

# The Law, Decrees and Technical Regulations on space operations of France

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# The French Space Operation Act's purpose

- France adopted its space operations Act on 3<sup>rd</sup> June 2008
- The purpose of the FSOA is to set up a coherent national regime of authorization and control of space operations under the French jurisdiction or for which the French Government bears international liability as a launching State, in accordance with UN Treaties principles
- Main objective: protection of people, goods, public health and the environment
- European framework for launch services from GSC:
  - Specific international agreements passed with the European Space Agency (ESA) on CSG facilities: the legal source of safety rules (“sauvegarde”) at the CSG
  - Treaty (the Declaration) between the Ariane Exploitation Phase Participating States (including France)

# Schedule

- **Adoption of the Space Operations Act on 3rd June 2008**
- **Adoption of 3 implementing Decrees on 09<sup>th</sup> June 2009**
  - **Authorization Decree**
  - **Registration/Safety at the Guiana Space Centre (CSG) Decree**
  - **Space Data Decree**

## Regulations to be adopted

- **Technical regulations (=>European Commission)**
  - **Safety regulations (CSG)**
  - **Registration regulations**
- **SOA full implementation on 10<sup>th</sup> December 2010**



# SOA (+ modification of L.331 Research Code related to CNES missions)

L. 331-6 Research Code (see 1961 Act /CNES)

Art. 4  
Art. 6

Art. 23 to 25

Art. 12  
Art. 21

Art. 27-28

General implementing decree—  
authorization and control  
regime (art. 28)

Space-based  
data Decrees

CNES' Decree n° 24-510 (28 June 1984) – to be  
modified in 2009

- Authorization process
- Licenses
- Operations carried out from a foreign country
- Preliminary technical assessment
- Command of a space object
- Withdrawal of the authorization or license
- Financial guarantees
- Control regime

- Emergency measures so as to protect security of people, goods, public health and the environment
- Registration of space objects
- CNES President powers at the GSC

Technical Regulations  
launchers+satellites)

Safety Regulations  
at the GSC

Registration  
Regulations

Best practices  
guidelines

Instructions



CENTRE NATIONAL D'ETUDES SPATIALES

# The authorization regime

- Which space operations are concerned?
- What are the conditions for the granting of an authorization?
- What are the different kinds of authorization?
- What is the procedure for the granting of an authorization?



# Scope of the authorization regime

- **The following persons shall apply for an authorization:**
  - Any operator that aims at launching a space object from the national territory or from facilities under the jurisdiction of France, or when such an object comes back onto the national territory or facilities under the jurisdiction of France
  - Any French operator that aims at launching a space object from the territory of a foreign State or from a place that is not under any State's sovereignty, or when such an object comes back onto the territory of a foreign State or onto a place that is not under any State's sovereignty
  - Any French company that aims at launching a space object, or any French operator that commands such an object during its mission in outer space

**As a result the procurement of the launch of a non-French satellite by Arianespace from CSG is not subject to French SOA, Arianespace being already authorized and controlled for such operation. The command phase of such object is also out of French SOA's scope.**

# Scope of the authorization regime

- **Other authorization cases: transfer of on-orbit command**
  - An authorization is required to transfer to a third person of the command of a space object (such as a GEO satellite) whose launch or command has been authorized in compliance with the French legislation (transfer to a foreign country).
  - Any French operator who aims at taking the command of a space object whose launch or command has not been authorized in application of the French legislation has to apply for an authorization (transfer from a foreign country).

# Authorization conditions

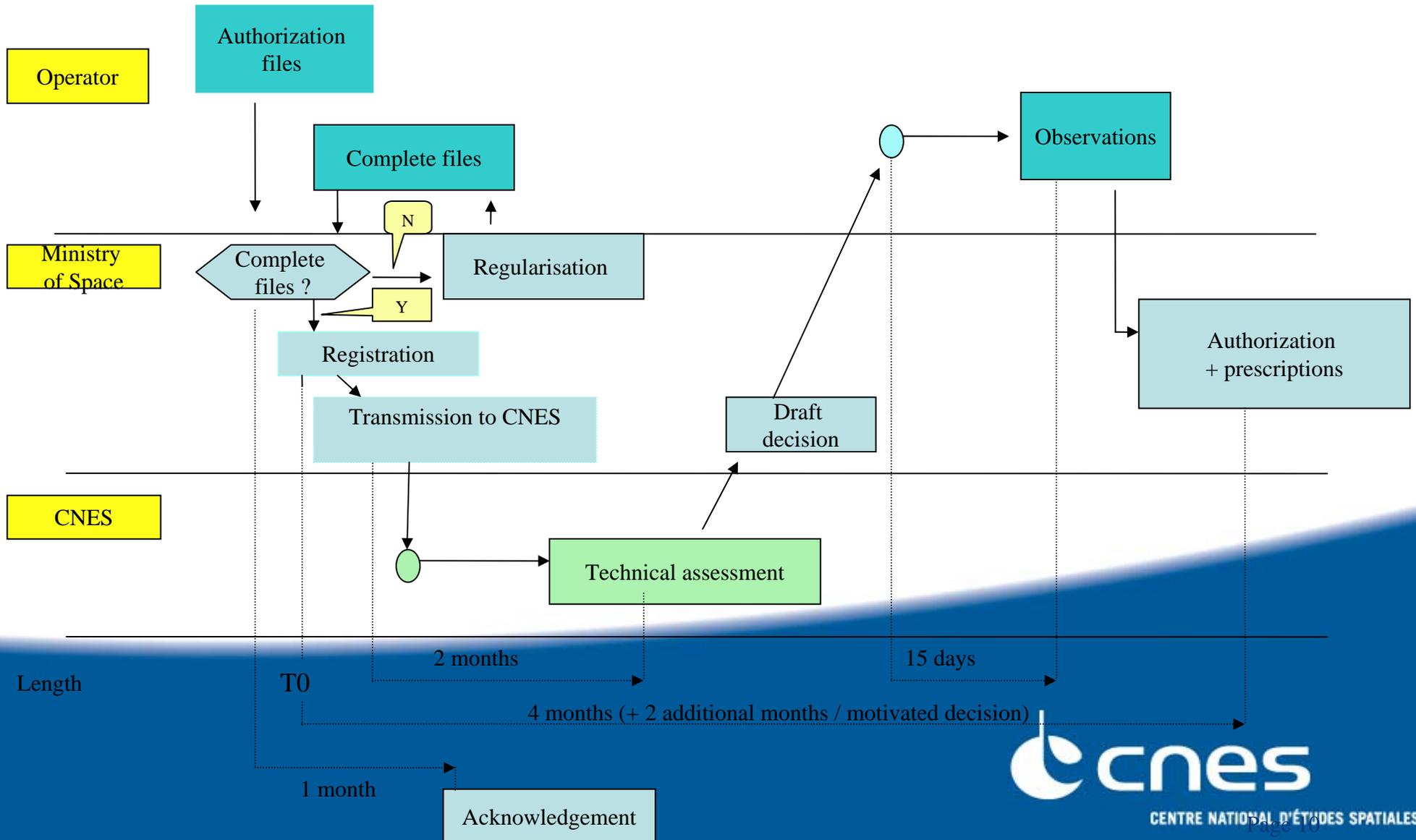
- **General principles: Authorizations are granted by the research ministry in charge of Outer Space Affairs (art. 1 Authorization Decree) prior to the space operation and after completion of the following process:**
  - **Administrative review by the ministry in charge of outer space affairs :**
    - such ministry shall assess moral, financial and professional guarantees of the operator
  - **Technical review by CNES**
    - Space systems and procedures to be carried out by the applicant shall be compliant with the technical regulations issued by the ministry in charge of outer space affairs. Technical assessment related to the operation is delegated to CNES (article 4)
    - Exemptions of technical assessment (see art. 4.4 for foreign operations) may be granted by the ministry
- **Additional condition : insurance coverage**

# Different kinds of authorizations/licenses

- **Authorization/license**
  - **Single Authorization**
  - **“Operator License” : license attesting moral, financial and professional guarantees of the applicant (+ authorization for each operation on a case by case basis)**
  - **“Technical license” : certification of technical conformity of the generic systems and procedures used + simplified authorization on a case by case basis to assess differences between the certified generic system and the system used for the operation**
  - **License equivalent to authorization for determined operations within a determined period (without any authorization on a case by case basis: obligation of information only )**
  - **Simplified authorization (technical control exemptions) for space operations being carried out from a foreign territory (SOA art. 4.4)**

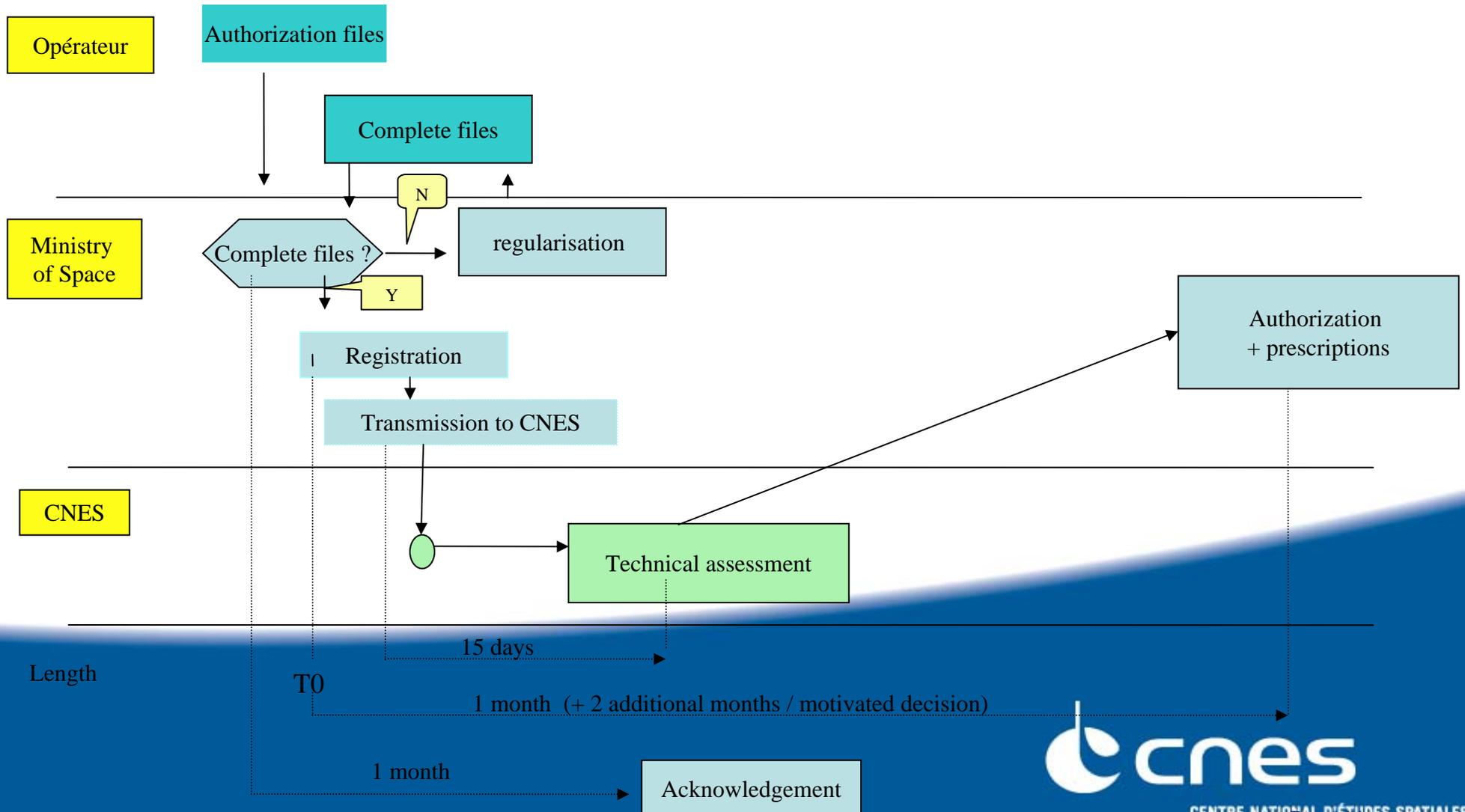
# Authorization Decree :

## Case 1 : single authorization or license



## Authorization Decree

### Case 4 : case-by-case authorization when the operator has a technical licence



# Possibility of a preliminary technical assessment by CNES

- **Specific regime : Preliminary technical assessment (optional consultation prior to and independent from the authorization process) for innovative systems under development (Authorization Decree: Article 11)**
  - Open to any person in charge of the development of a space system or of an important sub-system
  - A non mandatory “consultation regime” which is prior to and independent from the formal authorization procedure
  - This consultation enables CNES to certify systems or sub-systems under development at given milestones
  - Such certification issued by CNES may be used by the operator in the authorization procedure to facilitate the granting of such authorization

## Once the authorization is granted...

- **Controls during the preparation and the carrying out of the operation**
- **+ Safety regime for launches carried out from the CSG**

# SOA control regime

- **An “a posteriori” control regime based on specific prescriptions contained in the authorization/license**
  - Authorizations granted on the basis of technical information available at the moment of the application => technical key points to be assessed after the granting of the authorization through specific prescriptions
  - The authorizations granted pursuant to the present act may include “prescriptions” set forth for the safety of persons and property, protection of public health and the environment, in particular in order to mitigate risks related to space debris (article 5 SOA)
- **Control by State's agents, in particular CNES staff**
- **Controls carried out during the preparation as well as during the carrying out of the operation**
- **Necessary measures so as to protect people, goods, public health and the environment may be taken by CNES President**

# Safety and security at the GSC

- ◆ **The President of CNES is entrusted with a general safety and security mission regarding the exploitation and the facilities of the GSC, in the name of the French Government**
  
- ◆ **CNES' Statutes are modified in this way (mission added in the current article L 331-6 of the "Research Code" and implemented in the 1984 CNES Decree)**
  
- ◆ **Content:**
  - General mission to ensure the safety of persons, goods and environment during the preparation and the carrying out of a launch, including a specific power of CNES' President to issue specific regulations dealing with the CSG launch site
  - Mission of coordination dealing with the implementation of applicable security regulations aiming at ensuring the security of the GSC facilities and the activities conducted at the CSG ("overflowing risks" prevention) by all companies and other entities located at the GSC
  - All these missions shall be defined by specific decree and regulations, especially the conditions under which the President can delegate its powers, if deemed necessary to the CSG Director as well as to the persons responsible for safety and security activities at the CSG

# Safety and security at the GSC

➤ CNES President shall set out applicable safety rules concerning the facilities located within the perimeter of the Guiana Space Centre, as regards the activities of designing, preparing, producing, storing and transporting space objects and their constitutive parts, as well as the tests and operations performed within the perimeter or out of the Guyana Space Centre, in particular :

- Overall coherence of the design requirement of ground facilities, roads and networks located at the GSC ;
- Specific rules applicable on the ground and during the flight in order to ensure the protection of persons, property, public health and the environment
- Determination of the areas to be protected during the launch phase and the limits of the flight corridor;
- Technical and meteorological conditions under which a launch can be carried out as well as the corresponding measures;
- Applicable rules dealing with the destruction of the launchers in flight as well as the corresponding measures

# SOA Technical regulations

- **Technical regulations for launch operations, associated to a best practices guidelines**
- **Technical regulations for satellite operations (on-orbit command and reentry), associated to a best practices guidelines**
- **Safety regulations at the GSC**
- **Best practices Guidelines to be elaborated by CNES in coordination with the space operators and manufacturers**
- **Technical regulations main features:**
  - Shall be as close as possible of the European space industry's current practices regarding security of people and goods and protection of health and of the environment:
  - Shall impose objectives to be reached by the operator instead of a mandatory manner to do so
  - Shall be based on international norms and standards
  - Shall be compatible with specific requirements of launch ranges
- **Safety regulations at the GSC :**
  - Based on the current Safety Regulations (“Réglement de sauvegarde”)

# Governmental space activities

- **Exclusion of the operations carried out by CNES in the scope of its “public mission” (Governmental programs, Science, systems development...)**
  - Operational activities (on orbit command of governmental satellites)
  - Management of public infrastructures
- **Other public activities: Defence activities, meteorological activities not carried out by CNES : not excluded from the authorization regime (Launch of ballistic missiles excluded from SOA regime)**

## Liability regime

- **Allocation of liability between the French Government and the operators: the operators shall be liable to the same extent, whatever the claim may be:**
  - **Case 1: When the operator is sued and condemned by a domestic court : State guarantee** granted to the operator for damages caused to third parties by authorized space operations carried out on the French or European territory (except in case of willful misconduct) during the launching phase or during the command phase according to the terms of the Tax Act (art. 15) :
    - For damages caused during the launching phase: **above** approx. 60 M€ (see Launchers Exploitation Declaration)
    - For damages caused on Earth or in the airspace during the command phase: **above** an amount comprised between 50 and 70 M€ (to be determined by the authorization)
    - Shall also benefit to contractors, subcontractors, customers or insurers for damages caused during the launching phase

# Liability regime

- **Allocation of liability between the French Government and the operators: the operators shall be liable to the same extent, whatever the claim may be:**
  - **Case 2: When the French Government is sued under UN Space treaties (1972 Convention...), it may make a claim for compensation towards the Space operator, whose liability shall be limited to a fixed ceiling equivalent to the aforementioned amounts (art. 14)**

# Registration: CNES Decree

## *« DISPOSITIONS RELATIVES AU REGISTRE D'IMMATRICULATION DES OBJETS SPATIAUX*

« Art. 14-1. – Pour l'exercice de la mission confiée au Centre national d'études spatiales par l'article 12 de la loi n° 2008-518 du 3 juin 2008 relative aux opérations spatiales, tout opérateur spatial au sens de l'article 1<sup>er</sup> de cette loi fournit au centre les informations qui sont nécessaires à l'identification de l'objet spatial et dont la liste est fixée par arrêté du ministre chargé de l'espace.

« Art. 14-2. – L'opérateur transmet ces informations au Centre national d'études spatiales au plus tard soixante jours après le lancement.

« Art. 14-3. – Le Centre national d'études spatiales attribue pour chaque objet spatial lancé sur une orbite terrestre ou au-delà un numéro d'immatriculation et l'inscrit sur le registre national d'immatriculation.

« Art. 14-4. – Toute modification des informations prévues à l'article 15 du présent décret est transmise immédiatement par l'opérateur concerné au Centre national d'études spatiales, qui apporte la modification au registre national d'immatriculation.

« Art. 14-5. – Le registre d'immatriculation est public et peut être consulté librement sur demande adressée au Centre national d'études spatiales. Toutefois, les informations relatives à l'identification du propriétaire ou du constructeur de l'objet spatial et aux éventuelles sûretés, réelles ou personnelles, constituées sur celui-ci, ne sont communiquées qu'après accord préalable des intéressés.

« Art. 14-6. – Le Centre national d'études spatiales transmet au ministre des affaires étrangères les informations issues du registre d'immatriculation requises par la convention du 14 janvier 1975 sur l'immatriculation des objets spatiaux lancés dans l'espace extra-atmosphérique. Il l'informe de tout événement affectant la vie en orbite de l'objet spatial inscrit sur le registre d'immatriculation, en particulier la désorbitation, la fin de l'exploitation ou la perte de l'objet spatial.

« Le ministre des affaires étrangères communique ces informations au secrétaire général de l'Organisation des Nations unies.

# Registration regulations to be adopted

## ➤ Information required (in the Technical Regulations)

- Same ones as those mentioned in the Registration Convention

+ identification of the operator, the owner and the builder of the space object

+ Operational state of the space object

# Specific provisions related to space-based data

- **Declarative regime set out: Any primary space-based data operator undertaking in France an activity must preliminarily declare it to the Government**
- **The Government may at any time prescribe measures restraining the activity of the primary space-based data operators, which are necessary to safeguard the fundamental interests of the Nation (particularly defence matters, foreign policy and international commitments of France)**
- **June 2009 implementing Decree determines the competent administrative authority and the restriction measures that could be taken**
- **The technical characteristics of the concerned data have to be specified in another implementing Decree**