

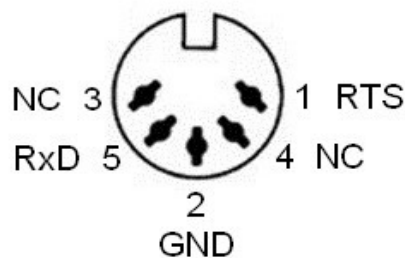
# EAG for Arena

## Fidelity Printer Simulation

In late 1980 Fidelity launched the first chess computer with an inbuilt printer port, the Chess Challenger Sensory Voice. From this time on many Fidelity computers had the same serial printer interface, like the Sensory Champion, Prestige, A/S Elite, Super 9 and Chess Challenger 12. In later models this serial interface was extended to receive data. The first computer with the bi-directional interface was the Elite Avantgarde and gave the interface its name – EAG.

The serial computer interface was able to handle a printer (Fidelity Imprinter) and a home computer or PC with a standard terminal program. The DOS software EAGLink was sold with a cable a short time, but after the takeover of Fidelity by Mephisto the development was stopped.

The serial interface is placed at the side or back of the computer as 5-pin-DIN connector. The first series like CC Sensory Voice, CCS Champion, Super 9 up to A/S Elite and the corresponding Impact Printer have the following pins connected (female connector):



1 = RTS (Request To Send)

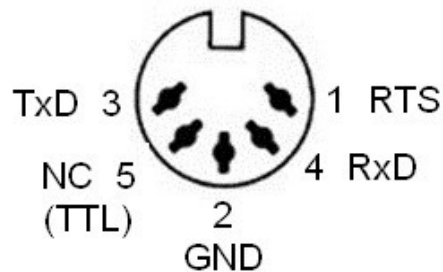
2 = Ground

3 = NC (Not Connected)

4 = NC (Not Connected)

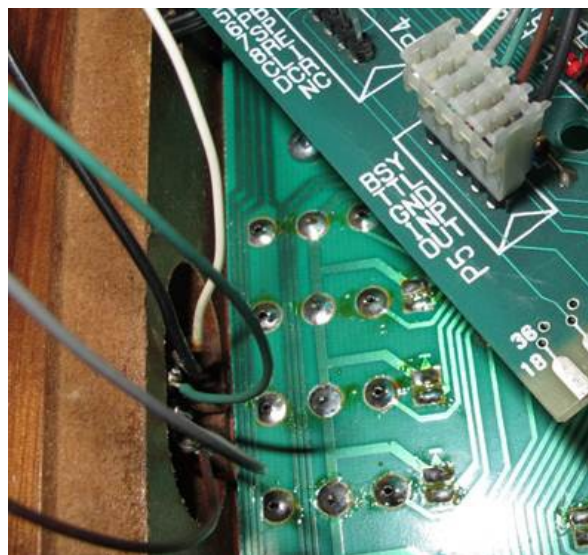
5 = RxD (Receive Data)

End of 1984 Fidelity changed the connection of the pins for the models CC 12 up to Elite Avantgarde. Especially the Avantgarde got a TxD wire to receive data with the EAGLink software. As a result the old Impact Printer will not work on this computers. It is unclear why Fidelity did that change and why even coputers with printer only support have a different connection.



1 = RTS (Request To Send)	BSY	
2 = Ground	GND	
3 = TxD (Transmit Data)	OUT	only wired in models for EAGLink software
4 = RxD (Receive Data)	INP	
5 = NC (Not Connected)	TTL	only wired in models for EAGLink software

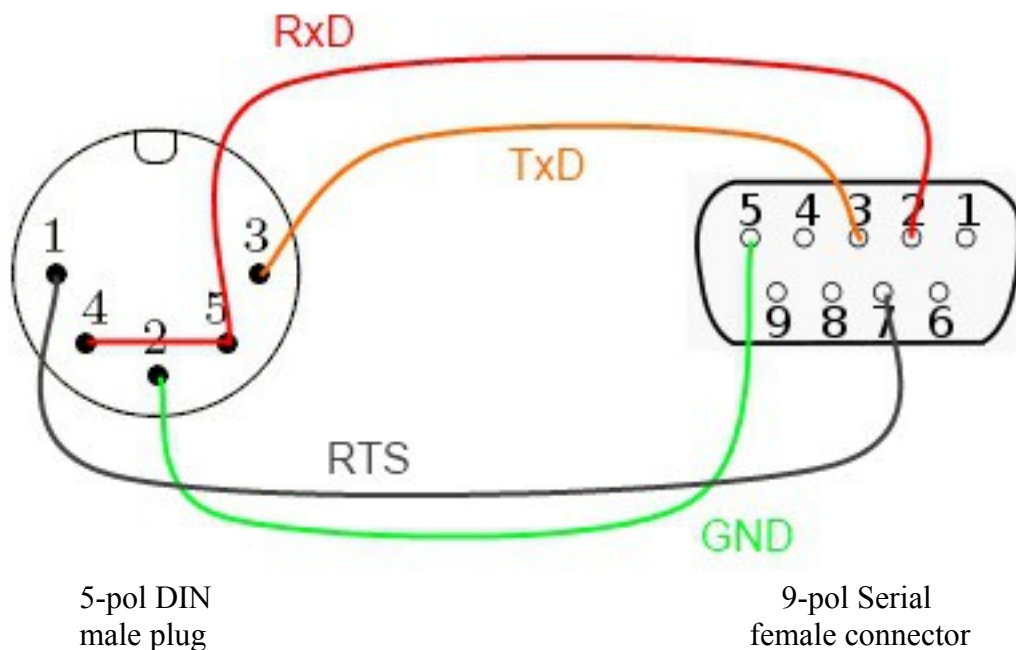
Pin 5 is wired as TTL to the mainbord in some models, but there is no further connection on the circuit – pin 5 is not used. Look at this picture from a V2 (see blue letters):



Owners of a EAGLink cable, that was offered together with the EAGLink software, cannot use this cable with older models like CC Champion. But a simple connection (wire) between pin 4 and 5 will extend the old cable to run with every model.

### Selfmade cable for EAG for Arena software and EAGLink

To use all Fidelity chess computers with printer interface and/or EAG capability, I designed the following cable that is easy to build. Just buy a 9-pol serial cable for your computer (COM), cut off the male plug and connect a few wires to a 5-pol DIN plug (used for audio). The following picture shows the connection of the needed pins:



The view is from outside, like in the picture below. All other pins of the serial connector are not used and need not to be wired.



To use all Fidelity printer compatible boards under the well known software 'Arena' ([www.playwitharena.com](http://www.playwitharena.com)), I have developed the following software under GPL (GNU General Public License). Other UCI (Universal Chess Interface) compliant GUIs (Graphical User Interface) can be used also.

### **UCI-Engine implementation**

UCI is a common protocol for chess software written by Rudolf Huber and Stefan Meyer-Kahlen. Because many chess software GUIs support UCI, I choose it for the development. The implementation is not complete, because the EAG-Boards have a specific behaviour and cannot simulate all of the possible UCI options, in many cases it is not possible to send any command to the computer (printer only). Many UCI commands from the GUI to the engine will be ignored, but have no effect on the play. The development is KISS (Keep It Simple and Stupid) based and runs well in most cases, but some specifics may crash the engine or the board software.

- It is not possible to use opening books from a GUI, the chess computers always use their own book. So please disable any book of the related GUI (like Arena, Fritz or Shredder).
- Disable time controls of the GUI, because the time information send to the engine are ignored and the result is a loss of the game in some cases.
- Pondering is not possible at the interface, so please disable it (if send it will be ignored). The chess computers still do their own pondering (not visible to the UCI interface).
- It is not possible to use an EAG engine for analysis.
- Playing levels from the GUI are ignored. Set them manually at the board.

### **EAG-Monitor**

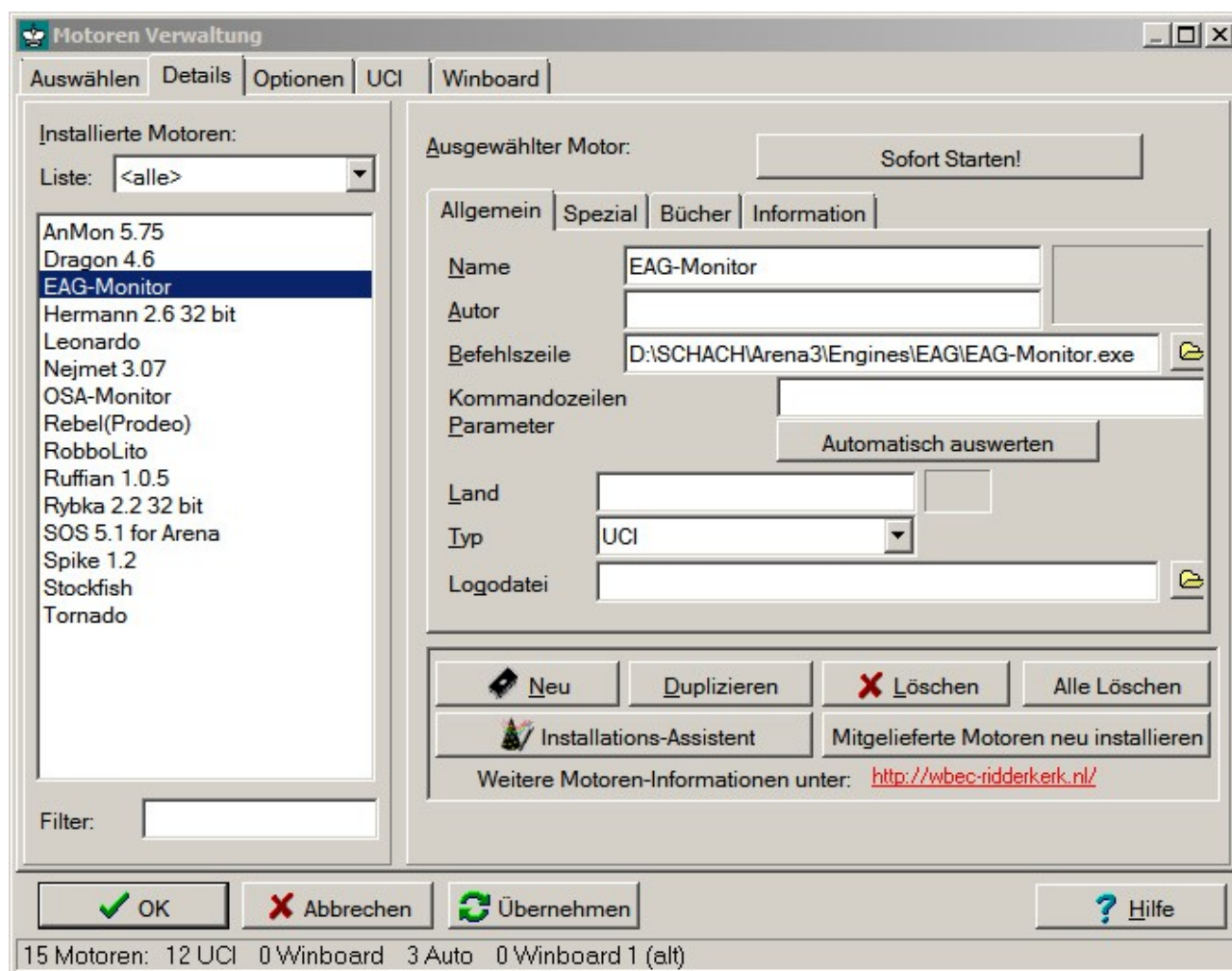
This is an UCI engine for monitoring all moves done on any board between a player and the inbuild software (basic software or module). Selfplay is also possible by pressing the "Play" button on the board repeatedly, this includes switching the side at any point. EAG-Monitor is a printer simulation that captures all moves on the chess board and send them to the GUI, all games can be recorded directly under Arena and then saved there. All settings are done on the board, EAG-Monitor does not send any commands from Arena, so it is not possible to set up positions in Arena, but "Analysis" mode can be used and openings or move lines in a game can be made and are monitored in Arena as well. The UCI protocol does not support takebacks, but with a special procedure it is still possible to do this.

### **Installation under Arena**

To use the EAG software for Arena extract all files from the archive file EAG4Arena.ZIP to a directory of your choice under Arena\Engines. The process is similar to the setup of my OSA4Arena software, so you can get several information in that specification too.

## EAG-Monitor as engine

To use EAG-Monitor as chess engine under Arena it must be configured as engine in the Engine Management. EAG-Monitor can be used only as Engine 1, Engine 2 shall be empty.



A good idea is to name the chess board as Arena name. So it can be used for all savings and reports.

Add the relevant COM interface of the EAG cable connection into 'Command Line Parameters'. If omitted, COM1: is used as default.

EAG-Monitor supports the following optional command line parameters:

Syntax: COMx:        x = number of COM port in your PC

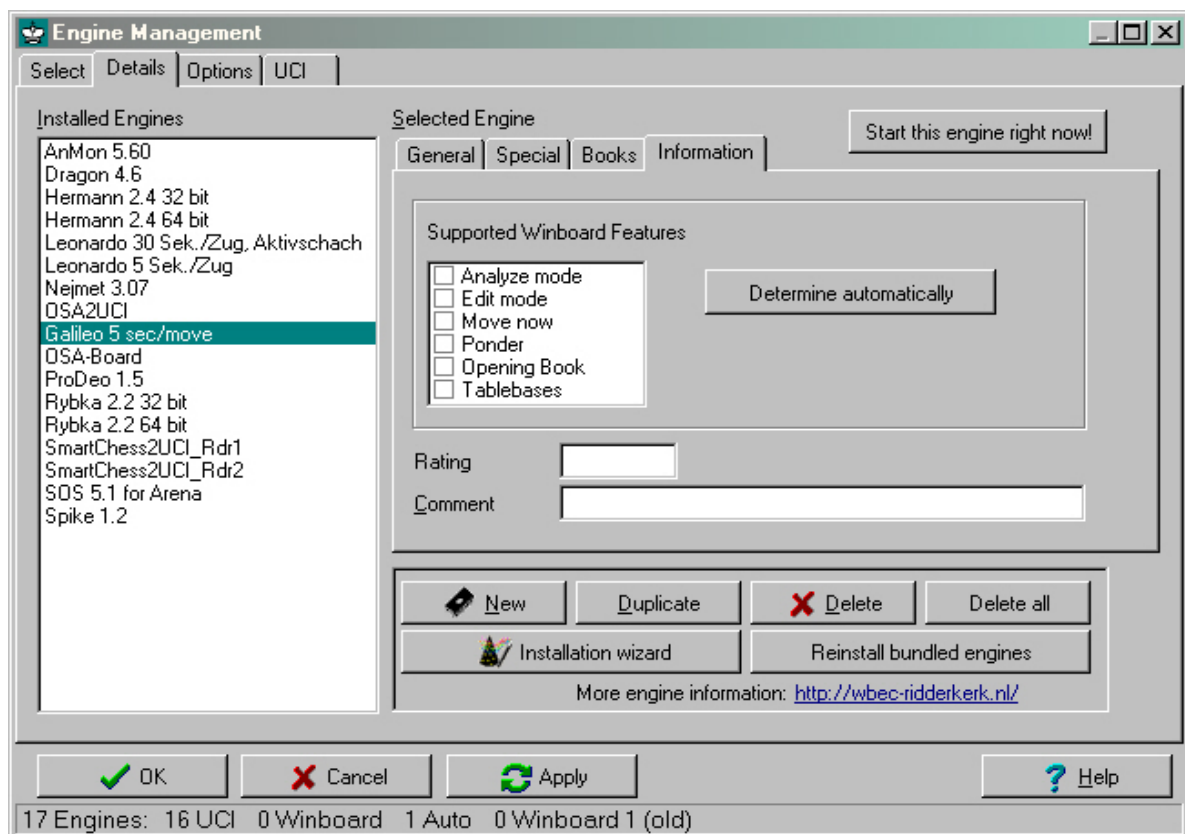
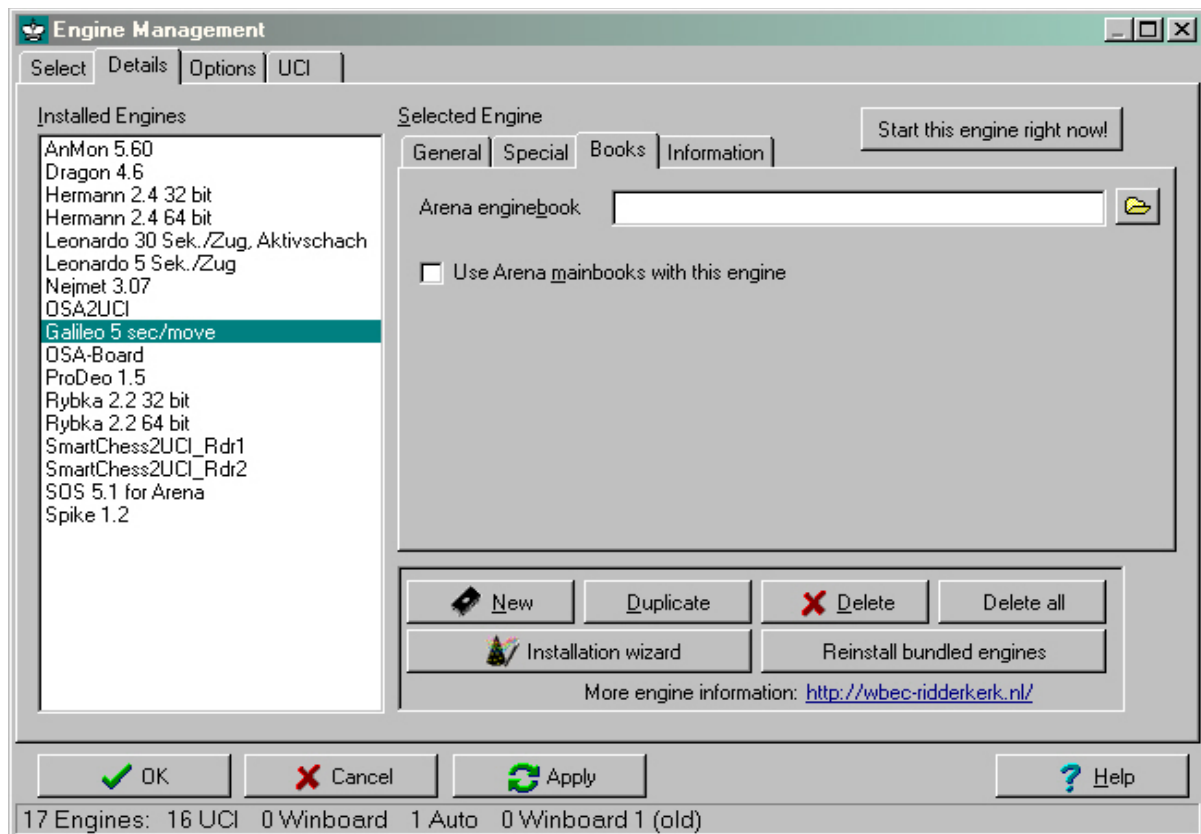
e.g.

EAG-Monitor                      (no parameters set COM1:)

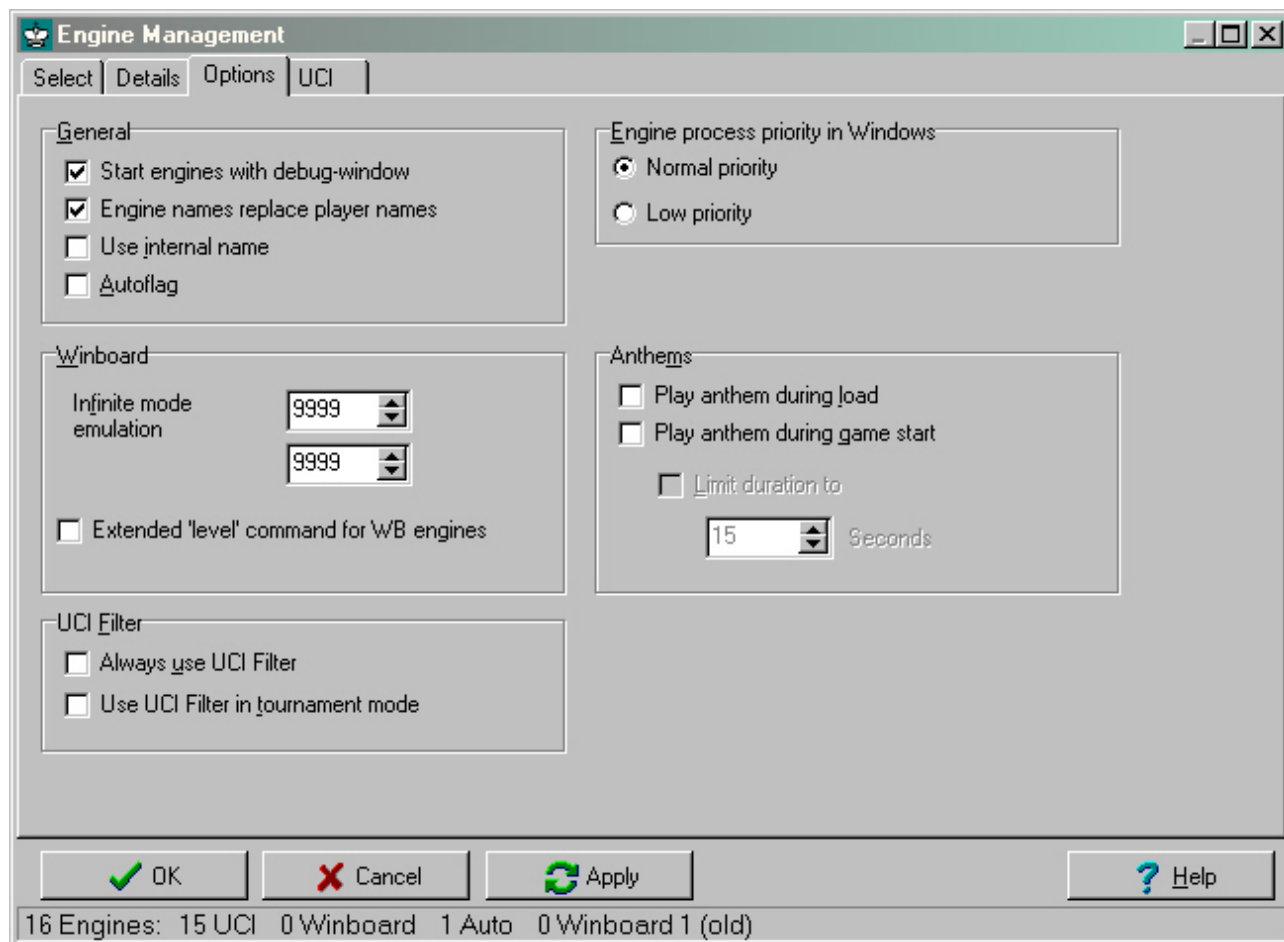
EAG-Monitor COM3:

USB to Serial interfaces still work, so you can use the software with your laptop.

The sections 'Books' and 'Information' shall be left empty:



## General Arena settings

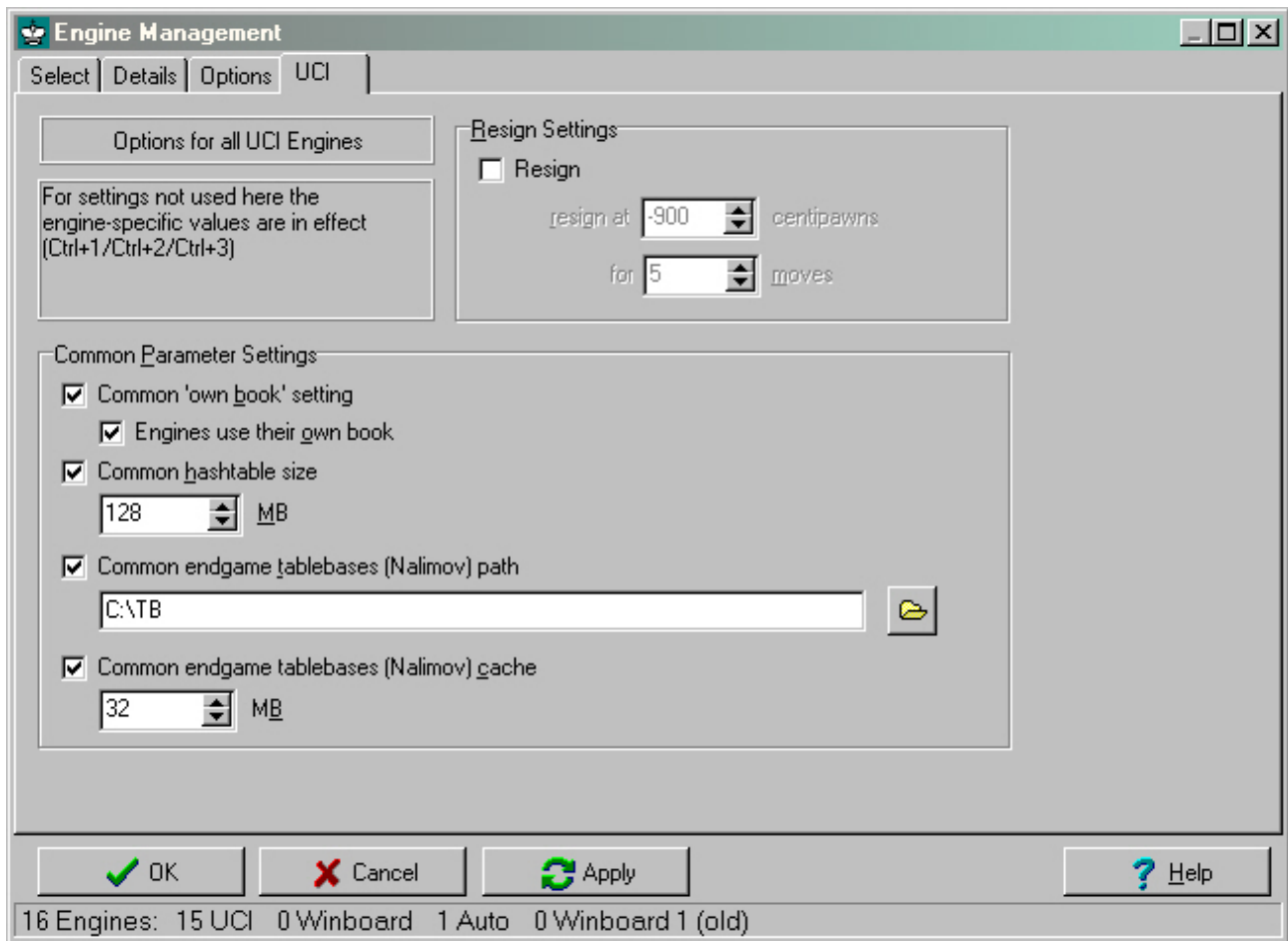


To use the values from the examples mark 'Engine names replace player names' and disable 'Use internal name' (this will show the name and the version of the EAG software) in the section 'Options' of the Engine Management.

For the first steps it is useful to mark 'Start engines with debug-window', then you can see the communication between the board and Arena. If everything works fine, it can be disabled later.



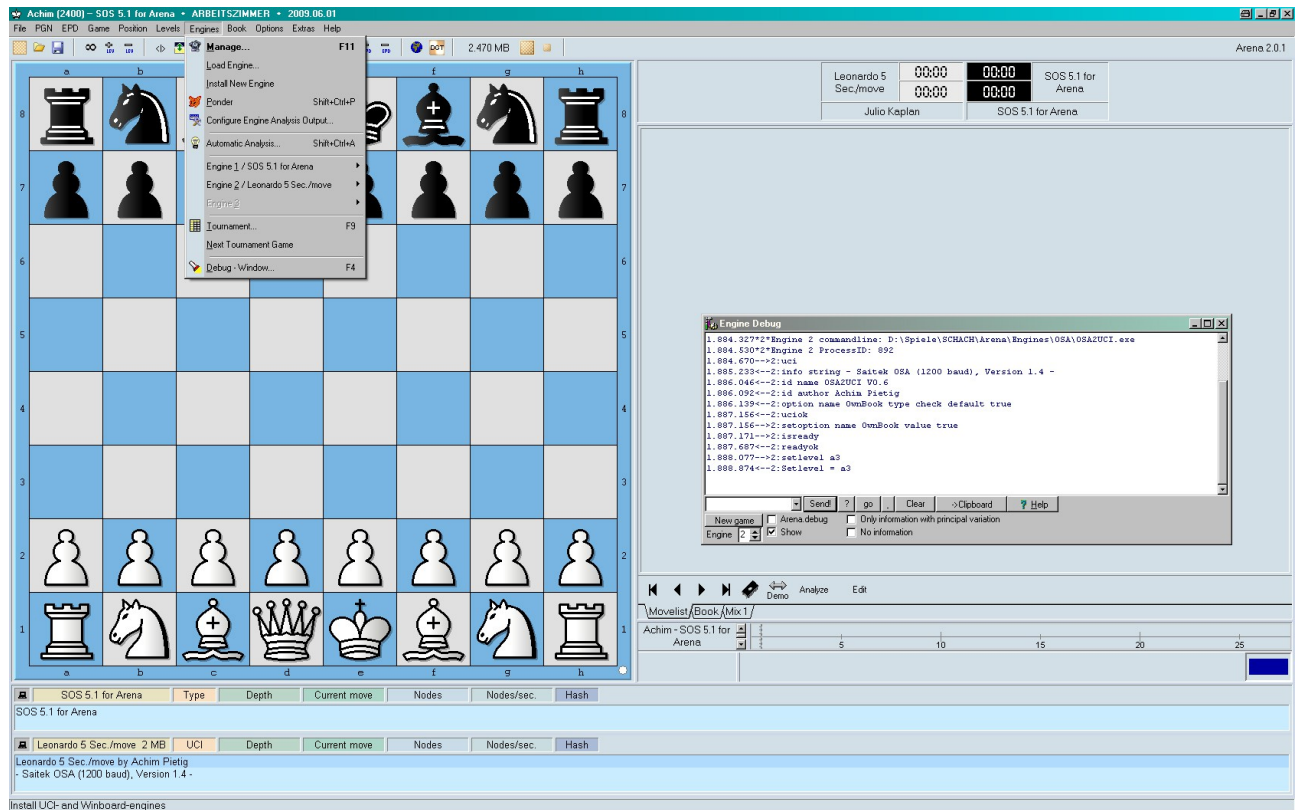
In the 'UCI' section please mark 'Common 'own book' setting' and 'Engines use their own book'. Other values are not relevant for the EAG board and will be ignored. To give full control to the chess engine of the board disable 'Resign Settings'.





## Using EAG engines

After configuring the new engines you can simply use them as new Arena engines. Do not use any opening book of the GUI. Load the EAG engine as engine 1 and start it with the “Demo” button. This initiates a self play and all moves on the board are recorded. If the debug window is available, you can see the established connection.



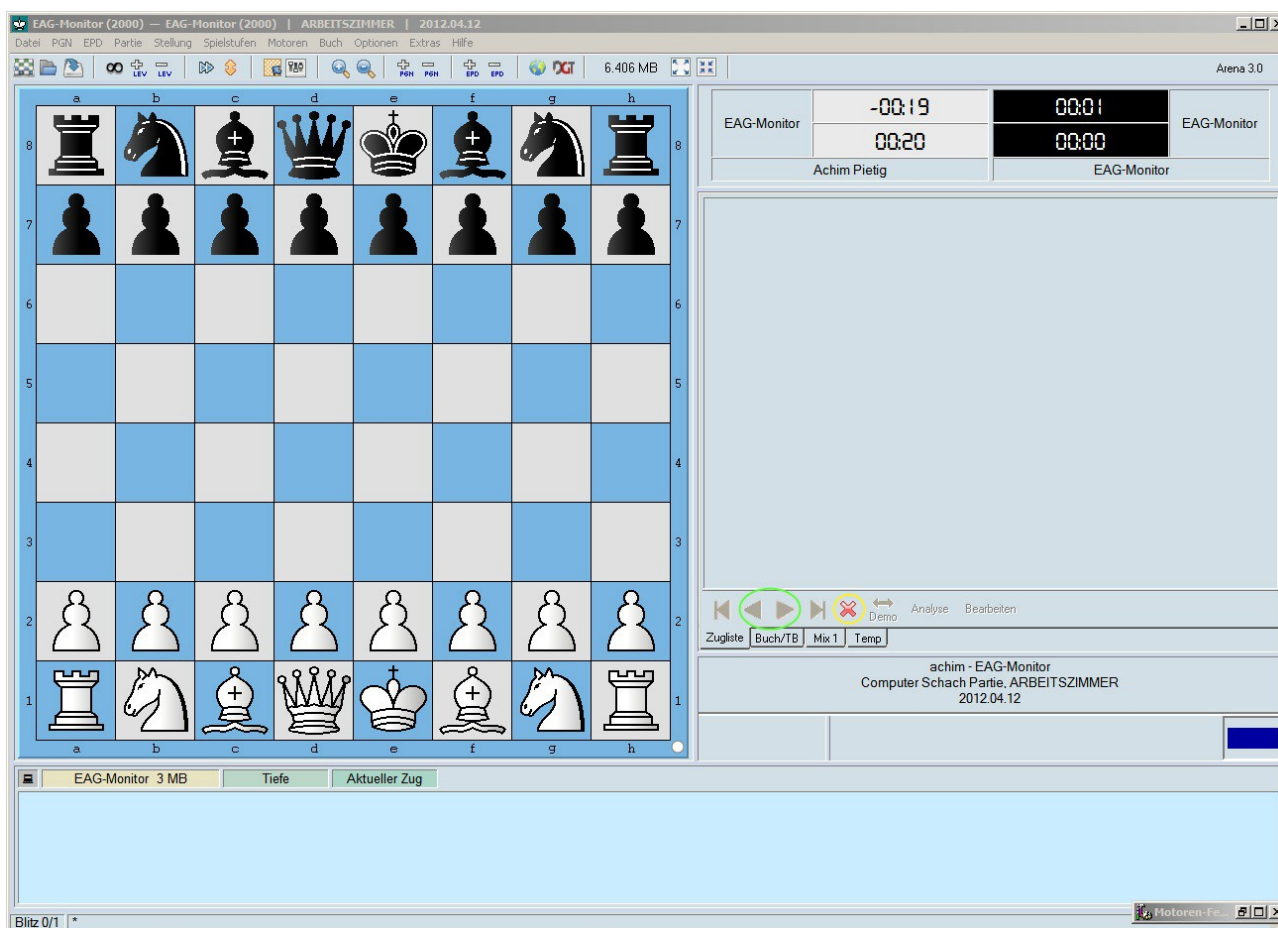
That's all...

## EAG-Monitor specifics

Because Arena cannot send commands to the board in monitor (printer simulation) mode, it is necessary to start a game from the beginning or to setup a position in Arena and on the board independantly. If you start EAG-Monitor with the “Demo” button, the positions must be equal, otherwise an illegal move may occur.

Arena will not recognise if the board is in analysis or any specific mode, each move is simply displayed. So you can change to analysis every time and make some moves on the board, e. g. to play a specific opening line. But you can move forward only, takebacks are not defined in the UCI protocol and will result in an error.

If you want to “Takeback” moves on the board, you should stop the “Demo” mode by pressing the red cross left from the “Demo” button (marked yellow in the picture). Then you can go back to any previous position on the board. After this you have to play backwards to the same position in Arena too, for this you can use the green marked buttons. If the position in Arena and on the board is equal, you can restart EAG-Monitor by pressing the “Demo” button again. After the first new move, Arena will ask if you want to overwrite the old moves or make a different line, best is to overwrite.



Some Fidelity computers have a function to print the whole game (all moves) at the end of the game, this can be used in Arena also. Start a new game in Arena (start position) and press “Demo”, then press the relevant keys on your computer to start the printing (e. g. GC D3 CL on an A/S Elite). Now you see all moves running quickly in Arena.

#### Limitations:

- Only the standard printing mode is supported, do not switch the chess computer in the mode that prints figure pictures.
- Printing a position is not possible and will be ignored, however this function is useless with Arena.
- Promotions always result in a queen in Arena, because the Fidelity only sends the move coordinates and gives no additional information. If the Fidelity promotes a pawn to a different figure, you can stop EAG-Monitor (pressing the red cross) and change it in Arena.

#### Contact

Please report any bugs or ideas to [achim@pietig.com](mailto:achim@pietig.com).

#### Disclaimer

The software is provided 'as is' and there is no guarantee for any functionality or malfunctions. I'm not responsible for any damage that may occur, use it at your own risk.