R-SYS
SUBSIDIARY OF era

SAFER AIRSPACE

FOR ALL



COMPANY PROFILE

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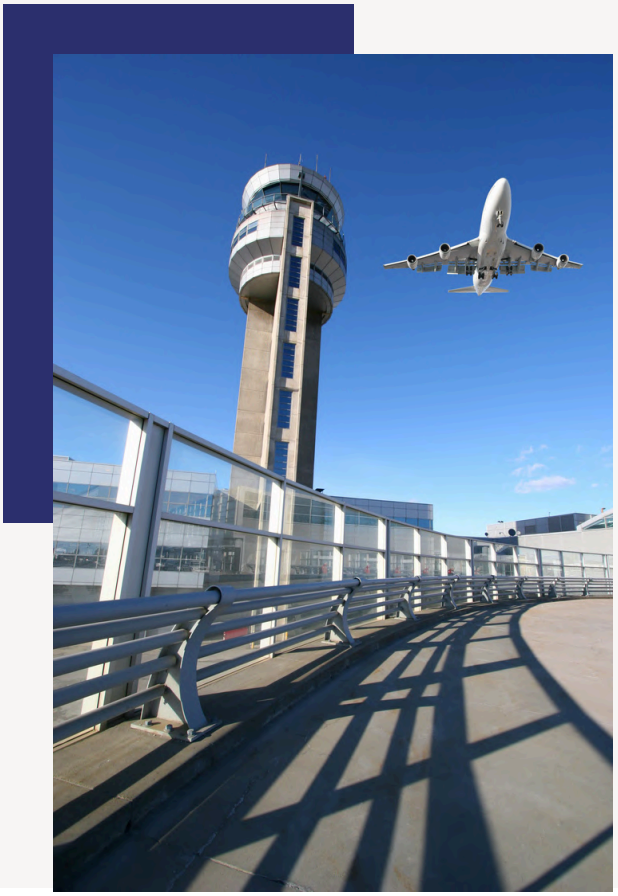
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A WORD FROM THE CEO

Rapid aviation advancements present both opportunities and challenges. Modern technologies bring new opportunities, but regulatory frameworks often struggle to keep up. Nevertheless, at R-SYS we strive to respond flexibly to all the specific requirements of our customers by developing customizable solutions that meet both customer needs and the latest safety and regulatory standards.

Our main competitive advantage is our flexibility and ability to communicate with customers on a daily basis. In our solutions, we also strive to convey the latest trends in providing software as a service in a cloud environment.

With over two decades of experience and a highly specialized team, we deliver solutions that enhance airspace safety.

Ing. Marek Náhlik
CEO R-SYS, s.r.o

COMPANY PROFILE

About R-SYS

R-SYS is a stable company that has been operating on the market of information systems for the **aerospace and defence sector** for over 20 years.

We specialize in comprehensive services including development, delivery, monitoring and maintenance of **on-premises and cloud solutions for mission-critical applications** that meet the current technological standards of European aviation authorities (EASA, ICAO, Eurocontrol) as well as trends in terms of long-term sustainability.

Since 2016, we are a **subsidiary of ERA**, one of the global leaders in the development and production of passive radar systems.

R-SYS in numbers

20
Years on the market

80+
Employees

8
Countries with our systems

30 k
all systems end-users

7,7 mil
processed FPLs

33 mil
FPL related messages



COMPANY PROFILE

History

1997

R-SYS s.r.o. (Ltd.) founded by a group of experts concerned with Command & Control systems, and radar technology.

2007

General Assembly of the company took a decision to change the company branding, corporate structure and business strategy to follow new trends and flexibly respond to market requirements by delivering competitive software & hardware solutions, and system integration services.

2016

Acquisition of the company by ERA a.s., Czech Republic, thus ERA became a majority owner of the R-SYS. By entering the strategic alliance with ERA, the R-SYS refocused its business primarily on the development of SW solutions as a support of ERA product portfolio, and on other in-house innovations for the customers worldwide.

2026

Today, R-SYS represents a middle-sized project-oriented IT company employing 80+ highly skilled IT engineers and ATC/ATM specialists. The company is organized as a distributed team spread across multiple Slovak locations.

Certificates

AAA highest creditworthiness

Cribis Business Elite



ISO 9001, ISO 14 001, ISO 27 001

Design and Production Certification EASA (DPO)

As part of our continuous improvement and commitment to meeting EU requirements, R-SYS enrolled in the certification process as a Design and Production Organisation (DPO) led by the European Union Aviation Safety Agency (EASA) in 2024.

This step aims to enhance the quality of our products and strengthen our customers' trust in us as a business partner.

EUROCAE

A full member of EUROCAE since 2022

OUR SOLUTIONS

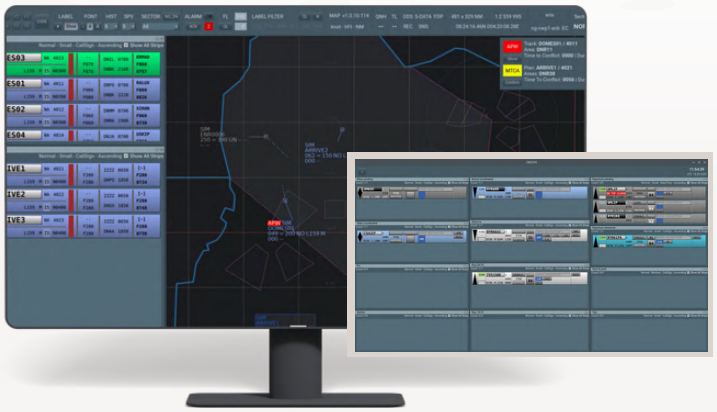
Information systems for safe flight management

Our effort is mainly spent on the development of software products for our parent company, **ERA a.s.**, including, but not limited to, delivering **applications for data processing of passive surveillance systems in real time** and **data visualization**, determination of measurement accuracy of data provided by surveillance systems (MLAT WAM, LAN, PCL, etc.) and planning of sensor deployment, simulation of passive sensor operation as well as applications for ATC/ATM systems. Our key products are intended for the **safe management of flights**.

Product portfolio

ATC/ATM

System	Module
ERIS	APP/ACC ATC SYSTEM
ERIS - A	ASMGCS
	EFS



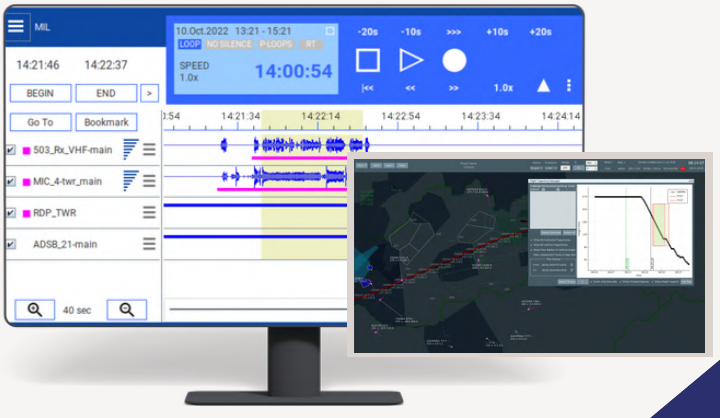
ATM/milATM/AIS/UTM

System	Module
IXO System	IXO ATM
	IXO UTM
	IXO MIL/DCM



Recording and replay

System	Module
3R System	Recording Replay and Investigation System
	Investigator Radar Data Display



IXO SYSTEM

A modern platform for the management and distribution of aeronautical data

IXO SYSTEM is a state-of-the-art information system and technological platform designed for collecting, processing, and distributing aeronautical data from a variety of sources. It is developed in close cooperation with aviation authorities, air navigation service providers (ANSPs), and domain experts.

The system includes a suite of web and mobile applications that enable users to work with specific data in a customizable environment. From pilots to ANSP personnel, users can efficiently manage flights, conduct pre-flight briefings, and ensure compliance with ICAO standards and regulations.

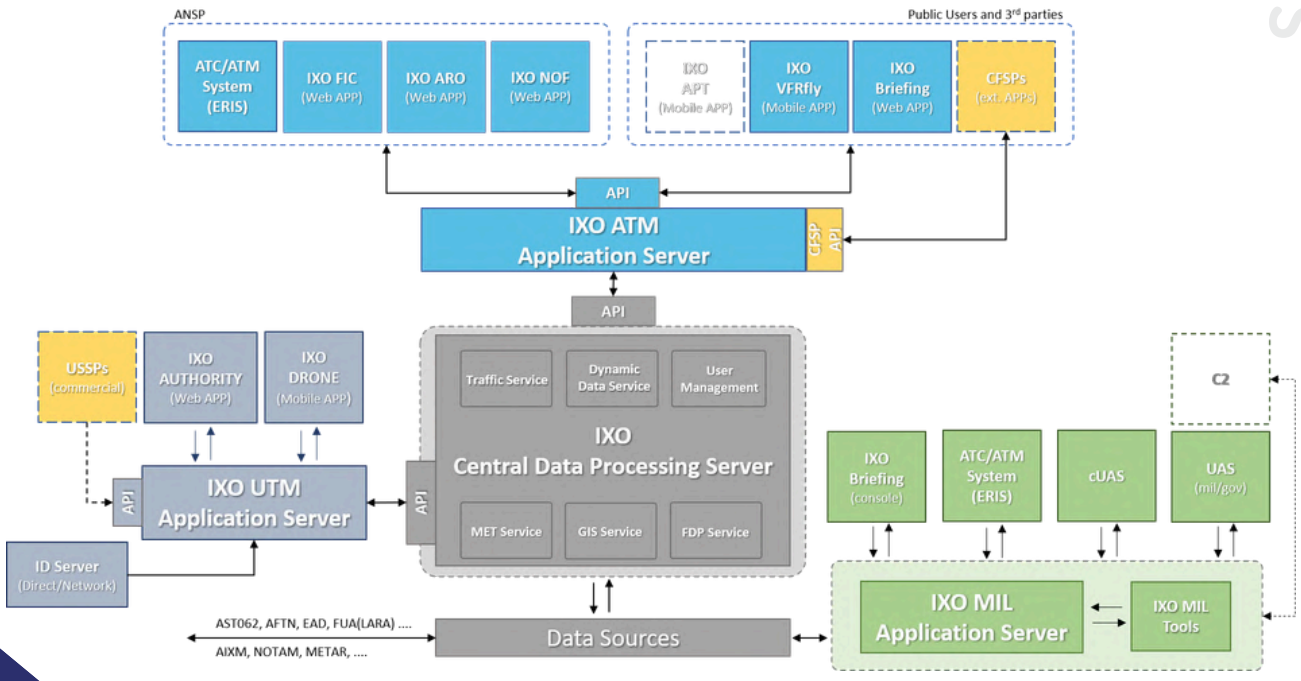
A core component of the platform is **IXO ATM**, which delivers functionalities for Homebriefing (HBS), NOTAM Office, ARO, FIC, and more. This module is designed to **fulfill the requirements of AIS.TR.405(a) of EU Regulation 469/2020** for automated pre-flight information systems – the provision of aeronautical data and aeronautical information to operational personnel, including flight crew members, for self-briefing, flight planning, and flight information service purposes.

Users can electronically submit flight plans (FPL), receive all necessary information in one place, and obtain flight approvals. The system supports the generation of various briefings and information packages – including AIP, PIB, and MET data – with graphic visualization. The application is fully compatible with **EUROCONTROL's European AIS Database (EAD)** and is prepared for integration with the future **eEAD (iNM)** platform.

The solution also includes **FDS (Flight Data Services**) – a next-generation system for digital flight planning, advanced data processing, and ARO services. Beyond traditional services, IXO supports digital coordination in integrated airspace, including UAS operations management through modular CIS and USSP components, fully aligned with EASA and EUROCONTROL standards.

SOLUTIONS

IXO Integrated ATM/UTM System

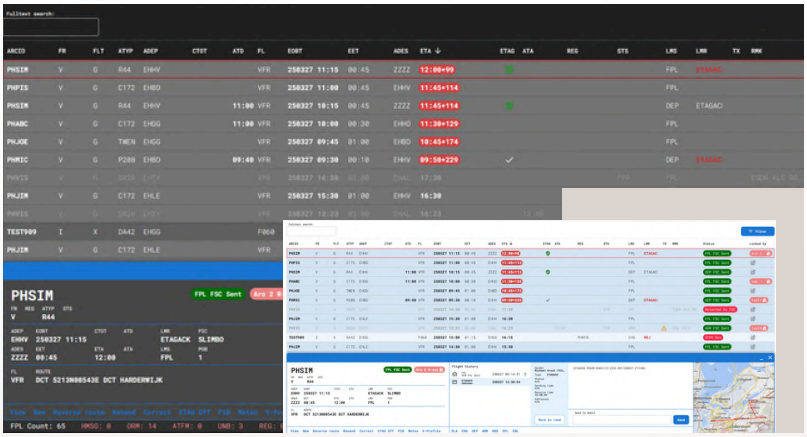


IXO ATM

Advanced integrated ATM solution

IXO ATM is a web-based application designed for both **ANSP operators** and **Commercial and General Aviation** that facilitates overall **flight plan management** and comprehensive **pre-flight planning** via state-of-the-art technologies.

This product, designed for **manned aviation**, has been successfully deployed and is currently being operated by several European ANSPs, including **HungaroControl**, **PANSA**, **LVNL**, **Austrocontrol**, **Albcontrol**, and **LPS SR**. To comply not only with global, but local regulations, all IXO ATM modules are customized after deployment at each of our clients individually.



IXO BRIEFING

The **IXO Briefing** application offers **interactive flight planning** and **pre-flight briefing** based on valid ANSP and EAD data. IXO Briefing is paperless and accessible from anywhere. Its ability to manage flight plans, and create detailed Pre-flight Information Bulletins in real time provides a significant added value to all its users.

Main Features

- Interactive flight planning and pre-flight briefing based on valid ANSPs and EAD data
- CFSP API
- Submission of FPL proposals and FPL-related messages, and their instantaneous updates via dedicated modules
- Alerts on potential conflicts of the flight route with terrain, obstacles, static (TRA, TSA, etc.) and dynamic (FUA/LARA) airspace in the flight planning phase
- Information on current weather conditions (METAR, satellite and radar images), weather forecast (TAF) and significant weather (SIGMET, lightning, etc.)
- 2D/3D route visualization

IXO ARO

The **IXO ARO** application is designed specifically for **ATS Reporting Office (ARO/CARO)** to enable flight plans management in relation with the IXO SYSTEM and its interfaces, and to provide all information and data required for seamless ANSP operations. IXO ARO is fully compliant with ICAO DOC-4444 (PANS – ATM), ICAO Annex 15 (Aeronautical Information Services), ICAO Annex 3 (Meteorological Service for International Air Navigation), and EUROCONTROL IFPS User Manual, and was developed in close cooperation with several European ANSPs.

Main Features

- Flight plan management
- Access to NOTAM database and other EAD data
- Weather information visualization
- Aeronautical data display
- Interfaces to other AIM tools (e.g. EUROCONTROL Network Manager, AIMSL)
- Interfaces to CFSP flight planning tools
- Compliance with the highest cybersecurity requirements according to industry standards

SOLUTIONS

IXO WORKSTATIONS

IXO Workstations (consoles) are designed to support the specific needs of ANSPs, aviation authorities, state institutions, municipalities, and airport operators. Each console is individually customized to meet the functional and operational requirements of its respective role, while all consoles operate within a single, centralized data environment. This architecture ensures unified data management, consistent user experience, and efficient coordination across all operational units.

Main Features

- Comprehensive management of manned flight operations across all airspace classes
- Real-time traffic information and situational awareness to support safe operations
- Conformance monitoring to ensure compliance with planned flight trajectories and procedures
- Integration with positioning and identification services(including iConspicuity, where applicable)
- Flight plan validation and coordination with relevant authorities
- Geo-awareness tools, including alerts for airspace structure and activity changes(FUA, eFUA, LARA,...)
- Access to up-to-date NOTAM and meteorological information relevant to flight planning and operations
- Statistical analysis of operational data and automated reporting for supervisory and safety purposes

IXO APP

The IXO App is a suite of mobile applications developed for iOS and Android platforms, tailored separately for manned and unmanned aviation.

Each version is specifically designed to meet the unique needs and operational workflows of its target users — whether drone pilots, UAS operators, or general aviation pilots. Despite their distinct functionalities, the apps are part of a shared ecosystem where operational data is securely exchanged to enhance situational awareness, airspace safety, and coordination across different types of airspace users.

Main Features

- Real-time flight monitoring with full support for electronic conspicuity
- Bi-directional integration of traffic information for enhanced situational awareness
- Fully automated flight authorization and mission management
- Filing of flight plans (FPLs) directly from the app
- Support for FPL-related messages and automatic two-way communication with ANSP/ARO systems
- Access to real-time NOTAM and METAR data for pre-flight and in-flight awareness
- Mid-air collision prevention with dynamic conflict detection and resolution
- Display of surrounding UAS traffic equipped with Direct ID technology
- Intuitive, easy-to-use interface tailored for both manned and unmanned aviation

IXO CORE

The core of IXO System is a virtual platform that provides services covering all requirements of the SWIM-based modular CIS/FIMS platforms, and serves as a digitally centralized single point of truth for all users.

Main Features

- Real-time flight management and traffic data sharing between ATM and UTM stakeholders
- Cross-platform, multi-source data interface (SDO, SDD, AFTN, FUA, AIMSL, NMB2B, XTAM linkage, MET etc.)
- Common situational awareness – data for cross-authority and -agency collaborative decision making
- Safety Nets – airspace authorization, deconfliction and conflict management
- API for provision of valid real-time data for all users (USSPs, C-UAS C2 systems, Security Systems, etc.)
- Central airspace management

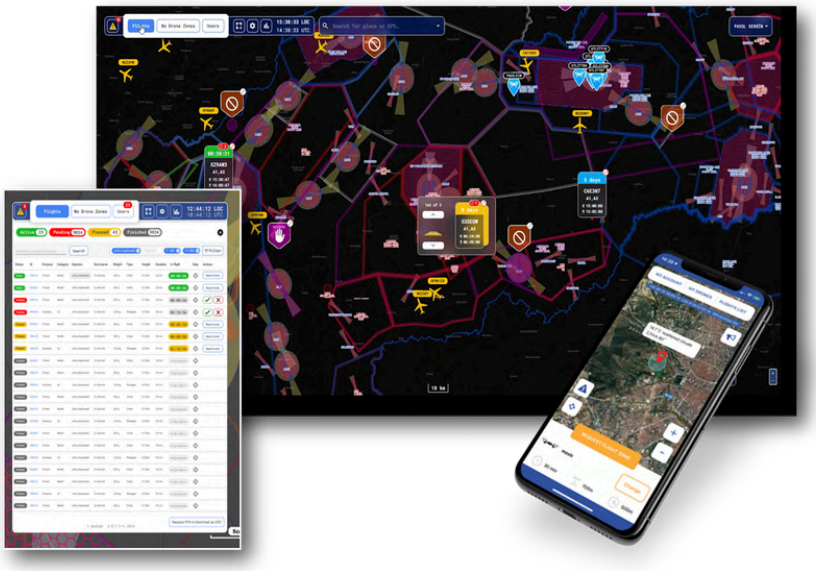


IXO UTM

Unmanned Traffic Management and U-Space

Our most recently deployed solution, **IXO UTM**, built upon the IXO ATM core, is designed for **unmanned aircraft operations management**. This tool, as a powerful platform for all UTM stakeholders, integrates all information on manned and unmanned aircraft operations, and provides **real-time aeronautical data** for all airspace users in a common digital environment.

Albeit complex and fully automated tool, IXO UTM with its **simple and intuitive user interface** decreases the users' workload thus greatly contributing to overall airspace safety. The original IXO UTM tool was developed as an initiative of HungaroControl, and put into operation in January 2020. Since then, this product underwent further extensive in-house development, and its latest version covers the latest **CIS and USSP** solution requirements to full extent.



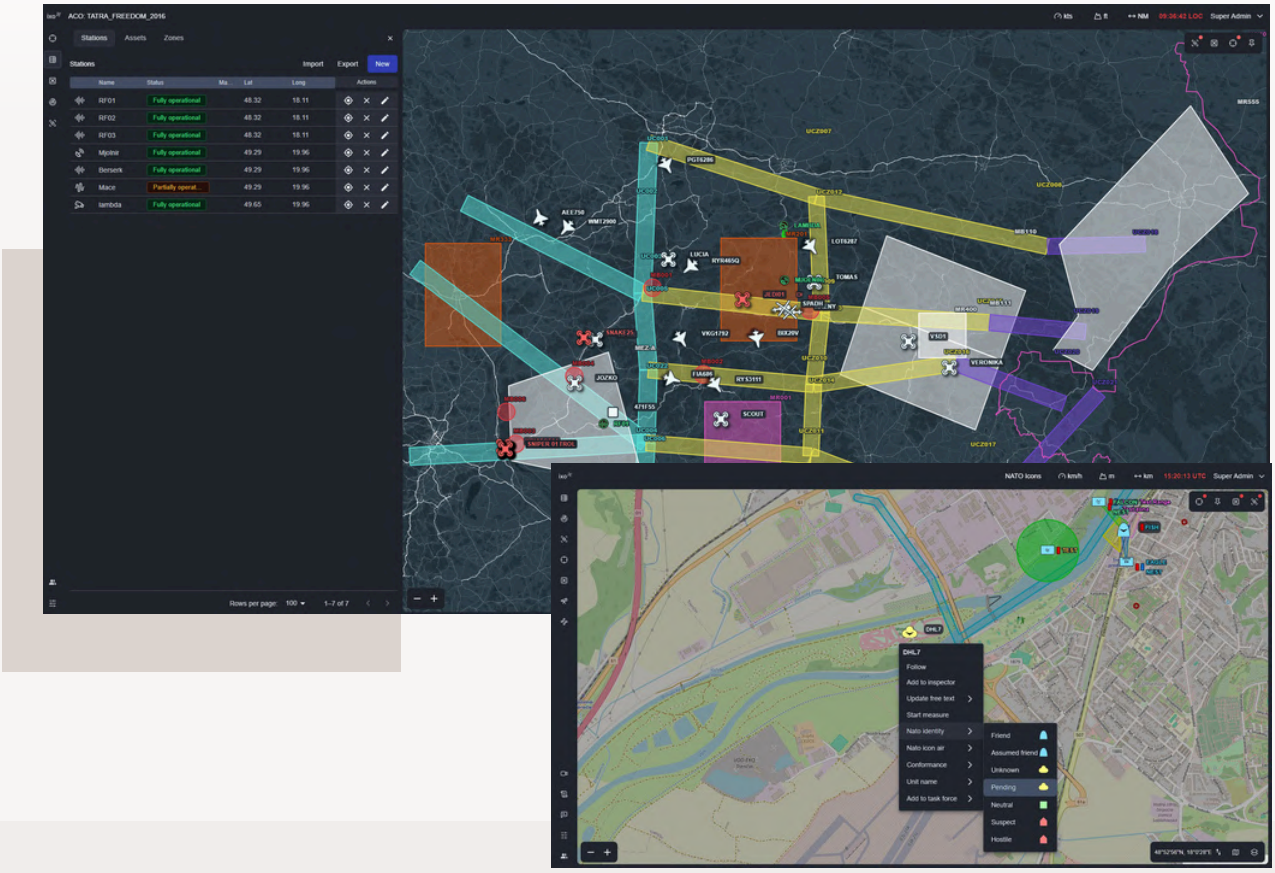
IXO UTM is designed to comply with **the latest regulations** on UAS flight planning, airspace conflict calculation, UAS flight validation and authorization processing, unmanned aircraft management, and aeronautical data provision in compliance with ICAO, EASA and EUROCONTROL standards. Moreover, the IXO UTM system provides U-Space services up to level U2, and shall the national UTM legislation and infrastructure permit, these services can be upgraded up to level U4.

IXO MIL/DCM

Airspace and assets management

IXO MIL/DCM solution is specifically tailored for the **needs of military, government and law enforcement entities**. The system represents the SW solution, which combines advantages of the IXO UTM system, possibility of **integration of cUAS elements into the real C2 system**.

IXO MIL/DCM goes far beyond the standard cUAS C2 systems offered by many producers, thanks to possibility to create, manage and supervise clusters, or task forces composed of various subordinated sensors and efectors from different producers.
Our solution can **integrate, display and share comprehensive information** (Local Air Picture) gathered from a great number of ground and airborne sensors and positioning devices, capable of detection of cooperating and non-cooperating aerial and ground targets. IXO MIL/DCM provides several cUAS tools and functionalities in the form of Threat assessment.



Main Features

- Real-time flight management and traffic data sharing between ATM and UTM stakeholders
- Cross-platform, multi-source data interface (SDO, SDD, AFTN, FUA, AIMSL, NMB2B, XTAM linkage, MET etc.)
- Common situational awareness – data for cross-authority and -agency collaborative decision making
- Safety Nets – airspace authorization, deconfliction and conflict management
- API for provision of valid real-time data for all users (USSPs, C-UAS C2 systems, Security Systems, etc.)
- Central airspace management

3R SYSTEM

Voice-Video-Data Recording & Replay System

The **3R System** provides a high level of modularity, which allows us to deliver to our customers a variety of 3R configurations according to their requirements for performance, and operational and safety parameters of the proposed solution. The 3R SW is built on **Service-Oriented Architecture (SOA)** integrating distributed, separately maintained, and deployed software components, thus allowing 3R processes and applications to run on one or multiple devices connected to one network as required.

Key capabilities

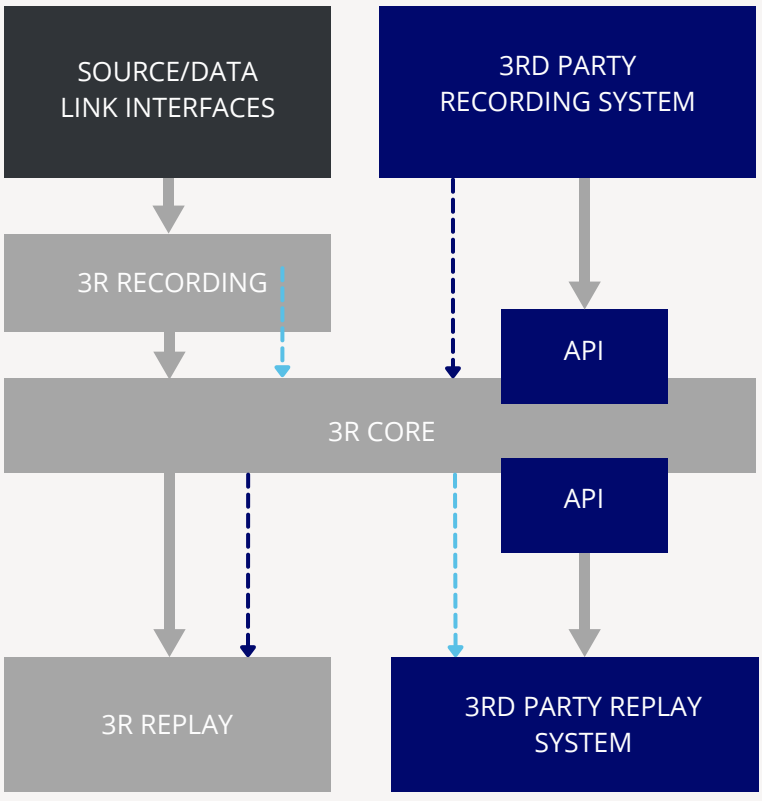
- 365/24/7 operation
- Retention period of at least 30 days
- Multi-source/multi-channel design
- Secure communication within 3R environment
- ATC/ATM-specific Monitoring and Diagnostics (status, notification, alert) and SNMP support
- Incident Management tools
- User Management
- Centralized System Configuration
- Centralized Monitoring and Log System

Benefits

- Shorter time of investigation files sharing across the team
- Based on COTS HW components
- Easy export of given sequence
- Independent Data Display for surveillance data
- Selectable channels for on-line monitoring

SOLUTIONS

MODULAR and OPEN architecture



Modular Design



3R modules

- **3R Recorder** – Audio/Video/VoIP/Data – Recording Module
- **CSS and CS** – Central Storage and Central Server
- **CMS** – Monitoring & Diagnostics and System Configuration Module
- **3R Player** – Replay and Investigation Module
- **3R RDD** – Radar Data Replay and Investigation Module
- **New module DART** – Data Analysis and Replay Tool provides an interactive and advanced multi-level surveillance data analysis, from packets to decoded ASTERIX message inspector, to trajectories.

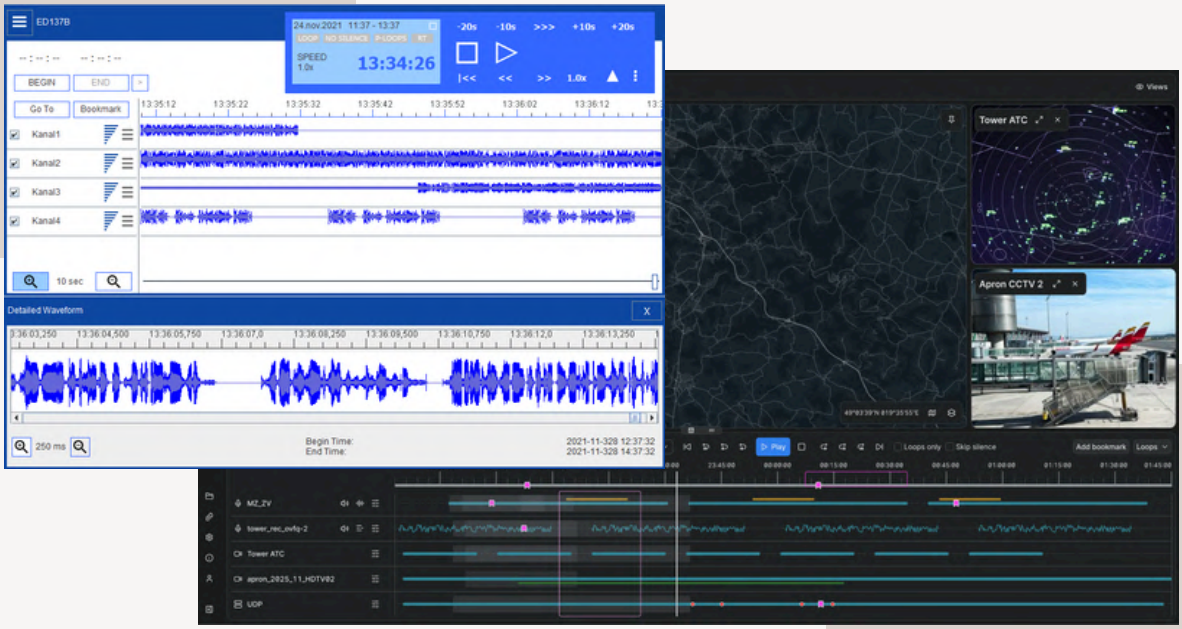
3R modules can be operated on one computer, one or more servers, and one or multiple workstations, and configured in compliance with required performance, operational, and safety specifications.

3R system modules can run as:

- Autonomous recording and replay system integrated into a third party' system
- System fully integrated within the monitored system environment (e.g. software video grabbing)
- System modules integrated into third party' recording and replay environment via API

3R modules can be deployed as:

- A stand-alone computer
- One or more servers, and one or multiple workstations
- Configured to required performance, operational, and safety specifications



SOLUTIONS

ERIS-A

A-SMGCS SYSTEM

ERIS-A belongs to a family of **advanced airport surveillance data processing and display systems** designed for air traffic control and flight planning operations in a TMA and an airport, and is developed in compliance with ICAO 9830-AN/452 and EUROCAE ED -87, -153.

Key capabilities

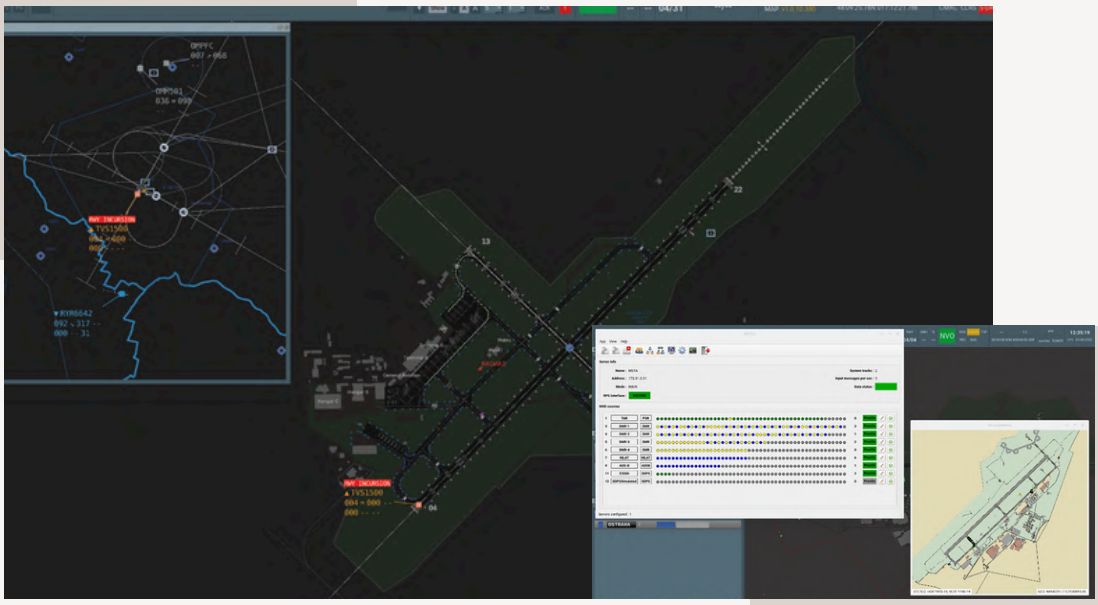
- Open and modular architecture
- Surveillance Data Fusion from various data sources (ADS-B, MLAT, SMR, TAR)
- Provision of Surveillance Monitoring Service and Airport Safety Support Service (RMCA, CATC, CMAC)
- Integrated Electronic Flight Progress Strip (EFS) module for a control and presentation of flight progress
- Comprehensive supervision and monitoring system
- Continuous operational data recording, archiving and replay system
- Configurable HMI at ATCO working positions
- Supporting data for airside security awareness and Airport Management
- Airport Map Layout Editor as a part of delivery

Key components

The Controller Working Position (Collaborative Workstation, CWS)

CWS application can run in a single- or dual-monitor configuration while providing the same functions. In a dual-monitor configuration, the main screen is used to display surveillance and SafetyNet information while providing the controller with a clear picture of movements on approach and on the airport surface and the second screen serves for a display of **EFS** assisting users in managing traffic workflows safely and efficiently on the ground and on approach.

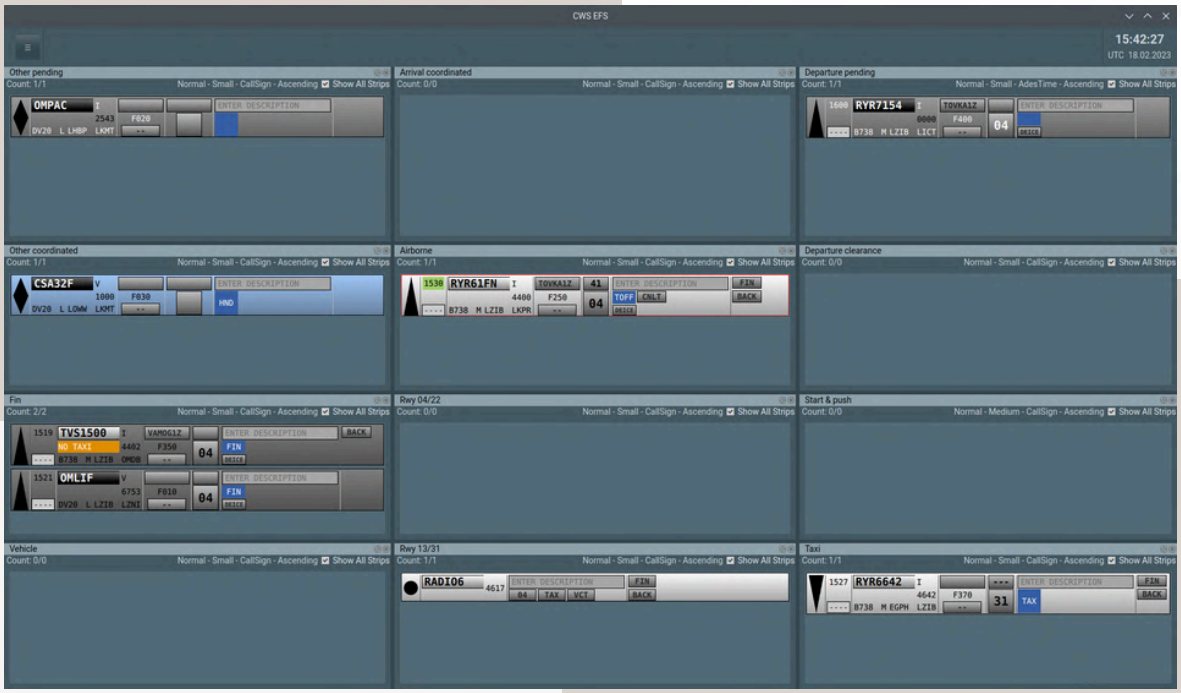
In a single-monitor configuration, both the surveillance functions and EFS system are manipulated via one screen whereby specific groups of strips are managed through windows laying on top of the main primary CWS window.



EFS Module

EFS module provides the user with a set of customized **predictive clearances** to be issued with respect to operational and safety aspects, local rules, and applied to a specific phase/type of flight or flight operation.

User profile management provides access control based on rules specified by the user. Map view profile management allows to apply user-specific settings to create customized configurations of map content which the user needs when accomplishing his specific tasks.



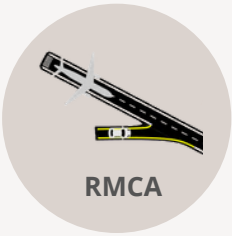
Safety Net Service

RMCA, CATC and CMAC are an integral part of Airport Safety Nets contributing to a safety of airside operation through a **prevention of hazardous situations and/or accidents** resulting from operational errors or deviations of a controller, flight crew or vehicle driver. Calculation of conflict events is performed by a centralized service ensuring that identical conflicts and alerts are presented on all CWS screens. Conflicts/alerts are distributed to CWS workstations by ASTERIX Cat. 04 protocol.









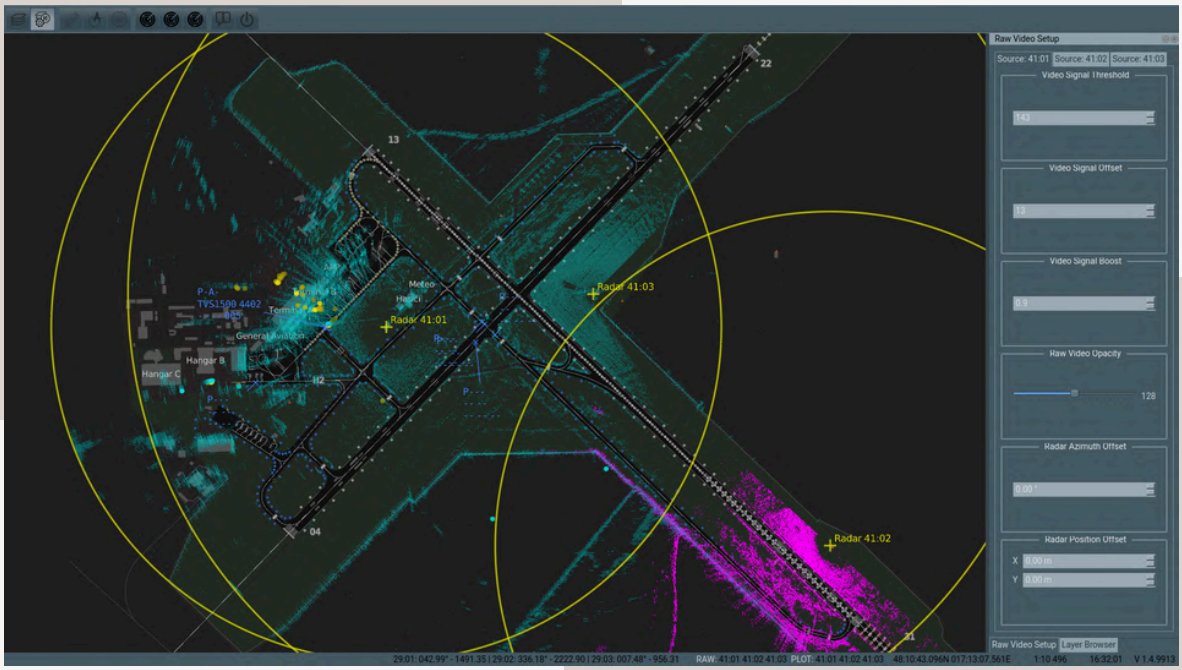
SOLUTIONS

Surveillance Subsystem

Surveillance subsystem is an integral part of ERIS-A solution. ERIS can be integrated with standard SMR radar via ASTERIX CAT 10 output, however R-SYS introduced an optional cost-effective solution in accordance with upcoming A-SMGCS Light concept which is designed for middle-sized and regional airports. This solution uses reasonably priced EHF radar combined with ERA ADS-B or MLAT system for a detection of non-cooperative targets.

EHF is a short-range radar providing high-precision measurement of a target position. It can be used as a principal source of non-cooperative target data or as a gap filler radar ensuring a coverage of blind zones. EHF radars are sources of sufficient data needed for a calculation of potential collisions caused by runway incursion.

EHF radar frequency range	FMCW - 76-77.5 GHz
Scalable detection range	Scalable range 800-3000 m Vehicle detection up to 2000 m Human detection up to 900 m
Resolution	25cm
Radar pattern	Azimuth 1°, Elevation 3°
Data update	360° up to 1 sec
Consumption	18 W
Weight	17 Kg



SOLUTIONS

R-SYS
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COMPANY PROFILE