LISA

POWERFUL TRAFFIC DESIGN

By traffic engineers for traffic engineers

LISA – the comprehensive software package for the design, evaluation, and optimization of traffic signal systems

The structured design of LISA is based on the best possible user-friendliness for straightforward use in the design and evaluation of traffic signal systems.

The graphical implementation and intuitive guidance enable even inexperienced users to create sophisticated traffic control systems within a very short time.

Intelligent calculations and pre-settings are at the heart of LISA and offer efficient support with the comprehensive manual.

OCIT-standard **LISA** vulnerable road users Car2X

green wave **traffic light control** public transport

coordination C-ITS prioritization

logic **simulation** CCAM

detectors data-import/export

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From simple fixed-time control for individual intersections to green waves for corridors and complex adaptive traffic control

Optimization of green times & coordination and efficient solutions for public transport, bicycle, or emergency vehicle priority

Analysis of the control system in the test site and export to various simulation programs, e.g. PTV Vissim, SUMO

Consideration of numerous detection types in the control logic, e.g. detectors, public transport detection points, CCAM data

Different export formats such as OCIT-I or OCIT-C standard, can be used by almost all controllers

MAP creation and export of the functions of the C-ITS function library enable GLOSA services and ETA predictions

S | M | XL

Flexible license packages offer tailor-made solutions for different requirements at a low total cost.

For further information, please contact **lisa@schlothauer.de.**

We look forward to hearing from you!

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LISA S – Fixed time control
for individual intersections

LISA S comes with all important functions for the design, evaluation, and optimization of traffic signal control in fixed time.

Signalized or unsignalized intersections and roundabouts are created intuitively and automatically, parameters are entered or changed graphically or in tabular form.

All road users can be considered, possible optimization potential is visualized immediately.

fixed-time control signal timing plan
intersection layout Basic data
HBS 2015 performance calculation
time-distance-diagram LISA S geometry
intergreen times conflict matrix

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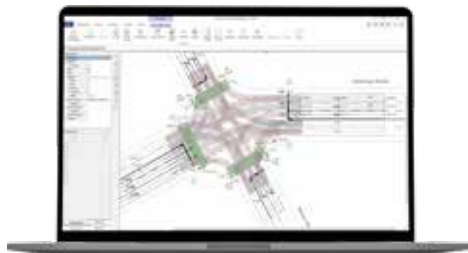
Basic data and intersection layout

Import of plans, creation of lanes and signal groups, graphical input of detectors and public transport detection points

Automatic definition of conflict matrices and calculation of intergreen times

Graphical or tabular changes

Signal timing and flow plans

Automatic calculation and optimization of signal timing plans

Integrated quality analysis function in accordance with national and international guidelines

Performance calculations according to HBS2015

Project management & variant comparison

Management of intersection and coordination variants in project management

Assignment of guidelines and location templates and export and import in various file formats

Change history with variant comparison

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LISA M – Fixed time control & coordination of multiple intersections

Configuring, displaying, and editing a corridor to create green waves is easy and convenient with LISA M.

The coordination of public transport can be optionally taken into account.

The detailed coordination evaluation and various optimization procedures support the development of optimal coordination.

fixed-time control signal timing plan

corridor green wave LISA S

HBS 2015 coordination optimization

LISA M geometry

time-distance diagram

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Configuration

Efficient compilation of a corridor, taking into account the distances between the signal groups of the selected intersections

Configuration of speeds, incoming and turner signal groups

Representation

Creation of several time-distance diagrams including automatic synchronization with the signal timing plans of the selected intersections

Direct adjustments in the displayed time-distance diagrams

Evaluation

Calculation of stops, passages, coordination criterion and performance index based on the coordination flow

Evaluation results as graphical representation of the platoons

Coordination optimization

Manually by moving individual green times or entire signal timing plans in the time-distance diagram

Combinatorial optimization of a single intersection

Analytical optimization of the entire route using the downhill simplex method

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LISA XL – Adaptive traffic control with logic editor, test site and simulation

LISA XL enables the creation of complex rule-based controls, including prioritization of public transport, emergency vehicles, pedestrians, or bicycle traffic.

By considering detectors, public transport detection points, and detection chains as well as CCAM messages, all conceivable use cases can be taken into account.

LISA M
public transport priority function library
test-site green wave C-ITS package
HBS 2015 coordination optimization
time-distance diagram LISA XL geometry
LISA S logic simulation
adaptive control

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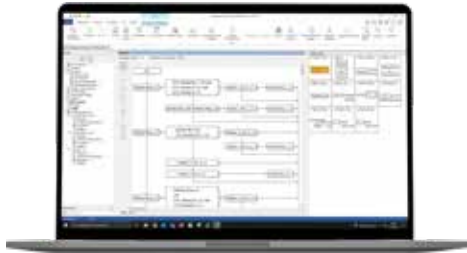
Logic editor

Logic editor with extensive function library for creating complex control logic without programming knowledge

Logic elements in comprehensible flowcharts at the click of a mouse

Definition and storage of proven logic sequences as a function

Control logic compileable based on C or JAVA for supply to a controller

Test Site

Testing, simulation, and evaluation of the created adaptive traffic control

Virtual controller for simulating, analyzing and reproducing any traffic flow

Detector occupations set manually, as defined test routines or automated random tests

Step-by-step tracking and analysis of the control logic via integrated debugger

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LISA C-ITS package – Consideration of CCAM in complex traffic controls

With the C-ITS package, in addition to georeferenced data for MAPs, CCAM messages, e.g. for the prioritization of public transport or emergency vehicles, can also be taken into account in the control logic.

Different penetration rates can be simulated in the test site. All CCAM functionalities are synchronized for export for detailed simulation in PTV Vissim.
LISA XL is a prerequisite for the C-ITS package.

MAP creation emergency vehicles
georeferencing LISA XL CCAM messages
logic C-ITS package function library
SSEM test site SREM simulation
public transport priority

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CCAM is available in the intersection layout, the basic
parameters, the logic editor and the test site fully integrated.

CCAM Message generator

Virtual controller to simulate all CAM
and SREM transmitting vehicles

Vehicle buffer for displaying CAM data
for reliable forecasting (GLOSA services)

C-ITS function library

Functions for using CAM, MAPEM, SREM,
SSEM data for complex traffic signal control
in the logic editor

MAP creation and export

Use of georeferenced intersection data
for calculating intergreen times and the
design of adaptive traffic controls

Automatic georeferencing with defined
reference point or intersection topology

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Further modules, export formats and interfaces

Our software packages grow with your needs - they can be expanded at any time with additional license packages as well as functions and interfaces and thus fit seamlessly into your IT landscape.

Export formats

OCIT-I and OCIT-C export of control logics to traffic control centers

OMTC export to supported controllers (prerequisite: consent of the manufacturer).

Simulation software

Export e.g. to SUMO and PTV Vissim

C-ITS functions are already fully integrated in the export to PTV Vissim

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LISA provides support before and after the creation of traffic control systems also for other activities.

Documentation

Comprehensive customization options for reports and documents

Editing functions similar to Word for editing cover sheets and automated reports

(For LISA S/M, included in LISA XL)

Counting

Import and extensive processing and evaluation options for count data

Consideration of the data in flow plans and integration into the control design

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Lizence models

LISA can be installed on any number of PCs. Access to the license information is required for use - currently on a hardware-based software protection (USB dongle) from Marx Software Security (CRYPTOBOX).

Single user license

The dongle is plugged into the user's local PC (client). Each client requires its own dongle, the number of licenses corresponds to the number of dongles.

Network license

A dongle is connected centrally to the customer's company server and provides the clients with license information. The LISA server software is also installed on the server to manages access rights to licenses - even to varying degrees - and shared projects.

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Hardware requirements

Client
- PC with Windows 10 operating system (64-bit)
- Processor: Intel Pentium or AMD Athlon from 2.0 GHz
- Memory: at least 2 GB (recommended: 8GB)
- Hard disk: 20 GB (1 GB hard disk capacity for program files, total capacity depends on the amount of project data)
- Monitor: 19" with a resolution of at least 1280x1024 (recommended: 24" Full HD)
- Interfaces: USB 2.0 type A connection for software protection (Cryptobox - „dongle")

Server
- Windows operating system from Windows 10 with 64-bit
- Main memory depending on Windows version
- TCP/IP network connection
- Hard disk capacity approx. 200 MB
- USB 2.0 type A connection for the dongle on the server

With installed third-party software
- MARX(R) CryptoTech LP - Intelligent CRYPTO-BOX USB
- GNU C-Compiler TDM-GCC Compiler Suite for Windows GCC 5 Series MinGW-w64 64/32-bit Edition
- Open JDK Platform
- Microsoft Visual C++ Redistributable

For further information please refer to the installation instructions or contact **service@schlothauer.de.**

We look forward to hearing from you!