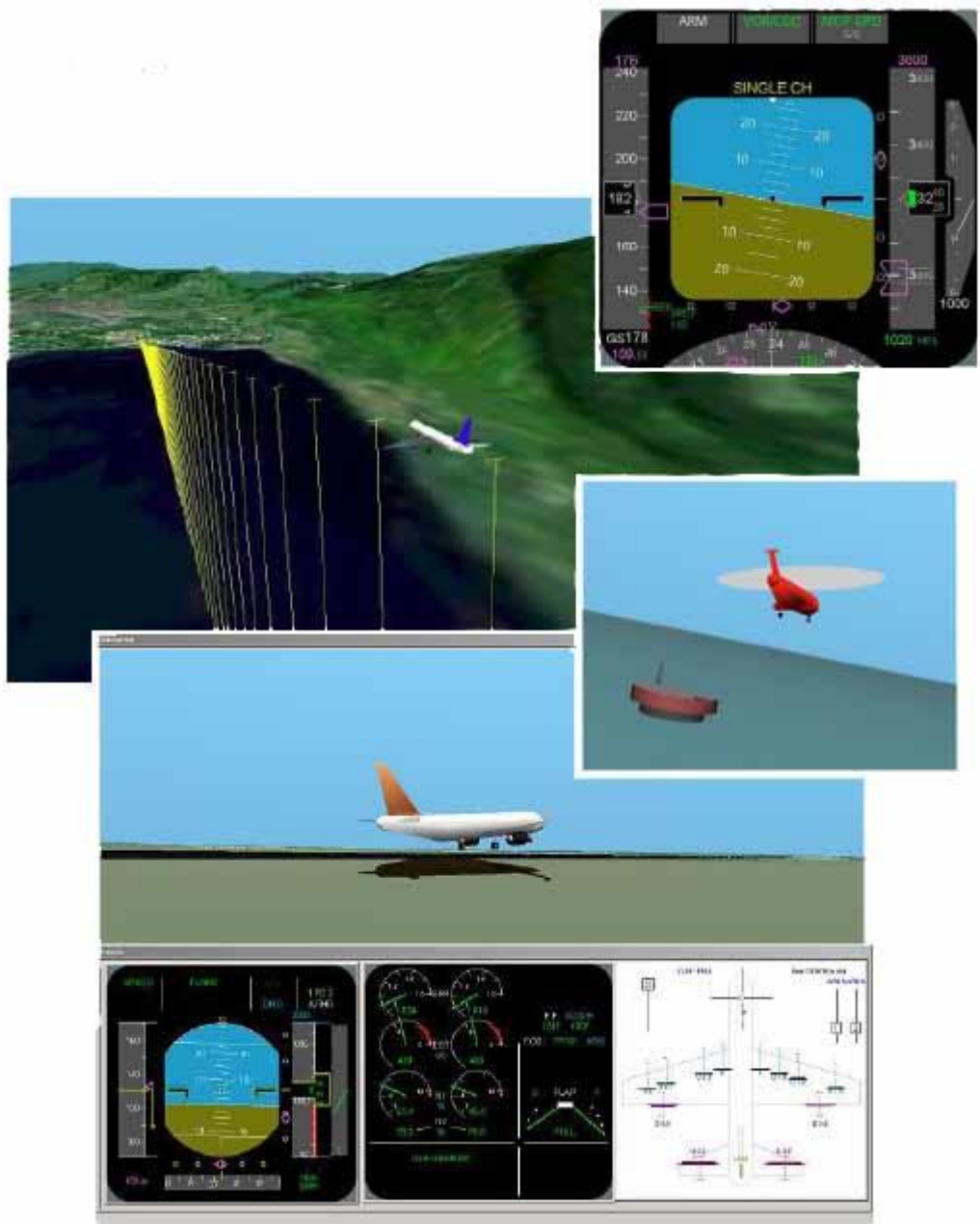


Flight Data Monitoring FDM Flight Operations Quality Assurance FOQA



Introduction

Beginning January 1st 2005, various legislation bodies require the implementation of the Flight Data Monitoring (FDM) combined with the Flight Operation Quality Assurance Process (FOQA) and Safety Management System SMS for commercially operated aeroplanes with a maximum take-off weight of 27'000 kg and more.

Our Services

AviSwiss a Swiss company based in Switzerland specialized in providing airplane operators with an integrated solution to the task of flight data monitoring and .

Select form our services:

- Cost-efficient analyse and evaluation of your flight data performed by AviSwiss
- Frame definition of limitations and exceedences
- Establishing of the "just culture" process for flight operation quality assurance
- E-Manual and IT Reporting with integrated reactive and proactive Hazard identification and Risk assessment

Our support and services are designed to help you establishing the mandatory Flight Data Monitoring together with the Flight Operation Quality Assurance Process FOQA in an easy, efficient and cost-effective manner.

Several smaller Airlines and General Aviation Operators are already taking advantage of our services.

Our experienced staff can provide comprehensive support and on a requirements basis provide the services of the Flight Safety Officer (FSO). This outsourced solution will help you to establish the FOQA internal process required by your Authority on an anonymous and neutral basis.

Cost

For most operators, our service is less than the cost of an in-house system. Why not save the high initial cost for FDM- soft and hardware, time and money to train your personnel or employ analysts as well as the effort for regular data evaluation? In the meantime, you can concentrate on your core business and make money.

Please contact us for a demonstration or a comprehensive business proposal tailored to your exact requirements.

Some of the more important features of the system are listed on the following pages.

Replay & Analysis

Replay is the process by which your flight-data is loaded into the system and analysis is the process whereby events and trends are found in that data.

- supports all QAR's in common use
- supports standard deviation and other more advanced statistical functions
- supports engine-health monitoring


Results and Views

Usually the operator receives an email after data are analysed. In addition, specific events details will be forwarded to the operator as well.

The email notification will be backed-up by a report in excel format as samples show here.

Overview of analysed flights for HB-DEMO

Aircraft	T/O Airport	T/O Rwy	T/D Airport	T/D Rwy	T/O Datetime	T/D Datetime	Duration	Events	Worst Event %
_HB-DEMO	WSSS	02L	VHHH	07L	12 Dec 09 02:59	12 Dec 09 06:17	06:54:36	2	63
_HB-DEMO	VTBD	21R	WSSS	02L	11 Dec 09 02:19	11 Dec 09 04:13	04:23:28	5	63
_HB-DEMO	VHHH	25L	VTBD	21R	10 Dec 09 05:05	10 Dec 09 07:33	07:31:24	1	61
_HB-DEMO	RCTP	05L	VHHH	25R	04 Dec 09 06:14	04 Dec 09 07:37	02:57:36	2	55
_HB-DEMO	VHHH	07R	RCTP	05L	04 Dec 09 02:57	04 Dec 09 04:09	05:30:36	0	0
_HB-DEMO	RCTP	05R	VHHH	07R	02 Dec 09 09:42	02 Dec 09 11:09	02:42:48	3	44
_HB-DEMO	RPLC	02R	RCTP	05R	02 Dec 09 07:34	02 Dec 09 09:03	01:58:36	2	62
_HB-DEMO	RPLC	02R	RPLC	02R	02 Dec 09 06:56	02 Dec 09 07:14	00:49:48	7	58
_HB-DEMO	RCTP	05L	RPLC	02R	02 Dec 09 04:35	02 Dec 09 06:13	02:16:44	5	70
_HB-DEMO	VHHH	07R	RCTP	05R	02 Dec 09 02:53	02 Dec 09 04:00	03:00:24	1	57
_HB-DEMO	RJCC	19R	VHHH	07L	26 Dec 09 04:23	26 Dec 09 09:36	07:33:36	4	53
_HB-DEMO	RJAA	34L	RJCC	19R	26 Dec 09 01:57	26 Dec 09 03:05	03:09:12	1	40
_HB-DEMO	RJCC	19R	RJAA	16L	23 Dec 09 06:12	23 Dec 09 07:19	03:08:32	2	56
_HB-DEMO	VHHH	07R	RJCC	19R	23 Dec 09 01:11	23 Dec 09 05:09	08:17:16	1	55
_HB-DEMO	VMMC		34 VHHH	07L	17 Dec 09 06:59	17 Dec 09 07:21	01:18:04	3	51
_HB-DEMO	VHHH	07R	VMMC	34	17 Dec 09 05:32	17 Dec 09 05:51	04:24:20	1	52

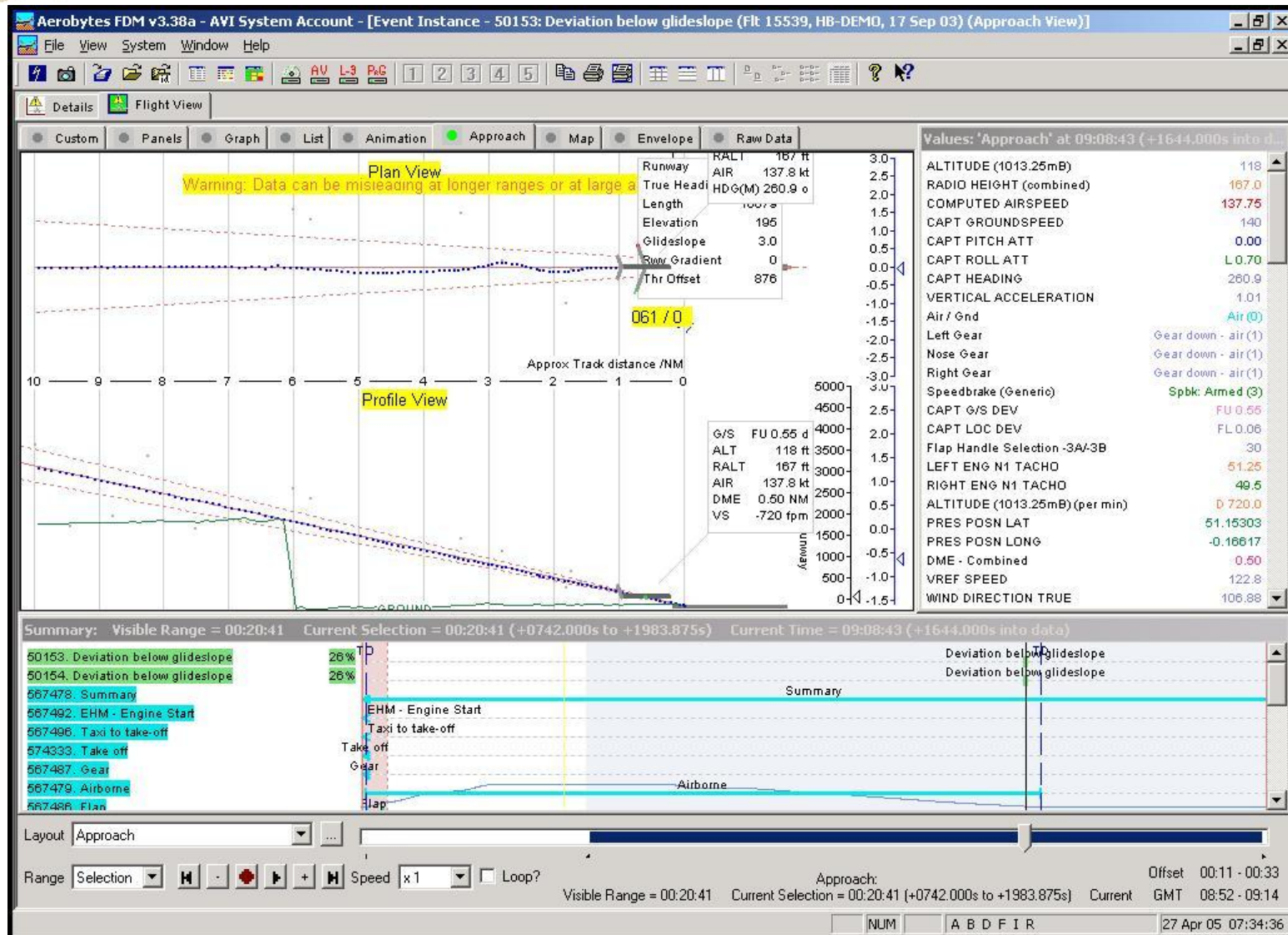


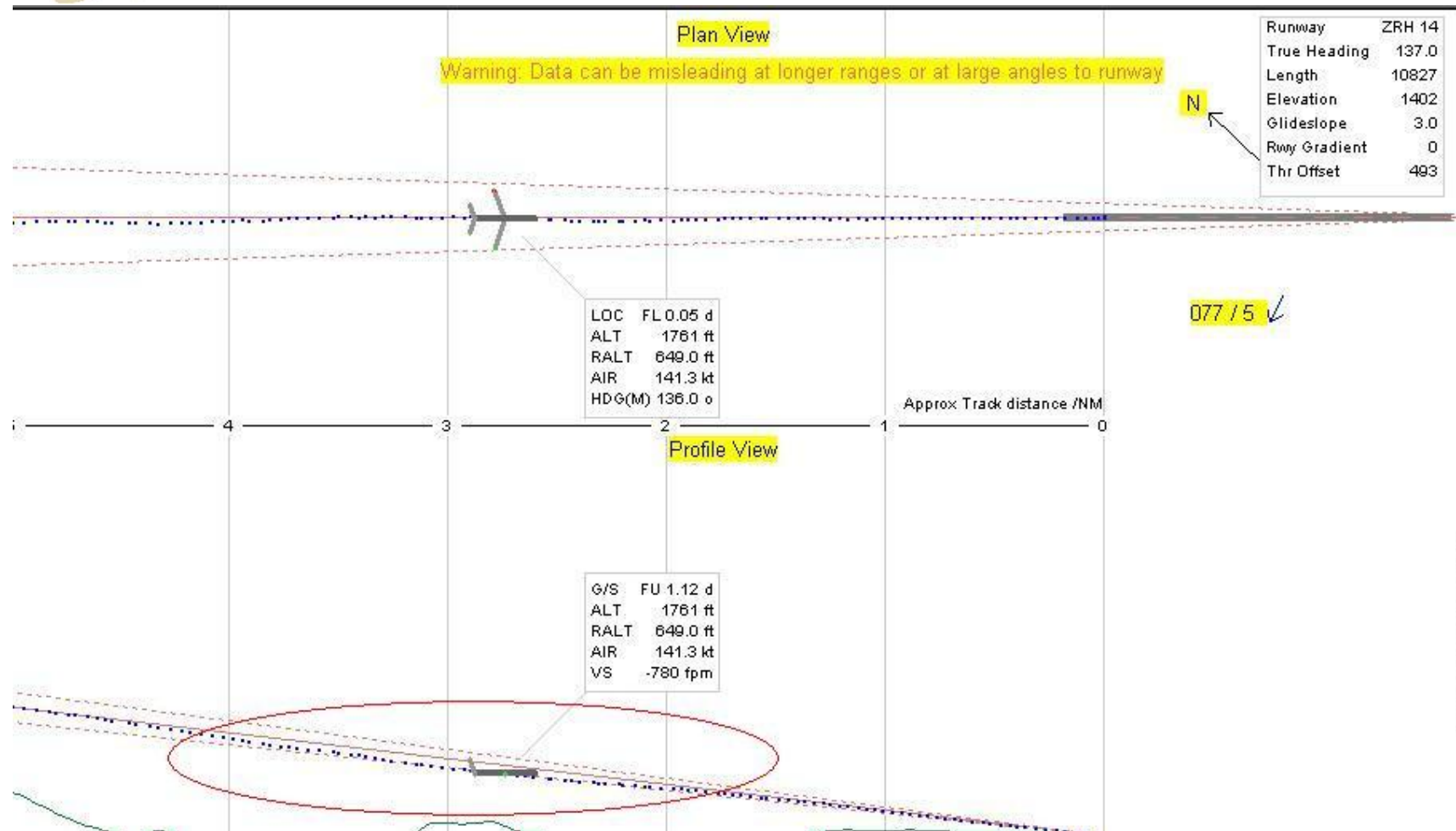
HB-DEMO

Event Name	T/O Airport	T/O Runway	T/D Airport	T/D Runway	T/O Datetime	T/D Datetime	Peak Time	Aircraft	Aircraft Type	Value Name	Value	Units	Severity	% Severity
Early config change after take-off (height)	TSN	34	IKG	07L	31 Mar 10 05:01	31 Mar 10 07:57	31 Mar 10 05:31	_HB-DEMO	Gulfstream 550	Height above rwy - config change	635.4	F	35	Major
Abnorm. Climb Rate	TSN	34	IKG	07L	31 Mar 10 05:01	31 Mar 10 07:57	31 Mar 10 05:31	_HB-DEMO	Gulfstream 550	Vertical Speed - max climb (10 secs)	6912	fpm	34	Major
Loss of config stabilization (Ht A4L)	TSN	34	IKG	07L	31 Mar 10 05:01	31 Mar 10 07:57	31 Mar 10 07:55	_HB-DEMO	Gulfstream 550	Stable Approach - Ht A4L (first stable)	916.5	F	33	Minor
Un-stabilised at Low Altitude (Ht A4L)	TSN	34	IKG	07L	31 Mar 10 05:01	31 Mar 10 07:57	31 Mar 10 07:55	_HB-DEMO	Gulfstream 550	Stable Approach - Ht A4L (last unstable)	925.5	F	30	Minor
Early config change after take-off (height)	IKG	07R	TSN	16	29 Mar 10 02:13	29 Mar 10 04:35	29 Mar 10 02:13	_HB-DEMO	Gulfstream 550	Height above rwy - config change	567.4	F	59	Major
Excessive Fluctuation Landing	IKG	07R	TSN	16	29 Mar 10 02:13	29 Mar 10 04:35	29 Mar 10 04:35	_HB-DEMO	Gulfstream 550	Elevation - (steep)	23.63	m	43	Minor
RFWS	IKG	07R	TSN	16	12 Feb 10 07:36	12 Feb 10 07:42	12 Feb 10 07:42	_HB-DEMO	Gulfstream 550	Rad Alt - hgt (30-100 Active)	50.1	ft	39	Critical
Excessive bank	IKG	07R	TSN	16	12 Feb 10 07:36	12 Feb 10 07:42	12 Feb 10 07:35	_HB-DEMO	Gulfstream 550	Roll - max	40.5	g	25	Critical

The following pages show some details of analysed flights.

Various results may be reviewed and exported into different formats (excel, Google Earth) for further handling of flight data (statistics, graphs, animation and more)





Aerobytes FDM v3.38a - AVI System Account - [Event Instance - 50153: Deviation below glideslope (Flt 15539, HB-DEMO, 17 Sep 03) (Animation View)]

File View System Window Help

AV L3 P.G 1 2 3 4 5

Details Flight View

Custom Panels Graph List Animation Approach Map Envelope Raw Data

Values: 'Approach' at 09:08:43 (+1644.000s into d...)

ALTITUDE (1013.25mB)	118
RADIO HEIGHT (combined)	-167.0
COMPUTED AIRSPEED	137.75
CAPT GROUNDSPEED	140
CAPT PITCH ATT	0.00
CAPT ROLL ATT	L 0.70
CAPT HEADING	260.9
VERTICAL ACCELERATION	1.01
Air / Gnd	Air (0)
Left Gear	Gear down - air (1)
Nose Gear	Gear down - air (1)
Right Gear	Gear down - air (1)
Speedbrake (Generic)	Spbk: Armed (3)
CAPT G/S DEV	FU 0.55
CAPT LOC DEV	FL 0.06
Flap Handle Selection -3A:3B	30
LEFT ENG N1 TACHO	51.25
RIGHT ENG N1 TACHO	49.5
ALTITUDE (1013.25mB) (per min)	D 720.0
PRES POSN LAT	51.15303
PRES POSN LONG	-0.16617
DME - Combined	0.50
VREF SPEED	122.8
WIND DIRECTION TRUE	106.88

Summary: Visible Range = 00:20:41 Current Selection = 00:20:41 (+0742.000s to +1983.875s) Current Time = 09:08:43 (+1644.000s into data)

50153. Deviation below glideslope 26%
 50154. Deviation below glideslope 26%
 567478. Summary
 567492. EHM - Engine Start
 567496. Taxi to take-off
 574333. Take off
 567487. Gear
 567479. Airborne
 567486. Flap

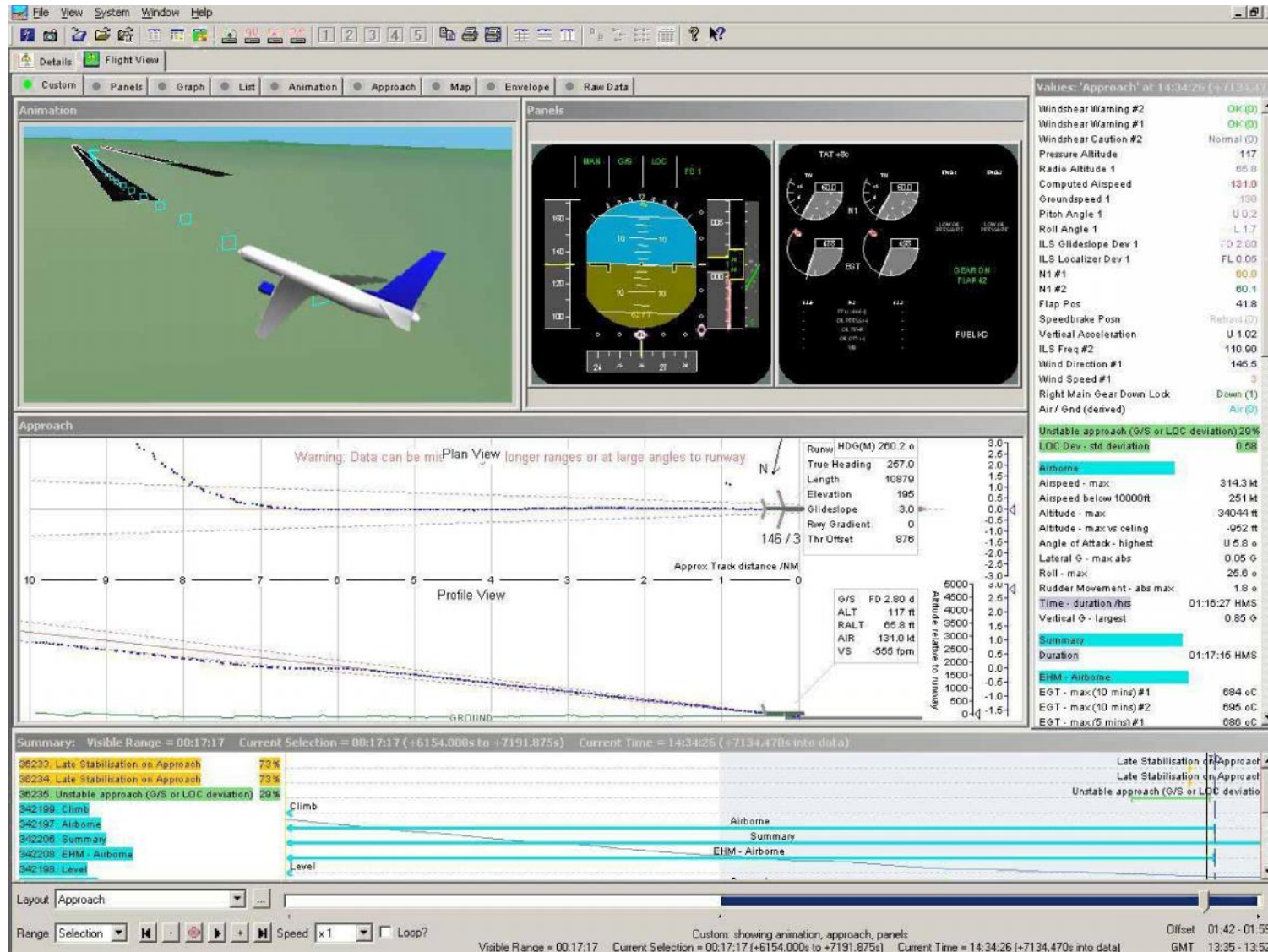
Summary
 EHM - Engine Start
 Taxi to take-off
 Take off
 Gear
 Airborne
 Flap

Layout: Approach

Range: Selection [Play] [Stop] [Pause] [Fast Forward] [Fast Reverse] Speed x1 [Loop?]

Animation: H = 'Localiser / Ht AAL', V = 'Cor Pressure Alt'
 Visible Range = 00:20:41 Current Selection = 00:20:41 (+0742.000s to +1983.875s) Current GMT 08:52 - 09:14 Offset 00:11 - 00:33

NUM A B D F I R 27 Apr 05 07:33:51



Risk Matrix for <all fleets>											
Fleet		<all fleets>		Intervals		60 days		Close			
F	0	418	943	Air	Ground	Landing & Approach	Take Off & Climb				
E	0	156	342								
%	0.0	37.3	36.3								
Acceleration	Air / Acceleration	4 1.0	20 2.1	Ground / Acceleration	17 4.1	23 2.4	Landing & Approach / Acceleration	6 1.4	4 0.4		
Attitude	Air / Attitude	2 0.5	2 0.2			Landing & Approach / Attitude	17 4.1	32 3.4	Take Off & Climb / Attitude	9 2.2	18 1.9
Configuration	Air / Configuration					Landing & Approach / Configuration	9 2.2	8 0.8	Take Off & Climb / Configuration		
Flight Path	Air / Flight Path					Landing & Approach / Flight Path	59 14.1	137 14.5	Take Off & Climb / Flight Path	3 0.7	5 0.5
Power	Air / Power			Ground / Power	1 0.1	Landing & Approach / Power		Take Off & Climb / Power			
Speed	Air / Speed			Ground / Speed	Landing & Approach / Speed		17 4.1	76 8.1	Take Off & Climb / Speed	2 0.5	5 0.5
Warnings	Air / Warnings	11 2.6	10 1.1			Landing & Approach / Warnings	1 0.1	Take Off & Climb / Warnings			

Aerobytes FDM v3.38a - AVI System Account - [Event Instance - 50153: Deviation below glideslope (Flt 15539, HB-DEMO, 17 Sep 03) (Panels View)]

File View System Window Help

Details Flight View

Custom Panels Graph List Animation Approach Map Envelope Raw Data

Values: 'Approach' at 09:08:43 (+1644.000s into d...)

ALTITUDE (1013.25mB)	118
RADIO HEIGHT (combined)	167.0
COMPUTED AIRSPEED	137.75
CAPT GROUNDSPEED	140
CAPT PITCH ATT	0.00
CAPT ROLL ATT	L 0.70
CAPT HEADING	260.9
VERTICAL ACCELERATION	1.01
Air / Gnd	Air (0)
Left Gear	Gear down - air (1)
Nose Gear	Gear down - air (1)
Right Gear	Gear down - air (1)
Speedbrake (Generic)	Spbk: Armed (3)
CAPT G/S DEV	FU 0.56
CAPT LOC DEV	FL 0.06
Flap Handle Selection -3A/3B	30
LEFT ENG N1 TACHO	51.25
RIGHT ENG N1 TACHO	49.5
ALTITUDE (1013.25mB) (per min)	D 720.0
PRES POSN LAT	51.15303
PRES POSN LONG	-0.16617
DME - Combined	0.50
VREF SPEED	122.8
WIND DIRECTION TRUE	106.88

Summary: Visible Range = 00:20:41 Current Selection = 00:20:41 (+0742.000s to +1983.875s) Current Time = 09:08:43 (+1644.000s into data)

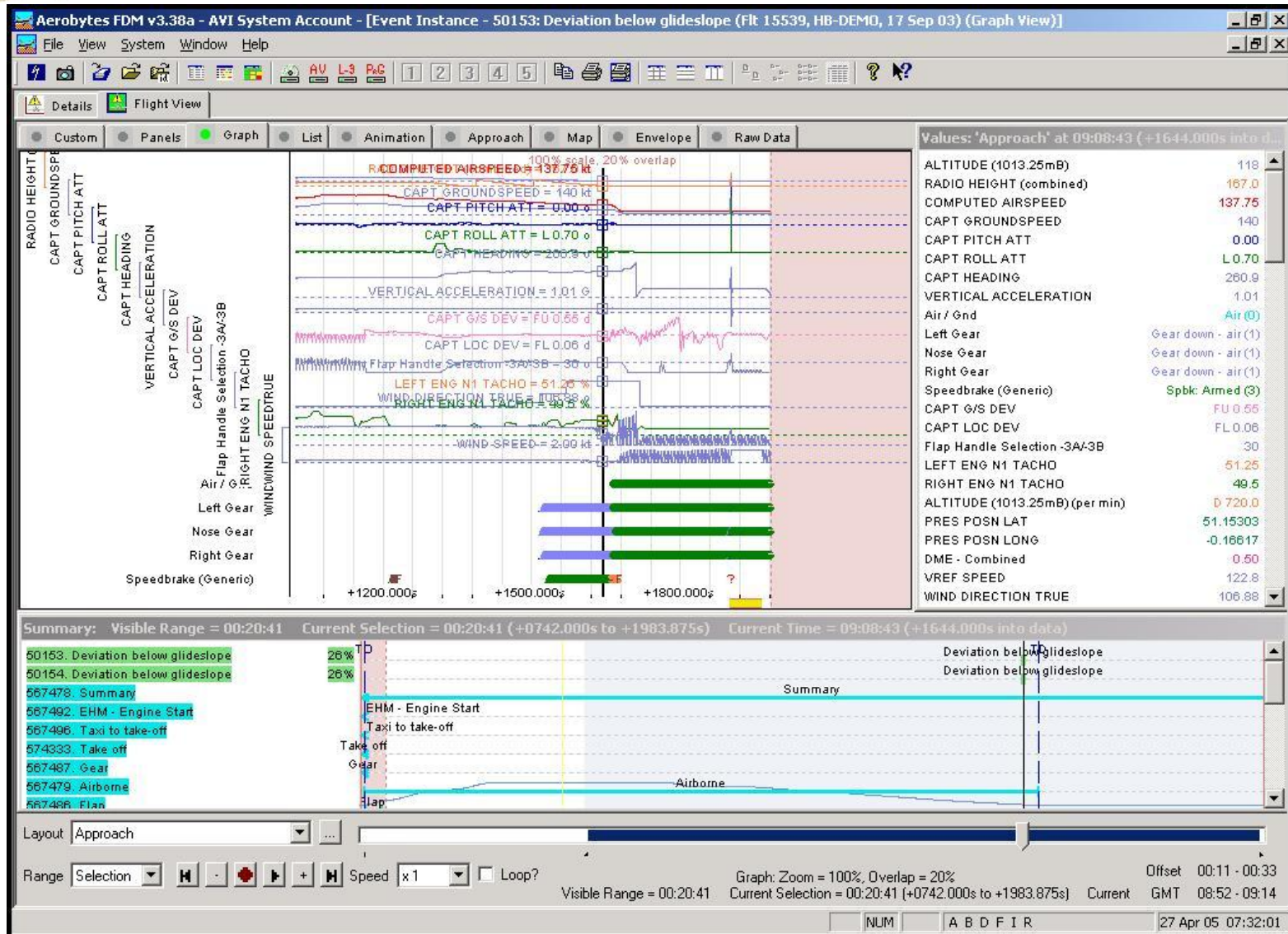
- 50153. Deviation below glideslope 26%
- 50154. Deviation below glideslope 26%
- 567478. Summary
- 567492. EHM - Engine Start
- 567496. Taxi to take-off
- 574333. Take off
- 567487. Gear
- 567479. Airborne
- 567486. Flap

Layout: Approach

Range: Selection [Navigation icons] Speed: x1 [Loop?] Panels: extrapolated values (ILS forced visible) Offset: 00:11 - 00:33

Visible Range = 00:20:41 Current Selection = 00:20:41 (+0742.000s to +1983.875s) Current GMT: 08:52 - 09:14

NUM A B D F I R 27 Apr 05 07:32:46



Flight view exported in Google Earth

Flights or safety relevant parts may be extracted and shown in Google Earth®.
A sample of an approach is shown here.



For details or an online demonstration please contact us.