1 d: max, step, totalTime

2 if (!inProgressSimulation)

4 return null;

3 d : barrelPose, initialSpeed, externalForce, velocity, p
   u: barrelPose, initialSpeed

5 while (p[2] >= 0 || totalTime <=60)
   d: dragForce
   u: velocity, p, u

6 if (dragForce == null)

18 return null;

7 if (round_shot.mass! = 0)

8 return null;

9 d : acceleration
   u : externalForce, dragForce

10 for(i=0; I<3; i++)

11 d : p
    u: velocity, p

12 if (acceleration[2] *step* step <=0 &p[2] > max && i==2)

13 d : max
    u: p

14 velocity+ = acceleration * step * step

15 d, u : totalTime
    u : step

16 p[3] = max
    inprogress = false

17 return p;

1 d : density

2 if(radius <= 0)

4 return null;

3 d : area, flowVelocityMagnitude

5 if(flowVelocityMagintude != 0)

6 Exception

7 d : unit, dragForceMagnitude
   u : flowVelocity, flowVelocityMagnitude

8 for(i=0; i<3; i++)

9 d : dragForce
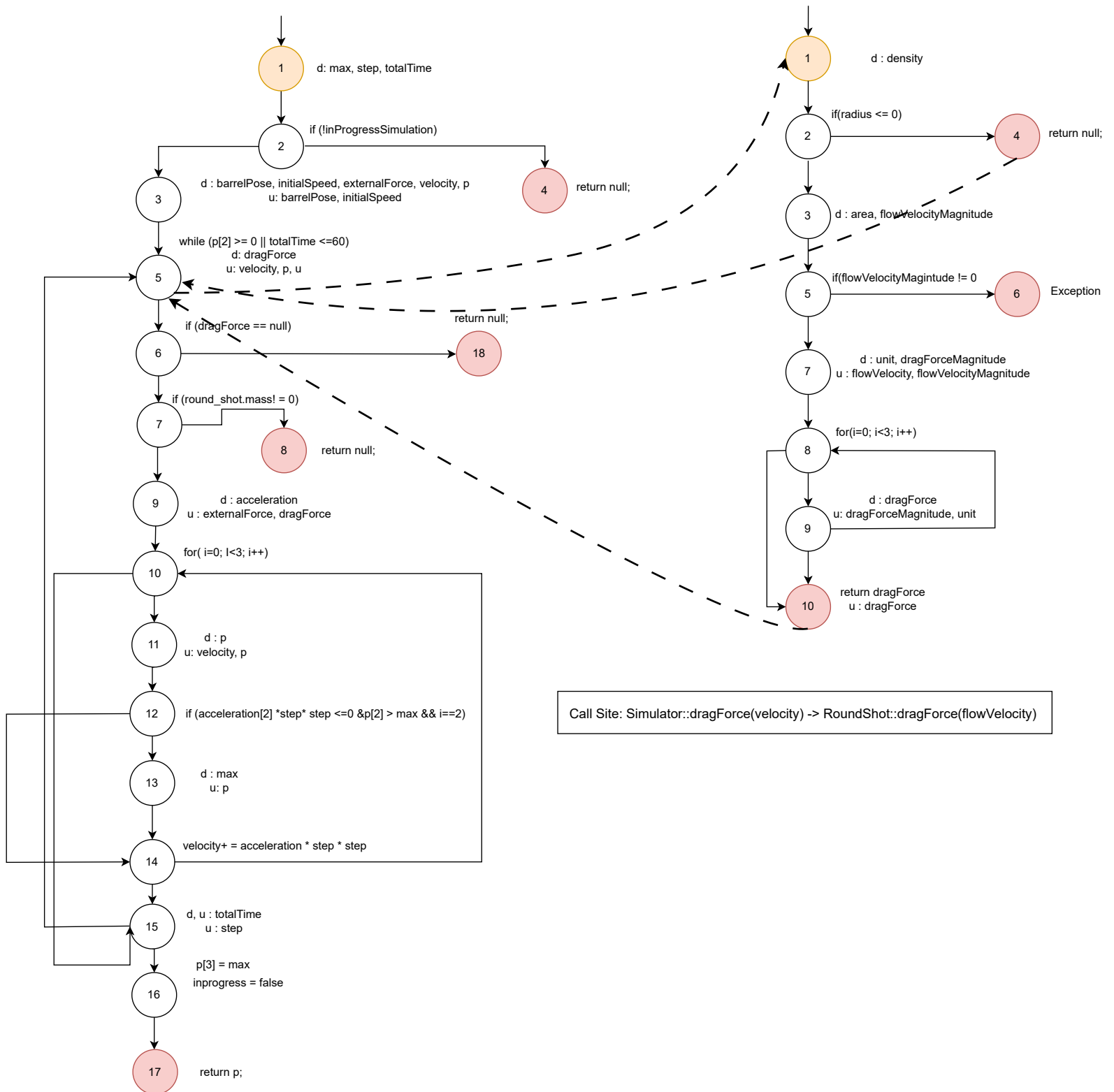   u: dragForceMagnitude, unit

10 return dragForce
    u : dragForce

Call Site: Simulator::dragForce(velocity) -> RoundShot::dragForce(flowVelocity)