

Flight database services for Pro Line 4 and Pro Line™ 21

Flight database services

Pro Line 4 and Pro Line 21™ Database Options

Welcome to Rockwell Collins Flight Database Services. Below you will find a complete list of all the databases that will need to be updated on a periodic basis. Included is a how-to guide to help you navigate through our website where you will download the latest database updates.

Databases for the Pro Line 4 and Pro Line 21 subscriptions include:

(Database availability depends on the specific aircraft and FMC model. For a list of applicable FMC part numbers, visit the Flight Deck Content subscription information web page at www.rockwellcollins.com.)

| Database | Update frequency |
|--|------------------|
| FMS Navigation Database | 28 days |
| IFIS – Enhanced Map Overlays Database | 28 days |
| IFIS – Graphical Weather Overlay Database for Datalink subscribers | 1 year |
| IFIS – Graphical Weather Overlay Database for XM® subscribers | 1 year |
| Synthetic Vision – Airport/Runway Database | 28 days |
| Terrain Awareness Warning System – Threat | As needed |

Additional Services for IFIS equipped aircraft – Subscription Service required through suppliers listed below:

Graphical Weather –

Datalink or XM WX Satellite Weather®:

To arrange Datalink Graphical Weather and XM WX Satellite Weather® service, as well as additional flight support services (flight planning, flight deck communications, cabin connectivity, trip support), contact: Rockwell Collins ARINCDirectSM

phone: North America: +1 866.321.6060 Worldwide: +1 410.266.2266

website: www.arincdirect.com

Jeppesen® Electronic Terminal Charts –

Contact Jeppesen® to arrange and subscribe to service

product: Pro Line 21 and JeppView™ Terminal Charts

phone: +1.800.553.7750

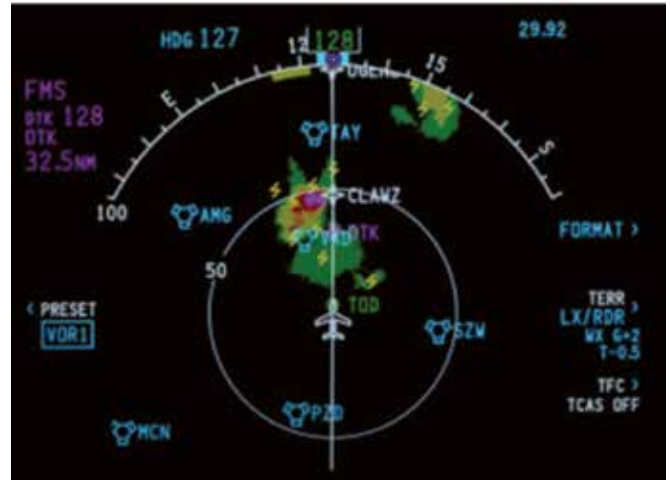
website: <http://jeppdirect.jeppesen.com/index.jsp>

email: ba-customerservice@jeppesen.com

Database descriptions:

Navigation database

The Rockwell Collins' navigation database provides the Pro Line 4 and 21 avionics system with the necessary information to provide accurate and reliable navigation. The navigation database is derived from Jeppesen and Lufthansa Systems ARINC 424 navigation data. This data is received from an FAA approved Type 1 Letter of Acceptance (LOA) data provider. Rockwell Collins, an FAA approved Type 2 LOA holder, processes this data to allow compatibility with the Pro Line 4 and Pro Line 21 avionics systems. The database contains publicly available airports, approach procedures, arrivals (STARS), departures (SIDS), airways and more.

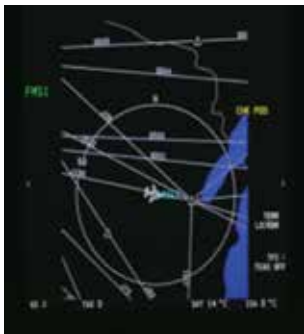


Integrated Flight Information Systems (IFIS) –

Enhanced Map Overlays (E-maps) – Airways & Airspace and Geo/Pol Boundaries

Rockwell Collins E-maps increase situational awareness through the addition of map overlays including high and low-altitude airways, restricted and controlled airspace, and geopolitical information including state and international boundaries, rivers, lakes and ocean coastlines.

- E-Maps Political Boundaries function depicts geographical-political boundaries for all countries and state boundaries for a select few countries on the navigation map.
- E-Maps Special User Airspace function depicts special-use and military airspaces that contain additional information such as ceiling height, controlling agency, airspace name, etc.
- E-Maps Controlled Airspace function depicts Class-B, Class-C and Class-D airspaces surrounding aerodromes.



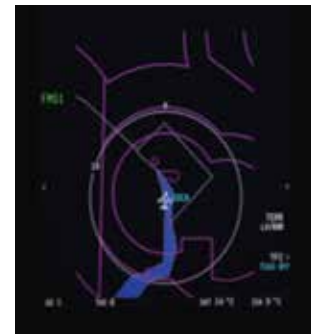
Airways information

The system's enhanced mapping capabilities eliminate the need to continually refer to paper charts. In response to Air Traffic Control changes, flight crews can locate new airway assignments and waypoint identifiers faster and easier than ever before.



Controlled airspace information

Significantly improve your situational awareness by simplifying routine tasks, such as establishing visual contact with the airport, or approaching speed or altitude constraints by relating aircraft position to ground features presented on the charts.



Restricted airspace information

Know your aircraft's exact position as it relates to restricted airspace and have the information needed to make informed decisions when flight plan deviations may be necessary due to weather or traffic.

Database descriptions: (cont.)

IFIS - terminal charts database

Rockwell Collins Electronic Terminal Charts Application (ETCA) provides an electronic display of worldwide terminal charts on the forward display, with display of present position. The terminal charts database is supplied by Jeppesen. The terminal charts database includes instrument approaches, SIDs, STARs, airport diagrams and other relevant chart items that are typically available in paper format.

With Rockwell Collins' patented ChartLink™ capability, the terminal charts application automatically identifies and retrieves the charts needed based on the FMS flight plan. With over 7,000 airports and 40,000 charts in the database, the ChartLink function significantly reduces pilot workload during crucial phases of flight. The display of the aircraft's present position in every phase of flight is a unique capability not available on most Electronic Flight Bags (EFBs), let alone on a forward looking display.

The Pro Line 21 flight displays offer a high-contrast and sun-glare free experience that is unmatched by EFBs and other electronic devices. On the full-screen mode, each chart image provides a user experience that is superior to paper products due to powerful interactive capabilities such as zoom and pan. The charts application also offers shortcuts to most needed features such as FMS chart list, quick swap, night mode, rotate, etc.



IFIS electronic charts

Rockwell Collins IFIS replaces heavy and bulky printed charts with large-format, high-resolution electronic charts. Now, critical departure, arrival, approach and airport information is instantly available to the flight crew.



Easy to read and interpret

Enhanced functionality is now available on the flight deck. Instantly zoom in or out on charts. Display geo-referenced approach and airport charts with aircraft location with worldwide coverage. Selectable day or night mode operation is available for easier viewing.



Know your position on the airport diagram

Enhance your peace of mind on the airport surface with a clear, easy-to-interpret display of all runways and taxiways.

Database descriptions: (cont.)

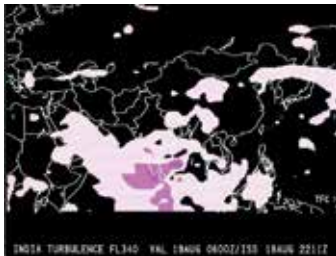
IFIS - graphical weather overlay databases:

With IFIS, pilots have a powerful new tool to help them make more strategic decisions about their flight plans. By combining strategic weather information with Rockwell Collins airborne weather radar, pilots can look at the big weather picture prior to each flight and during the flight as weather develops. As a result, pilots can choose the most efficient flight path around hazardous weather.

Datalink weather subscribers

Datalink weather offers graphical display of weather conditions around the world. With coverage that includes every continent and oceanic regions, datalink graphical weather is an ideal solution for both international operations and regional operations outside the U.S. The datalink graphical weather database provides updates to the background map over which the weather products can be displayed. Yearly database updates provide corrections, enhancements and improvements to depiction of the background. Graphical weather products include NEXRAD WX radar (CONUS only) and echo tops/movements. Other capabilities and features include worldwide graphical METARS, turbulence, icing, weather depiction and winds aloft.

(Appropriate datalink hardware and a weather service provider are required to enable this function.)



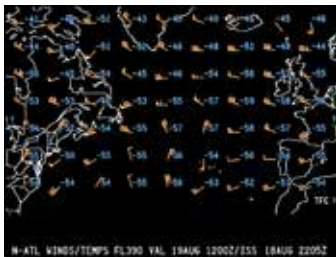
Turbulence display capability

IFIS can be integrated with Rockwell Collins datalink to present en route graphical weather information, including predicted and actual areas of precipitation or significant turbulence.



Icing conditions display

Global graphical weather display capabilities give pilots a picture of global weather patterns, that can be updated on demand.



Wind direction and temperature

Flight crews benefit from graphic depictions of the actual temperature and direction of winds aloft to better determine the effect on performance fuel loads and arrival times.



Echo tops and movement

With IFIS, you can use echo tops and cell movement to track major storm cells. This depiction enables the air crew to comprehend severe storm cells, peak altitudes and true ground track movements at a glance.

Database descriptions: (cont.)

XM WX Satellite Weather subscribers

XM Satellite Weather offers CONUS, Canada and Puerto Rico aircraft operators a strategic view of weather conditions in a single affordable, yet highly capable system. With high bandwidth data rates, XM offers unmatched graphics and color to display strategic weather information. Data is received from XM satellites for continental U.S., Canada and Puerto Rico.

Graphical weather products include NEXRAD, SIGMETs, lightning, METARs, SCITs, Winds Aloft, Icing, Turbulence, Satellite (with and without NEXRAD) and animated NEXRAD. Textual weather products include SIGMETs, AIRMETs, METARs and TAFs. Products have altitude controls to allow the users to view specific data at selected altitudes.

The XM graphical weather database provides updates to the background map over which all the XM® weather products can be displayed. Yearly updates provide corrections, enhancements and improvements to depiction of the background.

(An XM receiver is required and an XM subscription will be needed to enable this XM weather.)



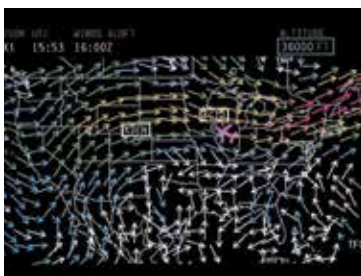
Graphical weather



Graphical weather local



Icing



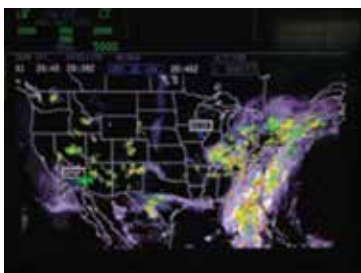
Winds aloft



Lightning



Satellite without NEXRAD



Satellite with NEXRAD



Turbulence



Echo Tops (SCIT Tops)

Database descriptions: (cont.)

Synthetic Vision Systems (SVS)

Airport/Runway Database: SVS receives the selected origin, destination, and alternate airport IDs from the FMS. SVS renders a fixed size dome at the airport location for the destination, origin, and alternate airports. SVS also renders conformal runway surfaces representing all landing surface, displaced threshold surface and stopways at each of these airports.



Manual data transfer:

Accessing and downloading Rockwell Collins supplied databases:

Rockwell Collins website – New User Registration

1. Go to www.rockwellcollins.com
2. Click “Request an Account”
3. Click “Get Started”
4. New User Registration:
 - a. Select “To access catalogs, technical publications... and other tools”
 - b. Complete the following information with your work contact information
 - Starred items* are mandatory
 - c. Select challenge phrases and answers
 - d. Create your password
 - e. Type the validation code
 - f. Click “Submit”
5. Log in:
 - a. Go to your email address that you used to register. You should receive an automated email from Rockwell Collins asking you to accept Terms and Conditions. Click the link to accept the terms.
 - b. Close the browser window and log back in to:
www.rockwellcollins.com ->Database and Software Updates -> Flight Deck Content
 - c. Enter your user name and password, click “Log in”
6. Your account and eligible databases will appear for download

Website login/password support – telephone support provided 24/7/365:

Calling from U.S. and Canada: +1.888.721.3094

Calling from all other locations: +1.800.721.3094

Contact information:

For more information, contact:

Database Subscription Support:

New/change subscription, pricing/invoicing/billing, cancellation
Assistance available during normal business hours, M-F; 7:30 a.m. - 4:30 p.m. CST
phone: +1.319.295.5000; Menu Option 3
email: fmssubs@rockwellcollins.com

Database Technical Support:

Database content issues, downloading database from website
Assistance available during normal business hours, M-F; 7:30 a.m. - 4:30 p.m. CST
AOG phone support provided 24/7/365 – this service is for true AOG issues only
phone: +1.319.295.5000; Menu Option 1, then 2
email: collinsdatabasetech@rockwellcollins.com

Product Support:

Loading database on aircraft, hardware and software
phone: +1.319.295.5000; Menu Option 1, then 1
email: customerservices@rockwellcollins.com

Building trust every day.

Rockwell Collins delivers smart communication and aviation electronic solutions to customers worldwide. Backed by a global network of service and support, we stand committed to putting technology and practical innovation to work for you whenever and wherever you need us. In this way, working together, we build trust. Every day.

For more information, contact:

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