

## FLIGHT2™ SYSTEMS

The forward-scalable solution meeting your avionics modernization needs.



**Rockwell  
Collins**

Building trust every day



*Open architecture  
with evolutionary  
insertions of Flight2  
capabilities will extend  
your fleet life.*

## Our vision. Your avionics answer to ever-changing mission requirements.

In 1999, Rockwell Collins unveiled a new flight deck avionics system for the C/KC-135 Global Air Traffic Management program. We called this system Flight2 – for the second century of flight. It advanced flight operations from the traditional, purely pilot “see and avoid” responsibility for flight hazards related to navigation, terrain, traffic and weather to an intelligent avionics system that not only automatically detects these hazards but provides complete situational awareness and hazard avoidance guidance for flight crews.

Flight2 transformed a federated system into a modern digital system and provided commonality with commercial aircraft. Its high degree of integration and commercial off-the-shelf equipment provide a greater degree of:

- Direct lineage with commercial avionics development using common modules for the displays, CDUs and processing centers
- Ethernet Local Area Network
- Fault tolerance
- On-board diagnostics

Today, our next-generation Flight2 system continues to build upon that visionary architectural design, enabling you to easily and cost effectively upgrade your aircraft today while providing a flexible platform for future growth linked to commercial development.

### Flight2 is the tiered solution.

The Rockwell Collins evolutionary Flight2 system’s tiered acquisition and installation approach helps you maximize your budget while minimizing aircraft downtime. Flight2 seamlessly integrates new-generation displays and avionics with your aircraft’s legacy analog sensors, radios, autopilots and other systems. This integration brings a host of new capabilities to popular aircraft types including international C-130, P-3, KC-135, E-2C, C-2A, E-3 and others.

Based on the most popular commercial retrofit avionics solution – Rockwell Collins Pro Line 21™ – Flight2 gives you more installation options than any other system. Tiered solutions can begin with simple modernization of your aircraft’s communications, navigation and surveillance (CNS) systems, and end with the creation of the ultimate tactical avionics suite including satellite communications, large-format digital flight displays, tactical situational awareness, and more.

The Flight2 system delivers the most advanced capabilities available today, but with a foundation based on a proven, scalable, all-digital architecture. With it, you can easily integrate emerging technologies and capabilities into your aircraft. We created Flight2 to address obsolescence issues while providing complete CNS/ATM capabilities.

When the goal is to cost effectively increase the safety, functionality and capabilities of your current fleet, the one solution is Flight2 from Rockwell Collins.



Select from three Flight2 tiered solutions to meet your avionics modernization needs. Aircraft can readily be upgraded from Tier 1 to 2 and Tier 2 to 3, as budget and needs dictate.

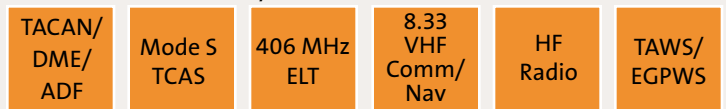
### TIER 1:

#### STAND-ALONE COMPONENT UPGRADES

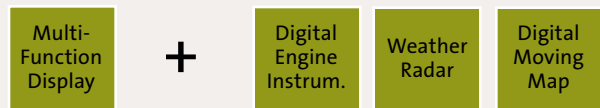
Created to address immediate needs, Tier 1 is a line replacement unit upgrade approach and requires the shortest aircraft downtime. You can select to install any or all of the components including TCAS, Mode S Transponder, 406 MHz ELT, 8.33 VHF Com/Nav, Integrated Communication System (ICS), and/or TAWS/EGPWS. Tier 1 also has a multifunction display option for electronic engine display, weather radar and/or moving maps.

#### Current CNS/ATM requirements

#### CNS/ATM Communications



#### Situational Awareness



### TIER 2:

#### BASIC INTEGRATED CAPABILITIES

Tier 2 is the basic integrated cockpit solution. As a requirement for operation within European airspace, Tier 2 takes all the elements of Tier 1 and integrates them along with a new FMS, SATCOM II, GPS/EGI, Data Transfer Unit and full CNS/ATM compliance including a flight director, autopilot and ADC/AHS or DCU.

#### CNS/ATM RNAV



#### Full CNS/ATM Compliance



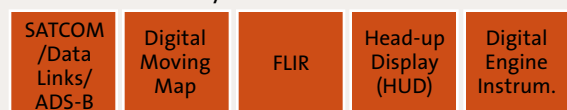
#### Future CNS/ATM roadmap

### TIER 3:

#### TOTAL MULTIMISSION CAPABILITY

Tier 3 is the ultimate panel upgrade that delivers incredible capabilities today while ensuring a path to future technology upgrades. Tier 3 can build off of Tier 1 or Tier 2 installations. Because of its all-digital format, the Tier 3 system enables full tactical data and voice interoperability with other new-generation allied armed forces aircraft.

#### CNS/ATM Surveillance





## Flexible, military-proven technologies ensuring optimum capabilities now and in the future.

Flight2's Tier 3 integrated avionics suite gives military mission planners a no-compromise solution to meeting both their tactical and civil operations requirements. At the heart of the system is a proven, open architecture that not only provides integration with current digital and legacy analog instruments, avionics and systems, but also ensures seamless upgradeability to newly emerging technologies.

Because next-generation Flight2 continues a long tradition of providing unparalleled functionality, reliability and value to military operators, the system ensures seamless civil airspace interoperability while meeting specialized, mission demands. This works to save operators both time and cost.

### Flight2 installation flexibility

The Flight2 system gives military aircraft operators the widest variety of digital display, avionics and control units available. From the system's large-format liquid crystal displays (LCDs), to the CNS/ATM communications, to the Flight Management System (FMS), the open system architecture of each Flight2 components, along with its ability to integrate with legacy analog units, give you the flexibility to specify an avionics modernization solution that best fits your needs.

### Flight2 displays

Flight2 gives you the option of installing either 5x5-, 6x8- or 9x12-inch large format LCDs. Proven in the most demanding commercial and military applications, these high-resolution primary flight displays (PFDs) and multifunction displays (MFDs) provide pilots with mission-critical information in familiar formats that are easy to interpret.



### Flight2 CNS/ATM

With its all-digital communications, navigation and surveillance/air traffic management (CNS/ATM) units, Flight2 gives your flight crews the clearest, most accurate communications and ensures compliance with global air traffic control.

### Flight2 FMS

The CDU-7000 is the processing home of the powerful Rockwell Collins Integrated Flight Management System (FMS). The FMS is driven by a proven complement of autonomous tactical and global navigation sensors providing seamless precision navigation around the world, including autonomous self-contained approach capability equivalent to a Category I ILS. In addition, the FMS automatically computes a variety of mission related calculations including search and rescue patterns, and holding procedures for use in both civil and military airspace. With the CDU-7000, aircrews will also find their workload drastically decreased by automation. The NVG-compatible CDU serves as the primary mode control and status reporting interface with all major avionics subsystems, eliminating the need for inefficient remote control mode/tuning panels.

### Enhanced system reliability you can count on.

Legacy avionics can develop CNS/ATM performance issues that could compromise crew safety and mission success. Our next-generation Flight2 components are highly reliable, fully ruggedized and mission proven around the world.

Each Flight2 unit features a solid-state, all-digital architecture, which greatly reduces vibration- and shock-induced failures. Reliability and maintainability are further enhanced by state-of-the-art fault tolerance monitoring and full-time diagnostics to alert flight crews of any problems.

# Not so much radical change as evolutionary gains.

Multiple aircraft. One proven solution.

When first introduced in 1999, our Flight2 quickly became one of the world's most popular avionics modernization solutions for military customers. More than 600 Flight2 integrated cockpits fly aboard a wide array of aircraft, including the international C-130, P-3, KC-135, E-2C, C-2A, E-3, HC-130H and HC-144A.

We developed Flight2 as an avionics solution that would continue to evolve to take advantage of emerging capabilities and technology to ensure that military customers would have the functionality their flight crews needed for mission success.

Today's next-generation Flight2 tiered solution delivers true 21st century capabilities while continuing the original system's proven installation flexibility. Flight2's all-digital displays and components seamlessly integrate with the avionics already on board your aircraft, enabling you to systematically and effectively complete a partial or full avionics modernization program.



## C/KC-135 Stratotanker

Contract award: October 1999

Aircraft qty: 419

First DoD fleet GATM approved

Program completed Sep. 2011

- Flight2 FMS
- CDU-900
- MFD-255 displays
- Interactive Hand Control
- IPC-7010  
(PC603 Ethernet-based processor)
- Comm'l/Mil Radios/Data Links
- ETCAS
- MMR



## USN P-3C/EP-3 Orion

Contract award: June 2002

Aircraft qty: 165

- Flight2 FMS
- **CDU-7000**
- MFD-255 displays
- Interactive Hand Control
- Mil Radios



## E-2C Hawkeye

Contract award: May 2004

Aircraft qty: 27

- Flight2 FMS
- **CDU-7000**
- MFD-268C2 displays
- **MFD-2912 displays (9x12)**
- Interactive Hand Control
- Comm'l/Mil Radios/Data Links
- TCAS



## USCG HC-144A Greyhound

Contract award: May 2004

Aircraft qty: 18

- Flight2 FMS
- CDU-900
- **MFD-268C2 displays**
- Interactive Hand Control
- **IPC-7010** (PC750 processor)
- Comm'l/Mil Radios/Data Links
- MMR

Note: Bold indicates technology upgrades and/or new integration.



**Train them on the exact flight deck they'll use in the cockpit.**

One of the biggest challenges facing military operations is the speed at which their flight crews can be trained to use new avionics. To ease the transition, Flight2's initial and ongoing training can be completed with the Rockwell Collins Virtual Avionics Procedures Trainer (VAPT).

VAPT is the only system that operates on the same software and hardware found in the Flight2 cockpit. It's the most cost-effective

solution available that enables pilots to train on the equipment they will use in the aircraft. Not simulations or replications – the real thing. Pilots walk away from a VAPT session with the knowledge and confidence they need to safely operate in today's active military-operations environment.

The Virtual Avionics Procedures Trainer is just one more element in the Rockwell Collins toolbox to ensure that Flight2 systems will meet our military customers' expectations now and well into the future.



**Thailand C-130**

Contract award: Sept. 2006  
Aircraft qty: 12

- Flight2 FMS
- CDU-900
- MFD-268 6x8 displays
- Interactive Hand Control
- **IPC-7010** (PC750 processor)
- Comm'l/Mil Radios
- MMR
- **FMR-200 Radar**
- **ICS**
- **Digital Moving Map**



**US/NATO E-3**

Contract award: April 2010  
Aircraft qty: 50

- Flight2 FMS (w/Civil RNAV)
- **CDU-7000** (PC7448 Processor)
- **MFD-268C2-100 displays** (PC7448 Processor)
- Interactive Hand Control
- Mil Radios
- **IPC-8310** (PC 7448 Processor)

### 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:

Rockwell Collins  
400 Collins Road NE  
Cedar Rapids, Iowa 52498  
+1.800.321.2223  
+1.319.295.5100  
fax: +1.319.378.1172  
email: [learnmore@rockwellcollins.com](mailto:learnmore@rockwellcollins.com)  
[www.rockwellcollins.com](http://www.rockwellcollins.com)

**Rockwell  
Collins**

Building trust every day