



THE GOLD STANDARD FOR AVIATION SINCE 1935

RTCA SC-206
Aeronautical Information and Meteorological
Data Link Services
22nd FPAW 2018 Fall Meeting
October 2018



RTCA SC-206 Leadership

- Co-Chairs: Capt. Rock Stone, United Airlines, Chief Surveillance Technical Pilot and Tom Evans, NASA Langley, Research Flight Deck Technology and Concepts
- Secretary: Joe Bracken, AvMET, Systems Engineer
- Government Authorized Representative: Eldridge Frazier, FAA, Lead Engineer Weather Technology in the Cockpit Program
- RTCA Project Director, Karan Hofmann



Background

- Establish the aircraft as a participant in the ICAO and Next Generation Air Traffic Management collaborative decision making
- Establish airspace regions for autonomous operations where the aircraft is primarily responsible for safe separation from other traffic, weather and designated / restricted airspace
- Timely availability of high-quality and reliable Aeronautical Information Services and Meteorological Information Services necessary to support the transition and implementation of advanced global ATM concepts envisioned by ICAO, NextGen, and SESAR
- Globally harmonize services with EUROCAE for systems interoperability

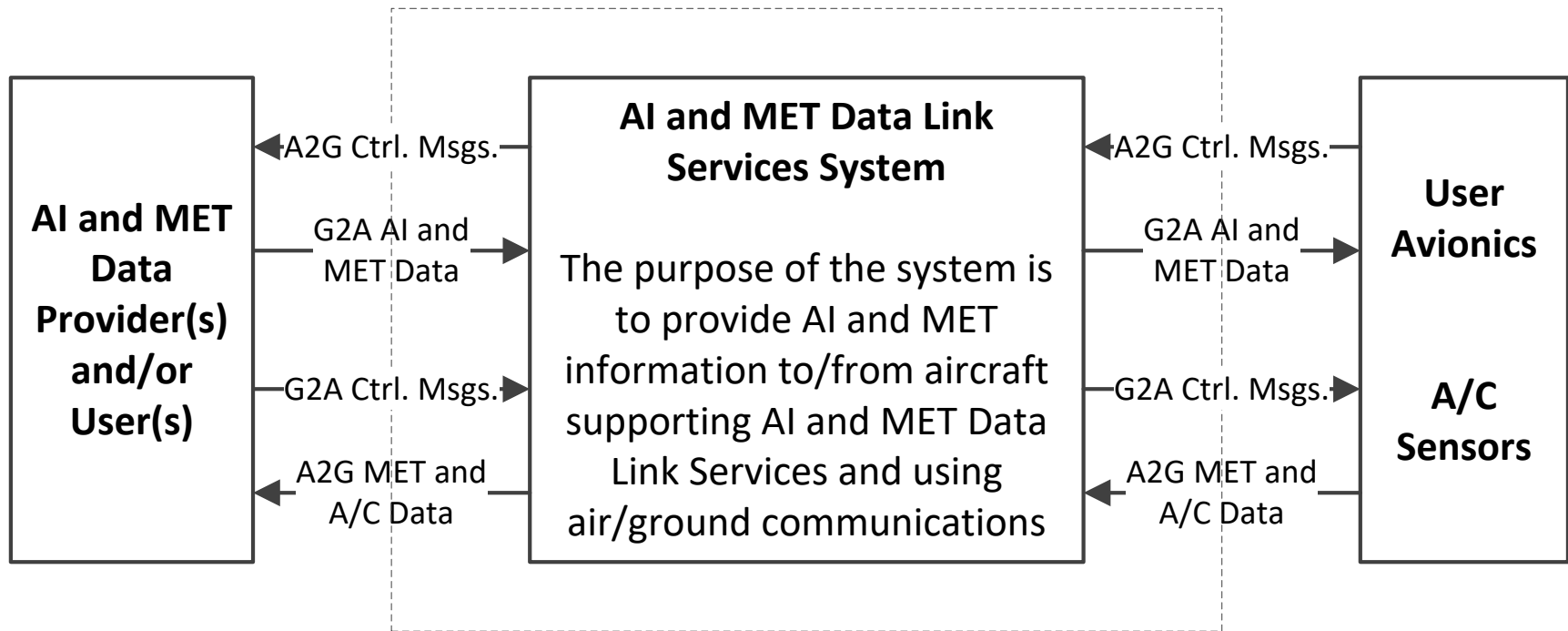


SC-206 Status

- Current Term of Reference two document in works; Two modifications to DO-358 the Minimum Operational Performance Standards (MOPS) for flight Information Services Broadcast (FIS-B) data using Universal Access Transceiver (UAT) and Minimum Aviation System Performance Standards (MASPS) for Aeronautical Information / Meteorological Data Link Services
 - Modify DO-358 to DO-358A
 - Add six new FIS-B Products: Lightning, Turbulence, Icing, Cloud Tops, Center Weather Advisory, Graphical Airmen's Meteorology Advisory, and correct errors or deficiencies.
 - DO-358A deliver date: March 2019
 - Modify DO-358A to DO-358B
 - Add two new FIS-B Products: Temporary Restricted Area, Temporary Military Operating Area, and correct errors or deficiencies
 - DO-358B deliver date: March 2020
 - Update DO-364 to DO-364A
 - Expand minimum system requirements and recommendations to cover additional AIS and MET data link services as identified by SC-206, EUROCAE WG-76, and industry
 - No changes, except error corrections, will be made to the Near Real-Time Aircraft-Based Meteorological Observation Services System already defined in DO-364
 - Expand minimum system requirements and recommendations to include those for AIS and MET input information
 - ❖ Identify parameters for AIS and MET input information and their associated characteristics (e.g. latency, accuracy, resolution) that support the newly defined services
 - ❖ Identify AIS and MET input requirements for portable or installed avionics
 - Coordinate with the Collaborative Decision Making (CDM) Steering Group to document minimum information content requirements for cockpit participation in specific CDM initiatives
 - DO-364A deliver date: December 2020

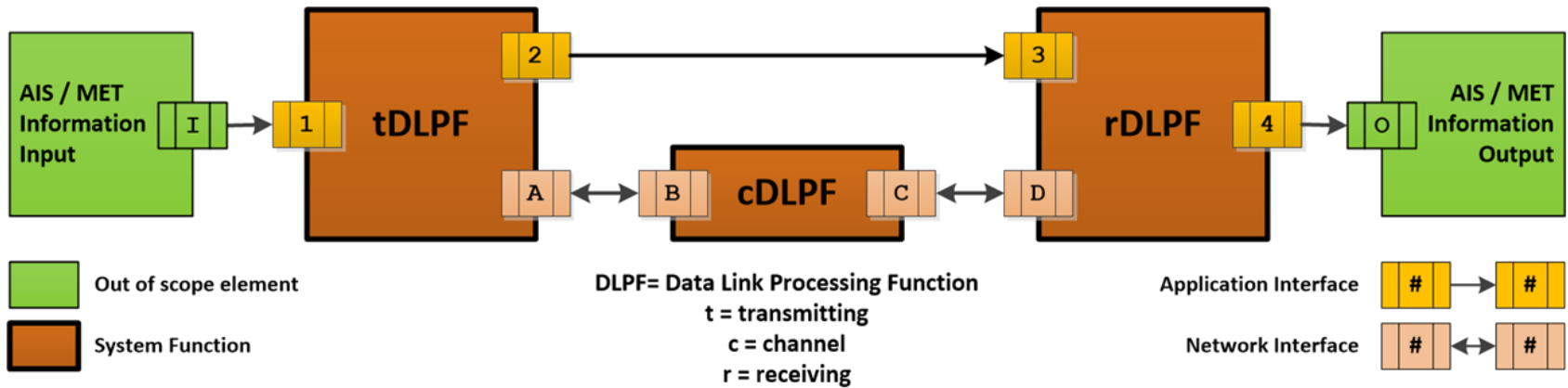


System Boundaries





System Diagram





Basic Comparison of Services

	AIS			MET			Both		
	Up	Down	X	Up	Down	X	Up	Down	X
Broadcast					WxS	ETS			
Req-Reply (demand)									
Pub-Sub (contract)	SAA								

	Uplink	Downlink	Crosslink
WG-76*	10 services	2 services	2 services
DO-364	SAA	WxS	ETS

* Some services may provide different link types depending on use

ETS: Eddy Dissipation Rate Turbulence Service

SAA: Special Air Reporting

WxS: Weather Surveillance



Additional 14 Services

- Airspace Restriction Update
- Digital NOTAM
- Winds and Temperatures Aloft
- Aerodrome and Landing Zones Weather
- Hazardous Weather
- Aerodrome Hazardous Phenomena
- Routine Atmospheric Forecast
- Weather Imagery
- Runway Visual Range
- Digital ATIS
- Airport Operational Surface Information
- Emergency Diversion
- Special Air Reporting
- Collaborative Decision Making



CDM and Exchange of MET/AIS Data

Flight Crew Needs

- Hazard avoidance
- Flight optimization
- Diversion
- Operating restrictions
- Departure, destination and alternate information
- etc.

A/C Observations

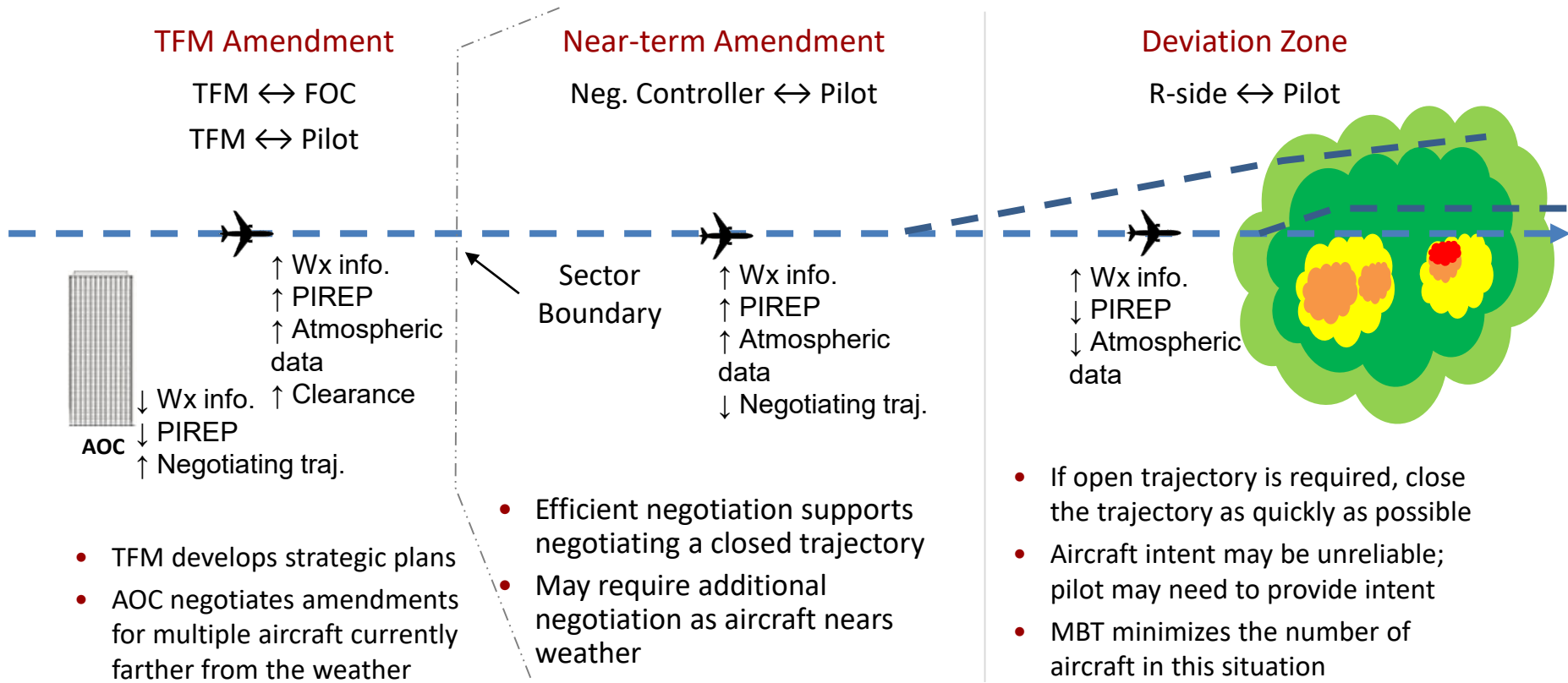
- Increased AMDAR equipage
- Increased AMDAR reporting
- New/improved parameters
- etc.



Improved connectivity will provide better data collection and dissemination



CDM Example: Weather Deviations and Reroutes with MBT





ENVISIONED USE OF DELIVERABLE(S)

- DO-358A and DO-358B MOPS will be used by manufacturers to ensure compatibility with the FAA's FIS-B products delivered over UAT
- Updated DO-364 MASPS will be used by designers, manufacturers, installers, service providers, regulators, and users of AI and MET data link services systems



Summary

- Modifying DO-358 to DO-358A and B
- Updating DO-364 with EUROCAE WG-76 adding additional services
 - Identify parameters for AIS and MET input information and their associated characteristics (e.g. latency, accuracy, resolution) that support the newly defined services
 - Identify AIS and MET input requirements for portable or installed avionics