



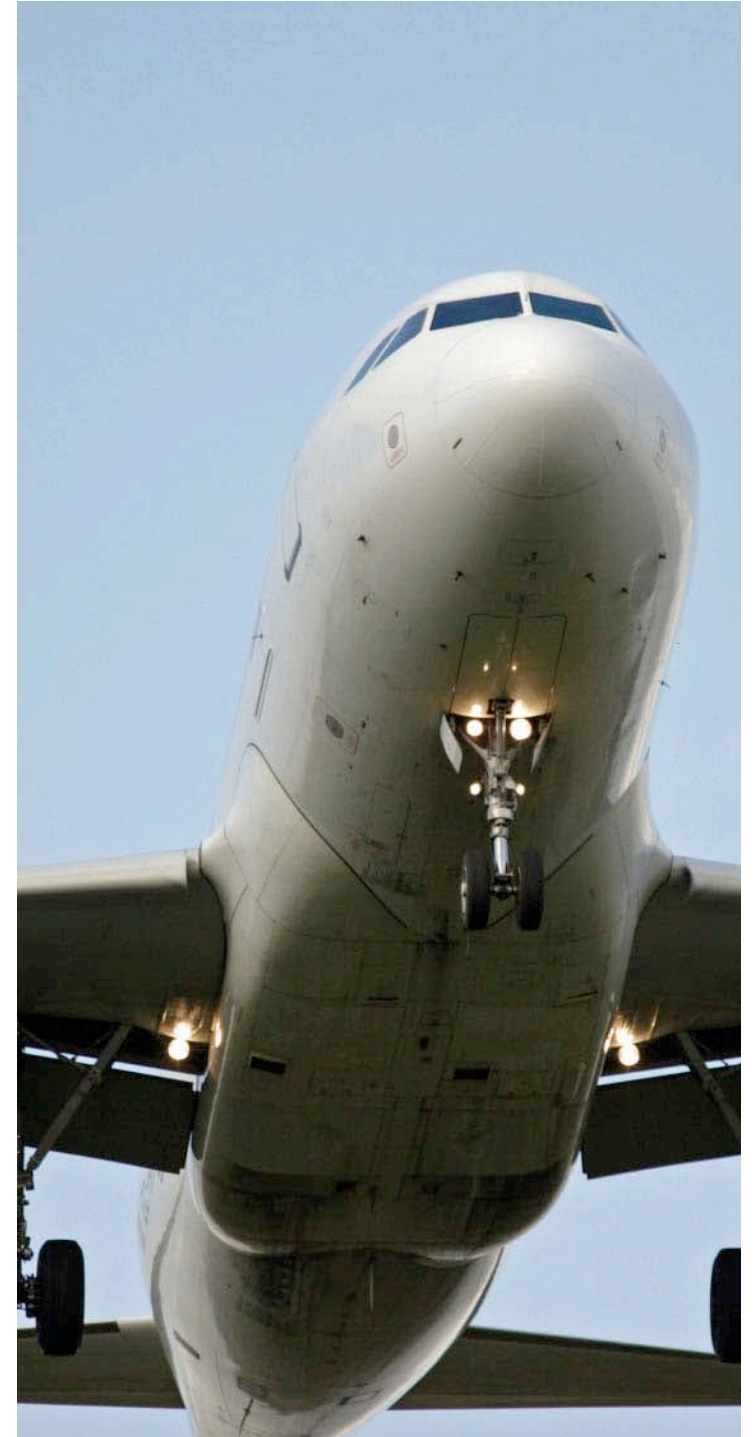
Plug and Play – The Deliverable

FDM concepts for university and fleet operators

January 8, 2007

Workshop Deliverables

- Air Transport “Style” Plug and Play (PnP) Flight Data Monitoring program
 - Tailored for universities
 - Tailored for fleet operators
 - Tailored for owner operators
 - Tailored for general aviation



Comprehensive PnP solutions include:

- FDM program development considerations
- Equipment, software, & facility selection
 - FDM PnP 4R Development Model
- OEM (airframe and engine) “Buy In”, possible incentives
- Aviation insurance industry incentives
- Definitive regulatory guidelines (non-punitive) for general aviation



FDM program development goals and considerations

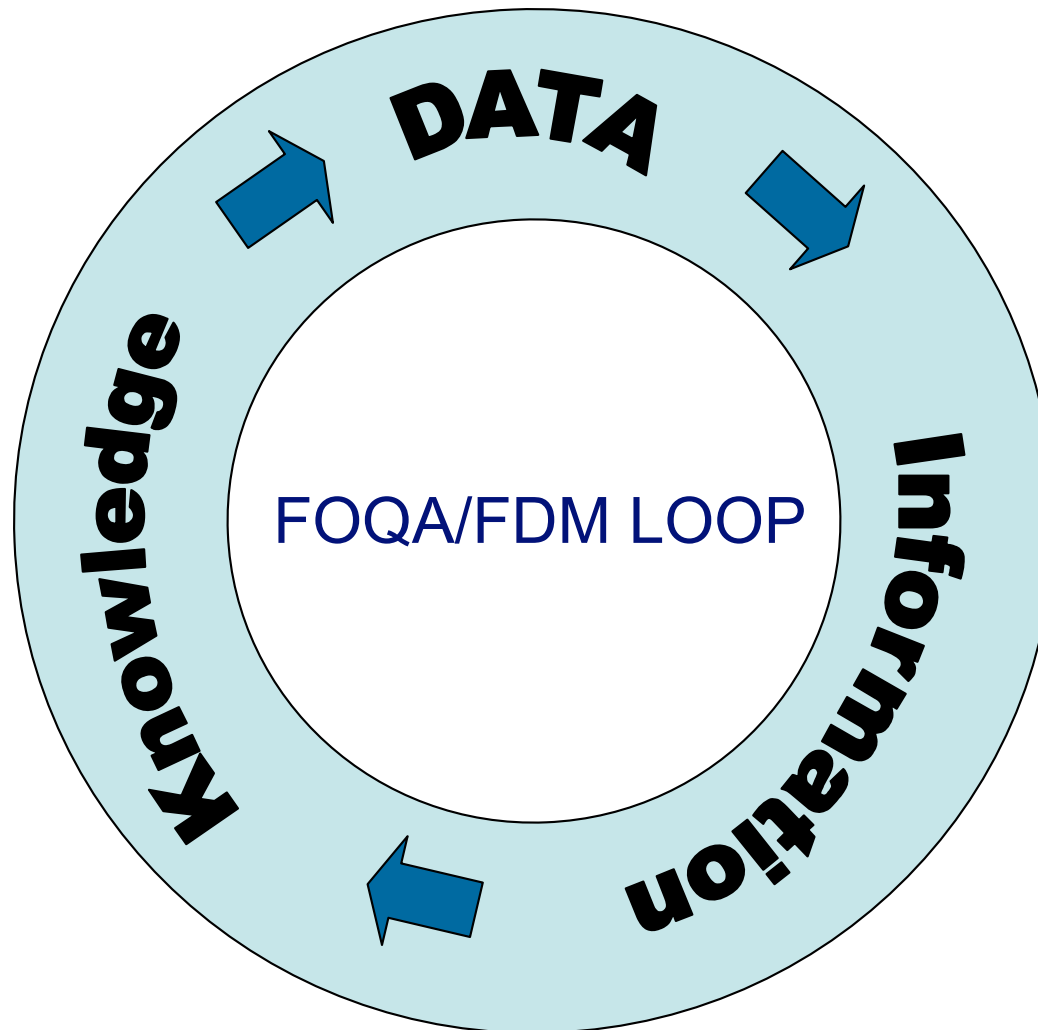


FDM – Data, Information and Knowledge - *A Hierarchy of Values*

- Flight Data Monitoring converts recorded flight data into information.
- Proper analysis converts this information into knowledge.
- Knowledge can then be used to enhance safety or flight operations based on meaningful findings and recommendations.
- Findings and recommendations can be monitored by flight data. (FOQA loop)



Resultant PnP solution converts data into useful information and the end user gains knowledge

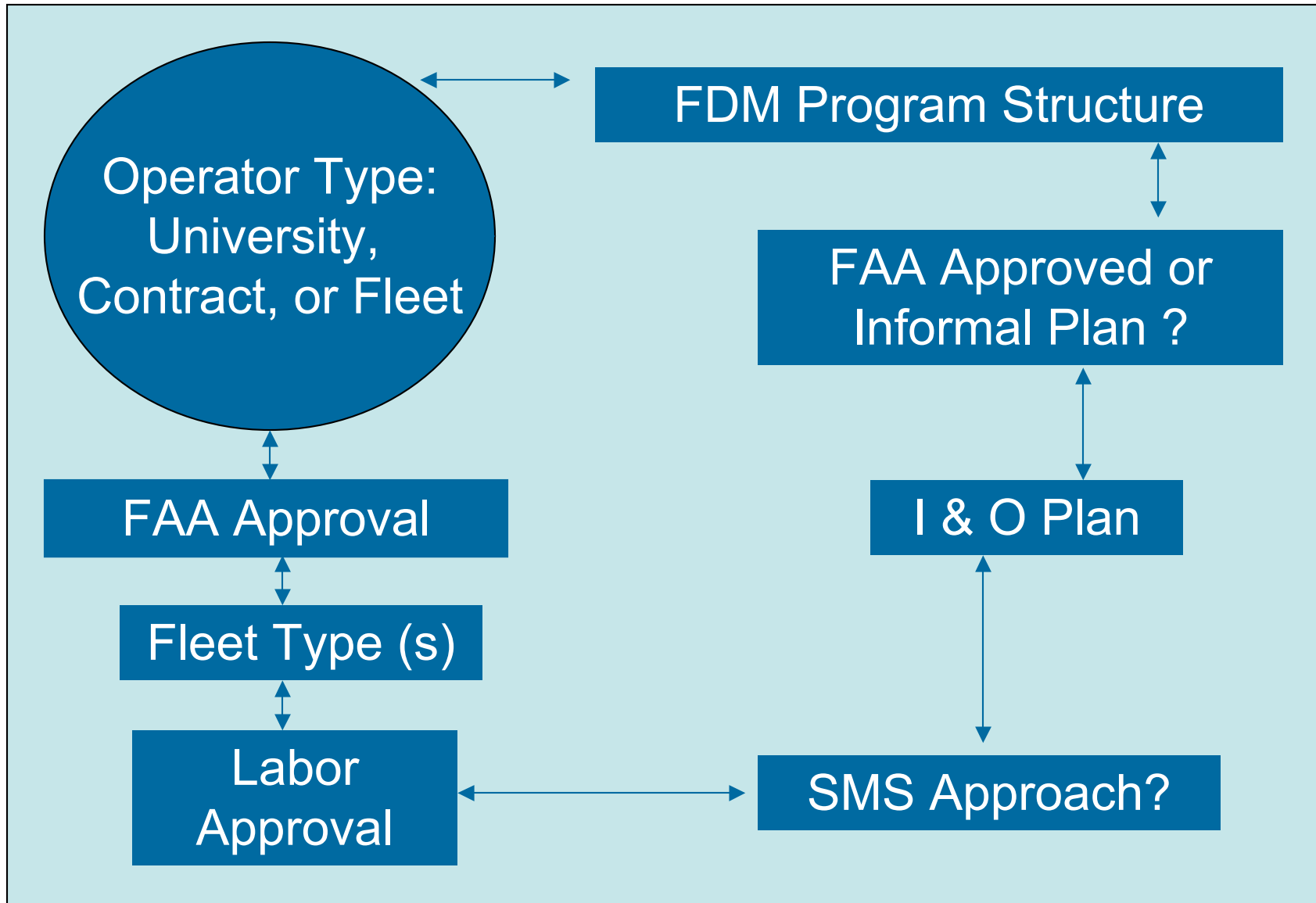


Program development considerations

- Operators – university, contracted, fleet
 - Fleet composition
- Program structure – in house, or 3rd party FDM
- Labor considerations – union or non-union
- FAA Implementation and Operations Plan (guide)
- Program status – FAA approved or informal
- SMS (Safety Management Systems) approach – ASAP, LOSA, FITS, formal auditing programs



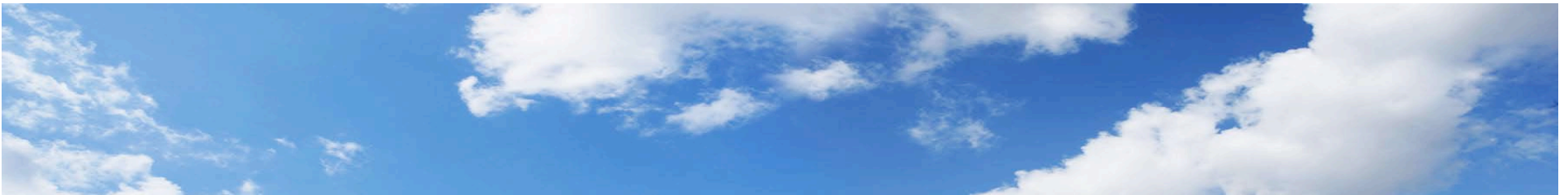
FDM program development requires a collaborative effort



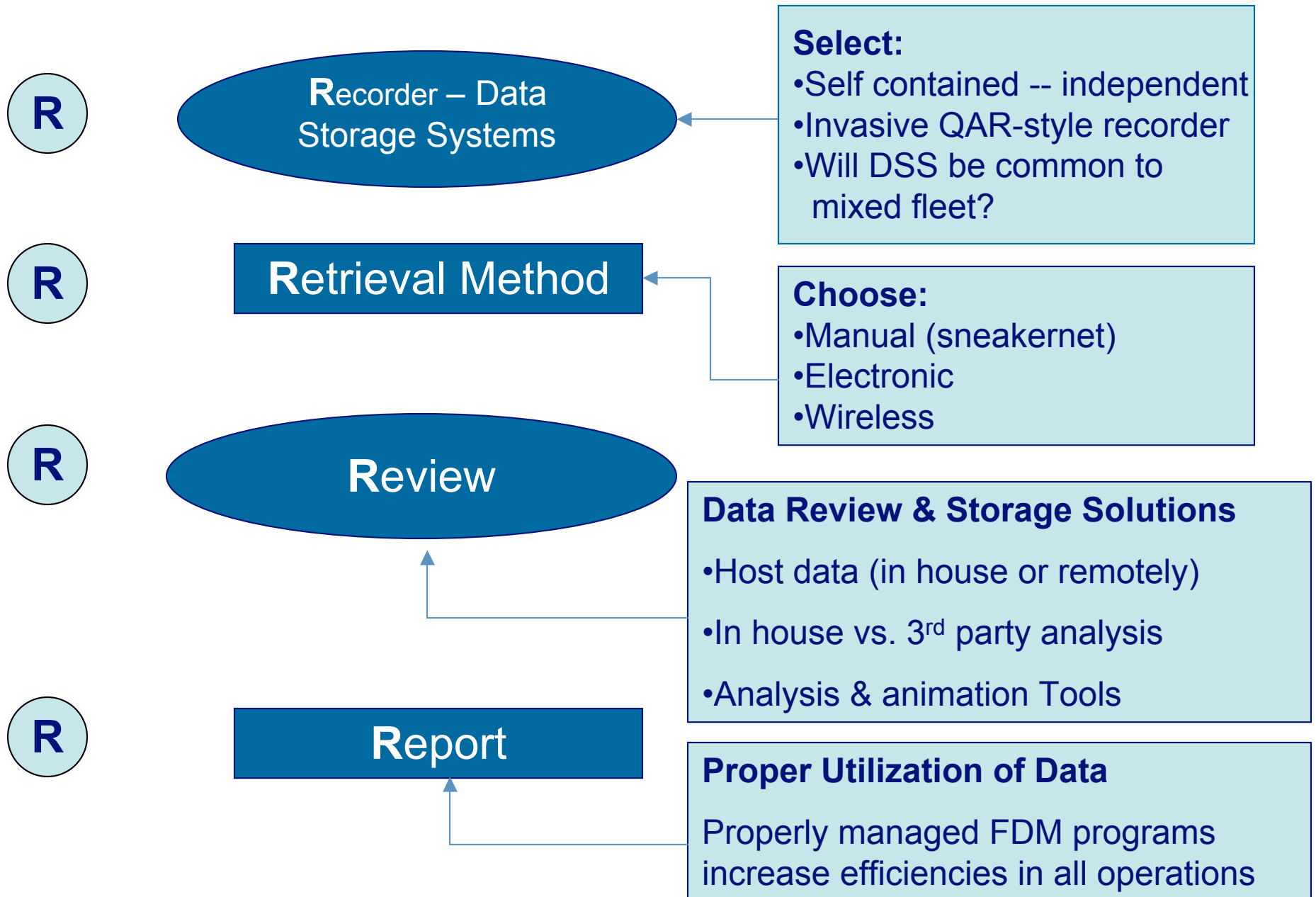
Equipment, software, & facility selection – the 4Rs



- **Record (select hardware)**
 - Data Storage System (DSS)
- **Retrieve (select methods-TAA/Legacy fleets)**
 - Manual, electronic or wireless
- **Review (choose process)**
 - How best to validate, classify and analyze the retrieved data (select your tools)
- **Report (How to use the data?)**
 - After review of data, report meaningful findings and recommendations, group review to determine operational and training impact.



FDM PnP 4R Development Model

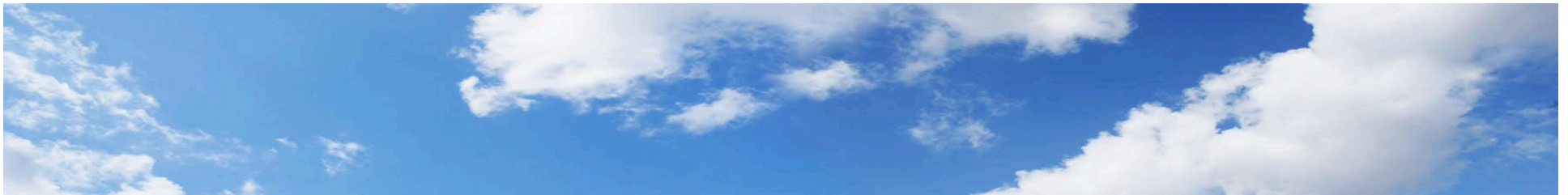


OEM “Buy In”



OEM acceptance – paramount to success

- FDM – standard on fleet aircraft sales
- FDM – standard on fractional fleet sales
- FDM – optional but encouraged on private owner/operations sales
- FDM data ownership – pro's and con's
- Airframe & engine maintenance incentives?



Aviation Insurer acceptance – what will it take, what will we gain?



Continuous oversight with continual audit programs

Validation of training programs

Claim reductions do to increased efficiencies

Use of data for claims discrepancies

Insurance premium incentives for participants?

Corporate (OEM, Engine, Avionics) liability benefits?



Regulatory roles with GA FDM?
What can you expect? What do you want?



Formal FDM (FOQA) program

FAA Implementation and Operations Guidelines

FDM enforcement incentives

SMS (Formal FDM is just one piece of the puzzle)

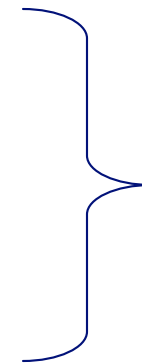
ASAP

LOSA

AQP (FITS)

Formal 3rd party auditing (IS-BAO)

Hybrid GA voluntary safety programs



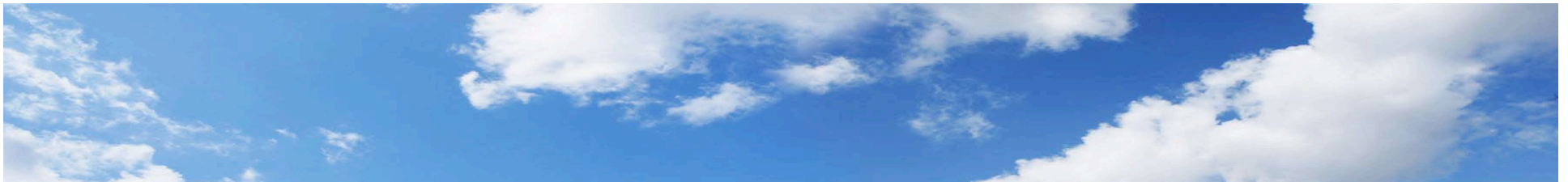
SMS
Components



FDM Workshop Breakout Ground Rules

Academic Fleets

- **Fleets operated, maintained, managed by institutions to provide flight training for baccalaureate and associate degree programs.**
- **Several business models exist, predominantly:**
 1. **Directly owned and managed with Flight Manager reporting into academic organization.**
 2. **Contractor provides the training services.**
- **Academic & training collaboration, fleet upgrades, modification, curriculum, evaluation coordinated with academic organization.**
- **Institution and/or contractor establish student flying costs.**



FDM Workshop Breakout Ground Rules Academic Fleets

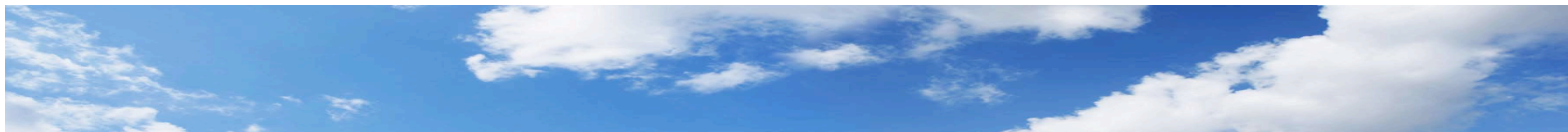
- **Students integrate flight training into their academic activity and graduate with a degree and ratings.**
- **Some institutions have programs accredited by AABI.**
- **Insurance and regulatory oversight managed by the department, contractor, or institution. Liability may be distributed among these entities or reside with one.**
- **The institution and/or contractor integrates training device and airplane training and utilization.**
- **FDM may be used in associated training device(s).**
- **Fleets may be owned or leased or contracted.**



FDM Workshop Breakout Session Ground Rules

Commercial Fleets

- **Two types of fleets:**
 - **Commercial: aviation training, Part 135, shared/fractional ownership businesses.**
 - **Owner operated treated as “virtual” fleet**
- **Training focused on flight skills; no academic degrees.**
- **Fleets and individual airplanes may be owned or leased.**
- **Multiple business operating models exist.**
- **Airplane acquisition, maintenance, upgrading and modification models vary.**



FDM Workshop Breakout Session Ground Rules

Commercial Fleets

- **FDM confers a fleet management, training, and individual cost of ownership benefit.**
- **Liability, airplane financing, airplane maintenance, airplane modification and acquisition authority are organization-specific and should all benefit from FDM.**
- **Manufacturers, operating companies, fractional management, FBOs, etc. could own and use FDM data and information for liability mitigation.**



Questions/Comments
Before the Breakout Sessions?

