

11 January 2017  
F500-L17-030

Lic. Federico Patiño  
Director General  
Grupo Aeroportuario de la Ciudad de México (GACM)  
Insurgentes Sur 2453, Piso 2  
Col. Tizapán, Del. Álvaro Obregón  
C.P. 01090, México, D.F.,  
México

**Subject: Technical Letter: Summary of Work During the Period 1 October 2016 through 15 January 2017**

Dear Lic. Patiño:

Since it has been several months since we have last met, I thought I would take this opportunity to reintroduce myself. I am the technical coordinator of the project entitled *Implementation Planning for the Operation of a New Mexico City Airport and Required National Modernization*. The project is intended to assist Mexico's Secretariat of Communications and Transportation (Secretaría de Comunicaciones y Transportes [SCT]) and other aviation stakeholders with the implementation of plans leading to the operation of the Nuevo Aeropuerto Internacional de la Ciudad de México (NAICM). As you know, MITRE's contract was recently reassigned from Aeropuertos y Servicios Auxiliares (ASA) to GACM. I, along with my team at MITRE, am very excited to work with GACM on this important project, and I look forward to collaborating closely with your team!

I would like to take this opportunity to invite you and your team to visit MITRE at a mutually agreed upon time to become familiarized with MITRE, discuss the overall project, its status and upcoming work, and to establish points-of-contacts and communication protocols. A visit to MITRE's Air Traffic Management (ATM) Laboratory for flight demonstrations around NAICM would be included. Technical questions and comments that have recently been provided to MITRE by GACM through ASA, prior to the execution of the contract assignment to GACM, as well as other important matters, can be discussed at that time as well.

As per the Agreement, you will be receiving quarterly Technical Letters, which summarize the work performed by MITRE during the calendar quarters nearing completion (except for the quarters ending on 31 December, which are reported, as this one, by 15 January).

This document represents the first Technical Letter submitted directly to GACM, respectfully submitted to your attention. It includes a summary of the most significant MITRE project activities conducted or being conducted during the period 1 October 2016 through 15 January 2017.

Please note that a document distribution list is provided at the end of this Technical Letter. MITRE requests that the documents enclosed with this Technical Letter are distributed to the appropriate aviation authorities as shown in the list in a timely manner. This is important so that the appropriate aviation authorities are aware of MITRE's work. Once the documents have been distributed, the document distribution list should be signed, scanned and sent to me via e-mail at [rkleinha@mitre.org](mailto:rkleinha@mitre.org).

## Reports

At the outset, before proceeding with a full description of activities, please find below a list of the documents included with this Technical Letter, some of which have already been delivered in advance to various parties throughout the concluding quarter.

1. Cancún and Cozumel Preliminary Procedural Separation: Informal Working Notes. See MITRE document F500-L17-001, dated 17 October 2016.
2. Addendum to MITRE Letter F500-L17-001, Cancún and Cozumel Preliminary Procedural Separation: Informal Working Notes. See MITRE document F500-L17-006, dated 24 October 2016.
3. Nuevo Aeropuerto Internacional de la Ciudad de México (NAICM) Initial Procedural Separation: Informal Working Notes. See MITRE document F500-L17-016, dated 30 November 2016.
4. Toluca International Airport Initial Procedural Separation: Informal Working Notes. See MITRE document F500-L17-019, dated 8 December 2016.
5. Task 8: Airport Expansion Feasibility Analysis – Airport Selection Considerations. See MITRE document F500-L17-025, dated 31 December 2016.
6. Enclosure 1 to this Technical Letter (F500-L17-030): Assessment of Centro de Gestión de Residuos Sólidos en el Bordo Poniente: Options 3, 4.1, 4.2, and 5, dated 11 January 2017.
7. Enclosure 2 to this Technical Letter (F500-L17-030): Mexico City Terminal Maneuvering Area Airspace Redesign for the New Airport – Initial Sectorization: Draft Informal Working Notes, dated 11 January 2017.
8. Enclosure 3 to this Technical Letter (F500-L17-030): Weather Analysis for Toluca Airport, dated 11 January 2017.

The documents designated as Enclosures, are described below:

- **Enclosure 1: Assessment of Centro de Gestión de Residuos Sólidos en el Bordo Poniente: Options 3, 4.1, 4.2 and 5.** This document describes MITRE's assessment of the potential impact of a proposed facility named *Centro de Gestión de Residuos Sólidos en el Bordo Poniente* being considered for construction near NAICM. The assessment considered four potential locations located to the south of NAICM. Note that Undersecretary of Transportation, Lic. Yuriria Mascott, requested that MITRE perform this analysis on a priority basis.
- **Enclosure 2: Mexico City Terminal Maneuvering Area Airspace Redesign for the New Airport – Initial Sectorization: Draft Informal Working Notes.** This report describes MITRE's initial analysis of Air Traffic Control (ATC) sectorization for the new Mexico City Terminal Maneuvering Area (TMA) to support independent operations at NAICM. The intent of this document is to provide informal working notes to Servicios a la Navegación en el Espacio Aéreo Mexicano (SENEAM) to facilitate further discussions.
- **Enclosure 3: Weather Analysis for Toluca Airport.** The objective of this document is to provide a comprehensive summary of weather and wind conditions at Toluca Airport. The analysis is based on data from an on-site Automated Weather Observing System (AWOS), covering a period from 1 January 2009 through 30 November 2016.

## Activities

The following list describes the activities conducted by MITRE during this reporting period:

- Cancún Airport will serve as a test-bed location where SENEAM air traffic controllers can obtain an understanding of matters associated with independent operations, a complex operation not currently conducted anywhere in Mexico, and gain valuable experience for the future implementation of such procedures at NAICM. During this quarter, the MITRE Cancún team continued refining the Cancún/Cozumel TMA airspace design to support dual independent test-bed operations at Cancún in close coordination with SENEAM.

Once the airspace design reached an appropriate stage, MITRE created an AIRINC 424 database of the Standard Terminal Arrival Routes (STARs) and Standard Instrument Departures (SIDs) for initial flyability testing. Routes that did not pass initial flyability were redesigned and retested. Note that additional testing by airlines considering appropriate aircraft and Flight Management Systems will be required at the appropriate stage of the project as well.

Next, the MITRE Cancún team spent a significant amount of time procedurally separating routes within the Cancún/Cozumel TMA to support dual independent test-bed operations for Cancún. This work involved applying waypoints, altitudes, and speeds to procedurally separate routes in order to reduce controller intervention and pilot-controller coordination for consideration by SENEAM. The

document describing that work is being sent along with this Technical Letter as a reference (see MITRE document F500-L17-001).

Afterwards, the MITRE team prepared an addendum to the above-mentioned document that provided complimentary graphical depictions of the procedurally separated routes. The document describing that work is also being sent along with this Technical Letter as a reference (see MITRE document F500-L17-006).

Procedural separation matters were further discussed and examined with SENEAM during an airspace design workshop conducted in Cancún from 12 through 16 December 2016 (described in more detail later in this Technical Letter).

- The MITRE NAICM airspace design team spent a significant amount of time procedurally separating routes within the new Mexico City TMA to support operations at NAICM and Toluca Airport. This work involved applying waypoints, altitudes, and speeds to procedurally separate routes in order to reduce controller intervention and pilot-controller coordination for consideration by SENEAM. The documents describing that work are being sent along with this Technical Letter as references (see MITRE documents F500-L17-016 and F500-L17-019).

This information supported SENEAM in starting its examination of the new Mexico City TMA in SENEAM's ATC simulators in Mexico City, which will help identify potential issues with the design.

- During this quarter, MITRE's NAICM enroute airspace design team spent a significant amount of time advancing on its analysis of the sectors pertaining to the Mexico Area Control Center (ACC), as well as the SENEAM-developed Performance-Based Navigation (PBN) routes. This work represents the second step in MITRE's analysis methodology to assist SENEAM in evaluating and designing the Mexico ACC airspace to support NAICM. Preliminary analyses indicate that some of the enroute sectors may need to be redesigned to accommodate the above-mentioned SENEAM-developed PBN routes. The MITRE team modified the enroute sectors and then reevaluated the sectors to identify potential issues. This is on-going work and will be discussed in more detail with SENEAM.
- On 22 September 2016, officials from Aeroméxico and Interjet visited MITRE for a full-day of detailed presentations, demonstrations, and discussions regarding MITRE's NAICM-related work. The visit by the airline officials was critical in order to ensure that they have a comprehensive understanding of important aeronautical and operational matters pertaining to NAICM. As a result, there is now a full understanding on a broad variety of subjects between MITRE and the two largest airlines of Mexico on key operational matters, requirements, and expectations. The visit was very successful and the feedback provided by the airline officials was extremely valuable.

It is important to mention that MITRE also invited officials from Volaris and VivaAerobús to MITRE along with the officials from Aeroméxico and Interjet. Volaris has not responded to the invitation. Perhaps MITRE had a wrong contact. VivaAerobús responded but was not available and would like to visit another time. One of the airline officials from Interjet who visited MITRE offered to follow-up with Volaris on behalf of MITRE, but no feedback has been provided yet.

Finally, MITRE is in the process of submitting Non-Disclosure Agreement documents to Aeroméxico and Interjet (as per MITRE legal requirements due to proprietary and confidentiality matters) for their review and signature. Once signed, MITRE plans to provide information on a few select procedures to Aeroméxico and Interjet for testing. It is important to note that the submittal of the selected procedures to Aeroméxico and Interjet for testing was coordinated and agreed upon with SENEAM in advance.

- In early 2016, MITRE assembled a large team of engineers with expertise in various areas to thoroughly review Volume I of the Arup Master Plan for NAICM (dated 14 September 2015), which MITRE received on 5 April 2016. It is important to note, however, that MITRE is still waiting on information regarding additional Master Plan-related material, such as Volumes 2 through 4 and all other associated files (appendices, AutoCAD drawings, etc.). This information is required for MITRE to conduct a complete and thorough review of the overall Master Plan so that feedback can be provided to GACM and other stakeholders. MITRE requested several times the information above directly from GACM through Ms. Abril Aguirre who was at that time your *Secretaria Particular*.
- In June 2015, MITRE's procedure design team completed and delivered its Area Navigation (RNAV) departure procedure design work to support triple independent operations at NAICM. Refer to Enclosure 1 of Technical Letter F500-L15-021, dated 24 June 2015. Since that time, MITRE has been working closely with SENEAM on the complex redesign of the Mexico City TMA to support operations at NAICM. The above-mentioned airspace design work resulted in numerous changes to MITRE's previously designed RNAV departures. Also, several new RNAV departure routes were added to provide operational flexibility and options during other modes of operation, such as dual independent departure operations.

Therefore, in order to support the NAICM project, MITRE's procedure design team spent a significant amount of time this quarter redeveloping RNAV departure procedures for NAICM. The development of the RNAV departure procedures was very complicated due to the obstacle environment surrounding the NAICM site. Nevertheless, the MITRE team was able to develop the necessary RNAV departure procedures, which were then reviewed with SENEAM's procedure design team (described in more detail below).

- As per previous conversations with Lic. Mascott and SENEAM, a procedure design tool utilizing United States (U.S.) Federal Aviation Administration (FAA)

standards should be acquired to facilitate SENEAM's review of MITRE's procedural work. This will also allow SENEAM and MITRE to work efficiently together on procedure design matters.

During the summer, MITRE conducted discussions with MDA Systems Ltd. (MDA), the developer of a sophisticated procedure design software named Global Procedure Designer (GPD), that MITRE has also acquired. During these discussions, MITRE asked MDA to provide an evaluation license of that software to SENEAM. After numerous, lengthy, and intense discussions, the software provider agreed to offer SENEAM an 18-month evaluation license at no cost. This was, as MITRE sees it, a major accomplishment that will not only save time to SENEAM but contribute in the modernization of procedure design in Mexico. MITRE discussed the offer with SENEAM and it was accepted. Following the 18-month evaluation period, hopefully much earlier as this should be budgeted, SENEAM needs to make a decision about purchasing the software tool.

Next, from 14 through 16 November 2016, two procedure design experts from SENEAM visited MITRE's facilities in McLean, Virginia to meet with several MITRE procedure design experts to install the GPD software and receive initial training to utilize it. This was done with the assistance of an MDA trainer. This training also included provision of an obstacle database for NAICM and Cancún. The software installation and training was very successful and provided the users with a solid foundation on the operation of GPD.

To operate GPD in the SENEAM computer, MITRE made an out-of-scope payment totaling \$3373.78 to acquire a third-party license (ESRI) required to enable GPD to legally operate in that computer (the software itself is already installed). MITRE is willing to also make an out-of-scope payment for an Oracle license similarly required when SENEAM completes that purchase. MITRE is coordinating this with SENEAM.

Following the above-mentioned GPD software installation and training, the process of reviewing the instrument procedures for NAICM and Cancún that were developed by MITRE with SENEAM commenced, as follows:

- On 17 and 18 November 2016, the transfer and review of instrument procedures for NAICM and Cancún developed by MITRE was initiated. This work also took place at MITRE's facilities in McLean, Virginia.
- From 28 November 2016 through 8 December 2016, the transfer and review of all remaining instrument procedures for NAICM and Cancún developed by MITRE was completed. This work took place at SENEAM's facilities in Mexico City.
- From 9 December through 13 December 2016, MITRE design experts remained in Mexico City to conduct with the SENEAM design experts a

number of procedure design exercises using GPD, with the ultimate objective of strengthening their proficiency in its use.

As a result, MITRE transferred and reviewed with the SENEAM procedure design experts to their satisfaction all instrument approach and departure procedures required for the operation of a triple independent runway operation at NAICM (both conventional and satellite-based procedures) and the operation of a dual independent operation at Cancún (only conventional procedures) and addressed all questions asked by the SENEAM experts who participated in the transfer and review sessions. MITRE's availability to address any procedural design questions that may arise continues, of course, and SENEAM should not hesitate to communicate any questions to MITRE. Per MITRE's contract, all procedures designed by MITRE utilized U.S. FAA criteria (Terminal Instrument Procedures [TERPS] and similar).

**With the above-mentioned transfer of procedures, MITRE's contractual obligations concerning approach and departure procedures (both conventional and satellite-based) for NAICM and Cancún have been completed and delivered. Once again, MITRE, however, remains available for consultation.**

- The MITRE Human-In-The-Loop (HITL) simulation team worked on a variety of efforts in preparation for the Cancún HITL simulations to be conducted at MITRE's facilities. A variety of software design and implementation, as well as human factors tasks and other pre- and post-HITL simulation planning and coordination matters (e.g., HITL simulation scenarios, pseudo pilots, HITL simulation participant questionnaires, etc.) were conducted by the team. The MITRE HITL simulation team also visited Cancún for one week to meet with SENEAM (described in more detail later in this Technical Letter) to discuss and plan the upcoming HITL simulations and develop operational scenarios to evaluate and key objectives.

An important task conducted by the MITRE HITL simulation team was the development of a Final Monitor Aid (FMA) prototype display to be used during the above-mentioned HITL simulations, as shown in Figure 1 below. (The FMA will be used to support dual independent test-bed operations at Cancún, and is also required to conduct independent approaches at NAICM.) The MITRE HITL simulation team developed a separate display for each runway configuration at Cancún (Runway 12 direction and Runway 30 direction). The team also developed a radar error model into the display to better simulate realism and update rate of an actual display.



**Figure 1. MITRE FMA Display Prototype to Support HITL Simulations**

- A large team of MITRE engineers visited Cancún from 12 through 16 December 2016 to conduct an airspace design workshop to assist SENEAM with procedural separation and ATC sectorization matters pertaining to the Cancún/Cozumel TMA. The primary objective of the workshop was twofold:
  - To solidify the Cancún/Cozumel TMA routes considering procedural separation and ATC sectorization.
  - To develop scenarios to be accomplished during the upcoming Cancún HITL simulations and address other HITL simulation matters.

Prior to the visit, as previously mentioned, the MITRE Cancún team spent a significant amount of time procedurally separating routes within the Cancún/Cozumel TMA. Additionally, MITRE also developed preliminary ATC sectors within the Cancún/Cozumel TMA based on the procedurally separated routes for further discussion with SENEAM. This allowed the SENEAM and MITRE teams to review the routes and ATC sectors in an efficient and collaborative manner. It is important to mention that prior to the above-mentioned airspace design workshop, the SENEAM team also examined the Cancún airspace design in SENEAM's ATC simulators at the Mérida ACC, which helped in identifying potential issues with the design.

Furthermore, to support the above-mentioned workshop, the MITRE HITL simulation team developed numerous HITL simulation scenarios with key objectives for consideration by SENEAM. During the workshop, the scenarios were discussed in more detail and a brainstorming session was conducted to

identify other scenarios of interest to the SENEAM team. The goals of the upcoming HITL simulations, daily scenario plans, as well as subsequent data analysis and feedback were also discussed to ensure that SENEAM has a full understanding of the overall HITL simulation process and expectations.

In MITRE's opinion, the workshop was extremely successful and its objectives were met. Following the workshop, the MITRE HITL simulation team began inputting routes, procedures, ATC sectors and HITL simulation scenarios into the HITL simulation software in anticipation of the HITL simulation dry-run with SENEAM. The SENEAM and MITRE teams are advancing at a steady pace and are well positioned to meet upcoming HITL simulation milestones.

- MITRE was informed through ASA Oficio ASA/C/00496/2016 that GACM requested MITRE's technical opinion regarding SENEAM's findings that helicopter operations at a proposed heliport to the immediate west of runway 1 at NAICM would conflict with aircraft operations on those runways due to concerns regarding aircraft missed approach procedures.

MITRE is not an expert in the siting of heliports at airports, and the analysis of the interaction of helicopter operations at a heliport collocated with a major airport such as NAICM is beyond MITRE's area of expertise. Having said that, MITRE had the opportunity to discuss this matter with SENEAM during the above-mentioned visit to Cancún to get a better understanding of the situation and their concern. In MITRE's opinion, SENEAM's comments and concerns, as they are the local experts on this subject, appear correct and should be carefully taken into consideration by GACM. It is essential to ensure that operations at proposed heliports at NAICM do not conflict or interfere with aircraft operations on any of the runways at NAICM. No heliport should be built in the proposed location if this is not completely assessed or SENEAM disagrees.

- Under Task 8 of the GACM-MITRE contract, MITRE is to assist the Mexican aviation authorities in the examination of problems relating to airport expandability in Mexico (so that, in the process, they learn how to reexamine in the future modifications concerning NAICM airside and aeronautical matters). As part of this task, specialized methodologies utilized by MITRE will be transferred to Mexican engineers and controllers so that they learn about MITRE's way of conducting runway expansion feasibility analyses.

This task commenced in 2015 with the preliminary identification by the Mexican authorities of the airport to be studied. The task was discussed with Lic. Mascott and other officials, including CTA. Miguel Peláez, Director General of the Dirección General de Aeronáutica Civil (DGAC), during their 20 November 2015 visit to MITRE. During that visit, the following preliminary airports were identified:

- Guadalajara Airport
- Puerto Vallarta Airport

- Tijuana Airport (expansion and/or new airport site examination)

MITRE received a letter from ASA on 13 May 2016, which offered options for MITRE's consideration on how to address the selection of an airport. Based on the information and considerations described in that letter, MITRE agreed to discuss the matter directly with the DGAC.

Therefore, MITRE contacted CTA. Pelález via e-mail in September 2016 regarding the selection of an airport for MITRE to analyze. CTA. Pelález provided a priority airport order, as MITRE's budget would not allow MITRE to perform analyses for three airports simultaneously. MITRE then performed a pre-analysis for all three airports to help CTA. Pelález decide what can be done realistically under MITRE's budget and most benefit Mexico.

On 31 December 2016, MITRE submitted a document to CTA. Pelález describing MITRE's ideas and opinions regarding the airport(s) to be selected and the type of analyses that could be conducted for the airport(s). That document is being sent along with this Technical Letter as a reference (see MITRE document F500-L17-025). Once MITRE receives feedback from the DGAC, a formal decision will be made regarding the scope and content of MITRE's Task 8-related work. Also, following the selection of the final airport(s) to be studied, an AWOS is to be installed by SCT, if needed. A satellite-based photogrammetric survey (for which MITRE is responsible) is also to be performed.

- During the previous quarter, per request on a priority basis by Lic. Mascott and CTA. Pelález, MITRE designated a team of experts to conduct an assessment of the potential impact of a proposed facility named *Centro de Gestión de Residuos Sólidos en el Bordo Poniente* to be constructed near NAICM. The facility would include both solid waste management and bio-digester operations. The proposed facility would be located in an area south of the NAICM runways. MITRE's assessment of the facility raised important operational and safety concerns. Refer to MITRE document F500-L16-040, dated 29 July 2016.

As a result of MITRE's above-mentioned assessment, Mexican officials examined alternative locations for the facility. In mid-September 2016, MITRE received through CTA. Pelález information on alternative locations for the facility, which the MITRE team reviewed and preliminarily investigated.

On 10 October 2016, CTA. Pelález and a delegation of officials from the government of Mexico City visited MITRE for a full day of detailed presentations on MITRE's NAICM-related work, including flight demonstrations in MITRE's ATM Laboratory. A presentation on MITRE's assessment of the above-mentioned locations being considered for the facility was also provided. This was followed by an intense brainstorming session on other potential alternative locations for the facility, considering operations at both current Mexico City International Airport (AICM), since the facility may be constructed prior to the closure of AICM, and later at NAICM. Afterwards, MITRE held a separate meeting with CTA. Pelález to discuss other important matters pertaining to MITRE's project.

As a result of the above-described 10 October 2016 visit to MITRE, the officials from the government of Mexico City investigated three new alternative locations for the facility referred to as Option 3, Option 4.1 and Option 4.2, which are located to the east of AICM and to the south of NAICM. Lic. Mascott and CTA. Peláez again requested, on a very high priority basis (even if this would delay other MITRE work, as authorized by ASA in writing), that MITRE conduct an assessment of the potential impact of Option 3, Option 4.1 and Option 4.2 on operations at both AICM and NAICM. It is important to add that ASA's written authorization for MITRE to conduct the assessment was not received until 31 October 2016, despite MITRE's insistence, given Lic. Mascott's urgency.

Finally, in mid-December 2016, MITRE learned by coincidence that another alternative location for the facility, referred to as Option 5, was being investigated (and that construction planning was probably underway). MITRE had not been informed of Option 5 and had not been requested to assess its potential impact on operations at AICM and NAICM.

As long as MITRE takes responsibility, as an aeronautical adviser of all work that may become a procedural obstacle, it is important that it is informed so that it examines with its SENEAM colleagues all options to avoid confusion and to ensure consistency among analyses and findings. Therefore, MITRE expresses here its concern and hopes that such situations are avoided in the future, no matter how politically important it is. An obstacle to navigation can be dangerous in the future and it can also severely affect MITRE's reputation.

Following the above, MITRE contacted Lic. Mascott, and CTA. Peláez to better understand Option 5. As a result, SCT formally requested that MITRE conduct an assessment of Option 5, shortly before Christmas 2016. Despite the late notice, and given the urgency of this matter, the MITRE team regrouped and focused its attention on completing the assessment of Option 5 as soon as possible. Refer to Enclosure 1 of this Technical Letter for details.

- The MITRE NAICM airspace design team also spent time developing an initial ATC sectorization concept associated with the new Mexico City TMA airspace design for opening-day. The sectorization concept also considers Toluca routes that have been developed as part of the overall new Mexico City TMA airspace design. Refer to Enclosure 2 of this Technical Letter for details.

The initial ATC sectorization concept will be discussed in more detail with SENEAM. Then, sectors will be used to support the upcoming new Mexico City TMA and Mexico ACC airspace design work, as well as preparations for future HITL simulations.

- Toluca Airport plays an important role in meeting the aviation demand of the Mexico City area. Therefore, it is important to consider operations at Toluca Airport when designing the new Mexico City TMA to ensure that capacity-limiting airspace interactions do not adversely impact operations at NAICM. A key factor

in conducting airspace analyses are meteorological conditions, which can affect traffic flow scenarios and operational matters. It is essential to examine meteorological conditions at Toluca Airport to obtain a better understanding of prevailing wind and weather patterns. Therefore, MITRE conducted an analysis of Toluca Airport weather based on data from an on-site AWOS covering a period from 1 January 2009 through 30 November 2016. Refer to Enclosure 3 of this Technical Letter for details.

- In early 2015, ASA issued a stop-work order on all MITRE's work concerning a second runway for Toluca Airport (on the basis that this is a long-run target), despite the fact that the approved contract's plan and budget included a second parallel runway. MITRE immediately expressed in many ways that this was an error because in designing NAICM's airspace, Toluca Airport operations need to be considered.

During the 20 November 2015 visit to MITRE by Lic. Mascott and other officials, the topic of the second parallel runway at Toluca Airport was discussed. MITRE expressed its opinion that Toluca Airport should be planned and protected for long-term growth along with NAICM's growth. As a result, the officials present at the meeting, including Lic. Mascott, Ing. Roberto Kobeh, Director General of SENEAM, and Lic. Alfonso Sarabia, Director General of ASA, agreed that a second parallel runway at Toluca should be considered, as originally planned. However, MITRE never received ASA's revocation of the stop-work order despite repeated requests over a one-year time period.

The entire Toluca Airport work is now delayed (both runways need to be analyzed simultaneously) and this is already starting to impact other NAICM-related airspace and procedure design work. Furthermore, part of the MITRE Toluca Airport team has been reassigned to work on other tasks. See the Contractual Matters section below.

- Contractual Matters
  - **Toluca-Related Work** – As mentioned above, MITRE requires formal authorization to re-instate consideration of a second parallel runway at Toluca Airport. This formal notification is now urgent to avoid further work delay in both, the Toluca Airport work and part of the NAICM airspace design. Once GACM indicates (even informally) that it plans re-instate this work, MITRE will be able to designate a team to move on within five months or so. Additionally, at that time, MITRE is going to require feedback from appropriate authorities on the preferred location of a second parallel runway for Toluca Airport. Note that runway spacing standards keep changing.
  - **Hidalgo-Related Work** – ASA issued a stop-work order on all MITRE's work in the state of Hidalgo, on the basis of the Fuerza Aérea Mexicana's

(FAM's) preference to relocate Santa Lucía Air Bases' fixed-wing non-transport aircraft operations to Querétaro Airport.

MITRE informed ASA that FAM operations at Querétaro Airport, along with the establishment of Special-Use Airspace (SUA) to support those operations must be thoroughly examined to ensure that the airport is feasible and, more importantly, that FAM's operations do not interfere with future operations at NAICM. Such investigation must be conducted in close coordination with FAM and SENEAM officials.

Since this work is not contained in MITRE's current contract, a modification of the contract will be required, possibly exchanging the Hidalgo work, never completed, for the new work for Querétaro. Before that happens, it is essential that MITRE meets with officials from FAM to discuss the specific work to be conducted for Querétaro Airport once the NAICM airspace and procedure design reaches an appropriate stage. Therefore, MITRE plans to reconvene FAM-related coordination matters in upcoming months.

- Note that due to the recent assignment of MITRE's contract to GACM, the above-mentioned Toluca and Hidalgo contractual matters will need to be addressed by GACM.

Please do not hesitate to contact me if you need any clarification or assistance.

Sincerely,



Ing. Robert W. Kleinhans  
Project Technical Coordinator

Included with this letter:  
Eight documents (including three Enclosures)

cc: Dr. Bernardo Lisker, MITRE

**This two-page return receipt (*acuse de recibo*) is to be scanned (all pages) and e-mailed to Ing. R. Kleinhans**

**15 JANUARY 2017 TECHNICAL LETTER DISTRIBUTION**

MITRE requests that the documents enclosed with this Technical Letter are distributed as follows.

1. Cancún and Cozumel Preliminary Procedural Separation: Informal Working Notes. See MITRE document F500-L17-001, dated 17 October 2016.
  - GACM: 5 copies
  - SENEAM: 5 copies
  - DGAC: 5 copies
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  - DGAC: 5 copies

The distribution of the eight, above-mentioned documents, was completed.

\_\_\_\_\_  
Signature of GACM Point of Contact for MITRE

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name of GACM Point of Contact for MITRE