You are designing an NPC tank for a military FPS game. Design and draw a finite state machine for the behavior of the vehicle as described below.

- Create a table that lists all of the states and their properties.
- Create a table of game conditions that will be used to transition between states. Develop abbreviations to use when labeling transitions.
- Draw a diagram that includes the states and their transitions.

You should assume that the animations are run asynchronously. That is, a game state may trigger an animation to start, but it will need to test some condition to determine when the animation has finished.

**Initialization**
The tank becomes active when the level is initialized. It will wander about the "patrol zone" portion of the level. In this state, the turret is always pointing the same direction as the direction of travel.

**Combat**
The tank will focus on the player when a) he enters into the field of view of the turret, or b) when he fires a weapon. When in combat, the tank's turret will track the player and fire at its normal (slow) rate. The tank will also turn towards the player, but the turret can turn faster. If the player is out of view behind a non-destructible object (like a rock), the tank will cease fire but continue to track the location where the player was last seen. If the player is behind a destructible object (like a Jeep), the tank will reorient its fire to destroy the obstacle – it will shoot at the object rather than the player. The tank's main gun cannot fire closer than 50 meters, so the tank go no closer than this distance to whatever it is firing at.

If the player comes within 50 meters of the tank, its machine gun will fire in bursts. If the player hits the tank with a RPG or hand-thrown grenade, it will cease firing briefly while an explosion animation is shown. At close range, the tank will also aim towards the player to run him down. If the tank gets within 5 meters of the player and is aiming at him, it will increase speed in an attempt to crush him. All firing ceases while this is happens, but begins again if the player dodges out of the way.

**Termination**
If the player's health is reduced to zero, he dies and the tank heads back towards the patrol zone. If the tank's health is reduced to zero, it explodes in a fireball. It is possible for the player to be killed by the fireball if his health is low and he is too close.