Digital Globe 90% satelital (?)

14 de Abril de 2010

Sr. Gabriel Tort
Director Gral. Adjunto de Aviación
SCT-SST-DGAC
Providencia 807, 7o piso
Del Valle
03100 México, D.F.

ASUNTO: Estudio Fotogramétrico basado en información satelital del Area de Texcoco y sus Alrededores

Estimado Sr. Tort,

MDA Geospatial Services tiene el agrado de enviarles la propuesta adjunta Número 01-5896 para el *"Estudio Fotogramétrico basado en información satelital del Area de Texcoco y sus Alrededores".*

Nuestra propuesta cumple en su totalidad con las especificaciones de MITRE número de referencia F062-L10-013 y nuestra empresa continúa trabajando con MITRE para proporcionarles estudios de aeropuertos de alta calidad, de conformidad a su solicitud, usando la mencionada especificación. Los productos resultantes de nuestro estudio son compatibles con el software de MITRE y su metodología de análisis. Consideramos que nuestra experiencia y previo trabajo con MITRE representa una ventaja significativa para DGAC de manera de asegurar que el trabajo planeado por MITRE prosiga sin complicaciones. Nuestra experiencia previa y análisis del trabajo requerido nos permite comprometernos a la finalización del estudio para la primera semana de Diciembre del 2010, dado que estaremos bajo contrato la primera semana de Mayo del 2010. También entregaremos productos provisorios para asistir a MITRE en el cumplimiento de su plan de trabajo.

Nuestro método de estudio usará los datos satelitales más recientes de uno de los más avanzados satélites disponibles de alta resolución, el satélite WorldView-2, de propiedad y operado por la compañía DigitalGlobe de Colorado, USA. MDA tiene una extensa experiencia en mapeo de aeropuertos con la familia de satélites de DigitalGlobe, tanto para MITRE como para Jeppesen Saunders (una subsidiaria de Boeing). Hemos mapeado un número mayor de 300 aeropuertos, muchos de ellos en múltiples oportunidades, como parte de nuestro mantenimiento continuo de la base de datos creada inicialmente.

MDA es una compañía de alta tecnología, cuya casa matriz se encuentra ubicada en Vancouver, Canadá, con más de $1 Billón de ingresos anuales y que aparece en la lista de la Bolsa de Valores (TSE:MDA). Nuestra mayor línea de negocios abarca el desarrollo de sistemas complejos, a menudo en el sector de aviación para clientes como la FAA (Federal Aviation Administration-Administración Federal de Aviación) y USAF (United States Air Force- Fuerza Aérea de Estados Unidos), la construcción de satélites y también proporcionando productos y servicios para mapeo basados en información satelital. Nuestro conocimiento de los requisitos de información para la aviación incluye sistemas para el procesamiento de NOTAMs (Notice to Airmen - Información para Aviadores, por ejemplo), sistemas para el diseño de procedimientos de vuelo y la creación de base de datos geoespaciales relacionadas a la aviación (por ejm. ICAO Anexo 15 que se ajusta a los estudios de terreno y obstáculos).

MDA se complace en enviarles la presente propuesta con la firme convicción de que representamos para DGAC una solución única y de bajo riesgo para el requerido aeropuerto de Texcoco y en particular para la entrega programada de los resultados de los estudios de la más alta calidad en Diciembre del 2010.

Sin otro particular quedo de Ud, muy atentamente,

Kevin O' Neill
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MDA Geospatial Services Inc.
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av

April 14, 2010

Mr. Gabriel Tort
Director Gral. Adjunto de Aviación
SCT-SST-DGAC
Providencia 807, 7o piso
Del Valle
03100 México, D.F.

Subject: Photogrammetric, Satellite-Based Survey of the Texcoco Area and Its Surroundings

Dear Mr. Tort,

MDA Geospatial Services is pleased to provide the attached proposal for a "Photogrammetric, Satellite-Based Survey of the Texcoco Area and Its Surroundings", Proposal Reference Number 01-5896.

Our proposal is fully compliant with the MITRE specification reference # F062-L10-013. We continue to work with MITRE to provide high quality surveys of airports at their request using this specification. Our survey products produced are compatible with MITRE's internal software and analysis methodology. We believe our experience and previous work with MITRE represents a significant advantage to DGAC in order to ensure MITRE's planned work proceeds smoothly. Our previous experience and analysis of the required work also enables us to commit to a survey completion in the first week of December 2010, provided we are under contract in the first week of May 2010. we will also deliver interim products to further assist MITRE in accomplishing their work plan.

Our survey method will use the latest satellite data from one of the most advanced high resolution imaging satellites available, the WorldView-2 satellite owned and operated by DigitalGlobe of Colorado, USA. MDA has extensive experience in mapping airports with the DigitalGlobe family of satellites, both for MITRE and for Jeppesen Saunders (a Boeing subsidiary). We have mapped in excess of 300 airports, many of them multiple times, as part of our ongoing maintenance of the databases initially created.

MDA is a Vancouver Canada headquartered high technology company with in excess of $1 Billion in annual revenue and listed on the Toronto stock exchange (TSE:MDA). Our major line of business encompass developing complex systems, often in the aviation sector for clients like the FAA and USAF, building satellites and also providing satellite based mapping products and services. Our knowledge of aviation information requirements includes systems for the processing of NOTAMs (example), systems for flight procedure design and creating aviation related geospatial databases (e.g. ICAO Annex 15 compliant terrain and obstacle surveys).

MDA is pleased to provide this proposal and we believe that we represent a unique and low risk solution to DGAC's requirement for the required Texcoco airport and in particular the scheduled delivery of the highest quality survey results in December 2010.

Yours faithfully,

Kevin O' Neill
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Photogrammetric, Satellite-Based Survey of the Texcoco Area and Its Surroundings

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Document Information

Document Name:	Photogrammetric, Satellite-Based Survey of the Texcoco Area and Its Surroundings
Document Number:	01-5896
MDA GSI Reference:	RV-20072
Date:	April 14, 2010

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Acronyms

AGL	Above Ground Level
CAA	Civil Aviation Authority
CAASD	Center for Advanced Aviation System Development
DGAC	Dirección General de Aeronáutica Civil
DEM	Digital Elevation Model
GCP	Ground Control Point
GeoTIFF	Geographic Tagged Image File Format
km	kilometre
m	metre
MDA GSI	MDA Geospatial Services Inc.
MDA	MacDONALD, DETTWILER AND ASSOCIATES LTD.
MSL	Mean Sea Level
PSA	Photogrammetric Survey Area
sq km	Square Kilometres
SCT	Secretariat of Communications and Transportation of Mexico
SRTM	Shuttle Radar Topography Mission
UTM	Universal Transverse Mercator
WV2	WorldView-2

1 MDA GSI Unique Qualifications

MDA Geospatial Services Inc. ("MDA GSI") is pleased to provide this Proposal to Mexico's Dirección General de Aeronáutica Civil ("DGAC"), which is a dependency of the Secretariat of Communications and Transportation ("SCT"). MDA GSI's years of experience, acquired by having worked with various aviation stakeholders such as The MITRE Corporation ("MITRE"), USAF, Jeppesen, the FAA and others, have provided it with a particular uniqueness as an honest-broker of numerous data and information providers; as a result, MDA GSI always strives to go with the best complete solution rather than the common one. MDA GSI is poised to lend that strength, experience and expertise to the Texcoco project. The following Table 1-1 showcases MDA GSI's unique capabilities.

Table 1-1 MDA GSI Unique Qualifications

MDA GSI Uniqueness	Benefit
Previous experience with MITRE	MDA GSI has worked previously with MITRE on similar projects to Texcoco and developed an excellent relationship with MITRE and the MITRE personnel already working on the Texcoco project. MDA GSI also has extensive experience working in Latin America and in particular Mexico. For instance, MDA GSI has an ongoing multi-year monitoring project with PEMEX.
	This experience allows MDA GSI to determine the kind of data that MITRE requires and the necessary formats for MITRE to ingest such data into its software and internal processes.
	This previous experience results in a lower risk project as MDA GSI has a record of committing to and meeting MITRE's schedule and making interim deliveries to accommodate MITRE's project schedule.
Aeronautical Information	MDA GSI combines unique experience and knowledge in both aeronautical information (for example, the International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA) standards and their application in procedure design) and mapping (high accuracy and cost-effective terrain and obstacles). This unique experience positions MDA GSI to be more than just a conventional mapping company but rather a mapping company that is knowledgeable in the use of the data in aeronautics and the creation of a better, more suitable product as a result.
	This unique knowledge is incorporated into MDA GSI's mapping tools and procedures so as to provide accurate and compliant aeronautical mapping products.
Satellite-based Mapping	MDA GSI not only uses satellite imagery in its mapping projects but its parent company, MacDONALD, DETTWILER AND ASSOCIATES LTD. ("MDA"), also builds earth imaging satellites and the systems to process the imagery. MDA GSI and MDA are unique in spanning the complete technology chain from building satellites, developing related data processing systems, to providing mapping services. This allows MDA GSI to have unique insight into satellite operations and details of how the actual cameras are designed and work.
	Consequently MDA GSI is uniquely positioned to derive the maximum geometric accuracy and information from the satellite imagery and perform these tasks on schedule and to our client's satisfaction.

MDA GSI Uniqueness	Benefit
Aeronautical Client Base	MDA GSI and MDA count leading aeronautical organisations, government and commercial, among their client base. Such organisation include the following: • USAF: where MDA has built a complete procedure design system, AFTERPS, which is now deployed and operating to the satisfaction of the USAF customer • FAA: the FAA awarded a contract to MDA to implement the IPDS system to enable FAA staff to efficiently produce the latest flight procedure designs and ultimately be compatible with the USAF's previously procured AFTERPS system. • Jeppesen: MDA GSI has performed airport mapping for Jeppesen for almost 5 years and mapped in excess of 400 airports around the world. These products are produced to rigorous RTCA standards. The airport maps are incorporated in Jeppesen's Electronic Flight BAG (EFB) Other clients include Transport Canada and other international civil aviation authorities. MDA GSI and MDA have developed advanced information solutions (systems and services) to the satisfaction of our aeronautical clients under the most demanding of schedules.

2 Introduction

This Proposal demonstrates MDA GSI's approach to survey the location and surrounding area of the proposed Texcoco Airport site ("Texcoco"), centered at approximately N19.513°, W98.982°, through the use of earth imaging satellites (the "Project"). MDA GSI has developed an innovative and cost-effective method to conduct airport surveys to meet the geospatial information requirements of terrain and obstructions.

This Proposal is based on specifications requested by DGAC, which in turn were based on specifications from MITRE. See Appendix B for more information (MITRE document F062-L10-013, entitled Specifications for a Photogrammetric, Satellite-Based Survey of the Texcoco Area and its Surroundings, dated 29 March 2010, hereinafter referred as the "MITRE Specifications").

To this end, MDA GSI would provide duplicate Project deliverables, with one set sent to DGAC and the other delivered to MITRE (subject to DGAC's prior written agreement). Under MITRE's agreement with DGAC, MITRE would perform additional work with the MDA GSI Project deliverables. MDA GSI has extensive experience with this type of work and is therefore fully familiar with the requirements and deliverables and could in turn support MITRE in its survey schedule with DGAC. MDA GSI recommends that DGAC permit MDA GSI to work closely with MITRE throughout the performance of this Project. However, it is understood that DGAC would remain the technical authority on this Project.

2.1 Understanding the Problem

Airport procedure development requires accurate and up-to-date information on terrain and natural/man-made obstructions within their catchment areas.

As per the MITRE Specifications (see Attachment A-1), MITRE requires a source of quality information on the terrain and obstructions for Texcoco and its surroundings in three specific aeronautical areas (collectively, the "Aeronautical Areas" or individually an "Aeronautical Area"), shown in Figure 2-1, denoted as:

- Photogrammetric Survey Area ("PSA") - area of 139 sq km

- Area A (extending 10 km in all directions from a MITRE-established boundary) - cumulative area (PSA + Area A) of 788 sq km

- Area B (extending 35 km in all directions from the boundary of Area A) - cumulative area (PSA + Area A + Area B) of 9632 sq km
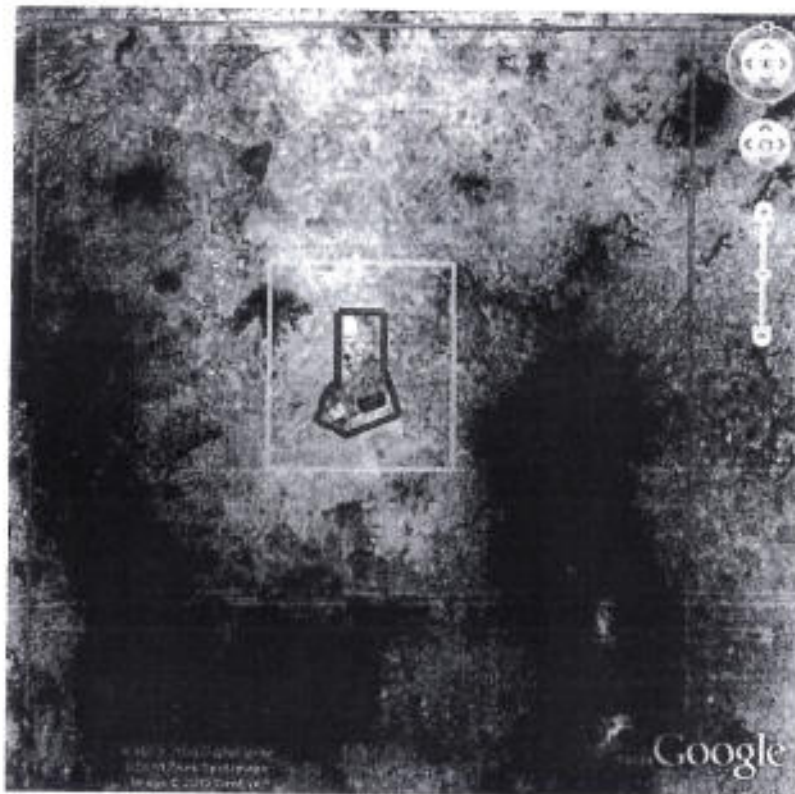

Figure 2-1 - Aeronautical Areas: Area B (red), Area B (yellow) and the PSA (blue)

The survey should utilize high resolution satellite imagery in which the resolutions on the final survey results would meet the accuracies, as specified in Table 2-1 below, which are required for each of the Aeronautical Areas.

Deliverables would include the following:

- Digital drawing(s) containing all obstructions for PSA, Area A and B, which include the following:
  - 5 m contour line intervals
  - Spot elevations
  - North arrow showing magnetic declinations
  - All major items should be labelled/identified through symbols in a legend
  - AutoCAD drawings with specific line-type properties as identified below for:
    - Contour lines: 3D polylines with z-values
    - Spot elevations: 3D circle (10-m radius) with z-value
    - Buildings, towers, power lines, bridges, etc.: 3D polylines with z-values for each vertex
    - Tree lines: 3D polylines with z-values
    - Individual trees: 3D circle (10-m radius) with z-value
    - Poles, posts, antennas, etc.: 3D circle (10-m radius) with z-value

MDA GSI would consult with MITRE to determine if any ambiguous or questionable obstacles and/or features (e.g., signs) should be included in the respective deliverable.

- Technical report describing the overall development of the survey, including a list of all ground control points ("GCPs").
- Color mosaic created from satellite imagery collected for PSA, Area A and Area B. It would be provided electronically (geo-registered, e.g., Geo-TIFF file, tiled for file size compatibility).
- Color mosaic created from satellite imagery collected for the PSA and Area A. It would be provided as a print (2 hardcopies).
- Colour mosaic created from satellite imagery collected for all Aeronautical Areas (PSA, Area A and Area B). It would be provided as a print (2 hardcopies).

2.2 Technical Solution

High resolution satellite imagery can provide a cost-effective and reliable source of information relating to the terrain and natural man-made obstructions within an airport catchment area.

2.3 Satellite-Based Survey Methodology Overview

The following is a high level description of the proposed satellite survey methodology. The major activities consist of the following:

- An initial inventory of geospatial data available and a satellite imagery acquisition plan.
- An assessment of the area, which would include a field trip, during which GCPs and appropriate data from DGAC or other government and private agencies would be obtained. MDA GSI would validate the accuracy, completeness and appropriateness of all data obtained from other sources.
- Acquisition by DigitalGlobe, Inc. of WorldView-2 ("WV2") color satellite stereo imagery over the PSA and Area A, and WV2 monoscopic color satellite imagery over Area B.
- PSA analysis:
  - Generation of Digital Elevation Models ("DEMs") using the WV2 stereo imagery
  - Mapping (x,y,z) of the man-made and natural features using the WV2 stereo imagery

- Area A Analysis:

  - Generation of DEMs using the WV2 stereo imagery

  - Mapping (x,y,z) of any qualifying obstructions using WV2 stereo imagery

- Area B analysis:

  - Shuttle Radar Topography Mission 90 ("SRTM 90") DEM data, which is available in the public domain, would be used as the DEM source

  - Mapping (x,y,z) of any qualifying obstructions in Area B using WV2 monoscopic color imagery

- Additional field trips to verify the above-mentioned analyses and collect any other necessary in situ data.

- Generation of a final report and delivery of AutoCAD Map 3D 2008 (i.e., .dwg files) compatible and formatted data, as well as color mosaics (2 hard copies and an electronic geo-registered, e.g., Geo-TIFF file) of the WV2 imagery.

2.4 Satellite Data Accuracies and Acquisition Strategies

The acquisition of new satellite imagery is key to the Project.

One source of satellite data (i.e., from WV2) would be used to support the analysis of the Aeronautical Areas.

The PSA and Area A would require high resolution optical data to map terrain and obstacle heights. MDA GSI has chosen the WV2 satellite as the source of satellite imagery for the PSA and Area A. The rationale for this choice includes the following:

- Option for stereo imagery collections to allow for DEM generation and enhanced feature extraction capability

- 0.5 metre resolution to optimize the ability to see as many obstructions as possible

- Image product-defined accuracies that best meet the aviation survey accuracy requirements

- Very high data collection capability that would accommodate the required delivery schedule and impending rainy season in the locale

MDA GSI would utilize Stereo WV2 0.5 m data. Both stereo images would be above a 60 degree elevation with a 30-45 degree convergence. This, in combination with sub-metre accuracy GCPs collected during field checks, would assist in meeting the precision positional accuracies defined in Table 2-2 below:

Table 2-2 WorldView-2 Stereo Data Collection Accuracies for 0.5 m Data Collections
Source: *DigitalGlobe Core Imagery Products Guide*

Product	Positional Accuracy	
	CE90	LE90
Precision	2.0 m	3.0 m

DigitalGlobe, the owner of the WV2 satellite, specifies that imagery from new collections are to have no more than 15% cloud cover, with the customer having the option of specifying the area in which cloud-free coverage is required. MDA GSI would work with MITRE in the objective of getting DigitalGlobe to acquire cloud-free imagery in all critical regions of analysis. Notwithstanding the foregoing, due to environmental factors beyond its control, DigitalGlobe does not guarantee that imagery meeting the aforementioned cloud-free specifications

will be collected. In the event that there are clouds over critical areas, these can be ground-surveyed during one of the planned field trips.

MDA GSI would use the same WV2 satellite for Area B, utilizing the monoscopic (single coverage) collection mode instead of stereo. MDA GSI would choose monoscopic WV2 satellite imagery for the larger Area B because stereo is prohibitively expensive for such a large area. Also, monoscopic imagery would allow for obstacles to be identified meeting the requested accuracy requirements.

2.4.1 Cloud Cover and Targeted Areas of Interest

MDA GSI realizes the importance of capturing all obstructions within the guidelines defined in the MITRE Specifications. To better assure that cloud-free WV2 imagery is acquired over critical Aeronautical Areas MITRE would provide MDA GSI with 10 locations in which cloud-free coverage is essential. These designated cloud-free locations may be either 4 X 4 sq km or 2 X 2 sq km each in size.

DigitalGlobe would use commercially reasonable endeavours to acquire WV2 imagery that meets MITRE's cloud-free requirements. DigitalGlobe would provide a preview of a WV2 image (i.e., a decimated .jpg of the full-resolution WV2 image) for MITRE approval. Should MITRE not accept the WV2 preview image, DigitalGlobe would provide MITRE with up to 2 more preview images.

To deal with the potential of cloud cover in key areas of the satellite acquisitions, MDA GSI would allocate resources to allow for additional data collections using the WV2 satellite for areas in which cloud cover has obscured critical areas of interest in any of the Aeronautical Areas. Equally, these additional resources, including survey services, could be used to target and survey critical areas within Area B that would require the increased resolution of WV2 to derive more detailed information. The possibility of collecting additional WV2 imagery has been included in this Proposal as contingency to account for cloud cover or allow for more detail in Area B. The resources to collect additional stereo imagery would be allocated for up to 8 locations ≤100 sq km in size.

2.5 Technical Work Flow

The workflow and major deliverables from each step is summarized in Table 2-3 below:

Table 2-3 Required Inputs and Outputs of Satellite Based Airport Survey Methodology

Task	Input	Output
Site Assessment Visit Kick Off Meeting — To maximize the information available to enhance resulting satellite imagery analysis.	• Aeronautical Areas location information as provided in the MITRE Specifications. • 10 critical locations, ≤ 4 sq km in area, defined by MITRE that must be cloud free. • Existing geospatial data available from DGAC, and/or in the public domain if required, which meet appropriate accuracy and completeness requirements (to be determined by MDA GSI).	• Database of GCPs • Follow-on data acquisition plan for satellite imagery
Acquire New Satellite Imagery — To obtain up-to-date satellite imagery for analysis.	• Aeronautical Areas locations.	• Satellite stereo imagery over the PSA and Area A • Monoscopic satellite imagery over Area B • 8 additional locations of ≤100 sq km in stereo satellite imagery over the Aeronautical Areas

⊃MDA

Task	Input	Output
Generate DEMs and Obstructions Area A and PSA To generate DEMs, spot heights, obstruction heights and orthorectified imagery of study location To investigate potential obstructions of particular interest	• Area A and PSA location • Ground control • Stereo WV2 imagery over the PSA and Area A	• DEM (and 5 m contour intervals and spot elevations) for PSA and Area A • PSA area x,y,z mapping of all natural and man-made features • Obstructions database for Area A including location and elevation (MSL) of obstructions • Area A mapping of all qualifying obstructions • Validated DGAC-provided obstructions (if provided) • Orthorectified and mosaicked imagery
Obstruction Survey of Area B To locate and measure obstructions 60 m or greater AGL To investigate potential obstructions of particular interest	• Area B location • WV2 monoscopic 0.5 m resolution satellite imagery • SRTM terrain data	• SRTM data used in the analysis • Obstructions database for obstructions over 60 m AGL, including location and elevation above MSL • Orthorectified WV2 imagery • WV2 mosaic (including Area A and the PSA)
Field Check To make two field trips in which in situ data is collected and obstruction and terrain are validated (one early in production, one at end of production)	• The geospatial data generated by MDA GSI for all Aeronautical Areas, namely DEMs, obstructions, mapped features, GCPs, check points	• Updated geospatial data • Validated obstructions and their accuracies
Final Report and Deliverables Produce final deliverables required by the MITRE Specifications	• Project plan • Outputs from each task • Notes from field trips and meetings • Inventory and catalogue of all digital data (provided by DGAC and others and generated as part of this Project from satellite imagery and any other sources used) • MITRE-defined file sizes for manageable mosaic and drawing files • MITRE-defined border and plotting scale for hardcopy mosaic plots	• Final report including overall development of survey and list of all GCPs • AutoCAD Map 3D 2008 formatted terrain and obstacle data in a digital drawing • Color orthorectified WV2 image mosaic of the PSA, Area A and Area B utilized for the survey—both hardcopy plot (2 hardcopies) and electronic (geo-registered—e.g., Geo-TIFF file) version
Post Support Consultation	• MITRE-defined questions, issues and additional analysis support	• Up to 5 days consulting support as required

2.6 Project Schedule

The expected Project schedule would be influenced by the availability of WV2 data collection. The Mexico rainy season starts in the late spring, decreasing the chances of acquiring cloud-free imagery over the summer. Digital Globe's recommended collection window is 86 days. Therefore, if DGAC and MDA GSI sign a contract on or before 3 May 2010, there should be sufficient time for MDA GSI to officially request that DigitalGlobe acquire imagery in a timeframe that would accommodate MITRE's survey schedule with DGAC.

Figure 2-3 below illustrates the Project schedule. MDA GSI would review the Project schedule with DGAC and MITRE regularly to optimize the scheduled timing of deliverables to best support MITRE in meeting its survey schedule with DGAC.
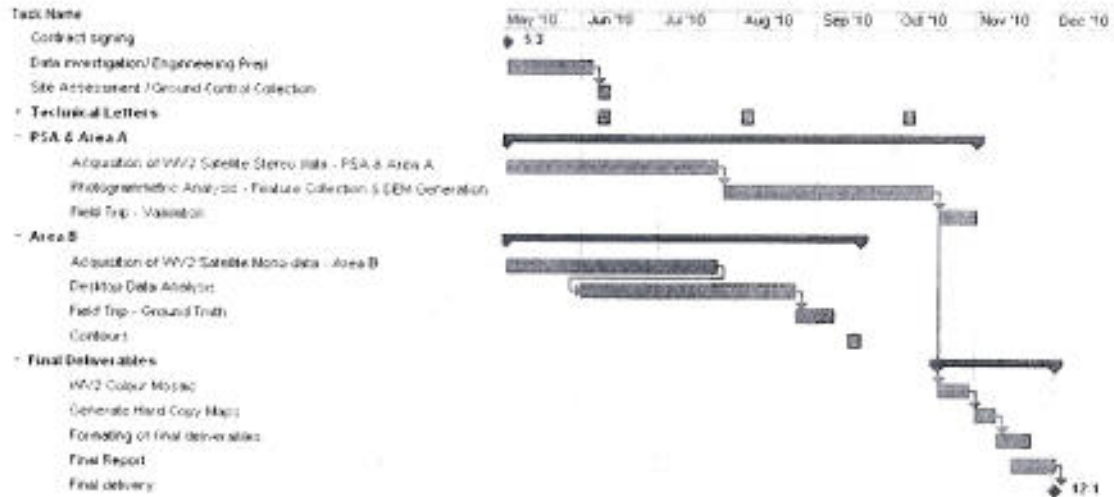

Figure 2-3   Project Schedule for Texcoco Airport

The interim products (e.g., survey data, mosaics, reports, etc.) would be made available to DGAC and MITRE (subject to DGAC's prior written agreement) during the analysis. These interim products would be draft versions only and not be considered final deliverables. DGAC and MITRE would be encouraged to provide timely feedback and indicate areas of concern that may be found in the draft work presented.

2.7   Deliverables

The deliverables by designated Aeronautical Area are summarized in Table 2-4 below.

Table 2-4   Deliverables by Aeronautical Area

Area	Deliverable
PSA	• All natural and man-made objects/structures and features within the PSA area output using typical drawing/drafting standards for engineering/survey AutoCAD drawings (AutoCAD Map 3D, 2008) as per the MITRE Specifications. • All natural and man-made objects/structures and features measured in metres above MSL to the top of the obstruction included in above-mentioned drawing file. • Terrain height at 5 m contour intervals and spot elevations all measured in metres above MSL • All data coordinates in UTM and WGS 84 Ellipsoid.
Area A	• Terrain height at 5 m contour intervals and spot elevations, all measured in metres above MSL. Obstructions, including terrain, that penetrate a 1.2% slope starting from a MITRE-established boundary from the lowest surveyed elevation in the PSA to the edge of Area A. Obstructions measured to the top of the obstruction in metres above MSL and output using AutoCAD specifications as identified in the PSA deliverable. • Obstruction database that would be delivered as either comma delimited or Excel spreadsheet and include the location and height of obstructions. • All data coordinates in UTM and WGS 84 Ellipsoid.

Area	Deliverable
Area B	• STRM data used in analysis provided.
	• Obstructions identified with height greater than or equal to 60 m AGL. Obstructions measured to the top of the obstruction in metres above MSL and output using AutoCAD specifications identified in the PSA deliverable.
	• Obstruction database that would be delivered as either comma delimited or Excel spreadsheet and include the location and height of obstructions.
	• All data coordinates in UTM and WGS 84 Ellipsoid.

Final deliverables would include the following:

- Digital drawing containing all suitable data (natural features, terrain, objects/structures, obstructions, etc.) for the Aeronautical Areas compatible with the AutoCAD Map 3D 2008 format. Drawing files would not be in a single file, but be optimized for file sizes that could be handled by MITRE. The final drawing deliverables would seamlessly match (no overlapping data).

- Technical report describing overall development of survey including list of all GCPs.

- Color mosaic created from data collected for the Aeronautical Areas. The mosaic would be provided as a print (2 hardcopies) and electronically (softcopy). For the softcopy version, the mosaic would be tiled into manageable file sizes. The digital mosaics would be geo-registered (e.g., Geo-TIFF file) so that when inserted into Autodesk Map 3D 2008, they would become aligned with the data collected for the Aeronautical Areas.

2.8   DGAC-Furnished Items

MDA GSI requires that DGAC provide the following support, at its own cost and expense:

- 2 vehicles suitable for transporting at least 2 individuals each and their associated equipment to all locations within the Project area (i.e. medium-sized SUV or similar), for all 3 field visits.

- Knowledgeable and capable professional driver, fluent in English and Spanish, for duration of all 3 field visits to drive aforementioned vehicle.

- In the event that some obstructions are not accessible via vehicle, MDA GSI requests that a helicopter and pilot be made available during the final field visit, for validation and Quality Assurance purposes.

3   Pricing Proposal

The total Firm Fixed Price for all deliverables described in this Proposal is Six Hundred Ninety Thousand Canadian Dollars (CAD 690,000).

The quoted price is valid for a period of 90 calendar days.

Prices do not include any shipping charges, sales and use taxes.

3.1   Delivery

It is anticipated that all deliverables will be delivered to DGAC and MITRE (subject to DGAC's prior written agreement) within 4 months of the successful completion of the optical imagery collection. Efforts to reduce this time will be examined during the course of the satellite imagery collection.

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01-5896

Appendix A   End User License Agreements

- *DigitalGlobe Product End User License Agreement* - applicable for WV2 Satellite Imagery Products.

- MDA GSI *Product License Agreement* - applicable for MDA GSI Products.

Attachment 1 - *DigitalGlobe Product End User License Agreement*

01-5896

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A-1

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   b.   Customer Group

      i.   one individual;

      ii.   one company, corporation, or similar legal entity (excluding affiliates or subsidiaries which will be treated as a separate Customer Group);

      iii. one subsidiary or affiliate of an entity;

      iv.   one department of a federal agency at the U.S. Cabinet level (e.g., office of the U.S Dept. of Agriculture of U.S. Dept of Interior, but excluding sub-agencies);

      v.   one civilian federal agency below the U.S. Cabinet level;

      vi.   one department of the four branches of the military, a defense agency, one of the unified commands, one of the non-Dept. of Defense entities identified in 50 U.S.C. Section 401a or the State Department;

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      viii. one state or provincial agency;

      ix.   one county or local government;

      x.   one non-governmental organization or non-profit organization;

      xi.   one department within a single educational organization within a single country;

      xii. one international agency such as NATO, but excluding the United Nations and the European Union;

      xiii. one office or department within the United Nations or the European Union; or

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   h.   State and Local Government Agency. Any government agency at the state and local level. With regard to the United States, the term "state" includes the 50 United States and the United States' territories and possessions.

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Group	From six to ten
Enterprise	From 11 to 25
Enterprise Premium	More than 25
Educational	One
Demonstration	One

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    d. This Agreement shall be governed by the laws of the State of Colorado, U.S.A., without regard to conflicts of law principles that would require the application of the laws of any other state or jurisdiction. The United Nations Convention on Contracts for the International Sale of Goods does not apply to this Agreement. Any action or proceeding arising from or relating to this

Agreement must be brought in a federal court or a state court in Boulder County, Colorado, and each party irrevocably submits to the jurisdiction and venue of any such court in any such action or proceeding.

e. The software portion of the Product is "commercial item" as that term is defined in 48 C.F.R. 2.101, consisting of "commercial computer software" and "commercial computer software documentation" as such terms are used in 48 C.F.R. 12.212. Any technical data provided with or included in the Product is "commercial technical data" as defined in 48 C.F.R. 12.211. Consistent with 48 C.F.R. 12.211 through 12.212, 48 C.F.R. 227.7202-1 through 227.7202-4, and 48 C.F.R. 252.227-7015, all U.S. Government end users acquire the Product with only those rights set forth therein.

f. This Agreement represents the entire agreement between you and DigitalGlobe as to the matters set forth herein and integrates all prior discussions and understanding between us. Your acceptance of this Agreement is expressly limited to the terms and conditions set forth herein; any additional or inconsistent terms provided by you in any other documents such as a purchase order will not have any legally binding effect. This Agreement may be modified only by a binding written instrument entered into by you and DigitalGlobe.

13. **Notices.** Any notices relating to this Agreement should be sent by personal delivery or U.S. certified mail (return receipt requested) to the address provided below and will be effective upon receipt:

DIGITALGLOBE, INC.
ATTN: LEGAL DEPT.
1601 Dry Creek Dr., Suite 260
Longmont, CO 80503, USA

Attachment 2 – *Product License Agreement*

PRODUCT LICENSE AGREEMENT

THIS LICENSE AGREEMENT ("License") is a legal agreement between you (either an individual or a single corporate entity) ("you") and MDA GEOSPATIAL SERVICES INC. a Canadian business operating from 57 Auriga Drive, Suite 201, Ottawa, Ontario, K2E 8B2 Canada, with a head office located at 13800 Commerce Parkway, Richmond, British Columbia V6V 2J3 ("LICENSOR").

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[END OF DOCUMENT]

Appendix B   MITRE document F062-L10-013,

Enclosure 3
(Ref. Technical Letter F062-L10-013)

MITRE

**Center for Advanced
Aviation System Development**

Specifications for a Photogrammetric, Satellite-Based Survey of the Texcoco Area and its Surroundings

Prepared for

MDA Geospatial Services, Inc.

The photogrammetric survey results described in this document are requested no later than 1 December 2010. The survey results, whether preliminary or final, should be shipped to MITRE via FedEx (see contact information within this document). Please include with the delivery a table of contents that references in a clear manner the various parts of this request. Likewise, please describe in detail any differences, if any, between the request and what is being delivered.

MITRE requests that the DGAC contact Ing. Robert W. Kleinhans (rkleinha@mitre.org) by 26 April 2010 to confirm that the requested photogrammetric survey contract with MDA will be initiated no later than Monday 3 May 2010. Given the mid-June onset of the rainy season in Mexico City, any delay beyond that date would likely prevent the completion of MITRE's contractual DGAC obligations.

29 March 2010

1.0 Overview

As directed by the DGAC, in 2008 MITRE performed an international search that resulted in the identification of a company in Vancouver, Canada (MDA Geospatial, Inc., hereinafter "MDA") that can perform an up-to-standard photogrammetric survey quickly and reliably through the use of satellite technology. Apart from speed, this technology has advantages that go well beyond those offered by aerial photogrammetry. MITRE then visited MDA in order to discuss their technical methodology and obtained results of previous MDA work which MITRE then reviewed and found to be acceptable. MITRE is now successfully using MDA results elsewhere.

The intent of this document is to provide MDA with specifications regarding survey information that MITRE needs in order to accomplish an aeronautical analysis of the potential new airport site near Texcoco. Specifications for a satellite-based survey of the Texcoco area and its surroundings, as well as sample imagery that represent the level of quality and resolution required by MITRE, are provided. **These specifications have been prepared specifically for MDA on the basis of detailed methodological discussions held by MITRE with that organization.**

The areas to be surveyed are:

1. An area (denoted as the Photogrammetric Survey Area), which is the area immediately at and around the Texcoco site

2. An area (denoted as Area A) that extends a distance of 10 km in all directions from a MITRE-established boundary. Terrain and obstacles that penetrate a sloping surface (that starts at the edge of the MITRE-established boundary) need to be identified.

3. An area (denoted as Area B) that extends a distance of 35 km in all directions from the boundary of the aforementioned Area A. Only obstacles 60 m or higher than the terrain (i.e., Above Ground Level [AGL]) need to be identified in Area B.

   Note: the use of the term "Photogrammetric Survey Area" is intended to indicate that the survey should not be conducted through the use of aerial (aircraft-based) photography, but through satellite-based imagery. Thus, satellite-based imagery should be used to perform not only the survey of the Photogrammetric Survey Area itself (item 1 above), but also Areas A and B (items 2 and 3 above).

It is important that MITRE be involved throughout the entire technical proposal review process in order to ensure that MITRE's specifications are being met. Furthermore, MITRE must also be involved during the implementation of MITRE's survey request. Close interaction with MDA is required throughout all phases of the survey in order for MITRE to provide appropriate feedback and review data. Furthermore, MITRE requests

that interim survey information and work status reports be periodically submitted (e.g., monthly) for review so that early feedback can be provided.

The DGAC's point of contact is Ing. Gabriel Tort and all administrative and financial matters should be handled through him.

MITRE's technical point of contact is Ing. Robert Kleinhans and all technical and deliverable matters should be handled through him. His contact information is:

Ing. Robert W. Kleinhans
Project Leader
7515 Colshire Drive
McLean, VA 22102
U.S.A.
Telephone: (703) 983-5331
Internet: rkleinha@mitre.org

The photogrammetric survey results described in this document are requested no later than **1 December 2010**. Please contact Ing. Robert Kleinhans, at the Internet address above no later than 26 April 2010 to confirm that the requested photogrammetric survey contract with MDA will be initiated no later than Monday 3 May 2010. Given the mid-June onset of the rainy season in Mexico City, any delay would likely prevent the completion of MITRE's contractual DGAC obligations.

2.0   Data Format

Survey data and associated imagery needs to be provided in specific formats, as described below:

- All survey data should be sent in **electronic format in AutoCAD Map 3D 2008** (i.e., .dwg files)

- **All data should be provided with three-dimensional (3D) values (i.e., z-values).** These z-values should reflect the **top-height** of any obstruction[1], including the tops of trees.

- All elevations should be provided in meters above Mean Sea Level (MSL). The vertical datum to be used will be confirmed prior to commencing any work.

- All coordinates should be based on the Universal Transverse Mercator (UTM) coordinate system using the World Geodetic System 1984 (WGS 84) ellipsoid

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[1] In the case of man-made obstructions, the top-height should include any structures (e.g., antennas) on the tops of buildings.

- All imagery should be in color (except for the Area B imagery, which can be black and white), geo-registered, and provided in a .TIFF format (i.e., Geo-TIFF files)

3.0 Photogrammetric Survey Area

This section describes the area denoted as the Photogrammetric Survey Area, as well as data requirements.

3.1 Photogrammetric Survey Area

The satellite-based Photogrammetric Survey Area is shown in Figure 1. Coordinate information is contained in Table 1. **All coordinates being provided in this document are based on UTM/WGS 84.**
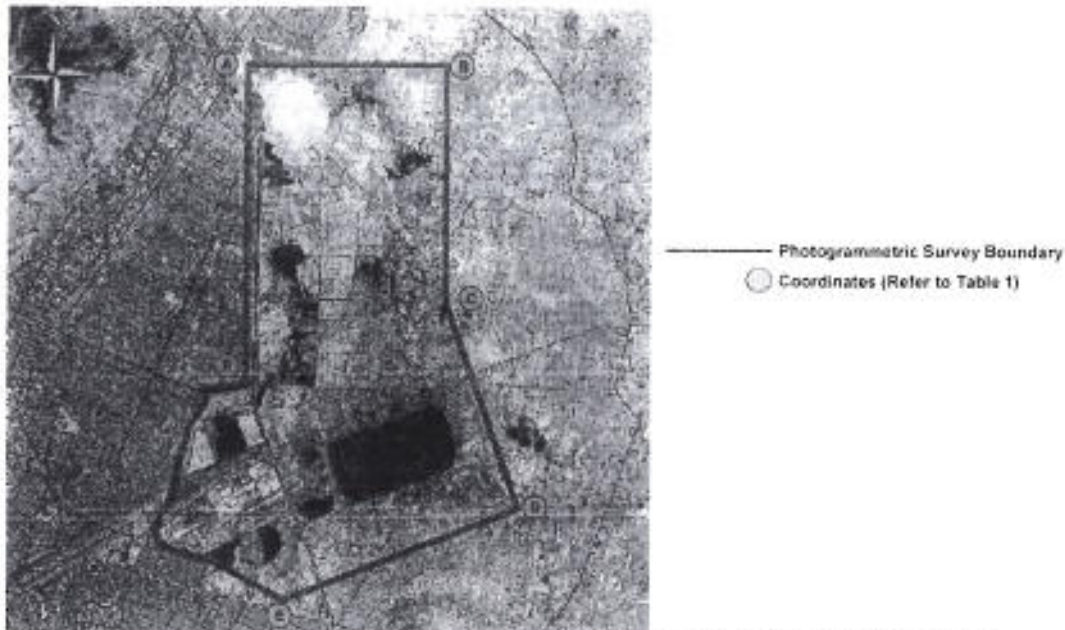
——— Photogrammetric Survey Boundary
◯ Coordinates (Refer to Table 1)

Note: the background imagery is provided for general visual reference and orientation purposes only.

Figure 1. Photogrammetric Survey Area Boundary

MITRE

Table 1. Photogrammetric Survey Boundary Coordinates

Point	UTM Coordinates (meters)	Latitude/Longitude (WGS 84)
A	498187.1651 / 2165698.7347	19° 35' 10.6"N / 99° 01' 02.2"W
B	504896.0000 / 2165698.7347	19° 35' 10.6"N / 98° 57' 11.9"W
C	504896.0000 / 2157690.0000	19° 30' 50.0"N / 98° 57' 12.0"W
D	507361.6431 / 2150681.9341	19° 27' 02.0"N / 98° 55' 47.5"W
E	499489.3857 / 2147538.8353	19° 25' 19.8"N / 99° 00' 17.5"W
Roadways (located between Points E and F)	From Point E proceed northwest along FFCC del Sur (México-Cuautla) to Av. Río Churubusco and Anillo Periférico; then, proceed north to Boulevard Rio de los Remedios; and then proceed east to Point F. The entire roadway should be included in the survey. **This is only an approximate description.**	
F	498187.1651 / 2154892.8217	19° 29' 19.2"N / 99° 01' 02.2"W

The coordinates provided in Table 1 should be plotted on a map by the surveyor and sent to MITRE to confirm their appropriateness prior to starting any work.

3.2 Photogrammetric Survey Area Requirements

The photogrammetric survey should include the following items (and any other topographic features normally found on engineering-related survey drawings):

- All natural features and terrain
    - Hills, rivers, lakes, trees, etc.

- All man-made objects and structures
    - Roads, highways, secondary roads, overpasses, railroad tracks, etc.
    - Bridges and power line towers
    - Residential, commercial, industrial, recreational areas, etc.

The following should be included:

- Contour lines spaced at **5-m intervals**

- Spot elevations

- North arrow showing magnetic declination

- All major items should be labeled/identified through symbols in a legend

- Typical drawing/drafting standards (e.g., legend, line types, colors, text styles, etc.) for engineering/survey type AutoCAD drawings should be used. However,

line types and properties (e.g., z-values) to be used for specific items are listed below:

- Contour lines - 3D polylines with z-values
- Spot elevations - 3D circle (10-m radius) with z-value
- Buildings, towers, power lines, bridges, etc. - 3D polylines with z-values for each vertex
- Tree lines - 3D polylines with z-values
- Individual trees - 3D circle (10-m radius) with z-value
- Poles, posts, antennas, etc. - 3D circle (10-m radius) with z-value

Accuracy requirements for the Photogrammetric Survey Area are shown in Table 2.

Table 2. Accuracy Requirements for Terrain and Obstructions within the Photogrammetric Survey Area

	Terrain	Obstructions
Vertical accuracy	3.0 m	3.0 m
Vertical resolution	1.0 m	1.0 m
Horizontal accuracy	2.0 m	2.0 m

Digital drawing(s) containing all of the combined surveyed data should be provided. The final drawing deliverables when combined together in AutoCAD will seamlessly match (no overlapping data). All elevations would be rounded up the next one meter. For example, if the measured height of a building is calculated to be 67.6 m, then MITRE would request that the data be rounded to the upper whole meter (i.e., 68 m). Finally, a technical report describing the overall development of the survey, including a list of all survey control points should be submitted.

3.3 Satellite Photograph

A sample of the approximate quality and resolution of the color mosaic (encompassing the Photogrammetric Survey Area and Area A) that MITRE expects is shown in Figure 2. However, MITRE has seen even better resolutions during its visit to MDA and hopes to obtain better pictures than the one shown in Figure 2.

Figure 2. Sample Satellite Photograph

4.0   Survey of Areas A and B

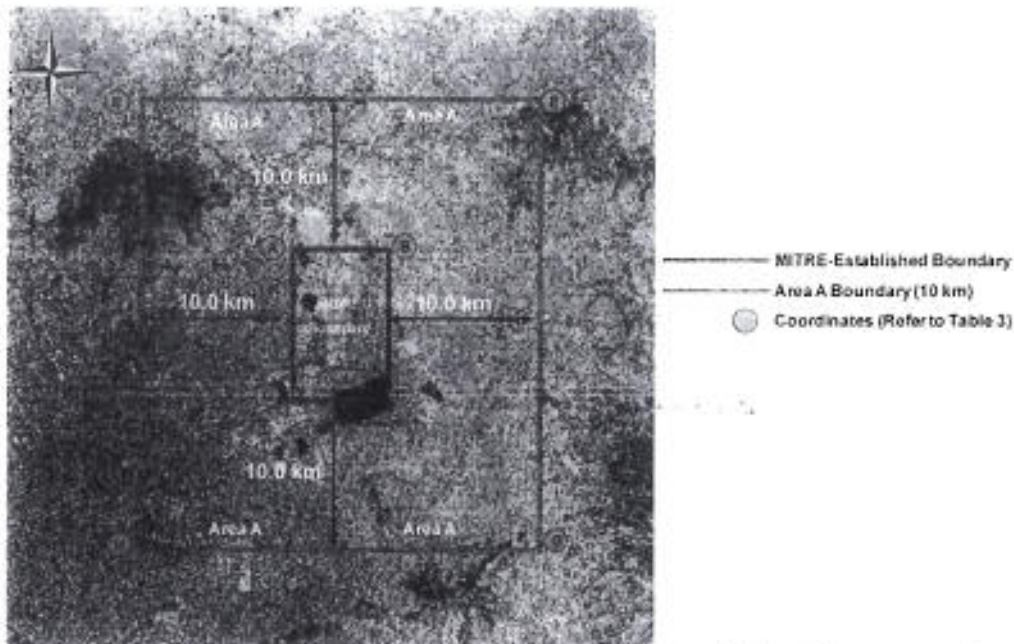This section describes the two additional areas to be surveyed by MDA.

Obstructions, such as buildings, towers, antennas, trees, etc. need to be surveyed within two additional areas denoted as Area A and Area B. Area A and Area B are located outside the blue-line rectangle established by MITRE, shown in Figure 3. (Terrain must also be surveyed for Area A.) Area A and Area B are described as follows:

- Area A is shown in Figure 3 and its coordinates are provided in Table 3. Area A extends 10 km in all directions from the blue-line rectangle established by MITRE.

- Area B is shown in Figure 4 and its coordinates are provided in Table 4. Area B extends 35 km in all directions from the Area A boundary.

The following should be included:

- Contour lines spaced at **5-m intervals**

- Spot elevations

- North arrow showing magnetic declination

- All major items should be labeled/identified through symbols in a legend

- Typical drawing/drafting standards (e.g., legend, line types, colors, text styles, etc.) for engineering/survey type AutoCAD drawings should be used. However, line types and properties (e.g., z-values) to be used for specific items are listed below:
    - Contour lines - 3D polylines with z-values
    - Spot elevations - 3D circle (10-m radius) with z-value
    - Buildings, towers, power lines, bridges, etc. - 3D polylines with z-values for each vertex
    - Tree lines - 3D polylines with z-values
    - Individual trees - 3D circle (10-m radius) with z-value
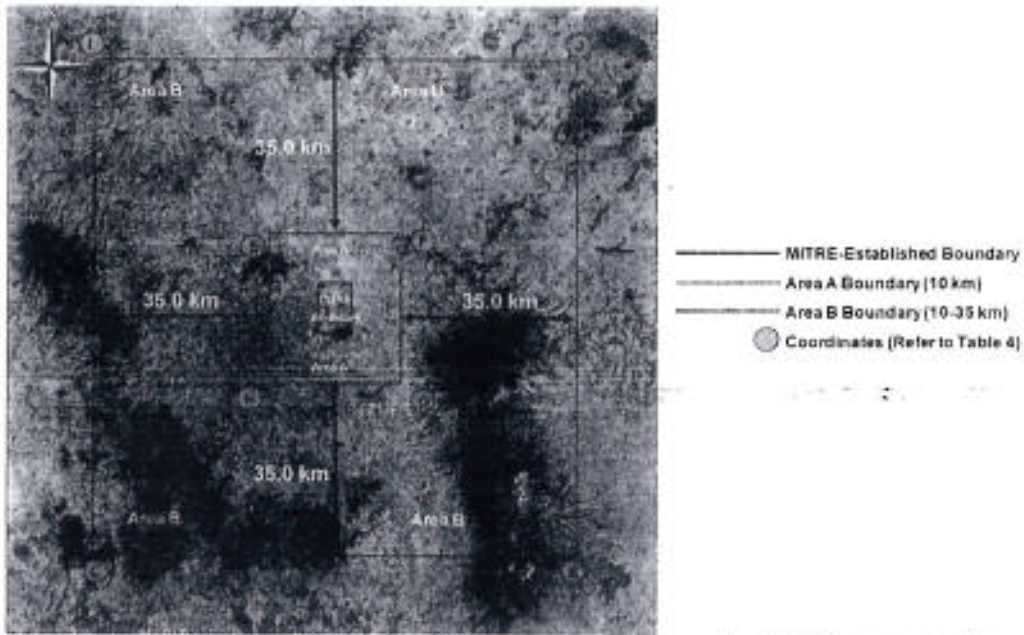   - Poles, posts, antennas, etc. - 3D circle (10-m radius) with z-value

Note: the background imagery is provided for general visual reference and orientation purposes only.

Figure 3. Area A Boundary

MITRE

Table 3. Area A Coordinates

Point	UTM Coordinates (meters)	Latitude/Longitude (WGS 84)
A	498579.5799 / 2162665.8372	19° 33' 31.9"N / 99° 00' 48.7"W
B	504896.0000 / 2162665.8372	19° 33' 31.9"N / 98° 57' 12.0"W
C	504896.0000 / 2152668.7725	19° 28' 06.6"N / 98° 57' 12.1"W
D	498579.5779 / 2152668.7725	19° 28' 06.6"N / 99° 00' 48.7"W
E	488579.5799 / 2172665.8372	19° 38' 57.1"N / 99° 06' 32.2"W
F	514896.0000 / 2172665.8372	19° 38' 57.0"N / 98° 51' 28.5"W
G	514896.0000 / 2142668.7725	19° 22' 44.1"N / 98° 51' 29.3"W
H	488579.5799 / 2142668.7725	19° 22' 41.2"N / 99° 06' 31.5"W

The coordinates provided in Table 3 should be plotted on a map by the surveyor and sent to MITRE to confirm their appropriateness prior to starting any work.

Note: the background imagery is provided for general visual reference and orientation purposes only.

Figure 4. Area B Boundary

Table 4. Area B Coordinates

Point	UTM Coordinates (meters)	Latitude/Longitude (WGS 84)
E	488579.5799 / 2172665.8372	19° 38' 57.1"N / 99° 06' 32.2"W
F	514896.0000 / 2172665.8372	19° 38' 57.0"N / 98° 51' 28.5"W
G	514896.0000 / 2142668.7725	19° 22' 44.1"N / 98° 51' 29.3"W
H	488579.5799 / 2142668.7725	19° 22' 41.2"N / 99° 06' 31.5"W
I	453579.5799 / 2207665.8372	19° 57' 53.9"N / 99° 26' 37.2"W
J	549896.0000 / 2207665.8372	19° 57' 53.6"N / 98° 31' 23.2"W
K	549896.0000 / 2107668.7725	19° 03' 40.4"N / 99° 31' 32.7"W
L	453579.5799 / 2107668.7725	19° 03' 40.7"N /99° 26' 28.3"W

The coordinates provided in Table 4 should be plotted on a map by the surveyor and
sent to MITRE to confirm their appropriateness prior to starting any work.

4.1 Survey Requirements for Area A

This section provides requirements for the survey of Area A.

- Terrain: Required.

- Obstructions: Identify those obstructions (e.g., trees, buildings, towers, etc.), that
  penetrate the sloping surface. Figure 5 represents an example of the sloping
  surface. The surface slopes upward and outward from the blue-line rectangle
  established by MITRE in all directions at 1.2 percent (starting at the lowest
  surveyed elevation within the Photogrammetric Survey Area boundary) until the
  edge of Area A. Accuracy requirements for obstructions are shown in Table 5.
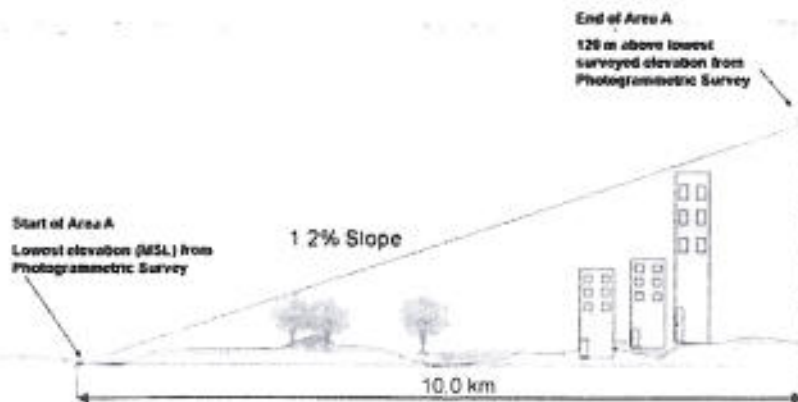

Figure 5. Sloping Surface for Identifying Obstructions within Area A

In all cases, wherever groupings of obstructions are encountered, it is acceptable to identify the highest obstruction within a 100-m radius of the center of the grouping.

**Table 5. Accuracy Requirements for
Terrain and Obstructions within Area A**

	Terrain	Obstructions
Vertical accuracy	3.0 m	3.0 m
Vertical resolution	1.0 m	1.0 m
Horizontal accuracy	2.0 m	2.0 m

4.2 Survey Requirements for Area B

This section provides requirements for the survey within Area B.

- Terrain: Not required (however, Shuttle Radar Topography Mission data used by MDA in the general analysis will be provided to MITRE).

- Obstructions: **Only identify those obstructions 60 m or greater in height AGL,** as shown in Figure 6. The elevation of those obstructions identified should be provided in meters above MSL. Accuracy requirements for obstructions within Area B are shown in Table 6.
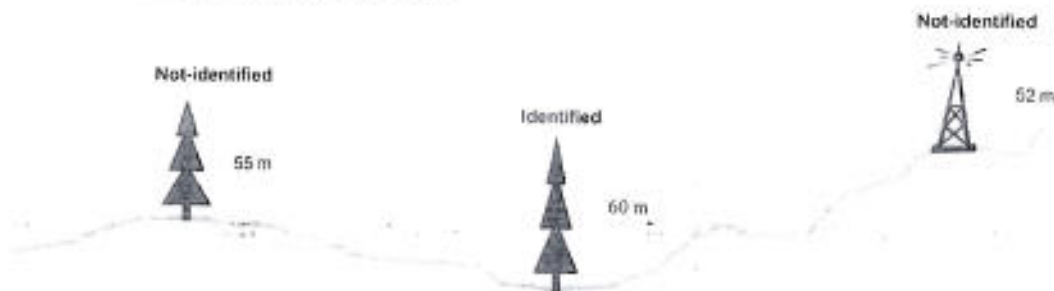

Figure 6. Identifying Obstructions within Area B

Again, wherever groupings of obstructions are encountered, it is acceptable to identify the highest obstruction within a 100-m radius of the center of the grouping.

Table 6. Accuracy Requirements for Obstructions within Area B

	Obstructions
Vertical accuracy	30 m
Vertical resolution	2.5 m
Horizontal accuracy	50 m

Other requirements for the survey of Areas A and B are:

- **Digital drawing(s)** containing all of the obstruction data should be provided in Autodesk Map 3D 2008 format (i.e., .dwg files). The final drawing deliverables when combined together in AutoCAD would seamlessly match (no overlapping data). All elevations would be rounded up the next one meter. For example, if the measured height of a building is calculated to be 67.6 m, then MITRE would request that the data be rounded to the upper whole meter (i.e., 68 m).

- A technical report describing the overall development of the survey, including a list of all survey control points should be submitted

5.0   Additional Satellite Imagery and Survey Services

Additional imagery will be requested under the following circumstances:

- Cloud cover issues in critical areas
- Areas showing apparent discrepancies or other information of concern

Therefore, MDA should include provisions to obtain an additional eight (8) 100 sq km stereo satellite images in the scope of work. Additionally, MDA should consider the work required to conduct a survey of the eight (8) 100 sq km areas using the satellite imagery. The decision as to which areas require additional satellite imagery and related survey work will be made in consultation with MITRE's point of contact.

6.0   Geo-Registered Mosaics

Provide two color mosaics containing the imagery utilized for the surveys of the Photogrammetric Survey Area and Area A both on paper and electronically. Provide two black and white mosaics containing all the imagery utilized for the survey of Area B both on paper and electronically. The mosaics should be geo-registered (e.g., Geo-TIFF file) so that when inserted into Autodesk Map 3D 2008 they are aligned with the obstruction data collected for the Photogrammetric Survey Area, Area A, and Area B.

7.0   Technical Letters

MDA should regularly submit (e.g., monthly) a technical letter describing and documenting work performed in order to keep the DGAC and MITRE informed of progress, schedules, and issues. The technical letter should consist of important information on items such as trip reports (e.g., site assessment, ground control collection, etc.), documentation of satellite-based imagery acquisition plans, interim products and reports (e.g., satellite images, survey data, etc.), and final deliverables.

ESTATUS DEL PROYECTO MITRE "SPECIALIZED ANALYSIS OF THE AERONAUTICAL VIABILITY OF A NEW INTERNATIONAL AIRPORT FOR MEXICO CITY"

- En may-08, se contrató al despacho The MITRE Corporation, de los EE.UU. para llevar a cabo un análisis especializado de la viabilidad aeronáutica de un nuevo aeropuerto internacional para la Cd. de México.

- El contrato negociado y firmado con vigencia del 28/May/08 al 31/Jul/12 es por un monto de US$8,347,384 (90 Millones de pesos aproximadamente).

- En 2008 se realizó un pago de USD $2,427,384; equivalente a 27 MDP; y para 2009 se programo un pago de USD $2,360,000 y a la fecha hemos pagado USD $1,970,000. Se programó un pago de USD $390,000. Lo que queda pendiente de pago para los siguientes años es de USD $3,560,000.

- A la fecha se cuenta con los siguientes entregables de MITRE en poder de la DGAC, ASA y SENEAM, enviados adjuntos a las cartas técnicas siguientes:

  > *Technical Letter* de MITRE No. F063-L08-040 de fecha 6-jun-08: From contract inception through 6 June 2008

    No. 1 *Preliminary Runway Spacing Analysis of the Texcoco Area.*

    No. 2 *Exploratory Feasibility Analysis of Independent Approach procedures in the Texcoco Area.*

    No. 3 *Master Data Request.*

    No. 4 *Specifications for the Survey of the Texcoco Area and its Surroundings.*

    No. 5 *Specifications for an Automated Meteorological Observation System for the Texcoco Area.*

  > *Technical Letter* de MITRE No. F063-L08-066 de fecha 4-ago-08: Terrain and Airspace Basemap Digitization

  > *Technical Letter* de MITRE No. F063-L09-001 de fecha 24-oct-08 : Summary of Work Performed During the Period 15 August through 31 October 2008

    No. 1 *Independent Parallel Approach Requirements and Display Features.*

    No. 2 *Surveillance Displays for Independent Approaches.*

  > *Technical Letter* de MITRE No. F063-L09-007 de fecha 6-ene-09: Summary of Ongoing Work During the Period 1 November 2008 through 15 January 2009

    No. 1 *Potential Runway Configurations in the Texcoco Area: Exploratory Runway Layout Examination.*

    No. 2 *Potential Runway Configurations in the Texcoco Area: Exploratory Capacity Analysis.*

    No. 3 *Exploratory Investigation of Expanded Air Traffic Flow in the Mexico City-Toluca Area: Airspace Issues and Potential Constraints.*

➢ *Technical Letter* de MITRE No. F063-L09-012 de fecha 24-mzo-09

  ➢ Sin anexos.

➢ *Technical Letter* de MITRE No. F063-L09-015 de fecha 23-jun-09: **Summary of Ongoing Work During the Period 1 April 2009 through 30 June 2009**

No. 1 *Updated* Runway Spacing Analysis of the Texcoco Area. *Final SIAM Modeling Results Subject to review Before the Definitive Runway Configuration is Determined.*

No. 2 *The Texcoco Airport Site Analysis. Considerations Regarding Long-Range Final Approaches.*

No. 3 *Initial* Weather Analysis for the Texcoco Area. Preliminary Report.*

No. 4 *The Texcoco Airport Site. Considerations Regarding Bird Hazards.*

- Todas las solicitudes de información que ha hecho MITRE por medio de sus entregables, han sido satisfechas por parte de DGAC, ASA y SENEAM.

- Los entregables No. 4 y No. 5 de la primera Technical Letter descrita, respectivamente señalan especificaciones para:

  Levantamiento topográfico de obstáculos de acuerdo a la normatividad OACI

  – Ninguna de las propuestas de diferentes empresas nacionales de levantamiento topográfico enviadas a MITRE, fueron aceptadas por esta.

  – MITRE nos indicó que están buscando una solución de bajo costo para un levantamiento topográfico satelital, sin embargo a la fecha no se tiene noticia sobre esto por parte de MITRE.

  – Después de la visita al DLR o Centro Espacial Alemán en marzo pasado, GTF propuso la utilización de esta tecnología satelital para el levantamiento topográfico requerido.

  Instalación de una Estación Automática de Observación Meterorologica

  – Se realizó la instalación de un sistema automático de observación meteorológica (AWOS) en Texcoco, mismo que quedó funcionando desde finales de dic-08 en el sitio denominado Cárcamo Caracol.

  – Ante la negativa de CONAGUA para terminar la adecuación del área aledaña al AWOS para evitar afectación a las mediciones por inundación, ASA ha tomado en sus manos el proyecto. Este proyecto ya está en proceso de licitación por parte ASA.

  – Personal de la Dirección de Meteorología de SENEAM ha estado enviando el reporte meteorológico del AWOS a MITRE cada semana de manera continua, desde enero de este año.

DIRECCIÓN GENERAL DE AERONÁUTICA CIVIL
DIRECCIÓN DE ADMINISTRACIÓN

"2009, Año de la Reforma Laboral"

Oficio No. 4.1.201.-157

México, D.F., 10 de agosto de 2009.

LIC. Y P.A. GILBERTO LÓPEZ MEYER
DIRECTOR GENERAL DE AEROPUERTOS
Y SERVICIOS AUXILIARES.
P R E S E N T E

Con relación al contrato No. DGAC-AD-2008, celebrado con la empresa Mitre Corporation, adjunto al presente remito en 1 (un) tanto el segundo informe correspondiente del año 2009, consistente en:

- *Enclosure No, 1 Updated Runway Spacing Analysis of the Texcoco Area: Exploratory Runway Layout Examination.*
- *Enclosure No, 2 The Texcoco Airport Site: Considerations Regarding Long-Range Final Approaches.*
- *Enclosure No, 3 Initial Weather Analysis for the Texcoco Area.*
- *Enclosure No. 4 The Texcoco Airport Site: Considerations Regarding Bird Hazards.*

Lo anterior, para su revisión y tramite conducente ante las instancias correspondientes.

Aprovecho la ocasión para enviarle un cordial saludo.

A T E N T A M E N T E
"SUFRAGIO EFECTIVO. NO REELECCIÓN"
EL DIRECTOR DE ADMINISTRACIÓN

LIC. JOEL MORALES ESCOBAR

C.c.p.   Lic. Héctor González Weeks.- Director General de Aeronáutica Civil - Presente.
Ing. Agustín Arellano Rodriguez.- Director General de SENEAM.- Presente.
Ing. Gabriel Tort Flores.- Director General Adjunto de Aviación.- Presente.

13 AGO 2009