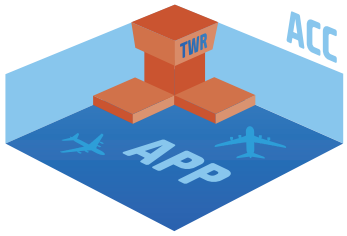
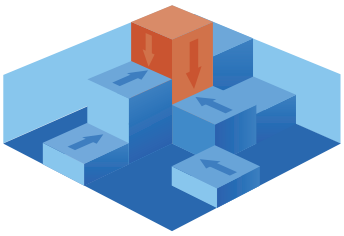
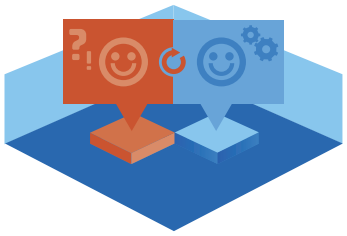
ALS Air Traffic Control System

Comprehensive and Extremely Flexible ATM Solution







Deployment Flexibility

The system can be implemented for use in:

- En-route control (ACC)
- Approach (APP)
- Tower control (TWR)

The system may be also used as a Backup system to your already existing solution.

Inter-operation Flexibility

ALS´s open architecture and modularity enables seamless integration to your existing environment according to your interoperability requirements.

This makes future upgrades and enhancements easy to apply.

Customization Flexibility

ALS features a unique concept parameterization, which makes this solution easily adaptable to your specific operating needs.

Team of ATC experts is ready to tailor the system with full respect to your local situation and habits with all the possible comfort for your ATCOs.

CERTIFICATES

CS SOFT is certified by IQNet and CQS for processes of Software administration, Development, Design and Supplies of Aeronautical Ground Facilities and ATM equipment maintanance.

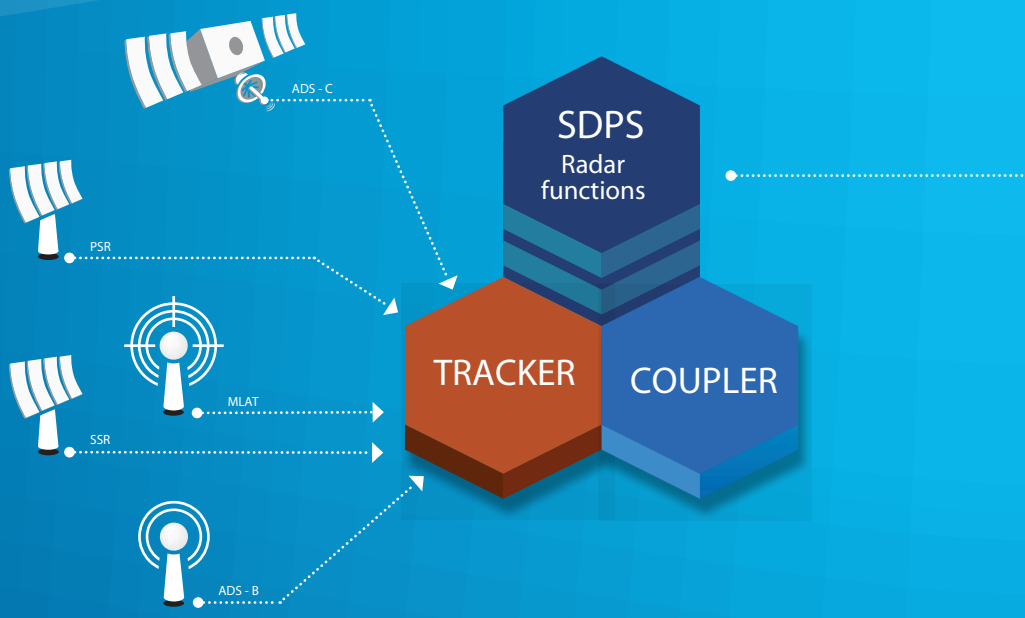
CS SOFT has achieved the level of CITECT SILVER INTEGRATOR for the year 2005.

ALS Air Traffic Control System

Comprehensive ATM solution

Ready to cover your operating needs for TWR, APP and/or ACC instantly and completely.
It consists of the following essential modules:

- SDPS
- Tracker
- FDPS
- Coupler
- CWS
- Consoles
- Strip presentation
- FDO positions
- Supervisor position
- Data Set module
- REC-Playback
- Monitoring and Control
- Safety Nets



USER FEATURES

All data (radar and non-radar) accessible from both Controllers´ positions

Both ATCOs – EC and PLC can access the same functionalities. This results in better substitutability and operational safety.

Degradation resistant CWS

CWS takes over a number of server functionalities, which makes CWS more independent. This allows CWS to operate also in case of server overload.

Complex position information

ALS provides a well organized and visually distinctive display of position information of all types (flight plan, ADS-C, radar tracking).
This feature steps forward to fully stripless system.

Seamless Controller-Pilot and Controller-Controller communication

Datalink CPDLC is integrated into ALS system and can be controlled by ATCO from CWS HMI.
SYSCO is offered as a part of OLDI.

Wide range of non-radar data presentation options

Presentation of non radar data kinds (paper, strips, glass, electronic) can be adjusted and customized according to your local settings.
All electronic strip data are editable and ready to be shared.

Safety Nets, Monitoring Aids and MTCD

These warning modules are offered as an integral part of ALS with expert setting and fine-tuning assistance.

Easy adjustments due to high level of parameterization

ALS can be easily tailored to ATCO specific needs, such as HMI colors and control, e-strip layout, strip posting rules, Safety Nets etc.

Billing and Statistics module

Adjustable in accordance with your local billing rules.

Data Security

In case of CWS failure, key data and functions are available at Supervisor´s position.

Record and replay feature

ALS allows recording and replay all operational data including audio communication. Record can be used for the evaluation of emergency situation.

SAFETY FEATURES

Software development strictly follows ISO/IEC 12207 normative

Functional Hazard Assessment is used as the basis for System design

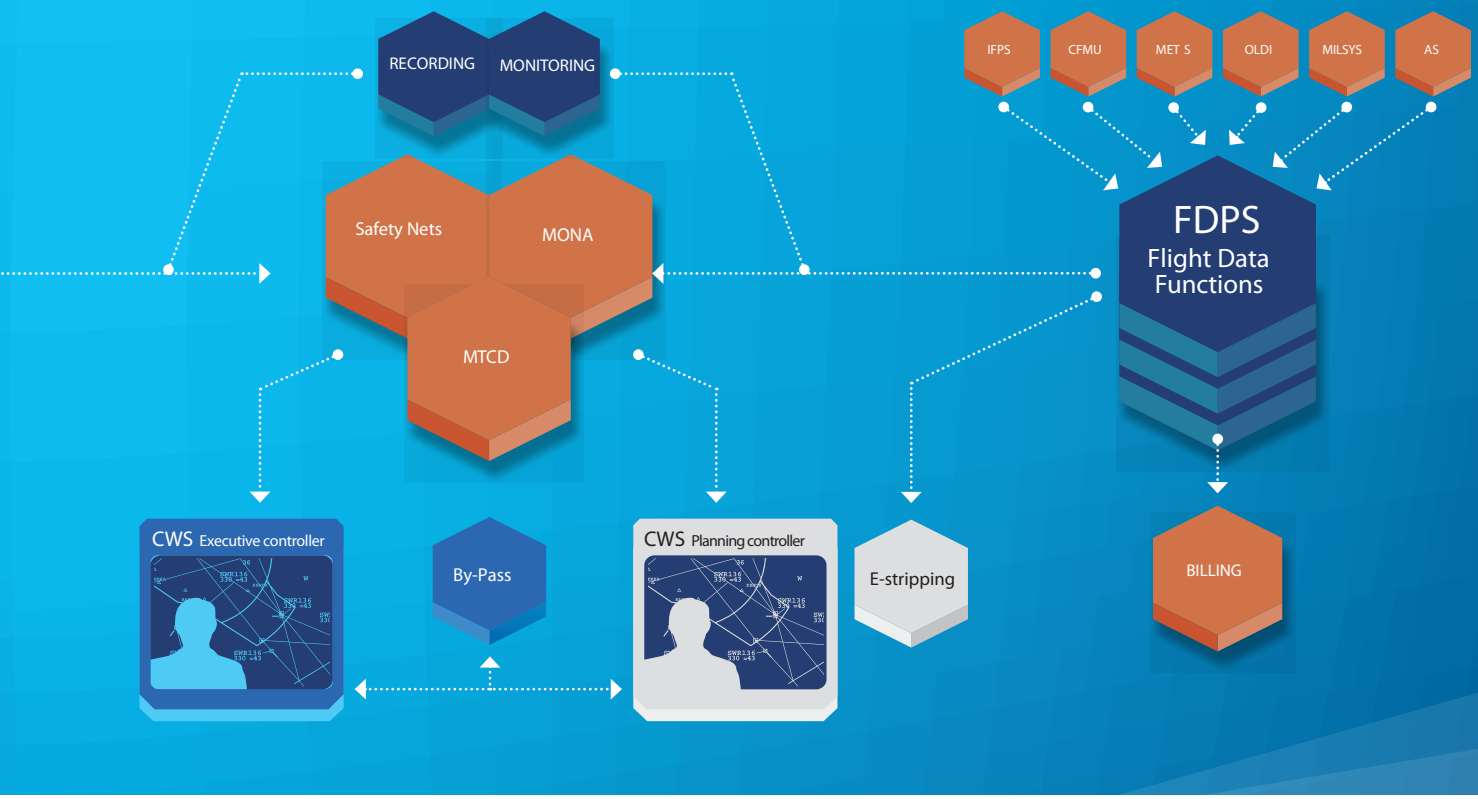
PSSA is a component part of ALS product

HW redundancy and seamless switching

ALS has been developed with regards to performance redundancy and full hardware redundancy.
ALS switching feature guarantees uninterrupted system operation.

Advanced CWS sectorization

ALS operates with the feature of quick and safe sector redistribution in case of CWS outage. The sectors of any CWS can be seamlessly transferred to any other CWS.



TECHNICAL FEATURES

Open architecture

ALS open architecture allows tailor-made solutions which may be gradually developed and changed according to your operating needs.

Surveillance data flexibility

Module Tracker processes Radar, Passive radar and ADS-C data. The most accurate data available are chosen for position computing. In case of an absence of surveillance data (in areas with no radar coverage), the CWS screen displays Flight Plan Tracks computed by FDPS.

OLDI complying with Eurocontrol standard

The module is an integral part of ALS and is adjustable to your local needs. It can be also deactivated.

Distributed system

ALS deploys distributed computing between the core and applied modules which makes the whole system more degradation resistant. For example, CWS takes over a number of server functionalities and consequently reduces the load of its operations.

Easy setting of interoperability

Interoperability is defined in custom "Data Set" meaning it can be quickly adapted to local coordination adjusting and transfer conditions.

Progressive 4D Trajectory Prediction

ALS features cutting-edge functionalities. 4D Trajectory Prediction is driven by advanced route extraction operating within AoI (Area of Interest). The ETO and altitude computation are enhanced by radar updating and the results are based on complex computing using the instant aircraft propulsive performance as one of the parameters. This results in exact altitude attitude prediction.

Reliability and Robustness

High availability and reliability of the system is supported by hardware redundancy and quick software switching.

Sophisticated two-way AFTN module

The AFTN Daemon does not only process incoming AFTN messages, but enables you to compile and distribute all kinds of AFTN messages as well.

Datalink for uncovered areas

ALS is able to use Datalink functionalities (such as CPDLC and ADS-C) for oceanic sectors or areas without radar and radio coverage.

Customizable AIS module

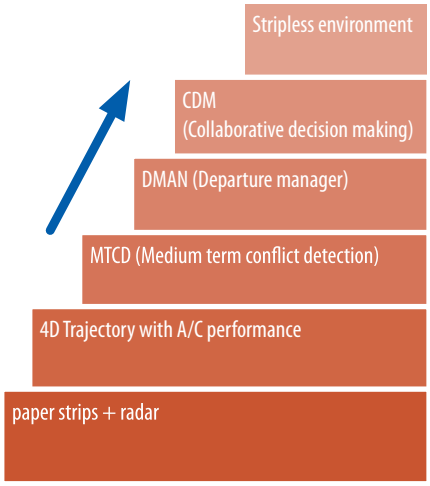
All necessary data for Flight information service (AIS, MET, warning frequencies, etc.) can be displayed on a separate screen or in a window on CWS display (depending on custom settings).

Comprehensive monitoring and control

The Monitoring module is an integral part of the whole system. It continuously generates the overview of the status and possible errors of individual ALS components. Early warnings enable to eliminate significant malfunctions.

Let your ATM system grow together with your staff´s skills

Open ALS architecture allows to start out with a basic version and to add enhanced and special features as your staff grow.



Example of Step-by-step scenario

Step-by-step functionality enhancement

As CS SOFT software is developed with a close co-operation with active ATCOs, we have gained a great experience with step-by-step system implementation. This approach allows us to start out with a basic version of ALS structure, and its subsequent enlargement takes place according to your changing operating needs and your staff's experience growth.

Step-by-step implementation results in:

- **Lower starting costs**
- **Faster staff's training**
- **Always the latest software upgrades**
- **Easier transition period**

COSTS SAVING FEATURES

Commercial off-the-shelf hardware

ALS uses standard Hewlett Packard hardware components which are easily available at favorable prices worldwide.

Remote access maintenance

Remote access allows service and upgrade installation to be done without the need of on-site supervision and additional service costs.

DELIVERY OPTIONS

Apart from standard sale, CS SOFT offers to arrange hire purchase with flexible deferred payment plan in cooperation with commercial banks.

Time period varies from few months to several years. This solution can solve the budget constraints when purchasing new system.

CS SOFT complex services cover the whole project life cycle

We supply our customers with the full service of delivery, installing and guarantee maintenance.
We offer as well the system integration of third party´s system parts, including the maintenance.
Last but not least, we assist our customers with the professional experience and support in gaining all necessary legal safety certificates.

- **Project management**
- **Feasibility studies**
- **Safety assessment**
- **Integration and migration**
- **Maintenance**
- **HW delivery (including consoles)**

Complex system integration and post-implementation guidance

The installation and the system integration with existing environment (VCCS, AFTN switch etc.) is an integral part of our services.
We also offer post-implementation on-site guidance during fine-tuning of all systems and processes.

ATC simulator as an option

Simulator is another CS SOFT product with the SDPS, FDPS and HMI functionalities, which are the same as ALS. A part of ATC Simulator is Exercise preparation tool as well.

MAIN ALS REFERENCES

Indonesia
Indonesian Airforce
Installation 2015
APP, ACC

Lithuania
Oro Navigacija
Installation 2007, 2022
APP, TWR, ACC

Bangladesh
Chittagong Airport
Installation 2008
APP, TWR

Israel
Israel Airports Authority
Installation 2015, 2018
APP, TWR

Uganda
ELTA Systems Ltd.
Installation 2018
ACC

Indonesia
AirNav Indonesia
Project 2022
APP, TWR