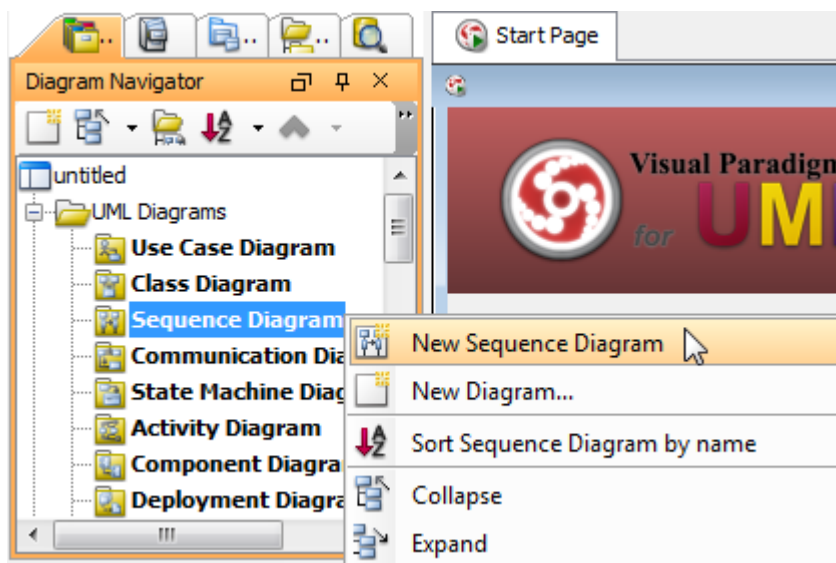


## Drawing sequence diagrams

A [sequence diagram](#) is used primarily to show the interactions between objects that are represented as lifelines in a sequential order.

Creating sequence diagram

- Click on **UML** on toolbar and select **Sequence Diagram** from the drop down menu.
- Right click on **Sequence Diagram** in **Diagram Navigator** and select **New Sequence Diagram** from the popup menu.
- Select **File > New Diagram > UML Diagrams > Sequence Diagram** from the main menu.

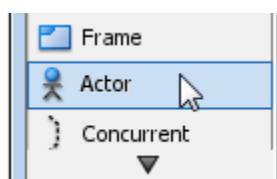


Create sequence diagram

Enter name for the newly created sequence diagram in the text field of pop-up box on the top left corner.

Creating actor

To create actor, click **Actor** on the diagram toolbar and then click on the diagram.

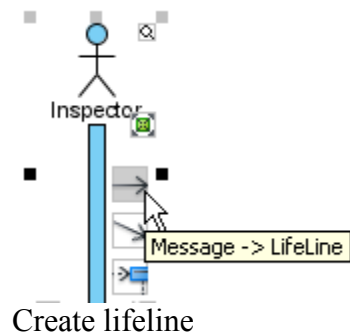


Create actor

Creating lifeline

To create lifeline, you can click **LifeLine** on the diagram toolbar and then click on the diagram.

Alternatively, a much quicker and more efficient way is to use the resource-centric interface. Click on the **Message -> LifeLine** resource beside an actor/lifeline and drag.

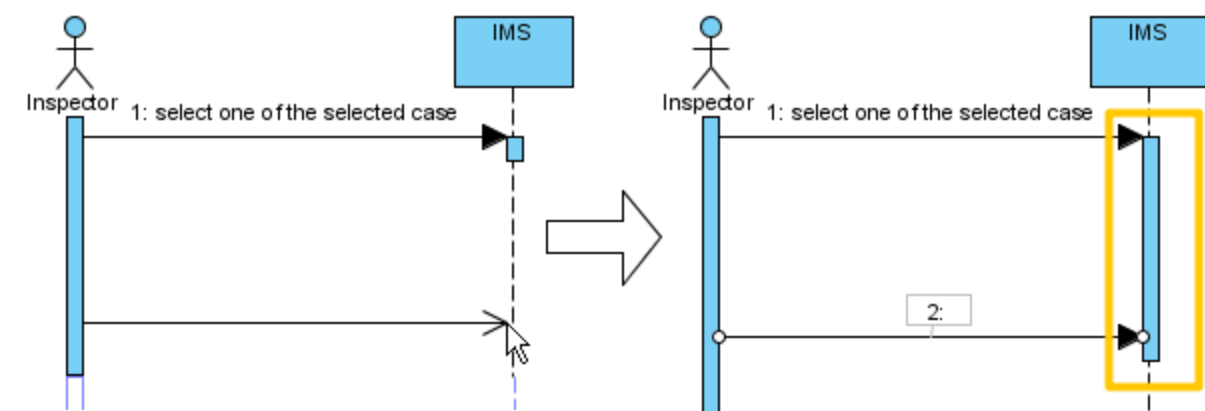


Move the mouse to empty space of the diagram and then release the mouse button. A new lifeline will be created and connected to the actor/lifeline with a message.



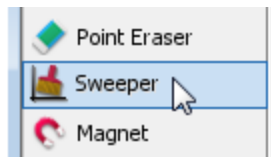
Auto extending activation

When create message between lifelines/actors, activation will be automatically extended.



Using sweeper and magnet to manage sequence diagram

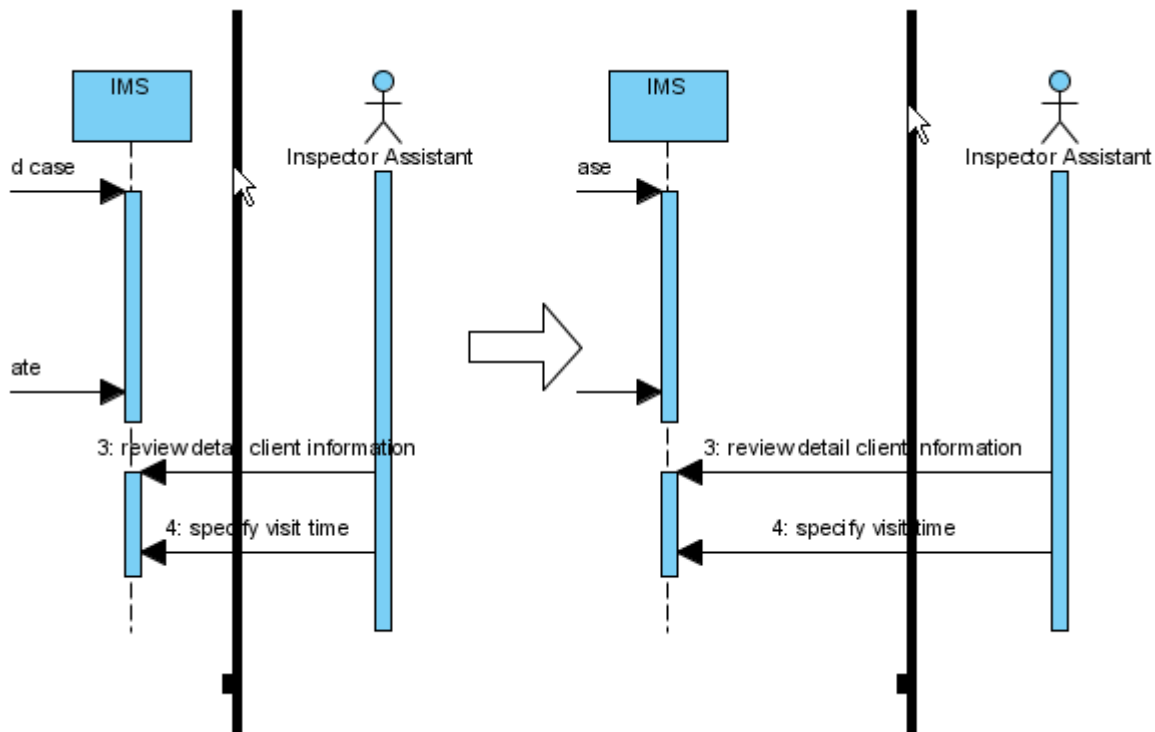
Sweeper helps you to move shapes aside to make room for new shapes or connectors. To use sweeper, click **Sweeper** on the diagram toolbar (under the **Tools** category).



## Sweeper

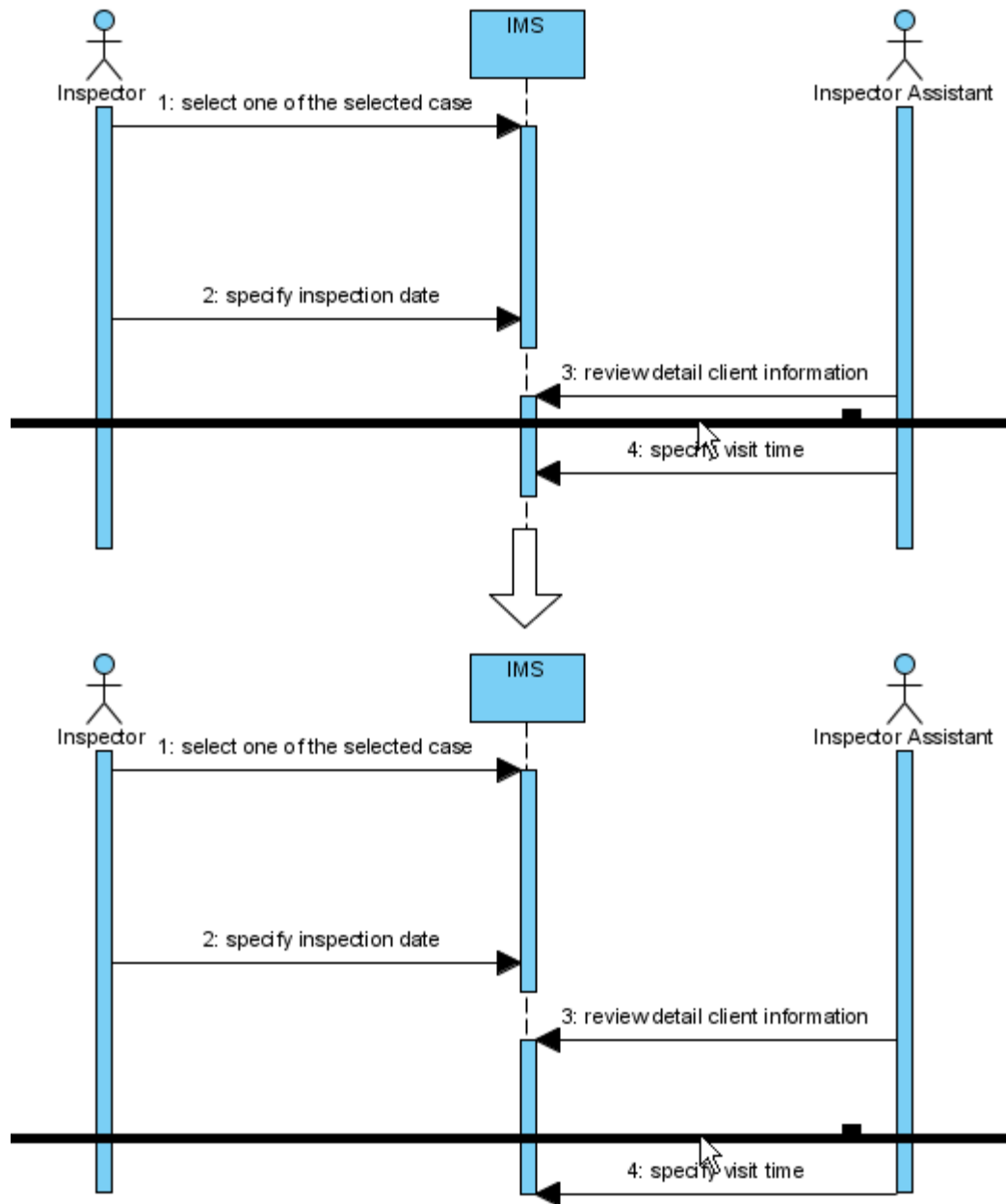
Click on empty space of the diagram and drag towards top, right, bottom or left. Shapes affected will be swept to the direction you dragged.

The picture below shows the actor *Inspector Assistant* is being swept towards right, thus new room is made for new lifelines.



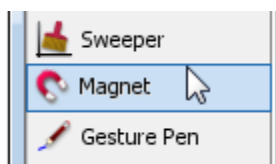
## Sweep towards right

The picture below shows the message *specify visit time* is being swept downwards, thus new room is made for new messages.



Sweep downwards

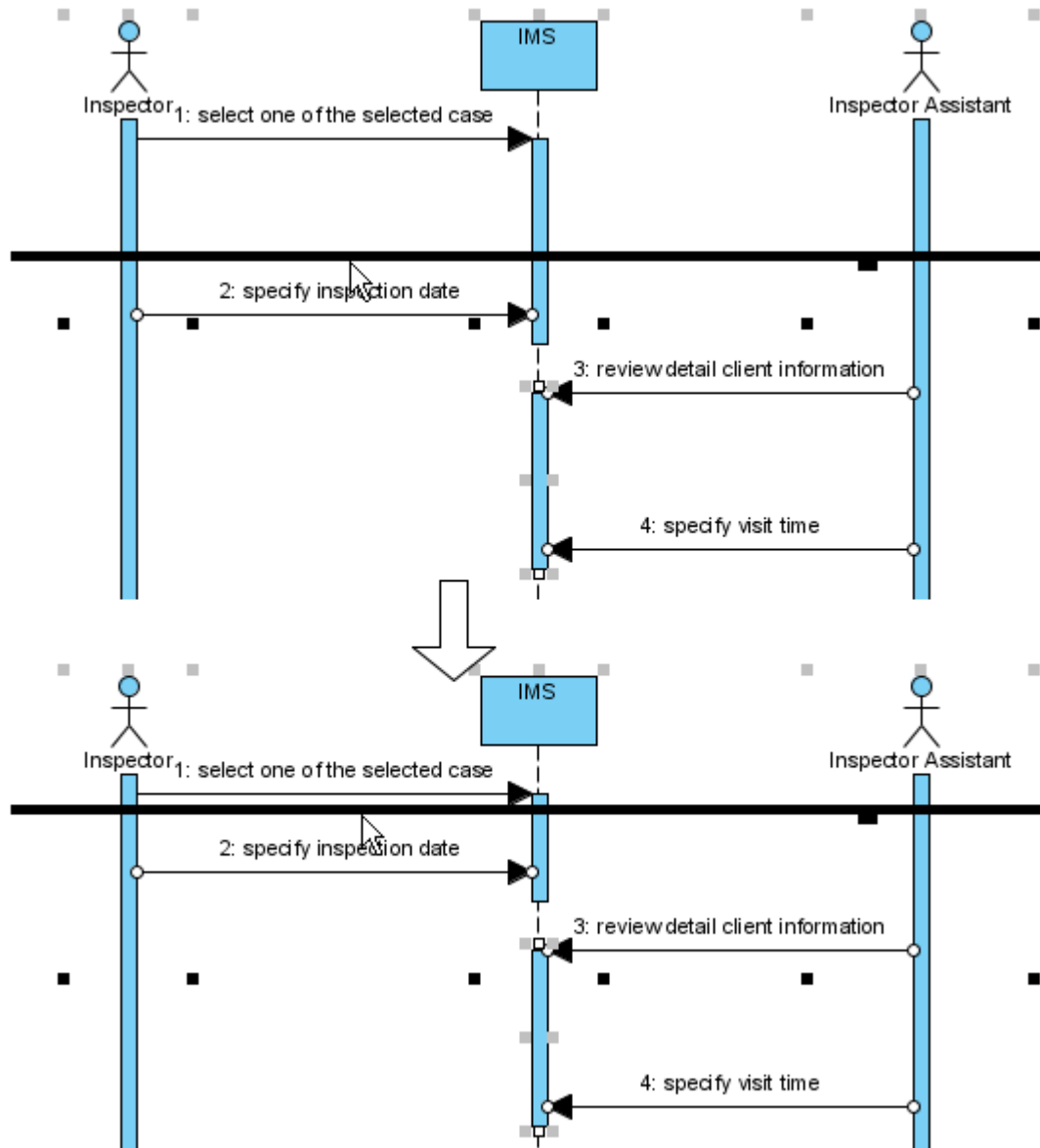
You can also use magnet to pull shapes together. To use magnet, click **Magnet** on the diagram toolbar (under the **Tools** category).



Magnet

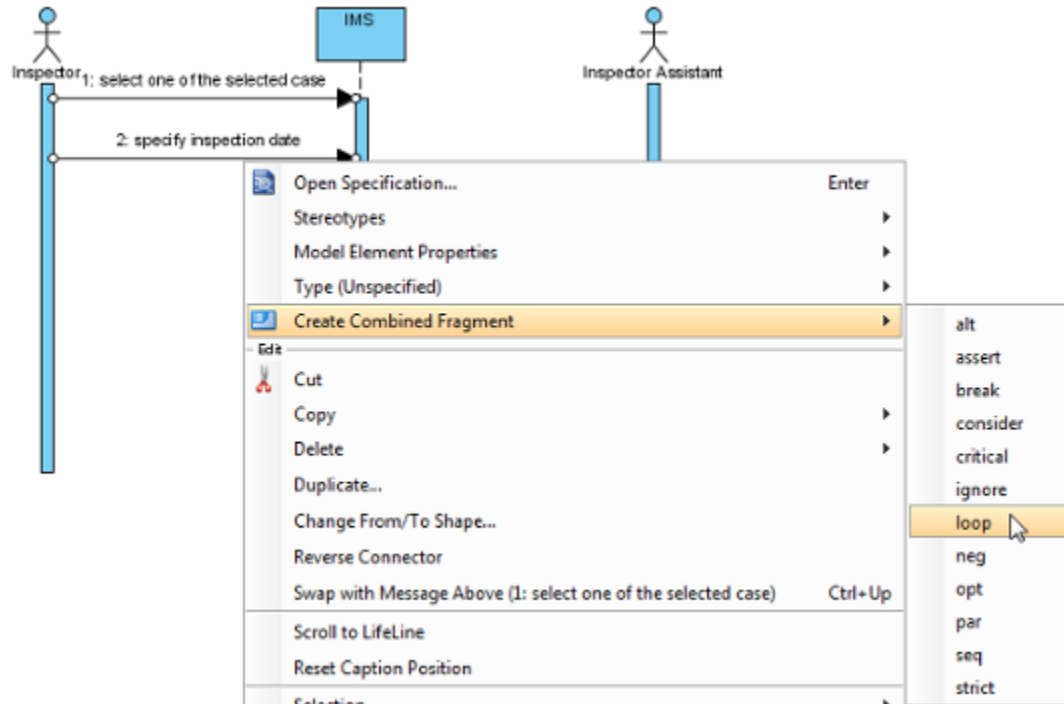
Click on empty space of the diagram and drag towards top, right, bottom or left. Shapes affected will be pulled to the direction you dragged.

The picture below shows when drag the magnet upwards, shapes below dragged position are pulled upwards.



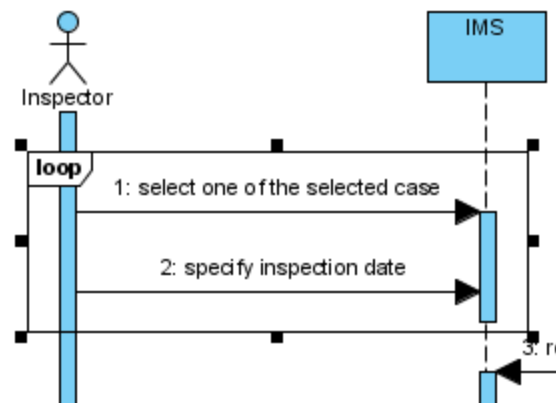
Pull shapes upwards using magnet  
Creating combined fragment for messages

To create combined fragment to cover messages, select the messages, right-click on the selection and select **Create Combined Fragment**, and then select a combined fragment type (e.g. loop) from the popup menu.



Create combined fragment for messages

A combined fragment of selected type will be created to cover the messages.

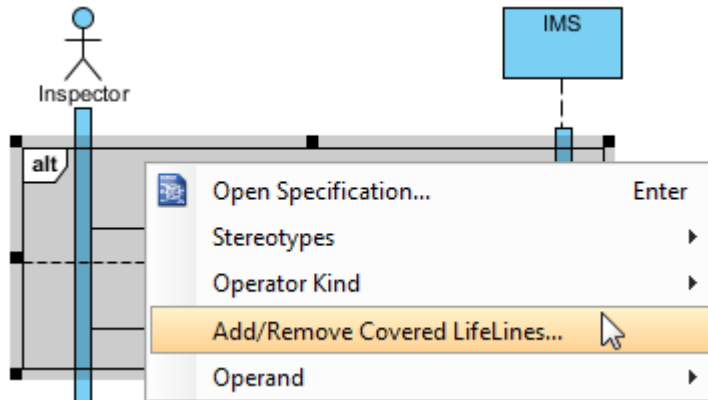


Combined fragment created

Adding/removing covered lifelines

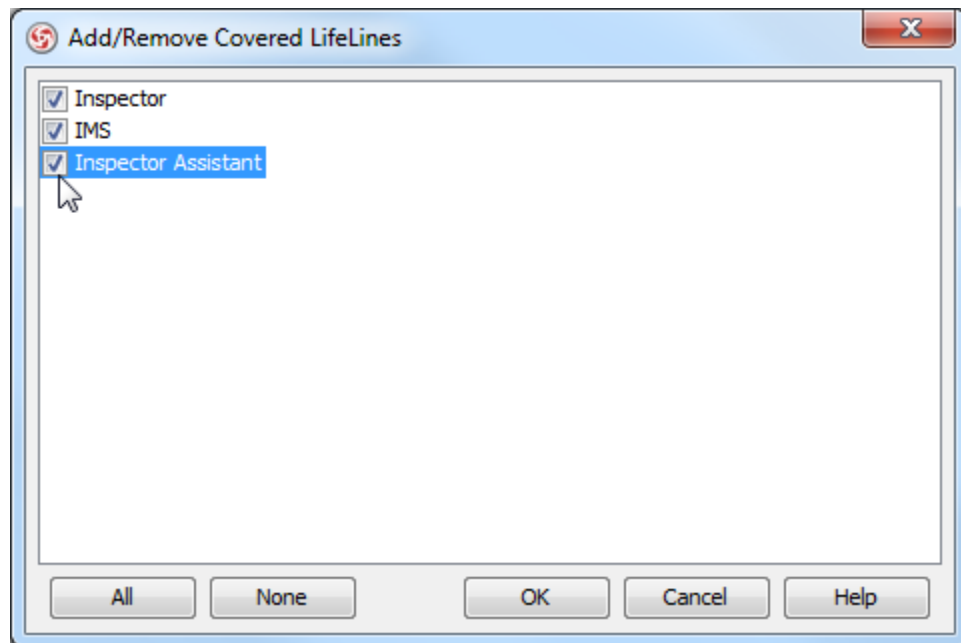
After you've created a combined fragment on the messages, you can add or remove the covered lifelines.

1. Move the mouse over the combined fragment and select **Add/Remove Covered Lifeline...** from the pop-up menu.



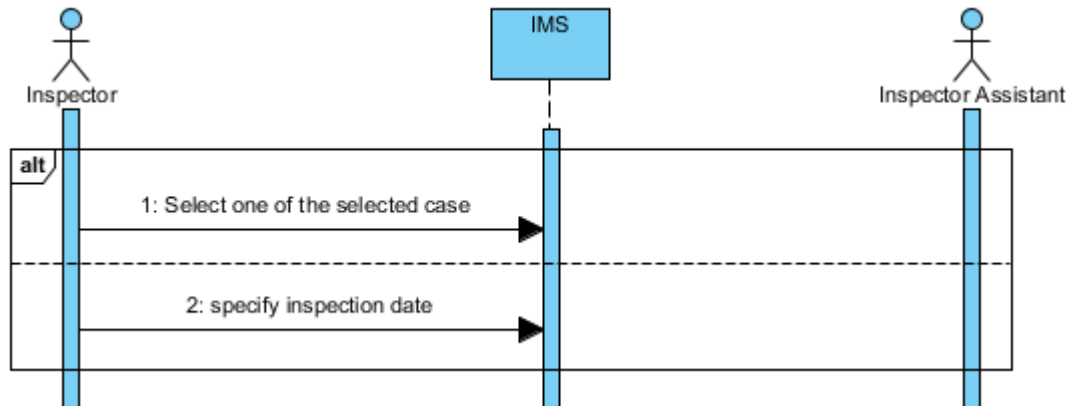
Add/Remove covered lifelines

2. In the **Add/Remove Covered Lifelines** dialog box, check the lifeline(s) you want to cover or uncheck the lifeline(s) you don't want to cover. Click **OK** button.



Check **Inspector Assistant**

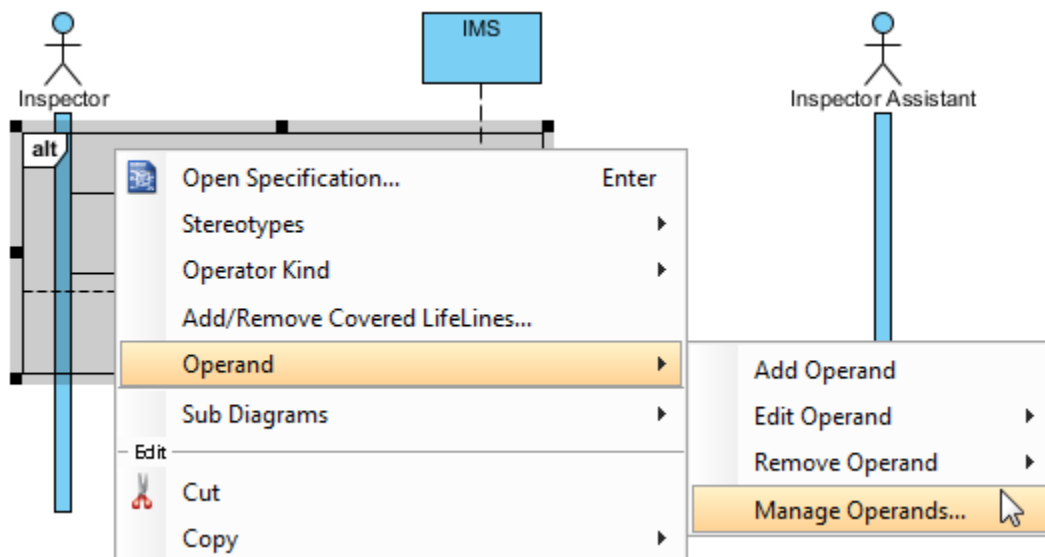
3. As a result, the area of covered lifelines is extended or narrowed down according to your selection.



The area of covered lifelines is extended  
Managing Operands

After you've created a combined fragment on the messages, you can also add or remove operand(s).

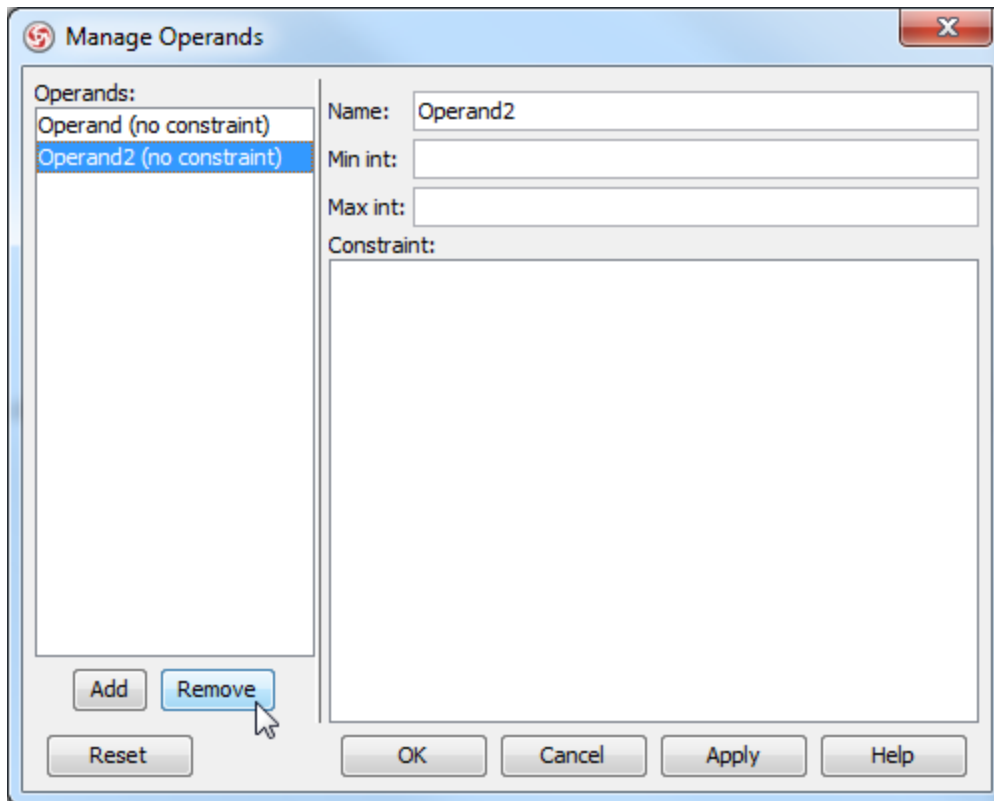
1. Move the mouse over the combined fragment and select **Operand > Manage Operands...** from the pop-up menu.



Manage operands

2. To remove an operand, select the target operand from **Operands** and click **Remove** button. Click **OK** button.





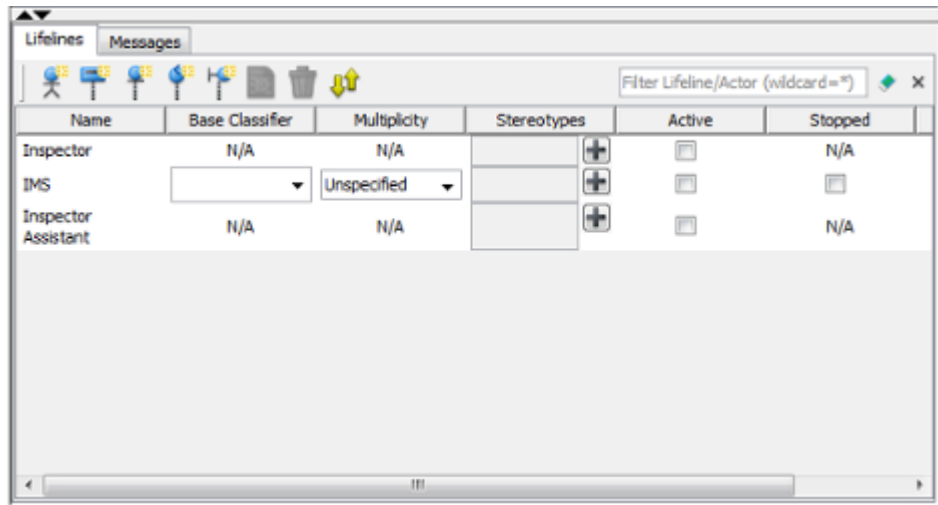
Remove Operand2

3.

Otherwise, click **Add** button to add a new operand and then name it. Click **OK** button.

Developing sequence diagram with quick editor or keyboard shortcuts

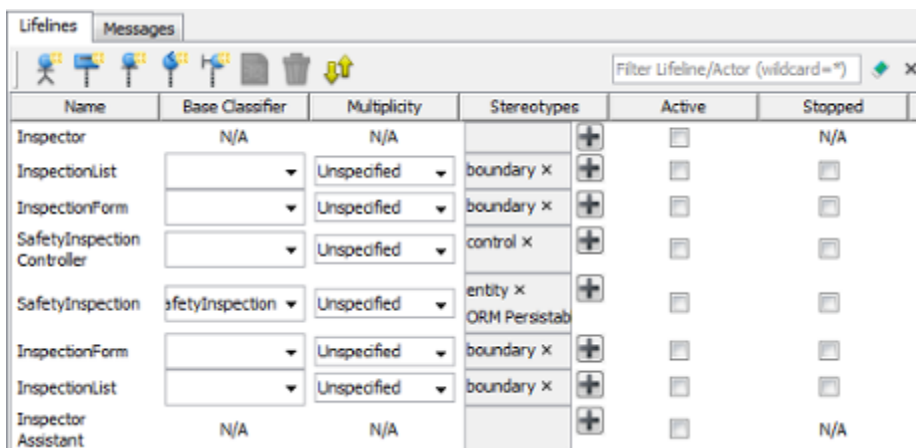
In sequence diagram, an editor appears at the bottom of diagram by default, which enables you to construct sequence diagram with the buttons there. The shortcut keys assigned to the buttons provide a way to construct diagram through keyboard. Besides constructing diagram, you can also access diagram elements listing in the editor.



## The quick editor

### Editing lifelines

There are two panes, **Lifelines** and **Messages**. The **Lifelines** pane enables you to create different kinds of actors and lifelines.



### Lifelines pane in quick editor

Button/Shortcut Description



Alt-Shift-A

To create an actor



Alt-Shift-L

To create a general lifeline



Alt-Shift-E

To create an <<entity>> lifeline



Alt-Shift-C

To create a <<control>> lifeline



Alt-Shift-B

To create a <<boundary>> lifeline



Alt-Shift-O

To open the specification of the element chosen in quick editor



Ctrl-Del

To delete the element chosen in quick editor



Ctrl-L

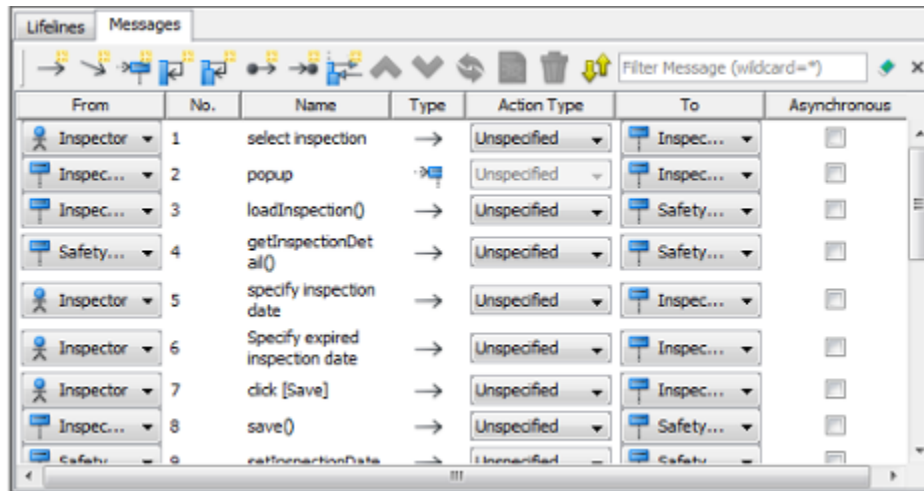
To link with the diagram, which cause the diagram element to be selected when selecting an element in editor,

and vice versa

## Buttons in Lifelines pane

### Editing messages

The **Messages** pane enables you to connect lifelines with various kinds of messages.



### Messages pane in quick editor

Button	Shortcut	Description
	Alt-Shift-M	To create a message that connects actors/lifelines in diagram
	Alt-Shift-D	To create a duration message that connects actors/lifelines in diagram
	Alt-Shift-C	To create a create message that connects actors/lifelines in diagram
	Alt-Shift-S	To create a self message on an actor/lifeline in diagram
	Alt-Shift-R	To create a recursive message on an actor/lifeline in diagram
	Alt-Shift-F	To create a found message that connects to an actor/lifeline
	Alt-Shift-L	To create a lost message from an actor/lifeline
	Alt-Shift-E	To create a reentrant message that connects actors/lifelines in diagram
	Ctrl-Shift-Up	To swap the chosen message with the one above
	Ctrl-Shift-Down	To swap the chosen message with the one below
	Ctrl-R	To revert the direction of chosen message
	Alt-Shift-O	To open the specification of the message chosen in quick editor
	Ctrl-Del	To delete the message chosen in quick editor
	Ctrl-L	To link with the diagram, which cause the message to be selected when selecting a message in editor, and vice versa

## Buttons in Messages pane

### Expanding and collapsing the editor

To hide the editor, click on the down arrow button that appears at the bar on top of the quick editor. To expand, click on the up arrow button.



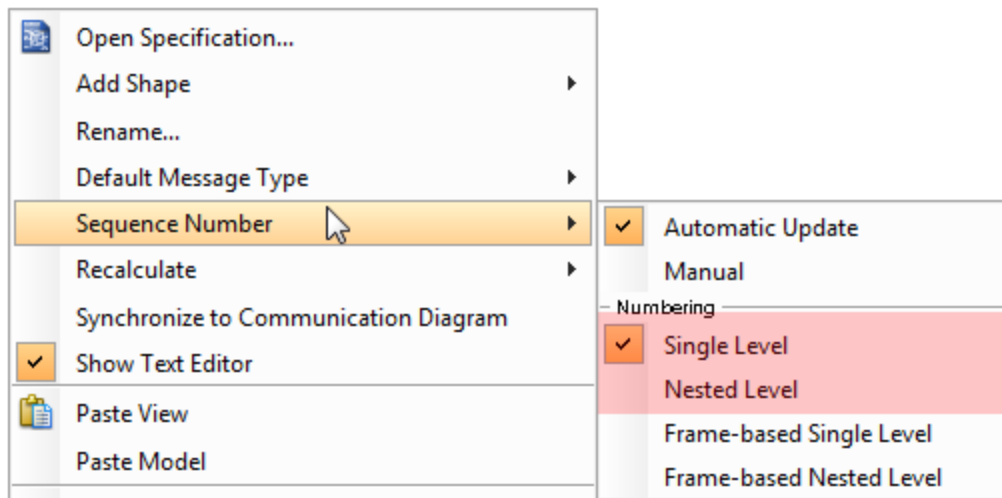
### Collapse the quick editor

## Setting different ways of numbering sequence messages

You are able to set the way of numbering sequence messages either on diagram base or frame base.

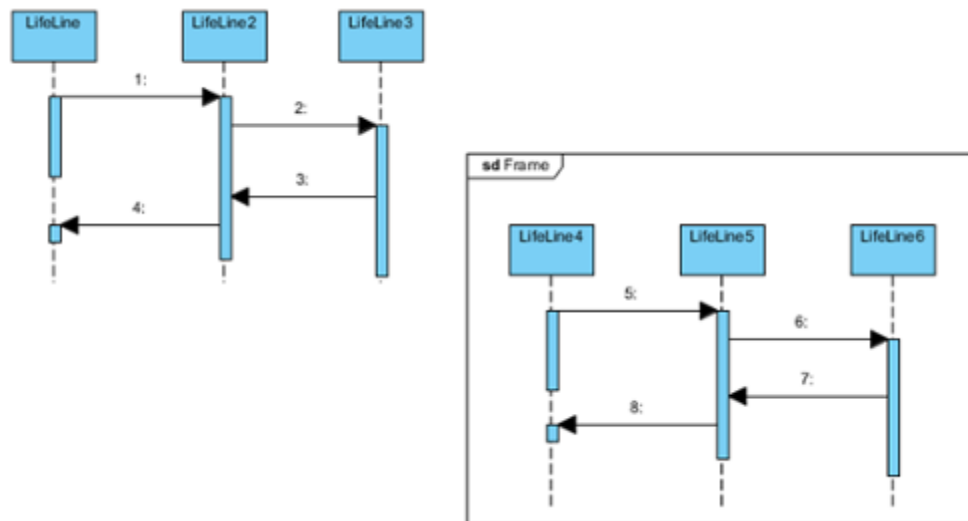
### Diagram-based sequence message

Right click on the diagram's background, select **Sequence Number** and then either **Single Level** or **Nested Level** from the pop-up menu.



### Diagram-based pop-up menu

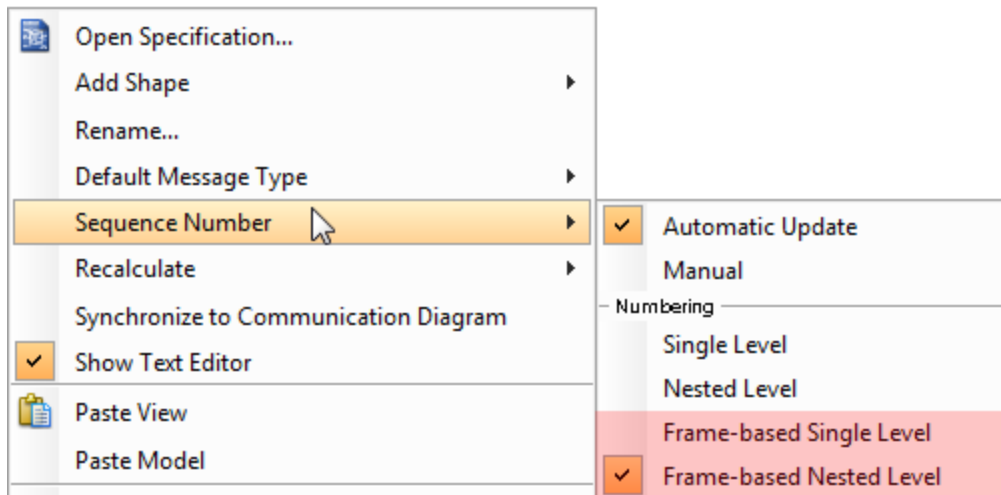
If you choose **Single Level**, all sequence messages will be ordered with integers on diagram base. On the other hand, if you choose **Nested Level**, all sequence messages will be ordered with decimal place on diagram base.



### Single level

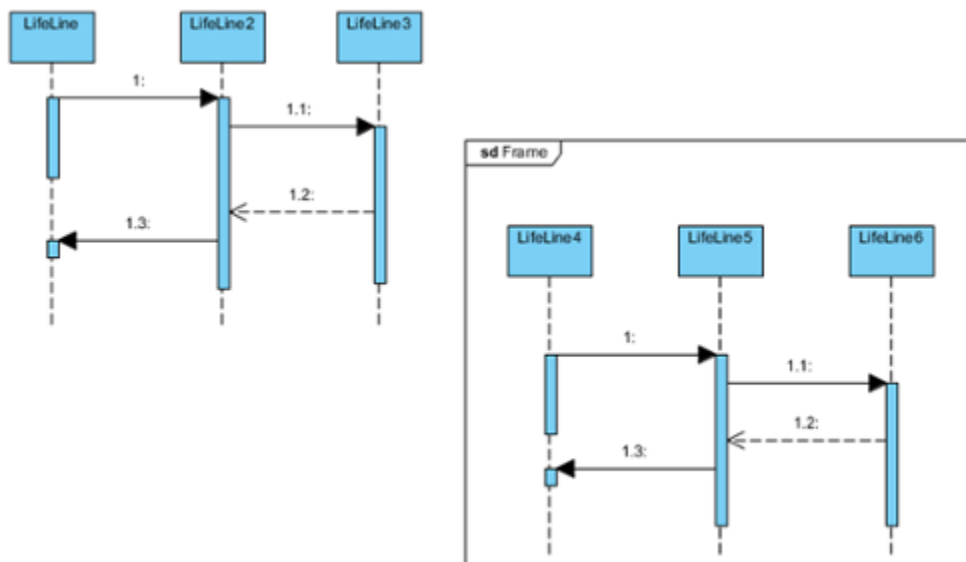
### Frame-based sequence message

Right click on the diagram's background, select **Sequence Number** and then either **Frame-based Single Level** or **Frame-based Nested Level** from the pop-up menu.



Frame-based pop-up menu

When you set the way of numbering sequence messages on frame base, the sequence messages in frame will restart numbering sequence message since they are independent and ignore the way of numbering sequence message outside the frame.



Frame-based nested level