

Eclipse APP4MC 2.1



NEW AND NOTEWORTHY

APP4MC 2.1 (Apr 2022)

General description of platform changes

Model extensions

- ▶ Extended channel fill condition (new attribute: relation)
- ▶ Extended relational operators (new literals: \leq , \geq)
- ▶ New local mode labels
- ▶ New mode label event

Product

- ▶ New visualizations:
 - Runnable dependencies
 - Namespace members
- ▶ New preference settings (editor preferences)
- ▶ Better handling of model compress / uncompress

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Extended ChannelFillColorCondition

Extended ChannelFillCondition

APP4MC 2.0

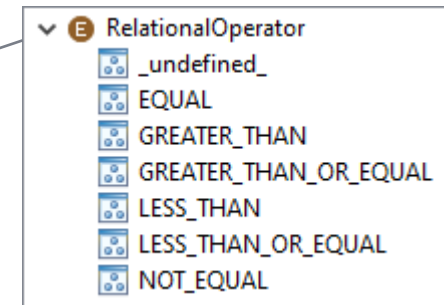
- Condition relation is predefined as "at least":

fill level \geq <number>

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- Condition relation can be specified:

fill level <relation> <number>



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Execution context / Local Mode Labels

Execution context / Local Mode Labels

Execution Context

- is defined in the scope of an executable (task, ISR, runnable)
- values are represented by local mode labels
- values can be . . .
 - set/modified in an activity graph
 - passed when calling a runnable

Execution context / Local Mode Labels

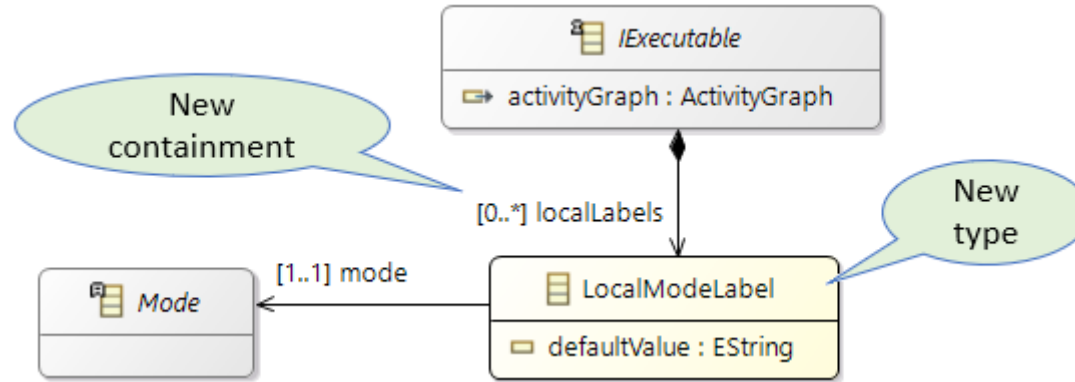
Local Mode Labels

- can save a local copy of a global state at a specific point in time
- can be modified (incremented, decremented, . . .)
- are used in conditions (switches, loops) in an activity graph
- can be set in a runnable call ("execution context")
- have the same attributes as global mode labels

Local Mode Label Definition

New local mode label

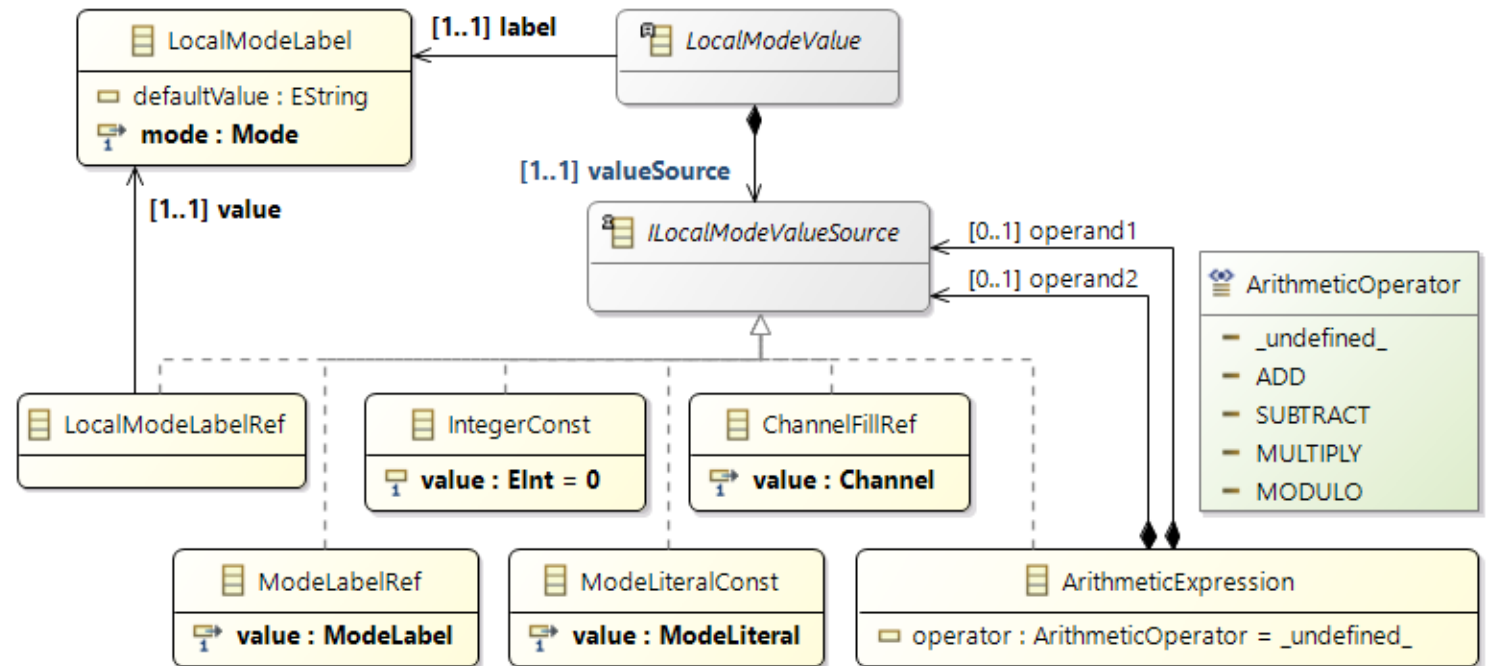
- inside an executable



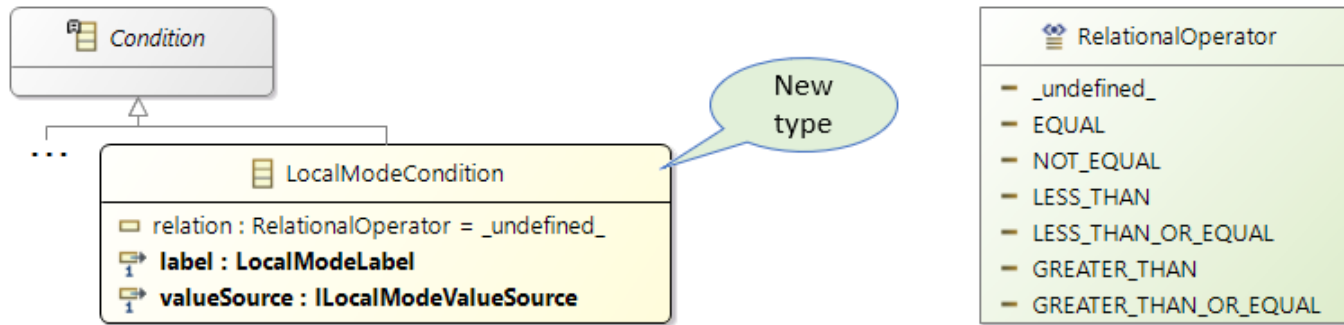
Local Mode Values

New local mode values

- used in conditions
- used in assignments

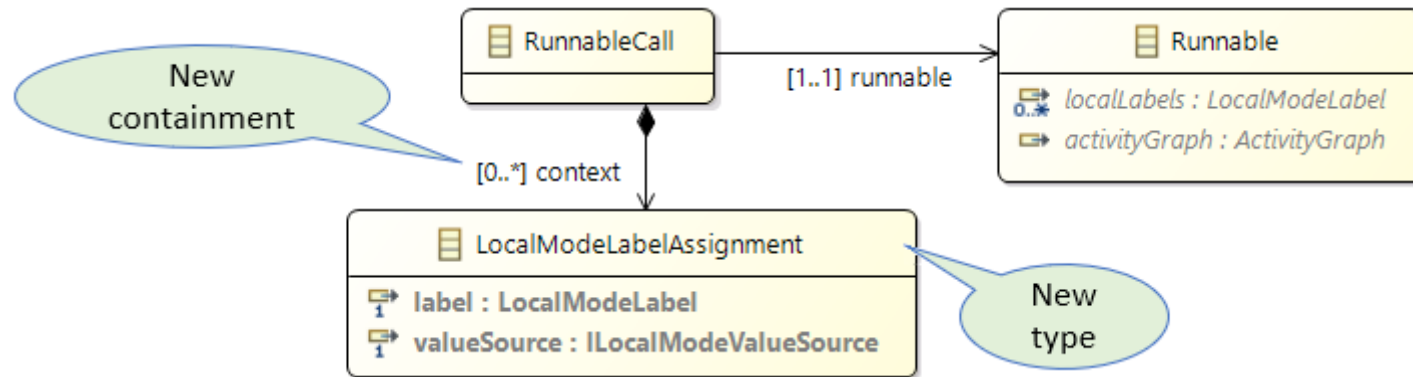


Local Mode Condition



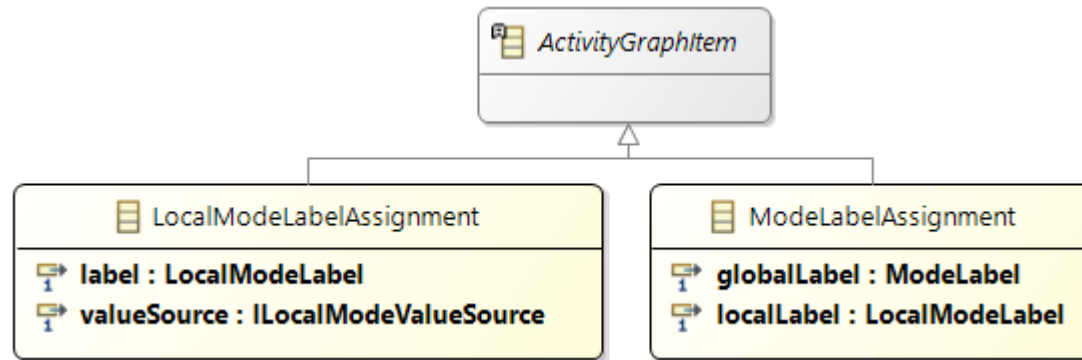
Local Mode Label Assignment (I)

as context of a runnable call

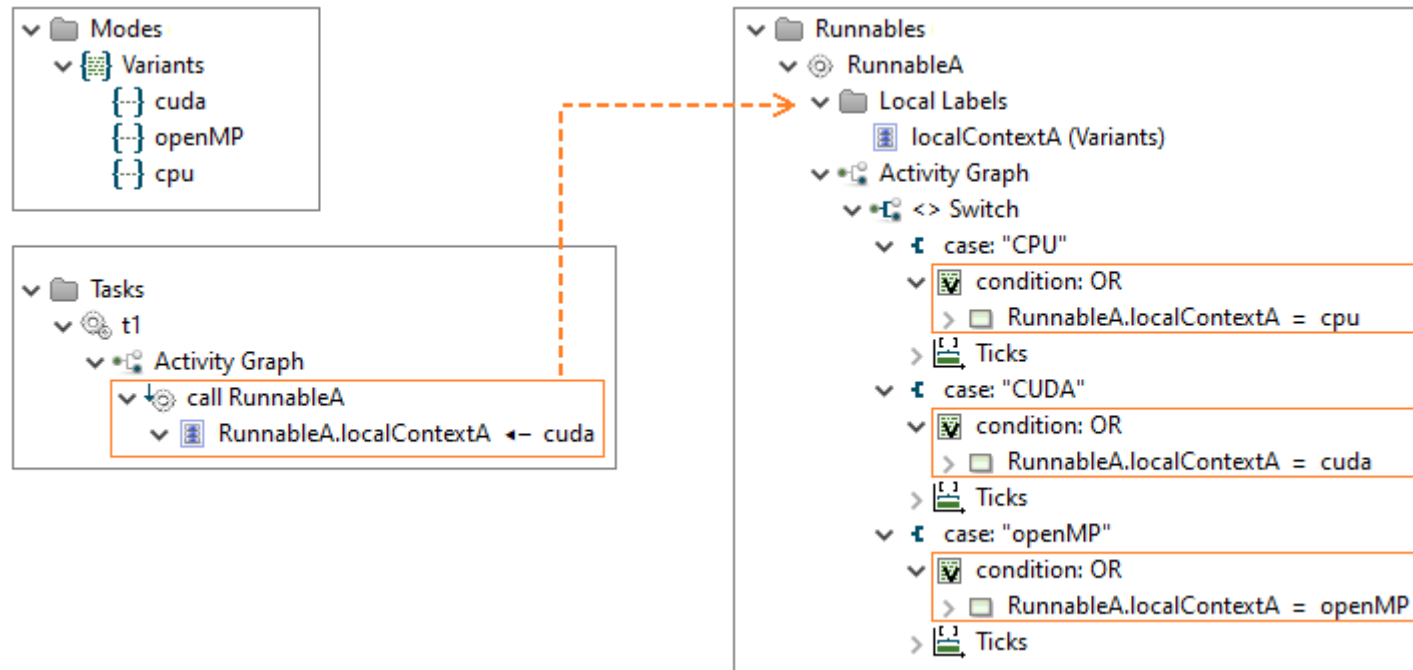


Local Mode Label Assignment (II)

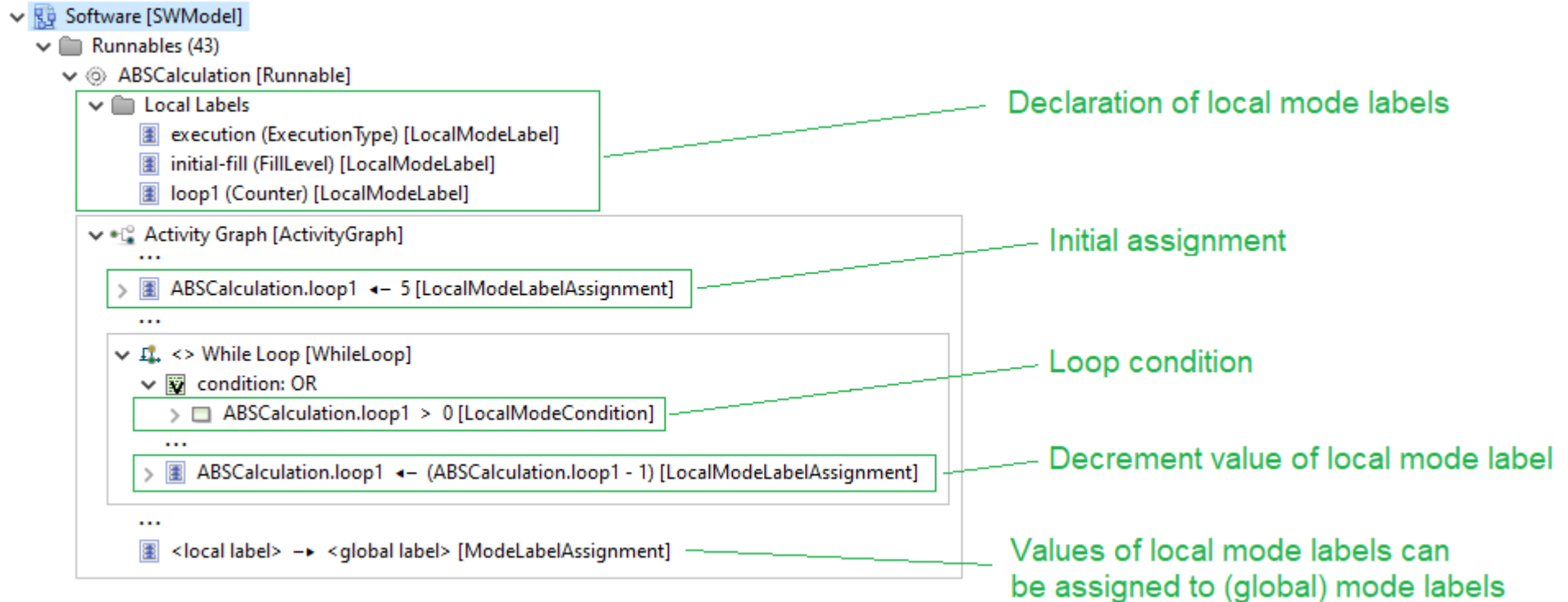
in an activity graph



Local Mode Label Assignment – Example



Local Mode Labels – Example



Declaration of local mode labels

Initial assignment

Loop condition

Decrement value of local mode label

Values of local mode labels can be assigned to (global) mode labels

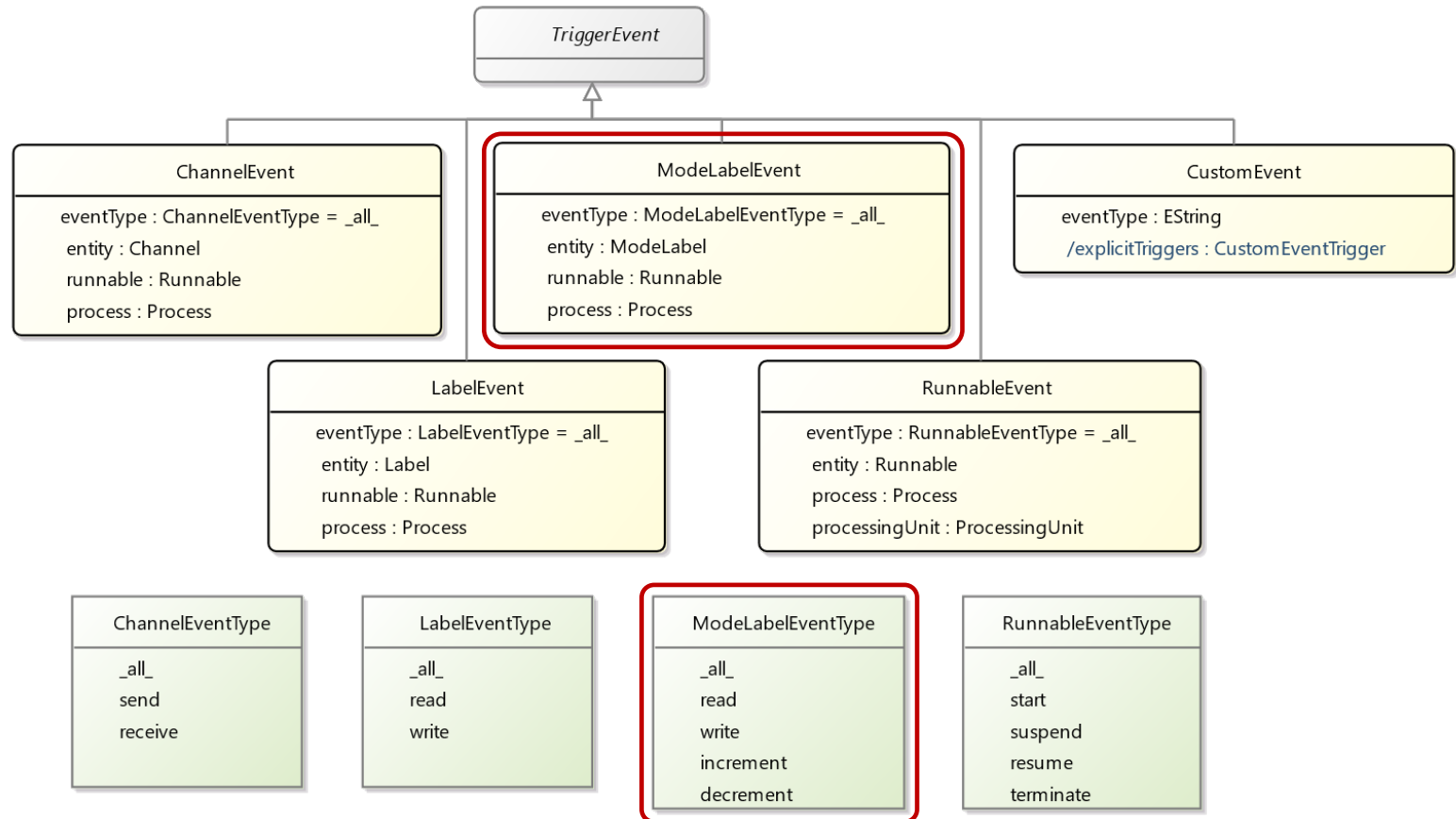
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Mode Label Event

Mode Label Event

New event type
to describe
access to
mode labels

(similar to label events)

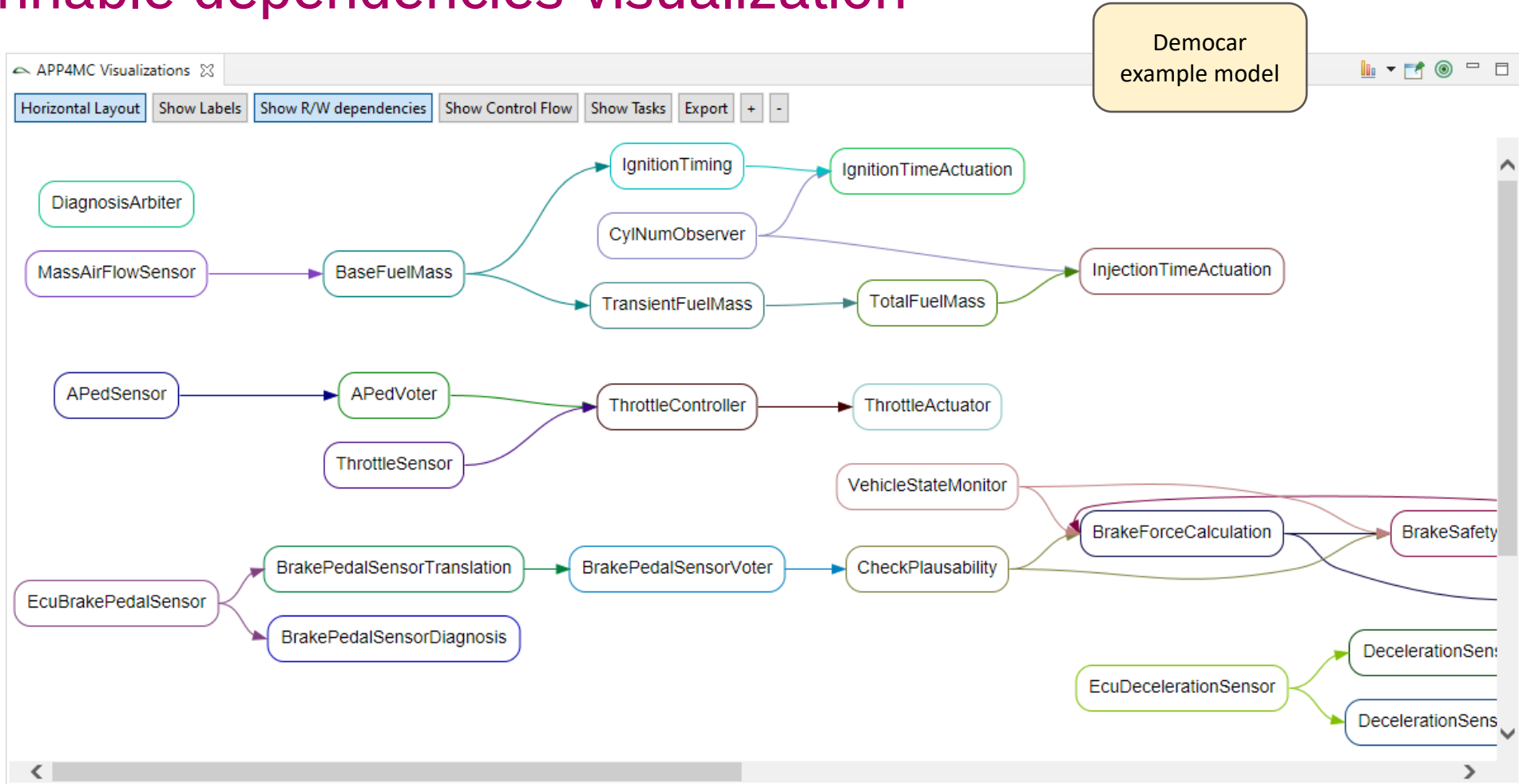


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New visualizations

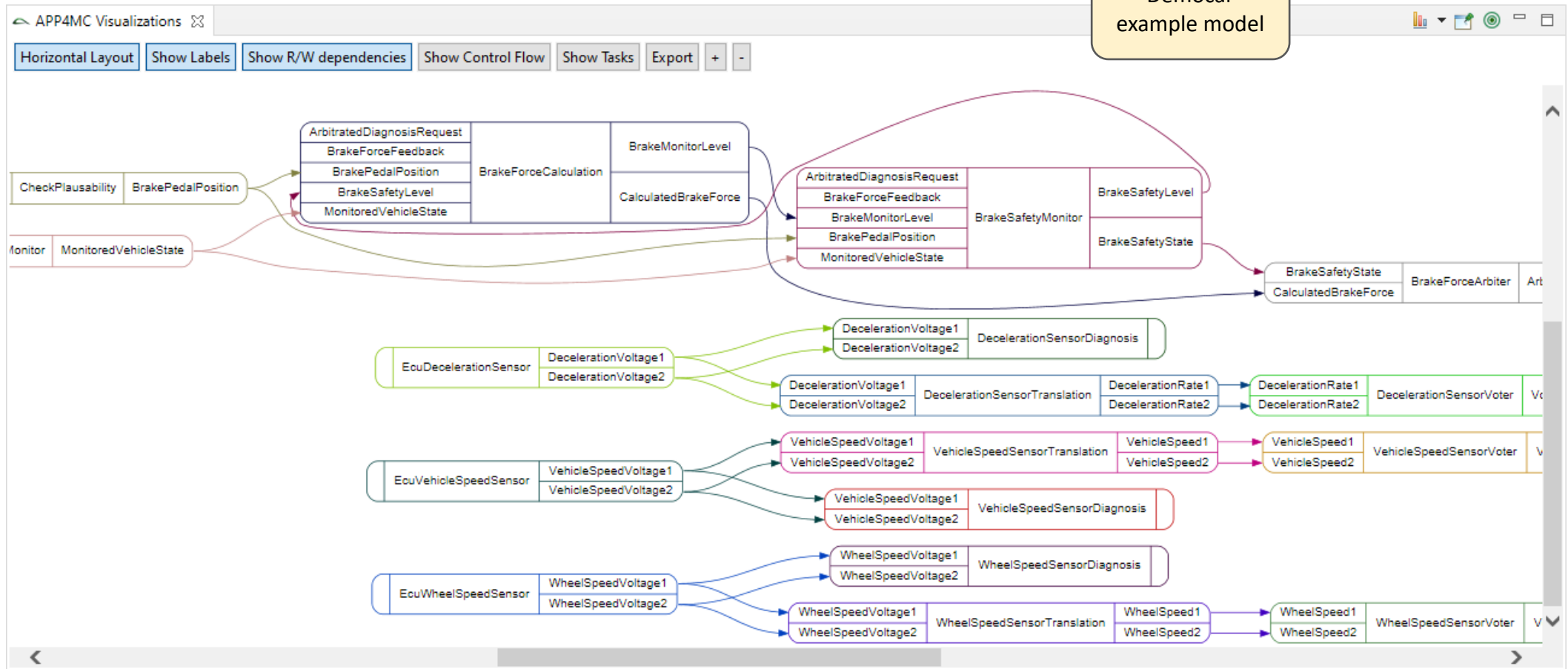
Runnable dependencies

Runnable dependencies visualization



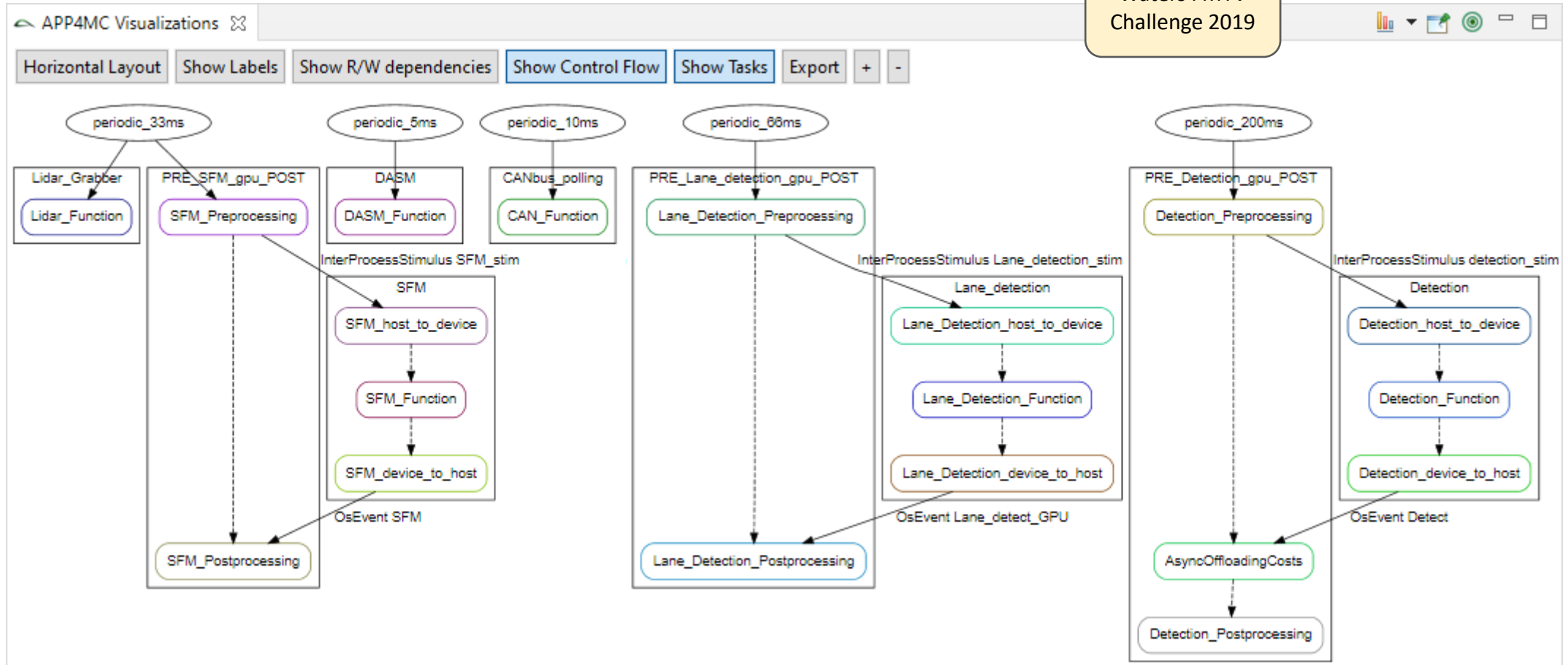
Runnable dependencies visualization

Democar
example model



Runnable dependencies visualization

Waters FMTV
Challenge 2019



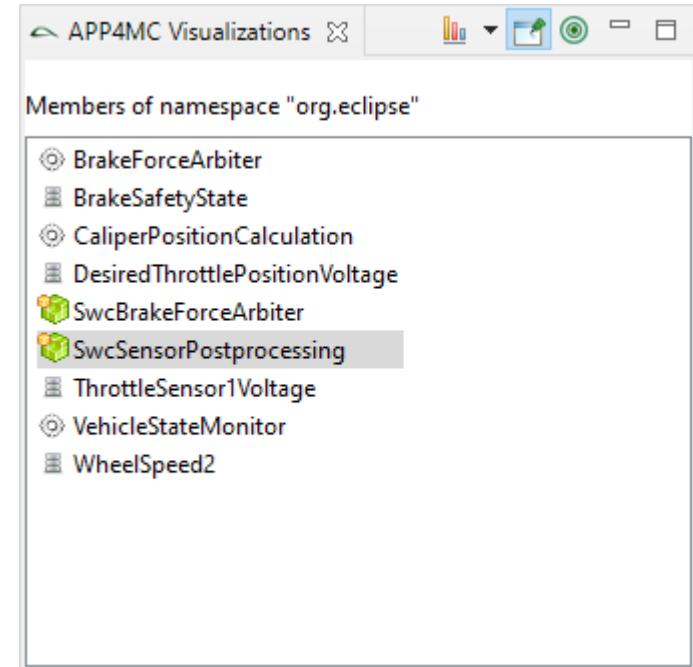
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New visualizations

Namespace members

Namespace member visualization

- simple list of elements
- blueprint for list-based visualizations



(Un-)Compress of Model Files

(Un-)Compress of Model Files

introduced with
APP4MC 2.0

- Amalthea model files can be compressed (Zip-archive)
- The Eclipse Modeling Framework (EMF) handles load and save

Properties view for democar.amxmi:

Property	Value
path	/app4mc.example.democar/democar.amxmi
size	64.961 bytes

Properties view for democar.amxmi (compressed):

Property	Value
path	/app4mc.example.democar/democar.amxmi
size	5.214 bytes

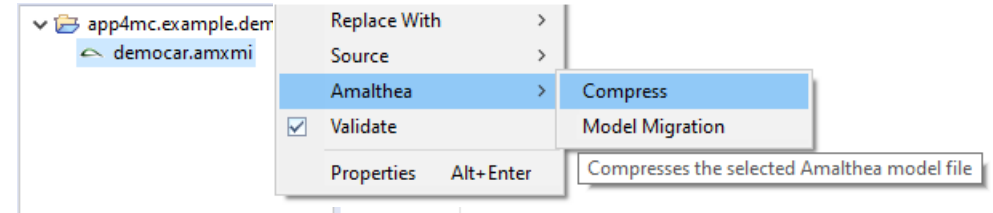
```
<?xml version="1.0" encoding="UTF-8"?>
<am:Amalthea xmi:version="2.0" xmlns:xmi="http://www.omg.org/XMI"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:am=
"http://app4mc.eclipse.org/amalthea/2.0.0">
  <swModel>
    <tasks xmi:id="Task_10MS?type=Task" name="Task_10MS" stimuli=
"Timer_10MS?type=PeriodicStimulus" preemption="preemptive"
length: 64.961 lines: 85 Ln: 1 Col: 1 Pos: 1
```

Name	Size	Packed Size
ResourceContents	64.961	5.068

(Un-)Compress of Model Files is improved

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- File decorator
- Menu and action
- load and save via EMF



New in APP4MC 2.1

- loaded models are marked as zipped or expanded
- un-/compress of unloaded models on file level (independent of EMF)

no conflicts with modified editor content

faster (especially for large files)

old model versions can be handled

