European and North Atlantic Office

SUMMARY OF DISCUSSIONS

Workshop on Implementation of the New Global Reporting Format (GRF) for Runway Surface Conditions - ICAO EUR Region

(Helsinki, Finland, 28-29 January 2020)

1. Introduction

1.1. The Workshop on Implementation of the New Global Reporting Format (GRF) for Runway Surface Conditions in the ICAO EUR Region was held at the Finnish Aviation Museum in Helsinki, Finland from 28 to 29 January 2020.

1.2. The list of participants is provided at **Appendix A**. A total of 110 experts from 17 States, 5 International Organizations (EASA, EUFALDA, EUROCAE, ICAO and IFALPA), 5 Airlines and 6 Industries participated in the workshop. The workshop agenda is provided at **Appendix B**.

1.3. The Secretariat of the workshop was Mr. Christopher Keohan of the ICAO EUR/NAT Regional Office.

1.4. Documentation and presentations of this workshop can be found at https://www.icao.int/EURNAT/Pages/Other-Meetings.aspx (GRF Workshop (Helsinki)). In addition, a GRF website containing all regional workshops and other relevant information can be found at https://www.icao.int/safety/Pages/GRF.aspx.

2. Overview of GRF

2.1. The subject was addressed in **PPT01**, *ICAO Global Reporting System and Format – Creation*, presented by Armann Norheim (CAA Norway and Rapporteur of the ICAO Friction Task Force (FTF)) and in **PPT02**, *ICAO Global Reporting Format – Introducing Reporting of Runway Condition Relevant for Aircraft Performance*, presented by Lars Kornstaedt (Airbus).

2.2. Regarding PPT01, it began emphasizing that the ICAO global reporting system and format:

- is developed based upon the operational need for the safe operation of the aircraft;
- improves safety through performance-relevant reporting of runway conditions;
- is a global language; and
- is a tool for making decisions.

2.3. The background leading up to ICAO in 2005 identifying the need to standardise information to pilots resulting in establishing the ICAO Friction Task Force (FTF) in 2008 and the parallel process leading up to the FAA Take-off and Landing Performance Assessment (TALPA) initiative from where the methodology of performance-relevant reporting were adopted. Furthermore, the importance of the eye is the most important tool in gathering data.

2.4. The delivery from FTF in its phase 1 (2008-2011) include the following: the conceptual document Circular 329 – *Assessment, Measurement and Reporting of Runway Surface Conditions* as well as the major change of no longer reporting the friction coefficient and removal of friction table and its relationship to the estimated surface friction in the ICAO SNOWTAM format (effective since November 2013). Furthermore, this presentation described how this was supported by the recent FAA SAFO 19001 (11 March 2019) – *Landing Performance Assessment at Time of Arrival* from which it was quoted: Friction measurement equipment values are no longer used to determine and report surface conditions because joint industry and multi-national government tests have not established a reliable correlation between runway friction values and the relationship to airplane braking performance.

2.5. It was noted ADOP was tasked to address the ICAO Air Navigation Commission Job Card AP001 and the problem statement: *Runway surface conditions have contributed to many safety events and investigations have revealed shortfalls in the accuracy and timeliness of assessment and reporting methods currently provided in ICAO provisions and guidance material*. And further detailed: *Pilots of modern aircraft also need reports that are directly related to the performance of the aircraft.* This task was assigned to the Runway Friction Task Force (FTF) of ADOP in its phase 2 commencing in 2011.

2.6. The ICAO Annexes affected and the new documentation by the ICAO FTF and the ICAO AIS-AIM Study Group creating one global language and the affected key players in the aviation industry was shown through a defined concept and standardised Runway Condition Report (RCR) information to pilots in an aerodrome performance calculation section and a situational awareness section.

2.7. Challenges related to implementation, training and technical issues/programming and willingness to change as well as the future document hierarchy in Europe was presented. Identifying the operational interface between EASA and State regulation based upon ICAO Standards, Recommendations (SARPs), procedures (PANS) and guidance material. Furthermore, the role of the service providers ATMS/ATS and AIM/AIS were provided to assure that the integrity of the Runway Condition Report are maintained when the Runway Condition Report reach the end user (Aeroplane operator/flight crew). The information is there to meet an operational need.

2.8. The simplicity of the global reporting format was exemplified by addressing the wet runway scenario. It was shown there were only four conditions that needed to be managed as follows: DRY, WET, WET (Slippery wet) and STANDING WATER (greater than 3 mm depth). Information gathered from maintenance activities communicated through NOTAMs notifies the users about runway deficiencies. The depth of water (3 mm depth) and runway deficiencies reported through NOTAM influence the reporting through ATM/ATS only or both ATM/ATS and AIM/AIS.

2.9. The key improvement by introducing the methodology of using the Runway Condition Assessment Matrix with associated written procedures originating from the information contained in the Runway Condition Report (RCR) as well as the use of this information for the intended operation (landing or take-off) was outlined.

2.10. The information in the Runway Condition Report and the operational need for its intended use by the aeroplane operator/flight crew was given in detail. The outcome from FTF phase 1 regarding the item addressing measured friction coefficients and its historical reason for still being identified in the RCR and SNOWTAM format was given stressing that **the ICAO STOWTAM format do not make use of measured friction coefficient as an operational information to be reported**.

2.11. On a State level, provided State-approved, and published use of measured friction coefficient noting that the SNOWTAM format contained this possibility. It was outlined and stressed how this opetion was closely related to the Canadian Runway Friction Index which was an updated version of James Brake Index introduced in the early 1970's and updated through the research program Joint Winter Runway Friction Measurement Program (JWRFMP) and where the operational use was related to published landing tables maintained by the State (Canada).

3. ICAO documentation

3.1. The subject was addressed in **PPT02**, presented by Lars Kornstaedt (Airbus). The workshop was briefed on proposed amendments to ICAO documentation: Annex 3 - *Meteorological Service for International Air Navigation*, Annex 6 - *Operation of Aircraft*, ICAO Doc 10064 - *Aeroplane Performance Manual (not yet published)*, Annex 8 – *Airworthiness of Aircraft*, Annex 11 – *Air Traffic Services*, ICAO Doc 4444 - *Air Traffic Management*, Annex 14 - *Aerodromes*, ICAO Doc 9981 - *Aerodromes*, Circular 355 – *Assessment, Measurement and Reporting and Runway Surface Conditions* and Annex 15 - *Aeronautical Information Services*.

3.2. The workshop noted that the applicability date of these changes to the provisions related to GRF is 5 November 2020.

3.3. The workshop also noted that GRF applies to all States, even those that do not experience snow and ice since many aircraft overruns are the result of operations on wet/flooded runways.

3.4. Annex 8 provisions described take-off performance on a contaminated runway. In addition, the provisions include a mandate to split landing performance information into 1) at time of take-off data (dispatch) and 2) at time of landing data (in-flight).

3.5. Annex 6 provisions added a mandate to provide an AIREP when conditions are worse than reported. The AIREP is then passed from ATC to Aerodrome Operations for possible reassessment. Also, a mandate of in-flight check with appropriate landing margin before starting approach was added to the provisions.

3.6. ICAO Doc 10064 was developed in light of GRF; however it is not yet published.

3.7. A chapter on operations on contaminated runways included a description of the Runway Condition Report (RCR) for Operators and Pilots; introduction to the Assessment Process applied by the Aerodrome; description and use of the RCAM and Runway Condition Code (RWYCC); considerations for making AIREPs of Braking Action and a training syllabus.

3.8. A chapter on landing included a derivation of landing performance data for time of arrival; publication of data and limitations; fall-back generic factors in case no data is provided by the manufacturer;

regulatory background; considerations for performance assessment in approach preparation; and considerations for flight crew and pilot procedures for landing on length-limited runways.

3.9. A chapter for take-off operations emphasized that contaminant drag (using contaminant type and depth) must be accounted for when making take-off computations. Since typical manufacturer data certified to Certification Specifications (CS)25 pre-amendment 2 does not cover many contaminants in the RCAM (missing: frost, dry snow, wet snow, compacted snow at temperature above -15C, slippery when wet and ice cold and dry), the Aircraft Performance Model (APM) offers advice on how to compute for missing contaminants conservatively. Also, an RCR downgrade results in difficulties for the flight crew in assessing the conservative condition to take into account for take-off performance determination in some cases (runway condition code 3 - compacted snow to runway condition code 2 – standing water or slush) as no computation option may represent the prevailing conditions both in terms of friction and draft. Airbus informed the workshop that it was working on these gaps for take-off operations in 2020.

3.10. The workshop noted a major difference between information needed for operators when landing (RWYCC) versus take-off (RWYCC, contaminant type and depth).

3.11. The workshop also noted that the RWYCC is related to the wheel breaking coefficient. Furthermore, AIREPs provide the most recent assessment of braking action and should be expressed on a scale of Good to Less than Poor. Aircraft generated braking action reports can remove the subjectivity from such reports.

3.12. The workshop requested more clarity on what elements of RCR should be provided in ATIS noting volume limitations. The minimum information required for RCR is: aerodrome location indicator, date/time of assessment – *time of completion of assessment in UTC*, lower runway designation number, Runway Condition Code - *RWYCC*, condition description over total runway length – *observed on each runway third, starting from threshold having the lower runway designator number*. The workshop noted that the FAA only provides RWYCC in ATIS to avoid a lengthy message and is provided this way to trigger alertness by pilots if the RWYCC changed in-flight, but cannot be used for landing calculations alone. The FAA has another method of providing this information called Field Condition NOTAM (FICON) via Flight Service Stations (FSS). What elements of RCR should be provided in ATIS could be addressed by an existing ICAO global group (e.g. FTF) if ADOP is assigned this tasked by the ICAO Council.

4. Case studies

4.1. The subject was addressed in **PPT03**, presented by Charles Enders (United States). A detailed case study examining the planning, training, implementation activities as well as challenges and lessons learnt in implementing Take-off and Landing Performance Assessment (TALPA) by the United States Federal Aviation Administration (FAA) was provided to the workshop. Parallel testing of TALPA, which is a decision support tool, was conducted with the legacy system for 2 winter seasons. Tools such as templates to provide the runway assessment were provided to reduce errors in reporting this information. An awareness campaign was also conducted that used e.g. Webinars and Frequently Asked Questions (available on a dedicated website and are useful in the context of implementation of the GRF). The main challenges identified in this implementation was time to implement; managing resistance to change; and ceasing the dissemination of friction measurements to pilots.

5. Implementation view (airports)

5.1. The subject was addressed in **PPT04**, presented by Vaisala. The Runway Condition Report Tool comprised of fully automated reports is a customer driven design process based on users' needs. The Vaisala Mobile Detector MD30 sensor with Mobile RCR application and road artificial intelligence detects contaminant conditions on each runway third automatically based on GPS. This device also reports runway contaminants types, average coverage and depth of contamination layer. The device could be used as part of the runway condition assessment noting that a human is still needed to make the final assessment. Some possible benefits to the device included reducing the runway inspection time, increasing objectivity and improving quality assurance.

6. Implementation view (airlines)

6.1. The subject was addressed in **PPT05**, presented by Mikko Kosonen (Finnair). While Finnair welcomes GRF and believes it will bring much needed harmonization on runway condition reporting, Finnair still has two separate main concerns on GRF. First, GRF reporting of the runway condition is not supported by the performance software in use with regards to take-off and landing pre-flight computations. The crews would have to use complicated correlation tables in order to determine the correct software input for a given runway contamination and runway condition code combination, especially with a downgrade or an upgrade. This kind of method is both time consuming and error prone. Finnair believes that the performance software vendors should revise their products for airlines, if GRF is not yet taken into account.

6.2. Secondly, measured friction values are not allowed to be reported to operators. Finnair stated it has a method of correlating friction measurements in Finland into aircraft performance, and has been using this method operationally for over two decades without any safety issues. Finnair believes that if this possibility is taken away from airlines who know how to use the friction values and have established processes for it, these airlines are being unnecessarily penalized for a lack of global friction knowledge amongst other airlines. Finnair also states, that missing friction measurements would most probably yield to high payload losses in certain, common winter conditions.

6.3. Finnair highlighted that landing calculation at pre-flight and in-flight were based on different parameters (the latter based on RCR) and therefore could yield different results. Finnair informed the workshop that landing distances are calculated using RCR as well as friction values and the worst case outcome is used. In addition, the take-off calculation issues (contaminant types missing, RCR downgrade) detailed in paragraph 3.9 were reiterated as a concern by Finnair. Furthermore, the inability to consider the measured friction in calculating allowable payloads can produce a significant economic loss to airlines.

7. State Perspective

Finland

7.1. The subject was addressed in **PPT07**, presented by Heikki Heinijoki (Finavia). Finavia, in support to the implementation of GRF, acquired new reporting software that is currently in test mode. In addition, GRF training of approximately 230 runway inspectors expected to be conducted by September 2020. Winter operations begin in September in Finland which poses a challenge in implementing many weeks later (5 November 2020); however, that period could present an opportunity to run GRF in shadow

trial mode. In addition, ICAO SNOWTAM Guidance will address the transition of issuing SNOWTAM from 4 to 5 November 2020.

7.2. Statistics as a result of analysis of RCAM contaminants revealed that thin snow based contaminants were often much more slippery than nominal RWYCC of 5, which is a safety concern. Also revealed was that thin snow based contaminants on top of ice were often better than nominal RWYCC of 0, which is a regularity concern. It was suggested that in the latter case, the runway should be treated accordingly and reassessed.

7.3. For conditions such as dry snow on top of frost (referred to as non-RCAM conditions), Finavia applies certain principals on how to address these two contaminants (e.g. add depth of frost and report as dry snow).

7.4. The subject was further addressed in **PPT12**, presented by Antti Puronto (TopP Oy). Concerns were raised in that there can be multiple contaminants reported on a runway third and even more on the whole runway, but cockpit crew can use only one 'basic' contaminant in their take-off performance calculation. In addition, if multiple contaminants are on the runway, which contaminant should be reported – should it favour landing or take-off interests? One perspective provided was that take-off calculation must be based on 'basic' contaminant type and the thickest contaminant should have priority over thinner ones. The landing calculation would be based on RWYCC noting that if the code were one step higher than experienced conditions, the 15% landing margin would be in jeopardy.

EASA

7.5. The subject was addressed in **PPT08**, presented by Vasileios Stefanioros (EASA). EASA focused on the implementation of GRF, challenges and the way forward. Given that there are 592 aerodromes in the EASA scope and the occurrence of runway excursions is a significant risk, implementation of GRF is a high priority of EASA. Four different rulemaking tasks address the following: Air Operations, Aerodromes, ATM/ANS, AIS and Rules of the Air. Rulemaking is compliant to ICAO provisions. Basic principles of the GRF are kept at the rule level to prohibit deviations while procedural issues are included in the acceptable means of compliance to allow some flexibility in the implementation. The latter gives States flexibility on how to conduct their assessment without prescribing specific technology. Furthermore, extensive guidance material is provided in order to explain the GRF. Adoption of regulations (Reg. (EU) 965/2012, 2017/373, 139/2014, 923/2012, 2017/373) is expected in the first quarter of 2020.

7.6. EASA informed the workshop that two new items were added to the SNOWTAM to describe the runway surface condition: 1) runway covered with compacted snow or ice, which has received special treatment and has improved friction characteristics (RWYCC greater than 3) and 2) slippery wet when associated with RWYCC of 3 when the runway is wet and below the minimum friction level. Furthermore, the situational awareness section was simplified in order to avoid long NOTAM strings.

7.7. EASA also highlighted the removal of the runway surface conditions from METAR, introduction of landing distance assessment at the time of arrival, obligation of the pilot in command (PIC) to report back when braking action encountered is not as good as reported and obligation of the ATS to report to the aerodrome operator when a pilot indicates that the braking action is not as good as reported.

7.8. EASA emphasized to EU States to apply EU Regulations to those aerodromes this applies and harmonize this regulation to those aerodromes that fall under the national procedures. Challenges identified included different level of experience and exposure on operations on contaminated runways; management of change; and determining how to ensure accurate assessments, especially at busy runways.

7.9. EASA will assess implementation of GRF (standardisation inspection reports, number of accidents and serious incidents related to the runway surface conditions, reports from aerodrome operators and air operators concerning the validity of the GRF through survey and interviews) in the years to follow November 2020 and if issues are identified, EASA will be actively involved in any proposed changes to the global provisions via the existing ICAO mechanisms (e.g. ICAO FTF).

7.10. The workshop noted that EASA plans to hold a GRF implementation event on 7 May 2020 in Cologne, Germany and that the related agenda would be available in the coming weeks.

8. AIS aspects

8.1. The subject was addressed in **PPT09**, presented by Chris Keohan (ICAO Paris). The workshop was provided with AIS/AIM aspects of implementing GRF, in particular origination and dissemination of SNOWTAM. The workshop was briefed on the changes to the SNOWTAM definition, provisions and format, introduced in the PANS-AIM (former amendment 39B to Annex 15).

8.2. It was noted that the maximum validity of SNOWTAM (and thus RCR) is 8 hours. It was also noted that a new RCR (and then SNOWTAM) should be initiated when a significant change occurs in the runway surface condition, as described in the PANS-ADR. Significant change would be any change to the following: the RWYCC; the contaminant type; the contaminant coverage; depth of the contaminant (standing water and slush: 3 mm up to and including 15 mm, wet snow: 5 mm and dry snow: 20 mm); and any other change that could be considered significant.

8.3. It was highlighted that two methods of disseminating GRF are through SNOWTAM and through voice communications by ATS (radiotelephony & ATIS). An emphasis was made that ATS disseminates wet runway conditions (RWYCC 5) via VHF and ATIS; however this particular runway condition is not disseminated via SNOWTAM. Further clarity was made on the use of SNOWTAM for non-winter conditions as follows: SNOWTAM is not issued for RWYCC 5 (wet), but is issued for RWYCC 3 (wet (slippery wet)) and RWYCC 2 (standing water).

8.4. The workshop noted that Guidance on SNOWTAM was being developed by ICAO Paris in coordination with the EUROCONTROL AIM/SWIM. The guidance would address the transition of SNOWTAM format change from 4 to 5 November 2020; SNOWTAM numbering reset; repeating contents and situational awareness of SNOWTAM for different runways (situational awareness elements would require flexibility in NOTAM systems to ingest various options on ordering the information); emphasizing that the condition description for each runway third is always a mandatory item for the issuance of SNOWTAM; and description of SNOWTAM items and SNOWTAM examples. This guidance material is expected to become available in February 2020 and will be posted on the ICAO Paris website and communicated to other Regions by ICAO HQ.

8.5. Concerns were raised about quickly changing conditions at an aerodrome where one runway maybe closed after an RCR was provided that no longer applies to that runway, but there is not enough time

to reassess it (removal of contaminants occurring on another or other runways). The workshop agreed that the item T of SNOWTAM could be used to indicate that a particular runway was closed in addition to a NOTAM indication the same thing. This type of example could be considered in the guidance material on SNOWTAM in the future.

8.6. Furthermore, the workshop was not certain when the EAD would be available for GRF and ICAO and EASA would inquire with EUROCONTROL in a timely manner.

9. Training requirements/ resources

IFALPA

9.1. The subject was addressed in **PPT10**, presented by Jussi Ekman (IFALPA). Noting the importance of GRF, IFALPA posed many concerns related to implementation and dissemination of this information such as: some smaller aeroplanes do not have data to perform adequate performance calculations for contaminated runways; difficulty of managing information overload (plethora of NOTAM already an issue); significant interactive training on GRF needed which would require months to reach all pilots; training should include other factors (e.g. wind) in making a decision to land on a contaminated runway; decisions should be predetermined given a suite of risk factors that includes contaminated runway conditions; training should include a recovery mode if there is a partial loss of control (consider simulator training); training on how to report AIREPs as accurately as possible is needed; RCR may not reach all pilots since a significant number of aircraft do not have Aircraft Communication Addressing and Reporting System (ACARS); and some aerodromes do not use Digital-ATIS that could impact the use of alternate aerodromes (since this information would not be retrieved by VHF in many cases due to the short range it is provided).

9.2. IFALPA emphasized that SNOWTAM-RCR must reach the pilot in a timely manner and the pilot must know what to do with it by applying the correct procedures.

EUROCAE

9.3. The subject was addressed in **PPT06**, presented by Niklas Jost (EUROCAE). In particular, the presentation focused on the work being done by EUROCAE Working Group (WG) – 109 that is developing Minimum Aviation System Performance Standards for Runway Weather Information Systems (RWIS). RWIS can provide relevant data in order to improve safety of airport operations and to have a continuous awareness of the runway condition. Especially busy aerodromes with many runways might reduce runway closure times by using a RWIS. In addition, friction limited aircraft braking measurements and reporting as well as requirements for surface contaminant classification and measurement equipment are being developed. These developments may mature by the end of 2020.

10. Review GRF implementation checklist & Conclusions

10.1. The subject was addressed in **PPT11**, presented by ICAO and provided at **Appendix C**. The workshop noted that some States already adapted the GRF implementation checklist for their national needs.

10.2. The workshop closed at 1500 on 29 January 2020 by thanking Finavia for hosting this event.

List of Appendices

Appendix A – Lists of the Participants

Appendix B – Agenda

Appendix C – GRF Implementation Checklist

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Appendix A – GRF Workshop (Helsinki) SoD
Helsinki, 28-29 January 2020
LIST OF PARTICIPANTS

AZERBAIJAN
Rauf GAFAROV
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Jesper BAGNER

ESTONIA
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FINLAND
Stina ANDERSSON-JALKANEN
Joonas EKLUND
Heikki HEINIJOKI *(Speaker)*
Marko IHANUS
Tina JUSLIN
Iiro KESKIVÄLI
Tomi LEPOLA
Heini NORONEN-JUHOLA
Pyry PENNANEN
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Jarmo RINTAMÄKI
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Edvards LIDOVSKIS
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Arturs SMELINS
Alla ZILINA

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Mustafa KILIÇ

UNITED STATES

Charles ENDERS

Last updated: 07/02/20

Appendix A – GRF Workshop (Helsinki) SoD
Helsinki, 28-29 January 2020
LIST OF PARTICIPANTS

SWEDEN
Mats AGELUND
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Martin EKENSTIERNA
Linnéa EKSTRÖM
Mikael FILIPSSON
Michael GIDEONSSON
Markus HÜBINETTE
Anders ISRAELSSON
Jimmy JOHANSSON
Roger JÖNSSON
Anton NILSSON
Kim NILSSON
Anette OLSSON
Fredrik OLSSON
Staffan OLSSON
Henrik PERSSON
Ingvar SANDQUIST
Johan SELLÉN
Jonas SÖDERLUND
Magnus SVANBERG
Jonas SVENSSON
Petter SUNDSTRÖM
Kjell TORIN
Peter WIKLUND
Lars-Erik WISTRÖM

AIRBUS
Lars KORNSTAEDT *(Speaker)*

AVINOR
Jan ANDERSEN
Hans Jørgen BUGGE

CITYJET *(FINLAND)*
Rene KEMPPINEN
Andrew LENNON
Sami VUOKKO

EASA
Vasileios STEFANIOROS *(Speaker)*

EUFALDA
Kenneth KRONBORG

EUROCAE
Niklas JOST

FINNAIR
Mikko KOSONEN *(Speaker)*
Matti RAHIKAINEN
Mikko VÄLISALO

FLYDUBAI
Gabriel NUNES DOS SANTOS

ICAO
Christopher KEOHAN

IFALPA
Jussi EKMAN *(speaker)*

MOVENTOR OY
Mikko KALLIO
Santeri VIINIKAINEN

NAVIAIR
Carsten BIENER *(only 2nd day)*

NOVAIR
Ulrika ZIVERTS

SKY PORT
Janis BOKUMS

STAR AIR *(DENMARK)*
Martin Reiss JENSEN
Michael HOLMBERG
Lars NAJBJERG

TOPP OY
Antti PURONTO *(Speaker)*

VAISALA
Tapio HAARLAA
Petri HIENONEN
Annika RIPATTI
Mauri VAPOLA *(Speaker)*

XSIGHT SYSTEMS
Ofer ACHLER
Danny LAVI

Last updated: 07/02/20

Appendix B – GRF Workshop (Helsinki) SoD

Workshop on Implementation of the New Global Reporting Format for Runway Surface Conditions – ICAO EUR Region

Agenda (28-29 January 2020, Helsinki)

Contact: Heikki Heinijoki heikki.heinijoki@finavia.fi

Time	Subject	Objectives	In charge	Support from
Day 1 – 28 January 2020				
0930	Introduction		ICAO RO	ICAO Paris
0945	Overview of GRF	A description of the GRF methodology, both ground and airborne aspects, history, development process	ICAO FTF	Armann Norheim **(PPT01)**
1030	Coffee Break			
1050	ICAO documentation	Introduce ICAO provisions (in Annex 14, Circ. 355, Doc. 9981 and Doc. 10068)	ICAO FTF	Lars Kornstaedt **(PPT02)**
1130	Case Studies	A detailed case study examining the planning, training, implementation activities, challenges and lessons learnt	US FAA	Charles Enders **(PPT03)**
1215	Lunch			
1330	Implementation view (airports)	Implementation perspective from 1 (or more) airport, perhaps representing the regional environment	Mauri Vapola	Vaisala **(PPT04)**
1445	Implementation view (airlines)	Implementation perspective from 1 (or more) airlines, perhaps representing the regional environment	Finnair	Mikko Kosonen **(PPT05)**
1515	Coffee Break			
1530-1600	Training requirements/resources	Training requirements and resources	EUROCAE	Niklas Jost **(PPT06)**

Appendix B – GRF Workshop (Helsinki) SoD

Day 2 – 29 January 2020				
0930	**State Perspective**	Example of a States perspective of implementation, planning, regulatory approach etc.	Finland	Heikki Heinijoki **(PPT07)** Antti Puronto **(PPT12)**
1030	**Coffee Break**			
1050	**State Perspective**	Example of a States perspective of implementation, planning, regulatory approach etc.	EASA	Vasileios Stefanioros **(PPT08)**
1215	**Lunch**			
1330	**AIS aspects**	AIM aspects (including promulgation by SNOWTAM)	ICAO	Chris Keohan **(PPT09)**
1400	**Training requirements/resources**	Training requirements and resources	IFALPA	Jussi Ekman **(PPT10)**
1440-1500	**Conclusions**	Review GRF implementation checklist	ICAO	Chris Keohan **(PPT11)**
1500	**Coffee & Close**			

GRF IMPLEMENTATION CHECK LIST

ID	TASK	WHO	WHEN	Remarks
GRF 1	**Establish a *National GRF implementation team*** at the State Level	State GRF implementation team to include: - CAA (*responsible entity for implementation*) - Aerodromes - ANSP(ATM/AIM/ MET) - Airlines/Flight Ops - Any other relevant stakeholder, as required	By Sep 2019	
GRF 1-1	**Develop a *National GRF Implementation Plan***, detailing tasks, champions and timelines	State GRF implementation team	By Nov 2019	
GRF 2	**Educate** by reviewing the following **documentation**: - PANS ADR - ICAO Circular 355 - Annex 14 - ICAO GRF global Symposium presentations https://www.icao.int/Meetings/grf2019 - ICAO Doc 10064 (check when available with HQ) - Other relevant ICAO provisions – consequential amendments due to GRF (e.g. PANS-AIM, PANS-ATM, etc.) **Educate** by **attending**: - ICAO Regional Workshops (GRF Workshop (Paris)) - https://www.icao.int/EURNAT/Pages/Other-Meetings.aspx **Educate** by **conducting**: - State Level Workshops/Seminars	State GRF implementation team - In coordination with national bodies representing airports, ANSPs, Airlines - note that if a State GRF implementation team is not formed – individual stakeholders (airlines, ANSPs, airports) should be	By Feb 2020 (consider refresher by Nov 2020)	*Advise difficulties to ICAO EUR/NAT*

ID	TASK	WHO	WHEN	Remarks
		addressed to a) insure education in their respective realm and b) form a GRF implementation team		
GRF 3	**Promote** GRF at the national level in context of safety by developing: - brochures - website material - AIC (Aeronautical Information Circular)	State GRF implementation team - distribution should also include GA/BA and Military	By Feb 2020	
GRF 4	**Train relevant stakeholders on GRF** Note that different stakeholders may have different training needs (e.g. aerodromes, pilots, ATS, AIS, aerodromes in warm climates vs. operators that fly to locations with winter conditions, etc.) **Train relevant groups that interface with customers on GRF** so they can brief their customers when on audit/inspections	Relevant stakeholders: - ACI - IATA & Airlines - IFATCA - IFALPA State GRF implementation team assures training for: - ADR/ATM - CAA/FO inspectors	By Apr 2020 (consider refresher by Nov 2020) By Apr 2020 (consider refresher by Nov 2020)	
GRF 5	**Update SNOWTAM Format/template (NOTAM/SNOWTAM systems)**	State GRF implementation team assures SNOWTAM template is updated by: - AIM	By Nov 2020	
GRF 6	**Train on the new SNOWTAM Format**	State GRF implementation	By Apr 2020	

ID	TASK	WHO	WHEN	Remarks
		team assures training on SNOWTAM format by: - AIM	(consider refresher by Nov 2020)	
GRF 7	**Update AIP**, as required	State GRF implementation team assures AIP is updated by: - AIM	By Nov 2020	
GRF 8	**Conduct parallel test of GRF** this winter **Conduct analysis** using archives of SNOWTAM & AIREPS (this should also be considered after implementation to identify errors)	State GRF implementation team coordinates parallel test with the necessary stakeholders: - Airport operators - ANSP - Regional CAA - Airlines - AIS	Nov 2019 - Apr 2020	

--END--