



Transport



A SINGLE SOFTWARE PACKAGE TO MANAGE YOUR FIXED INSTALLATIONS, LINEAR ASSETS AND ROLLING STOCK

- Preventive work, troubleshooting, new work, property damage, inventories, vandalism, etc.
- Automatic integration of regulatory reports.
- Monitoring of incidents and PCC portal.
- Management of fixed installations, linear assets and rolling stock (contracts, guarantees, etc.).
- Interactivity via .DWG diagrams (AutoCAD®), GIS (ArcGIS®), BIM model.
- Customisable graphical indicators (MKBF, etc.).
- Availability of rolling stock for operations.
- Budget control.
- Connectors for SCADA, SAE, fuel filling stations, etc.

EQUIPMENT ASSETS

Structure your facilities and your rolling stock

Your rolling stock, fixed installations and linear assets are described via interactive tree structures, linked with your photos, diagrams in .DWG format (AutoCAD), building information models (BIM) and geographic information systems (GIS).

These tree structures make it easy to search, navigate and consolidate information using various criteria: functional, location, network, etc. By combining display modes, you can view your fixed installations (substations, platforms, signal posts, etc.) and linear assets (track sections, overhead supply lines, etc.) on a map (ArcGIS, OpenStreetMap, etc.) and navigate within the assets to take actions on installed technical assets directly.

Changes can be made easily by dragging and dropping. These changes are archived and dated, allowing you to see how your assets were structured at any specific past date.

” Your rolling stock, fixed installations and linear assets are described via interactive tree structures, linked with a graphical or geographical representation “

Know your fleet

Appropriate record sheets are kept for each type of asset (rolling stock, fixed installations and linear assets), comprising technical and commercial specifications, warranties, multimedia documents, costs (insurance, tax stamps, taxes, etc.), depreciation values, registration information, hardware configuration (software version, circuit boards, tyres, etc.) and geocoded street and address information, and so on. It also contains tracking information such as asset maintenance history, mileage (odometer readings), preventive and regulatory maintenance schedules, standardised indicators (MKBF etc.) and tax reporting forms (such as TIPP, the French petroleum products tax).

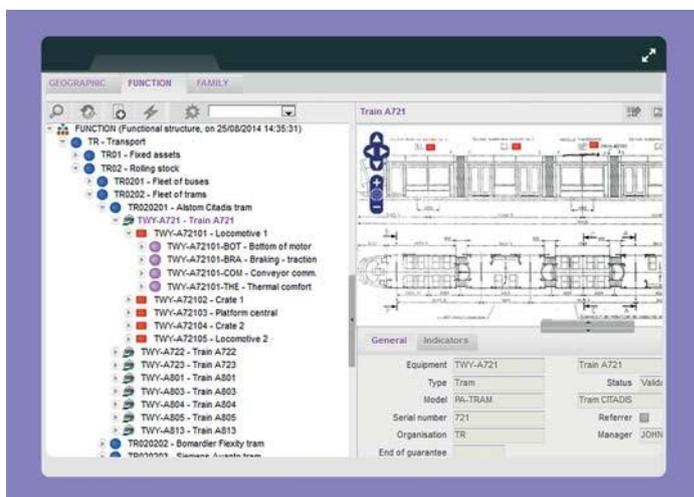
Graphical modelling of your various networks (electricity, gas, telephony, etc.) makes it easy to prepare maintenance work and allows you to assess the consequences of problems on associated assets. Passenger and employee safety is also enhanced.

CARL Source tracks readings (miles, hours, kWh, etc.) so that you can keep consumption under control and set up predictive maintenance. It can be connected with your operational systems (OAS, fuel filling stations, BMS/BAS, etc.) to automatically read values on meters or information from detected alarms.

PROCESS PURCHASES

Manage your purchases

Users make their requests for parts and services via purchase requests. These PRs are converted into purchase orders that are then sent to vendors. Acceptance of delivered items serves as a basis for invoice verification. All or part of your purchasing process can be handled in **CARL Source** or interfaced via exchange connectors, in particular with your accounting application.



The tree structure shows the spare parts list so that you can check available quantities, identify storage locations, and obtain other important information.

Each list of spare parts is updated to show the quantities of parts used to perform maintenance.

Various processes are implemented to increase efficiency: multi-vendor purchase requisitions, conversion of stock-keeping units and order units, purchases of specific items, budget overrun checks, payments, delivery disputes, vendor scoring, importing tariffs, etc.



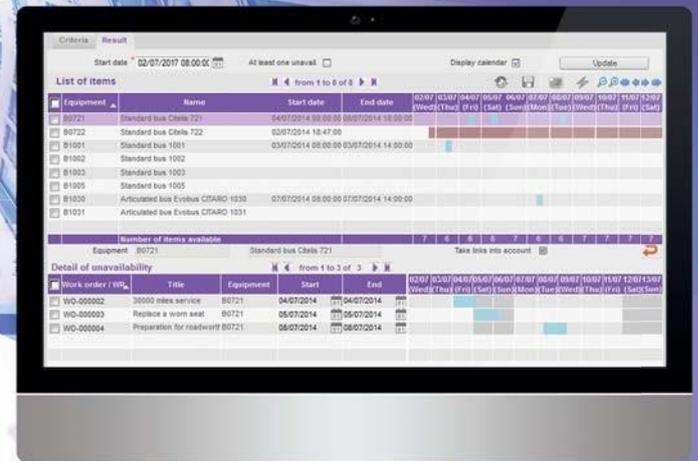
MANAGE YOUR RESOURCES

Manage your contractors

CARL Source allows you to work in various ways with contractors: purchase services as needed, take out service contracts (in relation to manufacturer warranties, cleaning of passenger areas, passenger safety, etc.), or negotiate contracts at predefined rates. By allowing your contractors controlled access to the system, you improve the clarity and quality of information. **CARL Source** provides you with everything you need to assess compliance with contractual obligations, objective performance and the profitability of service contracts.

Associate your internal resources

Your maintenance technicians make an active contribution to your maintenance processes (technical skills, operations performed, movements of items, time spent, etc.). The time they spend performing tasks other than maintenance (cleaning, tidying up, training, etc.) is also tracked.



| Equipment | Name | Start date | End date |
|-----------|------------------------------------|---------------------|---------------------|
| B0721 | Standard bus Class 721 | 04/07/2014 08:00:00 | 06/07/2014 18:00:00 |
| B0722 | Standard bus Class 722 | 02/07/2014 18:47:00 | |
| B1001 | Standard bus 1001 | 03/07/2014 08:00:00 | 03/07/2014 14:00:00 |
| B1002 | Standard bus 1002 | | |
| B1003 | Standard bus 1003 | | |
| B1005 | Standard bus 1005 | | |
| B1006 | Articulated bus Ecolis CITARO 1036 | 07/07/2014 08:00:00 | 07/07/2014 14:00:00 |
| B1031 | Articulated bus Ecolis CITARO 1031 | | |

| Work order / W/O | Title | Equipment | Start | End |
|------------------|--------------------------|-----------|------------|------------|
| WO-05002 | 30000 miles service | B0721 | 04/07/2014 | 04/07/2014 |
| WO-05003 | Replace a worn seat | B0721 | 05/07/2014 | 05/07/2014 |
| WO-05004 | Preparation for roadwork | B0721 | 05/07/2014 | 05/07/2014 |

CARL Source manages maintenance technician availability, qualifications and certifications to optimise work preparation and scheduling.

TRACK MAINTENANCE WORK

Perform maintenance

From the initial incident report to acceptance of completed work, the work order process can be adapted to your organisation (rolling stock, fixed installations, linear assets) and processes (qualification, preparation, scheduling, completion, etc.). **CARL Source** also takes incidents, vandalism, standard exchanges, parts taken from other equipment, and other specific aspects of your field into account. Practical processing steps simplify operations: linked work orders, work order copies, troubleshooting, instant reports, and so on. **CARL Source** handles the specific features of linear assets (tracks and sections) and optimises rounds by incorporating GIS data.

Perform preventive and regulatory maintenance

Work orders for preventive and regulatory maintenance (technical inspections, vehicle testing) are copied from work order templates, using rules for calendar dates, counters (mileage rates, running times, etc.) and events. Preventive maintenance scheduling can then be optimised using options such as multi-criteria triggers (for each specific asset or model), ranking of work orders, maintenance carry-over, incorporation of a work plan, seasonality, and so on.

Reports by official inspection organisations can be integrated automatically. They enable nonconformities to be tracked and their resolution monitored to ensure the safety of all concerned.

Organise the scheduling of maintenance work

The macro schedule provides an interactive (drag and drop, adjustable scale, custom display, etc.) graphical view of maintenance work. The scheduling process keeps workloads in line with resource availabilities. It becomes more and more specific as scheduled work dates approach. It first assigns work to a period of time, then to a team and finally to a specific maintenance worker.

Dynamic alerts warn planners and schedulers of work overloads, late work, inadequate certification, etc. Scheduling based around assets enables the availability of rolling stock for operations to be optimised.

KEEP TRACK OF STOCK

Optimise your stock management

Your spare parts, consumables, tools, PPE and fuel are classified in family tree structures and linked to corresponding assets. Each item is described in a detailed record listing its characteristics, assignment accounts, storage locations, vendor terms, and so on. **CARL Source** provides batch and serial number management so that you can track the quality of certain types of parts using criteria such as manufacturer's reference, consideration of expiration dates, asset component exchanges, tracking of repairable items, and more.

Reduce inventory costs

Inventory movements (reservations, entries and withdrawals, transfers between warehouses, etc.) made in connection with maintenance and purchasing processes are recorded to adjust the quantities available in each warehouse. Replenishment is triggered when available quantities reach a minimum level. Reservation dates and expected delivery dates and vendor delivery dates are taken into account to ensure greater accuracy.

COORDINATE YOUR BUSINESS

Home portal and alerts

All users have a customisable portal (with memos, reports, favourites, indicators, plans, etc.) corresponding to their profile (technical department, operational services, etc.). This portal allows for easier navigation, access to information and decision-making. If alert thresholds are exceeded, **CARL Source** informs you by email of any deviations.

Analyse your business

CARL Source provides a complete library of print and analysis reports: business dashboards, ABC classification of assets by maintenance cost, MKBF (mean kilometres between failures), mileage costs, fuel costs, breakdown of work orders by type (incidents, vandalism, corrective action, etc.), availability of rolling stock, ABC classification of categories by inventory value, analysis of symptoms, causes, solutions, etc.). Wizards can be used to easily create customised reports and indicators, enabling users to extend the library.



A geographic analysis of your activity is proposed via speciality topics, based on the integration of data from maps and diagrams.

Control costs

Cost control is an essential business activity. It is organised per accounting period based on the three-way accounting model: cost accounting, management audit and general accounting.

CARL Software
plays an active role at
trade fairs such as Innotrans and Sifer.



Find out more about our references on
our website www.carl-software.com

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