

- **Customer Self-Care Portal:** An online portal which allows general aviation operators to register accounts, aircraft and flight schedules and provides access to account related information: invoices, credit and debit notes and transactions. It also provides for automatic notification of invoices and outstanding balances and allows the operator online payments.
- **Whitelisting Accounts:** Implemented with the customer self-care portal, this feature allows the ANSP to restrict access to their airspace to credit accounts and cash accounts which have a balance to cover the cost of scheduled flights. Non-credit accounts must register via the self-care portal and pay for flights in advance via credit card. Scheduled flight plans received which are not pre-paid will result in an AFTN warning message being sent to originator and to the AIS operator that the flight has been declined.
- **Third Party System Integration:** Custom plugins may be developed to provide clean and robust interfaces to other ANSP systems, providing tightly integrated operation with accounting, aircraft registration or other systems. As well, all A-RMS data sets are accessible to third party system via authenticated web services.

Deployment





A-RMS is deployed in a high availability redundant web architecture. The billing server integrates with all common ANSP data sources (AFTN, AMHS, FDPS, RDPS) as well as site specific data sources (ATC logs, tower logs, passenger manifests). The modern web technology used provide a user-friendly experience on desk tops, laptops and tablets.

The central billing database can be deployed at the customer's location, ensuring the security of an ANSP's valuable data, or if required, a cloud or remote database solution can be provided.

The system can be configured for internal and external users with completely customizable permissions and access rights providing read, write, invoice, print, statistics and reporting capabilities.

Benefits

- Increase revenue by accessing multiple sources of flight information to ensure all eligible flight movements are invoiced appropriately;
- Shorten the time from invoicing to payment receipt by reducing contested invoices through accurate and evidence-based invoicing;
- Collect on outstanding invoices through the proactive identification and notification of delinquent accounts to billing and ATC staff;
- Reduce the internal costs of billing activities through the automation and streamlining of processes;
- Further increases revenue through the provision of flexible online billing to prepay or resolve overdue payments;

Credit Card





Credit card number: CVV code:

Expiration date: Billing ZIP code:

Credit Card Payment

A-RMS

Using technology to assist Air Navigation Services providers in managing their ANS revenue collection operations



A-RMS

A-RMS is an aviation billing management system which has been developed in conjunction with industry players to assist providers of Air Navigation Services in managing their ANS revenue collection operations. It collects flight data by interfacing with Radar Data Processing Systems (RDPS), Flight Data Processing Systems (FDPS) and AMHS / AFTN systems to ensure accurate billing of airspace usage and ground services.

By using technology and automation to replace arduous and costly paper-based, manual processes which are often prone to errors and omissions, ANS providers can:

- Reduce delays in invoicing;
- Increase accuracy in invoicing, decreasing lost revenue and reducing contested charges;
- Provide operators with documentation to support charges;
- Decrease the number of outstanding accounts;
- Improve the speed of payment receipt.

A-RMS's versatile architecture allows it to be used by all providers of Air Navigation Services from general aviation services and private airfields up to commercial aviation and national ANSPs.

A-RMS provides billing services for both aviation and non-aviation related charges.

Functionality

• **Account Management:** Account management allows the ANSP to create a database of individuals and organizations who should be invoiced for their use of Air Navigation Services. As well as account attributes, all information related to the account including aircraft details, flight schedules, flight movements, invoices, credit and debit notes and financial transactions is accessible.

- **Aircraft Management:** Aircraft management allows the ANSP to create a database of all known aircraft, identified by their registration number, their association to an account and their characteristics including ICAO Doc 8643 and manufacturer information.
- **Enroute Air Navigation Charges:** Separate formulas for enroute air navigation may be defined for domestic flights as well as regional and international departures, arrivals and overflights. Formulas may be based on either the actual aircraft weight or the average MTOW factor for the aircraft weight category and the distance travelled.
- **Aerodrome, Approach, Late Arrival, Late Departure and Parking Charges:** Separate fee rates may be established by aerodrome category, aircraft weight category and time of day.
- **Exemptions:** Exemptions from any flight related charge (enroute, approach, aerodrome, parking, late arrival, late departure) may be specified based on account, aircraft type, item 8 flight type, item 18 STS/, item 18 RMK/ and route departure/destination pair.
- **Flight Database:** The flight database is the center of the aviation billing engine. Flight information is combined from various sources: scheduled flights (via FDPS, AFTN, AMHS); ATC logs; tower logs; RADAR; and passenger manifests). Duplicate flights are identified and merged into single records based on geographic and temporal similarities in departures. A warning system for missing or duplicated flights based on departures and arrival of each registration number notifies the user where manual correction is required. Flight attributes from the database maybe viewed or modified. The flight and its route defined by each source of information may be displayed in a GIS web interface.
- **Invoicing:** Invoices may be generated for cash accounts at point-of-sale or for credit accounts on a weekly, monthly or on demand basis. Invoicing provides both IATA format and ANSP aviation invoices as well as non-aviation invoices. A record of the invoice is kept in PDF format.
- **Interest Charges:** Interest charges are automatically calculated and added to invoices once an invoice is overdue.

The screenshot shows a PDF invoice from IDS AirNav. It includes a header with the company logo, a customer name and address, and a table of charges. The table has columns for 'DESCRIPTION' and 'AMOUNT'. Below the table, there is a 'GRAND TOTAL' section. The invoice is dated 18 October 2018.

The screenshot shows a detailed table of charges. It contains many columns, including flight registration numbers, flight dates, and various charge amounts. The data is organized in a grid format.

Invoice with List of Charges

- **Adjustments:** Credit and debits may be made to accounts when required. A record of the credit or debit note is kept in PDF format.
- **Billing Ledger:** The billing record records all transactions including invoices, payments, credit notes and debit notes. It also keeps track of unpaid and overdue invoices.
- **Reports:** The system comes preconfigured with sixteen reports for various account, invoice and transaction related details. Additional user defined reports may also be configured.
- **Statistics:** Statistics maybe generated and displayed as reports or graphical pie, bar or line charts. Statistics may be generated based on number of flights and/or passengers or by economic value. Statistics may be catego-

rized by any combination of time interval, billing center, account, flight type (departure, arrival overflight), flight scope (domestic, regional, international), flight schedule (S,N), flight rule (IFR,VFR), flight level, aerodrome, route (departure, destination), aircraft type, aircraft MTOW category and payment mode (cash,credit).

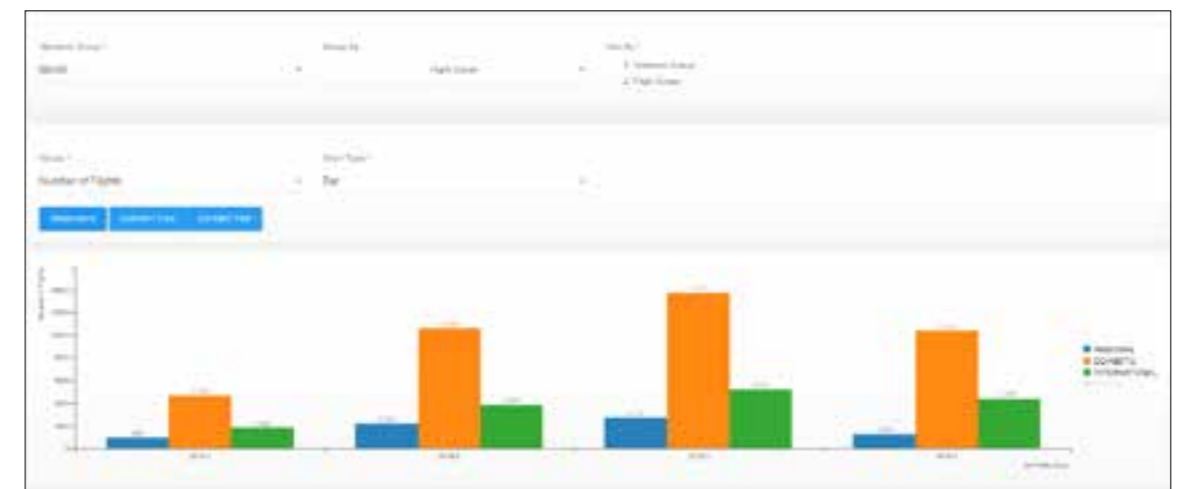
• **Non-Aviation Charges:** Non-aviation charges are specified in a user defined service charge catalogue. These charges may be selected at point-of-sale and added to an invoice. Pricing on service charge catalogue items may be fixed, per-unit or user-entered. For accounts with repeated monthly invoices (leases etc) – a standing invoice may be created which is used to generate an invoice each month.



Flight Movement



Aircraft Registration



Statistics