## **Preconditions:**

- 1. The playground is initialized.
- 2. The Player should be same with the PlayerRound information.
- 3. The target grid is available due to the players action, which means:
- If the player is moving a worker, the target grid status should be adjacent to the worker's current position.
  - -the target grid should be vacant, or a tower without a dome.
- -If the player is building a tower, the target grid should be vacant, or a tower with 1 or 2 level without a dome.

**For Minotaur:** - if we want to use the power of Minotaur, the target grid must has an opponent worker, and the current worker of current player must with the same x or y position, or in diagonal position with the target grid.

## **Invariants:**

- 1. For workers, when they are on certain x, y position, the correspond grid must also store the occupation of this worker.
- 2. For towers, when they are on certain x, y position, the correspond grid must also store the occupation of this tower.

## **Postconditions:**

- 1. The status of target gird is changed due to the action.
- 2. The position of the workers are changed to the target position.
- 3. The position, levels, or dome existence are changed due to the players actions.
- 4. The towers level should larger than 0 and smaller than or equal to 3.
- 5. The playerRound/ currentPlayerID are changed to another player.