



HIKVISION EUROPE B.V.

# How to Calibrate Radar and PTZ Camera

Product:	Radar : DS-PR1-60 DS-2DE7423IW-A
Publisher:	Alex.Xu
Version:	V.R2020/4/26
File:	IVMS-4200 v3.1.2.6



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## Purpose

Set the initial position of the speed dome to ensure the tracking accuracy.

Calibrate the linked PTZ camera to ensure high accuracy and better effect of target tracking.

## Preparation

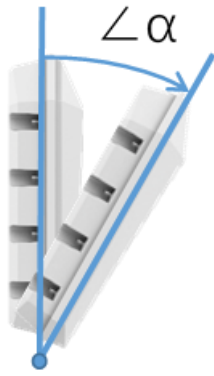
1. Language of PTZ Camera, IVMS-4200 and the radar should match;
2. The recommended PTZ camera size is above 6-inch;
3. Two persons are needed to complete this calibration process;
4. Reference of installation height and adjusting angle of radar

radar installation height(m)	$\angle\alpha(^{\circ})$	Max. detecting distance: walking away from radar(m)	Max. detecting distance: walking towards radar(m)	Min. detecting distance: walking away from radar(m)	Min. detecting distance: walking towards radar(m)
2	0	59.41	59.4	5.47	1.8
2	3	58.9	59.4	4.39	2.19
2	6	58.7	59	4.34	1.72
2	9	58	59.62	5.1	2.2
2	12	50.12	39.1	4.47	2
3	0	59	58.4	6.74	4.62
3	3	59.4	59.6	6.08	4.21
3	6	59	59.51	6.7	3.42
3	9	59.3	58	5.8	2.9
3	12	59.51	47.6	5.2	3.1
3.5	0	59	57.17	10.08	5.5
3.5	3	59.3	59.5	8.75	3.9
3.5	6	59.6	58.51	7.1	3.86
3.5	9	58	56.25	7.9	3.8
3.5	12	53.53	46	6.92	3.45
4	0	59	58	11.68	7.36
4	3	59.2	59.4	10.3	5.7
4	6	58.3	58.5	9.89	5.6
4	9	58.5	59.79	9.3	4.4
4	12	58	53	8.86	4.63
5	3	58.66	58.6	13.1	9.6
5	6	58.6	59.7	12	7.62

\*data is for reference only

recommended





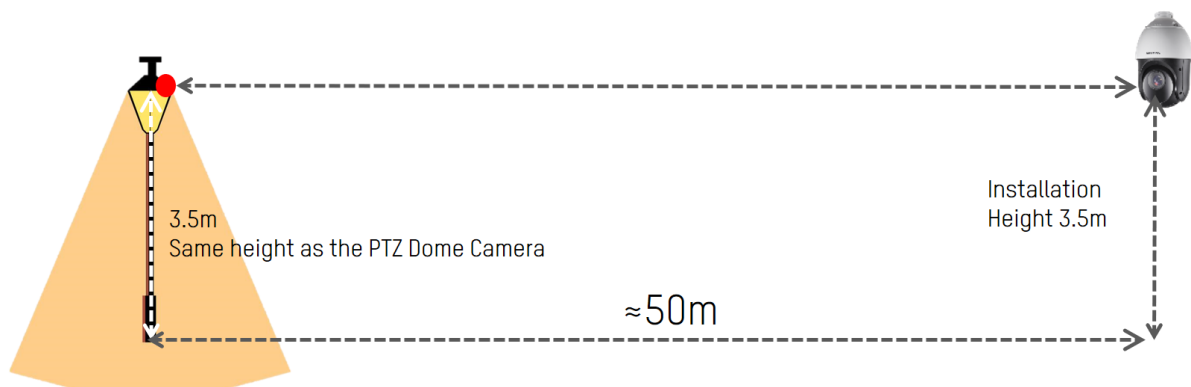
According to statistics above:

1. Radar installation height of 2.5m is highly recommended to ensure the best quality of trajectory surveillance.
2. If the installation height is between 2.2 and 2.5m, there is no need to adjust the radar angle.
3. For installation height from 3m to 4m, we recommend adjusting the angle in order to reduce blind zone.

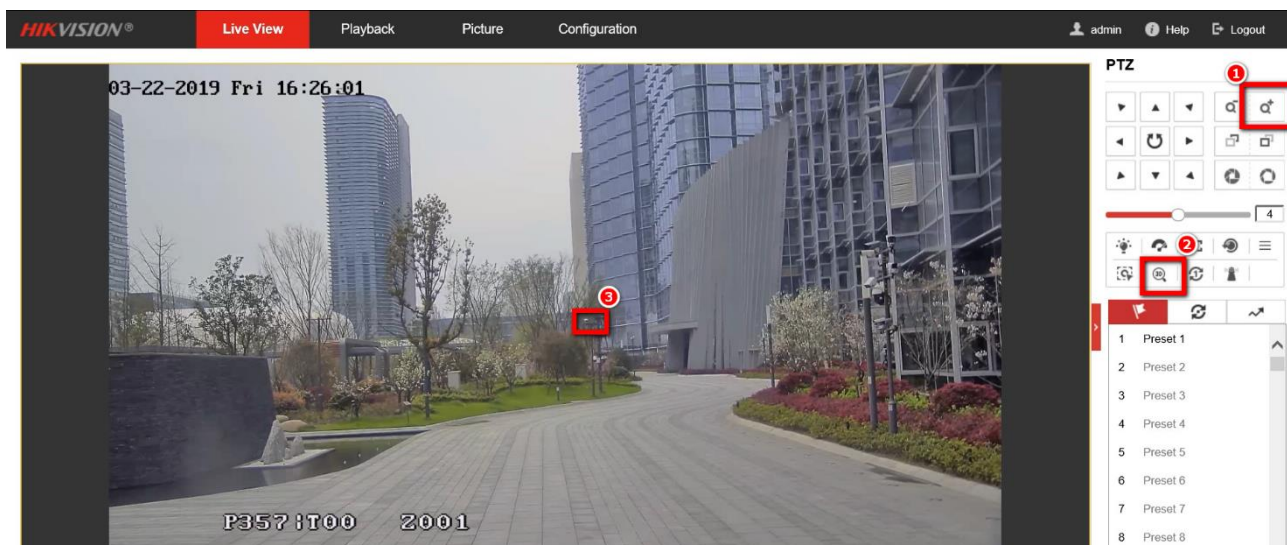
## Steps

### Part 1: Set initial position of PTZ camera

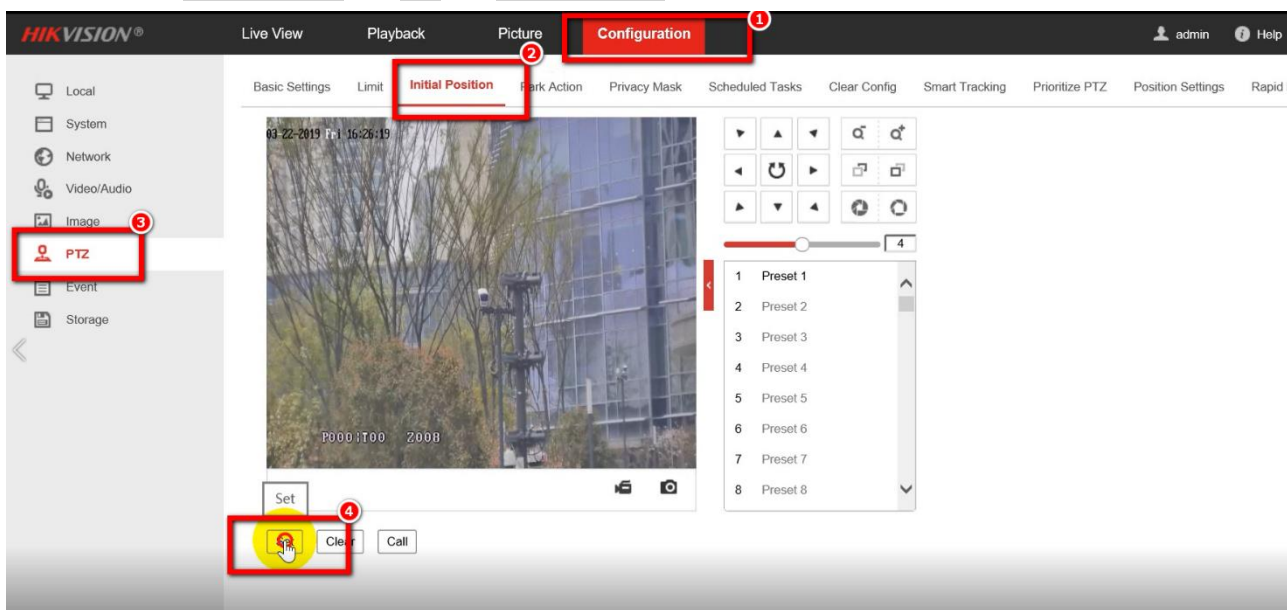
1. Select a reference object about 50m away from the speed dome, and select a point (on the reference object) whose altitude is the same as the speed dome's.



2. Enter the IP address of the speed dome in the web browser to enter the web client. Click **Zoom in** or **Zoom out** to adjust the PTZ Camera in the **Live View** page to make the reference point displayed in the image.
3. Click **3D Zoom** to middle the point in the image

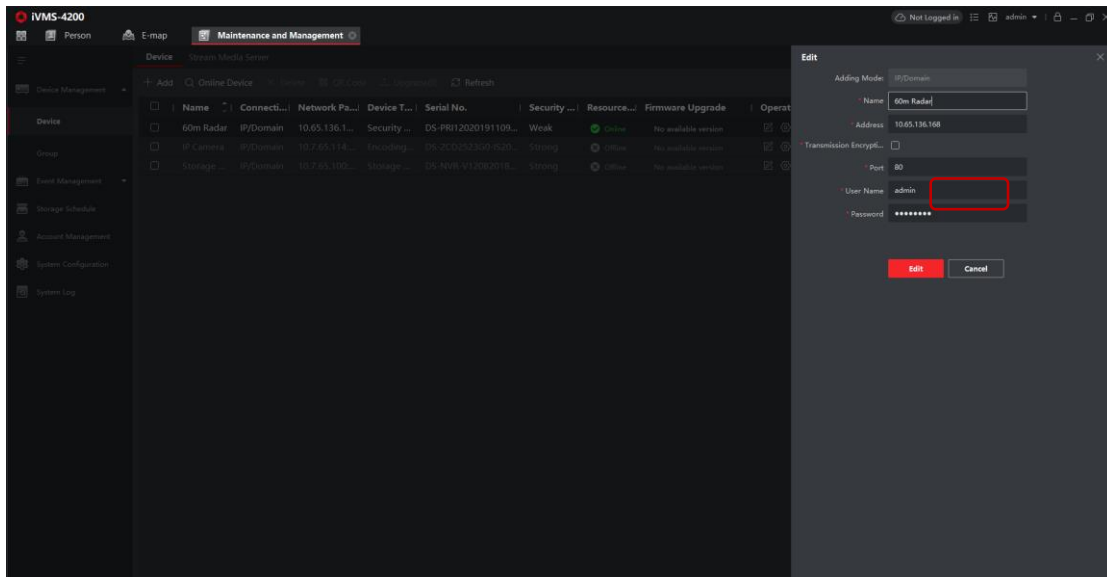


4. Enter the **Configuration** → **PTZ** → **Initial Position** page, and click **Set** to save the initial position.



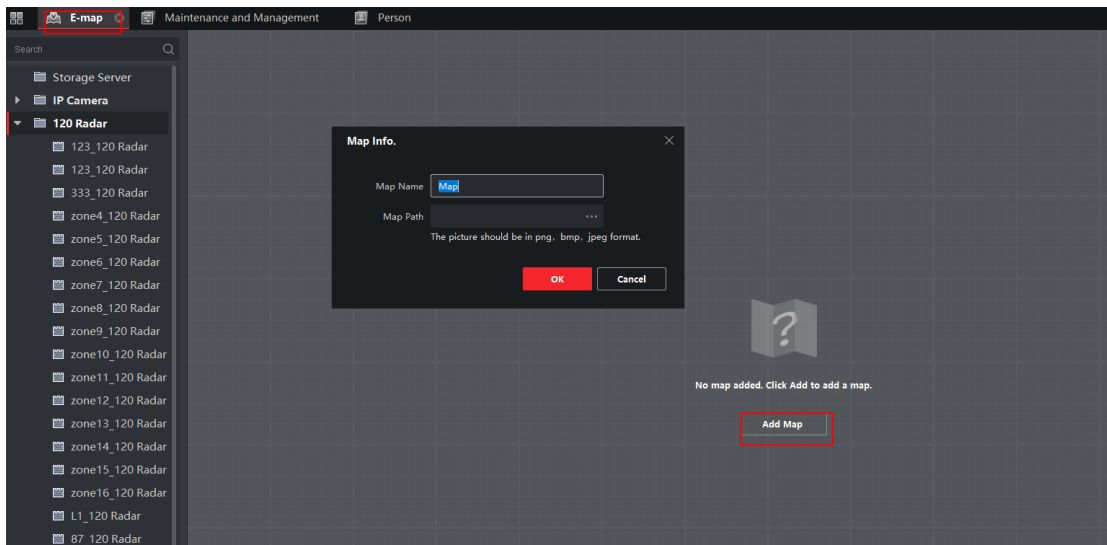
## Part 2: Radar device adding

1. Add the radar into ivms4200

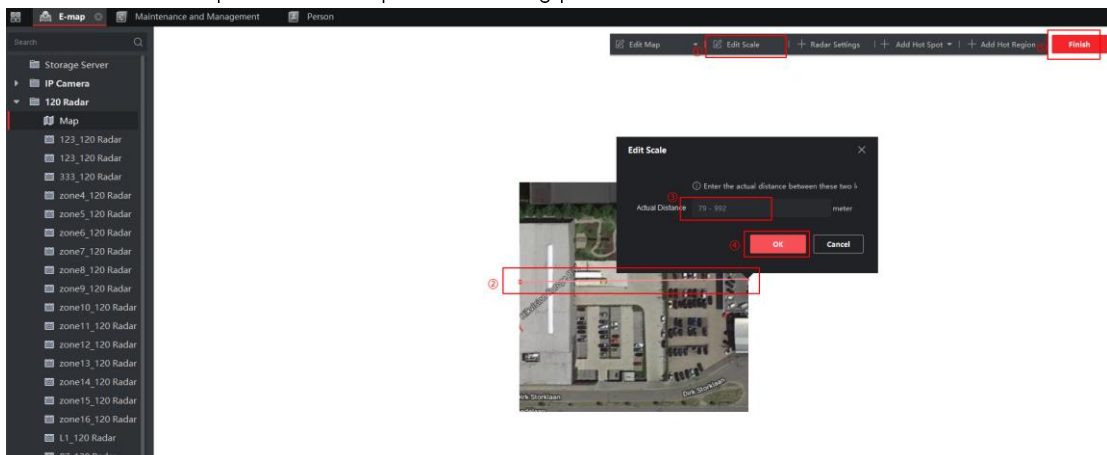


Note: Remember the device port should be 80.

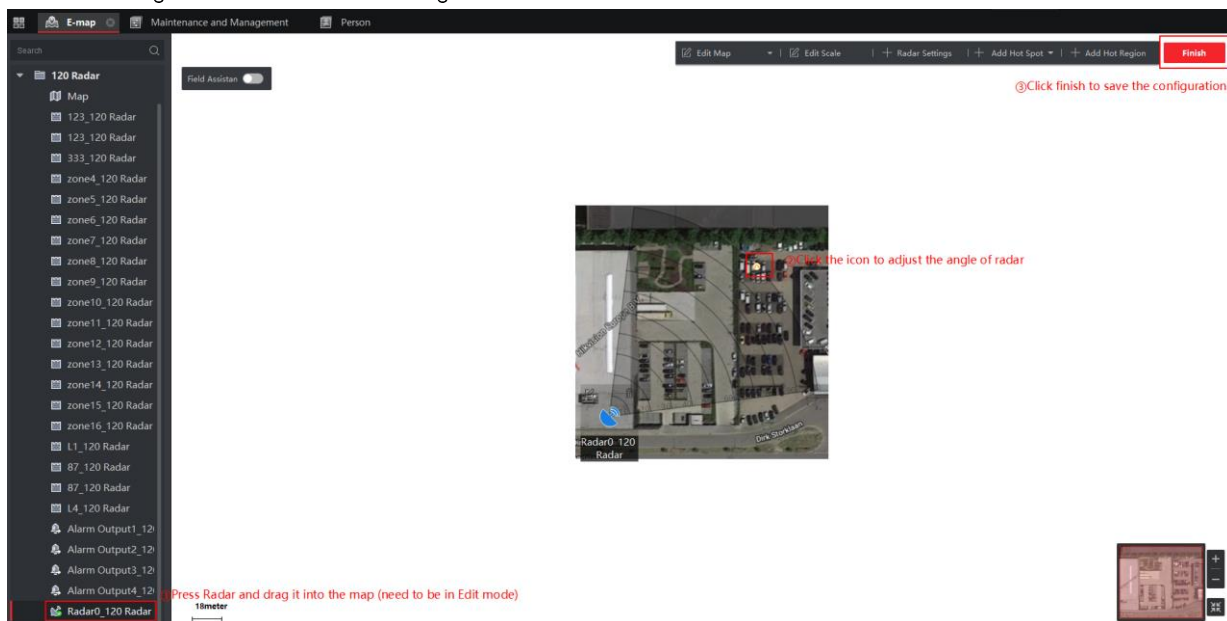
2. Go to E-map, click add map.



3. Set the actual map scale as steps in following picture.



- Click 'Edit' icon in the top right corner of E-map, left press radar and drag it to the map, adjust the radar angle. Then save the configuration.



## Part 2: Calibrate radar and PTZ camera

- Radar & Device Linkage. Go to Radar remote configuration (web configuration)->Smart Rule Settings- >Camera Linkage Settings->Link zones and trigger lines to the camera

**Add Camera** ✕


\*IP

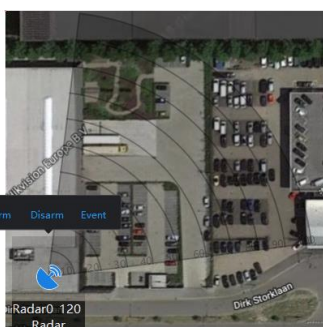
\*Port

\*User Name

\*Password

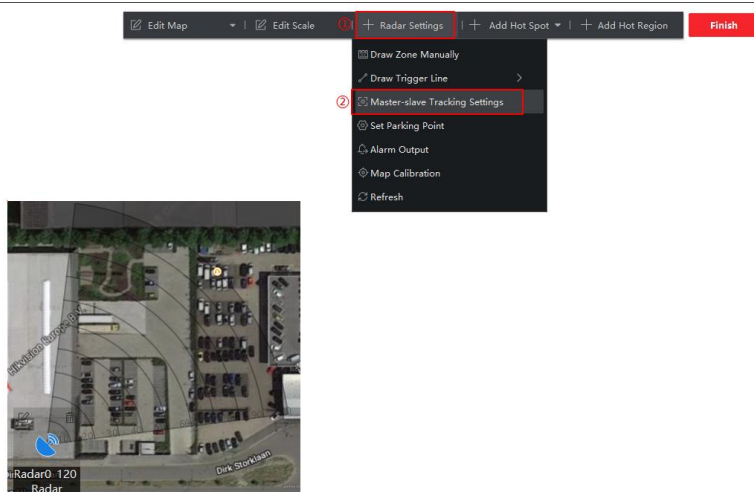
\*Link to NVR?  Yes  No

- Go to E-Map module of ivms4200->Disarm the radar before the operation. (Click  and disarm the radar)

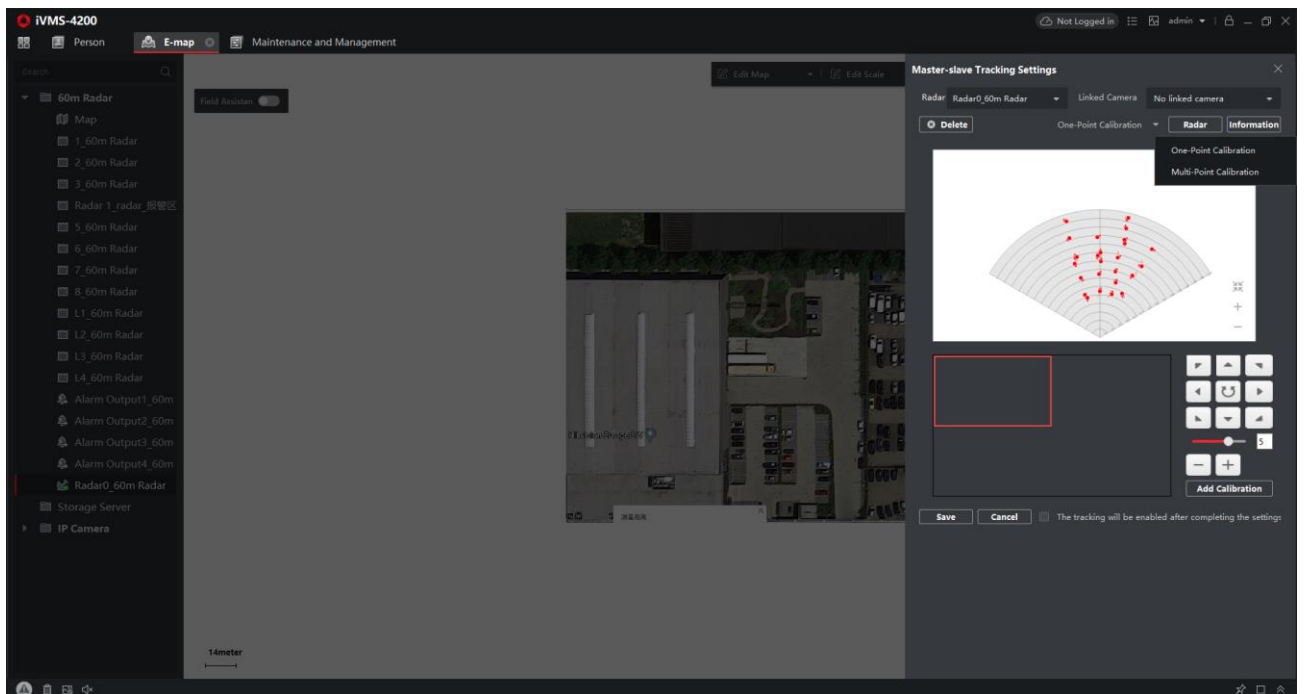


- Enter Edit mode, click radar settings and go to master-slave tracking settings.



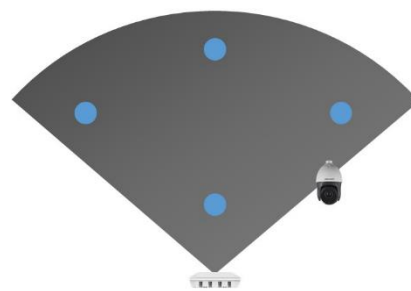
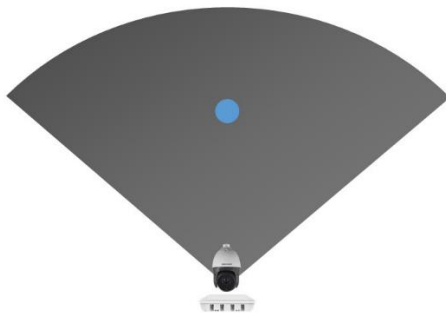


4. Select Calibration mode.



Note:

- a) If radar and PTZ Camera is installed on the same pole (or the distance between PTZ Camera and the radar is 2 to 3m), choose single calibration. Calibrate a point in the center of radar's detecting area.
- b) If radar and PTZ Camera are installed separately on different poles, choose Multi-Calibration. Calibrate four points equally distributed in radar's detecting area.





5. Select **Linked Camera**

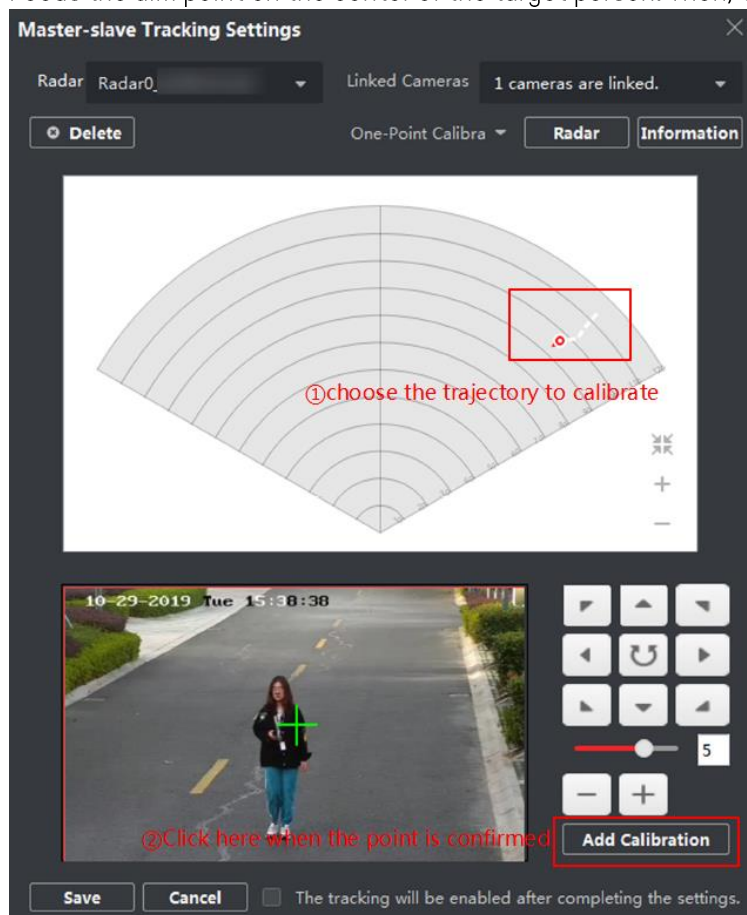
Click a live view window and select a camera in the Linked Cameras list. The live view window will show the camera screen. Select the live view window of the camera needs to be calibrated, and double click on it to maximum the window.

6. Now, we start the calibration process.

1) The calibration is a dynamic process and two persons are needed to complete calibration process. One person walks outside, one person stays in front of computer. When Person A is walking in the detection area, his trajectory will be presented in the real-time scene of the Radar.

2) Click the trajectory, and its color will turn into white. Modify the view of PTZ Camera to put target person in the image. In addition, in the horizontal direction, you'd better put the figure of person A in the middle of the image like picture bellow. Align the central sign + with the target in the scene.

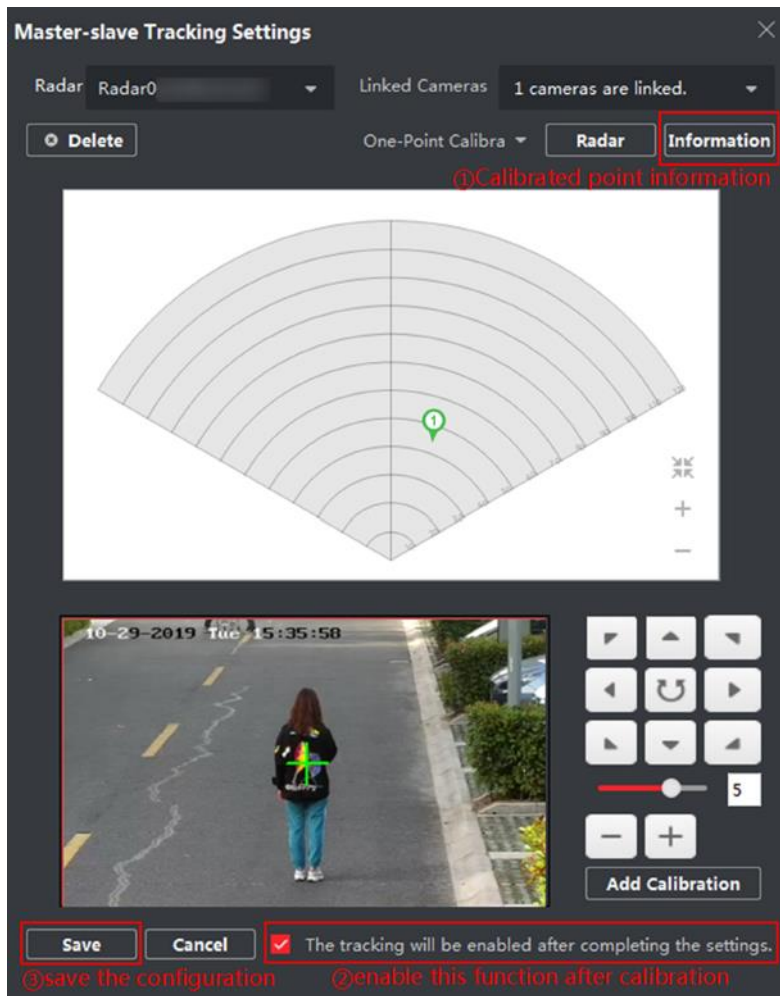
Focus the aim point on the center of the target person. Then, Click **Add Calibration**.



3) Then, click **information** on the top right corner, you will find the coordinate. Remember to enable the option 'The tracking will be enabled after completing the settings' and click **save**.







4) With the steps above, the calibration is finished.

