

Dependencies Constraints

Dependencies are one of the constraints that can be defined when determining the controls to be selected in an [Optimization](#).

You can view the dependencies in **Table** or **List** view.

Dependencies are displayed in the Table view by default as shown below:

| Controls | 1. Monthly Performan Review | 2. Schedule Proper Maintenan | 3. Upgrade Signals | 4. Mandatory Training for Engineers | 5. Periodic Proficiency Training | 6. Identify Staff requiring additional training | 7. Update Sensor | 8. Back-up Generator Power | 9. Periodic Inspection of Power Relay Station | 10. Predeploy Software Testing | 11. Quality Control of Cables | 12. Employ Higher Security | 13. Increase physical security |
|---|-----------------------------|------------------------------|--------------------|-------------------------------------|----------------------------------|---|------------------|----------------------------|---|--------------------------------|-------------------------------|----------------------------|--------------------------------|
| 1. Monthly Performance Review | | | | | | | | | | | | M | |
| 2. Schedule Proper Maintenance | | | | | | | | | | | | | |
| 3. Upgrade Signals | | | | | | | | | | | | | |
| 4. Mandatory Training for Engineers | | | | | | | | | | | | | |
| 5. Periodic Proficiency Training | | | | | | | | | | | | | |
| 6. Identify Staff requiring additional training | | | | | | | | | | | | | |
| 7. Update Sensor | | | | | | | | | | | | | |
| 8. Back-up Generator Power | | | | | | | | | | | | | |

The "List View" will be ON by default (grid view is disabled) when the system detected that there are so many controls that will make the grid view slow or hang up.

By single-clicking on the intersecting cell of the column and row, you can specify one of the three dependencies between controls in the Resource Allocation process:

- **D (Depends on)** – the row control depends upon the column control. The optimization assures that the row control is not funded unless the column control is funded. When there are Time Periods, the "depends on" dependency can either be **concurrent** or **non-concurrent**. **Concurrent** means that the row and column controls can be funded at the same period, while non-concurrent is not.
- **M (Mutually dependent)** – the row and the column are mutually dependent; both must be funded or neither is funded.
- **X (Mutually Exclusive)**– the row and the column are mutually exclusive; funding one precludes funding the other.

The clicked cell will display any of the letters explained above (**D**, **M**, **X**) depending on the currently selected dependency type (or clear to remove) on the button at the top.

D Depends On

D Depends On

M Mutually Dependent

X Mutually Exclusive

Clear Cell

Alternatively, you can right-click on a cell and then select the dependency you want to define for that row and column controls:

| Controls | 1. Monthly Performance Review | 2. Schedule Proper Maintenance | 3. Upgrade Signals | 4. Mandatory Training for Engineers | 5. Periodic Proficiency Training | 6. Identify Staff requiring additional training | 7. Update Sensor | 8. Back-up Generator Power | 9. Periodic Inspection of Power Relay Station | 10. Predeploy Software Testing | 11. Quality Control of Cables | En Hi Se |
|---|-------------------------------|--------------------------------|--------------------|-------------------------------------|----------------------------------|---|------------------|----------------------------|---|--------------------------------|-------------------------------|----------|
| 1. Monthly Performance Review | | | | | | | | | | | | |
| 2. Schedule Proper Maintenance | | | | | | | | | | | | |
| 3. Upgrade Signals | | | | | | | | | | | | |
| 4. Mandatory Training for Engineers | | | | | | | | | | | | |
| 5. Periodic Proficiency Training | | | | | | | | | | | | |
| 6. Identify Staff requiring additional training | | | | | | | | | | | | |
| 7. Update Sensor | | | | | | | | | | | | |

right-click on a cell to see the context-menu

D 4. Mandatory Training for Engineers **Depends On** 3. Upgrade Signals, **Can be concurrent**

D 4. Mandatory Training for Engineers **Depends On** 3. Upgrade Signals, **Non-concurrent**

M 4. Mandatory Training for Engineers **and** 3. Upgrade Signals **are Mutually Dependent**

X 4. Mandatory Training for Engineers **and** 3. Upgrade Signals **are Mutually Exclusive**

Clear

The row and column controls are being highlighted with yellow as you hover on their intersecting cells.

Toggle the List View switch List View: to display the dependencies in list view:

Dependencies for scenario "Default Scenario"

Depends On (Can be concurrent) ↓

+ **Depends On (Non-concurrent) ↑**

Mutually Dependent

"1. Monthly Performance Review" and "12. Employ Higher Security" are Mutually Dependent

Mutually Exclusive

"14. Emplace flood prevention material" and "15. Employ Water Pumps" are Mutually Exclusive

Click the + icon to add a new dependency.

Click the ▾ to see options to edit and delete.

When there are Dependencies (or any other constraint) specified, that constraint will be **bold** on the [Optimization](#) ignore options.

Ignore:

Musts Must Nots Groups

Dependencies

Funding Pools

You can choose to use or ignore the dependencies and other constraints when optimizing.
