



NTSB Forum – Emerging Flight Data & Locator Technology

Honeywell

- **Flight Data Solutions**
 - Existing Systems
 - Future Concepts
- **Near term Flight Locator Solutions**
 - ACARS AOC / ACMS
 - ACARS ADS-C
 - Inmarsat Aspire 200
 - SkyConnect / Iridium

Existing Flight Data Solutions

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- **Current FDR & CVR Systems**
 - Good historical performance
 - Very high recovery rate
- **Planned & Potential Enhancements**
 - **Underwater Locating Device**
 - ◆ 90 day duration – available in 2015
 - ◆ Increased range (8.8 KHz) – EASA NPA
 - **Extended voice recording**
 - ◆ 20 hour capacity – EASA NPA



- **Deployable Recorders**

- Increased cost and installation complexity
- Added maintenance
- Potential safety risk
- Uncertain performance
- Recovering physical evidence still required

- **Streaming Data**

- Increased cost
- Uncertain performance
- Good potential as supplemental system
- Unlikely to eliminate need for onboard recorders

ACARS

- System receives information from aircraft busses
- Installed on nearly all commercial aircraft
- Uses existing communication links
- Airline modifiable configuration
- Can provide periodic position reporting
 - Manually or automatic; Periodic or event-driven
- Similar functionality provided by Aircraft Condition Monitoring System
- Continuity of Function
 - Configuration loaded on ground
 - Crew interface to control communications
 - Multiple circuit breakers



- **ATC Periodic Position Reports (FANS)**
- **Uses ACARS transmission equipment**
- **Requires pilot to login to ATC Center**
- **ATC center contracts with aircraft to define position report parameters, timing**
- **Ground ATC center has control / interrogation capabilities**



Aspire 200 – Inmarsat SBB

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- **Uses Inmarsat Swiftbroadband**
 - Aircraft position transmitted at network layer every 10km
 - Tracking established through Inmarsat network directly or using applications
 - System automatically logs on to network at power on, and stays logged on until power down
 - System may also be used for data or voice application
- **Small terminal and antenna**
 - 2 MCU; 8lbs
- **Worldwide coverage**



Sky Connect

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- **GPS integrated unit supports install into any aircraft**
- **Tamper-proof solution for aircraft tracking**
- **Transmits final position reports after interruption to aircraft power**
- **Global coverage via Iridium constellation**
- **Transmits:**
 - **Unique Aircraft Identifier**
 - **Position information**
 - **Discrete Inputs**
- **Reporting interval:**
 - **Minimal : 6 seconds**
 - **Nominal: 1-2 minutes**



- **Current recorders have proven track record**
- **Enhancements in work to improve performance**
- **Narrowing search zone is key challenge**
- **Basic flight tracking available with existing avionics**
- **Potential to improve tamper-resistance**