Map editor for Anno1503
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Mapeditor (c) Dieter Robert Kohler -   Version January 2021

Preparations

Before you can work with the map editor, some preparations have to be done.

System requirements

This version of the map editor has been adapted to 64bit systems, particularly the Anno1503-History Edition. The map editor is restricted to generating scenarios for the KE version as a minimum. Scenarios for the base version of Anno1503are no longer generated (old scenarios will be updated automatically).

As a first step, create a directory where the map editor resides. (The software does not need any registry entries).

The zip-file should contain the following files:

<subdirectory> Deutsch   : required text files in German
<subdirectory> Englisch   : required text files in English

MainStrings.txt   : Text files from a language subdirectory
FigurenListe.txt
MinenListe.txt
Buildings.txt
MonsterListe.txt
NamensListe.txt
(Gelaende.txt)   : optional, not really used

AnnoMap.exe   : the map editor

These text files should never be altered (except correcting spelling errors), as they are required as is for the correct operation of the map editor.

The file NamensListe.txt contains (real) names for the various peoples. The list can be enlarged as you like it if you look for more diversity (keep the format structure of the file).

To change the language, copy all text files from one of the language subdirectories into the main directory, if the wrong language is active (default is German).

Separate programs

AnlagenProjekt.exe : a program that creates the texture images
GFXExtractor.exe   : a program that creates the GFX images (ground textures)
The ground textures are not used in the MapEditor.

Both programs can be found at www.Annopool.de

These two programs have been completely reworked.

The texture images are used to display the buildings in the island window of the MapEditor. The original bitmaps are retrieved from the system file ANLAGEN.addon.addon. The format has been changed to png to allow for transparency and alpha-channel data. The data requires a hefty amount of disk space.

The map editor runs without these images just as well, just without some eye-candy.

Start the editor

Simply create a shortcut to AnnoMap.exe on the desktop. A click on the icon starts the map editor. Loading is aborted with an error message if not all text files are present.

Some basic considerations

The map editor attempts to create the structures by comparing them to the structures contained in the original scenario files.
Unfortunately, not all structures and parameters are revealed or explainable in the original data, hence some structures and parameters require some ”guesses” or are generated using analogies from original scenarios.

Basically you can create new maps out of a completely empty world.(Menu:→->New Scenario →->Map editor). This way, the entirety of all structures and parameters must be generated by the map editor which increases the chances of an incorrect parameter/structure setting.

A safer way to create a new map is to alter an already existing (endless-)map. This way, most of the unknown structures are simply retained (with the hope they stay “legal”, which seems to be a correct assumption), and unknown parameters are not changed. This way greatly increases the chances of a working new map.

All three types of maps can be generated. Endless maps, scenario maps and campaign maps. The complexity greatly increases with the type, though, and consequently the danger of introducing errors.

Already existing campaigns should never be used as a starting point for a new map. They are within an entire chain of interlocked maps and events. Changing a campaign map requires extensive knowledge of the scripting system which can only be gained by studying existing scripts.

The AnnoPool at www.AnnoZone.de contains a special script manual created by Admiral Drake. He did fiddle extensively with the script system of Anno1503.

The map editor basically makes no consistency checks of your inputs.
This allows for many things that were not even considered by the authors of Anno1503 (MaxDesign). Do not create “senseless” settings on purpose. While the Anno1503 loader is rather forgiving when it meets weird input, not everything is forgiven...

A fundamental rule is that you should not change too many things at once. The probability that the map editor ”loses track” increases the longer you pile up changes to a map. In the end, if the map doesn’t load, it gets from very difficult to impossible to find the faulty change which was responsible for the crash.

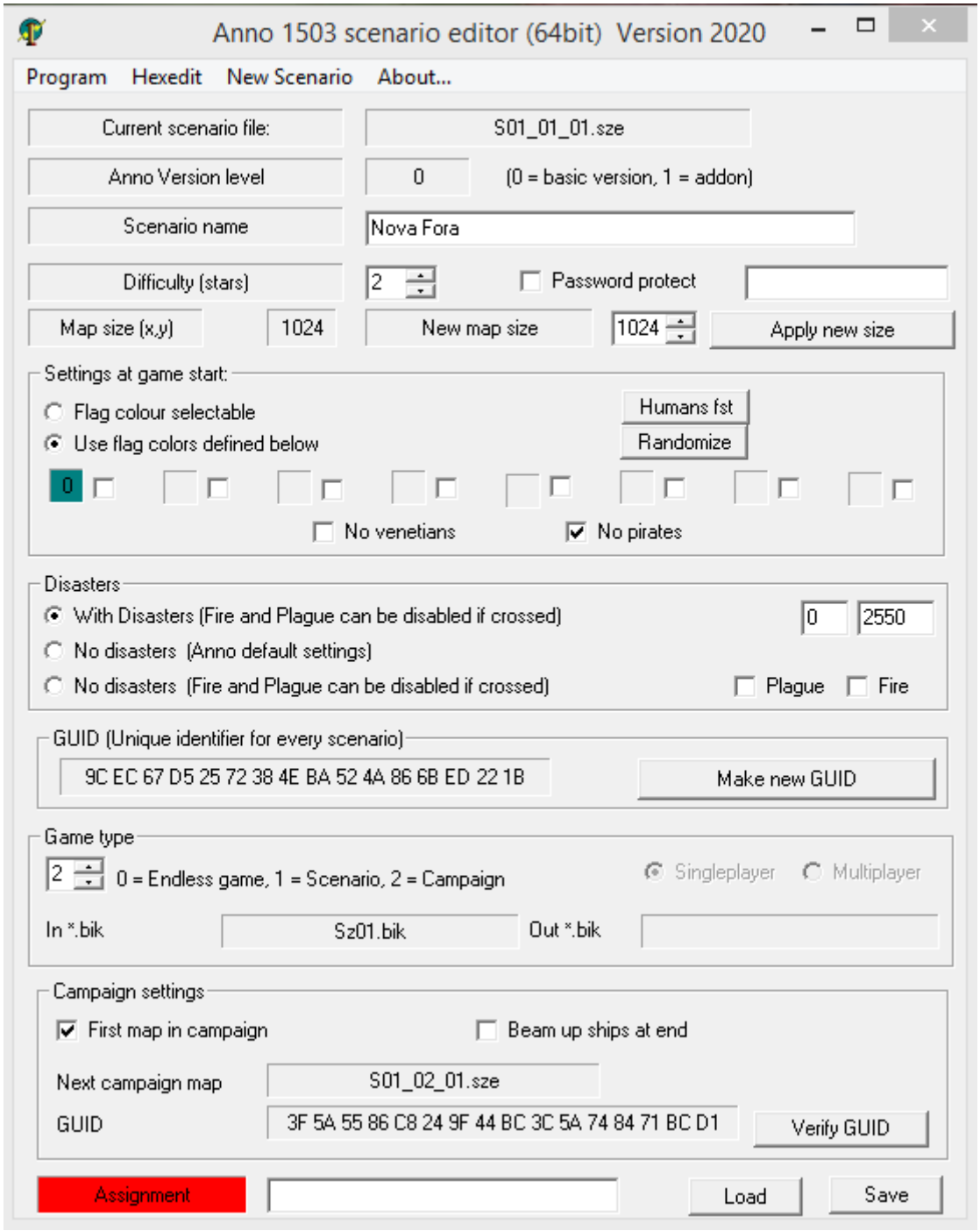
So make a smaller number of changes, generate the map and check if it still loads. That is more cumbersome but gets you to the target eventually.

Of course, never overwrite a working map, use a new filename for every stage..

New maps only appear in the launch screen list if the file Scenes.cach is erased before launching Anno1503.

Load an existing map

With the menu option ->Program ->Load Scenario an already existing map is loaded. With the menu option ->Program ->Load savegame, an existing savegame is loaded. If you generate a new map starting from a savegame, only the elements (islands, ships, etc) are used, not the game logic achieved in the game. ->Load savegame is basically used to either check “What’s going on?”, or to extract an island from the map and save it to disk in the original *.scp format. Never overwrite original islands, use a different name!



The main window shows some basic settings for the map.

Most settings are self explanatory.

The first parameter to set should be the map size. A later change of the map size is not entirely risk free, as many parameters require recalculations.

Every map contains a unique identifier (GUID), which is particularly important for the multiplayer maps. Every player in a multiplayer game must load the same map, hence a new multiplayer map must be distributed to all players first. The AnnoPool on www.AnnoZone.de has an up/download section for this purpose. A player cannot join a game if the map does not have the correct identifier.

In principle, multiple maps can have the same name if they possess different identifiers. However, this should be avoided as it creates confusion when the game starts and the list of available maps shows multiple maps with the same name.

At most, seven computer players can be set, as there only are eight flag colors to chose from.

If ”Flag colors selectable” is not selected, then the game starts right after selecting the map from the list of available maps with the colors defined here.

“No catastrophes” disables disasters in maps. The software uses a system default parameter set to 134 for this.

Setting disasters

There are two settings for natural disasters: **On** or **Off**.

In the **On setting**, all natural disasters can happen: plague, fire, drought, volcanic eruptions and earthquakes.

In the **Off setting**, Anno1503 disables drought, volcanoes and earthquakes, but not fires and the plague.

You can use the two checkboxes for Fire and Plague to manually disable these two disasters (in both settings).

Hints:

Fires can still happen if people are rioting in your streets (or if an enemy attacks your buildings). Riots are self-inflicted trouble, not natural disasters.

There are two input fields at the top right of the disaster input box. The first box contains the value that is written into the map file. The second field is an unknown parameter that might be connected to disasters. The effect of changing this parameter is unknown.

It is not possible to selectively disable earthquakes, droughts or volcanoes.

If ”Password protect” is selected, then other players cannot load the map into the map editor. Insert a password into the field.

Campaign additions

A campaign consists of several maps tying a history together. The campaign settings takes care of the logic behind going from one part to the next part.

Key components:
1. Your start map of the campaign must have the “First map...” flag set.
2. The name of the next map can be chosen by clicking on the panel.
3. The GUID of the next map must also be entered.

Usually you don’t have all this info for the next map (or the next map doesn’t exist yet). You can always reload a campaign map and enter the missing data once the followup map has been created.

Important:

If a culture/monster no longer owns a city and/or soldiers, it should be removed from the player list.
This could happen if you remove an island from the map that contains a settlement. The button ”Remove island” removes the island, but not the player structure associated with the settlement (the player might own another settlement or soldier on another island).

Before generating the new map, one should always check the player list to see if there are any “dead” (active but without any elements) players left.

Attention: This rule does not apply to the Venetians and Pirates. These two players might appear later in the game and might not have a ship or a city at the start of the game!

Loading a scenario (or generating a new map) also opens the main map window (which would be empty in case of an entirely new map):

The world map is displayed in the left part. Islands are shown as colored basic squares, depending on their sizes and types. Random islands are always displayed in their basic forms, as the true island shape is picked at game start from the list of available islands.

Ships are displayed as small colored squares

The bottom left contains some statistical data for the world map.
North is a top left, South at bottom right.

“Show real island shapes” opens a new window which shows the true shapes of the (non-random) islands. With this option, auto routes for ships can be created. This option is extremely tedious and should be tried when all islands and ships are fixed and no longer change.

The right half of the window is the ”work area” of the map editor.

There is a tab sheet for every main element of the map editor:

1. The island tab

This tab contains the options for working with islands.

2. The city tab

This tab contains the options for working with cities.
If no cities are present, the table is empty.
Cities for cultures on random islands are generated at run time and cannot appear in the table.

3. The player tab

This tab contains the options for working with players.
Certain players are always included in the table, including a ”dummyplayer”. This player basically marks the end of the player list, but it can be used to ”park” cities and soldiers which are not yet assigned to a specific player.

4. The ship tab

This tab contains the options for working with ships.
If no ships are present, the table is empty.

5. The soldier tab

This tab contains the options for working with soldiers.
If no soldiers are present, the table is empty.

6. The diplomacy tab

This tab contains the options for working with player connections.
If no diplomacy connections exist between players, then the table is empty.

7. The script tab

This tab contains the options for handling the scenario script.

8. The generator tab

This tab contains the options for generating the new map.

1. Working with islands

Basically there are two different ways to add islands to a map. The first option is to simply use a random island where you only define size and type of the island. At the start of the game, Anno1503 randomly picks an island from the island depository (with the chosen size and type). The advantage of this method is that the world looks different every time you start a new game as different islands are picked. Also the size of the scenario file *.sze remains small as it only requires the addition of a few bytes per random island.

The second option is to add a specific island *.scp to the scenario file *.sze. The advantage of this method is that you know what you get, the same island is present at every new game start. This increases the size of the scenario file considerably.

The table in the island tab lists all islands. An island can be selected by clicking into a line of the table. You can also select an island by clicking on an island square at left in the world display.

The table shows some important parameters for the islands. Some parameters depend on the type of the island. For example, the type and size of the island can only be changed for random islands.

A selected island can be moved around using the arrows (in predefined step sizes), or simply by clicking on an island rectangle and dragging the island to a new place. Island positions have certain built-in restrictions. Due to those restrictions, islands should not be placed at a map border, and islands should not overlap.

The island name can be changed by entering a new name.

Settings for random islands

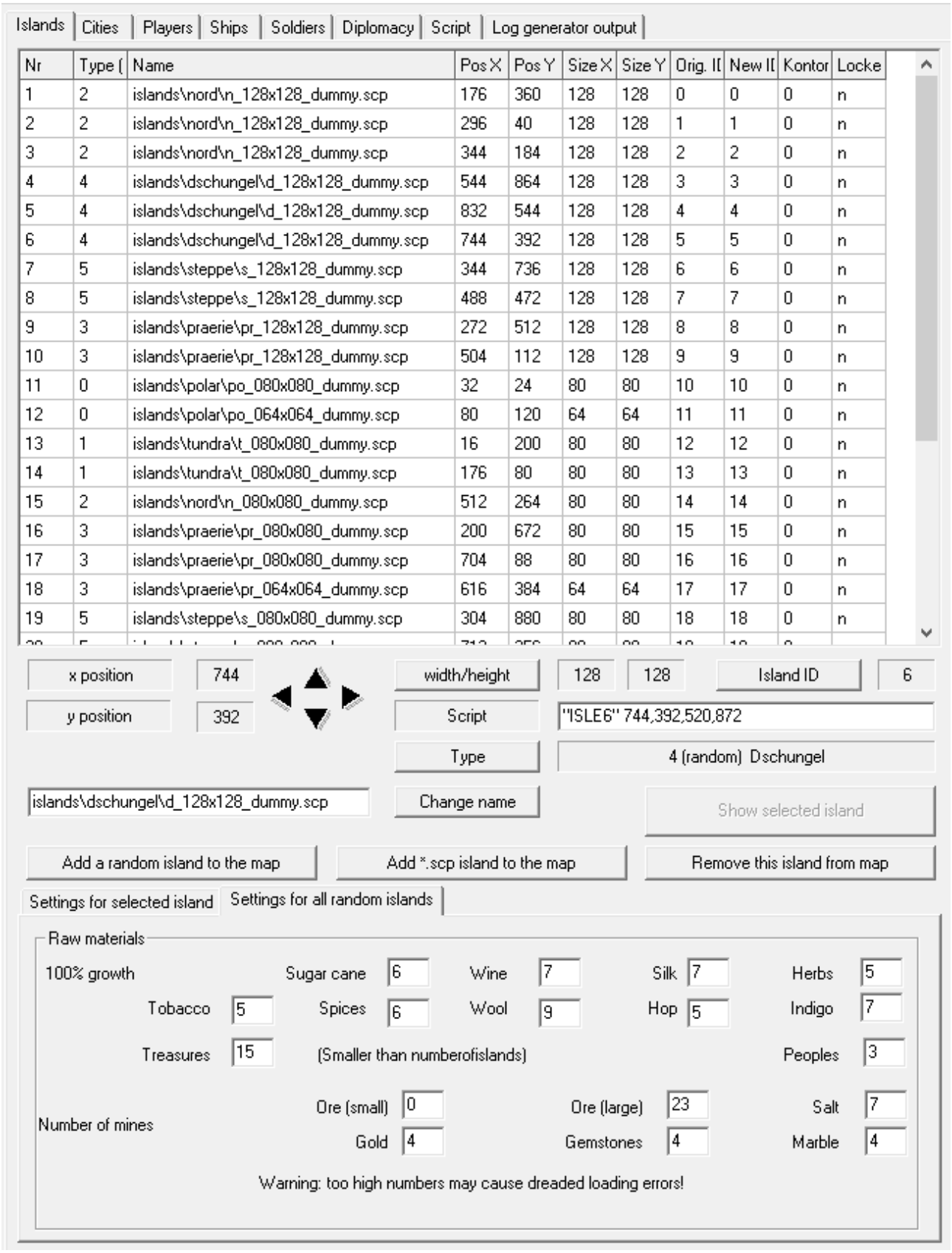
Some settings are possible that apply to the sum total of all random islands. One should always take care to not enter too high numbers for some parameters.

The Anno1503 loader cannot process too high numbers and falls into an endless loop trap when trying to load the map (the History Edition might not have corrected this bug).

Too high settings apply to mines, mining sites, cultures and treasures. Too high numbers for raw materials/plants do not lead to problems in general (but for example, setting sugar cane to 100 might lead to a world where the southern islands contain sugar cane only)

It is not possible to put restrictions on the distribution of the various cultures, unfortunately. In bad cases, four of the five cultures could be the same people.

The History Edition also still limits certain mines like salt to northern type islands (there won’t be salt on southern random islands)



There are three buttons to change an island in the world map:

1. Add a random island to the map

This button is self explanatory. The new island appears in the north and can be modified using the possible options for random islands (position, size, type).

2. Remove this island from map

This button removes the selected island from the map. Everything on the island (cities, soldiers) is removed as well if there is anything on the island. The player structure of the owner of the city/soldiers remains in the player list, as the player might possess more cities/soldiers elsewhere.

3. Add *.scp island to the map

With this button you can add a specific “.scp island to the map, picked from the island repository.

Settings for fixed islands *.scp

There are two types of fixed islands: “empty” islands and islands that contain a population.
If you select an island which contains one or more than one city, all cities will be assigned to the ”dummyplayer” by default. Before generating the new map, all cities owned by the dummy player should be assigned to a defined specific player. If there is more than one city on an island, and they are assigned to the same player, then all these cities are merged into a single city in the new map (there is no guarantee that this trick will work, though).

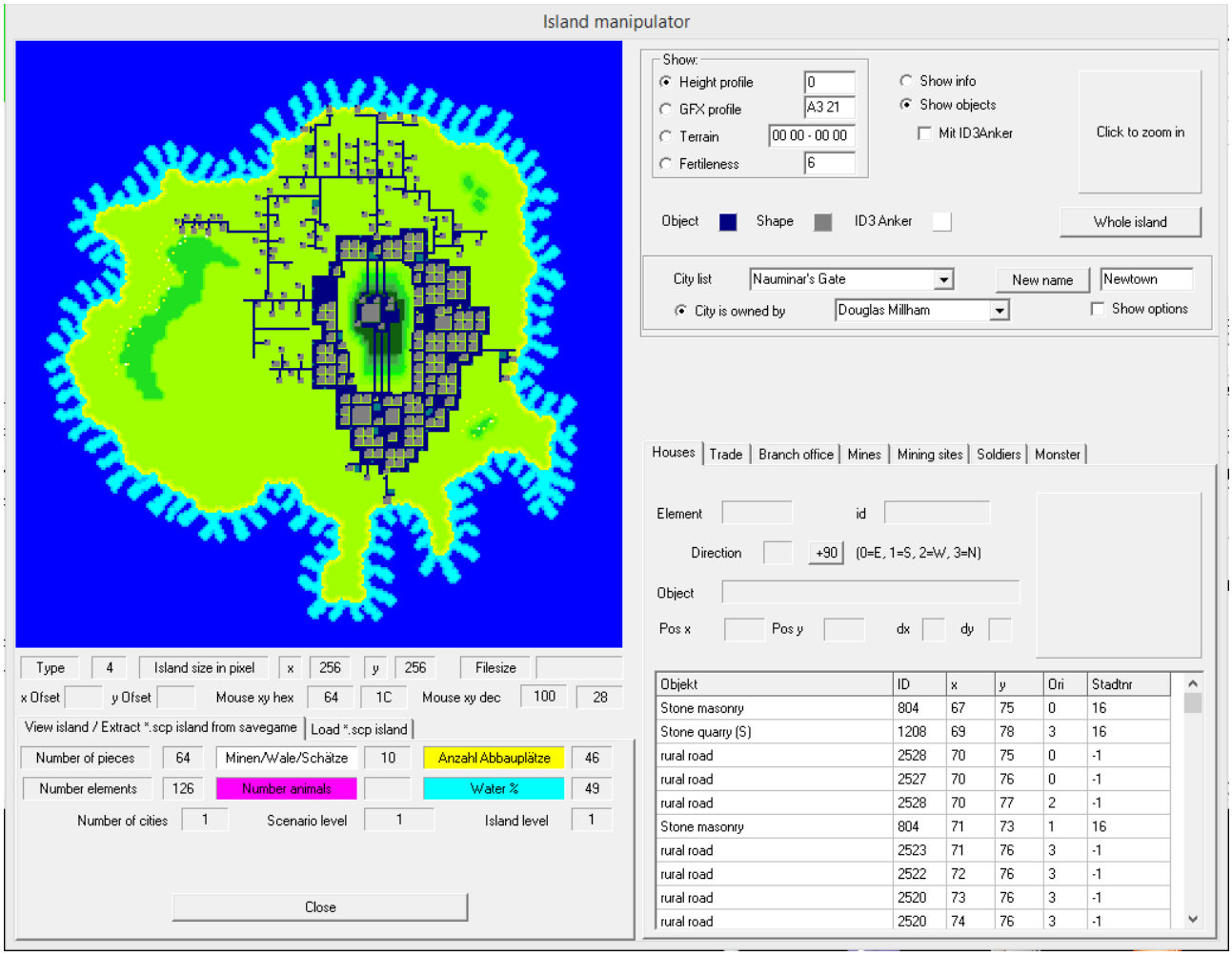
Basically, any city can be assigned to any player, even nonsensical assignments can be done. Whether the Anno1503 loader will accept that assignment or not can only be proven by trial and error.

The option island with city is very complex and stresses the map editor, as there are a multitude of different (and occasionally faulty) island structures within the original files during the history of the various Anno1503 versions. Unfortunately the History Edition still contains the same original island files (with all their inconsistencies) so this mess was passed on.

As a precaution, only one populated island should be inserted into the map. Then the new map should be generated and tested with Anno1503. If the map is ok, then the map editor can be restarted and work can be continued on the map. If the map does not load in Anno1503, then the island should be removed and another island can be tried.

Both buttons “Add *.scp island” and “Show selected island” (not for random islands) opens a new window. In this window, you can either load a new island or make changes to the selected island.

Show selected island



On the left, you can see the true shape of the selected island and, depending on which profile is shown, the Height, the GFX, the Terrain or the Fertility distribution on the island.

The tab “Load *.scp island” is inactive, the other tab contains some less interesting statistics for the island.

A click into the square “Click to zoom in” does exactly that, it show an enlarged section of the island on the left.

A change to “Show objects”, on the top right, seven tabs appear at bottom right that display various settings for the island:

1. Houses
2. Trade
3. Branch office
4. Mines
5. Mining sites
6. Soldiers
7. Monster

The first three tabs do not have any functions if there is no city on the island.

1. Houses

The table contains a list of all building elements on the island. A click into the table displays some info for the selected element.

2. Trade

Here you can set the trade with the city. However, some of the cultures seem to have hardwired trade in some scenarios which cannot be overwritten. Trial and error is the only way to find out.
Anno1503 calculates amounts and prices internally, so setting amounts and prices might get overwritten during game play by internal game logic. Also Anno1503 seems to make some checks about which materials are allowed to be traded for certain cultures. It may happen that your settings will be overwritten by defaults (which was a problem with some older Anno1503 versions)
Additionally, you can set trade options using the script system (this was possible in older versions).

3. Branch office

Here you can fill your warehouse with materials.

4. Mines

Here you can make some changes to the mines on the island

5. Mining sites

Here you can hide treasures, add/remove whaling grounds and add/remove mining sites at the mines. A click into the island display defines the xy position which can also be fine positioned using the xy input fields.

6. Soldiers

The table contains a list of all soldiers on the island. Almost all manipulations can be performed on soldiers (the Spider monster is a special case of a player soldier, as implemented by Anno1503).

7. Monster

The table contains all buildings from the houses tab associated with a monster. Monsters first appeared in the Addon-On version of Anno1503 and are implemented as a player with a town of one building, usually a cave. An exception is the spider which is a soldier. There are, however, two buildings (ruins) associated with the spider monster.

From the existing scenarios, only rudimentary information can be gathered as to the data structures of monsters. This basically leads to problems generating all the correct structures.
Monsters should be added, one by one, as the last step in the map making process, when the map is known to work correctly.

Monster caves essentially are a building with an influence area, typically a circle with a diameter of 7 tiles. If a player touches the influence area of a cave, then action starts in earnest (if the diplomatic relation with the player is set to “war”).

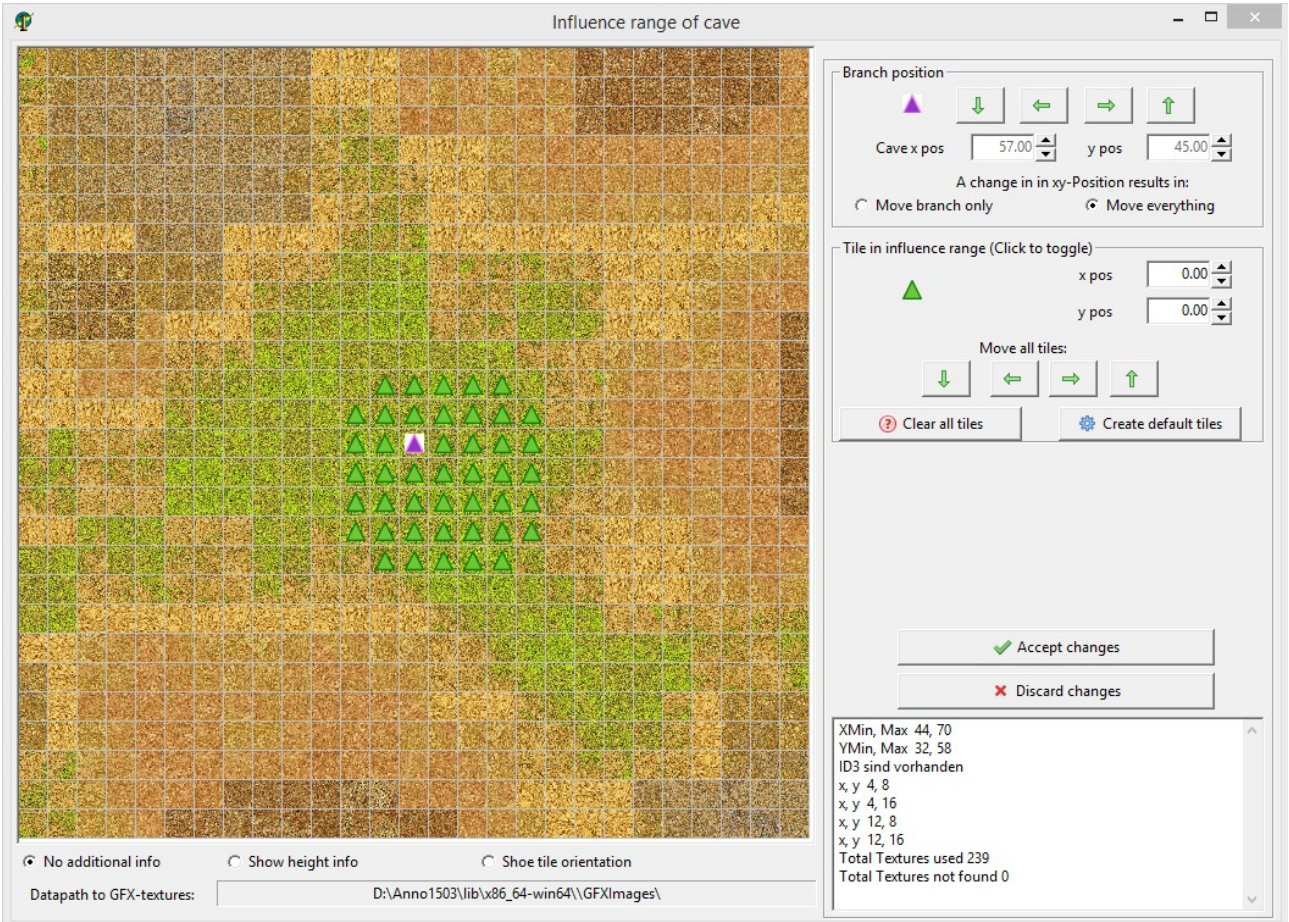
You can create a new monster or alter the influence range or position of an existing cave.

The button “Create new monster (all structures)” does exactly that: New monster, new cave (except Spider), new player.
The button “Create new monster (for existing player)” creates all structures except a new player structure.

To create a new monster, you select the monster type and click into the island where the cave should be placed.

A click into the monster table selects an existing monster, Afterwards you can use the button “Change influence range of cave” to alter the influence range of the cave.

A click into the island display determines the xy coordinates of a new cave. Using the buttons, a new window opens which shows the immediate surrounding of the cave:



The anchor position of the cave is shown with a red triangle, the influence area with green triangles. The cave does not need to be inside the green triangle area, but usually is unless you want to experiment.

The cave can be moved around using the arrows. Movement can be executed with or without the entire range of influence going along.

Care should be taken that the cave is placed on flat land and in an empty lot (though no checks are performed so it may or may not work if the rules are broken)

Clicking on the display adds or removes a green influence tile.

Depending on the option selected in the island window, either a button ”Accept changes” or a button ”Create monster” is shown.

The button ”Discard” closes the window without keeping any changes.

The buttons (hopefully) do exactly that. Due to lack of the precise knowledge of how monsters were tacked onto Anno1503, no guarantees can be given. There is at least one user made scenario with monsters so things are not as bleach as they may seem.

2. Working with cities

Islands | Cities | Players | Ships | Soldiers | Diplomacy | Script | Log generator output

Nr	Name	Ctr	Owne	Name	Insel	X rel	Y rel	Nr	Ink	ptr	act	vis
1	Krokohöhle	7	1	KROKO	2	85	160	2	1	2154900	Yes	No
2	Talakiki	0	2	Mahala Taki	4	100	69	5	1	216640	Yes	Yes
3	Haitahbu	0	3	Malakai Manti	7	95	110	9	1	217879	Yes	Yes
4	Mehome Kana	0	4	Weiome Otter	1	100	93	81	1	219089	Yes	Yes
5	Filimizaki	0	5	Mizaky Nu	11	64	55	33	1	220287	Yes	Yes
6	New Heaven Mair	0	6	Borrik Rauster	18	52	79	65	1	221491	Yes	Yes
7	Plata Nilane	0	6	Borrik Rauster	25	111	46	65	1	222687	Yes	Yes
8	Ile Kana	1	6	Borrik Rauster	1	85	53	65	1	223826	Yes	Yes
9	Ile Archara	0	6	Borrik Rauster	3	74	23	65	1	224974	Yes	Yes
10	Kaktusinsel	2	6	Borrik Rauster	10	82	81	125	1	226121	Yes	Yes
11	Löwenhöhle	2	7	Löwe	9	45	94	128	1	227303	Yes	No
12	Kroko	8	8	Kroko	2	97	200	256	1	228454	Yes	No
13	Krokobau	9	9	Kroko	2	132	148	512	1	229604	Yes	No
14	Krokonest	10	10	Kroko	2	31	179	1024	1	230753	Yes	No
15	Krokoversteck	11	11	Kroko	2	151	106	2048	1	231901	Yes	No
16	Krokoheimat	12	12	Kroko	2	57	45	4096	1	233049	Yes	No
17	Räuberhöhle	4	13	Haudrauf Hugo	10	33	39	8192	1	234200	Yes	No
18	Löwenhöhle	0	14	Löwe	8	79	51	16384	1	235366	Yes	No
19	Grabstätte	0	15	Knochenmann	5	49	51	4227072	1	236519	Yes	No
20	Grabstätte	2	17		5	75	62	131072	1	237704	Yes	No
21	Gruft	3	18		5	73	39	262144	1	238852	Yes	No
22	Handtaschenbau	13	21		2	105	145	2097152	1	240067	Yes	No
23	Haitah	1	22	Kuku	5	55	74	5406733	1	241216	Yes	Yes

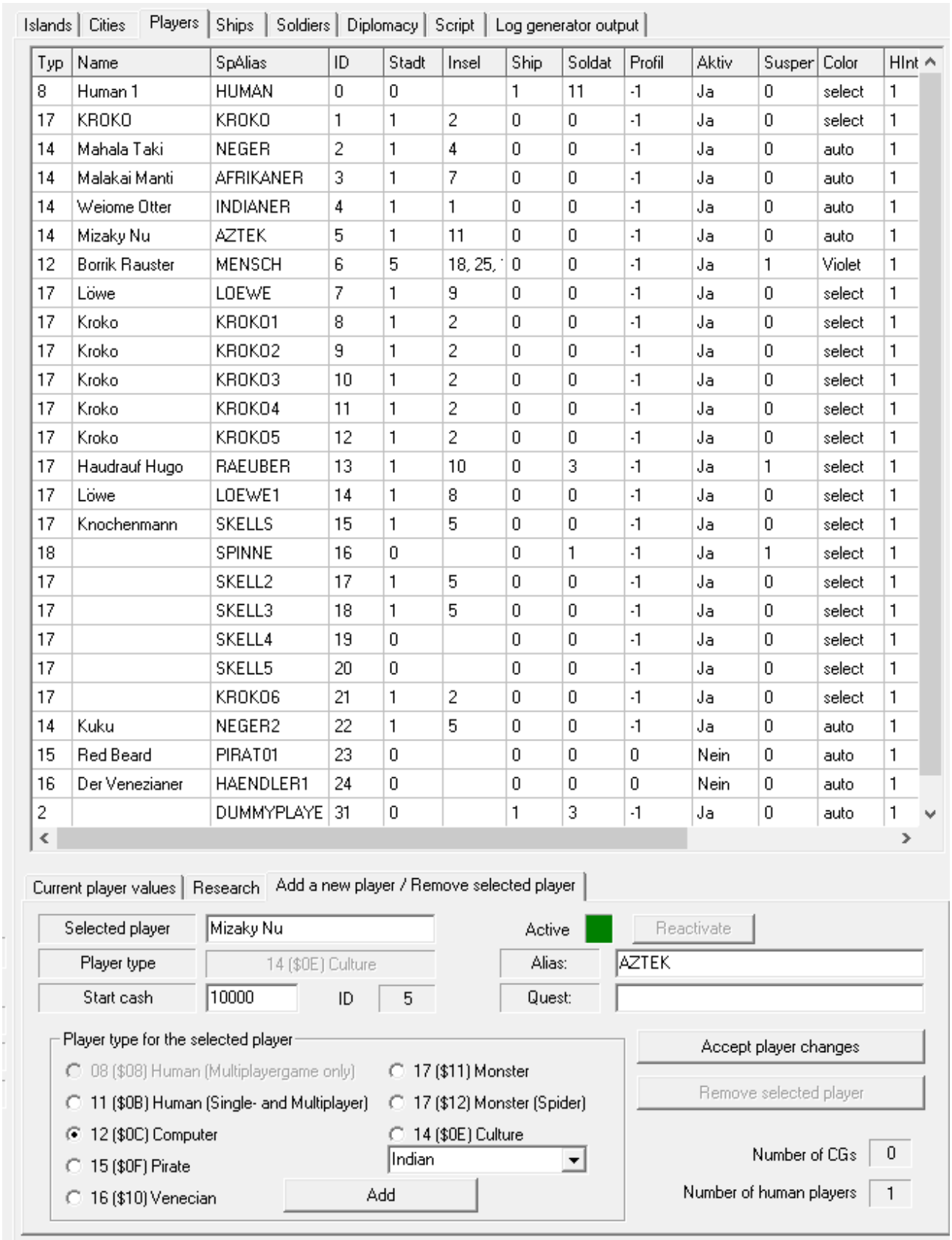
Selected town

City name: Ile Kana — on island: 1

City owner: Borrik Rauster — Confirm city change

A click into the table selects a city from the list. The city can be renamed, or handed over to another (new) player.
There are no consistency checks applied. You can hand over a pirate city to a human player, for example (whether the Anno1503 loader accepts a weird ownership must be tested, though, as that is not guaranteed).

3. Working with player structures



Typ	Name	SpAlias	ID	Stadt	Insel	Ship	Soldat	Profil	Aktiv	Susper	Color	HInt
8	Human 1	HUMAN	0	0		1	11	-1	Ja	0	select	1
17	KROKO	KROKO	1	1	2	0	0	-1	Ja	0	select	1
14	Mahala Taki	NEGER	2	1	4	0	0	-1	Ja	0	auto	1
14	Malakai Manti	AFRIKANER	3	1	7	0	0	-1	Ja	0	auto	1
14	Weiome Otter	INDIANER	4	1	1	0	0	-1	Ja	0	auto	1
14	Mizaky Nu	AZTEK	5	1	11	0	0	-1	Ja	0	auto	1
12	Borrik Rauster	MENSCH	6	5	18, 25,	0	0	-1	Ja	1	Violet	1
17	Löwe	LOEWE	7	1	9	0	0	-1	Ja	0	select	1
17	Kroko	KROKO1	8	1	2	0	0	-1	Ja	0	select	1
17	Kroko	KROKO2	9	1	2	0	0	-1	Ja	0	select	1
17	Kroko	KROKO3	10	1	2	0	0	-1	Ja	0	select	1
17	Kroko	KROKO4	11	1	2	0	0	-1	Ja	0	select	1
17	Kroko	KROKO5	12	1	2	0	0	-1	Ja	0	select	1
17	Haudrauf Hugo	RAEUBER	13	1	10	0	3	-1	Ja	1	select	1
17	Löwe	LOEWE1	14	1	8	0	0	-1	Ja	0	select	1
17	Knochenmann	SKELLS	15	1	5	0	0	-1	Ja	0	select	1
18		SPINNE	16	0		0	1	-1	Ja	1	select	1
17		SKELL2	17	1	5	0	0	-1	Ja	0	select	1
17		SKELL3	18	1	5	0	0	-1	Ja	0	select	1
17		SKELL4	19	0		0	0	-1	Ja	0	select	1
17		SKELL5	20	0		0	0	-1	Ja	0	select	1
17		KROKO6	21	1	2	0	0	-1	Ja	0	select	1
14	Kuku	NEGER2	22	1	5	0	0	-1	Ja	0	auto	1
15	Red Beard	PIRAT01	23	0		0	0	0	Nein	0	auto	1
16	Der Venezianer	HAENDLER1	24	0		0	0	0	Nein	0	auto	1
2		DUMMYPLAYE	31	0		1	3	-1	Ja	0	auto	1

A click into the table selects a player. You can remove a player or create new players up to a maximum of 31 players (the ”dummyplayer” cannot be selected). Up to a total of 8 combined human and computer players (4 humans max. +4 cgs or 1 human and 7 cgs max.) are possible as there are only eight flag colors.

The name of a selected player can be changed, as well as the start cash given to humans and computer players (cgs).

Humans (and only humans) can be given an assignment quest. Assignments are html encoded text files which contain a description of what the human has to do in a scenario.

In maps of type endless game, the text file usually contains a short description of the world. This text file is displayed when you start the game and click on “Show assignment”.
Different maps can have the same file if the world looks roughly the same in every map. Hence you can use an already existing text html text file for simplicity

A new player can be created using the ”Add” button in the Player type selection. This is required if you added a new island with a city on it which requires a player for the city. The city must then be assigned to the new player.

The tab “Research” is valid for humans and computer players. It sets the research as already done for the selected items at the start of playing the map.

The tab “Current player values” is only valid for computer players.
Here you can change various parameters for the behaviour of the cg player. Some parameters are known, while some parameters have no known meaning or the meaning is unclear (there are inter dependencies built into Anno1503 so it is not easy or even impossible to figure out what a change of an unknown parameter actually does to the computer player).

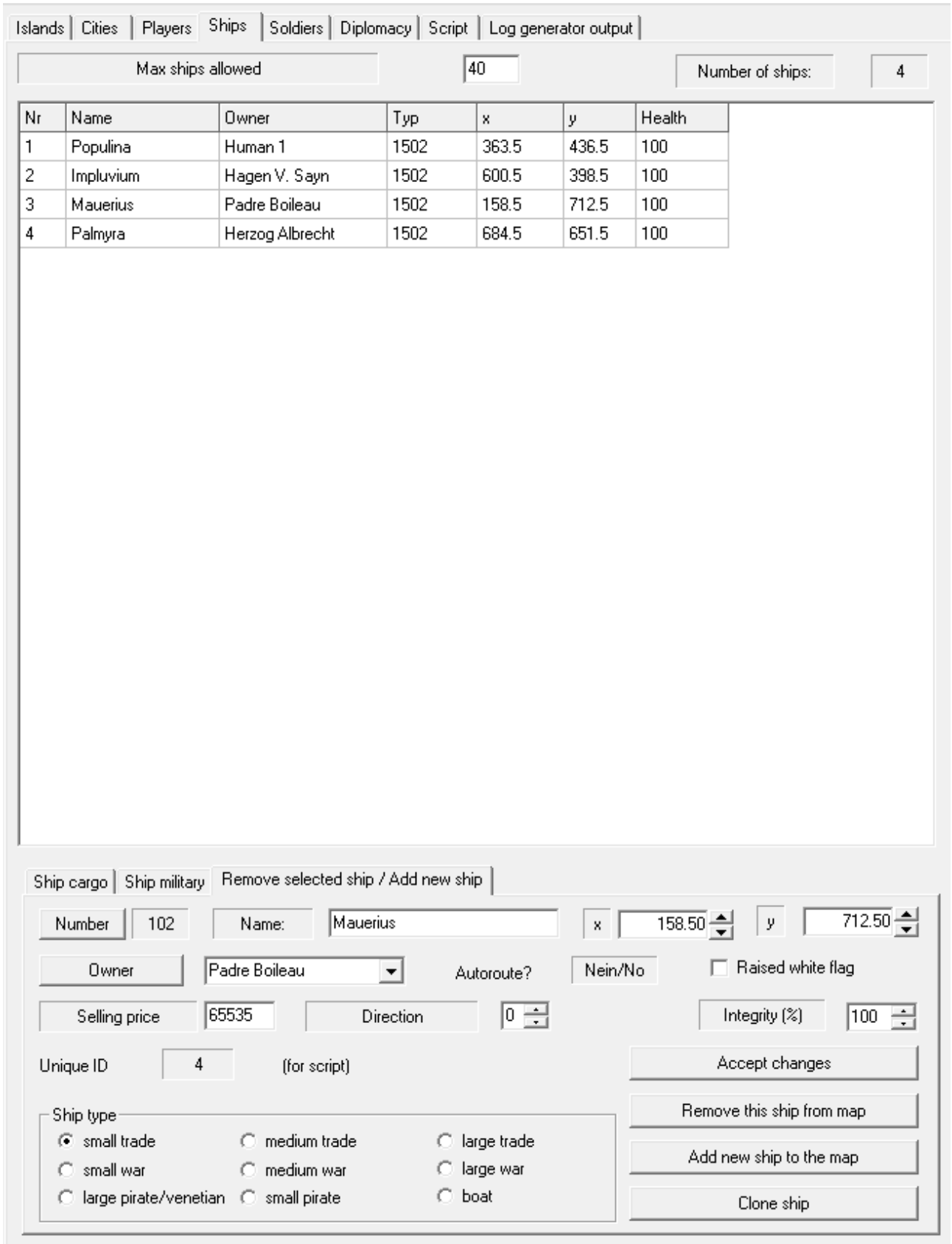
These settings can (likely) also be changed using a script setting.

More than 4 Humans in Multiplayer maps?

The system has a maximum of 4 human players in an mp map. However, there is a parameter set to 4 that can be changed to a higher number.
This feature has not been tested yet and may not work.

If you try, always make absolutely sure there is a maximum of 8 players (humans + computer players) on the map at most.

4. Working with ships



A click into the table selects a ship. A ship can also be selected by clicking on a small square in the world map.

The ship position can be fine tuned with the xy fields, even into an island. You should never position a ship inside a random island as the actual shape of the island is not determined until the map is loaded in the game.

If you position a ship inside an island, you can check its exact location using the button ”Show real island shapes” under the world map.

Ships can also be positioned using click and drag on a small square in the world map.

Every ship has a unique ID. This ID is required if one wants to use a script option to change a ship parameter. The number might not be static in the map editor and might change if ships or other elements are added/removed or the map is reloaded into the editor. Every element in Anno1503 has its unique ID.

The selling price range of a ship is 0 to 65535 units, where 65535 means it is not for sale. Ships assigned a very low selling price are usually sold instantly at program start.

You can change the ship’s type. There are nine different ship types, seven for the players and two for Pirates. Pirates should always be assigned pirate ships. If you assign a pirate ship to a human player, some inconsistencies may appear in the game (for example, you cannot use troops to board other ships from a pirate ship).

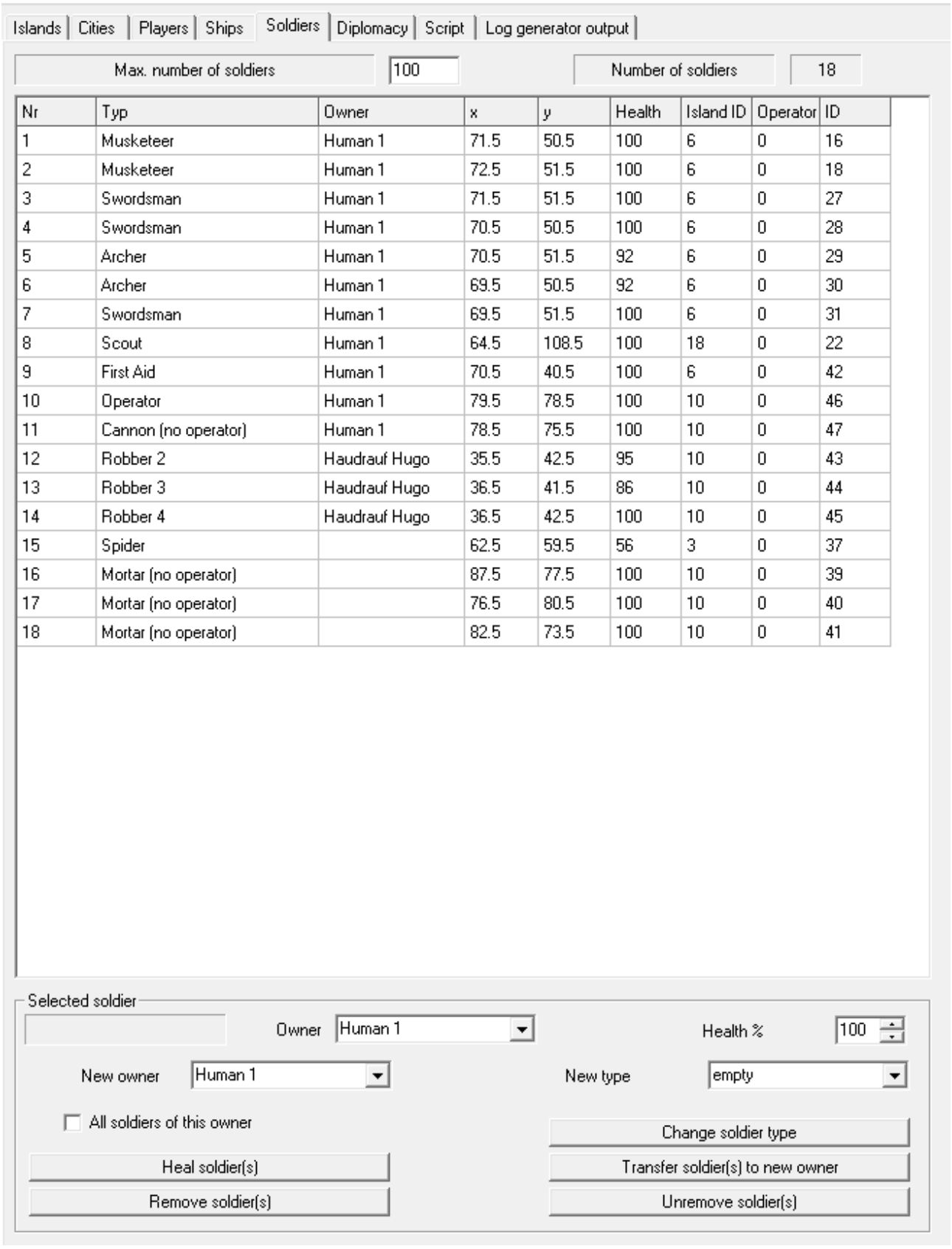
The button ”Remove the ship from the map” does exactly that. Everything is removed with the ship, including cargo and soldiers),

The button ”Clone ship” creates an exact copy of the selected ship (without on board soldiers, but with the same material in the cargo bays).

The tab ”Ship cargo” is used to fill the cargo bays.

The tab ”Ship military” is used to fill the military slots of a selected ship. Only military units can be used, a few tests with other figures have lead to a crash when the map is loaded in the game.

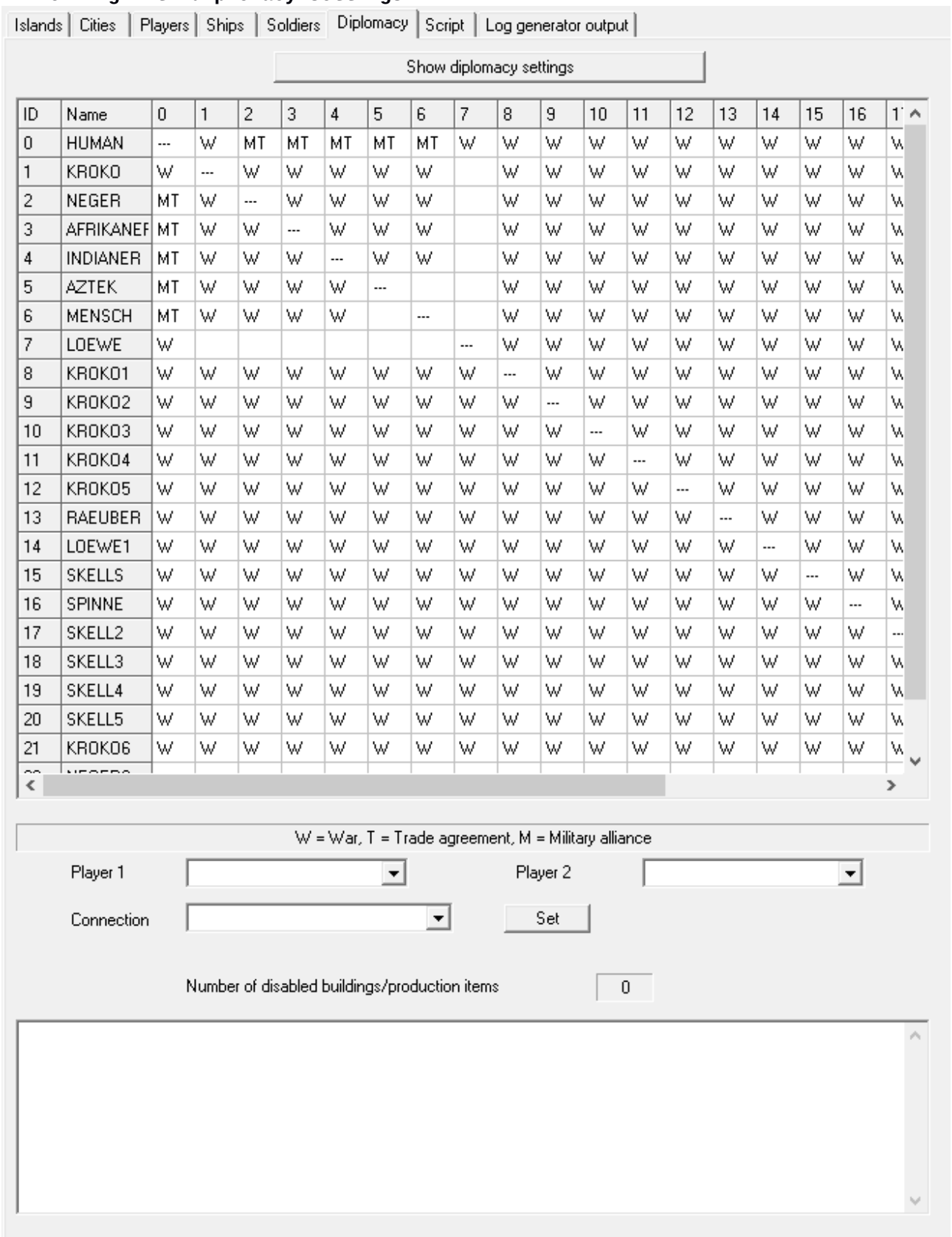
5. Working with soldiers



Nr	Typ	Owner	x	y	Health	Island ID	Operator	ID
1	Musketeer	Human 1	71.5	50.5	100	6	0	16
2	Musketeer	Human 1	72.5	51.5	100	6	0	18
3	Swordsman	Human 1	71.5	51.5	100	6	0	27
4	Swordsman	Human 1	70.5	50.5	100	6	0	28
5	Archer	Human 1	70.5	51.5	92	6	0	29
6	Archer	Human 1	69.5	50.5	92	6	0	30
7	Swordsman	Human 1	69.5	51.5	100	6	0	31
8	Scout	Human 1	64.5	108.5	100	18	0	22
9	First Aid	Human 1	70.5	40.5	100	6	0	42
10	Operator	Human 1	79.5	78.5	100	10	0	46
11	Cannon (no operator)	Human 1	78.5	75.5	100	10	0	47
12	Robber 2	Haudrauf Hugo	35.5	42.5	95	10	0	43
13	Robber 3	Haudrauf Hugo	36.5	41.5	86	10	0	44
14	Robber 4	Haudrauf Hugo	36.5	42.5	100	10	0	45
15	Spider		62.5	59.5	56	3	0	37
16	Mortar (no operator)		87.5	77.5	100	10	0	39
17	Mortar (no operator)		76.5	80.5	100	10	0	40
18	Mortar (no operator)		82.5	73.5	100	10	0	41

A click into the table selects a soldier. All options are self explanatory. Killing a soldiers flags the soldier as ”Dead” so that it can be “resurrected”. Death is final when the new map is saved to disk.

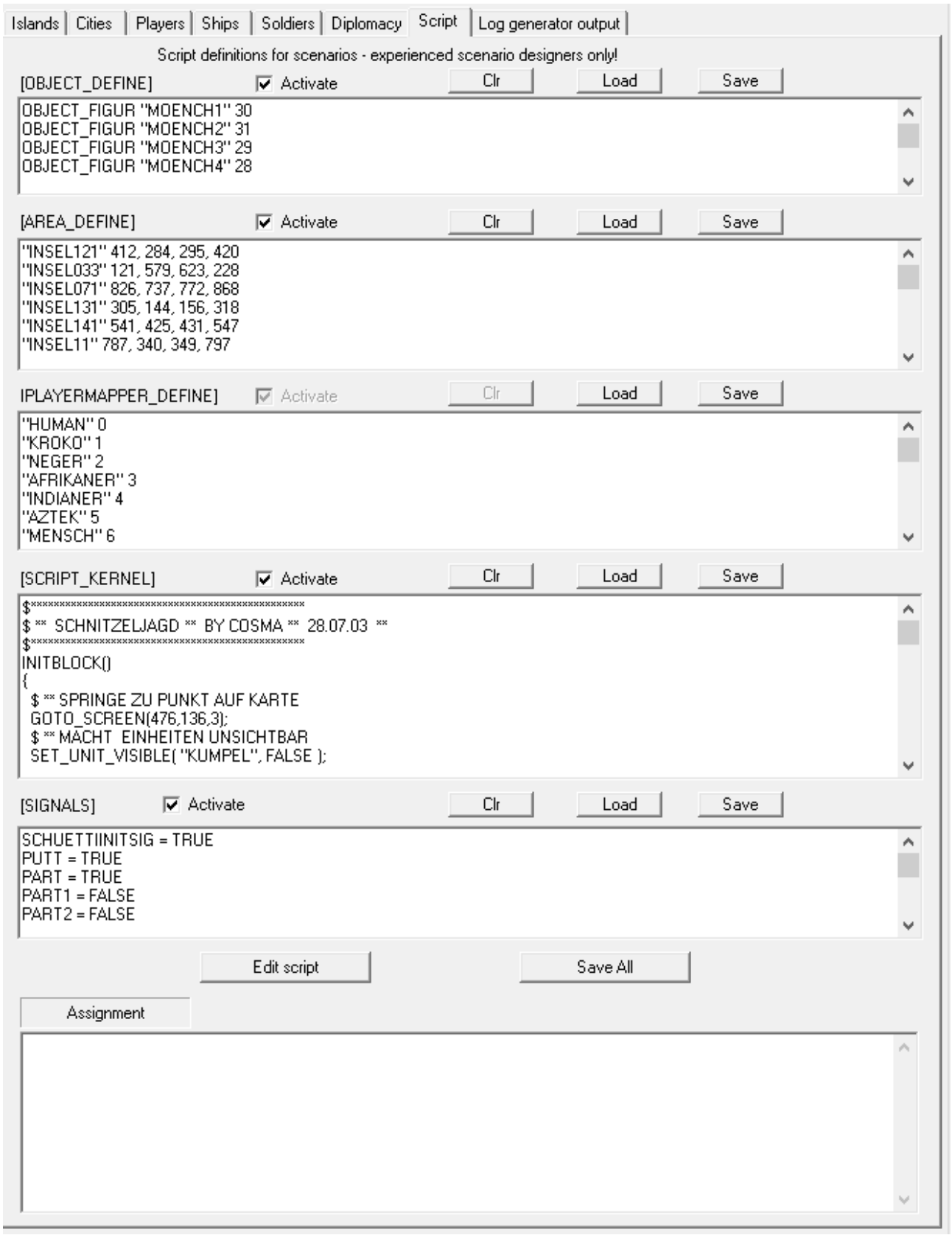
7. Working with diplomacy settings



ID	Name	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
0	HUMAN	---	W	MT	MT	MT	MT	MT	W	W	W	W	W	W	W	W	W	W	W
1	KROKO	W	---	W	W	W	W	W		W	W	W	W	W	W	W	W	W	W
2	NEGER	MT	W	---	W	W	W	W		W	W	W	W	W	W	W	W	W	W
3	AFRIKANEF	MT	W	W	---	W	W	W		W	W	W	W	W	W	W	W	W	W
4	INDIANER	MT	W	W	W	---	W	W		W	W	W	W	W	W	W	W	W	W
5	AZTEK	MT	W	W	W	W	---			W	W	W	W	W	W	W	W	W	W
6	MENSCH	MT	W	W	W	W		---		W	W	W	W	W	W	W	W	W	W
7	LOEWE	W							---	W	W	W	W	W	W	W	W	W	W
8	KROKO1	W	W	W	W	W	W	W	W	---	W	W	W	W	W	W	W	W	W
9	KROKO2	W	W	W	W	W	W	W	W	W	---	W	W	W	W	W	W	W	W
10	KROKO3	W	W	W	W	W	W	W	W	W	W	---	W	W	W	W	W	W	W
11	KROKO4	W	W	W	W	W	W	W	W	W	W	W	---	W	W	W	W	W	W
12	KROKO5	W	W	W	W	W	W	W	W	W	W	W	W	---	W	W	W	W	W
13	RAEUBER	W	W	W	W	W	W	W	W	W	W	W	W	W	---	W	W	W	W
14	LOEWE1	W	W	W	W	W	W	W	W	W	W	W	W	W	W	---	W	W	W
15	SKELLS	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	---	W	W
16	SPINNE	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	---	W
17	SKELL2	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	---
18	SKELL3	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
19	SKELL4	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
20	SKELL5	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
21	KROKO6	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W

The table shows the diplomacy settings between players. These can be changed by selecting two players, a connection and pressing the ”Set” button. Buildings that are blocked in the game’s building menus are defined in the script and are listed in the bottom display area.

7. Working with a script



Scripting was one of the novelties of Anno1503 compared to the old Anno1602. Similar to a computer program you can define a sequence of events and goals a player has to pass and/or a sequence of events that should happen at certain times/places/conditions.

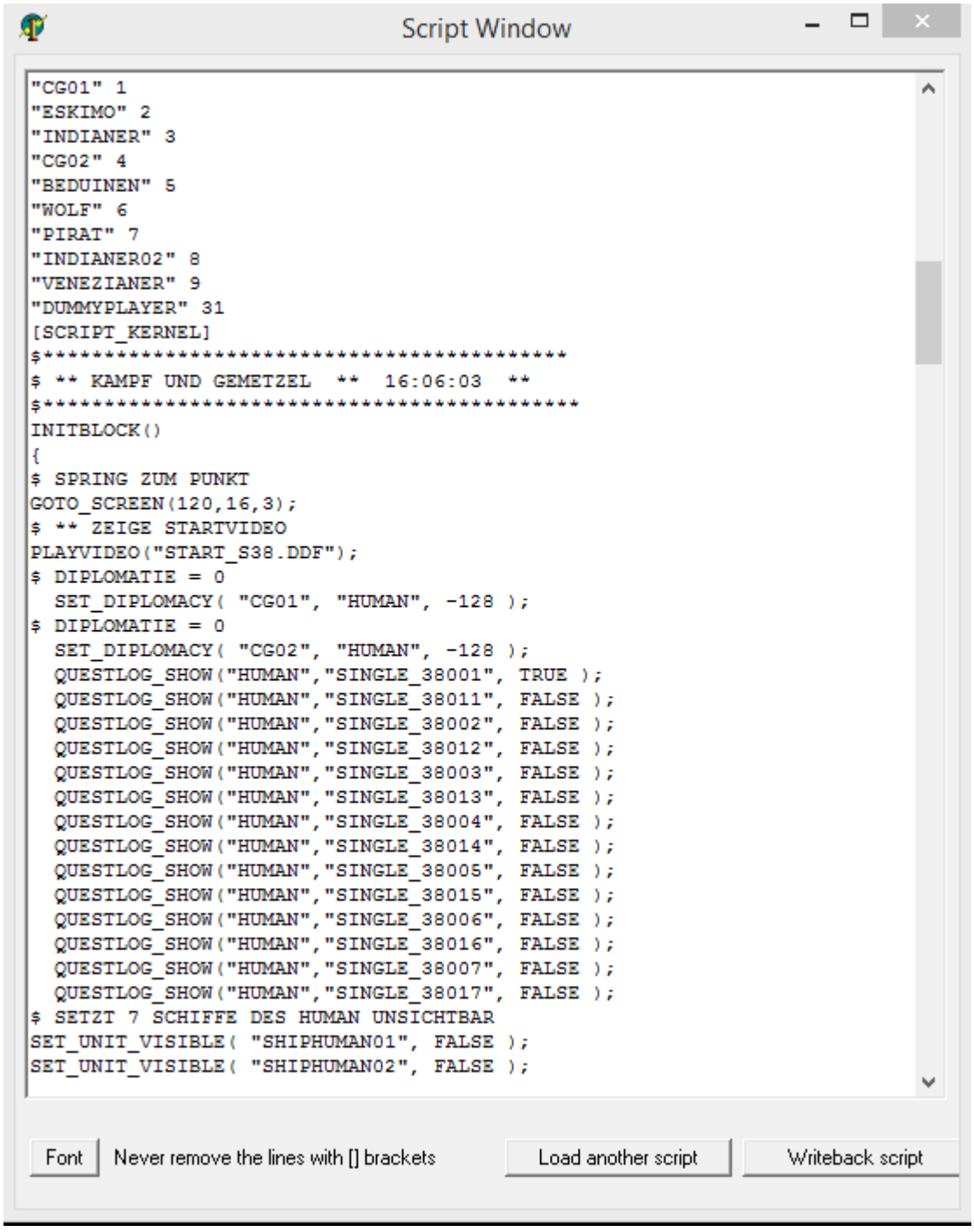
Scripting is a difficult endeavour, only experienced scenario builders should dive into. A single error in the script structure can result in an incorrect map display or the map doesn’t load at all when loading it into the game.

The tab window is divided into the various sections of a script. At the bottom, the contents of the assignment html text file is also displayed if one is defined.

If you change a scenario map into an endless map, all entries must be deleted except the entry in [SIGNALS] SCHUETTIINIT = TRUE

The AnnoPool at www.AnnoZone.de has a detailed scripting guide created by Admiral Drake.

The button „Edit Script“ opens a script window where the entire script can be edited:



You can load an entire script (text file), made by another editor

The button “Writeback script“ writes the contents of the window back to the script window.

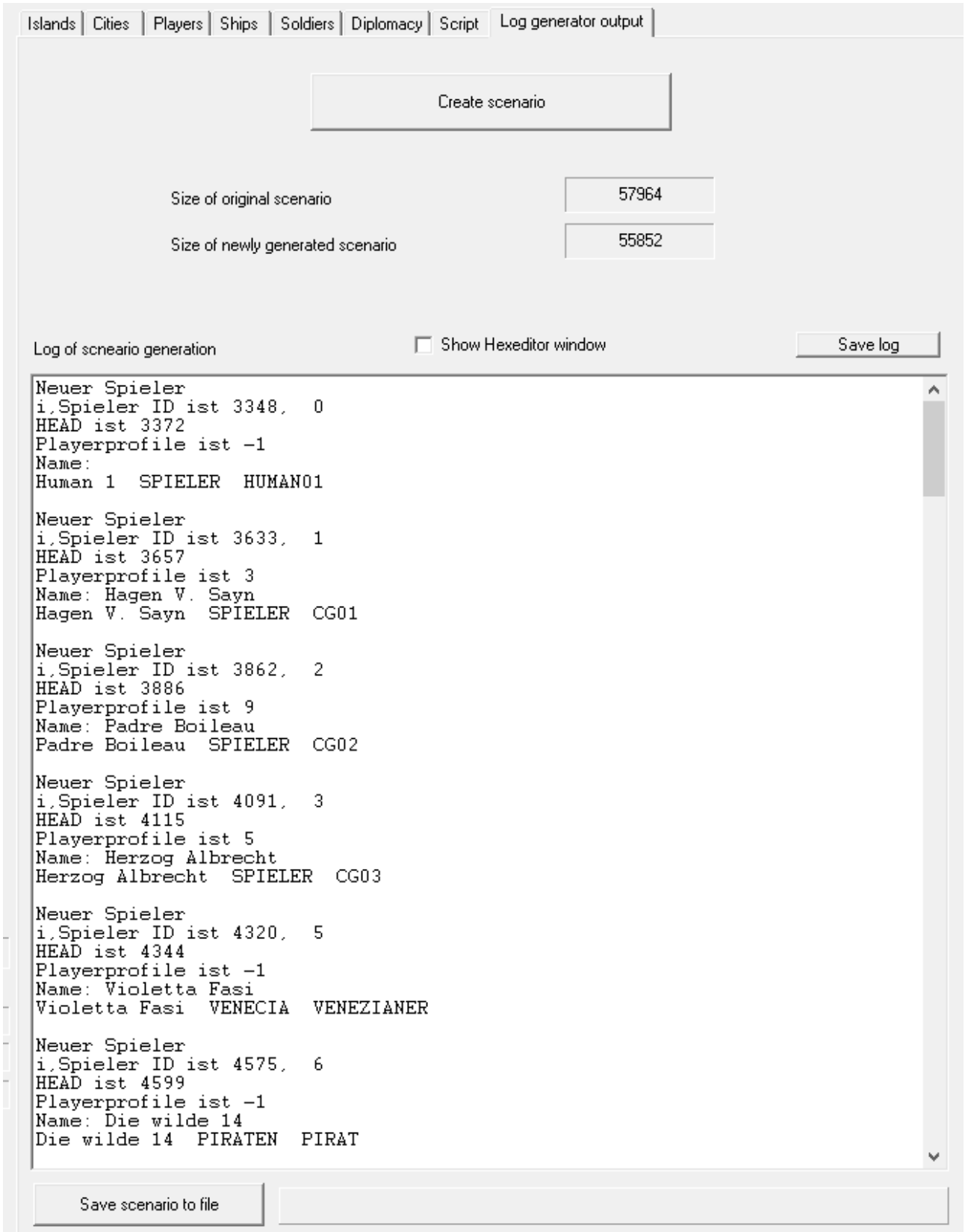
In no case should you change the spelling and sorting order of the lines containing the []-identifiers. Never remove the [] lines!

Caveat:

Diplomacy settings have been found to crash while loading a map.

The connection between settings in the diplomacy tab and diplomacy settings in the script is not entirely clear and might even clash with one another. The simple fact that there are two different places doing the same thing points to internal problems. Diplomacy settings should be used with care.

8. Working with the generator



The button „Create scenario“ generates the new map.

The button „Save scenario to file“ saves the new map into a *.sze file. Do not overwrite an existing, functional file (unless you only made “safe” cosmetic changes to the working map).

The file size of the original file and the newly generated file is shown, mainly for academic purposes. An experienced user can get a hint if something went wrong, though, if there is a large discrepancy between the two sizes.

What happens when an original, unchanged scenario is used to generate a new map?

Technically, the original and the newly created file should be identical (if the generator makes no mistakes. A copy of the copy will always be identical, though).

Total identity will never be the case for various reasons:

1. The generator always renumbers islands, players and soldiers in a continuous sequence of IDs (remember this when you use a script to address elements). The numbering in the original maps can be, and usually is, all over the place. (Renumbering never changes the file size, though).

2. Automatic upgrade to the KE/History Edition format of older scenario formats. This usually increases the file size considerably as new structures are added to the map.

3. Removal of errors in original island structures. Island files sometimes contain errors within certain structures or are missing entire structures all together, These wrong structures are automatically corrected when detected. Usually this leads to a small decrease in file size.

4. Wrong settings of parameters. These are indeed present in the original scenario files and are automatically corrected. These corrections do not change the file size. Apparently these incorrectly set parameters do not hinder loading a map into Anno1503 so there is redundancy built in or these parameters are not used (any more) at all. So correcting these errors is purely cosmetic.

5. Newly generated errors due to unknown data structures/parameters. This cannot be excluded as reasons, unfortunately.

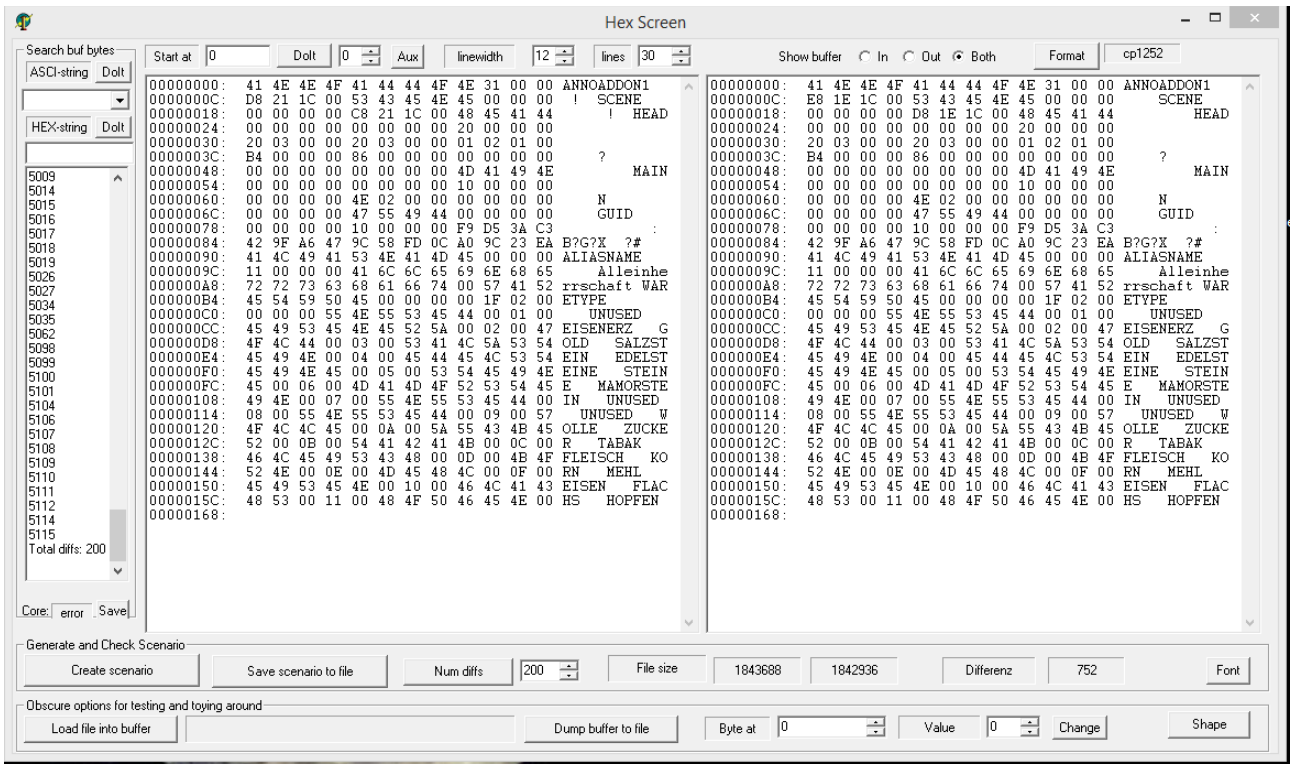
The display shows some crucial steps while generating the new map (academic use only).

9. The HexEditor window

The Checkbox option „Show HexEditor window“ opens the Hexeditor window.

This window was and still is the main playground while developing the map editor. It allows a byte for byte comparison between the original source file content and the freshly generated new file content to see what the generator actually does with all the data. This is the only place to detect erroneously created data structures.

This window is only useful for hardcore people who are searching for a particular setting or want to change particular bytes in the file.



The left field (buffer “in”) lists the content of the original file, the right field (buffer ”out”) lists the generated content of the new file. With the two search options at top left. Text or hex bytes can be searched within the two displays. Some suggestions for common text strings are already available or you can type a search string into the field (the * character is a wildcard character). You can also search for a hex code string, for example “00 CD”.

The button ”Doit” searches the text/hex code within the buffer (“in” or ”out”, ”in” if both buffers are shown), and a list of addresses is shown where the search string is found. A double click on an address copies the address into the “Start at” window. A start address offset can be entered into the field next to the ”Do it” button.

The field ”Start at” shows the address where the comparison listing begins by pressing the ”Do it” button.

The selection ”in”, ”out” or “both” determines which buffer is shown.
There are three independent buffers in the map editor, named “in”, ”out” and “Aux”. The original *.sze file is always written into the ”in” buffer. The new file is always written into the ”out” buffer. *.scp Islands that are loaded into a map reside in a separate ”Aux” buffer (that cannot be changed).

You can either display the ”in”, the ”out”, or both ”in” and “out” buffers side by side.

The displays contain the address at left, hex codes and text if the codes represent printable ascii codes.

The button “Load file into buffer” loads any file into one of the buffers “in” or ”out”, where the contents of the file can be searched and edited.

With the button “Dump buffer to file”, the buffer can be written to a disk file.

The button “Create scenario” creates the new map file, just like the button in the generator tab.

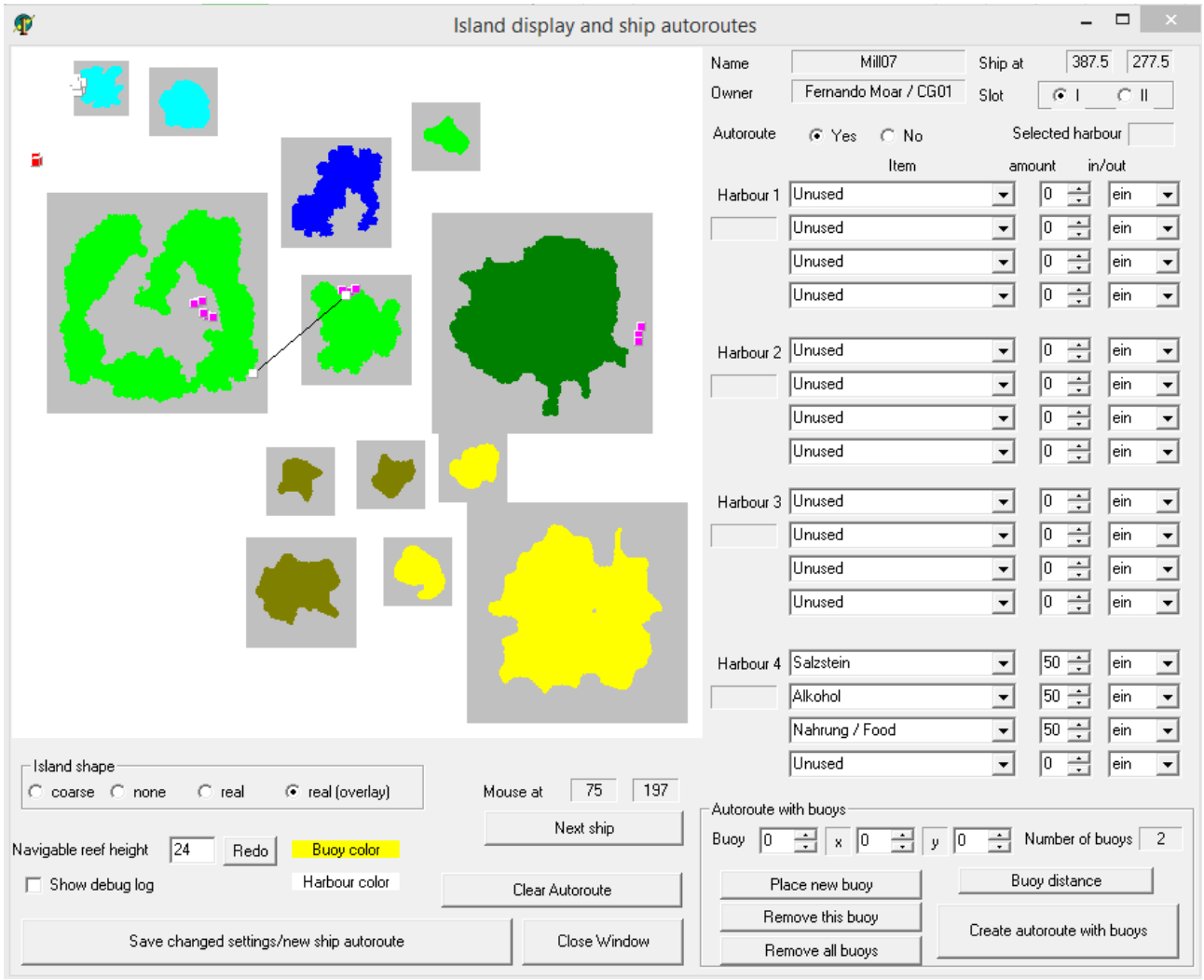
The button ”Save scenario” saves the generated code into a new disk file. Do not use this button if you have not generated a new scenario first.

The button “Num difs” compares the ”in” (old code) and ”out” (new code) buffers byte by byte for the same addresses, up to a preset number of differences (starting at the address given in the “Start at” field.

The addresses where differences were detected are listed in the left column so one can compare what the difference is at the address.

10. Defining auto routes

Using the button “Show real island shapes..” in the world map window opens a new window. On the left, the world map is displayed:



On this map, the (non-random) islands are displayed with their real shapes. The map also includes the positions (using white squares) of the harbours where ships can stop and trade.

As is the case for all elements in Anno1503, all harbours possess a unique ID which are handled by the map editor. The map also contains the ships.

Clicking on a ship (or clicking through the ship list with the “Next ship” button) shows the auto route settings for the ship (if there is one).

The button “Next ship” cycles through the list of ships. Sometimes ships are clogged together so some ship squares are difficult to click on.

There are two kinds of ship auto routes:

1. Simple routes without buoys

With this option, a ship is sent from harbour to harbour on a direct path.
Simply select a ship and the harbours where the ship should trade.
Up to four harbours can be selected for the auto route. The ship is using the built in path finding route to steer (more or less in a straight line) from harbour to harbour.

2. Routes with buoys

Sometimes a ship has to sail on a special path, for example when the auto route would pass along an island occupied by an enemy.
In such cases, it is possible to add buoys (way points) between harbours (harbours also count as buoys/way points). The ship then sails from buoy to buoy (which can be placed sufficiently far away from enemy territory gun range)

Creating an auto route

1. To select a harbour as a way point, click on a white square in the map. The ID of the harbour is displayed in the “Selected harbour” field.

2. Now click on one of the fields below the “Harbour 1” to ”Harbour 4” fields to mark this way point with the ID of the harbour.

3. Fill the fields with the material and amounts to load/unload. Ships can have up to 8 cargo bays. Slots I/II switches between slots 1-4 and 5-8.

4. Repeat steps 1-3 for every additional harbour (obviously you need at least one more harbour). Check that all materials are loaded and unloaded during all stops.

5. The button “Save changes..” or ”Create auto route with buoys” generates the auto route for the selected ship.

The button ”Clear auto route” removes the auto route for the selected ship.

Hints:

Do not create auto routes until the positions of all islands have been fixed in the world map. The auto route structures are extremely tedious to work with, and some Anno1503 versions even had problems on their own, resulting in weird behaviour of buoys.

Warehouses are also handled as harbours and show up as white squares in the map. Harbours are actually warehouses on the coast line. Do not choose inland warehouses as way points as these cannot be reached by ships.

Some basics when creating a new map

As the whole map editor software makes some assumptions about parameters and structures that are not fully known, some basic rules should be observed:

1. Always work in small steps. Do not attempt to realize all your ideas in one single design cycle. Due to the great complexity of the map editor (also due to the fact that the source code constantly changed with every Anno1503 version), errors can creep into the scenario code the more changes you make to the map.

Particularly handling of islands with cities is very complex due to the memory management involved. As a precaution, you should add one such island to the map only, generate the map, and test it by loading the new map in Anno1503. If ok, continue with another island.

2. After some changes, test the map and also make a backup of the map if it works. Cases are known where Anno1503 corrupted a map when trying to load it. Apparently errors in the data format caused this shredding of the scenario file. (This happened in early versions of Anno1503/the map editor. Meanwhile this should no longer happen as the map editor has become reasonably stable).

3. Load a few maps and scenarios and study the various settings of the map (probably also having played those maps before).

4. If you have generated a new map, reload the map into the editor. If the editor cannot load the map, Ano1503 won’t be able either. This would be bad luck indeed, unless you made a backup made before the last changes.
(Again, this only happened in early versions of the map editor. Meanwhile this should no longer happen as the map editor has become reasonably stable).

5. It is always advisable to close the map editor after a longer session with lots of changes, and restart it. The map editor likely has some memory leaks as not all the hundreds of memory allocations are fully watched over. At some point, a memory error might occur.

6. If you want to write a scenario or an entire campaign, do not start with adding a script until all islands, ships, soldiers etc. are present and at their final places. Scripts address the elements with unique IDs and coordinates and it makes life much simpler if those are fixed at some point.

It doesn’t run...

Anno1503 crashes either trying to load your map or during game play.

Once the map shows up and you can move a ship or click on a building for a few seconds, then your map is correct (or in the worst case, any illogical settings are tolerated), and a subsequent crash is a hardware or software driver problem which is outside the scope of the map editor.

There basically are five reasons why Anno1503 crashes when loading your map. Some of them may no longer show as the map editor has matured over the decades:

1). In the loading screen, the green progress bar doesn’t even appear after selecting the map. The system may hang (sometimes the hd is active).
This is indicative of a faulty player structure. Maybe a “dead” player is still present in the player list, or a player was assigned something not possible for that player type.
Often, the remedy is to remove the last changes from the map and add them again, one by one, maybe in a different sequence.

2). The green progress bar moves to the right and the program crashes before reaching the right end.
In this case, a faulty structure was created in the code. Remove the last changes.

3). The green progress bar moves fully to the right and the program crashes. When the progress bar reaches the end, Anno1503 switches to the graphics mode. This used to happen in older Anno1503s.
However, if it happens to your new map only, then again the only solution is to remove the last changes in the map and do a step by step procedure to find the culprit.

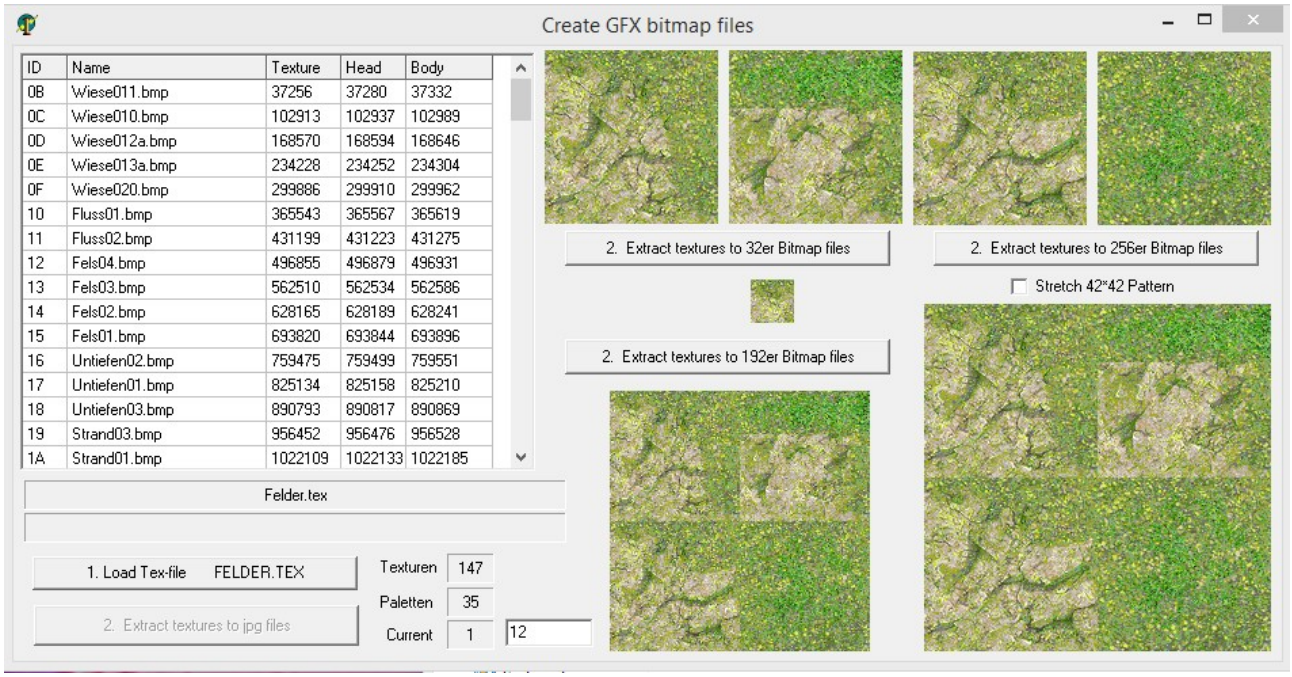
4). The green progress bar moves fully to the right and then nothing happens anymore, except the music continues in the background.
This error is typical for a map that has too few mines/treasure sites on random islands, and the number was set too high in the editor. The Anno1503 loader falls into an endless loop trying to find more sites. Reduce the numbers of sites in the island tab of the map editor.

5). The map appears, but not all islands or ships are visible, or the map might even be completely empty.
In this case an incomplete or wrong data structure was created by the map editor.
Often, the remedy is to remove the last changes from the map until it works again and add the changes again, one by one, maybe in a different sequence.

Nobody ever created a scenario which ran on the first try (except trivial maps, of course). You are bound to experience a crash at some point in your career as map maker.
The large number of user made maps and scenarios in the AnnoPool proves that it can be done.

Appendix: Helper programs for the bitmaps

1. GFXExtractor.exe



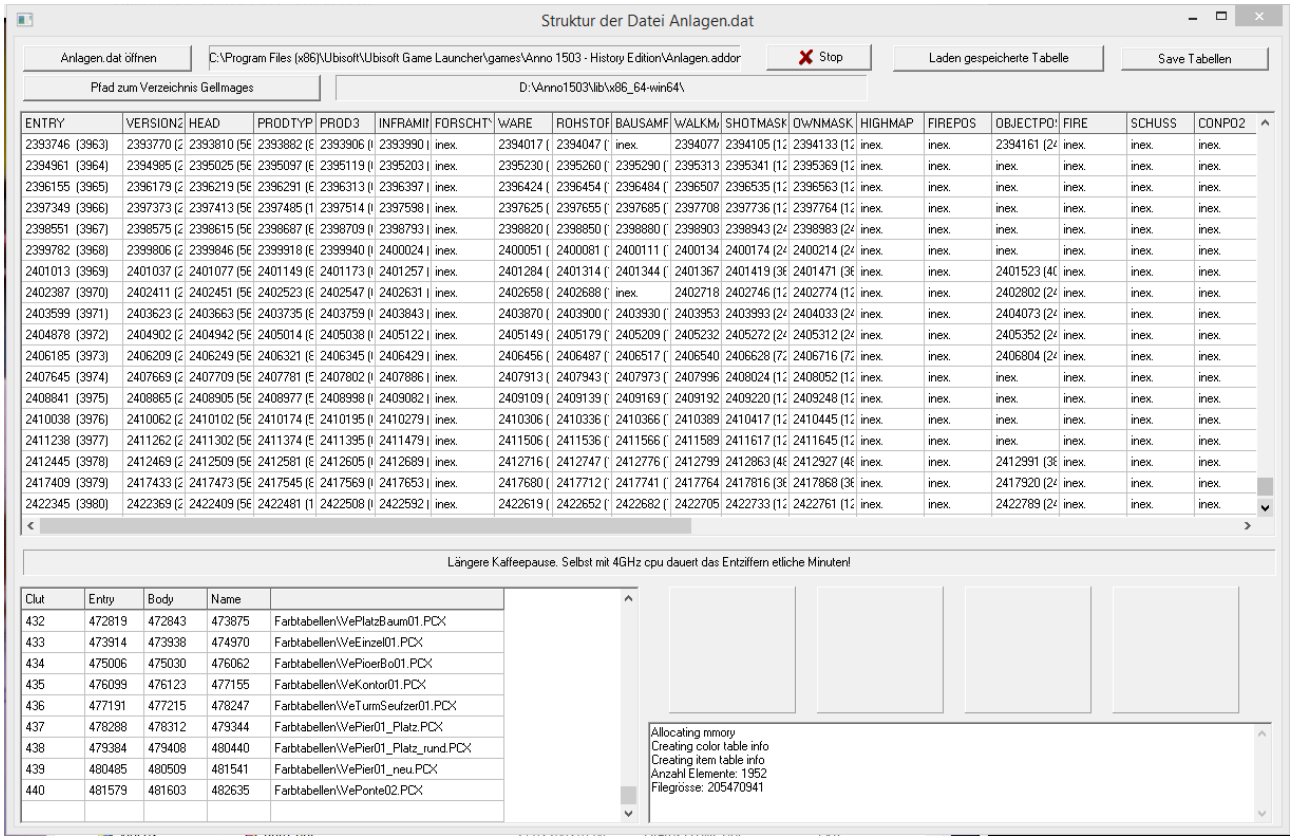
This program creates the ground textures for the subdirectory \GFXImages.

The subdirectory should be in the same directory as the map editor.

The file Felder.tex must be loaded (placed in the Anno1503 main directory).

Then the bitmaps are created using the “32er Bitmap files“ option (the other options create larger bitmaps, just for eye candy).

2. AnlagenProjekt.exe



This program extracts thousands of bitmaps for terrains and buildings out of a monster file Anlagen.Addon. The Anno1503 History Edition has this additional file, together with the old file Anlagen.dat.

The bitmaps are written into the subdirectory \GelImages.

The program runs for several minutes as an unusually large table is created. Performance unfortunately tanks while using conventional software routines for huge tables.