**Potentially Visible Set vs Static Zones**

A potentially visible set (PVS) in the context of networking is a technique used to figure out which parts of the game world should be sent to each player based on their current position and which direction they’re looking. This technique calculates which parts of the game world are likely to be visible to the player and figures out which updates are relevant and need to be sent over the network. This reduces network traffic by only sending the neceessary information and minimizes the data sent to each client.

Static Zones involve dividing the game world into fixed zones or sectors with prefetermined visiblity. Each zone has a predefined set of other zones that are visible from within it. Unlike PVS, static zones use a fixed approach which does not change based on the player’s actions.

The difference between the two is mainly their flexibility and processing power required to do them. PVS is dynamic and adaptive based on real time actions, this can be more expensive but gives precise control over traffic. Static zones are pre-calculated and require almost no real time computation but can’t handle dynamic game states as well as PVS.

**Interest Management**

Interest management aims to optimize the network traffic by making sure players only receive the data relevant to their current context of the game, it reduces bandwith and has the potential to greatly improve performance.

1. Area of Interest Management defines a spatial boundary around each player or object, only the updates within this area get given to the player. This reduces the data each player receives and cuts down on unnecessary traffic.
2. Subscription Based Filtering works by players/gameobjects subscribing to updates based on certain criteria, this could be distance, team membership, events. This means the player is only going to receive updates that are deemed relevant to their current gameplay. This method can be really flexible and tailored to the specific mechanics of a game.

Both AOI and Subscription based filtering help reduce load on the networking infrastructure by decreasing how much data is sent between the server and clients. These are crucial for having low latency and the ability to scale for larger numbers of player.