ACTIVIDAD 8.1

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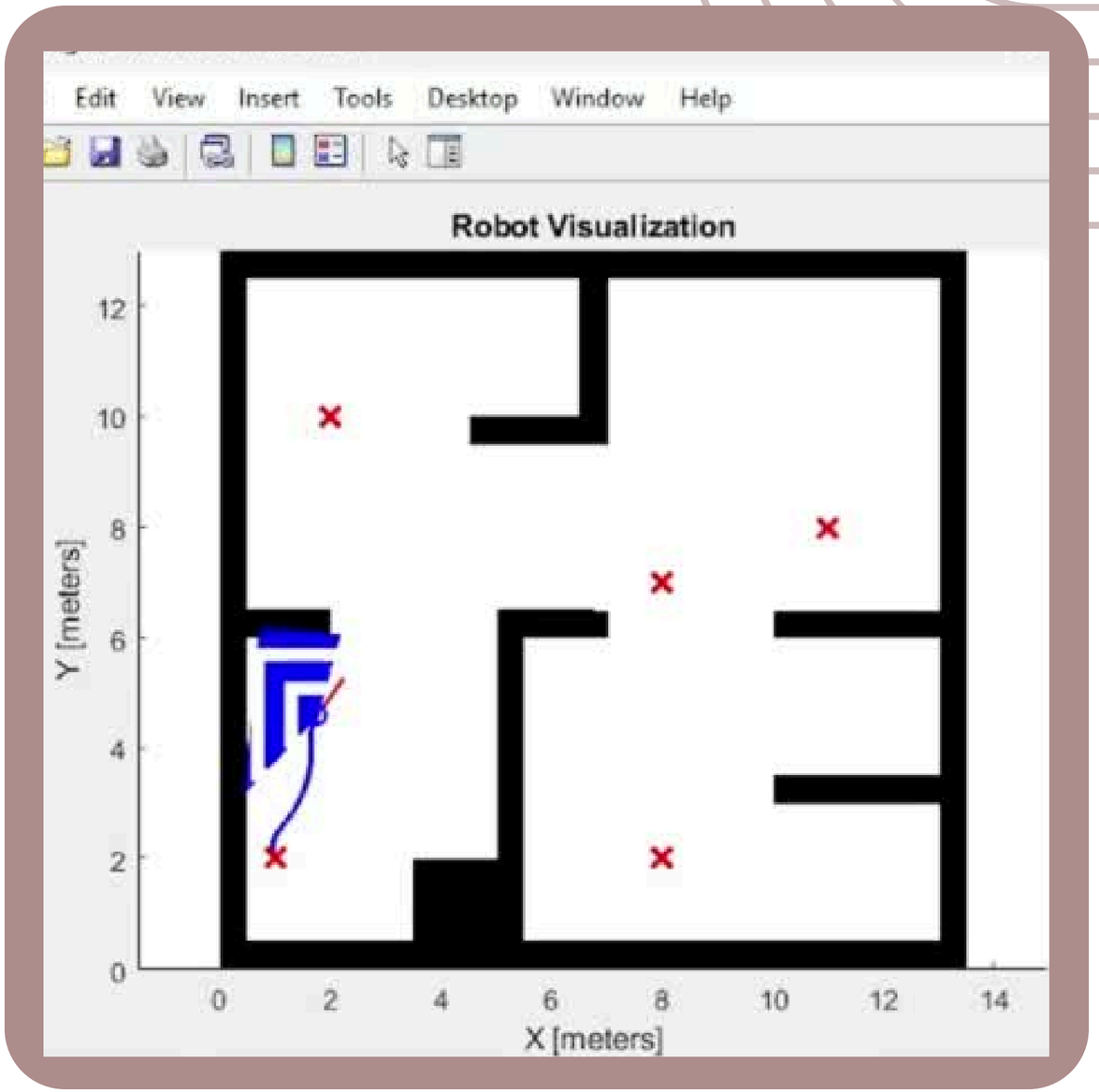
exampleMap

Cambios:

- Tiempo de simulación (tVec)
- Distancia de seguridad (vfh.SafetyDistance)
- Ganancia angular aumentada (wRef)
- Coordenada (8,7)



exampleMap

```
waypoints = [initPose(1:2)';
             2 10;
             11 8;
             8 2;
             8 7;
             1 2];
```

```
controller = controllerPurePursuit;
controller.Waypoints = waypoints;
controller.LookaheadDistance = 0.5;
controller.DesiredLinearVelocity = 1;
controller.MaxAngularVelocity = 20;
```

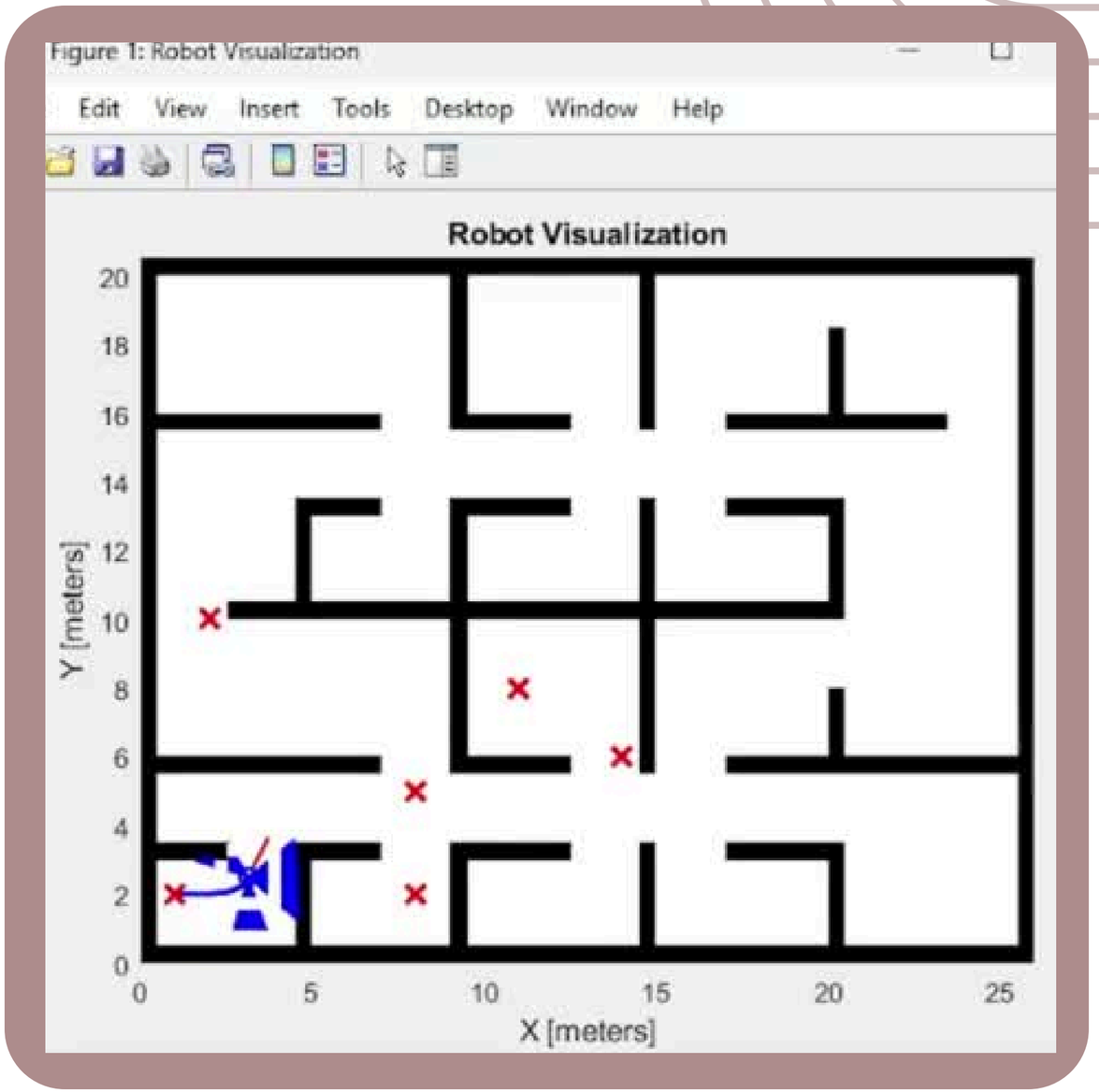
```
vfh = controllerVFH;
vfh.DistanceLimits = [0.05 3];
vfh.NumAngularSectors = 900;
vfh.HistogramThresholds = [5 10];
vfh.RobotRadius = L;
vfh.SafetyDistance = 0.2;
vfh.MinTurningRadius = 0.1;
```

```
[vRef,wRef,lookAheadPt] = controller(curPose);
targetDir = atan2(lookAheadPt(2)-curPose(2),lookAheadPt(1)-curPose(1)) - curPose(3);
steerDir = vfh(ranges,lidar.scanAngles,targetDir);
if ~isnan(steerDir) && abs(steerDir-targetDir) > 0.1
    wRef = 2*steerDir;
end
```

complexMap

Cambios:

- Tiempo de simulación (tVec)
- Distancia de seguridad (vfh.SafetyDistance)
- Ganancia angular aumentada (wRef)
- Coordenadas (8,5) y (14,6)



conplexMap

```
waypoints = [initPose(1:2)';
             8 5; %
             2 10;
             14 6; %
             11 8;
             14 6; %
             8 2;
             8 5;
             1 2];
```

```
controller = controllerPurePursuit;
controller.Waypoints = waypoints;
controller.LookaheadDistance = 0.5;
controller.DesiredLinearVelocity = 1;
controller.MaxAngularVelocity = 20;
```

```
vfh = controllerVFH;
vfh.DistanceLimits = [0.05 3];
vfh.NumAngularSectors = 900;
vfh.HistogramThresholds = [5 10];
vfh.RobotRadius = L;
vfh.SafetyDistance = 0.1;
vfh.MinTurningRadius = 0.1;
```

```
[vRef,wRef,lookAheadPt] = controller(curPose);
targetDir = atan2(lookAheadPt(2)-curPose(2),lookAheadPt(1)-curPose(1)) - curPose(3);
steerDir = vfh(ranges,lidar.scanAngles,targetDir);
if ~isnan(steerDir) && abs(steerDir-targetDir) > 0.1
    wRef = 2*steerDir;
end
```