



香港特別行政區政府

民航處

Civil Aviation Department

The Government of the Hong Kong Special Administrative Region

DCA 4048A (GLS - CAT I) (04/2018)

APPLICATION FOR GBAS LANDING SYSTEM (GLS) CATEGORY I (CAT I) OPERATIONAL APPROVAL

Please complete the form in BLOCK CAPITALS using black or dark blue ink.

This form is designed to elicit all the required information from those operators requiring **GLS CAT I Operational Approval**. The completed form and supporting documentation should be submitted to Civil Aviation Department at the address listed below:

Flight Standards and Airworthiness Division

Civil Aviation Department Headquarters

1 Tung Fai Road, Chek Lap Kok

Lantau, Hong Kong

Email: ops@cad.gov.hk

Fax: (852) 2362 4250

*Note: Application submission should be at least 30 days before the start of **GLS approaches**.*

Section I Operator details and Signature (completion is mandatory)

Section II Notes for completion

Section III Operator's submissions matrix

Section IV Job Aid (completion is mandatory)



SECTION I. OPERATOR DETAILS AND SIGNATURE

1.	Name of Operator	
2.	Applicant's name	
3.	Title	
4.	Mailing Address	
5.	E-mail Address	
6.	Telephone Number/ Fax Number	
7.	Date of submission	

SIGNATURE: _____



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SECTION II. NOTES FOR COMPLETION

1. Applicability

General description of the operation with references to appropriate standards and guidance material.

2. Operator's submissions matrix

Section III of this application form is to highlight the documents required for submission.

3. Documents to be included with the submission

Copies of all documents referred to in the operator's submissions matrix should be included when returning the completed application form to the Civil Aviation Department. Original documents should not be sent; photocopies are sufficient. Do not send complete manuals, only the relevant sections/pages.

FAILURE TO INCLUDE ALL RELEVANT DOCUMENTATION MAY RESULT IN A DELAY IN PROCESSING THE APPLICATION.

4. Submissions and enquiries

Email: ops@cad.gov.hk

Fax: (852) 2362 4250



SECTION III. OPERATOR'S SUBMISSIONS MATRIX

Reference documents	Submission based upon current regulatory material. Compliance statement should show how criteria have been satisfied.
Airworthiness navigation system and GBAS capability to perform CAT I approach compliance statement	Specify to what standards the GBAS associated equipment intended for CAT I approach and navigation system comply.
Aircraft flight manual	Copy of the extract from the AFM showing the certification standard for GLS CAT I operation.
Navigation system FMS/autopilot interface capability	Full details of navigation system, FMS and autopilot including type, number, software version.
Navigation database	Details of the supplier of the navigation database, the supplier's approval status and, where necessary, additional quality assurance/data integrity checks applied by the operator or the supplier.
Maintenance	Details of maintenance procedures applicable to the navigation system, associated databases and GLS associated equipment.
Charts	Details of the supplier of charts, supplier's approval status and additional quality assurance/data integrity checks applied by the operator or the supplier.
Error reporting	Outline of error reporting process and procedures for error analysis, prevention and correction, GLS performance anomalies, including feedback to the CAD, navigation database and chart suppliers, as well as OEMs.



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Standard operating procedures	Details of applicable operating procedures. It is recommended that the manufacturer's procedures are used as a starting point.
Operations manual	Details of dispatch requirements (GLS system, MEL, NOTAMs); RTF phraseology; SOPs; crew authorisation requirements; training and testing requirements.
Any further comments	



SECTION IV. GLS APPROACH – CAT I JOB AID

APPLICATION TO CONDUCT GLS CAT I APPROACH OPERATIONS

1. Purpose of the job aid

- a) To provide information on the relevant reference documents.
- b) To provide a record of the operator application, the inspector comments and the operator follow-up action for each relevant paragraph in the reference document(s).

2. Actions recommended for the inspector and operator

- a) At the pre-application meeting, the operator and the inspector review the approval process events and establish the form and content of the approval application.
- b) The operator records references to material in company documents for each relevant paragraph in the job aid.
- c) The operator submits to the inspector the completed job aid with the application.
- d) The inspector records his/her findings for each relevant paragraph in the job aid indicating compliance or necessary corrective action.
- e) The inspector informs the operator as soon as possible when a corrective action is required.
- f) The operator provides the inspector with the revised material when so requested.



- g) The CAD reviews the submitted documentation and overall results of simulator(s) and/or flight validation(s).
- h) The CAD provides the operator with a formal approval when items 2a to 2g above have been completed to a satisfactory standard.

3. Reference documents

<i>Publisher</i>	<i>Reference</i>	<i>Title</i>
ICAO	Annex 2	Rules of the Air
	Annex 6	Operation of Aircraft
	Annex 10	Aeronautical Telecommunications
	Doc 4444	Procedure for Air Navigation Services — Air Traffic Management
	Doc 9849	Global Navigation Satellite System (GNSS) Manual
FAA	AC 20-138(D)	Airworthiness Approval of Positioning and Navigation Systems
	AC 120-29A	Criteria for Approval of Category I AND Category II Weather Minima for Approach
	14 CFR Part 121, Subpart G	Manual Requirements
CASA	AC 21-36(1)	Global Navigation Satellite System (GNSS) Equipment: Airworthiness Guidelines
	Instrument 331/11	Instructions – GLS approach procedures (A380)
	Instrument 336/11	Instructions – GLS approach procedures (B737-800)
	Instrument 44/14	Approval – A380 and B737-800 aircraft GLS approach procedures



PART 1. BASIC EVENTS OF THE APPROVAL PROCESS

	<i>Action by Operator</i>	<i>Action by Inspector</i>
1	Establish the need for the authorisation.	
2	Review the AFM, AFM supplement, TC data sheet, other appropriate documents (e.g. STCs, SBs, SLs) to determine aircraft eligibility. If necessary contact the aircraft and/or avionics OEM to confirm eligibility.	
3	Schedule a pre-application meeting with the inspector.	
4		During the pre-application meeting establish: - form and contents of the application; - documents required to support the application; - target date for the application submission; - requirement for simulator and/or flight validation.
5	Submit the application at least 30 days prior to startup of the GLS operations.	
7	Ensure that amendments to manuals, programmes and other relevant documents are complete; provide training to flight crews, flight dispatchers and maintenance personnel; if required, conduct validation flight(s) in a simulator and/or on aircraft, as appropriate.	Review submission. If required, participate validation flight(s) in a simulator and/or on aircraft, as appropriate.
8		Once the requirements have been met, issue formal operational approval.



PART 2. IDENTIFICATION OF AIRCRAFT AND OPERATORS

Name of Operator: _____

<i>Aircraft manufacturer, model and series</i>	<i>Registration number</i>	<i>Serial number</i>	<i>Navigation system manufacturer, model and number</i>	<i>GLS approach certified capability (AFM)</i>

Date when operator intends to begin GLS operations: _____

<p>Date when application received by CAD: _____</p> <p>Date of pre-application meeting: _____</p>	FOR OFFICIAL USE
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**PART 3. OPERATOR APPLICATION**

<i>Annex</i>	<i>Title</i>	<i>Inclusion by Operator</i>	<i>Comments by Inspector</i>
A	Request for authorisation		
B	Aircraft eligibility — airworthiness AFM, AFM revision, AFM supplement, TCDS showing that the aircraft GLS systems are eligible.		
C	Aircraft eligibility — modifications (if applicable) Maintenance records documenting installation or modification of aircraft systems to achieve eligibility.		
D	Maintenance Navigation database and GLS associated equipment maintenance practices.		
E	Minimum equipment list		
F	Training Training programmes for flight crew, flight dispatchers and maintenance personnel.		
G	Operating policies and procedures Operations manual and checklists.		



<i>Annex</i>	<i>Title</i>	<i>Inclusion by Operator</i>	<i>Comments by Inspector</i>
H	Navigation database Validation programme and procedures.		
I	Validation flights Formal plan to validate proposed operation.		
J	Monitoring programme Data collection plan.		
K	Risk assessment A formal safety assessment of the proposed operation.		

Contents of the application to be submitted by the operator

- compliance documentation for the aircraft/GLS/navigation systems;
- operating procedures and policies;
- sections of the maintenance manual related to navigation databases and GLS associated equipment.

Note — Documents may be grouped in a single binder or may be submitted as individual documents.

**PART 4. CONTENTS OF THE OPERATOR APPLICATION**

#	<i>Topic</i>	<i>Operator compliance description</i>	<i>Inspector disposition/ comments</i>	<i>Follow-up by Inspector</i>
		<i>(Document reference/ method)</i>	<i>(Accepted/not accepted)</i>	<i>(Status and date)</i>
1	Authorisation request Statement of intent to obtain authorisation.			
2.	Aircraft/GLS/navigation system eligibility Documents that establish eligibility.			
3	Training Details of training programmes.			
4	Operating policies and procedures Operations manual and Checklists.			
5	Maintenance practices Document GLS associated equipment and navigation database maintenance practices.			
6	MEL update			

**PART 5. OPERATING PROCEDURES**

#	Topic	Operator compliance description	Inspector disposition/ comments	Follow-up by Inspector
		(Document reference/ method)	(Accepted/not accepted)	(Status and date)
1	Flight planning	—	—	—
1a	Verify that the aircraft and crew are approved for GLS operations.			
1b	Verify MEL and GLS/AP/FD availability.			
1c	Verify that the navigation database is current.			
1d	Review contingency procedures/options.			
1e	Verify State/AIP restrictions and limitations of GLS operations.			
2	Prior to commencing procedure	—	—	—
2a	A GLS approach may only be conducted in accordance with the local AIP, Operations Manuals and Flight Crew Training Manual.			



#	<i>Topic</i>	<i>Operator compliance description</i>	<i>Inspector disposition/ comments</i>	<i>Follow-up by Inspector</i>
		<i>(Document reference/ method)</i>	<i>(Accepted/not accepted)</i>	<i>(Status and date)</i>
2b	Verify GLS availability and the correct procedure is loaded in FMS.			
2c	Sufficient information must be provided in the flight deck to allow the crew to monitor the approach operation progress and safety. This in-flight performance monitoring must include: a. Unambiguous identification of the intended path for the approach (e.g., approach type, approach identifier, frequency or channel number); and b. Indication of the position of the aircraft with respect to the intended path (e.g. cross track and vertical deviation information).			
2d	Before commencing a GLS approach, pilots must check and ensure that at least one of the aircraft's GLS receivers is operational or that at least CAT 1 is displayed on the aircraft's Flight Mode Annunciator.			



#	Topic	<i>Operator compliance description</i>	<i>Inspector disposition/ comments</i>	<i>Follow-up by Inspector</i>
		<i>(Document reference/ method)</i>	<i>(Accepted/not accepted)</i>	<i>(Status and date)</i>
2e	Weather conditions must be at or above CAT I/State authority/AIP weather minima, whichever is higher.			
2f	CAT I GLS is not required to support autoland operations. Pilots are responsible for obtaining information to make operational decisions to conduct a GLS autoland.			
3	During procedure	—	—	—
3a	Continuity of Navigation. Verify continuity of navigation data during normal aircraft manoeuvring on the GLS approach.			
3b	Fault Detection and Annunciation. The automatic means to detect and annunciate misleading guidance signals should have coverage and integrity similar to that of an ILS system when used in the approach flight phase and during go-around.			



#	<i>Topic</i>	<i>Operator compliance description</i>	<i>Inspector disposition/ comments</i>	<i>Follow-up by Inspector</i>
		<i>(Document reference/ method)</i>	<i>(Accepted/not accepted)</i>	<i>(Status and date)</i>
3c	Flight tolerances. a) GLS final approach course and glideslope should be maintained within half scale deflection (or equivalent on expanded scale). b) If, any time during the approach after the FAP, the GLS final approach course or glideslope indicates full scale deflection, a missed approach should be commenced.			
3d	Altimeter checks. The final approach segment contains a fix at which the glide path/altimeter relationship should be verified. If the check indicates significant unexplained discrepancy, the GLS approach should be discontinued.			



PART 6. REPORTING

#	<i>Topic</i>	<i>Operator compliance description</i>	<i>Inspector disposition/ comments</i>	<i>Follow-up by Inspector</i>
		<i>(Document reference/ method)</i>	<i>(Accepted/not accepted)</i>	<i>(Status and date)</i>
1	Anomalies	—	—	—
1a	Report system for any anomalies or safety concerns associated with GLS operations.			



Personal Data Collection Statement

1. Purposes of Collection

The personal data provided by means of this form, including all the supporting documents included in the application, will be used by Civil Aviation Department for the following purposes:

- a. Processing of your application in this form;
- b. Carrying out relevant provisions of the Civil Aviation Ordinance (Chapter 448) and its subsidiary Orders / Regulations;
- c. Assisting in the enforcement of any other Ordinances and Regulations by other Government Bureaux and Departments;
- d. For communication purposes between Civil Aviation Department and yourself;
- e. For validation and verification of authenticity of your supporting documents in association with the application;
- f. For statistics and research purposes on the condition that the resulting statistics or results will not be made available in a form which will identify the data subjects.

It is obligatory for you to supply the personal data as required in this form. If you fail to supply the required data, we may not be able to process your application.

2. Classes of Transferees

The personal data you provided by means of this form may be disclosed to:

- a. Other Government Bureaux and Departments for the purposes mentioned in paragraph 1 above;
- b. Other Contracting States of the International Civil Aviation Organisation and Civil Aviation Authorities for the purpose mentioned in paragraph 1 above;

c. Other organisations or agencies for execution of their duties as required by Civil Aviation Department.

3. Access to Personal Data

You have a right of access and correction with respect to personal data as provided for in Sections 18 and 22 and Principle 6 of Schedule 1 of the Personal Data (Privacy) Ordinance. Your right of access includes the right to obtain a copy of your personal data provided by this form.

4. Enquiries

Enquiries concerning the personal data collected by means of this form, including the making of access and correction, should be addressed to :

Flight Standards Office
Flight Standards and Airworthiness Division
Civil Aviation Department Headquarters
1 Tung Fai Road
Hong Kong International Airport
Lantau, Hong Kong

(Attn.: Safety Officer (Technical Support))

Anti-bribery Reminder:

Anyone, while having dealings of any kind with the Civil Aviation Department (CAD), should not offer advantage to the CAD officers, or else he may commit an offence under section 4(1) and/or section 8 of the Prevention of Bribery Ordinance (Chapter 201 of Laws of Hong Kong), and be liable to a maximum penalty of a fine of \$500,000 and imprisonment for 7 years.