

Prepared by

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HAIC/HIWC science team meeting

HAIC Forum

HAIC – High Altitude Ice Crystals

Objectives

- Objectives
 - ▶ **Disseminate HAIC results** and achievements
 - ▶ Discuss ideas and **future collaborations** towards safe aircraft operation into glaciated and mixed phase icing conditions through workshops and exchange feedback
 - ▶ Exhibit hardware, prototypes used in HAIC
- Venue
 - ▶ Semi-Public event on **Thursday 29th – Friday 30th September** (2 full days) at **Toulouse, France**

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Agenda

HAIC Forum Agenda - Day 1

08h30 – 09h00	Registration & Welcome	
09h00 – 09h15	Plenary Session HAIC Introduction & Agenda	
09h15 – 09h30	Plenary Session European Commission Introduction	
09h30 – 09h45	Plenary Session Airbus top management	
09h45 – 10h15	Workshop Organisation & Logistics	
10h15 – 10h30	<i>Coffee break</i>	
10h30 – 12h30	Workshop session 1 <i>Spaceborne Detection and Nowcasting & Cloud modeling 1/2</i> Chair: CNRS, NCAR	Workshop session 6 <i>Ice Crystals Detection System</i> Chair: AI-F, DASSAV, ZA, UTAS, SEA, NRC
12h30 – 14h00	<i>Lunch</i>	
14h00 – 16h00	Workshop session 2 <i>Spaceborne Detection and Nowcasting & Cloud modeling 2/2</i> Chair: CNRS, NCAR	Workshop session 7 <i>Instrumentation & Test facilities calibration 1/2</i> Chair: CIRA
16h00 – 16h30	<i>Coffee Break</i>	
16h30 – 18h30	Workshop session 3 <i>Weather Radar Ice Crystals function</i> Chair: AI-F, HWL, NASA	Workshop session 8 <i>Instrumentation & Test facilities calibration 2/2</i> Chair: DGA EP, NASA, NRC

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Agenda

HAIC Forum Agenda - Day 2

08h00 – 08h30

Registration & Welcome

08h30 – 10h30

Workshop session 4
Flight Tests, microphysical properties & Assessment of the CS-25 Appendix P
Chair: CNRS, EC, NASA, FAA, EASA

Workshop session 9
Tools & Simulation 1/2
Chair: ONERA, NASA

10h30 – 11h00

Coffee Break

11h00 – 13h00

Workshop session 5
Flight Tests, microphysical properties & Assessment of the CS-25 Appendix P
Chair: CNRS, EC, NASA, FAA, EASA

Workshop session 10
Tools & Simulation 2/2
Chair: ONERA, NASA

13h00 – 14h30

Lunch

14h30 – 16h30

Plenary Session – Workshop Session Debriefing

16h30 – 17h00

Coffee Break

17h00 – 18h00

Plenary Session – Workshop Conclusion (EASA/FAA)

High Altitude Ice Crystals (HAIC, 314314)

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EUROPEAN COMMISSION
European Research Area

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Forum Workshops

WS n°	Title/topic	Chairman/ Moderator	Contributions & Agenda
1	Spaceborne Detection and Nowcasting & Cloud modeling 1/2	CNRS, NCAR	Objective: status Potential Presentations: <ul style="list-style-type: none"> - CNRS: LEO satellites - KNMI: HighIWC mask - MET-FR: RDT - NCAR, NASA: ALPHA + ?
2	Spaceborne Detection and Nowcasting & Cloud modeling 2/2	CNRS, NCAR	Objectives: Way forward Potential Presentations: <ul style="list-style-type: none"> - CNRS, NCAR: status on the cooperation HAIC/HIWC - CNRS: SONIC proposal
3	Weather Radar Ice Crystals function	AI-F	Objective: status HAIC, HIWC, EUROCAE WG95 & Way forward Potential Presentations: <ul style="list-style-type: none"> - HWL, AI-F: status HAIC - NASA: status HIWC - AI-F: EUROCAE WG95
4	Flight Tests, microphysical properties & Assessment of the CS-25 Appendix P	AI-F, NASA, NRC	Objectives: status on F/T performed as part of HAIC/HIWC & status on the dataset Potential Presentations: AI-F: Airbus field campaigns 2010/2012 & HAIC A340 MSN1 field campaign 2016 AI-F, NASA: HAIC/HIWC field campaigns NRC, EC: CV-580 and Cayenne 2015 campaign NASA: DC-8 field campaign in August 2015 out of Florida, USA

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Forum Workshops

WS n°	Title/topic	Chairman/ Moderator	Contributions & Agenda
5	Flight Tests, microphysical properties & Assessment of the CS-25 Appendix P	EASA, FAA	Objectives: status on the assessment of the Appendix D/P Potential presentation - Met Analytics, EC: TWC - CNRS , EC: PSD
6	Ice Crystals Detection System	DASSAV, AI-F	Objectives: achievements & way forward Potential Presentations: - DLR: status ODIPP - ZA: status AIIS - NRC: status PDP - SEA: status ICD - UTAS: status eOID
7	Instrumentation & Test facilities calibration 1/2	DGA EP	Objectives: status - DGA, CU, CIRA: HAIC Calibration methodology & instrumentation - Calibration at DGA, GKN, ESTERLINE and TUBS - Status NRC - Status NASA PSL
8	Instrumentation & Test facilities calibration 2/2	DGA EP, CIRA (instrumentation)	Objectives : way forward - CIRA: instrumentation intercomparison - Standardization - Further improvement / upscaling & Test facility intercomparison

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Forum Workshops

WS n°	Title/topic	Chairman/ Moderator	Contributions & Agenda
9	Tools & Simulation 1/2	ONERA, NASA	Objectives: status <ul style="list-style-type: none"> - HAIC Physical phenomena & modeling - HAIC validation: TRL4 benchmark, new experimental databases, integration into industrial environment & international benchmark - NASA: new tests & experimental databases, tools & simulation - NRC: new tests & experimental databases
10	Tools & Simulation 2/2	ONERA, NASA	Objectives: Way forward <ul style="list-style-type: none"> - ONERA: remaining limitations, maturity achieved & work plan (H2020 FSS2) - NASA, NRC: work plan

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Demo

SP n°	Type	Leader	Comments
7	HAIC project / Poster	F.Dezitter, AI-F	

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Demo

SP n°	Type	Leader	Comments
1	SP1 Instrumentation / Poster	C.Voigt, DLR	
1	Instrumentation / HSI & Poster	B.Esposito, CIRA	
1	Instrumentation / NASA IKP & Poster	NASA	
1	Instrumentation / CU IKP & Poster	CU	
1	Instrumentation / 2D-S, CDP, FCDP, PIP, CPSPD ?, Nephelometer & Poster	A.Schwarzenboeck, CNRS ; M.Weber, AI-F	
1	Instrumentation / New NRC IKP	NRC	

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Demo

SP n°	Type	Leader	Comments
2	SP2 F/T / Poster	A.Calmels, AI-F	
2	PLANET / Poster & video	J.M.Gaubert, ATM	
2	HAIC/HIWC field campaigns – F20 / Poster, mock-up and video	AI-F, NASA	
2	HAIC/HIWC field campaigns – CV / Poster	NRC, EC	
2	HAIC/HIWC field campaigns – B757 / Poster, mock-up and video	HWL	
2	NASA HIWC field campaign – DC8 / Poster, mock-up and video	NASA	
2	HAIC A340 field campaign / Poster, mock-up and video	AI-F	

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Demo

SP n°	Type	Leader	Comments
3	SP3 Spaceborne detection and nowcasting / Poster	E.Defer, CNRS	
3	LEO satellites / Poster	CNRS	
3	HighIWC mask / Poster & video	KNMI	
3	RDT / Poster & video	A.Gounou, MET-FR	

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Demo

SP n°	Type	Leader	Comments
4	SP4 Detection & Awareness technologies / Poster	P.Berard, G.Zalamansky, DASSAV	
4	Detection technology / AIIS Prototype & Poster	M.Thorez, ZA	
4	Detection technology / PDP Prototype & Poster	D.Fuleki, NRC	
4	Detection technology / ICD Prototype & Poster	L.Lilie, SEA	
4	Detection technology / ODIPP Prototype & Poster	DLR	
4	Detection technology / eOID Prototype & Poster	UTAS	
4	Awareness technology / WXR cabin tool & Poster	J.Lukas, J.Stecha, HWL	

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SP n°	Type	Leader	Comments
5	SP5 Icing Test Facilities / Poster	F.Hervy, DGA	
5	TUBS facility / Poster, video?	S.Bansmer, TUBS	
5	GKN facility / Poster, video?	I.Stott, GKN	
5	ESTERLINE facility / Poster, video?	I.Vallet, ESTERLINE	
5	DGA EP facility / Poster, video?	F.Hervy, DGA	
5	NASA facility	NASA	?
5	NRC facility	NRC	?
5	UTAS facility	UTAS	?

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Demo

SP n°	Type	Leader	Comments
6	SP6 Tools & Simulation / Poster	P.Villedieu, ONERA	
6	TUBS NACA0012 model / Poster & video	S.Bansmer, TUBS	
6	THAV probe / Poster & video	THAV	