

Participant Roles

Likelihood: Participant and Group Roles Overview

Participants roles can be defined when evaluating:

- the **Likelihoods** of:
 - threats,
 - events given threats
 - events with no threats
- the **Impacts** of:
 - events with respect to objectives
 - objectives, and
- the **Effectiveness** of
 - Controls

On this page, we will focus on participants' roles for evaluating the Likelihoods.

This can be found on **LIKELIHOOD OF EVENTS > STRUCTURE > Participants roles**:

The Participant Roles page for Likelihoods consists of:

Participants		Groups	For Event Vulnerabilities	For Source Likelihoods	Sources																			
Search					NO SOURCES	Inadequately	Disregarding	Lack of Situational	Engineers Fa	Flooding of In	Lightning Str	Minor Electric	Major Electric	Mechanical F	Mechanical F	Mechanical F	Conventional	Terrorism	Cyber Attack	Cyber Attack	System Softw	System Hard	New Cutting t	Intelligent Mo
<input type="checkbox"/> Select All			Events																					
<input checked="" type="checkbox"/> Kris			1 Late Train Running																					
<input type="checkbox"/> Chief Risk Officer			2 Degradation of Intelligent Monitoring System Physical /																					
<input type="checkbox"/> Chief Engineering ...			3 Line Closure																					
<input type="checkbox"/> IT Supervisor			4 Failed Integration with Future Monitoring System Netw																					
<input type="checkbox"/> Chief Executive Off...			5 Intelligent Event Monitoring Network Shut Down																					
<input type="checkbox"/> Michael Mankowski			6 Major Train Work Accident																					
<input type="checkbox"/> John Doe			7 Minor Train Work Accident																					
<input type="checkbox"/> Project Manager			8 Major Train Public Accident																					

1. The **For Events Vulnerabilities/For Threats Likelihoods** tabs to assign roles for evaluating events vulnerability given threats and for threats likelihoods respectively
2. The **Participants/Groups** tabs toggle between the participant's list and the group's list of the model.
3. The first column of the grid displays the **Events list**
4. The grid headings (next to the Events) displays the **NO THREATS** column and the **Hierarchy of Threats**
5. The intersecting cells were to assign roles for **evaluating the event (row) given the covering threats (column)**, and the **NO THREATS** column.
6. **Toolbar** options

Roles can be set for:

- The "All Participants Group" (every participant belongs to "All Participants")
- Any Defined Participant Groups (**non-dynamic** and **dynamic** groups)
- Each individual Participant Roles

How Roles are processed -- Three rules:

1. A role explicitly assigned for a participant **OVERRIDES** any role defined for:
 - The 'All Participants' Group
 - Any defined groups to which the participant belongs
2. Roles for the 'All Participants' Group and any Defined Groups have the same priority
3. A restrict role overrides an Allow role

Roles can be assigned for:

- Sub-threats with respect to their parent Threat and
- Events with respect to covering threats

Assigning roles without groups is a simpler way of setting up roles. **Setting up roles with groups** is a very flexible and powerful method, but somewhat more complex.

Likelihood: Setting Up Roles without Groups

Roles can be assigned to Participant Groups (**custom groups** or a pre-defined group called 'All Participants') as well as to individual participants. The resultant role for a participant is a combination of the roles assigned to any group to which the participant belongs (including the pre-defined 'All Participants' group) and any role explicitly assigned to the individual participant.

In this topic, we will focus on **Setting up roles without groups**. For the purpose of setting roles without using participant groups, all we need to know now is that a participant will have a role for every node (as defined by the "All Participants" group which by default is Allowed) unless they are explicitly restricted for one or more nodes.

Since each participant has an **implicit** allow role for every node, the easiest way to set roles is to restrict nodes for which a participant should not have a role. (There is no need to explicitly allow roles when participant groups are not being used.)

Roles for Evaluating the Threats Likelihoods

Click the "**For Threat Likelihoods**" tab to assign roles for evaluating threats. Roles for evaluating the threats are represented by the colored boxes on the non-covering threats as below:

For Event Vulnerabilities		For Source Likelihoods																		
		Sources																		
		Human Factor				Envi		Infrastructure				Terrorism		Technology						
		NO SOURCES	Inadequately Tra	Disregarding or ↑	Lack of Situation	Engineers Failur	Flooding of Intell	Lightning Striking	Minor Electrical F	Major Electrical F	Mechanical Failu	Mechanical Failu	Mechanical Failu	Conventional Att	Cyber Attack on	Cyber Attach on	System Software	System Hardwar	New Cutting Edg	Intelligent Monito
Events																				

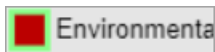
The headers are arranged according to the threats hierarchy/leveling. For example, the Sources is the top-most node and

its top-level children are the Human Factor, Environmental, and so on...

An 'Allow' role for the top node means that the participant will have the role of evaluating the top-level threats. The allow role for a threat node means that the participant will have the role of evaluating the sub-threats given that Threat.

You will notice that all of the cells in the figure above have a background of light green because by default, the "All Participants" group has an 'allow role' for everything, and we have not defined any custom groups that might have had one or more 'restrict' roles.

In addition to the implicit assignment of roles based on participant groups, an explicit role can be specified for a participant (either allow or restrict). If this is the case, there will also be an interior color for the node and the background color will appear as a border.



The 'Environmental' node has an explicitly restricted role in the figure above and thus appears as a red interior with a green background or border. Since restrict overrides allow ([roles three rules](#)), the participant would not have a role in evaluating the sub-treats of "Environmental" given their parent (Environmental).

Roles for Evaluating the Events Vulnerabilities

Click the "For Event Vulnerabilities" tab to assign roles for evaluating the vulnerabilities of events given threats (or no source events). Roles for evaluating the events are represented by the boxes on the intersecting cells of the events (row) with respect to the covering threats (column) -- see below.

All of the intersecting cells in the figure below have a background of green because by default, the "All Participants" group has an 'allow role' for everything.

For Event Vulnerabilities		For Source Likelihoods																	
Events		Sources																	
		Human Factor				Environ		Infrastructure				Terrorism		Technology					
		NO SOURCES	Inadequately	Disregarding	Lack of Situational	Engineers Fa	Flooding of In	Lightning Stri	Minor Electric	Major Electric	Mechanical F	Mechanical F	Mechanical F	Conventional	Cyber Attack	Cyber Attack	System Softw	System Hard	New Cutting t
1 Late Train Running	...	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
2 Degradation of Intelligent Monitoring System Physical Asse		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
3 Line Closure		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
4 Failed Integration with Future Monitoring System Network		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
5 Intelligent Event Monitoring Network Shut Down		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
6 Major Train Work Accident		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
7 Minor Train Work Accident		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
8 Major Train Public Accident		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green

In addition to the implicit assignment of roles based on groups, an explicit role can be specified for a participant (either allow or restrict). If this is the case, there will also be an interior color for the cell and the background color will appear as a border.

Events	Sources		
	NO SOURCES	Human Fa	
		Inadequately	Disregarding
1 Late Train Running	NO SOURCES	Inadequately	Disregarding
2 Degradation of Intelligent Monitoring System Physical Assets	NO SOURCES	Inadequately	Disregarding
3 Line Closure	NO SOURCES	Inadequately	Disregarding

"Late Train Running" in the figure above that has an explicit restrict role -- and is shown as a red interior with a green background or border -- when evaluating given the covering source "Inadequately Trained Staff".

The yellow interior color on the "Late Train Running" represents that the participant has different explicit roles for evaluating "Late Train Running" given the covering sources -- from above, one is restricted while others are "undefined" (no interior color). Same reason for the yellow interior color for the "Inadequately Trained Staff" cell.

The blank cells mean that the event is not vulnerable to the covering source.

Note: If there is a blank cell, this means that the event doesn't contribute to the covering threat.

How Participant Roles are Assigned?

We can assign roles explicitly while in Edit mode. Edit mode is the mode selected by default.

To assign roles to a participant, simply check the check box to the right of the participant name on the left pane:

Participants	Groups
Search	
<input checked="" type="checkbox"/>	Select All
<input type="checkbox"/>	Denis Risman
<input type="checkbox"/>	Brian Quigley
<input checked="" type="checkbox"/>	Chief Risk Officer
<input type="checkbox"/>	Chief Engineering ...
<input type="checkbox"/>	IT Supervisor
<input type="checkbox"/>	Chief Executive Off...
<input type="checkbox"/>	Devin Nagy
<input type="checkbox"/>	Michael Mankowski
<input type="checkbox"/>	John Doe
<input type="checkbox"/>	Project Manager
<input type="checkbox"/>	Administrator

Events	Sources																	
	NO SOURCES	Human Factor				Environi		Infrastructure			Terrorism		Technology					
		Inadequately	Disregarding	Lack of Situational	Engineers Fa	Flooding of In	Lightning Stri	Minor Electric	Major Electric	Mechanical F	Mechanical F	Mechanical F	Conventional	Cyber Attack	Cyber Attack	System Softw	System Hard	New Cutting t
1 Late Train Running																		
2 Degradation of Intelligent Monitoring System Physical Assets																		
3 Line Closure																		
4 Failed Integration with Future Monitoring System Network																		
5 Intelligent Event Monitoring Network Shut Down																		
6 Major Train Work Accident																		
7 Minor Train Work Accident																		
8 Major Train Public Accident																		

The yellow interior on the event names (rows) and covering threats (columns) represents that the participant has different explicit roles for evaluating the event given each of the covering threats; or that the participant has different explicit roles for evaluating the covering threat given each of the events.

Likelihood: Setting Up Roles with Groups

Setting up roles with groups is a very flexible and powerful method, but somewhat more complex.

Every participant belongs to a Participant Group called "All Participants".

The All Participants group initially has an "allow" role for all cells as seen below.

You can create additional [Participant Groups](#) from the Participants page.

There are three types of roles that can be specified for groups:

- Allow 
- Restricted 
- Undefined (Neither Allowed or Restricted) 

The role of a participant for any node depends on:

- Roles for the "All Participants" Group
- Roles for any defined Participant Group to which the participant belongs
- Roles explicitly assigned for the participant

Similar to [Setting up roles without groups](#), you can also assign roles to groups by clicking on the cells individually, by entire row/column, or by using the Allow/Restrict/Drop all buttons.

Each Column in the following figures represents a Case Illustrating the Above Rules

All Participants	Green	Green	Green
Defined Group(s)	Grey	Grey	Grey
Individual	Grey	Red	Grey
=	=	=	=
Result for Individual	1 (Green)	2 (Red)	3 (Green)

Case 1 is the default. The result is Allow.

Case 2 is a simple way to restrict individual roles.

Case 3 is equivalent to case 1.

All Participants	Grey	Grey	Grey	Grey	Grey
Defined Group(s)	Grey	Grey	Green/Red	Grey	Red
Individual	Green	Red	Grey	Grey	Green
=	=	=	=	=	=
Result for Individual	4 (Green)	5 (Red)	6 (Light Red)	7 (Red)	8 (Green)

To use roles with groups, we recommend that you start with No Specifications for the 'All Participants' group.

Cases 4 and 5 are obvious.

Case 6 shows a restricted group specification overrides an allowed group specification (Rule 3).

Case 7 illustrates if no roles are allowed for All Participants and Any Groups, then the Individual's role is Restricted.

Case 8 shows an Individual Participant's role overrides any group roles (Rule 1).

All Participants	Red	Red	Green
Defined Group(s)	Red	Green	Red
Individual	Green	Grey	Grey
=	=	=	=
Result for Individual	9	10	11

Case 9 An Individual's specification overrides any group specifications (Rule 1).

Cases 10 and 11 show a restricted group specification overrides an allow specification (Rule 3).

Likelihood: Copy and Paste Roles

You can copy roles from one participant to another:

1. Select the participant you want roles to be copied
2. Click Copy Roles
3. Select the participant(s) where you want to paste the roles
4. Click Paste Roles

You can also select multiple participants to whom you want the roles to be copied.

Likelihood: Participant Roles Edit vs View Mode

Edit Mode

The **Edit Mode** is a mode where the Project Manager can assign roles by clicking on the cells or using the Drop/Allow/Restrict All options.

Two participants are selected in the example below. The border of the node (in this case light green for all nodes) reflects the roles implicitly assigned to the participants based on the roles assigned to the groups they are in. The interior represents the role, if any, explicitly assigned to the selected participants.

If they are not the same, yellow is displayed as for Human Factor and Environmental see below.

Participants		Groups	For Event Vulnerabilities	For Source Likelihoods
Search				Sources
<input checked="" type="checkbox"/> Select All				Human Factor
<input type="checkbox"/> Kris				Envirc
<input checked="" type="checkbox"/> Chief Risk Officer				Infrastructure
<input checked="" type="checkbox"/> Chief Engineering ...				
<input type="checkbox"/> IT Supervisor				
<input type="checkbox"/> Chief Executive Off...				
<input type="checkbox"/> Michael Mankowski				
<input type="checkbox"/> John Doe				
<input type="checkbox"/> Project Manager				
Events			NO SOURCES	Inadequately Tra
1 Late Train Running				Disregarding or t
2 Degradation of Intelligent Monitoring System Phy				Lack of Situation
3 Line Closure				Engineers Failure
4 Failed Integration with Future Monitoring System				Flooding of Intell
				Lightning Striking
				Minor Electrical F
				Major Electrical F
				Mechanical Failu
				Mechanical Failu
				Mechanical Failu

To better understand what the yellow means, let's look at the roles assigned for objectives for Chief Risk Officer and Chief Engineering Officer, one at a time.


First for Chief Risk Officer: As we see below, the interior of the nodes "Chief Risk Officer" is a light green, the same as the border, meaning that neither allow nor restrict was specified for any node for Chief Risk Officer (if a role had been previously specified, it has been 'dropped'). Thus, Chief Risk Officer has a role for every threat and sub-threat based on the roles assigned to groups to which Chief Risk Officer belongs.

Participants		Groups	For Event Vulnerabilities	For Source Likelihoods
Search				Sources
<input checked="" type="checkbox"/> Select All				Human Factor
<input type="checkbox"/> Kris				Envirc
<input checked="" type="checkbox"/> Chief Risk Officer				Infrastructure
<input type="checkbox"/> Chief Engineering ...				
<input type="checkbox"/> IT Supervisor				
<input type="checkbox"/> Chief Executive Off...				
<input type="checkbox"/> Michael Mankowski				
<input type="checkbox"/> John Doe				
<input type="checkbox"/> Project Manager				
Events			NO SOURCES	Inadequately Tra
1 Late Train Running				Disregarding or t
2 Degradation of Intelligent Monitoring System Phy				Lack of Situation
3 Line Closure				Engineers Failure
4 Failed Integration with Future Monitoring System				Flooding of Intell
				Lightning Striking
				Minor Electrical F
				Major Electrical F
				Mechanical Failu
				Mechanical Failu
				Mechanical Failu

Now let's look at Chief Engineering Officer roles:


Participants		Groups	For Event Vulnerabilities	For Source Likelihoods
Search				Sources
<input checked="" type="checkbox"/> Select All				Human Factor
<input type="checkbox"/> Kris				Envirc
<input type="checkbox"/> Chief Risk Officer				Infrastructure
<input checked="" type="checkbox"/> Chief Engineering ...				
<input type="checkbox"/> IT Supervisor				
<input type="checkbox"/> Chief Executive Off...				
<input type="checkbox"/> Michael Mankowski				
<input type="checkbox"/> John Doe				
<input type="checkbox"/> Project Manager				
Events			NO SOURCES	Inadequately Tra
1 Late Train Running				Disregarding or t
2 Degradation of Intelligent Monitoring System Phy				Lack of Situation
3 Line Closure				Engineers Failure
4 Failed Integration with Future Monitoring System				Flooding of Intell
5 Intelligent Event Monitoring Network Shut Down				Lightning Striking
				Minor Electrical F
				Major Electrical F
				Mechanical Failu
				Mechanical Failu
				Mechanical Failu

As can be seen above, the Chief Engineering Officer has been explicitly assigned a role for Human Factor and

explicitly  restricted a role for Environmental. The explicit assignment for Human Factor doesn't have any impact since, as can be seen from the border of that node, Chief Engineering Officer would have had that role based on the roles of the groups to which the Chief Engineering Officer belongs. However, if later, the role for Human Factor for one of the groups to which Chief Engineering Officer belongs is changed to 'restrict', this explicit assignment would override it since an explicit assignment for an individual overrides any group role assignments. If that were the case, then the Chief Engineering Officer node for Human Factor would have looked like this:



Let's now return our attention to the display when we look at the roles with both Chief Risk Officer and Chief Engineering Officer selected on the first image above.

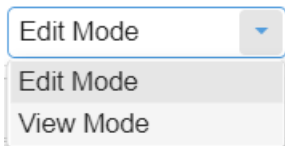
A node is displayed as yellow  in the Edit Mode if the individual role explicitly assigned to all of the selected participants is not the same. Human Factor is yellow because Chief Engineering Officer has an explicit role assigned for this node, but Chief Risk Officer does not -- so they are not the same. Environmental is yellow because Chief Engineering Officer has an explicitly restricted role while Chief Risk Officer has no explicit role -- so again, they are not the same.

From the example, above we can see that in the Edit mode, we can only determine whether the individual roles for the selected participants are the same or different, but we can not determine their resulting roles.

View Mode

As discussed above, the 'Edit mode' is the mode used to assign roles. We can not determine whether the resulting role for all the selected participants is the same or not from this display. The resulting roles can be determined using another mode called 'View mode'.

You can switch to the View mode using the menu as shown below:



If we look at the display for the same example above for the "View mode", we would see the following:

Participants		Groups	For Source Likelihoods													
Search			Sources													
<input checked="" type="checkbox"/> Select All <input type="checkbox"/> Kris <input checked="" type="checkbox"/> Chief Risk Officer <input checked="" type="checkbox"/> Chief Engineering Officer <input type="checkbox"/> IT Supervisor <input type="checkbox"/> Chief Executive Officer <input type="checkbox"/> Michael Mankowski <input type="checkbox"/> John Doe <input type="checkbox"/> Project Manager			NO SOURCES	Human Factor	Environmental	Infrastructure	Inadequately Trained	Disregarding or Ignoring	Lack of Situation Awareness	Engineers Failure	Flooding of Intelligence	Lightning Striking	Minor Electrical Failure	Major Electrical Failure	Mechanical Failure	Mechanical Failure
Events																
1 Late Train Running				Yellow												
2 Degradation of Intelligent Monitoring System Physics																
3 Line Closure																
4 Failed Integration with Future Monitoring System																

Since both Chief Risk Officer and Chief Engineering Officer have the same resulting role (allowed) for the Human Factor,

even though they have different explicit assignments, the node is shown as green. The Environmental node is still yellow because one of the participants has the role and the other does not. We would have to look at each participant individually to see which one has that role and which one does not.

Examining roles for all participants in the View mode

It is advisable to select all participants in the 'View' mode to see if there are any nodes that are red, meaning that no participant has been assigned the role for that node.

Likelihood: Selecting Multiple Participants for Roles

You can select multiple participants or groups at a time for assigning roles. You can check one or more participants or groups in the left pane and then click a node on the right to allow or restrict roles for the highlighted participant.

You have the following options to select multiple participants (or groups) from the list. These options work on Windows and Macintosh.

1. **Using CTRL key**

Hold the CTRL key and click the participants or groups in the list to choose them. Click all the items you want to select. They don't have to be next to each other.

Click any item again to deselect it, e.g. if you have made a mistake. Remember to keep the CTRL key pressed.

2. **Using SHIFT key**

If you want to **select items that are adjacent**, you can use the **SHIFT key**. Click the first item, then press the SHIFT key and hold it. Click the last item and release the SHIFT key.

3. **Both SHIFT and CTRL Keys**

You can also use both SHIFT and CTRL keys together. For example, you can deselect an item from a row selection that you have created with the SHIFT key when you hold the CTRL key and click the item you want to deselect

Likelihood: Participant Roles Statistics

You can view the number of participants that have an allowed role by checking the **Show Statistics** check box.

Participants		Groups	For Event Vulnerabilities	For Source Likelihoods	8 Sources																				
Search					NO SOURCES	8 Human Factor			5 Envirc	6 Infrastructure			6 Terrorism		7 Technology										
						Inadequately	Disregarding	Lack of Situational	Engineers Fa	Flooding of In	Lightning Stri	Minor Electric	Major Electric	Mechanical F	Mechanical F	Mechanical F	Conventional	Cyber Attack	Cyber Attack	System Softw	System Hard	New Cutting I	Intelligent Mo		
<input checked="" type="checkbox"/>	Select All																								
<input type="checkbox"/>	Kris																								
<input checked="" type="checkbox"/>	Chief Risk Officer																								
<input checked="" type="checkbox"/>	Chief Engineering ...																								
<input type="checkbox"/>	IT Supervisor																								
<input type="checkbox"/>	Chief Executive Off...																								
<input type="checkbox"/>	Michael Mankowski																								
<input type="checkbox"/>	John Doe																								
<input type="checkbox"/>	Project Manager																								
	Events																								
	1 Late Train Running					7	7		7	7	7	8	6	6	6	6	6	6	8					8	
	2 Degradation of Intelligent Monitoring System Physical /								6	7	7			6	6	6	6			7				8	
	3 Line Closure						8	8	7	7	7		7		6	6	6		8					8	
	4 Failed Integration with Future Monitoring System Netw					7	7		7												8	8	8	8	
	5 Intelligent Event Monitoring Network Shut Down						8		7	7	7		8		6	7	7	8	8					8	
	6 Major Train Work Accident					8	8	7	7			6	7	7	6	6	6	8						8	
	7 Minor Train Work Accident					8	8		7	7		6			6		6	8						8	
	8 Major Train Public Accident					8	8	7	7			6	6	7	6	6	6	8						8	

Recommended Approaches for Setting Roles for the 'All Participants' Group

Assigning roles to participants can be without using groups as well as with groups. In the former case, we advised leaving all roles allowed for the All Participants Group as they are set by default. In the case of assigning roles using groups, we advised starting by dropping all roles for the All Participants Group. There is one additional contingency to take into consideration: If new participants are added to the model after roles have been assigned to existing participants, what do we want the roles for the new participants to be? We describe three cases:

Case 1) If you want the roles for 'new' participants to be 'allowed' for everything, then leave the 'All Participants' group roles set to 'Allow' as they are by default.

Case 2) If you want the roles for 'new' participants to be 'allowed' for *almost* everything, then leave the 'All Participants' group roles set to 'Allow' as they are by default and 'restrict' roles for the new individuals as desired or add them to groups that have roles restricted for the desired nodes. (The latter can be done via a survey containing a question that is used to assign new participants to a group).

Case 3) If you want the roles for 'new' participants to be 'restricted' unless the new participant is in a group or groups that have specific roles enabled, or only if you explicitly allow roles for the participant, then 'Drop All' roles from the 'All Participants' group.