

The French Space Operation Act



■ The French Space Operation Act (SOA) was adopted by French Senate on 22nd May 2008.

■ Signed and dated on June 3rd, it was published in the «French Republic Official Journal » on June 4th, 2008.

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LOIS

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relative aux opérations spatiales (1)

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L'Assemblée nationale et le Sénat ont adopté,

Le Président de la République promulgue la loi dont la teneur suit :

TITRE I^{er}

DÉFINITIONS

Article 1^{er}

Pour l'application de la présente loi, on entend par :

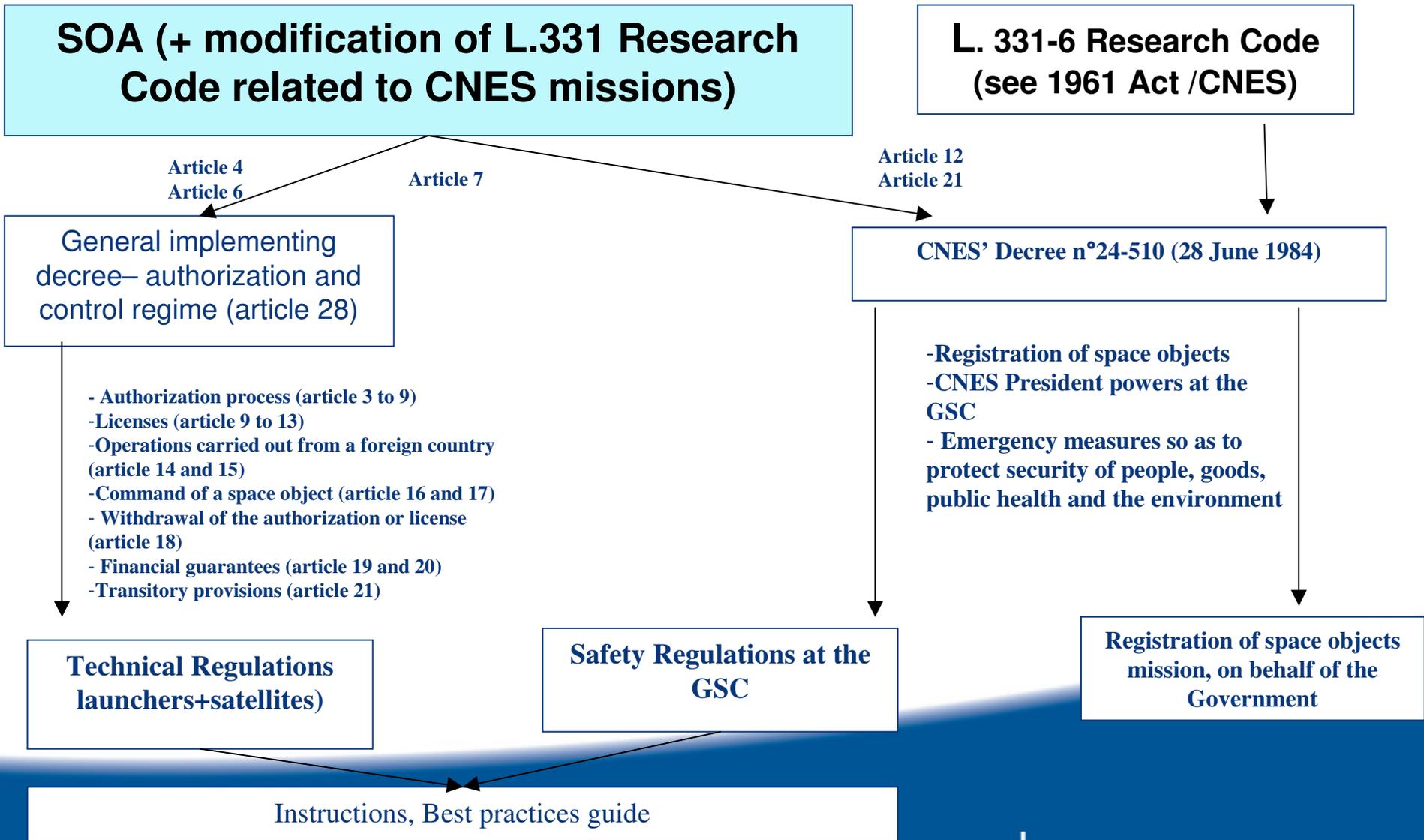
1° « Dommage » : toute atteinte aux personnes, aux biens, et notamment à la santé publique ou à l'environnement directement causée par un objet spatial dans le cadre d'une opération spatiale, à l'exclusion des conséquences de l'utilisation du signal émis par cet objet pour les utilisateurs ;

The logo for the Centre National d'Études Spatiales (CNES), featuring a stylized white satellite dish or antenna shape to the left of the lowercase letters 'cnes' in a bold, sans-serif font.

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The French Space Operation Act's purpose

- The purpose of FSOA is to set up a national regime to authorize and control Space operations following French government's international commitments



French SOA architecture

Content (1/2)

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- Liability - Government guaranties – waivers of claims enforcement
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FSOA's International background

- **Up to the Space Operations Act June 3rd 2008 entry into force, an empirical national legal and contractual framework, resulting from international commitments, governs French space activities carried out by private entities**
 - ◆ **UN International treaties**
 - OST67 : Art VI Obligation for States Parties to authorize and to control national space activities carried out by non-governmental entities (private companies). Art VIII State Jurisdiction and control on its registered Space Objects
 - Liability Convention 1972 : absolute liability for damage caused on the surface of the Earth or in the airspace...
 - Convention on registration of Objects launched into Outer Space: obligation to register the Space Object when France is the appropriate Launch State
 - ◆ **European framework for Launch services from GSC: Arianespace launches services governed by national regulation as a result of:**
 - Specific international agreements passed with the European Space Agency (ESA) on CSG facilities: the legal source of safety rules ("sauvegarde") at the GCS launch base
 - Treaty (the Declaration) between the Ariane Exploitation Phase Participating States (including France), such States giving mandate to ESA to conclude a Convention (now "Arrangement") with the private operator Arianespace to implement the "exploitation" phase (European launcher "development" phase being still governed by ESA rules) : legal source of the French Launch State special liability (ceiling of 60 M€ / Arianespace).
 - ◆ **Eutelsat SA**, a former intergovernmental organization (same model as former Intelsat) privatized in 2001 and incorporated in France as a private company (SA), has been affected only by legal regime on telecommunications services and frequency spectrum (Electronic Communication Code).

Space Operation Act (SOA) authorization regime

■ Scope of the SOA's authorization regime

- ◆ **Principle of prior authorization (or license) for the carrying out a “space operation”**
 - Authorizations to be given by an administrative authority (ministry in charge of outer space affairs), after technical instruction carried out by CNES (article 4)
 - Exclusion of the operations carried out in the scope of a public mission carried out by CNES (art 27)
- ◆ **Definition of “Space operation” (art 1) :** « any activity consisting in launching or attempting to launch an object in outer space, or of ensuring the command of a space object during its journey in outer space, including the Moon and other Celestial Bodies, as well as during its return on Earth ». Definition of “Launching Phase” and “Phase of Command” in art. 1.4 and 1.5.
No specific reference to: human flights - activities in the Moon and other Celestial Bodies
- ◆ **Definition of the « operator » (art 1.):** “any entity carrying out, under its responsibility and in an independent way, a space operation (i.e. Arianespace, Eutelsat)”. Not a subcontractor under operator's authority
- ◆ **“Launching phase”:** the period of time which, as part of a space operation, starts at the moment when the launching operations become irreversible and which, without prejudice to provisions contained, if necessary, in the authorization granted pursuant to the present act, ends when the object to be put in outer space is separated from its launch vehicle
- ◆ **“Command phase”:** the period of time starting as part of a space operation at the moment when the object to be put in outer space is separated from its launch vehicle and ending when the first of the following events occurs:
 - when the final maneuvers for de-orbiting and the passivation activities have been completed;
 - when the operator has lost control over the space object;
 - the return to Earth or the full disintegration of the space object into the atmosphere

Space Operation Act (SOA) authorization regime

■ Authorization applicants (article 2) :

◆ New applicants

- “Any operator, no matter its nationality, 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 to the national territory or facilities under the jurisdiction of France”. **For launch services - French territory jurisdiction criteria**
- 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 to the territory of a foreign State or to a place that is not under any State’s sovereignty. **For launch services operators - French nationality criteria**
- Any physical person who has got the French nationality or any moral person whose headquarters are located in France, being an operator or not, that aims at launching a space object, or any French operator that commands such an object during its mission in outer space”. **Any French person (satellite operators or not) that procures (purchase) a Launch service or intend to operate a space object it under French Jurisdiction.**

As a result, is not subjected to French SOA, for example, the launching of Non-French satellite by Arianespace from GCS, Arianespace being already authorized and controlled for such operation. A fortiori, the command phase of such object is out of French SOA scope.

Space Operation Act (SOA) authorization regime

■ Authorization applicants (article 2):

- ◆ **Other applicant: Operation's transfer of control (article 3)**
 - 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).

Space Operation Act (SOA) authorization Conditions (art 4)

◆ General regime

- **Conditions vs. applicant:**

The applicant shall comply with moral, financial and professional requirements (under the Ministry of Space assessment)

- **Conditions vs. operations:**

Systems and procedures carried out by the applicant shall be compliant with the technical regulations. Such regulation to be issued by the Space Department, under proposition by CNES (under CNES assessment)

Space Operation Act (SOA) authorization Conditions

■ Specific regimes

- ◆ **Foreign Launch services purchased by a French satellite operator (art. 4.4)**
 - For an authorization application for an operation to be carried out from the territory of a foreign State or from means or facilities falling under the jurisdiction of a foreign State, the Space department may exempt the applicant from all or any part of technical regulations compliance checking, when the national (national operators contracts, national ceiling) and international commitments (N.U. treaties, bilateral agreements...) of that State, as well as its legislation and internal practices, provide sufficient guarantees regarding the safety of persons and property and the protection of public health and the environment, and liability matters (under the Ministry of Space assessment) .

Space Operation Act (SOA) authorization Conditions

■ Specific regimes

- ◆ **Preliminary technical assessment (optional consultations prior authorization) for innovative systems under development (Authorization Decree: Article 14)**
 - A Non mandatory “consultation regime” which is prior and independent from the formal authorization procedure
 - This consultation enables to have a CNES certification on systems or sub systems under development at given milestones
 - Such certification issued by CNES is a valid reference to be used later in a further authorization procedure

(Equivalent mechanism in the GSC Agreement (ESA/France) : « The Agency may consult CNES in the course of the execution of its launcher development programs in order to facilitate the granting of authorizations or licenses related to launches or other space activities from the CSG. The French Government shall contact the Agency, prior to revoking from or refusing to Arianespace such authorization or license and as soon as circumstances allow, in order to determine what steps should be taken to safeguard the Agency’s interests »).



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Procedure

■ Authorities :

- ◆ Authorizations are under the “administrative authority”, of the ministry of research in charge of outer space affairs. Such ministry assess moral, financial and professional requirements and delegates to CNES the technical instruction (article 4). Exemptions of technical checking (under art 4.4 for foreign launches) are given by the ministry.
- ◆ Exclusion of the operations carried out on CNES’s responsibility in the scope of a “public mission” (Governmental programs, Science, systems development...)

Procedure

■ Different kinds of authorizations/licenses

- ◆ Single Authorization
- ◆ License attesting moral, financial and professional guarantees of the applicant (+ authorization for each operation on a case by case basis)
- ◆ License above + certification of technical conformity of the generic systems and procedures used (+ authorization on a case by case basis to assess differences / certified generic systems and procedures)
- ◆ 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)

Procedure

■ Procedure schedule (Authorization Decree project)

- ♦ Administrative assessment is carried out by the ministry of Space which delegates to CNES the technical assessment
- ♦ Technical assessment: CNES shall give its assessment to the ministry in charge of space affairs within a 2 months period for a “single authorization” and within a 2 weeks period for of a “license attesting the technical conformity of systems and procedures” (art. 5 Authorization Decree project)

SOA's Technical regulations

- Technical regulations for launch operations
- Technical regulations for satellite operations (in-orbit command and reentry)
- Safety regulations at the GSC

- 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 regulation (Sauvegarde)

Technical Procedure and requirements

Authorization procedure : technical file to be prepared by the applicant:

- **The general notification of compliance with the technical regulations;**
- **The internal standards and quality management provisions applicable to the space operation to be conducted;**
- **All the measures, including surveys of hazards and risk control plans, taken by the applicant to guarantee the safety of people and property and to protect public health and the environment;**
- **The environmental impact studies and measures designed to avoid, reduce or offset the harmful effects on the environment, including;**
- **The risk prevention plan relating to risks caused by the fall-back of the space object or fragments thereof,**
 - ◆ the prevention plan relating to environmental damage, as defined in article L.161-1 of the environment code,
 - ◆ the space debris limitation plan,
 - ◆ the collision prevention plan,
 - ◆ as applicable, the nuclear safety plan,
 - ◆ as applicable, the planet protection plan;
- **The risk control measures planned during the performance of the space operation;**
- **The emergency measures planned**

SOA's control regime

- An “ a posteriori” control regime regarding specific prescriptions contained in the authorization/license
 - ♦ Focus : compliance of the preparation and the achievement of the authorized operations
 - ♦ **Article 5 SOA** : 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 limit risks related to space debris
 - ♦ **Article 7 Authorization Decree project** : prescriptions mentioned in article 5 LSO will contain in particular the conditions under which the agents commissioned pursuant to article 7 of the LSO can control the preparation of the space operations

SOA's control regime

- ◆ **Control of the operator's obligations fulfillment after the delivery of the authorization/license (article 7)**
 - State's representatives (including authorized CNES agents) are allowed to carry out the required controls in order to determine if the operators comply with their obligations.
 - Possibility to visit and inspect the buildings, offices and facilities from which the operations are undertaken, including the space object
 - Possibility to require any useful document or file
 - Technical administrative investigation in case of serious incident, or in case of an accident

SOA's control regime

■ Measures considered as necessary to guarantee the safety of people and property, the protection of public health and the environment

- Power of the ministry in charge of space affairs delegated to CNES President (Article 8 and article 21 LSO) for emergency measures to be taken for the protection of people, goods, public health and the environment :
- Applicable to launch operations and to the command of satellites
- These measures can be prescribed before the carrying out of the operation (on ground) or during the carrying out of the operation , with the specific case of GSC

■ Administrative penalties :

- Possibility to withdraw or to suspend the authorizations in case of violation of the obligations established by the space legislation or of international treaties, or if some operations threaten the National Defense (article 9)

Launch base Regulations : the case of French Guiana Space Center (GSC)

- ◆ **The President of CNES is entrusted with a power of « administrative police » as relates to the exploitation and the facilities of CSG, in the name of the French Government for launch security and safety**
- ◆ **CNES' s Statutes is modified in this way (mission to be added in the new article L 331-6 of the “Research Code”)**
- ◆ **Content:**
 - General mission to ensure the safety of persons, goods and environment on Earth or during a launch, including a specific competence of CNES President to issue specific regulations dealing with the CSG base
 - Mission of coordination, for the implementation by all companies and other entities located in CSG of any regulation aiming at ensuring the safety of the facilities and the activities conducted at CSG (overflowing risks prevention)
 - All these competences to be specified by specific decree and regulation, especially the conditions under which the President can delegate its powers, if deemed necessary

Safety and security at the GSC

■ Safety mission at the GSC

◆ CNES President shall set out applicable safety rules, 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

Liability - Government guaranties – waivers of claims enforcement

■ Third parties Operator's liability (art 13):

- ◆ “Absolute liability” for damage on ground and in air space
- ◆ Liability on a “fault basis” for damage caused in outer space
- ◆ **Limitation term of liability: except in the case of a willful misconduct, such liability ends when all the obligations set out in the authorization or the license are fulfilled, or at the latest one year after the date on which these obligations should have been fulfilled. The Government shall be liable in the operator’s place for damages occurring after this period.**

Liability - Government guaranties – waivers of claims enforcement

- ◆ **Operators' rights attached to the authorization (including under a License)**
 - **State guaranty** on behalf operators for damage caused to third parties by space activities (except willful misconduct) on the ground and in the airspace according, or during the launch phase, according to the terms of the fiscal finance act;
 - Art. 14: when French Government is sued under NU Space treaties (1972 Convention...) the claim for compensation toward the Space operator is limited to a **fixed ceiling** (60 Million Euro today)
 - Art. 15: should the Space operator (or a manufacturer) is condemned by any court, it can benefit from the State guaranty (reimbursement of indemnifications exceeding 60 M€).
 - **Cross waivers of claims:** Art. 20, Legal acceptance, and existence pre-supposed, of cross waivers of liability claims between persons participating in the authorized operation (Launch service operator, Launch base operator, manufactures, sub contractors...)

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 itself 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)**
- **An implementing Decree shall determine the technical characteristics of the concerned data, the competent administrative authority and the restriction measures that could be taken**

Conclusion

- Preparation of the SOA “regulation corpus” required for implementation - Work in progress :
 - ◆ Specific decrees + lower regulatory texts (« Arrêté ») to be achieved by mid 2009 to specify the conditions of authorization, insurance and registration regimes as well as the powers of the President of CNES at CSG and for the maintaining of the French Space Object Register

 - ◆ Technical Regulations and other implementation forthcoming decisions based on «the principle of continuity» with respect to current best practices among international professional space community
- SOA Full implementation expected by mid 2010: decrees to be achieved by Spring 2009 and Technical Regulations by Summer 2009 + 1 year period delay to prepare implementation.
- An Authorization system keeping a balanced regime for private operators between the constraints resulting from safety and liability requirements (derived from NU Treaties) and benefits brought by the « legal security » and the State Guaranty