Presented by

Honeywell RDR-4000 Data (Cayenne 2015)

HAIC-HIWC Science Team Meeting

High Altitude Ice Crystals
Introduction

Boeing 757-225 registered N757HW	
Certificate of airworthiness "Experimental"	
Ceiling	FL 450
Cruise speed	360-500 kts (TAS) @ ~ FL350
Endurance	8.5 hours in flight
MTOW	115.7t
Payload	4500kg
Available electrical load	400Hz and 60Hz AC, 28v DC
Wingspan	38.05 m (124' 10")
Length	47.32 m (155' 3")
Height	13.56 m (44' 6")
Engines	Rolls-Royce RB211-535E4-37/10
Noise	Level 3
Other features	Engine testing pylon
	Honeywell IntuVue® RDR-4000 WXR
	RVSM
	ADS-B Out
	L Band SATCOM (Voice and Data)
	VHF, HF voice radio
	SmartLanding / SmartRunway
	Digital Data Recording
	16 seats (excluding pilots)

- RDR-4000 radar with Certified Port Recorder installed on Boeing 757
- Certified Port Recorder records raw – unprocessed data

High Altitude Ice Crystals
Data availability

- Radar dataset
  - Radar reflectivity data are stored in binary format
  - The buffers, one every 30-40s, are extracted at user selected range and inter/extrapolated into a grid of 400×600×60 points
  - There are 60 layers, covering 60 000 feet of flight altitudes MSL. 400 samples correspond to user selected range (in our case always 160 nm)
- A/C dataset
  - Flight information from air data computers is provided in .csv
- Matlab routines included to ease retrieval of the data
- Documentation available
- Dataset, utilities and documentation under upload on the CNRS/LaMP database

High Altitude Ice Crystals (HAIC, 314314)

Project co-funded by the European Commission within the Seventh Framework Programme (2012-2016)