

AI Behavior Software Development Toolkit

Kynapse for VR-Forces is a powerful and flexible software toolkit for adding advanced artificial intelligence (AI) behaviors to VR-Forces' entities. Using Kynapse, from Kynogon SA, VR-Forces' entities can perceive the world; decide which path to take; determine where to hide; identify where threats might be hiding; and navigate a path to their destination—all while avoiding collisions with terrain and other entities. Kynapse for VR-Forces includes the Kynapse AI engine, Kynapse PathData generator, and the complete source code to the B-HAVE Module for VR-Forces.

B-HAVE Yourself

The B-HAVE Module for VR-Forces, jointly developed by MÄK and Kynogon, provides out-of-the-box AI behaviors for VR-Forces entities. Kynapse for VR-Forces allows you to go beyond the functionality built into B-HAVE, and lets you take full advantage of the Kynapse AI Toolkit. You can extend B-HAVE, by starting with the included source code, or integrate Kynapse AI functionality directly into your VR-Forces-based simulation application.

Make your own Decisions

The brain within intelligent entities performs thinking logic to make decisions. You can control that logic using Kynapse for VR-Forces. Kynapse provides C, C++ and Lua interfaces to the Kynapse brain functions. Multiple heuristic modes, 3D topology tests, and dynamic avoidance algorithms allow you to dynamically choose the next course of action. Higher level actions, called agents, such as wander, follow, hide, and shoot are provided to simplify and speed up your development.

Using the B-HAVE source code, you can integrate your agents into the VR-Forces scenarios so that your agents respond to tasks carried out by simulation entities.



Kynapse's dynamic team composition and teammate communication mechanism allow you to coordinate behaviors with other entities to perform group tasks like formation maneuvers, room clearing or customized crowd behaviors.



- EXTEND AND CUSTOMIZE B-HAVE™ MODULE
- DEVELOP YOUR OWN AI BEHAVIORS
- SCRIPTED OR AUTONOMOUS DECISION MAKING
- 3D TOPOLOGY ANALYSIS
- ADVANCED PATH FINDING ALGORITHMS
- ENTITY SPECIFIC INTELLIGENT NAVIGATION
- HIERARCHICAL PATH MANAGEMENT
- DYNAMIC OBJECT MANAGEMENT
- MULTIPLE ENTITY COORDINATION
- INCLUDES KYNAPSE AI TECHNOLOGY
- INCLUDES B-HAVE SOURCE CODE



Link – Simulate – Visualize

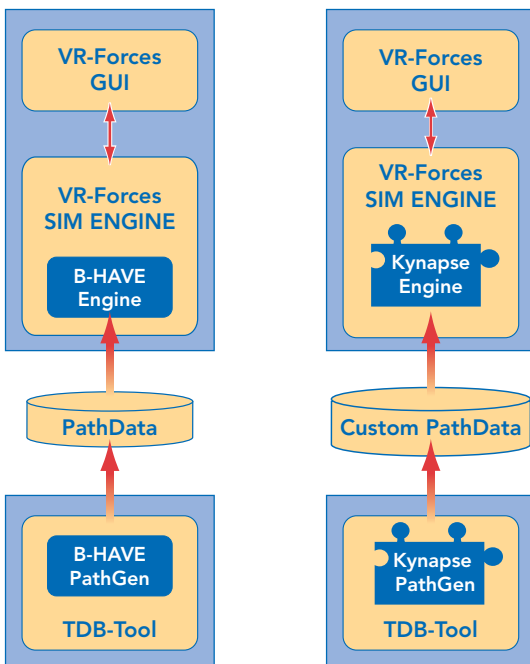
Visualize Yourself

By extending the B-HAVE GUI plug-in, you can make your behaviors easy to use by adding them to the VR-Forces Set and Task menus. If you have developed diagnostic graphics to show what your entities are thinking about, you can integrate those into the MÄK Stealth viewer by modifying the B-HAVE Stealth plug-in.

Find Your Own Path

Every time an entity decides to move, either through an autonomous decision or a task assignment, it computes its path based on the entity's mobility characteristics. Cars can't drive on rough terrain the way jeeps can; jeeps can't plow over vegetation the way tanks can; tanks can't travel down narrow alleys the way motorcycles can. With Kynapse for VR-Forces you can create PathData to describe the navigation possibilities for as many unique types of entities as your simulation requires.

Starting with the B-HAVE TDB-Tool plug-in and working directly with the Kynapse API, you can extend the PathData to include environmental attributes specific to your entity's perception of the surrounding 3D world. Kynapse's 3D perceptions of sight, sound, smell, and the effects of sensors help you to determine your relationship to other entities. Dynamic 3D topology analysis helps you find a suitable path across the terrain, around obstacles and through access ways.



B-HAVE adds out-of-the-box AI capabilities to VR-Forces

Use Kynapse for VR-Forces to extend the capabilities of B-HAVE



Link – Simulate – Visualize