

iLIC

INTELLIGENT LUMINAIRE INFORMATION CENTRE



The software enables both control of street lighting systems and capture of specific data on the basis of a Lonmark OLC luminaire controller as well as an intelligent Data Concentrator (iDC). This makes it easy to query and display technical data such as current, voltage, cos (phi), output, energy consumption, lighting hours as well as status updates regarding individual components and the entire lighting system. The tree-like structure of the system permits the display and visualisation of large data volumes in a structured manner, broken down by city, suburb and street.

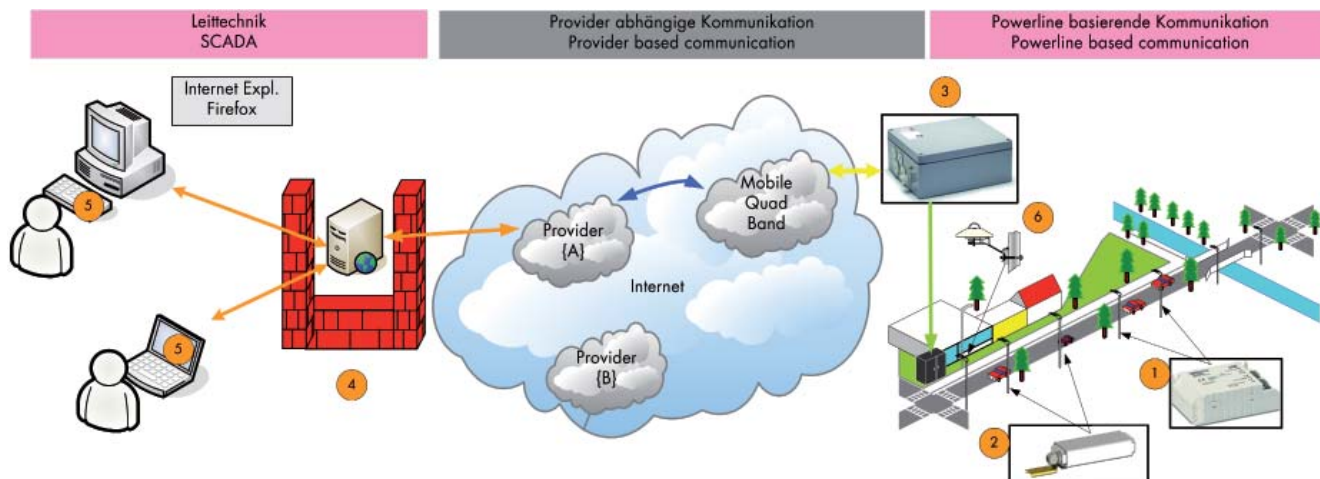
Typical Applications

- Street lighting and lighting near buildings
- Outside the confines of lighting at pedestrian crossings
- Multi-storey car parks, bus/tram stops and stations
- Company premises, warehouses
- Sports facilities

iLIC Software

Product Information

Communication between the software and the infrastructure is effected via the standardised internet protocol (IP with embedded XML/SOAP structure). As standard features, the protocol provides the basis for high availability and communication security, but also comes with the necessary investment protection thanks to the broad hardware support it ensures. The web server (4) hosting the iLIC software can use any kind of transmission technology to complete the communication chain via the intelligent data concentrator iDC (3) in the field, which acts as a gateway for communicating with the luminaire controllers (1 and 2). Examples of such transmission technology are fibre optics (SM/MM), GSM/GPRS, KAT5, DSL/ADSL, satellite connection, etc..



- | Various IP based communication | Powerline communication |
|---|---|
| <ul style="list-style-type: none"> □ 1 iLC Leuchten/Luminaire Controller □ 2 iPC Mast/Pole Controller □ 3 iDC Datenkonzentratoren/ Data Concentrator (quad band modem) □ 4 iLIC Server □ 5 PC PC/Notebook, Internet Explorer/Firefox □ 6 iLUX Lichtsensor/Lightsensor | <ul style="list-style-type: none"> • GPRS Wireless communication • IP- communication • FO- MM communication • FO-SM communication |

Image: Infrastructure



The screenshot shows the iLIC software interface for 'SLC 1'. The main panel displays 'Betriebsdaten' (Operational Data) including lamp status (0.0% on), dimming controls, alarm settings, and cumulative energy consumption (49481 h). A sidebar on the left shows a tree view of the system components. On the right, a '12:49 12:49' alarm log lists various events such as 'Lampenstrom überschritten' (Lamp current exceeded) and 'Netzstrom unterschritten' (Grid current below threshold).

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iLIC Software

The software runs on Microsoft XP – Windows 8 as well as on Linux operating systems and can therefore be operated via internet clients such as Microsoft Internet Explorer or Firefox in multi-user mode. All necessary software components such as the databank, mail server and application server can be installed using an installation routine delivered on a CD-ROM. To avoid conflict with other programs, the software should be installed on a separate server or operated in a VMware-encapsulated environment.

The software provides superordinate functions for iDC control distributed in the field.

- Switching of individual luminaires or luminaire groups, incl. specification of switching times,
- and processing of signals from floating web-server contacts.
- Integrated timer program and its decentralisation.
- Addressing floating web-server relay contacts.
- Visualisation of data log files.

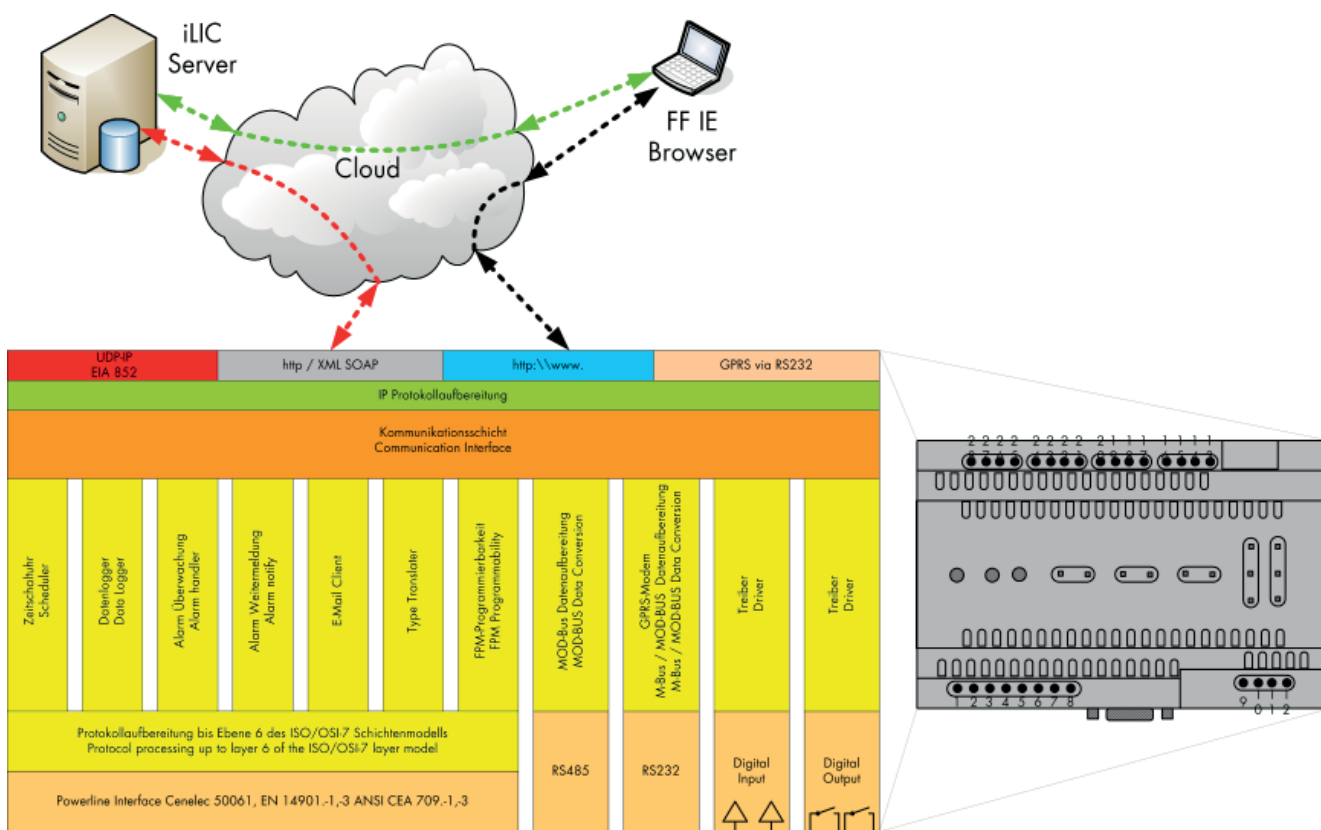


Image: Overview of control functions and data traffic

iLIC Software

Alarm Manager

- Evaluation of all available data points with regard to threshold values such as current, insufficient or excess voltage, phase availability or time values such as lighting hours.
- Alarm manager for email services and text messaging* (* = additional service required).
- Parallel notification of the iDC by up to 4 receivers.
- Monitoring of connection times.

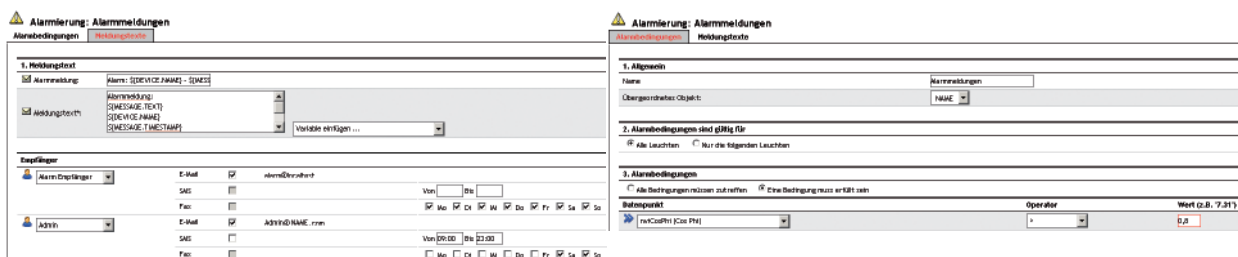


Image: Alarm manager, Alarm text

Information Centre

- News centre with process updates and alarm functions.
- Acknowledgement of updates.
- News filtering function.
- Data point plotter.
- Electronic document file.
- Integration of static maps.

Data Analysis

- Free selection of up to 8 data points.
- Freely definable time period.
- Display in colour.
- Zoom function via mouse highlight.



iLIC Software

Energy Analysis

- Analysis selection on the basis of a defined group.
- Freely definable time period.
- Billing period on a daily or monthly basis.
- Export to a *.CSV file.

Verbrauch in kWh je Tag	24.07.2013	25.07.2013	26.07.2013	27.07.2013	28.07.2013	29.07.2013	30.07.2013	31.07.2013	01.08.2013	02.08.2013
LpH_27	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2
LpH_28	0.3	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3
LpH_29	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2
LpH_30	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2
LpH_31	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2
Summe	0.9	1.0	0.9	0.9	1.1	1.0	1.1	0.9	0.9	1.1

Data export and interfaces to other IT systems

- XML/SOAP interface to the iDC communication module.
- Data export as a CVS file for billing purposes.
- Web-service interface.
- Data interface ready for Lux data*.
- Import of existing master data from SAP*.

Administration

- User administration with varying user rights (multi-client-capable).
- Administering devices (place, street, luminaire, luminaire group, controller, data point).
- Hierarchical structures, which makes it possible to display access rights.

Image: Administration

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iLIC Software

Additional Features

- Languages: German, English (further languages available*).
- Graphic display of operating states*.
- Scalability: clustering support*.

* = ready, available on project basis.

Sales Text

Java-based web-server application for control and data evaluation of lighting systems on the basis of an iDC (intelligent Data Concentrator), which features a tree-like structure. The software supports control of individual luminaires as well as groups. Defined luminaire groups form the basis for switching and dimming profiles, as well as for evaluating their energy consumption. The software is multi-client-capable and offers numerous analysis, alarm and news functions, which offer a variety of escalation levels with associated messaging in the event of a system problem.

Text for Invitations to Tender

Java-based web-server application for control and data evaluation of lighting systems on an iDC (intelligent data concentrator) basis. The program organises a lighting system in a tree-like structure and enables visual display of large data volumes and data points. Functions are generally structured with the help of tabs such as Admin, Luminaire, Group, Switching Profile, News Analysis, Alarms and Energy Evaluation, as well as associated property-related submenus. The application is capable of supporting multiple clients and makes it possible to precisely limit functions in line with the property structure of the actual company as well as any external persons that are to be given access. The data point of a luminaire can be displayed in a freely available map. Measured data will be available either off- or online, depending on the operational state of the lighting system. Logged data are processed in graphic form and, thanks to a timestamp, also provide a quick graphic analysis option in the form of curve, line or bar graphs.

It is possible to define an astronomical calendar under consideration of geographical data (latitude and longitude) as well as switching priorities for daytime and night-time operation to switch the lighting system off or on at sunup and sundown, respectively. Further options include defining a switching offset to adjust to "civil dusk", exporting a defined astronomical calendar using a superordinate management program and displaying parameters.

The program is delivered on a USB drive or CD and contains all components in the form of an installation routine. The program is available for Linux derivatives or Microsoft OS (XP to Windows 8). In terms of hardware, a state-of-the-art PC should be used. Precise security requirements should be clarified directly with the IT department.

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