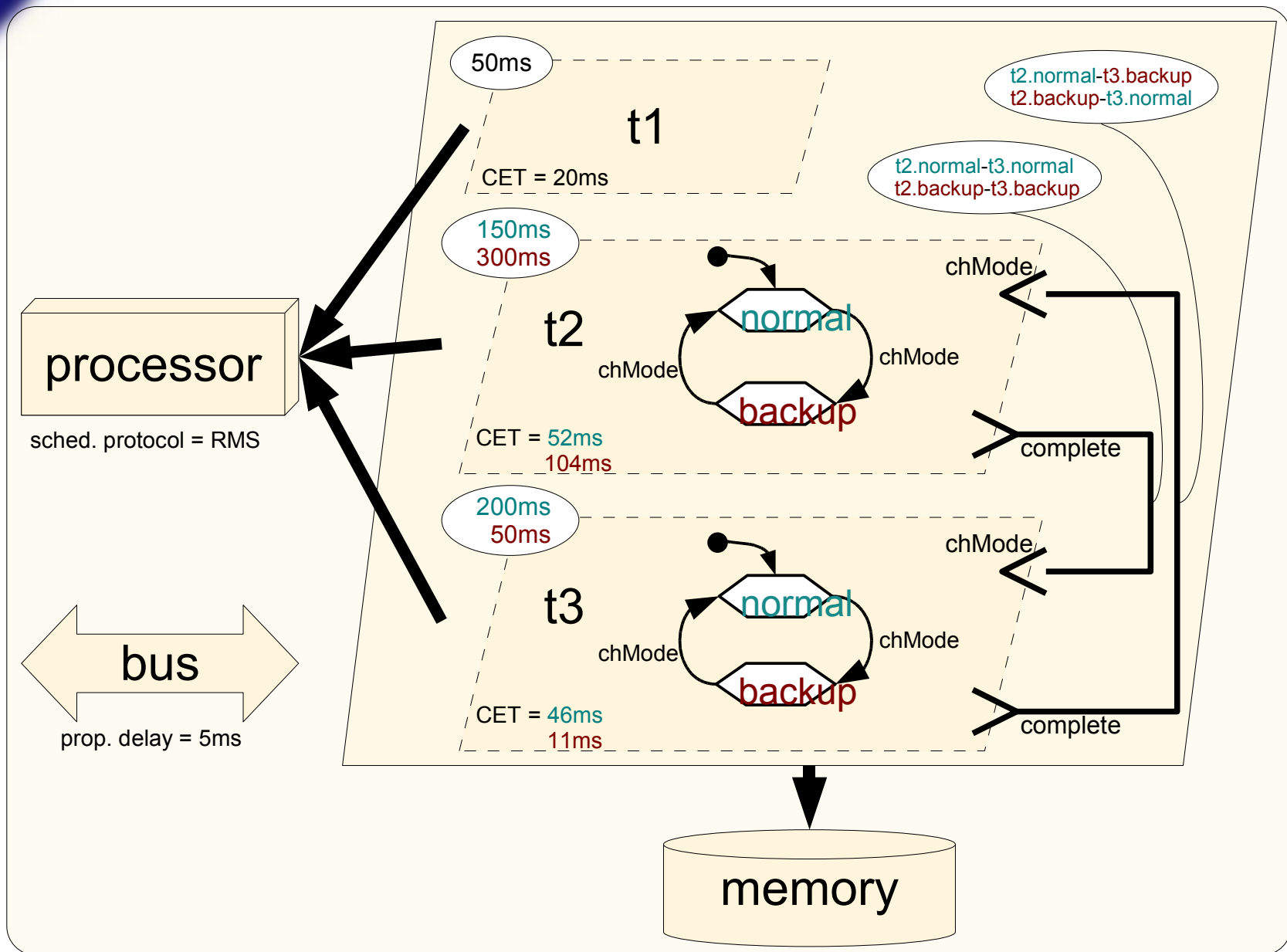


Driving a simulation





Demo scenario 3

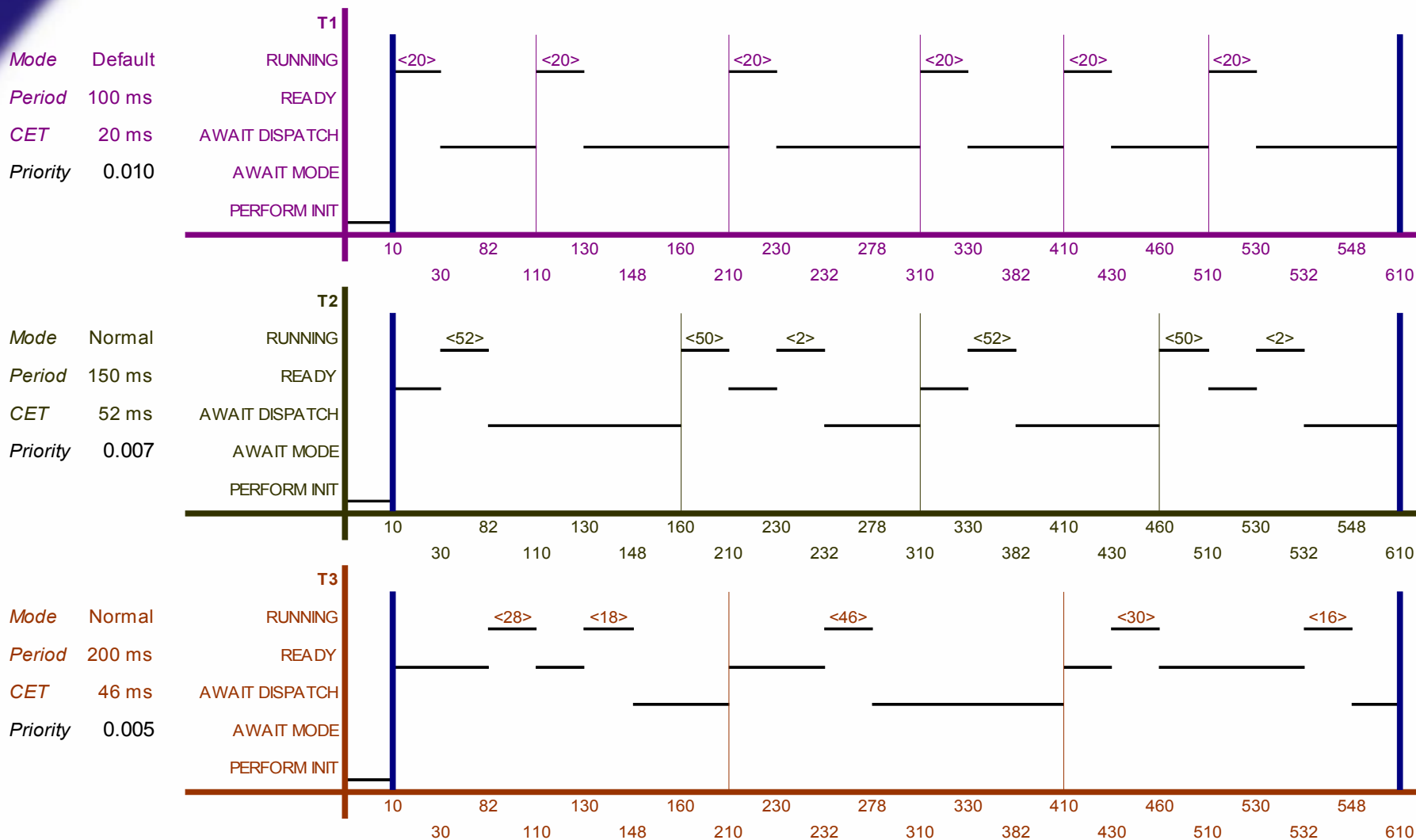




1st Hyperperiod

SOM: T2.Normal-T3.Normal

Hyperperiod: 600 ms

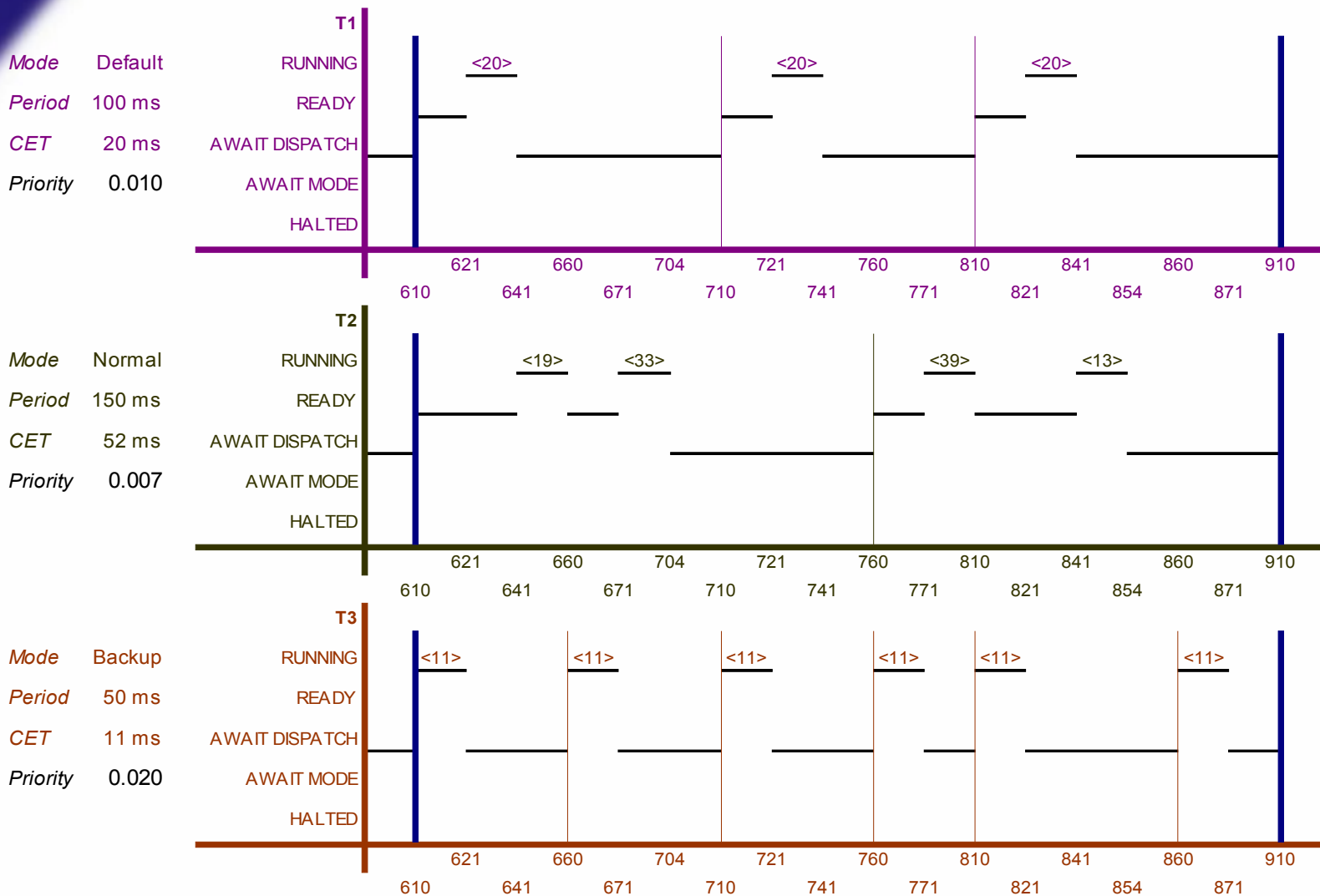




2nd Hyperperiod

SOM: T2.Normal-T3.Backup

Hyperperiod: 300 ms

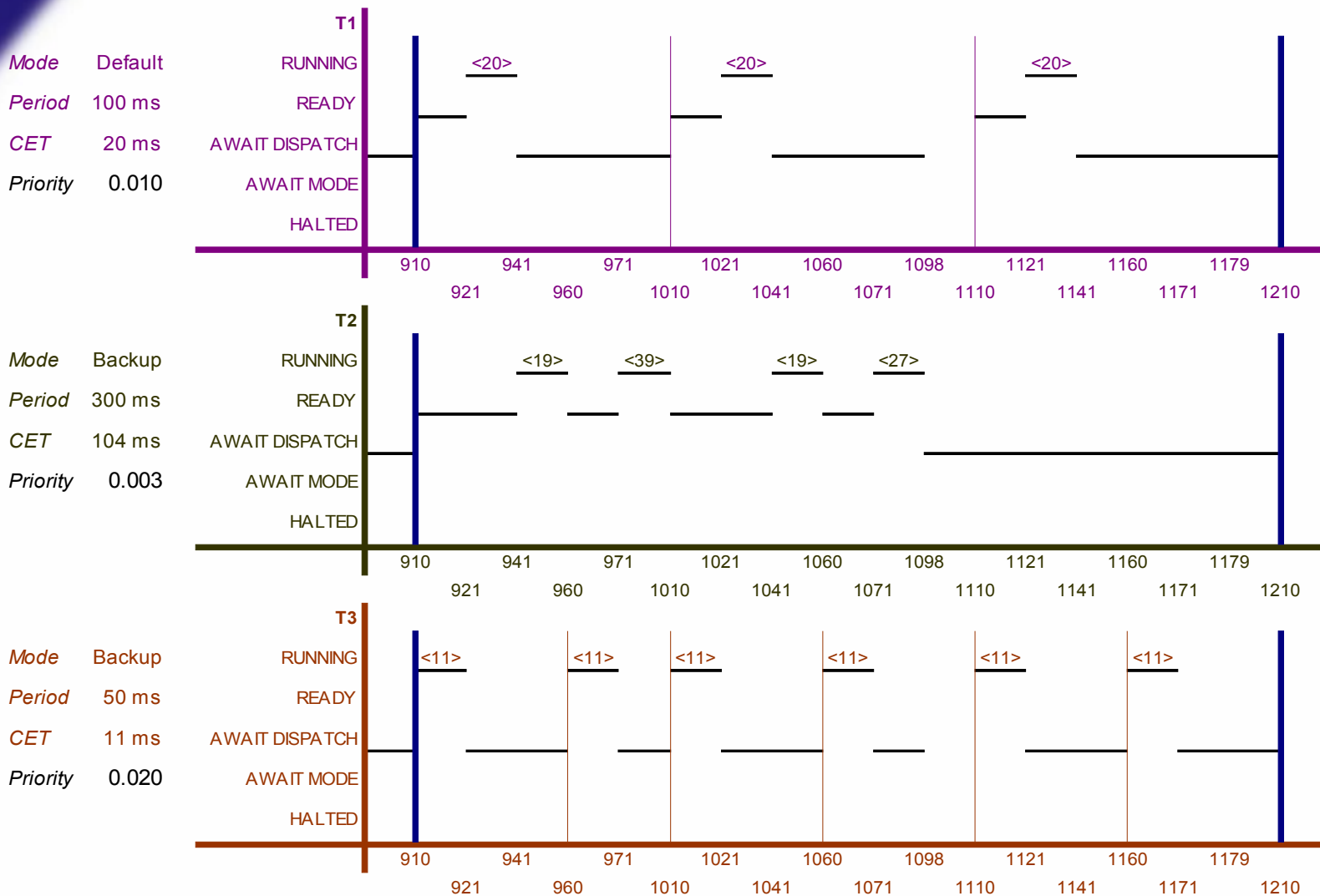




3rd Hyperperiod

SOM: T2.Backup-T3.Backup

Hyperperiod: 300 ms

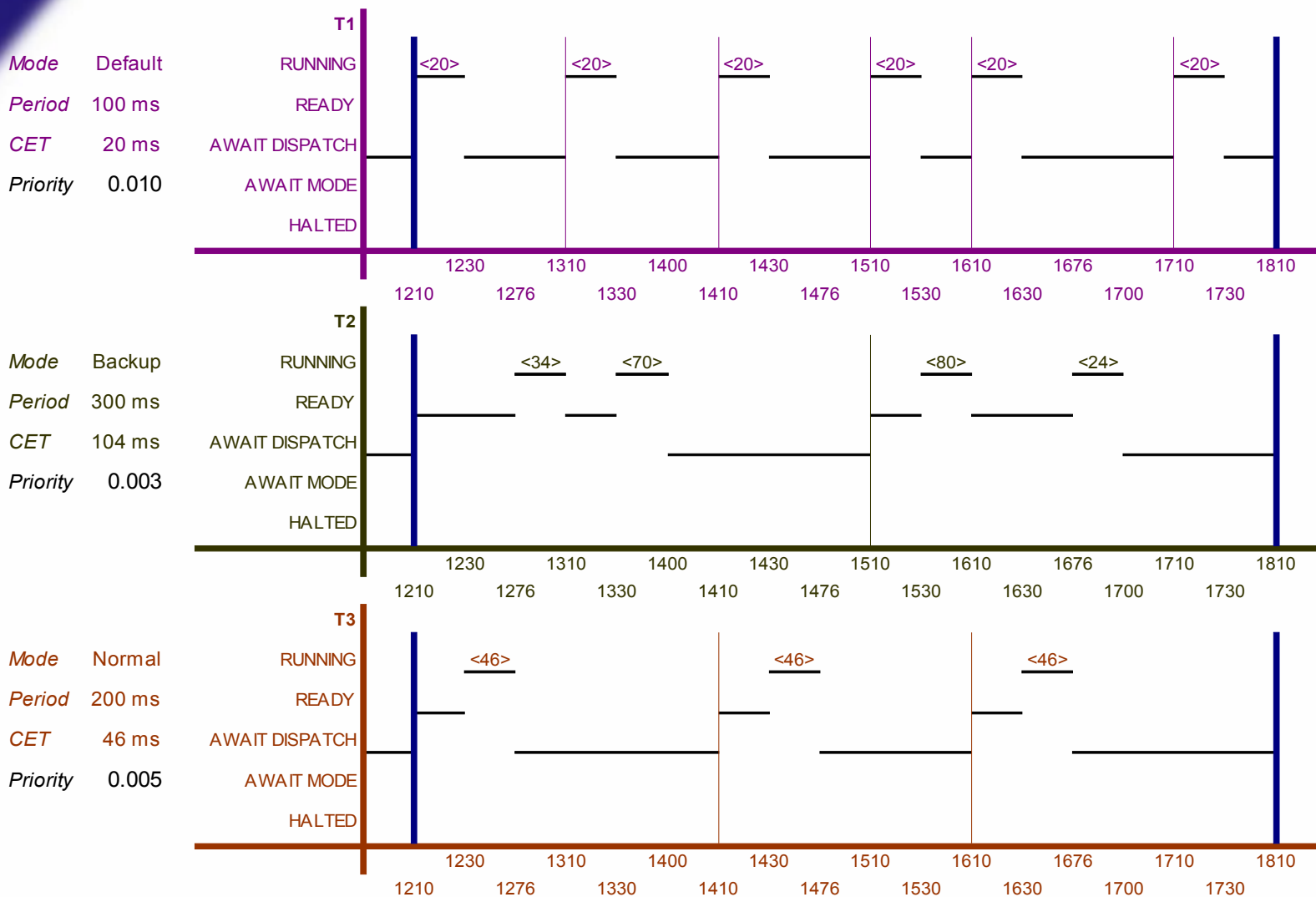




4th Hyperperiod

SOM: T2.Backup-T3.Normal

Hyperperiod: 600 ms





Components initialization 1/2

```

system [t= 0 ps] 'GlobalSystem' has the state STARTING.
bus [t= 0 ps] 'bus' treats a HYPERPERIOD_ENDED sent by SOMManager 'SOM Manager'.
bus [t= 0 ps] 'bus'
- Properties list:
- Propagation_Delay [5000000000..5000000000]
process [t= 0 ps] 'process' treats a HYPERPERIOD_ENDED sent by SOMManager 'SOM Manager'.
process [t= 0 ps] 'process'
- Subcomponents list:
- T3
- T1
- T2
thread [t= 0 ps] 'T3' treats a HYPERPERIOD_ENDED sent by SOMManager 'SOM Manager'.
thread [t= 0 ps] 'T3'
- Properties list:
- Dispatch_Protocol Periodic
- Deadline 200000000000
- Initialize_Decline 10000000000
- Actual_Processor_Binding RMS Scheduler [STOPPED][default]
- Synchronized_Component true
- Initialize_Execution_Time [10000000000..10000000000]
- Compute_Execution_Time [46000000000..46000000000]
- Period 200000000000
thread [t= 0 ps] 'T2' treats a HYPERPERIOD_ENDED sent by SOMManager 'SOM Manager'.
thread [t= 0 ps] 'T2'
- Properties list:
- Dispatch_Protocol Periodic
- Deadline 150000000000
- Initialize_Decline 10000000000
- Actual_Processor_Binding RMS Scheduler [STOPPED][default]
- Synchronized_Component true
- Initialize_Execution_Time [10000000000..10000000000]
- Compute_Execution_Time [52000000000..52000000000]
- Period 150000000000
thread [t= 0 ps] 'T1' treats a HYPERPERIOD_ENDED sent by SOMManager 'SOM Manager'.
thread [t= 0 ps] 'T1'
- Properties list:
- Dispatch_Protocol Periodic
- Deadline 100000000000
- Initialize_Decline 10000000000
- Actual_Processor_Binding RMS Scheduler [STOPPED][default]
- Synchronized_Component true
- Initialize_Execution_Time [10000000000..10000000000]
- Compute_Execution_Time [20000000000..20000000000]
- Period 100000000000
processor [t= 0 ps] 'RMS Scheduler' treats a HYPERPERIOD_ENDED sent by SOMManager 'SOM Manager'.
processor [t= 0 ps] 'RMS Scheduler'
- Properties list:
- Scheduling_Protocol RMS

```



Components initialization 2/2

processor	[t=	0 ps]	'RMS Scheduler'	treats a	START	sent by system	'GlobalSystem'.
processor	[t=	0 ps]	'RMS Scheduler'	has the state	STARTING.		
process	[t=	0 ps]	'process'	treats a	LOAD	sent by processor	'RMS Scheduler'.
process	[t=	0 ps]	'process'	has the state	LOADING.		
thread	[t=	0 ps]	'T3'	treats a	LOADED	sent by process	'process'.
thread	[t=	0 ps]	'T3'	has the state	PERFORMING_INITIALIZATION.		
thread	[t=	0 ps]	'T1'	treats a	LOADED	sent by process	'process'.
thread	[t=	0 ps]	'T1'	has the state	PERFORMING_INITIALIZATION.		
thread	[t=	0 ps]	'T2'	treats a	LOADED	sent by process	'process'.
thread	[t=	0 ps]	'T2'	has the state	PERFORMING_INITIALIZATION.		
...							
thread	[t=	10 ms]	'T3'	treats a	PERFORM_INIT_ENDED	sent by actionTimer	'timer_T3'.
thread	[t=	10 ms]	'T3'	has the state	AWAITING_DISPATCH.		
process	[t=	10 ms]	'process'	treats a	LOADED	sent by thread	'T3'.
thread	[t=	10 ms]	'T1'	treats a	PERFORM_INIT_ENDED	sent by actionTimer	'timer_T1'.
thread	[t=	10 ms]	'T1'	has the state	AWAITING_DISPATCH.		
process	[t=	10 ms]	'process'	treats a	LOADED	sent by thread	'T1'.
thread	[t=	10 ms]	'T2'	treats a	PERFORM_INIT_ENDED	sent by actionTimer	'timer_T2'.
thread	[t=	10 ms]	'T2'	has the state	AWAITING_DISPATCH.		
process	[t=	10 ms]	'process'	treats a	LOADED	sent by thread	'T2'.
process	[t=	10 ms]	'process'	has the state	LOADED.		
processor	[t=	10 ms]	'RMS Scheduler'	treats a	STARTED	sent by process	'process'.
processor	[t=	10 ms]	'RMS Scheduler'	has the state	OPERATING.		
system	[t=	10 ms]	'GlobalSystem'	has the state	OPERATING.		
thread	[t=	10 ms]	'T3'	treats a	DISPATCH	sent by periodEvtGen	'evg_T3'.
thread	[t=	10 ms]	'T3'	has the state	READY.		
thread	[t=	10 ms]	'T1'	treats a	DISPATCH	sent by periodEvtGen	'evg_T1'.
thread	[t=	10 ms]	'T1'	has the state	READY.		
thread	[t=	10 ms]	'T2'	treats a	DISPATCH	sent by periodEvtGen	'evg_T2'.
thread	[t=	10 ms]	'T2'	has the state	READY.		



Scheduling and execution

thread	[t=	10 ms]	'T3'	treats a	DISPATCH	sent by periodEvtGen 'evg_T3'.
thread	[t=	10 ms]	'T3'	has the state	READY.	
thread	[t=	10 ms]	'T1'	treats a	DISPATCH	sent by periodEvtGen 'evg_T1'.
thread	[t=	10 ms]	'T1'	has the state	READY.	
thread	[t=	10 ms]	'T2'	treats a	DISPATCH	sent by periodEvtGen 'evg_T2'.
thread	[t=	10 ms]	'T2'	has the state	READY.	
processor	[t=	10 ms]	'RMS Scheduler'	treats a	SCHEDULE	sent by processor 'RMS Scheduler'.
processor	[t=	10 ms]	'RMS Scheduler'	treats a	SCHEDULE_ENDED	sent by processor 'RMS Scheduler'.
processor	[t=	10 ms]	'RMS Scheduler'	executes element	'T1'	
				from the schedulable elements list:		
				- 'T3'		
				- 'T1'		
				- 'T2'		
thread	[t=	10 ms]	'T1'	treats a	RESUME	sent by processor 'RMS Scheduler'.
thread	[t=	10 ms]	'T1'	treats an action	COMPUTE(20 ms).	
thread	[t=	10 ms]	'T1'	has the state	RUNNING.	
thread	[t=	30 ms]	'T1'	treats a	ACTION_ENDED	sent by actionTimer 'timer_T1'.
thread	[t=	30 ms]	'T1'	has the fixed actions list:		
				- COMPUTE(20 ms).		
thread	[t=	30 ms]	'T1'	actual exec. time	20 ms.	
thread	[t=	30 ms]	'T1'	has the state	AWAITING_DISPATCH.	
processor	[t=	30 ms]	'RMS Scheduler'	treats a	ELEMENT_COMPUTATION_ENDED	sent by thread 'T1'.
processor	[t=	30 ms]	'RMS Scheduler'	treats a	SCHEDULE	sent by processor 'RMS Scheduler'.
processor	[t=	30 ms]	'RMS Scheduler'	treats a	SCHEDULE_ENDED	sent by processor 'RMS Scheduler'.
processor	[t=	30 ms]	'RMS Scheduler'	executes element	'T2'	
				from the schedulable elements list:		
				- 'T3'		
				- 'T2'		
thread	[t=	30 ms]	'T2'	treats a	RESUME	sent by processor 'RMS Scheduler'.
thread	[t=	30 ms]	'T2'	treats an action	COMPUTE(12 ms).	
thread	[t=	30 ms]	'T2'	has the state	RUNNING.	
thread	[t=	42 ms]	'T2'	treats a	ACTION_ENDED	sent by actionTimer 'timer_T2'.
thread	[t=	42 ms]	'T2'	has the fixed actions list:		
				- COMPUTE(12 ms)		
				- COMPUTE(40 ms).		
thread	[t=	42 ms]	'T2'	treats an action	COMPUTE(40 ms).	
thread	[t=	42 ms]	'T2'	has the state	RUNNING.	
thread	[t=	82 ms]	'T2'	treats a	ACTION_ENDED	sent by actionTimer 'timer_T2'.
thread	[t=	82 ms]	'T2'	has the fixed actions list:		
				- COMPUTE(12 ms)		
				- COMPUTE(40 ms).		
thread	[t=	82 ms]	'T2'	actual exec. time	52 ms.	
thread	[t=	82 ms]	'T2'	has the state	AWAITING_DISPATCH.	



Message propagation

thread	[t=	82 ms]	'T2'	treats a	ACTION_ENDED	sent by actionTimer	'timer_T2'.
thread	[t=	82 ms]	'T2'	has the fixed actions list:			
					- COMPUTE(12 ms)		
					- COMPUTE(40 ms).		
thread	[t=	82 ms]	'T2'	actual exec. time	52 ms.		
thread	[t=	82 ms]	'T2'	has the state	AWAITING_DISPATCH.		
bus	[t=	82 ms]	'bus'	treats a	PROPAGATE_CONNECTION_MESSAGE	sent by port	'T2.Complete'.
processor	[t=	82 ms]	'RMS Scheduler'	treats a	ELEMENT_COMPUTATION_ENDED	sent by thread	'T2'.
processor	[t=	82 ms]	'RMS Scheduler'	treats a	SCHEDULE	sent by processor	'RMS Scheduler'.
processor	[t=	82 ms]	'RMS Scheduler'	treats a	SCHEDULE_ENDED	sent by processor	'RMS Scheduler'.
processor	[t=	82 ms]	'RMS Scheduler'	executes element	'T3'		
				from the schedulable elements list:			
					- 'T3'		
thread	[t=	82 ms]	'T3'	treats a	RESUME	sent by processor	'RMS Scheduler'.
thread	[t=	82 ms]	'T3'	treats an action	COMPUTE(16 ms).		
thread	[t=	82 ms]	'T3'	has the state	RUNNING.		
thread	[t=	87 ms]	'T3'	receives a	EVENT_ARRIVAL		
				- current SOM:	[T3:normal T2:normal]		
				- hyperperiod:	600000000000		
				- old mode:	normal		
				- new mode:	backup		
thread	[t=	87 ms]	'T3'	treats a	DISPATCH	sent by port	'chModeT3'.
thread	[t=	98 ms]	'T3'	treats a	ACTION_ENDED	sent by actTimer	'timer_T3'.



Hyperperiod ending

```

processor [t=      548 ms] 'RMS Scheduler' treats a      ELEMENT_COMPUTATION_ENDED sent by thread      'T3'.
SOMManager [t=      610 ms] 'SOM Manager' receives a      HYPERPERIOD_END
- current SOM:      [ T3:backup T2:normal ]
- hyperperiod:      300000000000
bus [t=      610 ms] 'bus' treats a      HYPERPERIOD_ENDED sent by SOMManager 'SOM Manager'.
bus [t=      610 ms] 'bus'
- Properties list:
- Propagation_Delay      [50000000000..50000000000]
process [t=      610 ms] 'process' treats a      HYPERPERIOD_ENDED sent by SOMManager 'SOM Manager'.
process [t=      610 ms] 'process'
- Subcomponents list:
- T3
- T1
- T2
thread [t=      610 ms] 'T3' treats a      HYPERPERIOD_ENDED sent by SOMManager 'SOM Manager'.
thread [t=      610 ms] 'T3'
- Properties list:
- Dispatch_Protocol      Periodic
...
- Compute_Execution_Time      [110000000000..110000000000]
- Period      500000000000
processor [t=      610 ms] 'RMS Scheduler' treats a      HYPERPERIOD_ENDED sent by SOMManager 'SOM Manager'.
processor [t=      610 ms] 'RMS Scheduler'
- Properties list:
- Scheduling_Protocol      RMS
thread [t=      610 ms] 'T2' treats a      HYPERPERIOD_ENDED sent by SOMManager 'SOM Manager'.
thread [t=      610 ms] 'T2'
- Properties list:
- Dispatch_Protocol      Periodic
...
- Compute_Execution_Time      [520000000000..520000000000]
- Period      1500000000000
thread [t=      610 ms] 'T1' treats a      HYPERPERIOD_ENDED sent by SOMManager 'SOM Manager'.
thread [t=      610 ms] 'T1'
- Properties list:
- Dispatch_Protocol      Periodic
...
- Compute_Execution_Time      [200000000000..200000000000]
- Period      100000000000

```



Preemption 1/2

```

SOMManager [t= 1 sec 210 ms] 'SOM Manager' receives a HYPERPERIOD_END
- current SOM: [ T3:normal T2:backup ]
- hyperperiod: 600000000000

...
thread [t= 1 sec 210 ms] 'T2' has the state READY.
thread [t= 1 sec 210 ms] 'T1' has the state READY.
thread [t= 1 sec 210 ms] 'T3' has the state READY.
...
processor [t= 1 sec 210 ms] 'RMS Scheduler' executes element 'T1'
from the schedulable elements list:
- 'T3'
- 'T1'
- 'T2'

...
thread [t= 1 sec 210 ms] 'T1' has the state RUNNING.
...
thread [t= 1 sec 230 ms] 'T1' has the state AWAITING_DISPATCH.
...
processor [t= 1 sec 230 ms] 'RMS Scheduler' executes element 'T3'
from the schedulable elements list:
- 'T3'
- 'T2'

...
thread [t= 1 sec 230 ms] 'T3' has the state RUNNING.
...
thread [t= 1 sec 276 ms] 'T3' has the state AWAITING_DISPATCH.
...
processor [t= 1 sec 276 ms] 'RMS Scheduler' executes element 'T2'
from the schedulable elements list:
- 'T2'

thread [t= 1 sec 276 ms] 'T2' treats a RESUME sent by processor 'RMS Scheduler'.
thread [t= 1 sec 276 ms] 'T2' treats an action COMPUTE(52 ms).
thread [t= 1 sec 276 ms] 'T2' has the state RUNNING.

thread [t= 1 sec 310 ms] 'T1' treats a DISPATCH sent by perEvtGen 'evg_T1'.
thread [t= 1 sec 310 ms] 'T1' has the state READY.

processor [t= 1 sec 310 ms] 'RMS Scheduler' treats a NEW_SCHEDULABLE_ELEMENT sent by thread 'T1'.
processor [t= 1 sec 310 ms] 'RMS Scheduler' treats a SCHEDULE sent by processor 'RMS Scheduler'.

thread [t= 1 sec 310 ms] 'T2' treats a PREEMPT sent by processor 'RMS Scheduler'.
thread [t= 1 sec 310 ms] 'T2' has the state READY.

processor [t= 1 sec 310 ms] 'RMS Scheduler' treats a SCHEDULE_ENDED sent by processor 'RMS Scheduler'.
processor [t= 1 sec 310 ms] 'RMS Scheduler' executes element 'T1'
from the schedulable elements list:
- 'T1'
- 'T2'

```



Preemption 2/2

<i>thread</i>	[t= 1 sec 310 ms]	'T2'	<i>treats a</i>	PREEMPT	<i>sent by processor</i>	'RMS Scheduler'.
thread	[t= 1 sec 310 ms]	'T2'	has the state	READY.		
processor	[t= 1 sec 310 ms]	'RMS Scheduler'	<i>treats a</i>	SCHEDULE_ENDED	<i>sent by processor</i>	'RMS Scheduler'.
processor	[t= 1 sec 310 ms]	'RMS Scheduler'	executes element	'T1'		
			from the schedulable elements list:			
				- 'T1'		
				- 'T2'		
thread	[t= 1 sec 310 ms]	'T1'	<i>treats a</i>	RESUME	<i>sent by processor</i>	'RMS Scheduler'.
thread	[t= 1 sec 310 ms]	'T1'	<i>treats an action</i>	COMPUTE(20 ms).		
thread	[t= 1 sec 310 ms]	'T1'	has the state	RUNNING.		
thread	[t= 1 sec 330 ms]	'T1'	<i>treats a</i>	ACTION_ENDED	<i>sent by actTimer</i>	'timer_T1'.
thread	[t= 1 sec 330 ms]	'T1'	has the fixed actions list:			
				- COMPUTE(20 ms).		
thread	[t= 1 sec 330 ms]	'T1'	<i>actual exec. time</i>	20 ms.		
thread	[t= 1 sec 330 ms]	'T1'	has the state	AWAITING_DISPATCH.		
processor	[t= 1 sec 330 ms]	'RMS Scheduler'	<i>treats a</i>	ELEMENT_COMPUTATION_ENDED	<i>sent by thread</i>	'T1'.
processor	[t= 1 sec 330 ms]	'RMS Scheduler'	<i>treats a</i>	SCHEDULE	<i>sent by processor</i>	'RMS Scheduler'.
processor	[t= 1 sec 330 ms]	'RMS Scheduler'	<i>treats a</i>	SCHEDULE_ENDED	<i>sent by processor</i>	'RMS Scheduler'.
processor	[t= 1 sec 330 ms]	'RMS Scheduler'	executes element	'T2'		
			from the schedulable elements list:			
				- 'T2'		
<i>thread</i>	[t= 1 sec 330 ms]	'T2'	<i>treats a</i>	RESUME	<i>sent by processor</i>	'RMS Scheduler'.
thread	[t= 1 sec 330 ms]	'T2'	<i>treats an action</i>	COMPUTE(18 ms).		
thread	[t= 1 sec 330 ms]	'T2'	has the state	RUNNING.		
thread	[t= 1 sec 348 ms]	'T2'	<i>treats a</i>	ACTION_ENDED	<i>sent by actTimer</i>	'timer_T2'.
thread	[t= 1 sec 348 ms]	'T2'	has the fixed actions list:			
				- COMPUTE(52 ms)		
				- COMPUTE(52 ms).		
thread	[t= 1 sec 348 ms]	'T2'	<i>treats an action</i>	COMPUTE(52 ms).		
thread	[t= 1 sec 348 ms]	'T2'	has the state	RUNNING.		
thread	[t= 1 sec 400 ms]	'T2'	<i>treats a</i>	ACTION_ENDED	<i>sent by actTimer</i>	'timer_T2'.
thread	[t= 1 sec 400 ms]	'T2'	has the fixed actions list:			
				- COMPUTE(52 ms)		
				- COMPUTE(52 ms).		
thread	[t= 1 sec 400 ms]	'T2'	<i>actual exec. time</i>	104 ms.		
thread	[t= 1 sec 400 ms]	'T2'	has the state	AWAITING_DISPATCH.		
processor	[t= 1 sec 400 ms]	'RMS Scheduler'	<i>treats a</i>	ELEMENT_COMPUTATION_ENDED	<i>sent by thread</i>	'T2'.



To go further



Design of a new GUI

Navigator

System
 Process
 Thread sender
 > Dispatch
 < Complete
 < Error
 < triggerPort
 Thread receiver
 > Dispatch
 < Complete
 < Error
 < triggerPort
 Processor
 Memory

Editor

Display depending on the selected component

Current status	Display options	Breakpoints
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Properties

Property	Value

Chronograms

Console





Simulation "builder"

- Perform AADL instantiation with respect to
 - AADL standard
 - AADL annexes
 - ADeS simulation needs
- Automatically called when
 - An AADL resource is modified
 - A simulation option or parameter is modified
- Display of "markers" helping user to correct errors



"Configuration launcher"

- Perform simulation execution
- Control of the simulation
 - Run, Goto, Next step, Next time step, Reset
- Provide breakpoints mechanism
- Simulation execution options
 - Simulation duration
 - Simulation time step
 - Display/hide UI parts

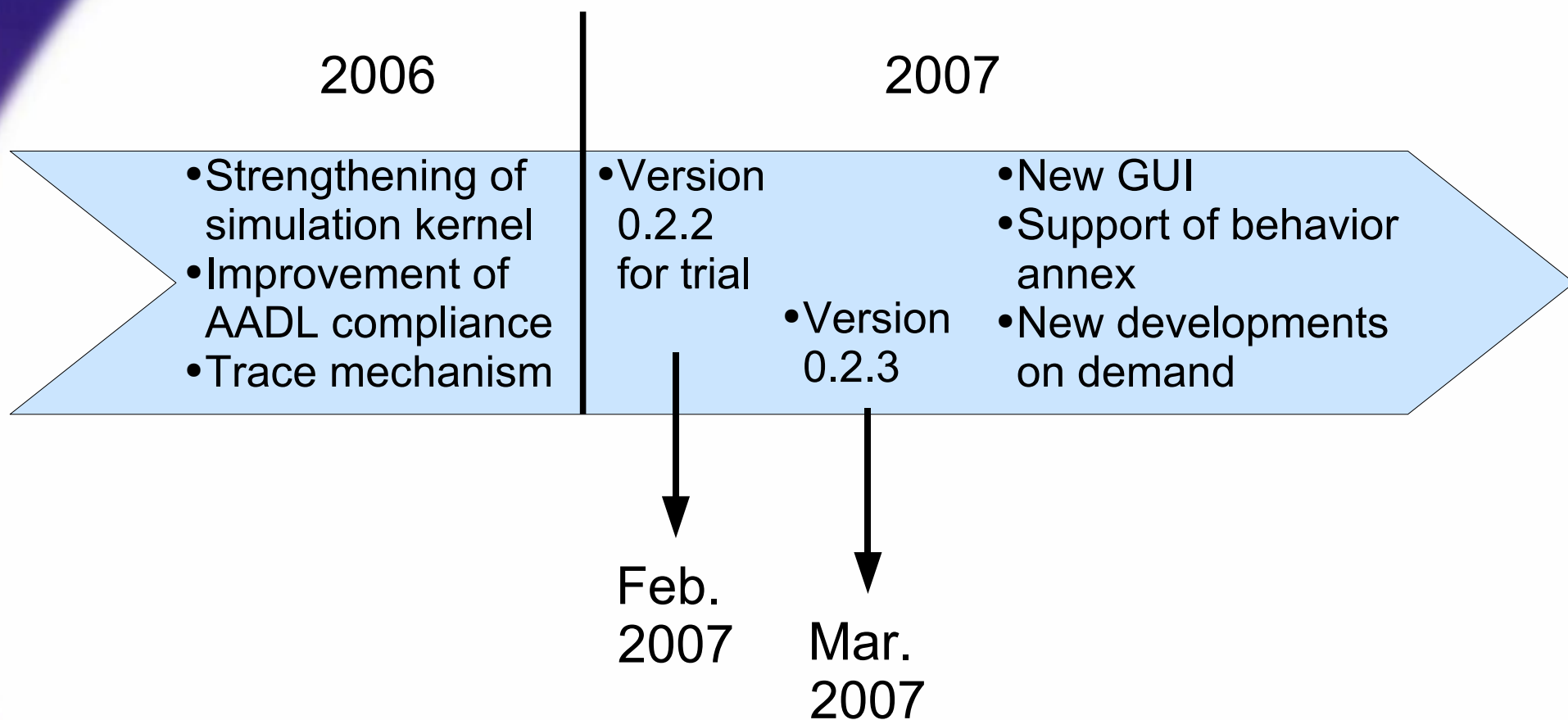


Simulation replay

- Go back in the past
- Re-execution of the simulation from a specified date
- Re-use of the content of the trace file
- Re-load the simulation kernel stack of events (*core*, *base simu* and *aadl* layers are serialized)
- Re-build UI parts



Road map





More information

- **Axlog Ingénierie**

- Tel: +33 1 41 24 31 00

- Fax: +33 1 41 24 07 36

- Address:

- 19-21 rue du 8 mai 1945

- 94110 Arcueil, FRANCE

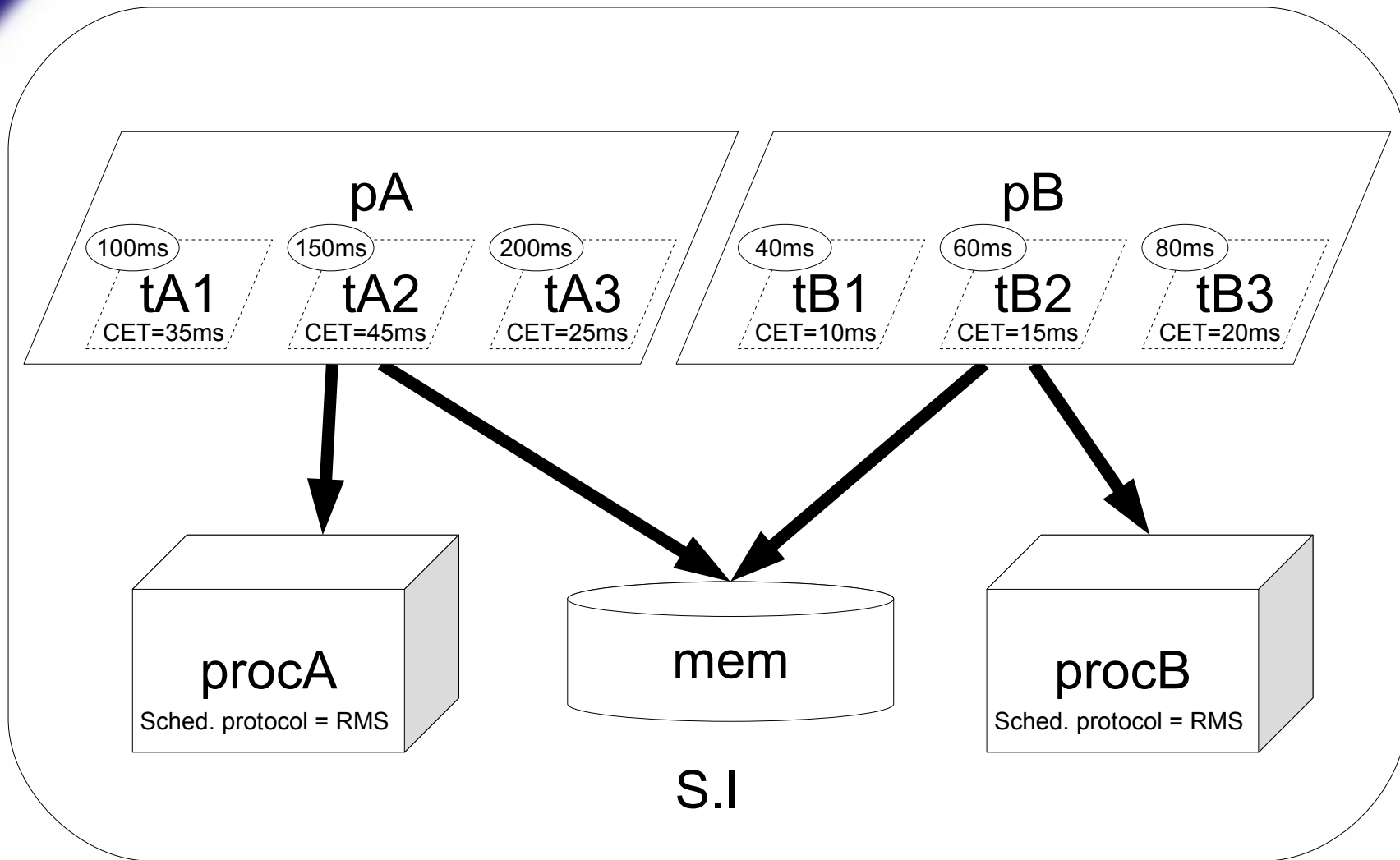
- E-mail: aadl@axlog.fr

- Web page (document and download)

- http://www.axlog.fr/aadl/ades_en.html



Demo scenario 1





Demo scenario 2

