

27 January 2014  
F500-L14-012

Lic. y P.A. Gilberto López Meyer  
Aeropuertos y Servicios Auxiliares (ASA)  
Avenida 602, Número 161  
15620 México, D.F.  
México

**Subject: Technical Letter: Summary of Work During the Period 1 December 2013 through 31 January 2014**

Dear Capt. López Meyer:

This letter respectfully submits to your attention a summary of the most significant project activities conducted by MITRE during the period 1 December 2013 through 31 January 2014. This letter includes three enclosures, as follows:

- **Enclosure No. 1: Alternative Runway Configurations for the Nuevo Aeropuerto Internacional de la Ciudad de México**. This enclosure discusses the various runway configuration alternatives being considered for the Nuevo Aeropuerto Internacional de la Ciudad de México (NAICM) site. Its appendix provides the coordinates of the runway ends for each of the configurations.

Per your request, MITRE reviewed the location of a new runway configuration delivered to MITRE by ASA on 26 November 2013. A fast-response team was assembled to conduct a general examination of the newly proposed configuration in order to provide you with a quick assessment and opinion. Additionally, and also per your request, MITRE examined the potential of adjusting the runway configuration already recommended by MITRE during a previous study that ended in July 2012, referred to as the MITRE-Recommended Runway Configuration. Specifically, MITRE investigated the potential for shifting runways in a manner that would allow additional room between the center and eastern pairs of closely spaced runways to accommodate a terminal building between those pairs of runways. This enclosure was rushed to you on 10 December 2013 (see MITRE letter F500-L14-006).

- **Enclosure No. 2: Alternative Runway Configuration for the Nuevo Aeropuerto Internacional de la Ciudad de México - Feasibility Analysis of Independent Departure Procedures**. This enclosure describes the work performed by MITRE to examine the feasibility of conducting independent instrument departures in both directions to three parallel runways for the NAICM Alternative 1 Runway Configuration described in Enclosure 1 above (i.e., the configuration that MITRE has been focusing on for a long time, attempting to fit six runways within federal land).

- **Enclosure No. 3: Hidalgo Terrain and Airspace Basemap Preparation - Initial Digitization.** This enclosure describes MITRE's development of the initial Hidalgo Airport basemaps. A large multi-disciplinary team of experts in several fields has continuously worked on the development of the basemaps since October 2013. Due to its nature, the basemap digitization is not susceptible to be mailed. While the enclosure describes in detail the basemap work, the following lines briefly explain its contents and purpose.

The basemaps provide a three-dimensional work environment within which MITRE can analyze a wide variety of important aeronautical matters. Construction of basemaps is a very labor-intensive, but essential effort. A properly created basemap enables better control, usage, and manipulation of data, more efficient and accurate analyses, and provides extensive visualization capabilities. MITRE will utilize the basemaps to assess obstacle limitation surfaces, perform aeronautical analyses, site new runways, evaluate instrument approach and departure procedures, and examine airspace and noise exposure.

### **Other Activities**

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

- In early December, MITRE provided a report to Lic. Manuel Ángel Núñez that provided a summary of MITRE's initial exploratory investigation of three potential new airport locations within the State of Hidalgo near the towns of Tepeji del Río Tlahuelilpan, Actopan-Santiago de Anaya, and Tulancingo. This information was provided to Lic. Núñez so that he could make others within the government of the State of Hidalgo aware of MITRE's initial exploratory work and provide feedback to MITRE in the short term.
- In late December, MITRE collaborated with ASA in the preparation of a briefing on the major airspace interactions and complications caused by Santa Lucía Military Base on operations at NAICM. This information was requested for a briefing being provided by the Secretary of Communications and Transportation to the Secretary of Defense.
- On 16 January, at your request, MITRE provided information via e-mail that described real-world examples of joint civil/military airports. The intent of this information was to assist ASA during a high-level meeting where the concept of relocating Santa Lucía Military Base to a new joint civil/military airport would be discussed.
- On 19 January, an important set of recommendations concerning the administration of project data and back and forth information between ASA and MITRE was sent to you via e-mail. The following is a list of project data items being required by MITRE:



- Hidalgo Automated Weather Observing Systems (AWOSs). MITRE was asked to rush AWOS specifications to ASA in early November 2013 so that three AWOSs, needed for the potential new airport sites in Hidalgo, could be acquired within 2013, to be installed in early 2014. MITRE offered to assist ASA in the review of the vendor technical proposals and other aspects relating to this acquisition. No further information on the status of this process has been received.
  - i. See Enclosure No. 5: Specifications for Automated Weather Observing Systems - For Three Potential Airport Sites in the State of Hidalgo, dated November 2013 (originally sent on 7 November 2013).
- Data requested by 15 January 2014.
  - i. See Enclosure No. 6: Project Data Preparation and Computerized Database Loading, dated November 2013.
- Mexico Aeronautical Information Publication (AIP) subscription. The AIP was received. However, it is not clear whether MITRE was provided with a subscription to amendments, which is important in order to keep up-to-date on important aeronautical changes.
  - i. Requested via e-mail and through Enclosure No. 6 mentioned above.
- Power-line information. Power-line information from the Comisión Federal de Electricidad (power-line elevation, meaning of Excel tabs in a file ASA sent to MITRE, indication of the portions of power-line to be underground) was requested.
  - i. Requests made via e-mail starting in November 2013.
- Comisión Nacional del Agua (CONAGUA) facilities. The position of the CONAGUA facilities that affect the western airport construction area needs to be provided.
  - i. ASA informed MITRE via e-mail in early January that an AutoCAD layout would be sent.
- Expected: a visit to MITRE on 28 January by yourself and Ing. Jorge Nevárez is expected. The following Technical Letter will detail key discussions during the visit.
- Expected: a visit to MITRE on 29 January by yourself, Ing. Jorge Nevárez, Lic. Manuel Ángel Núñez, and two representatives from ARUP is expected. The following Technical Letter will detail key discussions during the visit.
- Expected: a visit to MITRE on 30 January, by Lic. Manuel Ángel Núñez and five officials from the Fuerza Aérea Mexicana (FAM) is expected. During that visit important discussions are to be held regarding the relocation of Santa Lucía Military Base and the potential new airport sites being considered in the State of

Hidalgo for the development of a joint civil/military airport to replace Santa Lucía Military Base. The following Technical Letter will detail key discussions during the visit.

- MITRE is responsible for the procurement of a satellite-based survey of the NAICM site and its surroundings in order to update navigational procedures previously developed by MITRE. MITRE is almost ready to order the satellite-based survey. Contract and licensing preparation and negotiations are being conducted. MITRE expects to confirm the order in February 2014. Figure 1 shows the preliminary survey areas being considered by MITRE.

**Intentionally Left Blank**



Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

**Figure 1. Preliminary Survey Areas for NAICM (Subject to Change)**

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

Sincerely,

Ing. Robert W. Kleinhans  
Project Technical Coordinator

Enclosures (3)

cc: Dr. Bernard Lisker