



International Civil Aviation Organization

MIDANPIRG Air Traffic Management Sub-Group

Fifth Meeting (ATM SG/5)
(Aqaba, Jordan, 1 – 4 December 2019)

Agenda Item 4: MID Region ATS Route Network

MAIN OUTCOME OF RDGE

(Presented by the Secretariat)

SUMMARY

This working paper presents the main results from the ICAO Route Development Group Eastern part of the ICAO EUR Region and the associated Special Coordination Meetings which were organised in the framework of the RDGE. It also discusses the proximity check distance of homophonous five-letter name-codes (5LNC) and the ICARD 5LNC Database.

Action by the meeting is at paragraph 3.

REFERENCES

- EASPG/01 Meeting
- ICAO EUR RDGE/31 Report

1. INTRODUCTION

1.1 The Thirty-first Meeting of the Route Development Group – Eastern Part of the ICAO EUR Region (RDGE/31) was organised in the ICAO EUR/NAT Office in Paris, France from 9 to 13 September 2019. The RDGE was attended by 68 participants from 27 States, 2 international organizations and 2 Computer Flight Plan Software Providers (CFSP).

1.2 The RDGE was joined by delegations from P.R. China, I. R. Iran, Iraq and United States. The opportunity of the meeting was also taken to hold specific side-meetings on ATM coordination, contingency matters and airspace improvements in the “Eastern Mediterranean EUR/MID interface area” and on the interface area between Turkey, Iraq and Iran.

1.3 The side-meeting on ATM coordination, contingency matters and airspace improvements in the “Eastern Mediterranean EUR/MID interface area” was in follow-up to a Special Coordination Meeting on the implementation of ATM Contingency Arrangements (SCM ACA) which had been organized by the ICAO MID Office in Muscat, Oman, from 16 to 18 July 2019.

2. DISCUSSION

2.1 The Route Development Group – Eastern Part of the ICAO EUR Region (RDGE/31) meeting was informed about the latest international aviation events and developments at the global and regional level.

2.2 EUROCONTROL gave a detailed presentation on the RNDSG activities, the ARN 2019-2024, the progress on Free Route Airspace Implementation (especially the projects that will be implemented in November 2019) and the outcomes from the Regional Subgroup activities. The approved version of the FRA Design Guidelines was shared as a stand-alone document to the RDGE participants.

2.3 During the RDGE/31 a total number of 23 State reports were presented, which showed again a very volatile picture in traffic figures (between a decrease of 25% (Tajikistan had 70% loss in overflights) and a maximum increase of 11.1%, but with an average traffic decrease of 0.62% for the total traffic figures) when compared with the traffic figures for the same time period in the previous year, mainly due to the closure of the airspace of Pakistan and the events in Syria and the Gulf Region. The State Reports from Kyrgyzstan and Turkmenistan were missing, but the RDGE discussed in detail the reports from I.R. Iran and Iraq.

2.4 A total of 46 new ATS routes had been implemented since the last meeting and 9 airspace projects were completed. The enhancement of the interface between MID and EUR Region especially for traffic flows to/from the Gulf area, the impact of the closure of the Pakistan airspace, the high workload on adjacent FIRs in view of measures put in place to shift traffic out of congested FIRs in the core area of Europe and the numerous FRA and RNAV ATS route implementation activities were discussed.

2.5 The Group discussed the impact on airspace users' flight plans due to the removal of ATS routes in view of the implementation of FRA in a number of States. It was noted that close coordination with airspace users and computer flight plan service providers was necessary in order for flight planning software to be updated in order to enable continued coherent flight plans. IATA and ICAO were requested to address the flight planning issues (such as the CFSP software to be updated so that they do not choose automatically the underlying ATS Route Network but rather plan for FRA) related to FRA implementation and removal of ATS routes so that the full benefits of FRA could be provided to airspace users.

2.6 The Baltic Sea Area and its interface Subgroup reviewed a total of 43 existing proposals and 29 changes were agreed for the Baltic ATS Route Catalogue.

2.7 The Black Sea and South Caucasus Area and its interface Subgroup reviewed a total of 35 existing proposals. 8 proposals had been implemented and 8 new route proposals were agreed for insertion into the Black Sea ATS Route Catalogue.

2.8 A side meeting between Iraq and Turkey was held to discuss the issue of the possible re-opening of the waypoint KABAN. A SAAM/NEST evaluation was provided by EUROCONTROL NM and Iraq presented their proposal for traffic flows via KABAN and NINVA. It was noted that Turkey would review the proposal provided by Iraq.

2.9 Due to the absence of delegations from Afghanistan, Kyrgyzstan, Pakistan and Turkmenistan, the Middle Asia Area and its interface Subgroup reviewed only 51 out of the 62 existing proposals. 10 proposals had been implemented and 3 new proposals by Afghanistan, Azerbaijan and Uzbekistan were agreed for inclusion into the Middle Asia ATS Route Catalogue. It was however noted that a side meeting had been held between Afghanistan, China, Pakistan, Tajikistan, IFALPA and ICAO during the AIRARD/TF/4 meeting (Bangkok, Thailand, 05-09 August

2019) and several trans-regional ATS route proposals were discussed and agreed for implementation by Afghanistan, Pakistan and Tajikistan. No ATS route proposals were agreed for implementation by China.

2.10 The Far East Area and its interface Subgroup reviewed 39 existing proposals and 1 new proposal was added to the Route Catalogue. Nearly all route proposals in the Far East Area RDGE ATS Route Catalogue could not be progressed due to the lack of progress information from China and/or lack of responses from Japan and South Korea (ROK). The Subgroup noted with concern that the initially planned bilateral meeting (where the implementation of the SIMLI project was expected to be discussed) between Russian Federation and China did not take place in summer 2019. The Subgroup stressed the importance to address these necessary airspace improvements before airspace changes and increased traffic complexity negatively impacted the traffic flows. Whilst the continuous enhancement by the Russian Federation of the ATS route infrastructure in this part of the ICAO EUR Region was highly appreciated, all Subgroup members expressed their disappointment at the stagnation of the ATS route development process due to the lack of information from China, as well as the lack of responses from Japan and South Korea (ROK).

2.11 The Group noted that the Cross Polar Working Group (CPWG) was currently reviewing its tasks in order to re-organise its activities. In the same vein, it was noted that the AIRARD/TF would not continue to meet in the current format due to the lack of engagement from key trans-regional States and airspace users. IATA highlighted that a suitable inter-regional platform was still required to address inter-regional coordination of air traffic flows.

2.12 The Chairman, together with the IATA delegation, expressed their appreciation on the high number of States that were participating in this RDGE meeting and the excellent level of discussions, which resulted in a significant amount of ATS route improvements and updates to the RDGE ATS Route catalogues.

2.13 The Thirty-Second Meeting of the Route Development Group - Eastern Part of the ICAO EUR Region (RDGE/32) is tentatively planned to take place, at the kind invitation of Georgia, in Tbilisi, from 18 to 22 May 2020.

Special Meeting on ATM coordination, contingency matters and airspace improvements in the “Eastern Mediterranean EUR/MID interface area”

2.14 The meeting was organized by the ICAO EUR/NAT Office at the request of Cyprus with the aim to prepare and coordinate contingency measures in the event of closure of the Persian Gulf and the Gulf of Oman airspace.

2.15 EUROCONTROL presented the impact assessment due to the possible closure of airspace in the Middle East/Gulf areas (which was also presented at the ad-Hoc SSC on 21 Jun 2019 and also at the Muscat SCM 16-18 July 2019) focusing on the following 2 scenarios:

- Closure of the airspace over the Persian Gulf and the Gulf of Oman, affecting 759 flights with traffic shifts towards Oman, Saudi Arabia and Iran resulting in 229000 NM additional track miles and 29300 more minutes in flight time; and
- Closure of the airspace over the Persian Gulf, the Gulf of Oman and the whole Iranian airspace (Tehran FIR), affecting 1045 flights with traffic shifts towards Oman and Saudi Arabia resulting in 371000 NM additional track miles and 47700 more minutes flight time. For 95 flights the route extension was more than 5000NM so they were not assigned anymore.

2.16 EUROCONTROL pointed out that whilst there will not be ATFM restrictions for all westbound flights that will enter the European Core area, all eastbound flights (European departures) will be severely restricted by ATFM measures. In a contingency scenario it will be very important to

find the right balance so that the European departures and flights to/from countries in the Eastern Mediterranean EUR/MID interface area would not be penalized too much. There is a clear need to ensure continuity of air transport within the ICAO EU Region and with the immediately adjacent States.

2.17 The impact assessment from EUROCONTROL indicated that the additional traffic would not come in peaks but would rather be a constant flow of additional traffic over the whole day that would need to be accommodated in the Black Sea area, the Egypt-Cyprus and the Egypt-Greece interface areas.

2.18 Following the discussion from the SCM in Muscat, it was noted that Saudi Arabia was preparing measures to address the merger of the 3 major flows inside their airspace and that the dialogue with Egypt had started on how the interface should evolve so that the traffic would be able to enter Cairo FIR.

2.19 The meeting concurred that, (following the optimization of airspace in the Eastern Mediterranean interface area), there could be a possibility to manage around 100 extra eastbound flights on the flow through Jordan/Saudi Arabia airspace. However this should not create any additional problems for the existing departure /arrival traffic due to the increase in overflights and/or crossings. The connectivity to the airports has also to be ensured in the crisis scenario.

2.20 Greece explained that the additional traffic due to the crisis scenario could be accommodated in the winter timeframe. But if this would occur during the summer season, it would be very difficult to accommodate the additional traffic (in addition to the seasonal holiday traffic) and a detailed evaluation (simulation of traffic flows distributions within Athens FIR and analysis of all options/scenarios) would be needed.

2.21 Cyprus presented a detailed analysis on the possibilities to manage the crisis scenario traffic, which included the establishment of 3 additional waypoints on the interface to Turkey, and 1 new waypoint on interface with Egypt, the change for bi-directional to uni-directional ATS routes in order to naturally separate the traffic flows, the vertical separation of arrivals/departures to/from Cyprus and Lebanon from the overflight traffic, the use of only 2 waypoints for the arrival to Cyprus and the estimated effects on sector capacity/ATCO workload. In addition, the lack of OLDI connections with neighboring ACCs (Cairo, Ankara) was addressed which consequently prevents the potential reduction of longitudinal separation minima from 20 NM to lower values (in crisis scenarios). The presented proposals were developed to accommodate as much traffic as possible within Nicosia FIR (in terms of ATS route capacity and ATC sector capacity limits) but it was not clear if the traffic could actually be delivered by Egypt as presented in the EUROCONTROL simulations. The implementation of additional contingency ATS routes besides at waypoints PASOS, LAKTO, RASDA in the Cyprus-Egypt interface area was not further considered.

2.22 IATA appreciated the work that was presented to cope with the possible crisis scenarios and highlighted that the aircraft operator would have to make their individual analysis if their planned flights would still be feasible/valuable (very long route extension, flight crew rest times, stop over for refueling, loss of HUB- connections due to longer flight times, etc). However it was also pointed out that the preparation for these crisis scenarios was very important as the solutions to manage such a crisis must be in place before the activation of any crisis coordination team.

2.23 EUROCONTROL explained that, based on the previous crisis management experience during the last years, the crisis scenarios could be accommodated by the Network Manager and the ANSPs in the area and that possible solutions for sharing the extra traffic load and additional traffic flows (without having a detrimental effect on the European traffic flows) would be available with the European Network. The crucial factor would be the cooperation with the States outside the area of responsibility of the Network Manager, especially in the interface area between the EUR and

MID Regions. In an actual crisis event, the responses such as implementation of new airspace structures, implementation of contingency routes, reorganization of traffic flows, staffing of ATC sectors, etc. must all be organized, coordinated and effectively implemented within a maximum of 24 hours. At the moment it is not clear if the affected States in the MID region would be prepared/organized to support the quick responses to a potential crisis scenario.

2.24 **Key action points:**

- I. Clear statements from States in the interface area between EUR and MID Regions are needed if they will be able to accommodate the huge number of aircraft and if they would be able to support changes in the airspace structure and airspace organization within 24 hours.
- II. Better cooperation and the nomination of focal points are needed from States in the interface area between EUR and MID Regions.
- III. Expedite the implementation of OLDI connections between the ACCs so that in a crisis scenario the separation minima could be reduced (to allow increased capacity on ATS routes).
- IV. Based on clear statements from States in the interface area between EUR and MID Regions, make impact assessments and establish contingency routes with new waypoints (in addition to the existing infrastructure) so that the traffic flows on uni-directional routes could be better distributed.
- V. Segregate the ARR/DEP traffic from the overflights before they enter the congested FIRs.
- VI. Use as many opportunities for coordination meetings, e.g. the next MID ATM SG/5 meeting.

Discussion on proximity check distance of homophonous five-letter name-codes and the ICARD 5LNC Database

2.25 The Meeting may recall that the ICARD Five-Letter Name Code (5LNC) Task Force, established in June 2017 by the EANPG COG, evaluated the pronounceability of the 5LNC available in the ICARD EUR/NAT reserve list and provided a list of recommendations for further action by ICAO.

2.26 The following table provides a short summary of the progress that was made on these TF recommendations, since their submission to ICAO Headquarters in 2018:

ICARD 5LNC TF RECOMMENDATION (2018)	REMARKS
1. ICAO urgently to address the lack of awareness and training on the use of ICARD in the Regions that do not actively use ICARD;	Training was organized in various ICAO Regions and there has been a steady increase in the number of States who have registered Users on the ICARD 5LNC database.
2. ICAO to urgently complete the population of ICARD with all used 5LNC worldwide to ensure the accuracy of the database; Ensuring that all 5LNC used worldwide are reported in the database;	On this action item, progress has been made but further work is required. However, some States continue to use 5LNCs that are not recorded in the ICARD 5LNC Database.

ICARD 5LNC TF RECOMMENDATION (2018)	REMARKS
3. ICAO and States to complete the clean-up of 5LNC duplicates and sound-like conflicts;	Action began in 2017 and resolutions are progressing. There are still duplicated 5LNCs (or quadruplicated and beyond (5x, 6x, 7x, etc.)) that are being coordinated with States concerned.
4. States to improve civil-military coordination to ensure that whenever a 5LNC used for military purpose is published in an ICAO AIP and consequently coded into aircraft FMS, such 5LNCs are coordinated through the ICARD process;	Progress from States needs to be requested.
5. For the medium term and upon completion of recommendations 1-2-3-4, consider the following: a) Feasibility of transferring 5LNC from other ICAO regions to the EUR/NAT reserve list is to be investigated and/or; b) Feasibility of creating new codes to be added to the database.	Option b) was chosen. In November 2018, ICAO Headquarters created 50,000 new 5LNCs which were included in the EUR/NAT available 5LNC list in ICARD. Although these codes have provided some relief, a number of codes are unpronounceable. Additionally, new sound-like proximity conflicts have arisen, such as the sound-like proximity of homophonous 5LNCs discussed in this working paper which poses potential safety concerns.
6. In parallel to the above recommendations, ICAO to set up rules specifically defining how pronounceable 5LNC shall be composed (combination of consonants and vowels, pairs of same sounding 5LNC but with different spelling);	This issue is challenging from the technical perspective and has not yet been dealt with. There is also a lack of IT interest and expertise in this domain. Challenging factors include: - pronunciation by speakers of varying mother tongues (e.g. while 5LNCs with the letters V or W, like IBVAX vs IBWAX, would not cause sound-like proximity issues for English mother tongue speakers, it would for speakers from Germany, India and Pakistan.); and - pronunciation within the English language itself (e.g. JESIE vs JESSE, YELLA vs YELAH, BESSE vs BESSI, etc.). The set of algorithms/rules could create a restrictive and complicated situation that could aggravate the problem and increase exponentially the processing time per code.
7. Internal Review of ICAO Resources allocated to ICARD;	ICAO Headquarters have indicated that there are currently NO plans to make IT resources available for maintenance and improvement of the ICARD database.
8. ICARD Database Improvements a) Support the recommendation for ICARD to be upgraded with a MAP depicting the FIR and the need for a more detailed '5LNC log history' to be viewed by ICARD Data Managers and ICARD Authorized Users; b) Previous ICARD TF recommendation that ICARD sound-like proximity checks also include 5LNCs that have been reserved (orange) but not yet allocated by ICARD Data Manager.	2.26.1.1 This action was completed, but the '5LNC log history' can only be accessed by the ICARD Data Managers and not by the ICARD Authorized Users. 2.26.1.2 This function requires IT resources in order to modify the database. No action has been taken so far.

2.27 In view of the significant number of 5LNCs which are used or will be used in the European airspace, the appropriate allocation of 5LNCs that takes into account safety and pronounceability aspects is more than essential. The ICAO EUR/NAT office is concerned about the lack of resources from ICAO HQ that should work (per the 2018 TF Recommendations), on the maintenance and improvement of the ICARD database, particularly for the sound-like proximity check and the pronounceability of 5LNCs functions. Despite the discussions from the 13th Air Navigation Conference, ICAO Headquarters has not been able to assign the required resources. Therefore, States and International Organizations are now invited to provide support, particularly to address the establishment of rules (e.g. a pilot project for an application that would be supported by Artificial Intelligence –A.I.) that specifically define how pronounceable 5LNC shall be composed. Any offers would be highly welcomed to further progress on the ICARD 5LNC TF Recommendations.

2.28 The RDGE/31 agreed to the ICARD DM proposal that homophonous 5LNC shall be separated by a minimum of 1000 NM for the reservation and implementation of these codes.

2.29 However, this proposal was not supported by the 98th meeting of the EUROCONTROL Route Network Development Sub-Group (RNDSG/98, Brussels, Belgium, 24-26 September 2019). The RNDSG/98 participants preferred that the current 300 NM sound-like distance criteria be applied and that the decision be left to ICARD Authorised Users on whether such codes with similar pronunciation would be acceptable. Consequently, the ICARD Authorised Users must accept the responsibility for any safety related aspects (e.g. misunderstandings, or unintentional use of the wrong 5LNC, or NAV database issues) that result from the use of homophonous 5LNCs within the 1000NM range.

2.30 In order to accommodate the varying viewpoints, it is proposed that the following way forward will be used by the ICARD Data Manager (DM) and the ICARD Authorised Users:

- a) For new 5LNC requests, the ICARD Data Manager (DM) checks for homophonous 5LNCs from 300 NM up to 1000 NM.
- b) If there is a homophonous 5LNC within this distance, the ICARD DM informs the ICARD User concerned and the ICARD User of the State where such a case is found.
- c) The ICARD Users concerned from both States will coordinate, decide and confirm to the ICARD DM whether the situation of a homophonous 5LNC in proximity from 300 NM to 1000 NM is acceptable.
- d) The ICARD DM accepts the 5LNC based on the confirmation from the ICARD Users concerned.
- e) A note to be added to the message from the ICARD DM to the ICARD Users on the acceptance of the responsibility for the safety related aspects if a homophonous code is used within the 1000 NM range.

2.31 It should be underlined that the ICARD Data Manager would need to seek confirmation of acceptability from the ICARD Authorised Users of the States where the two 5LNCs (existing and new request) are located. This additional coordination aspect could increase the workload of the ICARD Data Manager in the long run. The proposed way forward will be presented to the EASPG, so that following the EASPG Decision States and ICAO are invited to apply the endorsed procedure for handling the homophonous 5LNCs.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the provided information;
- b) address the key action points on ATM coordination, contingency matters and airspace improvements in the Eastern Mediterranean EUR/MID interface area;
- c) discuss and note the proposed procedure for handling the homophonous 5LNCs; and
- d) continue to support the coordination activities in the interface area between the EUR and the MID Region.

- END -