MINISTÈRE
DES TRANSPORTS
*Liberté*
*Égalité*
*Fraternité*

direction générale de l'Aviation civile

**Service technique de l'Aviation civile**
***Civil Aviation Technical Service***


*Contacts :*
**For requests regarding lights/signs/panels :**
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*ludovic.legrand@aviation-civile.gouv.fr*


# Request for TECHNICAL ADVICE

*To be returned by email to the address opposite*
***(once dully filled in, dated and signed)***
*Any incomplete application will be returned.*
**For requests regarding light / sign / panel, please fill out a form for each model**

Blank form downloadable at www.stac.aviation-civile.gouv.fr

## Applicant

NAME, first name :
Email :
Phone :
Postal address :
Company (optional) :

## Deliverables recipients *(If different from the applicant)*

NAME, first name :
Email :

## Subject of technical advice *(several possible choices)*

- ☐ Aeronautical lighting device
- ☐ Remote Control System/ Remote monitoring for lighting systems
- ☐ New lighting system

*Details to be provided on the next page*

- ☐ Electrical power supply system for lighting systems
- ☐ Emergency power supply device
- ☐ Measuring device
- ☐ Preventive maintenance procedure for lighting systems
- ☐ Other

## Provision of equipment for testing at STAC premises ?

☐ Yes ☐ No

*If yes, delivery address :*

*Direction de la technique et de l'innovation (DSNA-DTI)*
*Bâtiment U – Laboratoire « Aides visuelles »*
***1** avenue du Docteur Grynfogel*
*31100 Toulouse*
*FRANCE*

Warning : The transport (including the delivery and the return) of any light / sign / panel is at the expense and risk of the applicant

## Are STAC experts being considered for on-site testing ?

☐ Yes ☐ No ☐ To be defined

*If yes, location of planned intervention :*

## Engagement

**Applicant**

☐ **I read and accept all the general terms and conditions for use of the service attached in annex**

**Date :**

**Signature :**

**STAC**
**Application form admissibility**

**FDEM n :**

| **Description of the object to be evaluated** | |
|---|---|
| **INFORMATION IMPORTANTE** | For requests regarding lights / signs / panels<br>**Please complete Annex 1 of this application form** |
| Detailed description | |
| Reference(s) used for design | Examples :<br>- ICAO Annex 14<br>- EASA CS-ADR<br>- CHEA<br>- STAC guide<br>- Other (to be specified) |
| Intended use location(s) *(Optional)* | |
| Additional information | Examples :<br>- Proposed protocol<br>- Standard to be applied<br>- ... |

**Annex 1 : For requests regarding lights / signs / panels – Description of the equipment to be evaluated**

## Description of the equipment to be evaluated

***If applicable, please ensure consistency between these informations, product labelling and associated technical documentation***

Is the equipment to be evaluated already on the market ? (in France and/or abroad) ○ YES ○ NO

*Characteristics :*

| | |
|---|---|
| BRAND | |
| MODEL | |
| Inset / Elevated | Drop-down list |
| Nominal voltage or current range | |
| Optical center position | Specify : |

*Lighting systems to be evaluated :*

***Fill in the tables on the following pages to identify its function(s) in the environment where it will be installed***

*Luminous sources characteristics :*

| | | | |
|---|---|---|---|
| LED / Halogen / Other ? | Drop-down list | Drop-down list | Drop-down list |
| Color(s) | Drop-down list | Drop-down list | Drop-down list |
| Number | | | |
| **Complete** reference(s) *(brand + type + reference)* | | | |

*Information required to ensure the traceability of the equipement to be evaluated :*

| | |
|---|---|
| Nameplate affixed to the equipment ? | ○ YES ○ NO |
| *Variant identification* Product code(s) / Other (specify) | |
| Documents to be submitted | Technical and/or commercial documentation Specify reference(s) : |

## Requested tests

*Photometric **and** colorimetric tests*

☐ Standard (23°C)

☐ High temperature — *Specify : +_____. °C (max +55°C)*

☐ Low Temperature — *Specify : -_____. °C (min -55°C)*

*Additional tests*

☐ Surface temperature test (1) / (2)

☐ Static load test (2) ☐ Watertightness test (2) / (3) ☐ Mechanical impacts test (2)

(1) *Halogen lights only* (2) Inset *lights only* (3) *Lights powered by 6.6 A only*

**Annex 1 : For requests regarding lights / signs / panels – Description of the equipment to be evaluated**

## Lighting system(s) to be evaluated
*(Cf Annex 2 : List of lighting systems)*

### Airport lighting systems

| | | | | |
|---|---|---|---|---|
| APPROACH | ☐ Center line (flashing) / runway threshold identification | | | |
| | ☐ Center line (no flashing) / crossbar | | | |
| | ☐ Side row | | | |
| | ☐ PAPI | | | |
| RUNWAY | ☐ Edge | ☐ Precision approach | Width | ☐ 45m |
| | | | | ☐ 60m |
| | | | Omnidirectional characteristic | ☐ with |
| | | | | ☐ without |
| | | ☐ Non precision approach | | |
| | | ☐ Night VFR only | | |
| | ☐ Threshold wing bar | ☐ Precision approach | ☐ Non precision approach | ☐ Night VFR only |
| | ☐ Threshold | | | |
| | ☐ End | | | |
| | ☐ Center line | ☐ Longitudinal spacing 15 m | ☐ Cat I ou II | |
| | | | ☐ Cat III | |
| | | ☐ Longitudinal spacing 30 m | | |
| | ☐ Touchdown Zone | | | |
| | ☐ Rapid exit indicator (RETIL) | | ☐ Longitudinal spacing 15 m | ☐ Cat I ou II |
| | | | | ☐ Cat III |
| | | | ☐ Longitudinal spacing 30 m | |
| | ☐ Take-off hold (THL) | | | |
| | ☐ Illuminated crosses, completely closed runway | | | |
| TAXIWAY | ☐ Runway entrance (REL) | RVR < 350 m | ☐ Straight sections (Wide beam) | |
| | | | ☐ Curved sections | |
| | ☐ Runway guard | ☐ High Intensity | Configuration | ☐ A |
| | | ☐ Low Intensity | | ☐ B |
| | ☐ Center line<br>☐ Stop Bar / No-entry bar | ☐ with A-SMGCS<br>RVR <350 m<br>☐ RVR ≥ 350 m | ☐ Straight sections | ☐ Narrow beam |
| | | | | ☐ Wide beam |
| | | | ☐ Curved section | |
| | ☐ Enhanced rapid exit center line | | | |
| | ☐ Intermediate Holding Point (IHP) | | | |
| | ☐ Edge | | | |

### Airport luminescent signs

| | | | |
|---|---|---|---|
| ☐ Mandatory | ☐ Information | ☐ RVR < 800m | ☐ RVR ≥ 800 m only |

### Heliport lighting systems

| | | |
|---|---|---|
| ☐ Heliport beacon | ☐ HAPI | ☐ TLOF (light) |
| ☐ Heliport fixed approach | ☐ FATO / Aiming point | ☐ TLOF (luminescent panel) |
| ☐ Heliport flashing approach | ☐ Heliport taxiway center line | |
| ☐ Flight path alignment guidance lighting system | ☐ Heliport taxiway, edge or parking | |

**Annex 1 : For requests regarding lights / signs / panels – Description of the equipment to be evaluated**

## Lighting system(s) to be assessed
*(Cf Annex 2 : List of lighting systems)*

### Obstruction light

| Horizontal beam spread | ◯ 360° | ◯ 180° | ◯ 120° | ◯ 90° |
|---|---|---|---|---|
| | Other, Specify : Example : +/- 120° ou +/-60° per side | | | |

**Low intensity (BI)**

| ☐ Type A | ☐ Type B | ☐ Type E |
|---|---|---|
| | | ☐ 20fpm ; ____ ms |
| | | ☐ 30fpm ; ____ ms |
| | | ☐ 40fpm ; ____ ms |
| | | ☐ 60fpm ; ____ ms |
| | | Other : ____ fpm / ____ ms |

**Medium intensity (MI)**

| Type A Day/Twilight | Type A Night | Type B |
|---|---|---|
| ☐ 20fpm ; ____ ms | ☐ 20fpm ; ____ ms | ☐ 20fpm ; ____ ms / ☐ 1/3ON – 2/3OFF |
| ☐ 30fpm ; ____ ms | ☐ 30fpm ; ____ ms | ☐ 30fpm ; ____ ms / ☐ 1/3ON – 2/3OFF |
| ☐ 40fpm ; ____ ms | ☐ 40fpm ; ____ ms | ☐ 40fpm ; ____ ms / ☐ 1/3ON – 2/3OFF |
| ☐ 60fpm ; ____ ms | ☐ 60fpm ; ____ ms | ☐ 60fpm ; ____ ms / ☐ 1/3ON – 2/3OFF |
| Other : ____ fpm / ____ ms | Other : ____ fpm / ____ ms | Other : ____ fpm / ____ ms |

| Modified beam beacon Night | Secondary wind turbine top |
|---|---|
| These lighting systems are designed for marking wind turbines in France; their lighting duration is set at 1/3ON – 2/3OFF | |
| ☐ 20fpm | ☐ 20fpm |
| ☐ 30fpm | ☐ 30fpm |
| ☐ 40fpm | ☐ 40fpm |
| ☐ 60fpm | ☐ 60fpm |
| Other : ____ fpm | Other : ____ fpm |

☐ **Type C**

**High intensity (HI)**

| Type A Day | Type A Twilight | Type A Night |
|---|---|---|
| 40fpm ; ____ ms | 40fpm ; ____ ms | 40fpm ; ____ ms |
| Other : ____ fpm / ____ ms | Other : ____ fpm / ____ ms | Other : ____ fpm / ____ ms |
| **Type B Day** | **Type B Twilight** | **Type B Night** |
| 40fpm ; ____ ms | 40fpm ; ____ ms | 40fpm ; ____ ms |
| Other : ____ fpm / ____ ms | Other : ____ fpm / ____ ms | Other : ____ fpm / ____ ms |

## Annex 2 : For requests regarding lights / signs / panels – List of lighting systems

| Airport lights | Obstruction lights | Heliport lighting systems | Airport luminescent signs |
|---|---|---|---|
| Approach, center line (flashing) / runway threshold identification | LI A | Heliport beacon | Mandatory (RVR < 800 m) |
| Approach, center line (non flashing) / crossbar | LI B | Heliport fixed approach | Mandatory (RVR ≥ 800 m) |
| Approach, side row | LI E | Heliport flashing approach | Mandatory (RVR < 800 m) |
| Approach, PAPI | MI A day / twilight | Flight path alignment guidance lighting system | Mandatory (RVR ≥ 800 m) |
| Runway, edge (precision approach, width : 45 m, without an omnidirectional charasteristic) | MI A night | HAPI | |
| Runway, edge (precision approach, width : 60 m, without an omnidirectional charasteristic) | MI B | FATO / Aiming point | |
| Runway, edge (precision approach, width : 45 m, with an omnidirectional charasteristic) | MI C | TLOF (light) | |
| Runway, edge (precision approach, width : 60 m, with an omnidirectional charasteristic) | Secondary wind turbine top | TLOF (luminescent panel) | |
| Runway, edge (non-precision approaches) | Modified beam beacon | Heliport taxiway, center line | |
| Runway, edge (night VFR) | HI A twilight | Heliport taxiway, edge or parking | |
| Runway, threshold wing bar (precision approaches) | HI A day | | |
| Runway, threshold (precision approaches) | HI A night | | |
| Runway, threshold and threshold wing bar (non-precision approaches) | HI B twilight | | |
| Runway, threshold and threshold wing bar (night VFR) | HI B day | | |
| Runway, end (precision approaches) | HI B night | | |
| Runway, end (non-precision approaches) | | | |
| Runway, end (night VFR) | | | |
| Runway, end/threshold (precision approaches) | | | |
| Runway, end/threshold (non-precision approaches) | | | |
| Runway, end/threshold (night VFR) | | | |
| Runway, center line (longitudinal spacing : 15 m, category I ou II) | | | |
| Runway, center line (longitudinal spacing : 15 m, category III) | | | |
| Runway, center line (longitudinal spacing : 30 m) | | | |
| Runway, TDZ | | | |
| Runway, RETIL (longitudinal spacing : 15 m, category I ou II) | | | |
| Runway, RETIL (longitudinal spacing : 15 m, category III) | | | |
| Runway, RETIL (longitudinal spacing : 30 m) | | | |
| Runway, take-off hold :THL | | | |
| Runway, Illuminated crosses, completely closed runway | | | |
| Taxiway,REL (RVR < 350m, straight sections, wide beam) | | | |
| Taxiway, REL (RVR < 350m curved sections) | | | |
| Low intensity runway guard (configuration A) | | | |
| High intensity runway guard (configuration A) | | | |
| Low intensity runway guard (configuration B) | | | |
| High intensity runway guard (configuration B) | | | |
| Taxiway, center line (RVR < 350 m, straight sections, wide beam) | | | |
| Taxiway, center line (RVR < 350 m, straight sections, narrow beam) | | | |
| Taxiway, center line (RVR < 350 m, curved sections) | | | |
| Taxiway, center line (RVR ≥ 350 m, straight sections) | | | |
| Taxiway, center line (RVR ≥ 350 m, curved sections) | | | |
| Taxiway, center line ( with A-SMCGS, straight sections, wide beam) | | | |
| Taxiway, center line (with A-SMCGS, straight sections, narrow beam) | | | |
| Taxiway, center line (with A-SMCGS, curved sections) | | | |
| Taxiway, enhanced rapid exit taxiway center line | | | |
| Taxiway, edge | | | |
| Taxiway, SB / NEB (RVR < 350 m, straight sections, wide beam) | | | |
| Taxiway, SB / NEB (RVR < 350 m, straight sections, narrow beam) | | | |
| Taxiway, SB / NEB (RVR < 350 m, curved sections) | | | |
| Taxiway, SB / NEB (RVR ≥ 350 m, straight sections) | | | |
| Taxiway, SB / NEB (RVR ≥ 350 m, curved sections) | | | |
| Taxiway, SB / NEB (with A-SMCGS, straight sections, wide beam) | | | |
| Taxiway, SB / NEB (with A-SMCGS, straight sections, narrow beam) | | | |
| Taxiway, SB / NEB (with A-SMCGS, curved sections) | | | |
| Taxiway, Intermediate Holding Point | | | |

**Legend :**

PAPI :Precision approach path indicator
VFR :Visual flight rules
TDZ :Touchdown zone
THL :Take-off and hold light

RETIL :Rapid exit taxiway indicator lights
A-SMGCS :Advanced surface movement guidance and control system
RVR :Runway visual range
SB :Stop bar
NEB :No-entry bar
REL :Runway entrance light

HI :High intensity
MI :Medium intensity
LI :Low intensité

FATO :Final approach and take-off
TLOF :Touchdown and lift-off area
HAPI :Helicopter approach path indicator

# Annex 3 : General terms and conditions for use of the service

## 1. Object and general terms

The agreement takes effect from the date of notification by the STAC to the applicant, subject to receipt by the STAC of the various items mentioned in the article "**Items to be provided**".
No tests will be carried out without any application form dully filled in, dated and signed by the STAC and the applicant.
Any incomplete application will be returned. Before applying, the applicant may contact the STAC by email at the address mentioned on page 1.

## 2. Particular conditions of termination

In the case of a serious breach of this agreement by one of the parties, the latter is denounced by the other party, by registered letter with acknowledgment of receipt, without prejudice to the provisions of article 15 below. The termination of this agreement is then effective at the date of receipt by the breaching party of the letter of denunciation issued by the non-breaching party.

## 3. Time frame

Once this agreement takes effect, the STAC will propose an evaluation programme within one month, specifying :

- A deadline for validation of the programme by the claimant
- A proposed content for the deliverable
- The complete list of elements to be provided with a deadline for their availability
- A provisional schedule for the evaluation, with proposed date(s) for the site visit(s) if necessary
- A deadline for sending the deliverable

The time taken to process the file depends on the quantity and complexity of the elements to be analysed and the level of technicality of the deliverable expected by the applicant.

If the programme validated by the applicant is not received by the deadline, it will be considered null and void and the request for technical advice will be cancelled.

## 4. Required documents

STAC reserves the right to request the provision of any element not specified in this chapter but which proves necessary for the performance of the service.

### *4.1. Technical documentation*

- Technical documentation and user manuals for each item to be analysed

*In particular, the technical documentation for a light or luminescent panel to be evaluated must include the items listed below :*

| *Equipement* | *Eléments provided by the technical documentation* | |
|---|---|---|
| ***Light*** | • *Light source(s) : model, brand, number, type (halogen, LED…)*<br>• *Optical components :prisms, glass, lens, filters…*<br>• *Optical center position*<br>• *Body*<br>• *Seals*<br>• *Connections*<br>• *Setting instructions*<br>• *Electrical insulation resistance* | • *Operating and maintenance instructions*<br>• *Operating temperature range*<br>• *Nominal electrical supply voltage or intensity*<br>• *Electrical protection index*<br>• *Electrical insulation class*<br>• *Frangible or non-frangible type* |
| ***Luminescent signs or panels*** | • *Light source(s) : model, brand, number, type (hlogen, LED…), schema*<br>• *Voltage converter : model, brand, conversion range*<br>• *Front surface : material, manufacturer, model*<br>• *Inner coating : material, manufacturer, model* | |

- Test reports from factory or other independent laboratories (if available)
- Certificates of compliance with various regulations or standards (if available)

### *4.2. In the event of on-site inspection (tests) :*

- Description of the site and installation to be analysed
- Layout and wiring plans of the equipment to be analysed
- Latest preventive / corrective / corrective maintenance reports for the equipment to be analysed (if available)

### *4.3. For requests concerning any other maintenance procedure*

- Technical documentation and user manuals for each piece of equipment or measuring device used for the procedure to be analysed
- Precise description of the procedure to be analysed
- Records of initial tests carried out

### *4.4. Equipment made available for testing on STAC's premises*

The equipment to be supplied is specified when this form, duly signed by STAC, is sent.
For requests concerning lights/lighting marker panels, the elements to be supplied, **if existing**, are indicated below.

| **Equipment**<br>**Other items to be supplied** | **Inset lights** | **Elevated lights** | **Luminescent sign** (Heliport lighting) | **Luminescent signs** (Airport signage) | |
|---|---|---|---|---|---|
| | | | | **Obligation** No entry 08 – 26 | **Indication** ← A \| B ↑ |
| **Subbase** | X | | | | |
| **Mounting bracket** (for vertical installation) | | X (if existing) | X | | |
| **Specific alignment device** | | | | | |

It is the responsibility of the applicant to ensure that the various items of equipment meet the requirements of the applicable health and safety at work regulations and standards.

## 5. Transport

When receiving the different product samples to be tested, STAC checks their number, checks that they are not damaged and that they work. Then, STAC acknowledges receipt, informing the applicant of any damage or defect.

## 6. Checks

On receipt of the various items of equipment to be evaluated, the STAC will check their number, their apparent condition and their state of operation, and will then send the applicant an acceptance report in which any anomalies noted are mentioned.

## 7. Conservation

STAC does not retain any equipment evaluated as part of a request for a technical opinion.

## 8. Proposed tests for lights/panels

### *8.1. List*

| **Equipment**<br>**Tests** | **Lights** | | | | **Luminescent panel** (Heliport lighting) | **Luminescent signs** (Airport signage) |
|---|---|---|---|---|---|---|
| | Airport or heliport lighting (except PAPI and HAPI) | | PAPI HAPI | Beaconing obstacle or wind turbine | | |
| | Elevated | Inset | | | | |
| **Photometry and colorimetry tests** (performed at +23°C) | | | | | | |
| **Photometry and colorimetry tests at high and low temperatures** | | | | | | |
| **Mechanical impacts test** | | | | | | |
| **Contact temperature test**<br>**Static load test**<br>**Watertightness test** | | | | | | |

*Tests performed on any provided sample* *Tests performed on one of the provided sample* *Non performed test*

### *8.2. Methods*

Tests are performed in accordance with the normative reference CEI/TS 61827 : 2004 and with the documents PRO/SE/E/VIS/6029 et PRO/SE/E/VIS/6016.

## Annex 3 : General terms and conditions for use of the service

### 9. Price

The tests listed above are free of charge.

### 10. Costs

In the event of STAC experts travelling for on-site tests, the costs and responsibilities are broken down as described below.

#### *10.1. Travel*

The costs of transport, accommodation and meals for STAC agents are examined on a case-by-case basis in accordance with the terms and conditions for the payment of expenses set by the Ministry.

In the event that accommodation is selected by the applicant, the latter must ensure that the cost incurred does not exceed the flat rate in force.

#### *10.2. Ancillary expenses*

Any ancillary expenses (provision of infrastructure, equipment hire, calls on third-party companies or other) are borne exclusively and entirely by the applicant.

### 11. Deliverables

On completion of the tests, the STAC will send the applicant (or addressee mentioned on page 1 of this form), electronically, a copy of the technical notice including, where applicable, the test results and the analysis of these results.

Authorisation to publish the deliverable on the STAC website may be requested. No document concerning the elements to be evaluated will be published without prior agreement signed by the applicant.

### 12. Responsabilities

#### *12.1. Equipment ta be evaluated*

The STAC is responsible for the conservation and protection of all equipment to be evaluated, as soon as it is received on its premises, and undertakes to use it in strict compliance with the instructions provided by the applicant. The latter will cover any damage that may affect STAC's personnel or facilities during the proper use of its equipment during the tests.

No compensation can be claimed from the STAC, which cannot be held liable, in the following cases relating to the equipment to be evaluated :

- loss suffered during transit to or from the STAC
- malfunctions observed by STAC on receipt of the equipment
- unintentional damage occurring during tests carried out by the STAC.

#### *12.2. Documentation*

The STAC is responsible for the management of all information obtained or generated in the course of its activities. In this respect, no information is made public without the prior agreement of the applicant.

All other information is considered exclusive and confidential.

### 13. Protection of intellectual property and personal data

STAC undertakes to protect and not to divulge any information relating to the applicant's intellectual property or any of the applicant's personal data. The STAC also undertakes not to divulge the detailed results of the tests carried out to any third party outside the DGAC, except in the case of publication of the deliverable on the STAC website, subject to the conditions set out in article 11 "Deliverables".

Certain data may nevertheless be communicated to authorised third parties (supervisory authorities, certification/accreditation bodies or assessors in the context of audits linked to the STAC's quality approach) and may be used for statistical or scientific purposes.

### 14. Force majeure

Neither party shall be compelled to comply with the terms of this agreement if some causes legitimately beyond its control prevent it from doing so. The affected party will have to notify the other party of the detailed reasons for invoking force majeure, to explain the predictable effects on this agreement and to put forward proposals for a resolution.

### 15. Dispute resolution and claims handing

The parties shall endeavor to act in good faith to resolve amicably any dispute between them arising from difficulties in complying with the terms of this agreement or from any new event affecting it. In the hypothesis where no negotiated solution, acceptable to both parties, may be found, the parties submit to the exclusive French court jurisdiction.

Any claim by the applicant shall be made by e-mail at the address indicated on page1. The claim handling process implemented by the STAC is available upon request.