medien wissenschaft
UNIVERSITÄT BAYREUTH

SPIELEGESCHICHTE

SIMULATION

8. JUNI 2017

Simulation

„to simulate is to model a (source) system through a different system which maintains (for somebody) some of the behaviors of the original system.“ The key term here is “behavior.” Simulation does not simply retain the—generally audiovisual—characteristics of the object but it also includes a model of its behaviors. This model reacts to certain stimuli (input data, pushing buttons, joystick movements), according to a set of conditions.“

Frasca (2003): Simulation versus Narrative, S. 223

Modell

Modell eines fiktiven Piratenschiffs

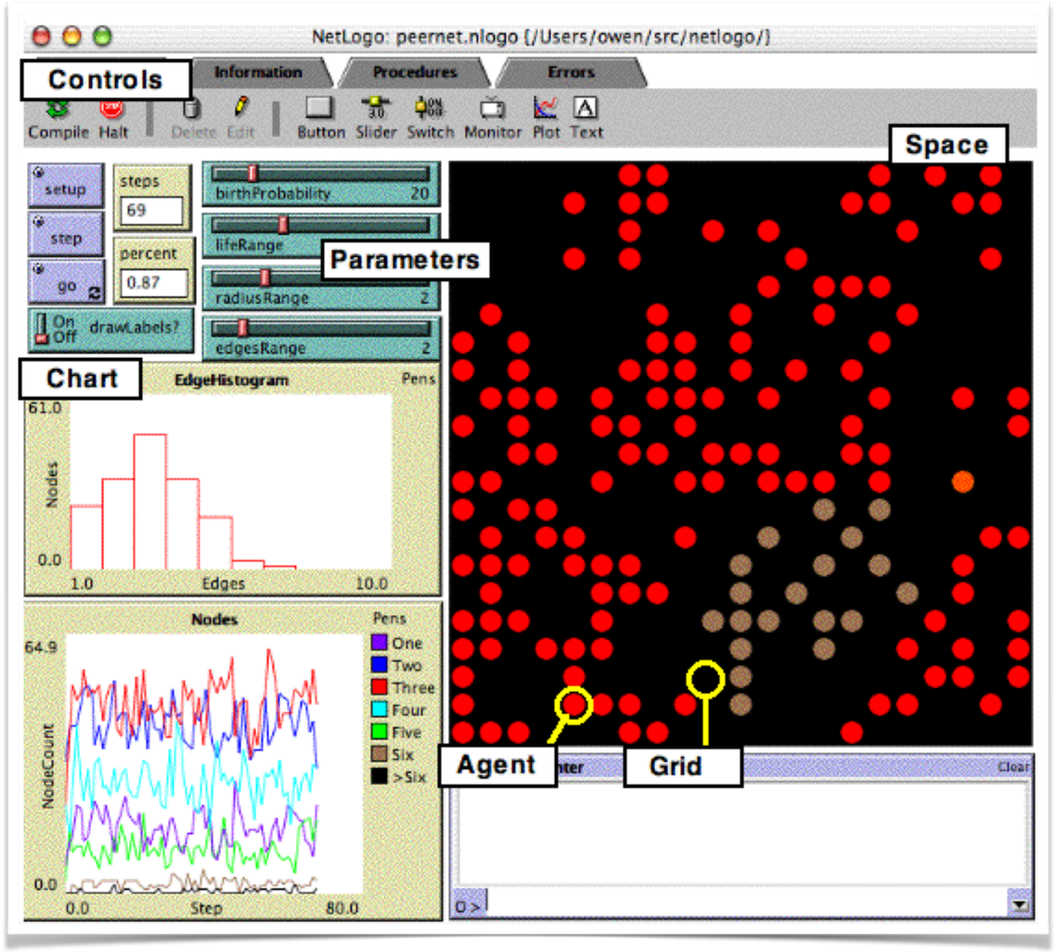
Modelle sind stets Modelle von etwas, namlich Abbildungen, Reprasentationen natürlicher oder künstlicher Originale, die selbst wieder Modelle sein können.

Modelle erfassen im allgemeinen nicht alle Attribute des durch sie repräsentierten Originals, sondern nur solche, die den jeweiligen Modellerschaffern und/oder Modellbenutzern relevant scheinen.

Modelle sind ihren Originalen nicht per se eindeutig zugeordnet. Sie erfüllen ihre Ersetzungsfunktion a) für bestimmte – erkennende und/oder handelnde, modellbenutzende – Subjekte, b) innerhalb bestimmter Zeitintervalle und c) unter Einschränkung auf bestimmte gedankliche oder tatsachliche Operationen.

Stachowiak: Allgemeine Modelltheorie, S. 130–133

(Digitale) Modellbildung



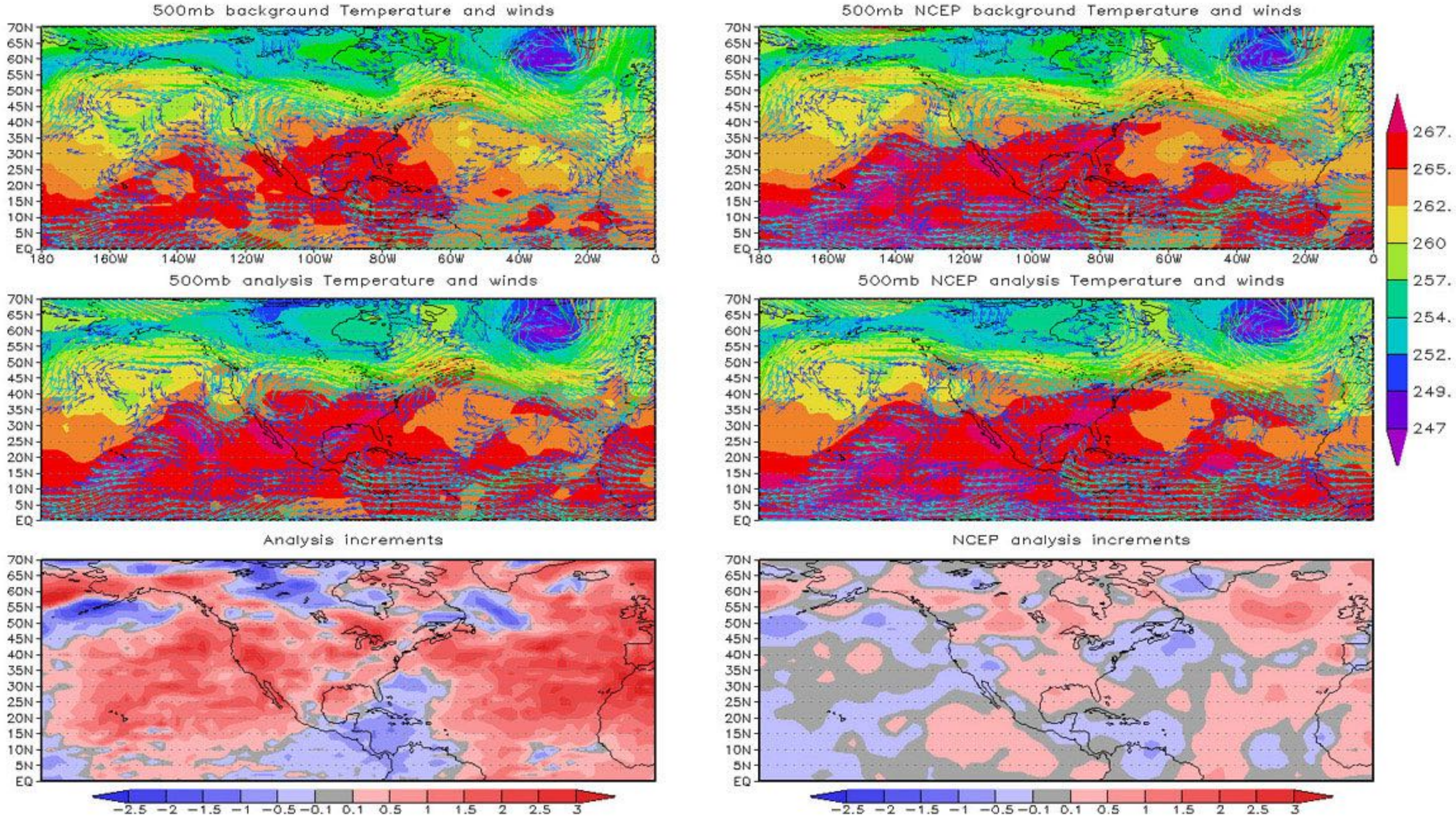
- Originalsystem auswählen
- Teilobjekte bestimmen
- Merkmale in Form von Parametern (Messgrößen) festlegen
- Prozesse identifizieren, bei denen Parameter geändert werden
- Beziehungen der Objekte festlegen
- Algorithmisierung

NetLogo ist eine Umgebung zur Simulation von Multiagentensystemen

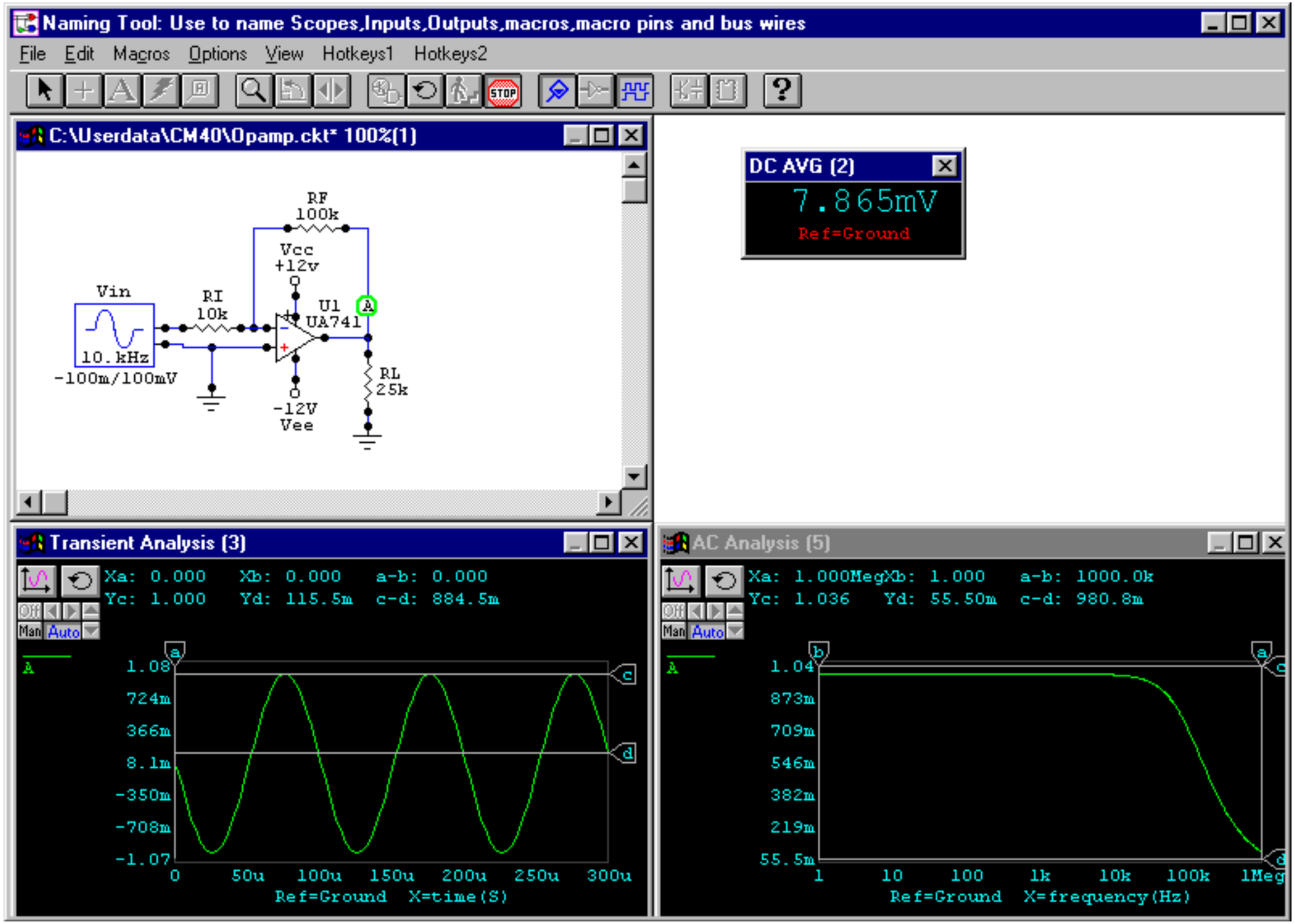
ENG 1
APU
ENG 2
LIFE VEST
LIFE VEST

AIIRSOURCE

US Military Simulator Training - Engagement Skills Trainer (EST)



Klima-Simulation

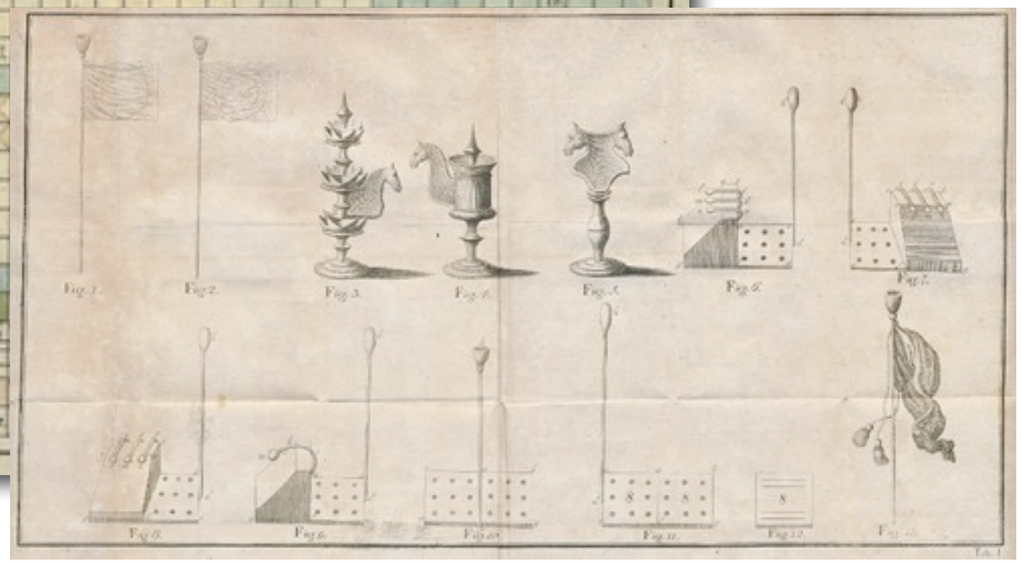


Simulation elektrischer Schaltungen

Planspiel / Militärsimulation

Versuch
eines
aufs Schachspiel
gebaueten
taktischen Spiels
von zwey und mehrern Personen
zu spielen
von
M. Joh. Christ. Ludw. Hellwig
Herzoglich-Braunschweig. Pagenhofmeister und Hofmathemat.
auch Mitgliede der Gesellschaft zum Nutzen der Künste und
Wissenschaften zu Frankfurth an der Oder.

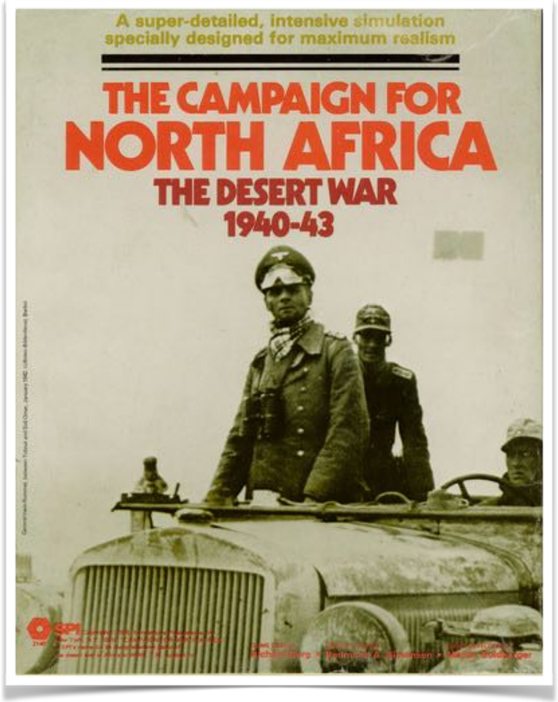
Leipzig,
bey Siegfried Lebrecht Crusius, 1780.

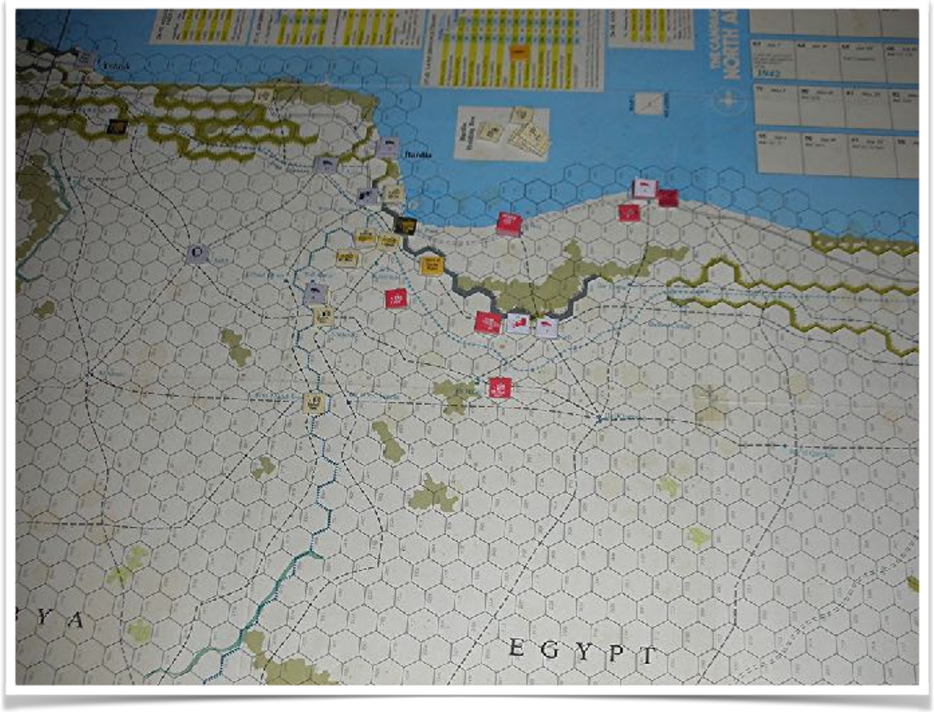


1780 Johann Christian Ludwig Hellweg

http://boardgamegeek.com/boardgame/72279/versuch-eines-aufs-schachspiel-gebaueten-taktische

Konfliktsimulation:
The Campaign for North Africa





Designer: Richard H. Berg

Artist: Redmond A. Simonsen

Publisher: SPI (Simulations Publications, Inc.)

8–10 Spieler

10.000 Stunden Spielzeit

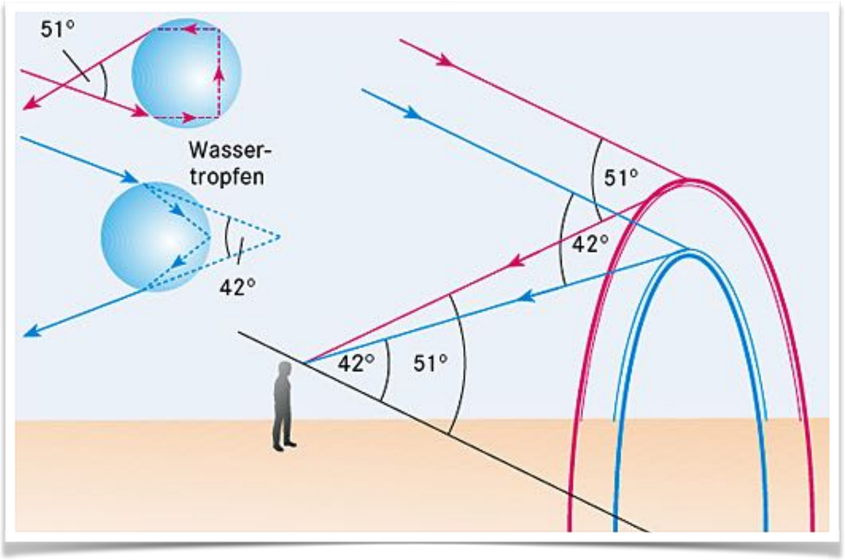
https://boardgamegeek.com/boardgame/4815/campaign-north-africa

Simulation und Spiel

Ergebnisoffener Ablauf

Nur realistischer Eingriff möglich

Wirklichkeitstreues Modell eines dynamischen Systems



Simulationen sind technische Modelle

Bevorzugte Systemzustände: Fortschritt, Sieg- und Verlustzustände

Eingreifen in den Simulationsablauf möglich

künstlerische Interpretation dynamischer Systeme

Spiele sind künstlerische Interpretationen

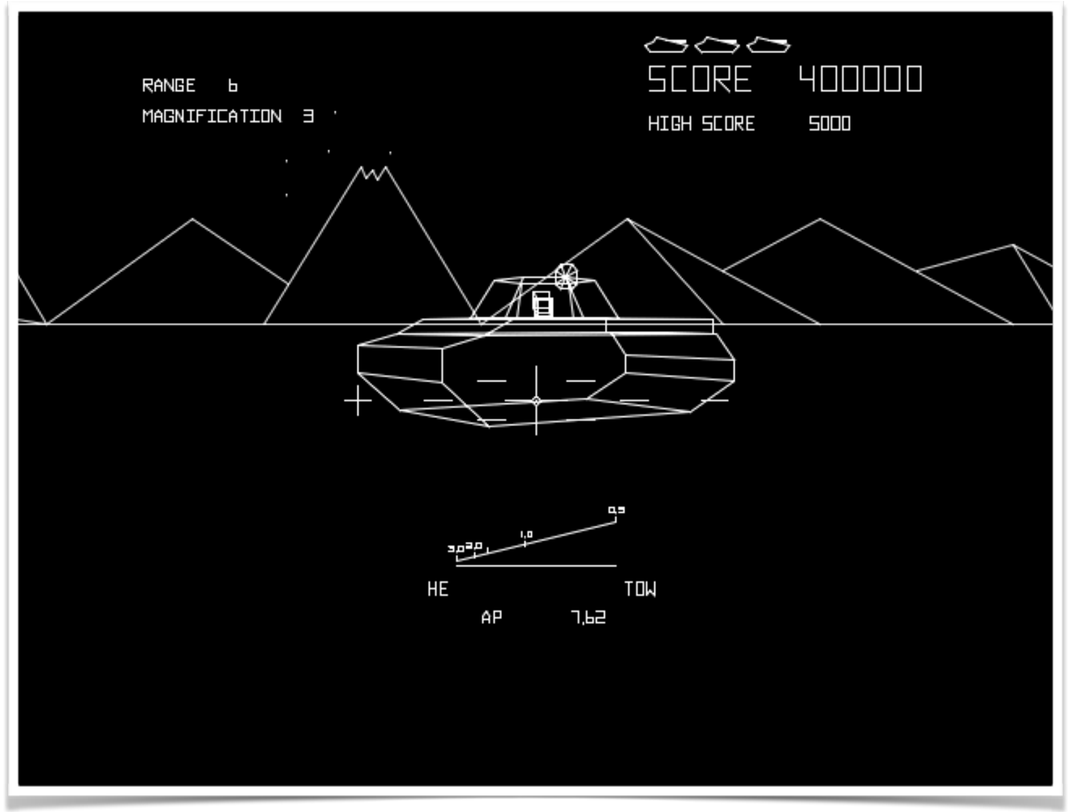
Funktionen von Simulationen

Ein Crash-Test ist die Simulation eines echten Unfalls

- Vermeiden von Aufwand
- Vermeiden von Gefahren
- Erkenntnis
- Vorhersage
- Training
- Archivierung
- Unterhaltung

Simulationsaspekte

Alle Spiele simulieren reale oder fiktive Systeme



Der Realismusgrad einer Simulation ist eine historische Größe. *The Bradley Trainer* wurde 1980 von Atari zur Ausbildung von Panzerschützen der U.S. Army entwickelt

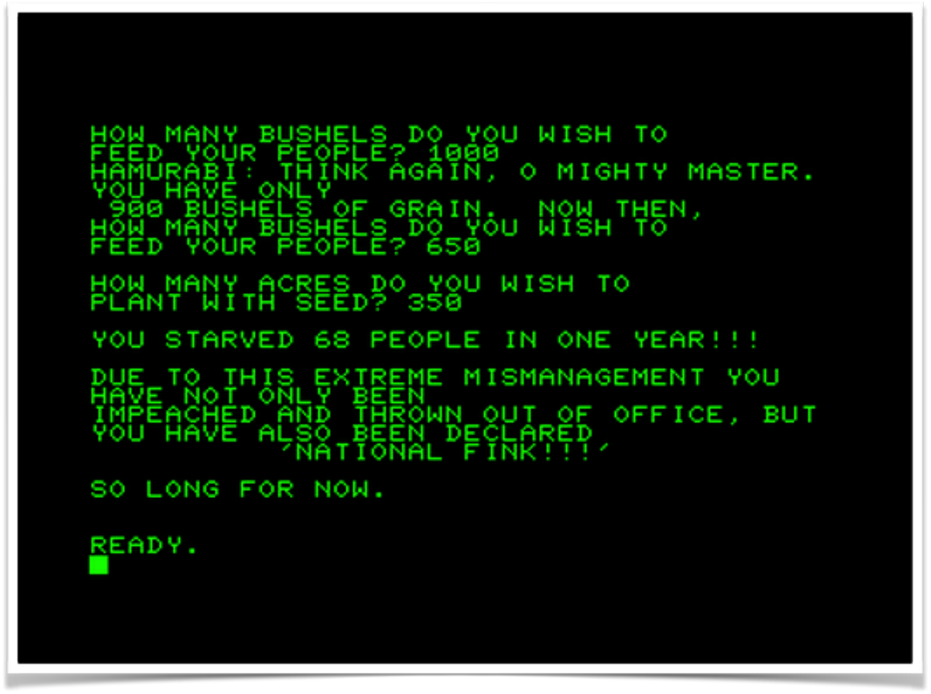
- Grafik
- Audio
- Narration
- Performativ
- Abläufe

Subgenres

Angry Birds simuliert zwar realistische Aspekte der Festkörperphysik, wird aber wegen des unrealistischen Referenzsystems nicht als Simulationsspiel eingeordnet.

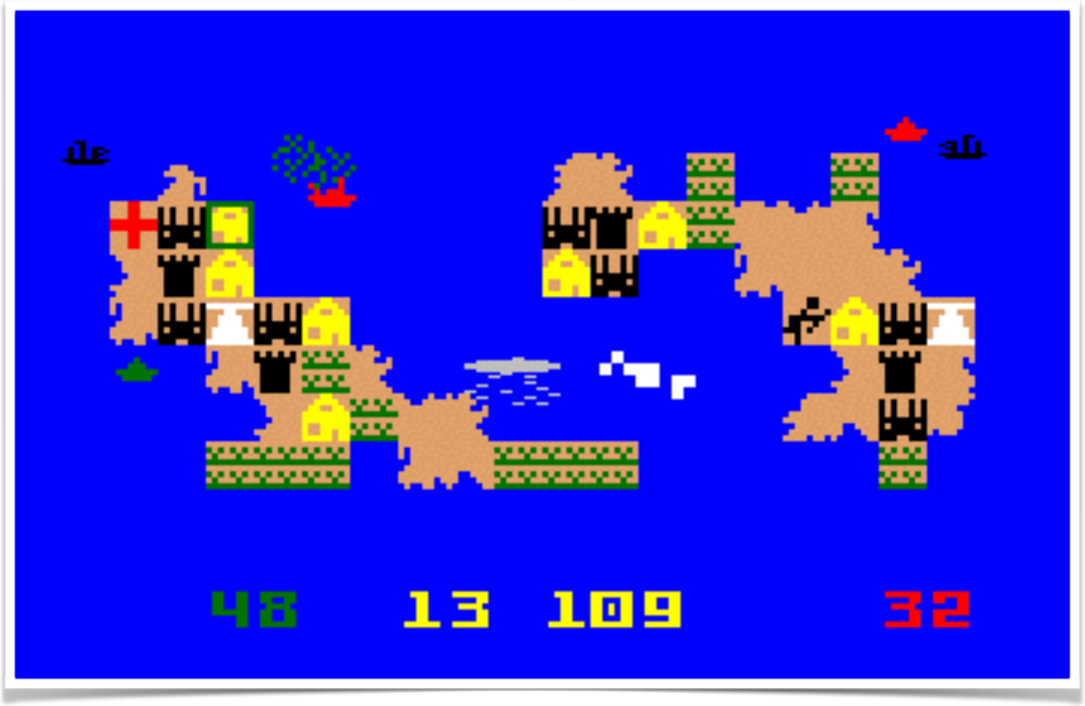
- Aufbau und Verwaltung
  - Wirtschaft
  - Stadt
  - Regierung
- Leben
  - Digitales Haustier
  - Gott
  - Soziales Leben
- Sports
- Fahrzeuge
- Andere Systeme

Aufbau und Verwaltung



The Sumer Game / Hamurabi (1968)

https://archive.org/details/msdos_Hamurabi_1996



Utopia (1982)

https://www.youtube.com/watch?v=_FVIHNmCHoY

Spielelemente

- Ressourcen: Geld, Material, Arbeiter, Raum, Zeit
- Planen und Bauen
- Kaufen und Platzieren
- Unterhalt
- Zufallsereignisse
- Ökonomie: Produktion, Verbrauch, Wechsel, Tausch (s. VL Ökonomie)

Tugendhafte Spiele

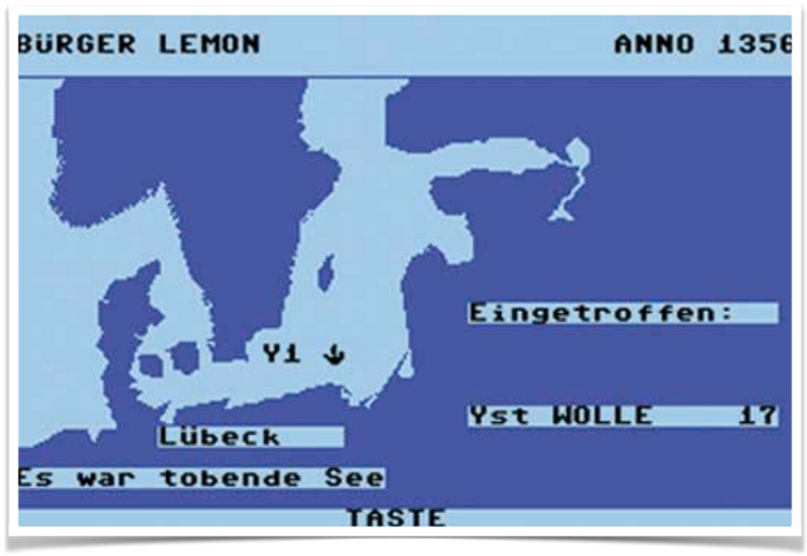
Aus ökonomischen, historischen, technischen und pragmatischen Gründen werden in Deutschland keine Militärsimulationen produziert.

»Stattdessen wird Deutschland bekannt für Aufbauspiele, bei denen es nicht um Eroberung und Zerstörung, sondern um Geldvermehrung und Ressourcen-Verwaltung geht«
retro gamer 2/2013: Made in Germany, Teil 1, S. 14.

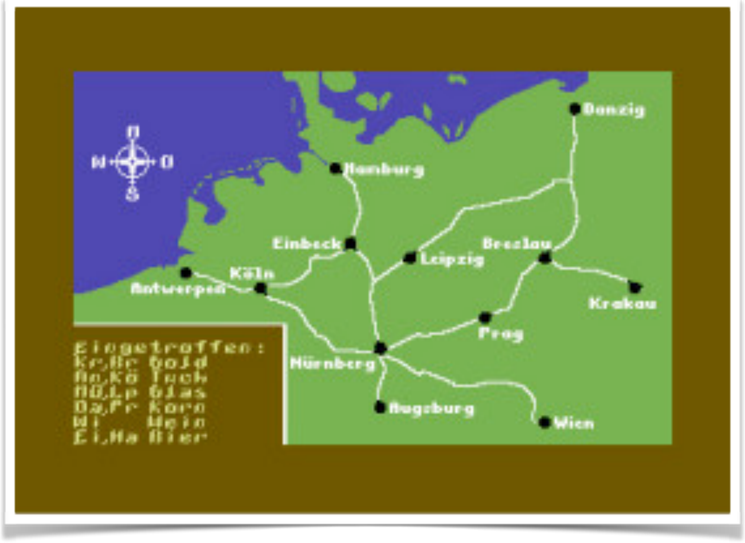
KRON: Bundesliga-Manager
ab 1989

Wirtschaftssimulation

Kaiser, 1984



Hanse, 1986



Fugger, 1988

Wirtschaftssimulationen

Ascon: Patrizier
ab 1992

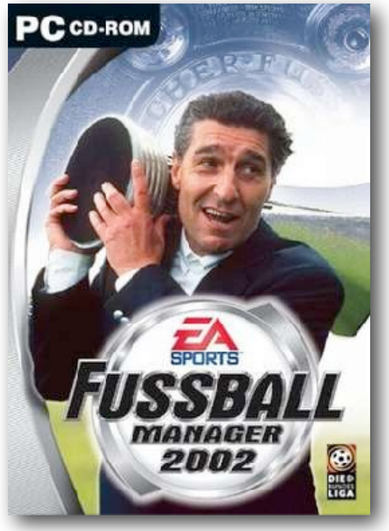
Max: 1869 – Hart am Wind, 1992

Oldtimer, 1994

Aufbaustrategiespiele

BlueByte: Die Siedler
ab 1993

Max Design, Sunflowers,
ab 1998



Bright Future: Fußballmanager
ab 2002

Stadt-Simulation

Fortune Builder 1984

Sim City 1989

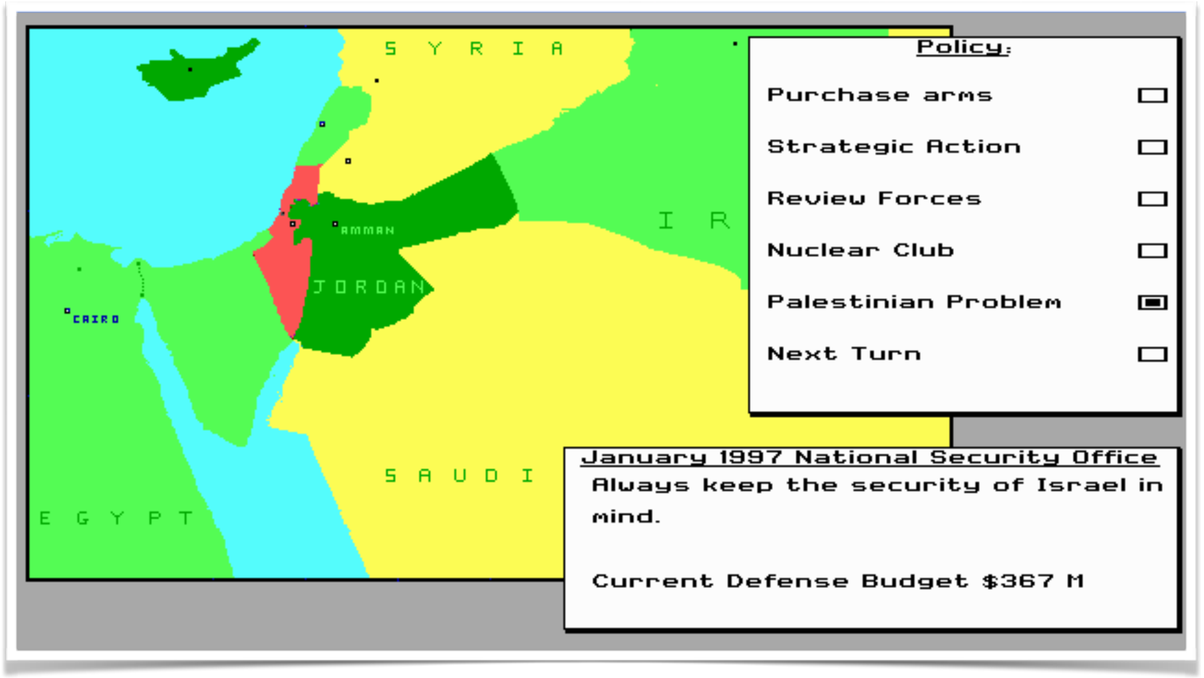
Sim City 2000

Amethyst
Inn & Suites
BURGERS

Cities: Skyline

1994 Theme Park
1999 Roller Coaster Tycoon
2002 Roller Coaster Tycoon 2
2004 Roller Coater Tycoon 3

Government

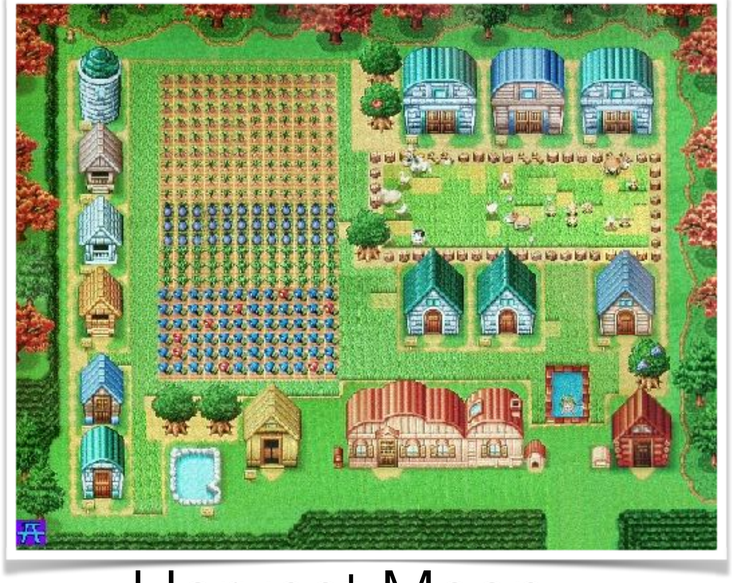


Conflict: Middle East Political Simulator

- 1968 Hamurabi
- 1990 Conflict: Middle East Political Simulator
- 1993 Caesar
- 2003 Tropico
- Crusader Kings II

Bauernhof

SimFarm (1993)



Harvest Moon

Stardew Valley

Reach for the Sun

Leben

- Conway’s Game of Life
- Little Computer People (1985)
- The Sims (2000)
- Spore (2008)

https://bitstorm.org/gameoflife/

Little Computer People 1985

Artificial Life

Creatures (1996)

Spore (2008)

Tamagotchi 1996

Furby 1990

Seaman 1999

Digital Pet

Konrad the Kitten (Early Access)

- Tamagotchi
- Furby
- Dogz
- Catz
- EyePet (PS Eye)
- Nintendogs
- Seaman
- Kinectimals (Kinect)
- Konrad the Kitten (Vive)

Populous (1989)

Reus (2013)

God Games

- Populous (1989)
- Dungeon Keeper (1997)
- Black & White (2001)
- Dwarf Fortress
- From Dust (2011)
- Reus (2013)
- Godus (2013)

The Sims (1999)

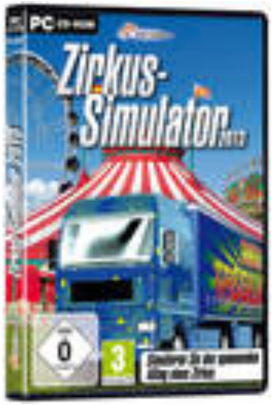
Social Sim

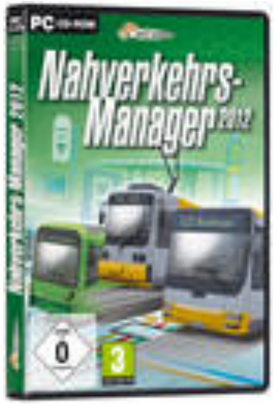
- Alter Ego
- Animal Crossing
- Façade
- The Sims (1999)
- Princess Maker
- Tomodachi Life

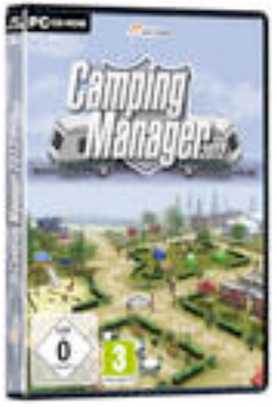
File Edit View World Tools Help Singularity Advanced
Violet Welcome Area and Infohub, Violet (158, 104, 26) - PG
03:24 PST
L$0
Mongini Princess Bracken Hotaling
Warden's Cove Member PINK (emy.sorciere)
(aiden.lawksley)
Camel Owner Viky (viktoria.viper)
Gesamtkunstwerk michellita Ceriano
Mongini Family Hasty Manx
Erbot
Master of the Wire Clip
TheNotoriousBIG
Comfortably Numb (Away) (rugged.faith)
Moonlight Angel Barbie aka Mrs G (gimpartist)
Stressoteric (autisticus)
Member SvetLana (alessandra.fright)
★Superstar★ Catcher Block (Mwteen) (catcherblock)
Farrah Helendale
Mongini Family Ron Ludlow
Parktown Manager ImNotYourLittleWeasel
Offline (aleph)
Brianne (brianne.braumley)
Second Life (2003)
infamous KreBaR
Brianne(brianne.braumley): nuh uh
Ron Ludlow: yes
Brianne(brianne.braumley): were you
Ron Ludlow: monkey avatar
Ron Ludlow: always talking shit to those bogan aussies
Brianne(brianne.braumley): i can't think of what your name was
Ron Ludlow: in korea1
Ron Ludlow: thats me
Brianne(brianne.braumley): started with a D
Autistic Powerhouse Vyrnox (vyrnox.ming)
Rikielthor
Talk
Communicate
Radar
Fly
Snapshot
Search
Build
Map
Mini-Map
Inventory

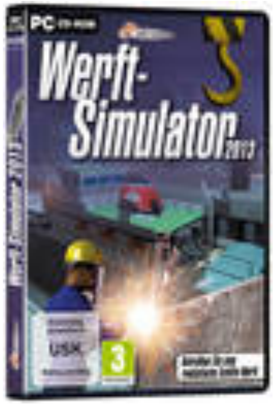
Berufe

»Womöglich handelt es sich aber auch um ein typisch deutsches Phänomen. All diese Spiele halten Tugenden wie Fleiß oder Pünktlichkeit hoch, und die Liebe zum motorisierten Gefährt ist sozusagen die Grundlage der Spiele.« (Oliver Klatt)

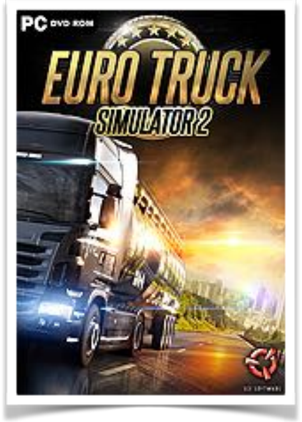


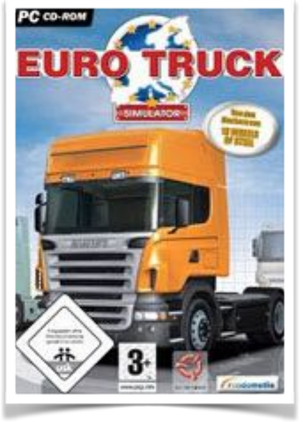


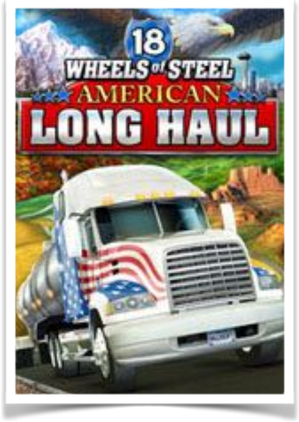


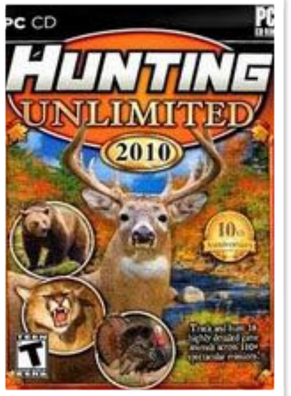


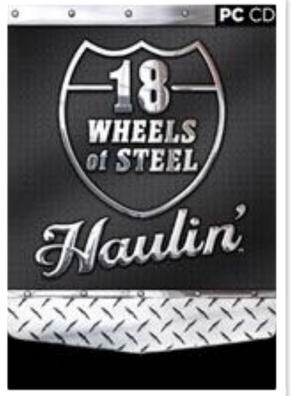
Berufe

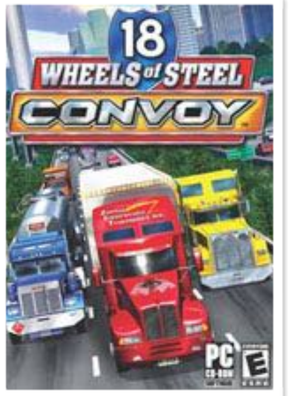


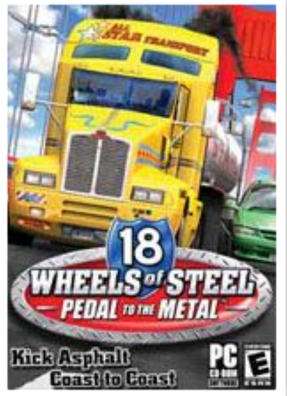


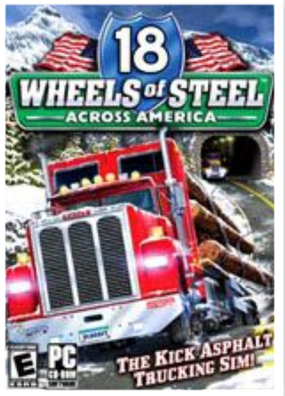


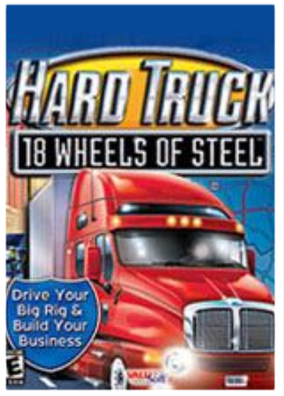












SCS Software

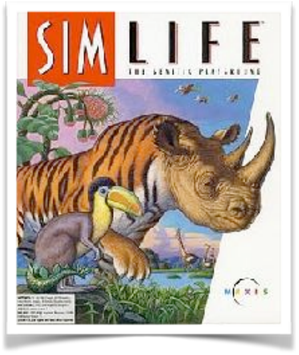
http://www.gamasutra.com/view/news/188054/

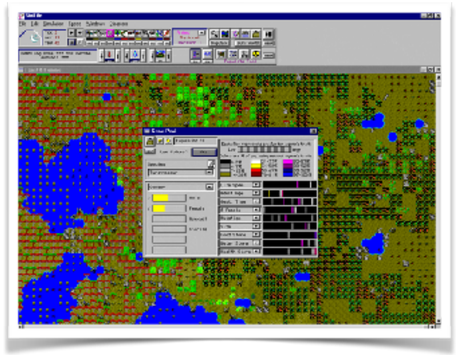
Slaves to Armok II: Dwarf Fortress (seit 2006)

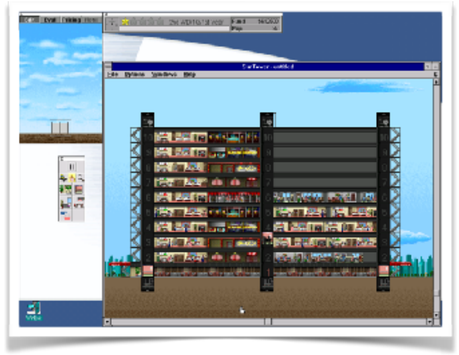
Verschiedene Systeme

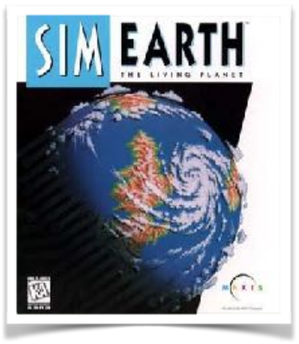
Maxis / EA – Sim X

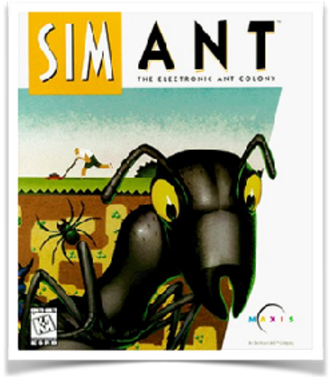
https://en.wikipedia.org/wiki/List_of_Sim_video_games

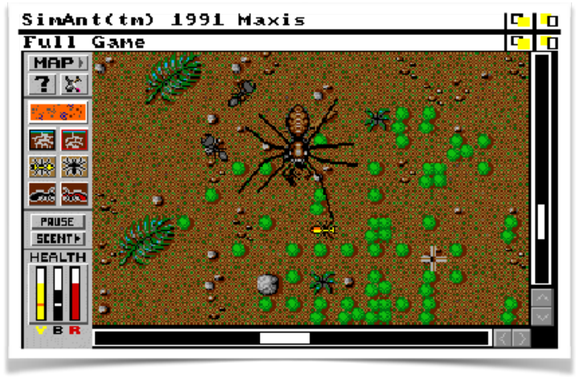












SimEarth

SimAnt

SimLife

SimFarm

SimRefinery

SimTower

SimCopter

Streets of SimCity

SimHealth

SimIsle

SimTown

SimPark

SimGolf

SimTunes

SimSafari

Sim Theme Park

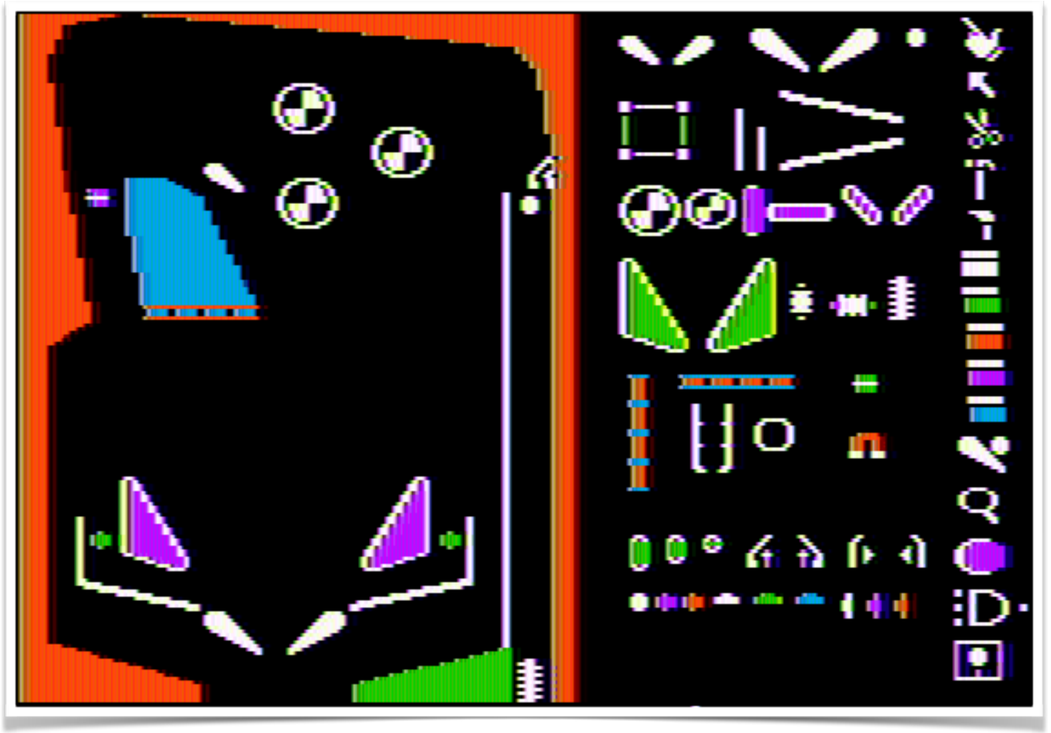
SimCoaster

Sid Meier's SimGolf

The Sims Carnival

SimAnimals

Flipper

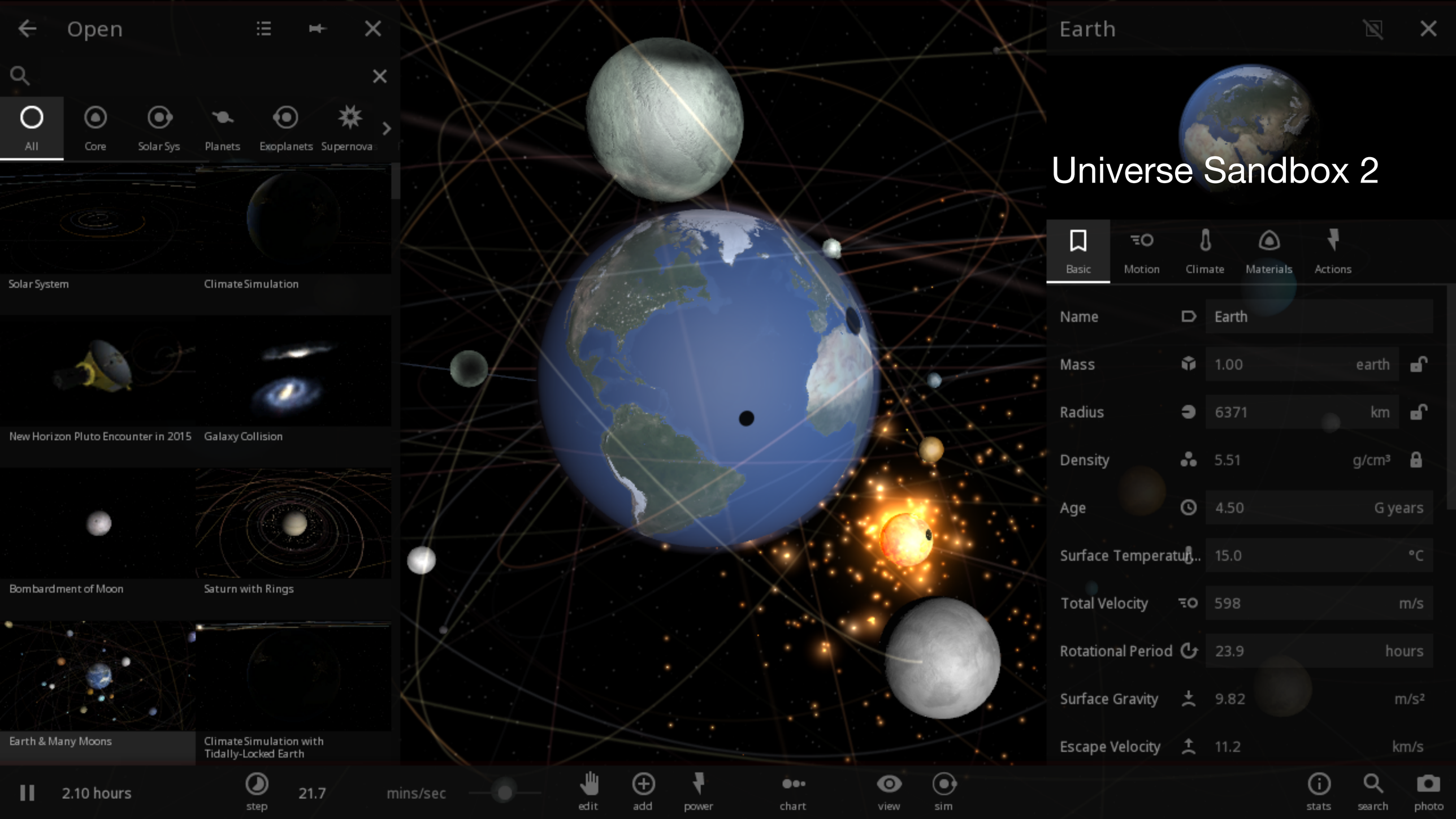


Pinball Construction Set (1983)

The Pinball Arcade (2012)

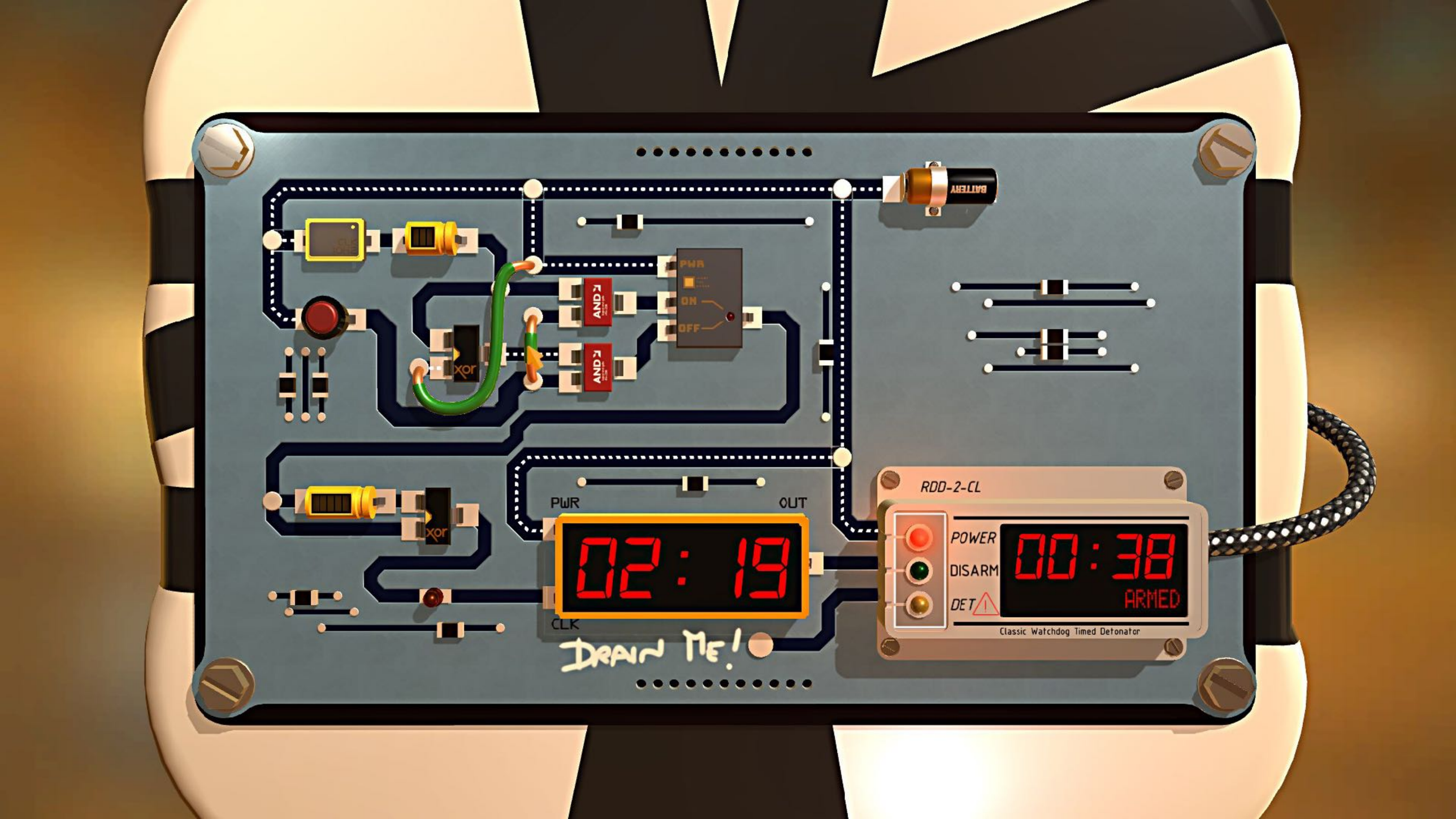
„We are introducing classic pinball tables to people who would otherwise never get an opportunity to play them, and we are also preserving these machines and their culture“
Rubens: *Virtual games bring pinball to new audiences*

Pods
Name
Mass
Cost
Size
Place
Learstar A1
Kerbal Space Program
113,734
RESET


Open
All
Core
Solar Sys
Planets
Exoplanets
Supernova
Solar System
Climate Simulation
New Horizon Pluto Encounter in 2015
Galaxy Collision
Bombardment of Moon
Saturn with Rings
Earth & Many Moons
Climate Simulation with Tidally-Locked Earth
Earth
Universe Sandbox 2
Basic
Motion
Climate
Materials
Actions
Name
Earth
Mass
1.00
earth
Radius
6371
km
Density
5.51
g/cm³
Age
4.50
G years
Surface Temperatur...
15.0
°C
Total Velocity
598
m/s
Rotational Period
23.9
hours
Surface Gravity
9.82
m/s²
Escape Velocity
11.2
km/s
2.10 hours
step
21.7
mins/sec
edit
add
power
chart
view
sim
stats
search
photo

Virtual Battlefield Systems

Bohemia Interactives *Operation Flashpoint* (2001) wird 2002 zum Virtual Battlefield System 1 und 2011 zu ARMA: Cold War Assault


BATTERY
PWR
ON
OFF
AND
AND
xor
xor
PWR
OUT
02:19
CLK
DRAIN ME!
RDD-2-CL
POWER
DISARM
DET
00:38
ARMED
Classic Watchdog Timed Detonator

SportsBar VR (2016)

Konflikte

s. VL Strategiespiele

Ultimate General: Gettysburg

Sport

s. VL Sport

Fahrzeuge

Project CARS (2015)

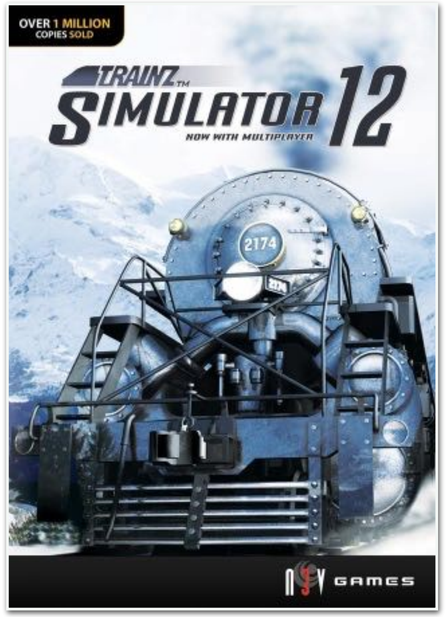
Rennwagen

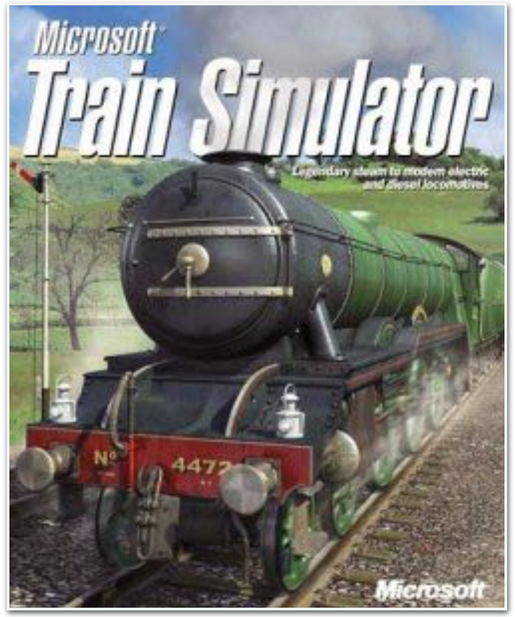
s. VL Rennspiele

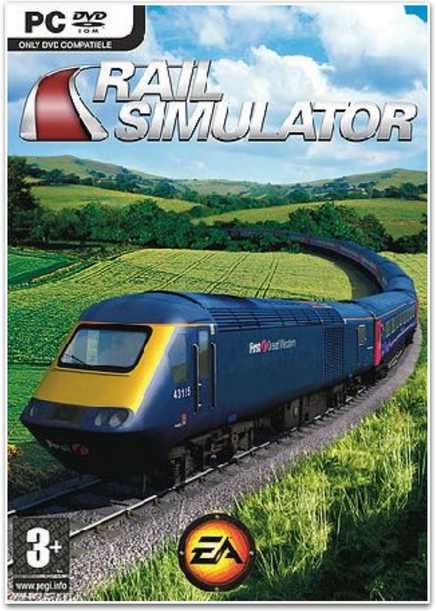
Flights Aircraft World Options Views Help Add-ons
Microsoft Flight Simulator X
FOR PILOTS
Real World Training
Jeff Van West and Kevin Lane-Cummings
For serious pilots, it's not a game
Microsoft
flight simulator
as a training aid
a guide for pilots, instructors, and virtual aviators
bruce williams
Using PC-Based Flight Simulations Based on FAA-Industry Training Standards
SCENARIO-BASED
TRAINING
with X-Plane® and
Microsoft® Flight Simulator
Bruce Williams
Flight Simulator X (2006)

Alpha 2.02. r19878/r0
Elite: Dangerous (2014)
INFO
PRIMARY 1
MULTI-CANNON
48/10000
MULTI-CANNON
48/10000
2,360m
MISFORTUNE
COBRA MKIII
MISFORTUNE
HULL
94%
50%
HULL
100%
SIGNATURE
ENG
WEP

Eisenbahnen







openBVE 1.4.2

Berufe

Landwirtschaftssimulator 2017

Euro Truck Simulator 2