USER MANUAL

After starting the tool, Figure 1 is observed.

Figure 1 – Main Screen

Tab 1 => For declarative process discovery

Tab 2 => For conformance checking

Tab 3 => For log generation

Tab 4 => For editing a MP-Declare model

Tab 1: Discovery

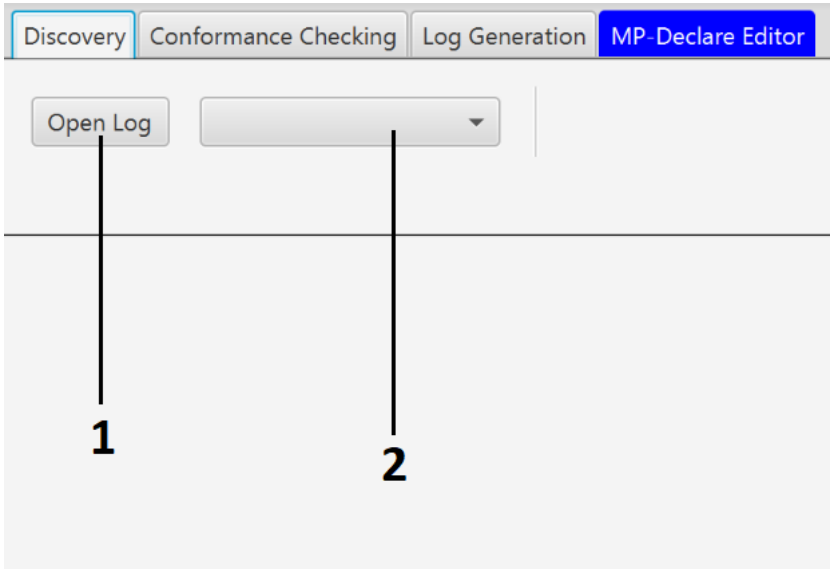

Figure 2 – Discovery blank screen

Figure 2 shows Discovery tab with a blank screen. An event log can be opened from the file system by clicking (1). Opened logs can be chosen later from (2).

For a log only: .mxml, .mxml.gz, .xes and .xes.gz formats are supported.

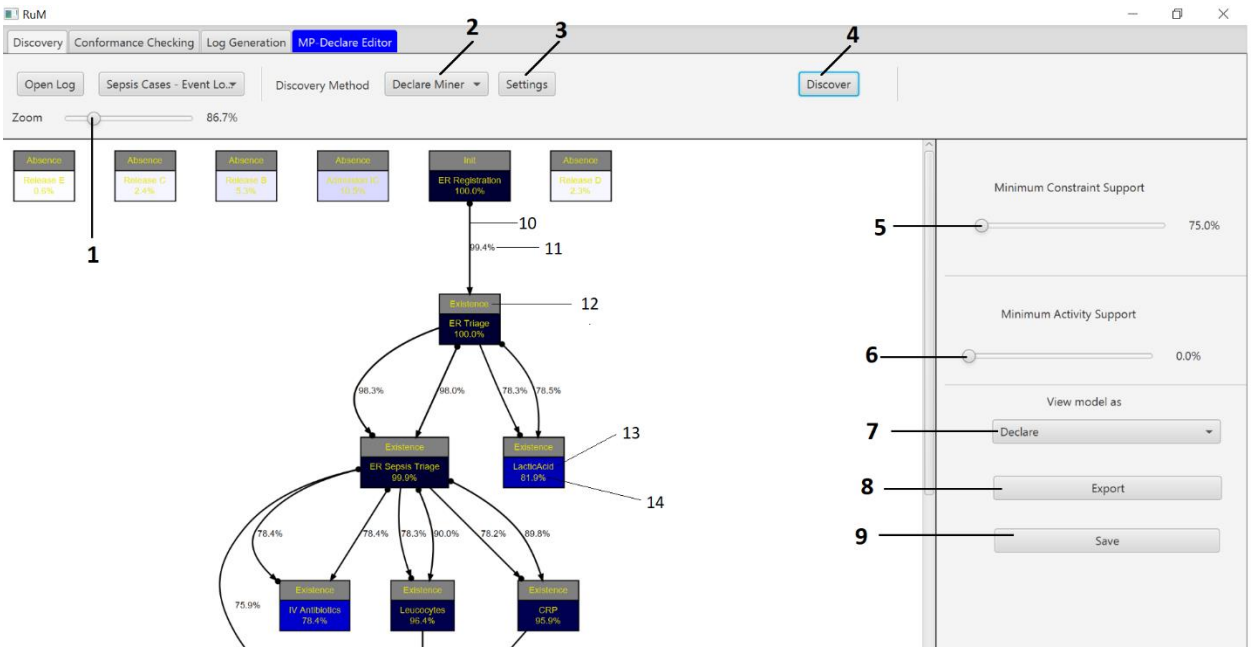

Figure 3 – Example discovery result

Figure 3 shows an example discovery result. Here:

(1) – is used to zoom in or out the view

(2) – to select a discovery method: Declare Miner or Minerful

(3) – to open configuration panel for the method selected in (2) (see Figure 4).

(4) – to start the discovery with the selected file (see Figure 2- (2)) and the selected method in (2)

(5) – slider to set a value such that constraints having a support less than this value are not displayed

(6) – slider to set a value such that activities having a support less than this value are not displayed

(7) – to select how to see the result model: Declare, Textual or Automaton

(8) – to save in the file system in the format depending on (7)

(9) – to save the result as DECL format in the tool (not in the file system).

(10) – A binary Declare template

(11) – Constraint support

(12) - A unary Declare template

(13) – Activity's name

(14) – Activity support

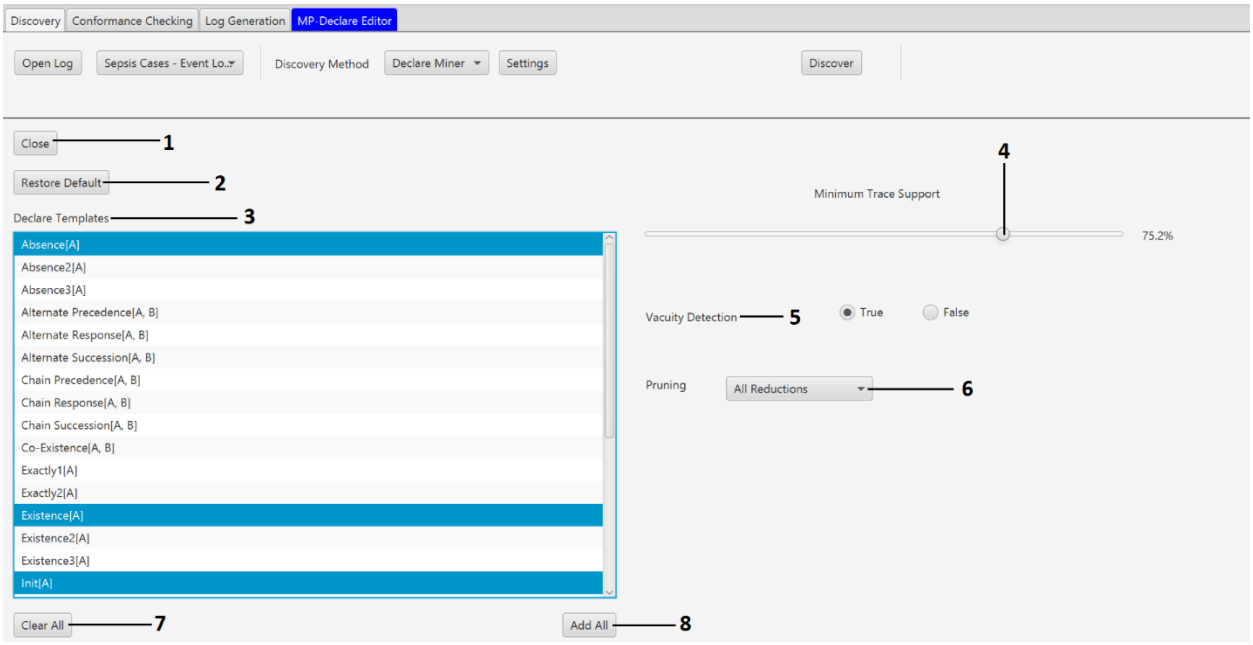

Figure 4 – Configuration screen for Declare Miner

Figure 4 displays the configuration screen for Declare Miner. Here:

(1) – to close the configuration

(2) – to restore the default settings for the configuration

(3) – A list of Declare templates to observe in the output, multiple selection is possible (ctrl for Windows, Cmd for Mac) the button used to multi-select in the file system.

(4) – set minimum constraint support for the output

(5) – enable vacuity detection

(6) – to select a pruning option for the output

(7) – to clear the selections in (3)

(8) – select all templates in (3)

After the settings, a discovery can be started using *Discover* button (see Figure 3 (4)).

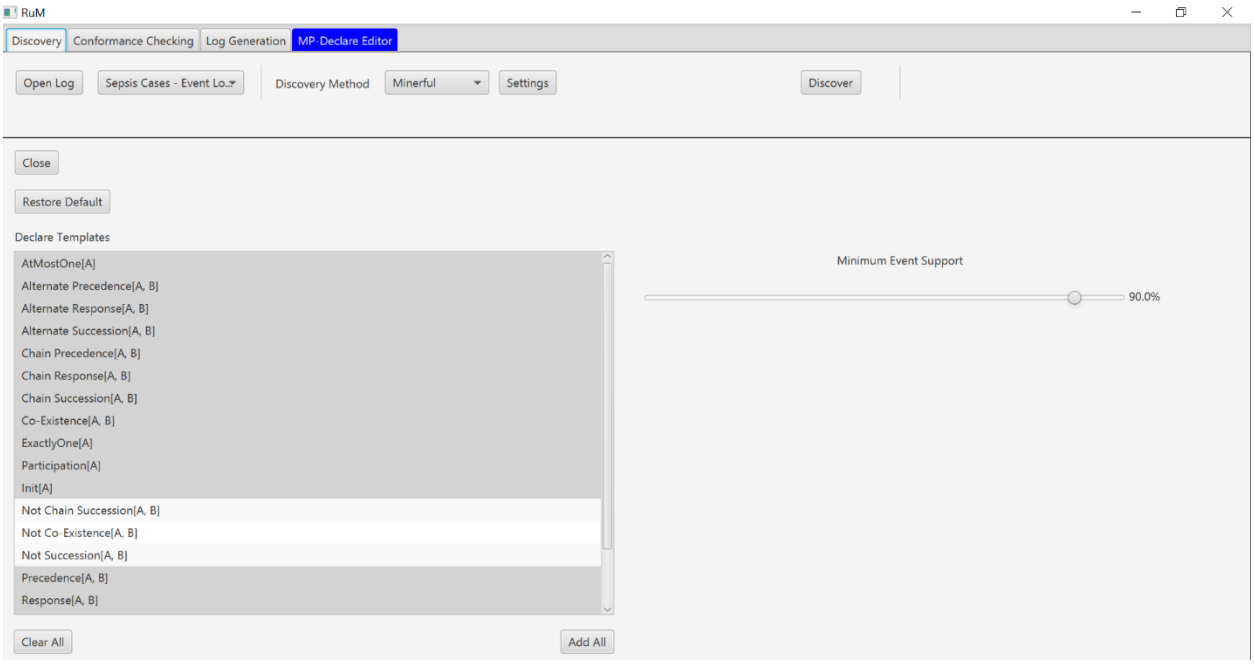

Figure 5 – Configuration screen for Minerful

Figure 5 displays the configuration screen for Minerful. The slider *Minimum Event Support* is used to set a minimum constraint support for the output. The rest is same as in Figure 4.

Tab 2: Conformance Checking

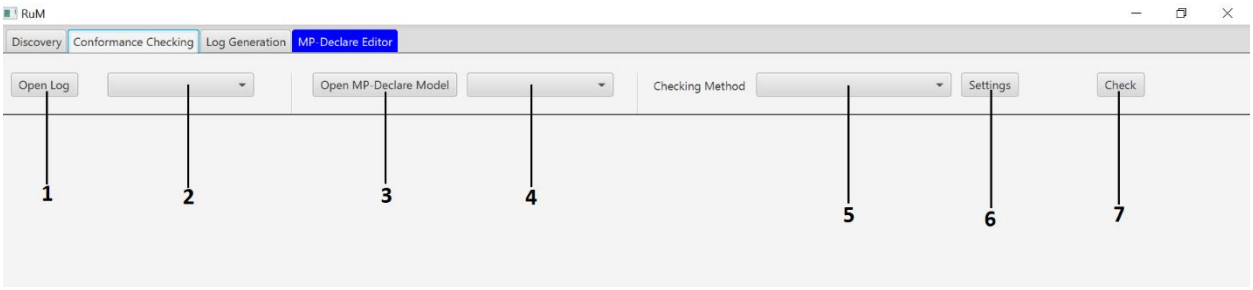

Figure 6 – Conformance Checking tab blank screen

Figure 6 is the initial screen for Conformance Checking tab. Here:

(1) – to open an event log as described in Tab 1: Discovery (see Figure 2).

(2) – opened log can be chosen again from here

(3) – to open a MP-Declare model in DECL format

(4) – opened model with (3) can be chosen again from here

(5) – to select a checking method: Declare Analyzer, DataAware Declare Replayer and Declare Replayer

(6) – to open the setting panel for the method selected in (5)

(7) – to start conformance checking with log in (2) and model in (4) using the settings

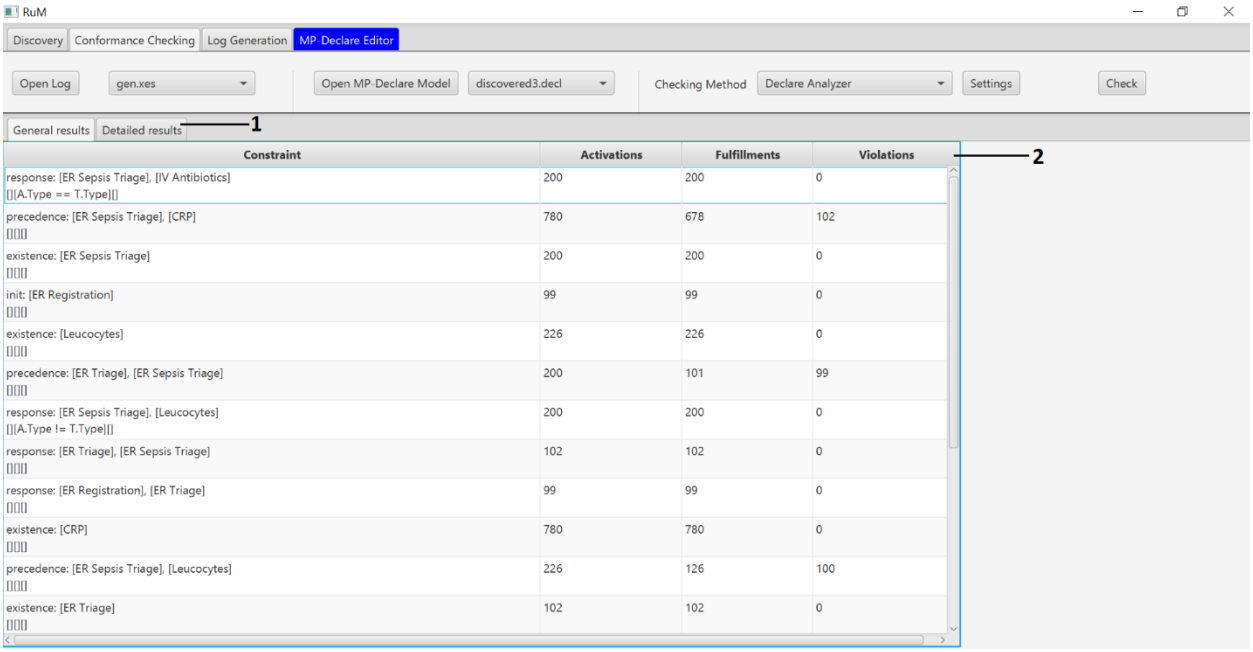

Figure 7 – Conformance checking result for Declare Analyzer

Figure 7 shows a conformance checking result for Declare Analyzer. Here:

(1) – to switch Detailed results

(2) – A table showing the activations, fulfillments and violations for each constraint in the input model.

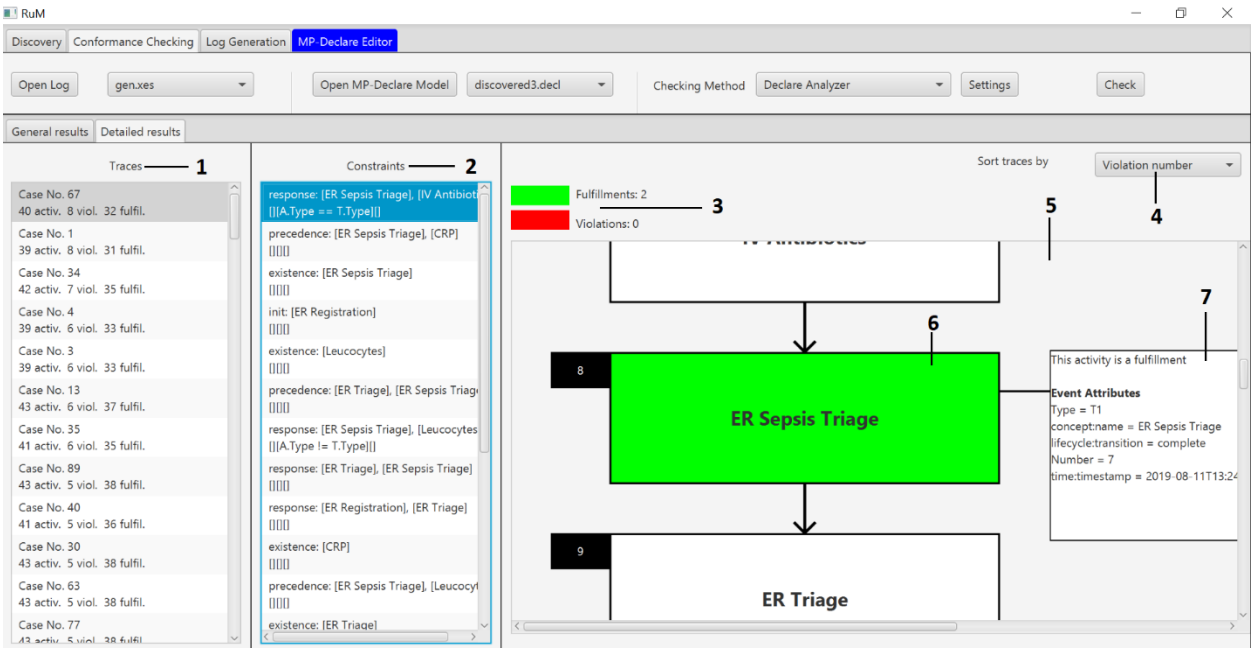

Figure 8 – Detailed results for Declare Analyzer

Figure 8 shows *Detailed results* tab for Declare Analyzer. Here:

(1) – to select a trace in the input log

(2) – to select a constraint in the input model

(3) – a legend showing what the colors refer to

(4) – sorting option for the traces: Activation, violation, fulfillment numbers and Alphabetical

(5) – a result view from the trace selected in (1) and constraint selected in (2)

(6) – An event in the trace

(7) – Details of an event, it appears when an event is moused over.

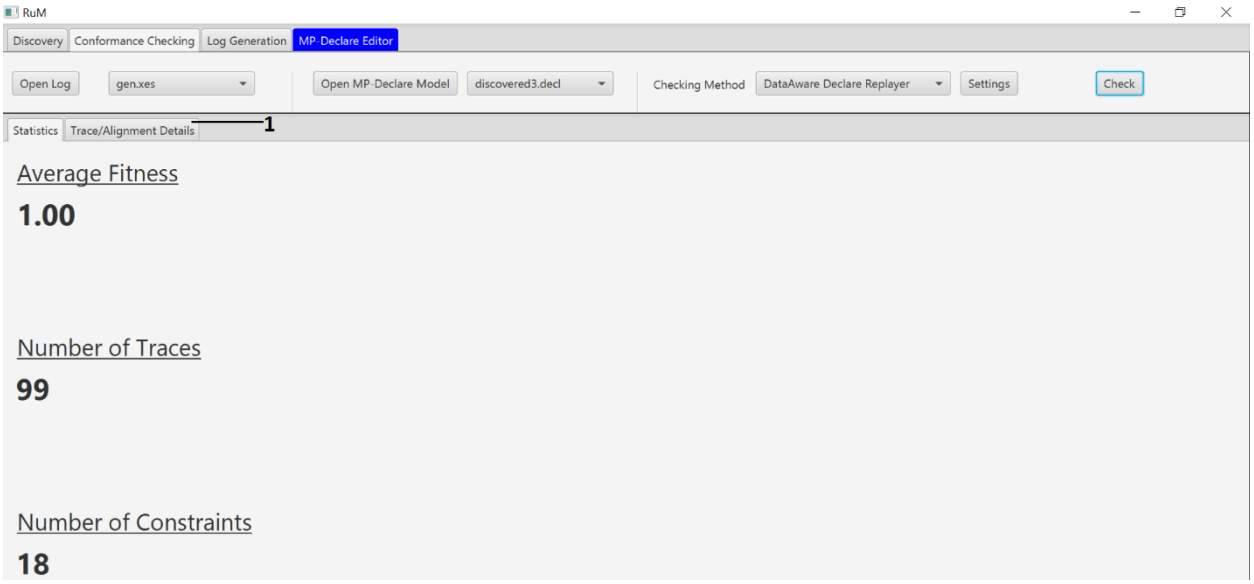

Figure 9 – A result screen for DataAware Declare Replayer

Figure 9 shows a result screen for DataAware Declare Replayer. Here:

(1) – to switch Trace/Alignment details

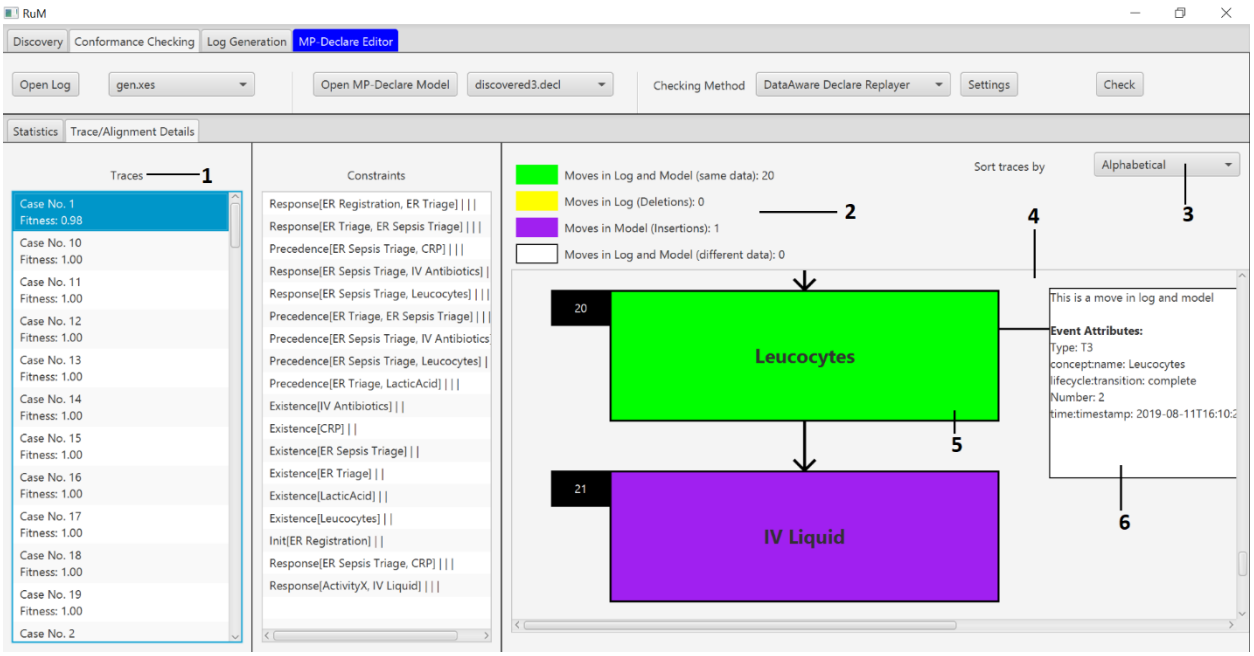

Figure 10 – Trace/Alignment Details for DataAware Declare Replayer

Figure 10 displays *Trace/Alignment Details* for DataAware Declare Replayer. Here:

(1) – to select a trace in the input log

(2) – a legend about what the colors refer to

(3) – sorting options for the traces

(4) – an alignment view of selected trace in (1)

(5) – an event in the selected trace

(6) – details of an event, it appears when an event is moused over.

For Declare Replayer

The result screen for Declare Replayer is same as in Figure 9. *Statistics* tab is the same as mentioned in DataAware Declare Replayer. *Trace/Alignment Details* tab is mostly same as mentioned in DataAware Declare Replayer. The difference is that the legend in Declare Replayer does not contain *Moves in Log and Model (different data)* and *Moves in Log and Model (same data)*. It has *Moves in Log*, *Moves in Model* and *Moves in Log and Model*.

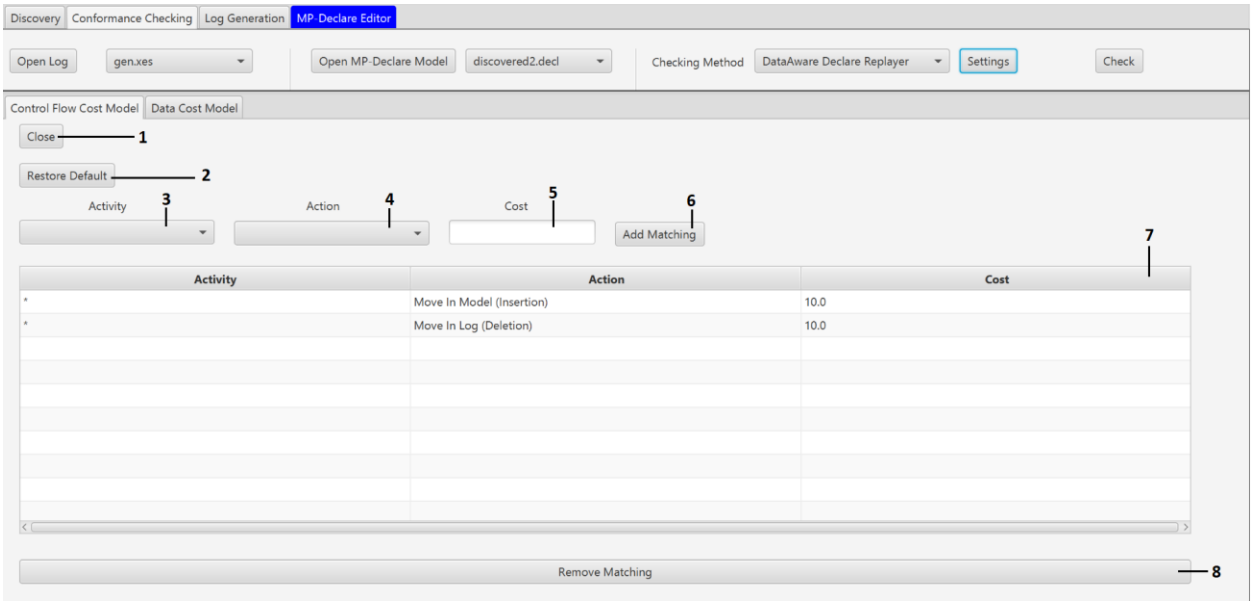

Figure 11 – Settings screen for DataAware Declare Replayer

Figure 11 is the settings screen for DataAware Declare Replayer. Here, the configuration for Control Flow Cost Model is displayed.

(1) – to close the settings screen

(2) – to restore the default settings

(3) – to select an activity

(4) – to select an action for activity in (3): Move in Model (Insertion) or Move in Log (Deletion)

(5) – to define a cost value

(6) – to define a cost model

(7) – table showing the cost models

(8) – to remove a model from (7)

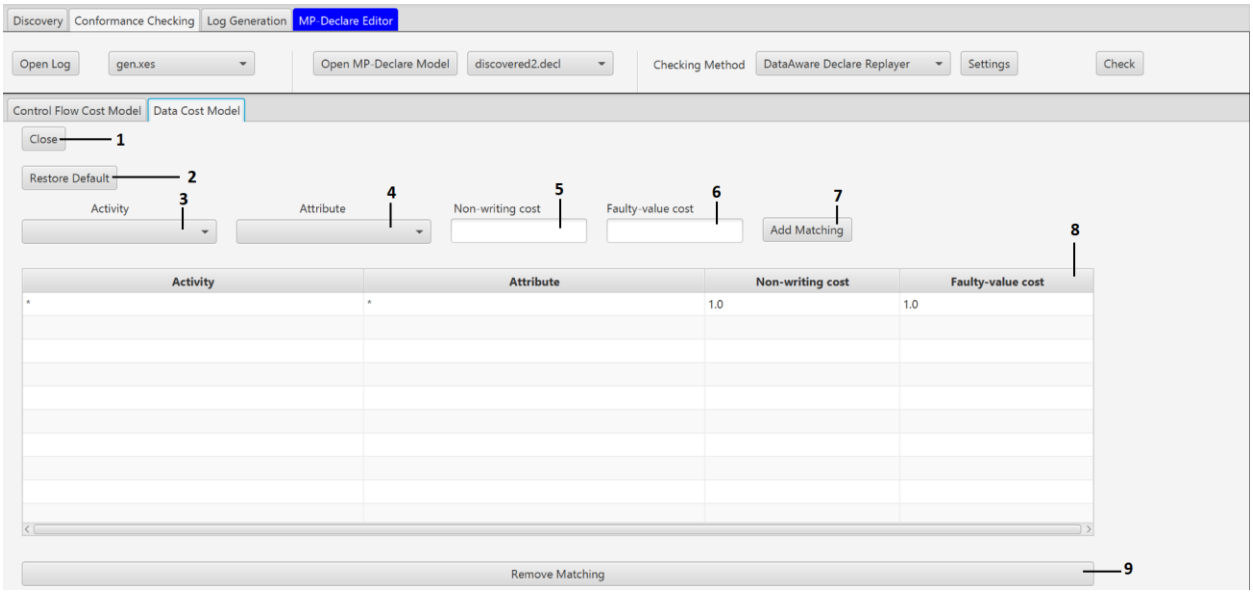

Figure 12 – Data Cost Model setting for DataAware Declare Replayer

Figure 12 shows Data Cost Model setting for Data Aware Declare Replayer. Here:

(1) – to close the setting screen

(2) – to restore default settings

(3) – to select an activity for a cost model

(4) – to select an attribute for a cost model

(5) – to define a non-writing cost value

(6) – to define a faulty-value cost value

(7) – to define a data cost model

(8) – defined data cost models

(9) – to remove a selected data cost model in (8)

Tab 3: Log Generation

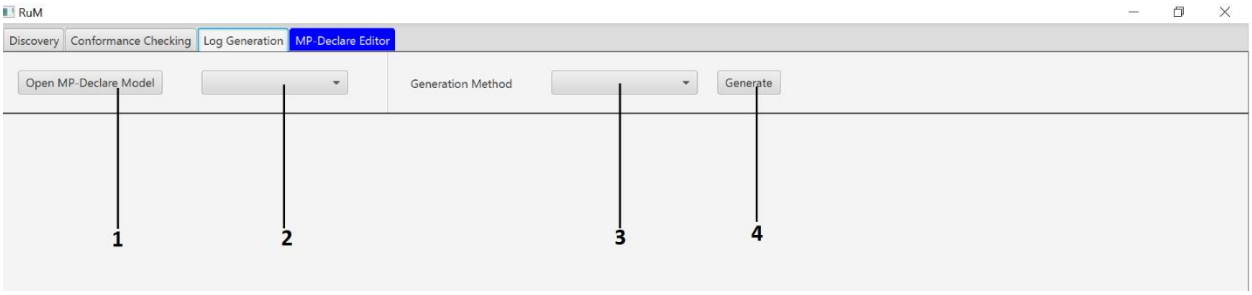

Figure 13 – Log Generation blank screen

Figure 13 represents the initial screen for Log Generation. Here:

(1) – to open a MP-Declare model in DECL format in the file system

(2) – opened models can be chosen later here

(3) – a method to generate a log: Alloy Log Generator and Minerful Log Generator

(4) – to start log generation with a model in (2) and method configuration

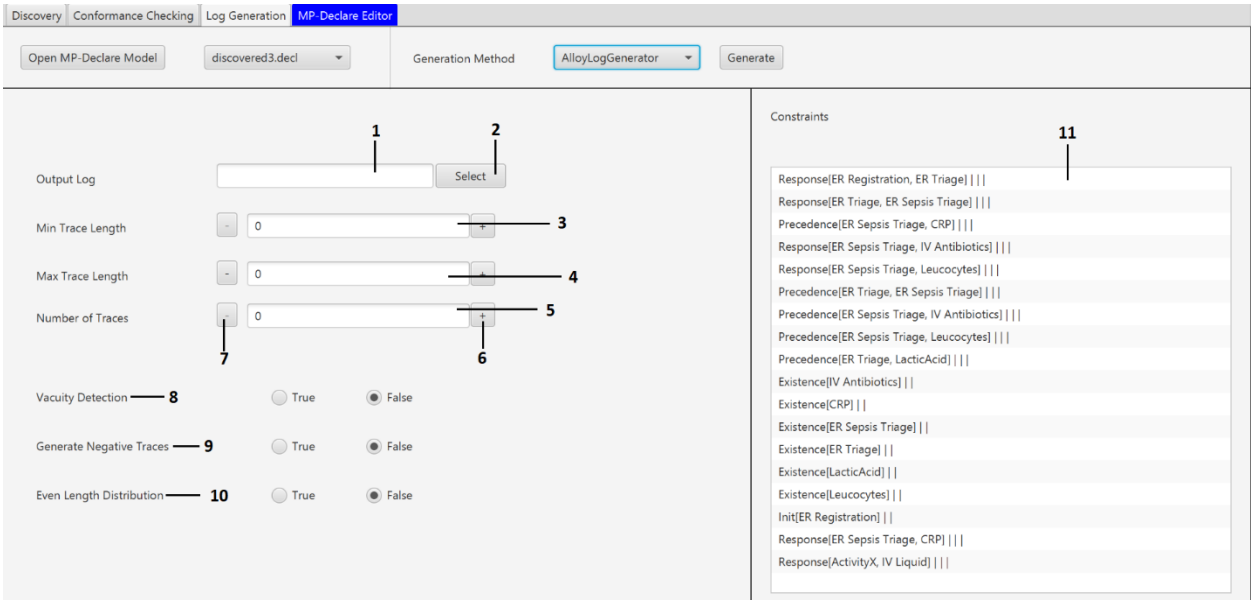

Figure 14 – Configuration screen for Alloy Log Generator

Figure 14 shows the configuration screen for Alloy Log Generator. Here:

(1) – for destination of the output log

(2) – to select a location in the filesystem for the output log

(3) – for minimum trace length of the output log

(4) – for maximum trace length of the output log

(5) – for number of traces of the output log

(6) – button to increment by 1 the value (3), (4) or (5)

(7) – button to decrease by 1 the value (3), (4) or (5)

(8) – to enable vacuity detection during the generation

(9) – to enable to generate negative traces during the generation

(10) – to ensure even length distribution during the generation

(11) – constraints in the input model

In Minerful Log Generator, the configuration screen does not have (8), (9) and (10); but has the remaining elements in Figure 14.

Tab 4: MP-Declare Editor

Figure 15 – MP-Declare Editor initial screen

Figure 15 shows the initial screen for MP-Declare Editor. Here:

(1) – to open a new editor with three tabs

(2) – to open a MP-Declare model in DECL format from the file system.

(3) – opened models can be chosen later from here

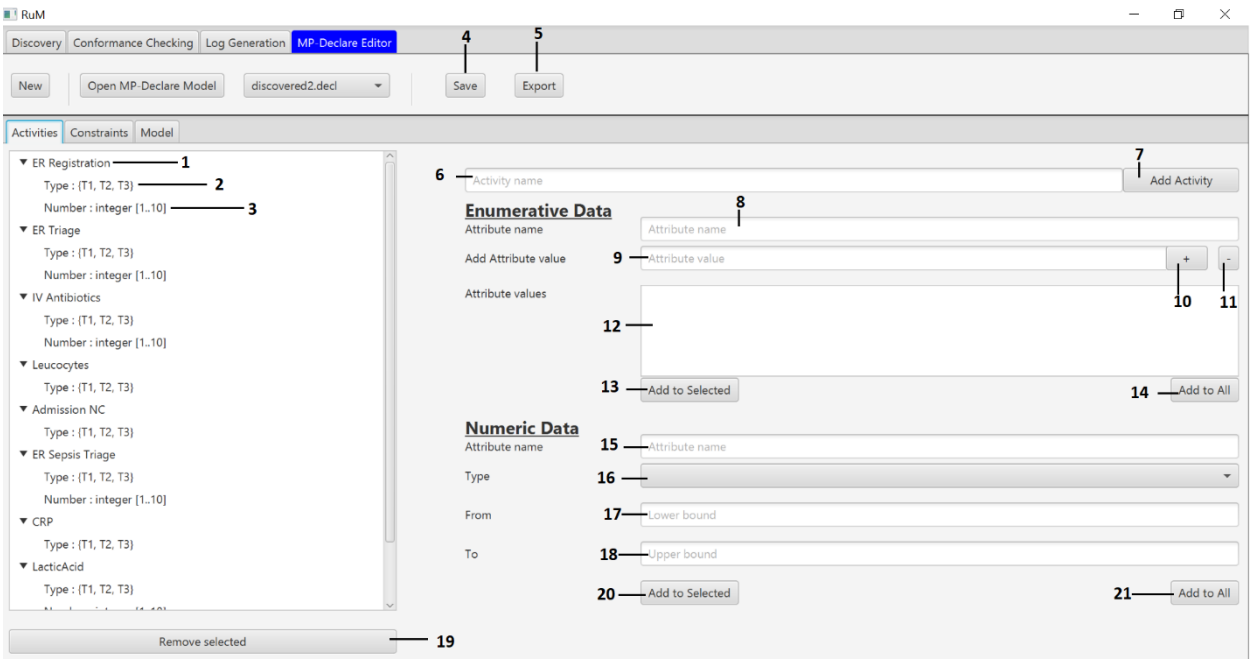

Figure 16 – Activities tab in MP-Declare Editor

Figure 16 shows Activities tab in MP-Declare Editor. Here:

(1) – An activity

(2) – An enumerative data

(3) – A numeric data

(4) – to save the model inside the tool

(5) – to save the model both inside the tool and in the file system

(6) – to insert new activity name

(7) – button to add new activity

(8) – to insert a name for enumerative attribute

(9) – a value for the enumerative attribute

(10) – to add the value to the enumerative attribute

(11) – to remove the value from the enumerative attribute

(12) – defined values for the enumerative attribute

(13) – button to insert the enumerative attribute to the selected activities

(14) – button to add the enumerative attribute to the all activities

(15) – to insert a name for numeric attribute

(16) – to select a type for the numeric attribute: integer or float

(17) – to set a lower bound for the numeric attribute

(18) – to set an upper bound for the numeric attribute

(19) – to remove a selected activity or attribute

(20) – button to insert the numeric attribute to the selected activities

(21) – button to add the numeric attribute to the all activities

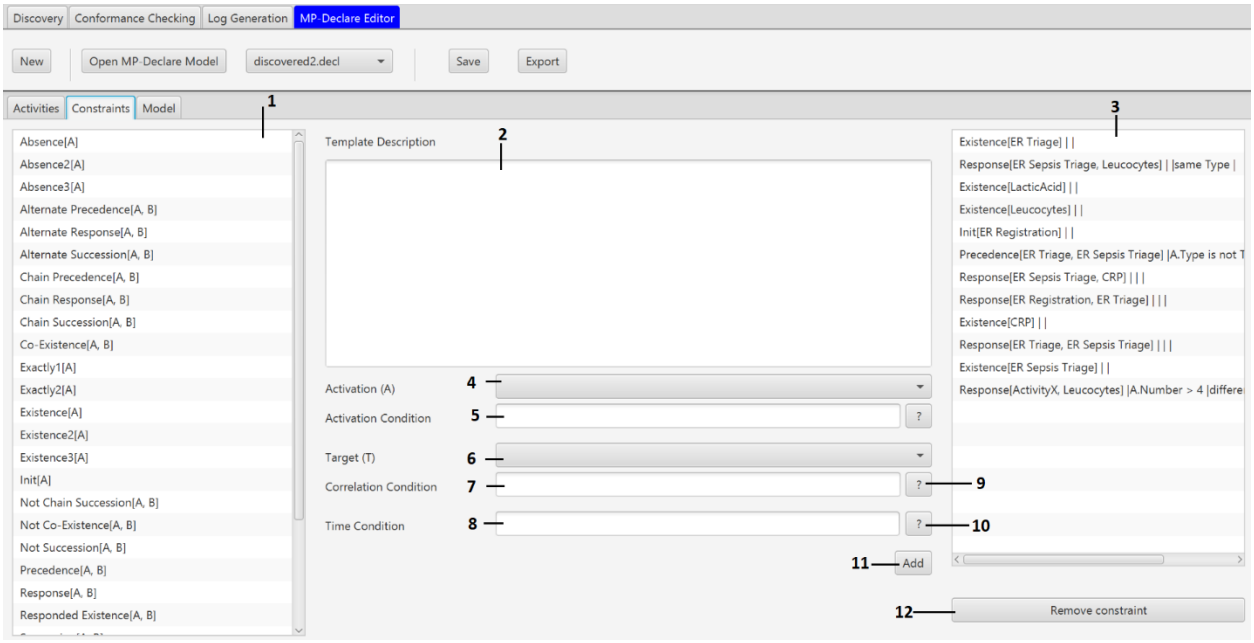

Figure 17 – Constraints tab in MP-Declare Editor

Figure 17 shows Constraints tab in MP-Declare Editor. Here:

(1) – Declare templates list

(2) – Description of a Declare template selected in (1)

(3) – Existing constraints list in the input model

(4) – to select an activity for the activation

(5) – to insert an activation condition

(6) – to select an activity for the target

(7) – to define a correlation condition

(8) – to insert a time condition

(9) – tutorial for defining activation and correlation conditions

(10) – tutorial for defining time conditions

(11) – to add a constraint in (3)

(12) - remove a selected constraint in (3)

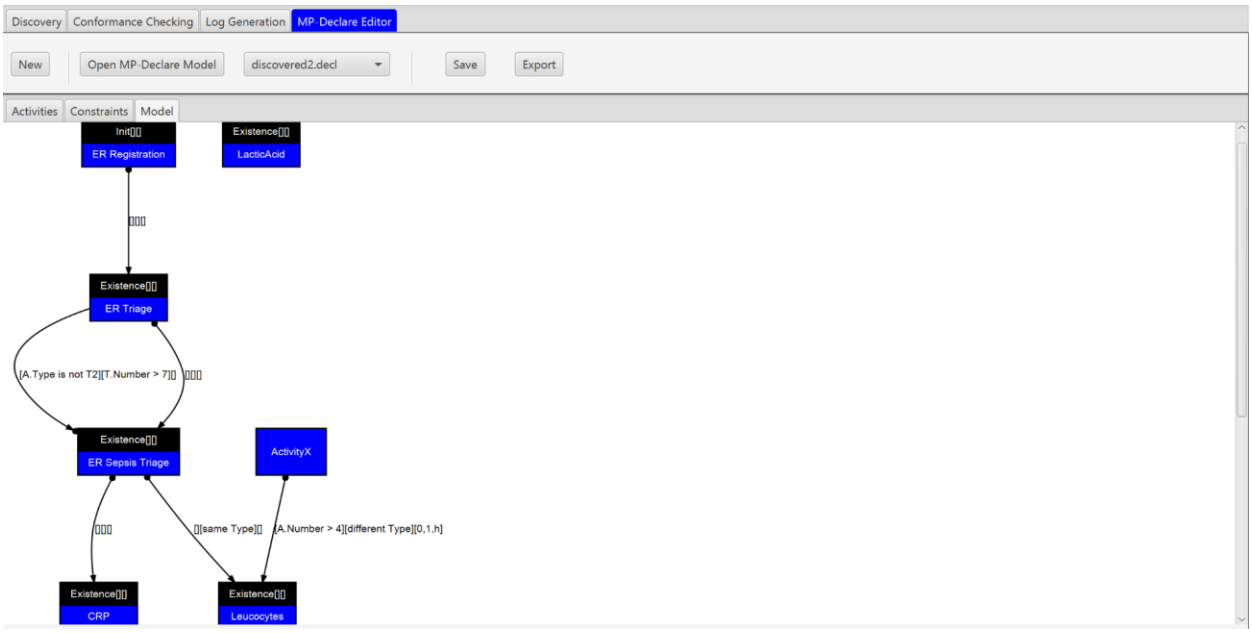

Figure 18 – Model tab in MP-Declare Editor

Figure 18 shows Model tab in MP-Declare Editor. Its screen is prepared by the existing constraints in Constraints tab.

1- Black boxes represent Existence templates: [][] refers to activation and time conditions

2- Arrows are binary Declare templates: [][][] refers to activation, correlation and time conditions

3 – Blue boxes are activities from Activities tab.