

ODSJEK PROMET

ZAVOD ZA ŽELJEZNIČKI PROMET

Laboratorij za modeliranje i simulacije željezničkih
sustava



Voditelj
Doc. dr. sc. Hrvoje Haramina
e-mail: hrvoje.haramina@fpz.hr



DIVISION OF TRANSPORT

DEPARTMENT OF RAILWAY TRANSPORT



Laboratory for Modelling and Simulation of Railway Systems



Head

Asst.Prof. Hrvoje Haramina, Ph.D.
e-mail: hrvoje.haramina@fpz.hr



Naziv opreme / Equipment name

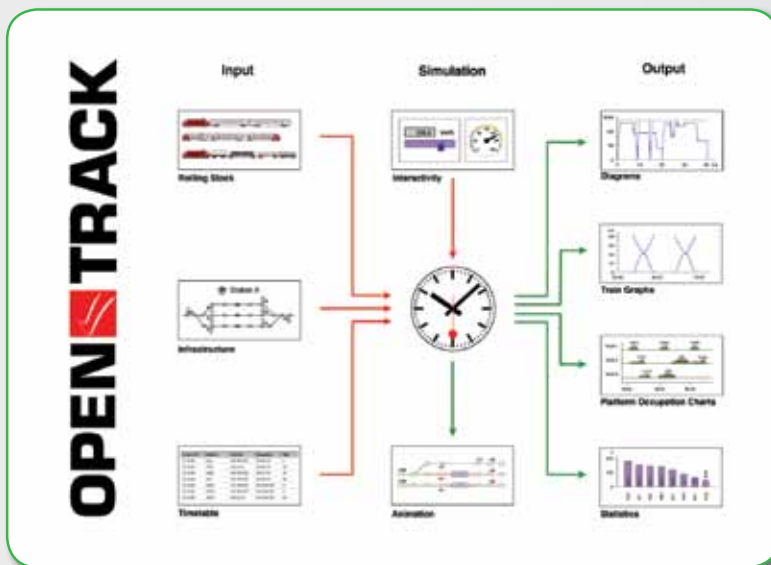
Program za modeliranje i simulacije u željezničkom prometu OpenTrack
Software for modelling and simulation of railway system OpenTrack

Proizvođač / Manufacturer

Swiss Federal Institute of Technology, Zürich,
Switzerland

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Namjena i opis / Purpose and description

Program služi za izradu računalnih modela i simulacije u željezničkom prometu. OpenTrack podržava izvođenje sljedećih zadataka:

- određivanje zahtjeva za željezničku infrastrukturu
- analiza tehničkog kapaciteta pruga i kolodvora
- analiza voznog parka
- planiranje i izrada voznog reda te analiza njegove stabilnosti
- analiza učinkovitosti različitih sustava za vođenje vlakova
- proračun potrošnje pogonske energije vlakova
- analiza utjecaja kvarova na infrastrukturnim i mobilnim kapacitetima željeznice i kašnjenja vlakova na učinkovitost željezničkog prometa
- simulacija tramvajskog prometa
- simulacija djelovanja sustava metroa
- simulacija djelovanja Maglev sustava

The program is used for modelling and simulation of railway operations. OpenTrack supports the following tasks:

- determining the requirements for a railway network infrastructure
- analyzing the capacity of lines and stations



- rolling stock studies (for example, future requirements)
- timetable construction; analyzing the robustness of timetables
- analyzing efficiency of various signalling systems, Analyzing the effects of system failures (such as infrastructure or train failures) and delays
- calculation of power and energy consumption of train services
- simulation of Tram/Streetcar and Light Rail systems
- simulation of Metro/Subway/Underground systems
- simulation of Maglev systems (such as Transrapid)





Naziv opreme / Equipment name

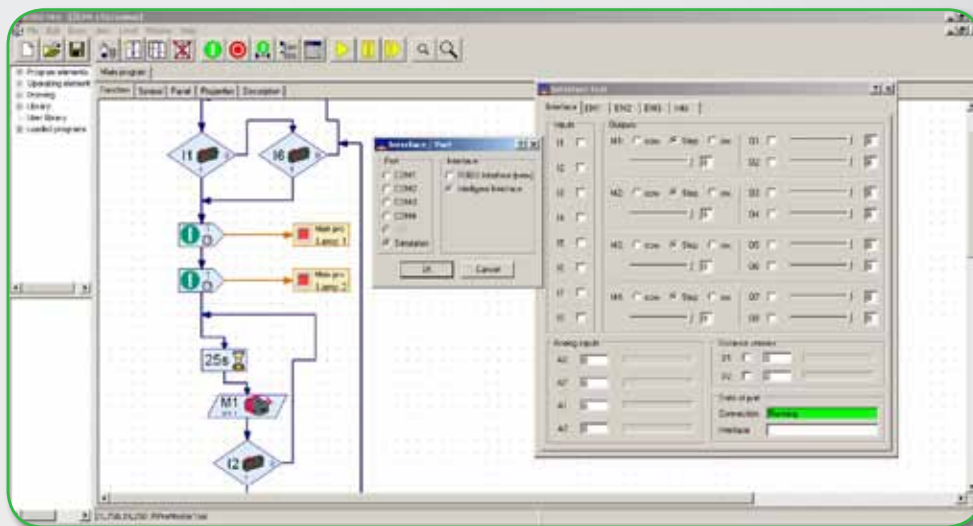
Program za izradu aplikacija upravljanja željezničkim uređajima RoboPro
Software for programming of railway control units RoboPro

Proizvođač / Manufacturer

Fischertechnik GmbH, Waldachtal, Germany

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Namjena i opis / Purpose and description

Program je namijenjen za programiranje rada programabilnog logičkog kontrolera. Ovaj kontroler primjenjuje se za upravljanje procesom rada fizičkih modela različitih željezničkih signalno-sigurnosnih uređaja kao što su uređaji željezničko-cestovih prijelaza u razini, uređaj automatskog pružnog bloka i dr.

The program is used for programming of programmable logic controller RoboPro. This controller controls various physical models of train control systems such as railway level crossings, automatic block system etc.





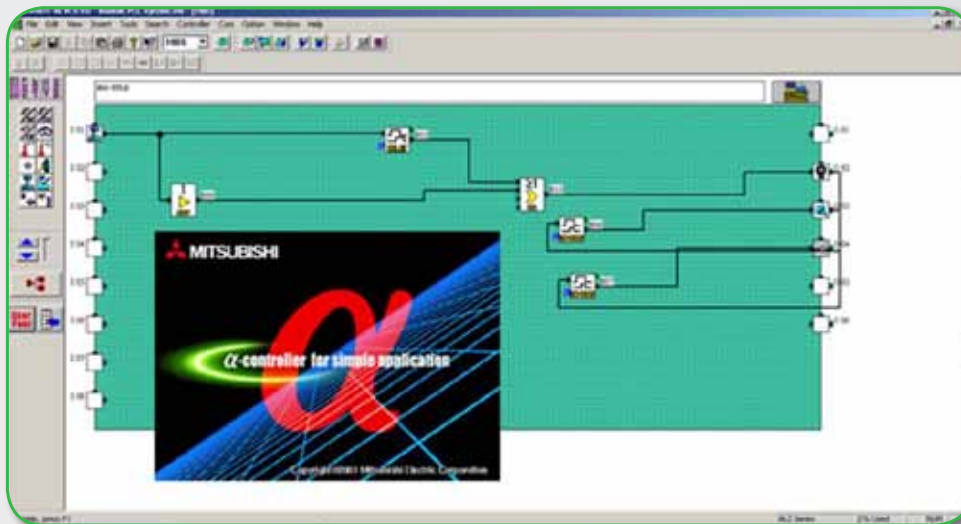


Naziv opreme / Equipment name

Aplikacija za programiranje mikrokontrolera
ALPHA 2 - Software
Micro controller programming software
ALPHA 2 - Software

Proizvođač / Manufacturer

Mitsubishi Electric, Tokyo, Japan



Namjena i opis / Purpose and description

Program je namijenjen za programiranje rada programabilnog logičkog kontrolera. Ovaj kontroler primjenjuje se za upravljanje procesom rada željezničkih signalno-sigurnosnih uređaja kao što su uređaji željezničko-cestovih prijelaza u razini, uređaj budnosti strojvođe (budnik) i dr.

The program is used for programming of programmable logic controller ALPHA 2. This controller is used for control of various train control systems such as railway level crossings, dead man's control system etc.

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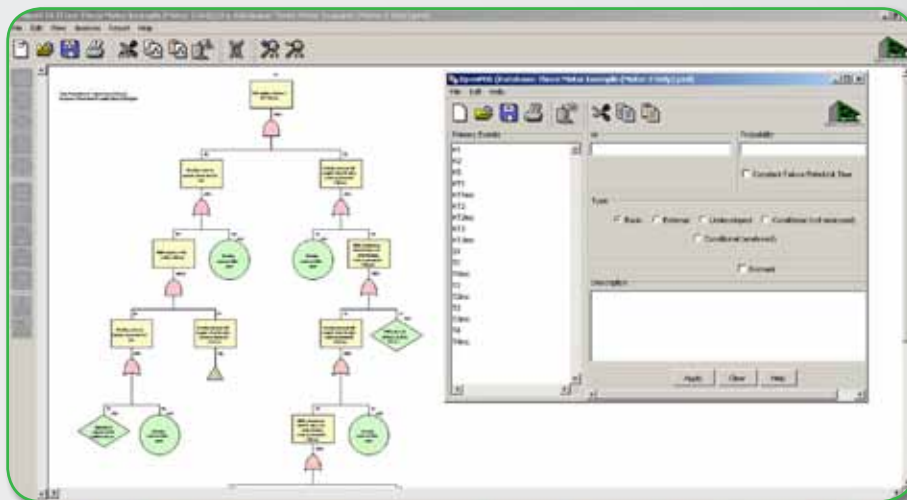


Naziv opreme / Equipment name

Program za analizu pouzdanosti sustava Open FTA
Software for conduction of Fault Tree Analysis Open FTA

Proizvođač / Manufacturer

Formal Software Construction Ltd., Cardiff, UK



Namjena i opis / Purpose and description

Program je namijenjen za izvođenje analize stabla pogrešaka. Analiza stabla pogrešaka predstavlja deduktivnu metodu koja služi za analizu utjecaja inicijalnih smetnji i kvarova u radu složenih sustava.

The program is used for conduction of fault tree analysis. FTA is a deductive, top-down method aimed at analyzing the effects of initiating faults and events on a complex system. This program is used for reliability analysis of train control systems.

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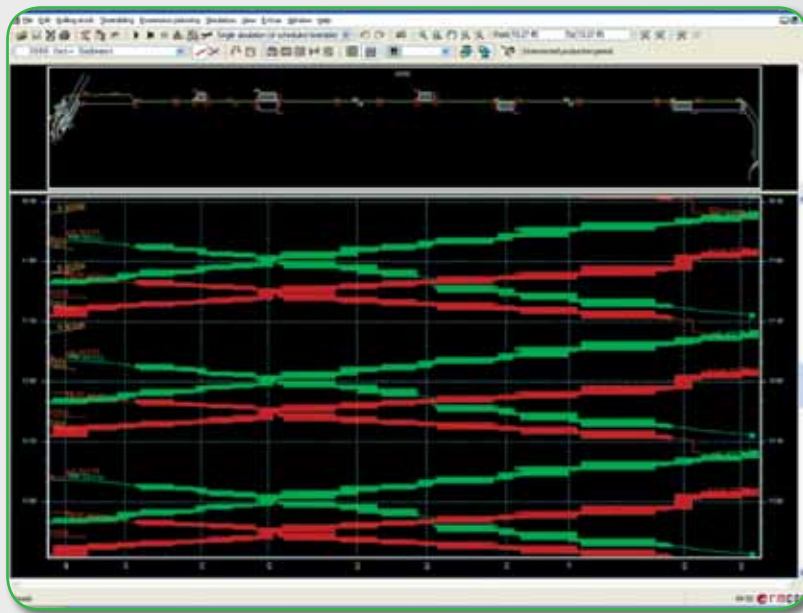


Naziv opreme / Equipment name

Program za modeliranje i simulacije u željezničkom prometu RailSys
Software for modelling and simulation of railway system RailSys

Proizvođač / Manufacturer

Rail Management Consultants GmbH (RMCon),
Hannover, Deutschland



Namjena i opis / Purpose and description

Program služi za izradu računalnih modela i simulacije u željezničkom prometu. RailSys podržava izvođenje sljedećih zadataka:

- određivanje zahtjeva za željezničku infrastrukturu
- analiza tehničkog kapaciteta pruga i kolodvora
- planiranje i izrada voznog reda te analiza njegove stabilnosti
- analiza utjecaja kvarova na infrastrukturnim i mobilnim kapacitetima željeznice i kašnjenja vlakova na učinkovitost željezničkog prometa

The program is used for modelling and simulation of railway operations.

RailSys supports the following tasks:

- determining the requirements for a railway network infrastructure
- analyzing the capacity of lines and stations
- timetable construction; analyzing the robustness of timetables
- analyzing the effects of system failures (such as infrastructure or train failures) and delays

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