

Princess Automated Combat Resolution and Commander's Graphical User Interface

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I would like to thank the current team of volunteers, developers, testers, and lore keepers. Your hard work and countless hours of effort have made this project possible. It exists because of your dedication to something we all value deeply.

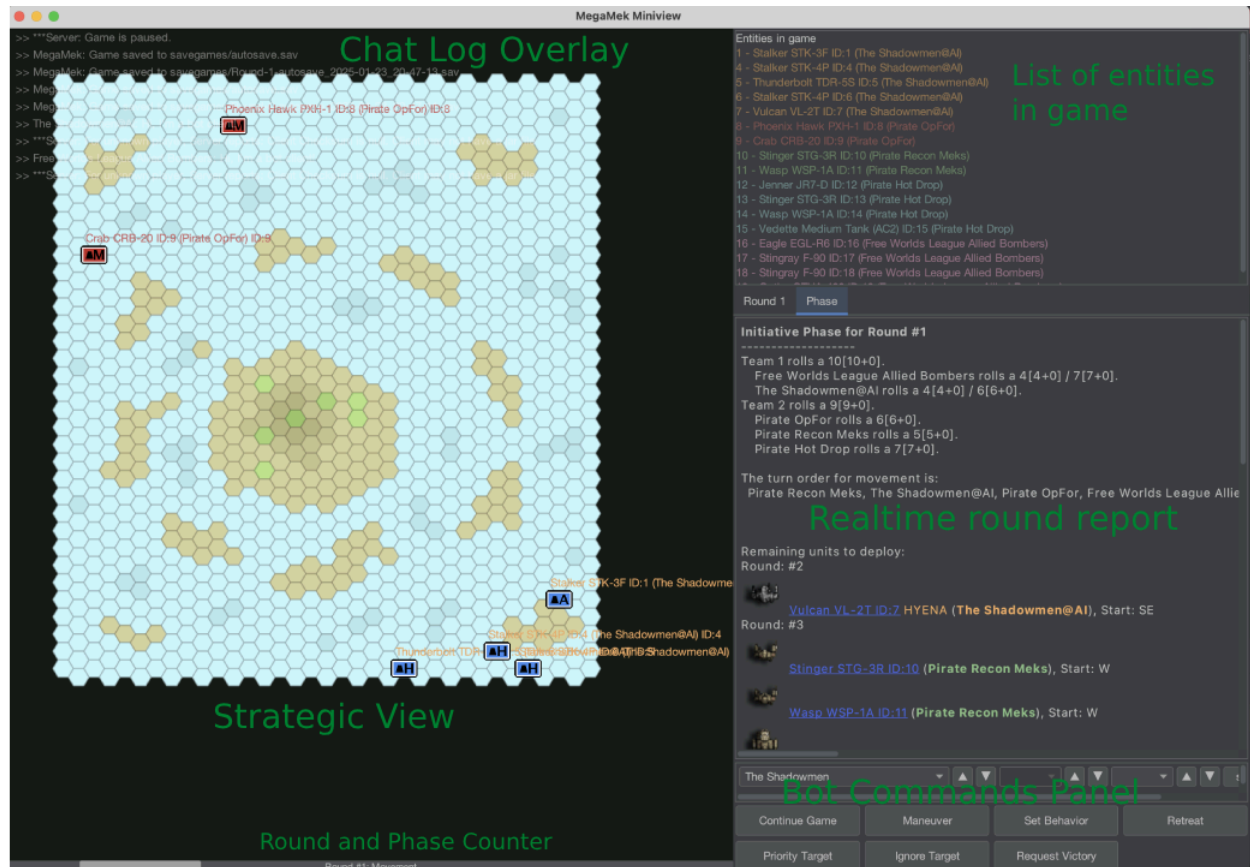
Abstract

Princess Automated Combat Resolution was dubbed PACAR by players as it had no name other than “Princess”, also, people would frequently think that Princess was controlling the units in ACAR – which I find cute – so nothing better than actually creating a GUI for the player that prefers to let princess play. This has a good motivation, the game is faster without all the stuff present in the original ClientGUI, way less game listeners, dialogs, no constant checks to open or close reports, and since it is faster, the need for the typical board view disappears, as a simple minimap with blips and arrows can abstract the faster gameplay in a very simplified manner, while keeping all the fidelity of a MegaMek game for the player. Also, Princess is smart, she can follow basic orders, kill targets of opportunity, but a proper way to control allied bots is missing today, and that’s why I am creating this Commander's GUI.

Keywords: auto-resolve, ACS, SBF, MegaMek, MekHQ, bot, Princess, AI, ACAR

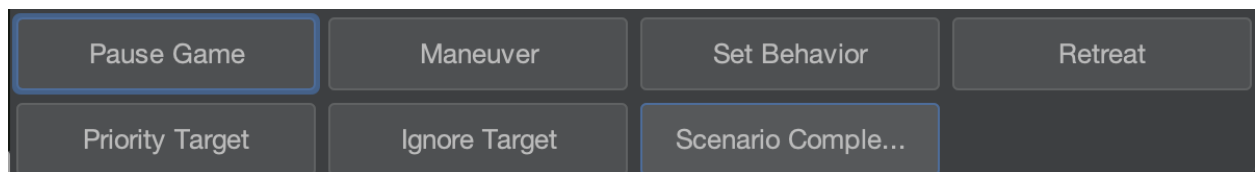
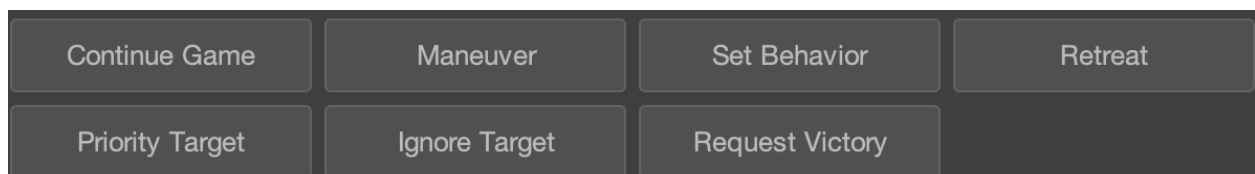
Princess Automated Combat Resolution and Commander's Graphical User Interface

This new Interface is designed for players which are only overseeing a game played between two or more bots, those games can be paused, and as a quality of life improvement I even attached the spacebar to the pause/unpause action. This GUI abstracts away much of the complexity of the game and allows the player to change how they interact with the game.



- List of Entities: List of currently alive units in the game.
- Chat Log Overlay: Shows the few most recent chat messages overlaid on top of the strategic view.
- Strategic View: A mini map with extra information, it shows movement lines, destroyed units, artillery strikes, etc. The lines drawn on the strategic view decay with time, meaning they stay in the map and become fainter as turns go by.

- Realtime Round Report: The report you usually only see at the end of each phase, here it is shown constantly, it is not really real time as things only are flushed to it during phase changes, but the speed at which the game flows makes it even hard to follow.
- Report and Phase Counter: A simple progress bar which keeps track of the current round and phase.
- Bot Commands Panel: A proper switch board, has an assortment of tools necessary to communicate with the bots in a feasible manner. Includes a pause/unpause button (which inside the Commander's GUI is associated with the spacebar), all the typical commands you can use to communicate with the bot – Retreat, Priority Target, Ignore Target, Set Behavior – a “Request Victory” button which is used to request the server for the victory phase, which then ends the game earlier, a very important action when playing bot against bot, as there are rare situations where they can be stuck doing nothing waiting for an enemy to leave the scenario one hex at a time. And finally a new button – Maneuver – which serves as a shortcut for predefined changes to the bot behavior. When the game is over the button “Request Victory” becomes “Scenario Completed”



The new Maneuver option is exclusive to the bot command panel, and it sends commands to the



bots to change their behaviors to those presets. They mostly focus on changing between one and three behavior indices, except by the “No Prisoners!” which also makes princess include every single player in its “Dishonored players” list.

Currently each of the options do (the values are subject to change and this documentation may not reflect exactly what is implemented):

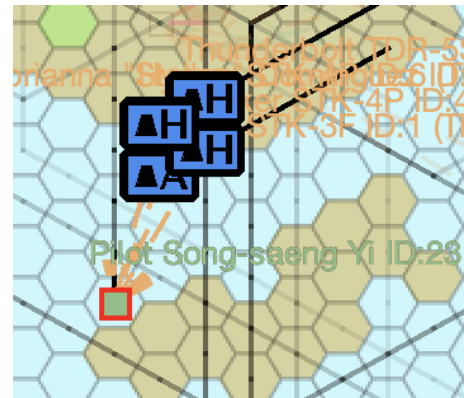
- Alpha Strike!: Bravery 10, Aggression 10, Avoid

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- No Prisoners!: clear ignored targets, add all

players to the dishonored list.

- Stay at Range: Bravery 8, Aggression 3, avoid 7,
- Disperse: Herding 0
- Tight Formation: Herding 9
- Loose Formation: Herding 3
- Hold the Line: Avoid 2, Bravery 10, Aggression 3, Caution 7
- Double Time March: Avoid 2, Caution 2
- Final Glory: Avoid 0, Bravery 10, Aggression 10, Caution 6
- Fall Back: Avoid 8, Bravery 3, Aggression 3, Caution 7
- Evasive Action: Avoid 10, Bravery 3, Aggression 6, Caution 2
- Careful Aim: Avoid 6, Bravery 8, Aggression 3, Caution 7



MegaMek Miniview

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>> Pirate Hot Drop: Jenner JR7-D ID:12 (Pirate Hot Drop) is immobile, Abandoning unit.
>> Pirate Hot Drop: Jenner JR7-D ID:12 (Pirate Hot Drop) is crippled and withdrawing.
>> MegaMek: Game saved to savegames/autosave.sav
>> ***Server: Game is resumed.
>> MegaMek: Game saved to savegames/Round-4-autosave_2025-01-23_20-49-29.sav
>> ***Server: Game is paused.
>> ***Server: Game is resumed.
>> ***Server: Game is paused.
>> ***Server: Game is resumed.

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Entities in game

- 1 - Stalker STK-3F ID:1 (The Shadowmen@AI)
- 4 - Stalker STK-4P ID:4 (The Shadowmen@AI)
- 5 - Thunderbolt TDR-5S ID:5 (The Shadowmen@AI)
- 6 - Stalker STK-4P ID:6 (The Shadowmen@AI)
- 7 - Vulcan VL-2T ID:7 (The Shadowmen@AI)
- 9 - Crab CRB-20 ID:9 (Pirate OpFor)
- 10 - Stinger STG-3R ID:10 (Pirate Recon Meks)
- 11 - Wasp WSP-1A ID:11 (Pirate Recon Meks)
- 12 - Jenner JR7-D ID:12 (Pirate Hot Drop) (Crippled)
- 13 - Stinger STG-3R ID:13 (Pirate Hot Drop)
- 14 - Wasp WSP-1A ID:14 (Pirate Hot Drop)
- 16 - Eagle EGL-R6 ID:16 (Free Worlds League Allied Bombers)
- 17 - Stingray F-90 ID:17 (Free Worlds League Allied Bombers)
- 18 - Stingray F-90 ID:18 (Free Worlds League Allied Bombers)
- 19 - Gotha GTHA-400 ID:19 (Free Worlds League Allied Bombers)

Round 1 Round 2 Round 3 Round 4 **Phase**

Initiative Phase for Round #4

Team 1 rolls a 8[8+0].
Free Worlds League Allied Bombers rolls a 9[9+0].
The Shadowmen@AI rolls a 5[5+0].
Team 2 rolls a 7[7+0].
Pirate OpFor rolls a 9[9+0].
Pirate Recon Meks rolls a 6[6+0] / 11[11+0].
Pirate Hot Drop rolls a 6[6+0] / 6[6+0].

The turn order for movement is:
Pirate Hot Drop, The Shadowmen@AI, Pirate Hot Drop, Free Worlds League Allied Bombers

Wind direction is from the South. Wind strength is Calm. The weather is Clear. Fog level is None.

Team 1:
18077 / 18252 BV remaining (99.04%), 0 BV fled.
9 / 9 units remaining (100.0%).
Units: light damage, 0 moderate damage, 0 heavy damage, 0 crippled, 0 destroyed

Team 2:
2725 / 4563 BV remaining (59.72%), 0 BV fled.
6 / 8 units remaining (75.0%).
Units: 0 light damage, 0 moderate damage, 0 heavy damage, 1 crippled, 1 destroyed

Pirate OpFor (Team 2):
1098 / 2038 BV remaining (53.88%), 0 BV fled.

The Shadowmen

Continue Game Maneuver Set Behavior Retreat

Priority Target Ignore Target Request Victory

Round #4: Movement

Units destroyed and units being attacked in the Strategic View