Order of 28 June 2024 amending the Order of 31 March 2011 on the technical regulation pursuant to Decree No 2009-643 of 9 June 2009 concerning authorisations granted pursuant to Law No 2008-518 of 3 June 2008 on space operations

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Text No 13

The Minister for the Economy, Finance and Industrial and Digital Sovereignty,
Having regard to Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services (codification);
Having regard to Law No 2008-518 of 3 June 2008 on space operations, in particular Articles 2 and 3 thereof;
Having regard to Decree No 2009-643 of 9 June 2009, as amended, on authorisations issued pursuant to the Law of 3 June 2008 on space operations, in particular Article 1 thereof;
Having regard to the Order of 31 March 2011, as amended, on the technical regulation pursuant to Decree No 2009-643 of 9 June 2009 concerning authorisations granted pursuant to Law No 2008-518 of 3 June 2008 on space operations;
Having regard to the Order of 23 February 2022 on the composition of the three parts of the file referred to in Article 1 of Decree No 2009-643 of 9 June 2009 concerning authorisations granted pursuant to Law No 2008-518 of 3 June 2008, as amended, on space operations;
Having regard to notification No 2023/668/FR sent on 30 November 2023 to the European Commission,
Hereby decrees:

Article 1

The above-mentioned Order of 31 March 2011 is hereby amended in accordance with Articles 2 to 52 of this Order.

Article 2

Article 1 is amended as follows:
1. In the second paragraph, after the word: ‘Order’, the following words are inserted: ‘, in addition to the terms defined in Article 1 of the aforementioned Law of 3 June 2008,’:
2. After the fourth paragraph, the following paragraph is inserted:
‘“ Constellation”: a group of space objects consisting of at least 10 space objects working together for a common mission subject to a predefined orbital deployment plan. See also Mega-constellations;’
3. In the fifth paragraph, after the word: ‘launch’, the following words are inserted: ‘or re-entry’;

4. After the sixth paragraph, two paragraphs shall be inserted, worded as follows:
‘“ Deployer”: device that carries a space object(s) as part of a multiple launch and releases it into orbit as requested by the client(s). Such a device, with or without propulsion, which releases one or more space objects after separation from the launcher, shall be subject to the orbital requirements specified in Part 3 of this Order;
‘ Note: a device without propulsion which releases space objects without separation or before separation of the launcher shall be subject to the requirements for launcher elements specified in Part 2 of this Order.’;
5. In the seventh paragraph:
a) After the word: ‘launch’, the following words are inserted: ‘or re-entry’;
b) The following paragraph shall be inserted:
‘ Note: The on-board neutralisation device can be remotely controlled via external or autonomous means.’;
6. After the eighth paragraph, three paragraphs shall be inserted as follows:
‘“ Deck”: An element of a launcher, with or without propulsion, planned to detach itself at the end of its main mission;
‘ Note 1: an orbital deck corresponds to a separate deck in orbit
‘ Note 2: a hood constitutes a deck.’;
7. After the tenth paragraph, two paragraphs shall be inserted as follows:
‘“ Launcher”: a self-propelled vehicle intended to put space objects into orbit;
‘“ Reusable launcher”: a launcher of which all or part of the elements undergo a recovery phase on Earth in order to be reused in a subsequent launch operation;’
8. After the eleventh paragraph, two paragraphs shall be inserted as follows:
‘“ Mega-constellation”: constellation containing a minimum of 100 space objects;
‘“ Space object mission”: for each space object, this designates all the tasks or functions performed during the operational phase of the operation to control that object;’
9. In the twelfth paragraph:
a) After the word: ‘launcher’ the following words are inserted: ‘or the re-entry vehicle’;
b) After the words: ‘launch vehicle’, the following words are inserted: ‘or re-entry’;
10. The thirteenth paragraph is deleted;
11. After the fifteenth paragraph, the following paragraph shall be inserted:
‘“ Recovery phase”: during the launch phase, beginning with the separation of the reusable element from the main launcher and ending at the immobilisation of that element on Earth;’
12. In the seventeenth paragraph, after the words: ‘space object’, the following words are inserted: ‘or group of coordinated space objects’;
13. In the twenty-seventh paragraph:
a) The word: ‘predefined’ is replaced by the word: ‘predicted’;
b) The words: ‘on the ground’ are replaced by the words: ‘on Earth’;
c) The following sentence is added:
‘ A controlled re-entry can be done either on site with precision, or by targeting a limited area with a certain level of confidence;’
14. Three paragraphs shall be inserted after the twenty-seventh paragraph, worded as follows:
‘ Note:

‘-examples of on-site re-entries with precision: reusable launcher decks or space objects;
‘-example of re-entries targeting a limited area with a certain level of confidence: controlled re-entry of orbital decks for one-use launchers.’

15. In the twenty-eighth paragraph:
a) The word: ‘predefined’ is replaced by the word: ‘predict’;
b) The words: ‘on the ground’ are replaced by the words: ‘on Earth’;
16. The twenty-ninth paragraph is deleted;
17. The following provisions shall be inserted after the thirty-first paragraph:

‘-“ In-orbit service”: a service carried out by a service vehicle and which requires a meeting and/or approach and/or contact phase with a target object such as: inspection, capture, docking, orbital transfer, repair, assembly, fluid transfer, undocking. To that end, the following definitions shall apply:
‘-“ Operator of the service vehicle”: entity conducting service activities in orbit;
‘-“ Service vehicle”: space object that carries out in-orbit service operations;
‘-“ Target object”: space object (including space debris) served by the service vehicle;
‘-“ Composite”: a combination consisting of the service vehicle and the target object after a catch;
‘-“ Catch”: action to establish a physical connection between two space objects;
‘-“ Proximity area”: volume around the target object in which a series of orbital manoeuvres dictated by the relative positions, speeds and attitudes of the two objects makes it possible to place and maintain the service vehicle in close proximity to the target object;
‘-“ Do you phase”: a phase in which two space objects are intentionally approximated to the proximity area by means of a series of orbital manoeuvres at a defined and planned time and place;
‘-“ Approach phase”: a series of orbital manoeuvres carried out in the Proximity area to position and maintain a vehicle in the environment close to the target object according to a planned and defined trajectory for the duration of the mission;
‘-“ Contact Phase”: phase consisting of the following 3 steps:

‘1° The final translation of the service vehicle towards the target object beyond the point of no return until contact is made;
‘2° Capture of the target object;
‘3° Stabilisation of the composite;

‘-“ Attached phase”: phase in which both objects form the composite;
‘-“ Separation and removal phase”: series of manoeuvres to ensure the physical separation (mechanical, electrostatic or other) of the target object and service vehicle and the distance of the service vehicle beyond the proximity area;
‘-“ Parking point”: waiting area outside the proximity area to maintain a constant relative distance from the target object during which the service vehicle is waiting before starting manoeuvres bringing it into a proximity area;
‘-“ Point of non-return”: time during the approach phase from which fallback manoeuvres are excluded;
‘-“ Corridor”: the volume in which the service vehicle is likely to move, in light of normal dispersions;”

18. In the thirty-second paragraph:
a) The word: ‘stations’ is replaced by the word: ‘systems’;
b) After the words: ‘of tracking’, the following words are inserted: ‘(Earth station networks and satellites)’;
19. After the last paragraph, the following paragraph shall be added:
‘“ Re-entry vehicle”: a space object, which is not a constituent part of the launch vehicle, designed to land on Earth at the end of an orbital or suborbital flight phase.’

Article 3

Article 2(3) is amended as follows:
a) In (a), after the words: ‘launch operation’, the following words are inserted: ‘of a launch vehicle’;
b) In (b), the word: ‘unmanned’ is replaced by the words ‘or a group of unmanned coordinated space objects’.

Article 4

At the end of the heading of the second part, the following words are added: ‘and return of launcher elements to Earth’.

Article 5

At the end of Article 3, the following words are added: ‘or, as the case may be, until their recovery’.

Article 6

Article 13 is amended as follows:
1. The first paragraph is worded as follows:
‘ Technical and organisational facts.’;
2. At the end of the second paragraph, the following words are added: ‘as well as from the progress of their treatment until their closure’.

Article 7

Article 14 is amended as follows:
1. At the end of (1), the following words are added: ‘, in the context of development and operation activities’;
2. In (2), after the words: ‘ National Centre for Space Studies’, the following words are inserted: ‘of the holding’.

Article 8

Article 15 is amended as follows:
1. In (1), the word: ‘some’ is replaced by the word: ‘all’;
2. (3) becomes (4);
3. (3) is reinstated as follows:
‘3. In the event that the launch operator is legal entity different from the launcher provider, the launch operator is responsible for ensuring the application of the provisions described in Articles 11 and 12 of this Order by the launcher provider.

Article 9

Article 16 is amended as follows:
1. In (1):
a) In the first subparagraph, the word: ‘respects’ is replaced by the words: ‘must respect’;
b) (f) to (h) shall become, respectively, (g) to (i);
c) (f) shall be reinstated as follows:
f) It shall take into account, where appropriate, a post-flight revalidation plan for reusable launcher elements;
2. At the end of the sixth subparagraph of (2), the following words are added: ‘, including where appropriate the recovery phase’;
3. In the first subparagraph of (3)(d), the words: ‘implementation on the ground’ are replaced by the words: ‘the implementation operations related to the preparation of the launch’;
4. (4) is added, worded as follows:
‘4. For a reusable launcher element, provisions 1 to 3 of this Article shall cover its entire life cycle.

Article 10

Article 17 is amended as follows:
1. In 2°, the words: ‘launch vehicle’ are replaced by the word: ‘launcher’;
2. 4° to 6° and 7° to 11° become 6° to 8° and 10° to 14° respectively;
3. 4° and 5° are thus reinstated:
‘4° Ensure that the load separation systems are compatible with the launch vehicle environments;
‘5° Where appropriate, ensure, for a reusable launcher element, compliance with the post-flight revalidation plan referred to in Article 16(1) of this Order, with a view to its re-use;’
4. In 7°, as amended by 2° of this Article:
a) After the word: ‘configuration’, is inserted the word: ‘qualified,’;
b) After the word: ‘implementation’ shall be inserted the words: ‘and, where applicable, post-flight revalidation’;
5. 9° is thus reinstated:
‘9° Ensure that there is no risk of collision between the launcher and its satellites and between different satellites until they start to manoeuvre or, at most, for five days after the end of the phase of withdrawal from service of the launch vehicle;
6. In 14°, as amended by 2° of this Article:
a) In the first paragraph:

- the words: ‘on-board automatic’ shall be replaced by the word: ‘on-board’;
- at the end, the following words are added: ‘and, where applicable, reusable decks’;

b) In the second paragraph, after the words: ‘simulated trajectories’, the following words are inserted: ‘, including’;
c) In the third paragraph, after the word: ‘drop’, the following words are inserted: ‘of debris’;
d) In the last paragraph, the words: ‘of flight enabling the launch vehicle to be neutralised’ are replaced by the words: ‘triggering the neutralisation of the launch vehicle and, where applicable, of the reusable decks’.

Article 11

Article 18 is amended as follows:
1. In the first paragraph, after the word: ‘ Means’, the following word is inserted: ‘on-board’;
2. In the fifth paragraph, the word: ‘dangerous’ is replaced by the words: ‘and dangerous recovery phase’;
3. In the eighth paragraph:
a) The words ‘on-board automatic’ shall be replaced by the word: ‘on-board’;
b) The words: ‘is tangent to the territorial waters of the first State encountered along the nominal trajectory’ are replaced by the words: ‘is situated, in whole or in part, in a territory under the sovereignty of any State encountered along its nominal trajectory, including its territorial sea’;
c) The reference: ‘17-11’ is replaced by the reference: ‘17-14’;
4. After the eighth paragraph, two paragraphs shall be inserted as follows:
‘ The neutralisation of the launch vehicle can be triggered by a remote order or automatically by an autonomous safeguard system. In this second case, the definition elements and the results of validation tests, including the demonstration of the proper functioning of the autonomous safeguard system in all non-nominal flight cases, must be communicated to the National Centre for Space Studies.
‘ In the case of an autonomous neutralisation system, a preliminary conformity file as provided for in Article 11(1) of the aforementioned Decree of 9 June 2009 and in the Part 4 of this Order shall be submitted to the National Centre for Space Studies.’;
5. In the last paragraph, after the word: ‘orbit’, the following word is inserted: ‘, in’.

Article 12

Article 19 is amended as follows:
1. In the first paragraph, the words: ‘of the section’ are replaced by the words: ‘in-flight, major flight anomaly and’;
2. In the second paragraph:
a) At the beginning, the following shall be inserted: ‘1.°’;
b) In the first sentence, the words: ‘launch vehicle’ are replaced by the word ‘launcher’;
3. (2) is added, worded as follows:

‘2. In the event of a major flight anomaly calling into question the hazard assessment and associated risk reduction actions, the launch operator must organise a board of inquiry, to analyse the causes of the anomaly encountered and to identify the corrective measures to be implemented allowing return to flight, involving experts from the National Centre for Space Studies.
‘ At the end of the inquiry and prior to the return to flight, the launch operator must present to the National Centre for Space Studies, in particular to the agents authorised under Article 7 of the aforementioned Law of 3 June 2008 of the National Centre for Space Studies concerned:

‘- the results of the investigations carried out;
‘- the recommendations issued by the Board of Inquiry and the resulting action plan;

‘ and then provide the following documents:

the Board of Inquiry’s report;
the evidence demonstrating that the recommendations issued by the Board of Inquiry have been taken into account;
‘- where appropriate, the updating of the documents in accordance with Articles 4 to 10 of the Order of 23 February 2022 mentioned in (1) of this Article.’

Article 13

Article 20 is amended as follows:
1. In (1):
a) In (a):

- at the end of the first subparagraph, the following words shall be added: ‘(excluding the recovery phase of reusable launcher elements)’:
- in the second subparagraph, the words: ‘launch phase’ are replaced by the words: ‘flight phase between take-off and satellisation of the launch vehicle’;

b) In (b):

- at the end of the first subparagraph, the following words shall be added: ‘(excluding the recovery phase of reusable launcher elements)’:
- in the first sentence of the second subparagraph: the words: ‘of return’ are replaced by the words: ‘between the satellisation of the launch vehicle and the return to Earth’ and the words: ‘the element’ are replaced by the words: ‘each element’;
- in the first sentence of the last subparagraph, the words: ‘impossible’ shall be replaced by the words: ‘, duly justified, where the operator is not in a position’ and the words: ‘provided for above’ shall be replaced by the words: ‘mentioned in Article 21(5)’;

c) The following (c) shall be added:
b) Risk for the recovery phase of reusable launcher elements:
2*10-5 for the recovery phase of each element of the launcher intended to be reused.
‘ In the case of an reusable deck in orbit, the launch operator shall implement on-site controlled re-entry in accordance with Article 21(1) and (5) and Article 23(2) of this Order.
‘ In the case of a reusable deck that is not in orbit, the launch operator shall implement the on-site recovery phase in accordance with Article 23(2) of this Order.’;
2. In (2):
a) In the second subparagraph, after the words: ‘put into orbit’, the following words are inserted: ‘, recuperation phase of a reusable deck’;
b) In the fourth subparagraph:

- the words: ‘on re-entry or’ shall be deleted;
- at the end, the following words are added: ‘and the return to Earth of any element of the Launcher’;

c) The following words shall be added at the end of the sixth subparagraph: ‘, including, where applicable, during the recovery phase’;
3. In (3), after the word: ‘prescribed’, the following words are inserted: ‘, in particular for specific cases of sea and air routes’.

Article 14

Article 21 is amended as follows:
1. In the second paragraph, the word: ‘system’ is replaced by the word: ‘vehicle’;
2. In the last subparagraph of (1):
a) In the first sentence, the word: ‘powder’ is replaced by the words: ‘solid or hybrid propellants’;
b) In the second sentence, the words: ‘in the protected region B’ are replaced by the words: ‘in protected regions A and B’;
c) The last sentence is deleted;
3. In (3):
a) In the first sentence of the first subparagraph, the words: ‘of the space object’ are replaced by the words: ‘of orbited launcher element(s)’;
b) The second sentence of the first subparagraph, after the words: ‘the structures,’, are inserted the words: ‘passivation operations described in (4) of this Article,’;
c) The second subparagraph is worded as follows:
‘ If an orbited launcher deck cannot perform its controlled re-entry as intended, passivation must be carried out in a safe and controlled manner.’;
4. In (4):
a) The following shall be added at the end of the first subparagraph: ‘, all its elements are passivated’;
b) In the second subparagraph, the words: ‘the exhaustion of energy reserves on board’ are replaced by the words: ‘their exhaustion’;

c) The following words are added at the end of the last subparagraph: ‘or all equipment directly powered by such means of energy production is placed in such a state that it does not present a risk of generating debris’;
d) The following subparagraph is added:

‘- at the end of the withdrawal from service phase, the launcher must be in a stable state with minimal internal energy.’;

5. In (5):
a) At the beginning of the second subparagraph, the word: ‘a)’ is deleted;
b) In the third subparagraph:

- at the beginning, the word: ‘b)’ is deleted;
- after the word: ‘exceptional’ are inserted the words: ‘, duly justified,’;
- the word: ‘it’ has been replaced by the words: ‘the launcher’;
- the words: ‘preferably’ is deleted;
- the words: ‘or, failing that, by placing in an orbit whose perigee remains over protected region A, for 100 years after the end of the operation,’ shall be deleted;
- the following sentence is added: ‘ The launch operator must also demonstrate that it uses the necessary means to minimise the duration in orbit of the components of the launcher passing through protected region A, which must be less than or equal to 25 years after the withdrawal from service.’;

c) (c) and (d) are repealed;
6. In (6):
a) In the second subparagraph:

- at the beginning, the word: ‘a)’ is deleted;
- after the two occurrences of the words: ‘constituent elements’, the following word is inserted: ‘orbiting’;
- the word: ‘operation’ is replaced by the words: ‘the withdrawal from service phase’;

b) At the beginning of the last subparagraph, the following: ‘b)’ is deleted;
7. (7) becomes (8);
8. (7) is reinstated as follows:
‘7. The particular case of missions to Lagrange points or with release orbits
‘ The launch operator shall use all necessary means to ensure that the components of the launcher do not return to either Protected Region B or Protected Region A within 100 years after the end of the withdrawal from service phase. For this purpose, the operator shall take the necessary means to implement a manoeuvre to release or generate a speed increment by the launcher. In addition, the non-crossing of protected regions will have to be demonstrated to the best of the state of the art of orbital calculation methods.’;
9. In (8), as amended by 7° of this Article:
a) The four occurrences of the word: ‘manoeuvres’ are replaced by the word: ‘operations’;

b) References: ‘5 and 6’ are replaced by the references: ‘5, 6 and 7’;
c) The following (9) is added:
‘9. The deliberate fragmentation of launcher elements is prohibited.’

Article 15

In the second paragraph of Article 22, the word: ‘with’ is replaced by the words: ‘between launcher elements, including injected satellites, and’.

Article 16

At the end of the heading of Section 4 of Chapter III of Title II of Part 2, the following shall be added: ‘and at the recovery of reusable launcher elements’.

Article 17

Article 23 is amended as follows:
1. In the first subparagraph of (1):
a) The words ‘of the propellant element’ are replaced by the words: ‘of the component(s) of the launcher’;
b) The words: ‘as part of’ are replaced by the words: ‘and subject to’;
c) The words: ‘territorial waters’ are replaced by the words: ‘the territorial sea’;
2. (2) and (3) become (3) and (4) respectively;
3. (2) is reinstated as follows:
‘2. In the event that the launcher contains elements which are subject to a return on site, the launch operator shall comply with the applicable regulations specific to the said site.
‘ In the case of a return operation to a site other than the Guyanese Space Centre, the operator must provide the information requested under the second paragraph of Article 27 of this Order.
‘ In the specific case of the return of launcher elements to a remote landing site at sea (e.g. barge or ship), the fallout zone associated with a probability of 99.999% must not overlap with the territory of any State. In the event of interference with the territorial sea of a State, the agreement of that State must be obtained.’;
4. In (3), in the version resulting from 2° of this Article, after the words ‘(mainly maritime rail)’, the following words are inserted: ‘or air’;
5. At the end of the first subparagraph of (4), in the version resulting from 2° of this Article, the following words shall be added: ‘, in connection with the authorities of the launch and/or return site’;
6. The last subparagraph is deleted.

Article 18

Article 24 is amended as follows:
1. At the beginning of the first paragraph, the following words are inserted: ‘ Floating objects,’;
2. In (1):

a) In the first sentence, after the words: ‘at the time of creation’, the following words are inserted: ‘of a floating object or’;
b) In the second sentence, after the word: ‘wrecks’ are inserted the words: ‘and floating objects’;
c) The following words are added at the end of the second sentence: ‘, nor a lasting danger on the maritime coastline’;
3. In the first sentence of (2):
a) After the word: ‘recovered’, the following words are inserted: ‘on zone’;
b) The words: ‘in the case of separation’ shall be replaced by the words: ‘after separation’;
c) The words: ‘, but must work in the event of untimely separation or deck breakage’ are deleted;
4. 3 is added, worded as follows:
‘3. When decks are recovered on site, their neutralisation device must be disabled at a moment during the recovery phase which minimises the risk of a victim on the ground. The operator must define this moment and justify this choice.
‘ It shall be possible to restore the neutralisation device to safety prior to any handling on Earth.

Article 19

At the beginning of Section 5 of Chapter III of Title II of Part 2, the following Article 24-1 is inserted:

‘ Article 24-1. - Cybersecurity
‘ The launch operator must implement a cybersecurity approach and the resulting security measures, in order to protect against cyber-based malicious attack that may pose a risk to compliance with these rules.
‘ The elements justifying this approach and a summary of the security measures put in place shall be transmitted to the National Centre for Space Studies.

Article 20

The second paragraph of Article 25 is amended as follows:
1. The word: ‘materials’ is replaced by the word: ‘substances’;
2. The word: ‘complies’ shall be replaced by the words: ‘must comply’;
3. At the end, the following words are added: ‘and justifies its application in the nuclear safety plan provided for in Article 9 of the Order of 23 February 2022 relating to the composition of the three parts of the file mentioned in Article 1 of Decree No. 2009-643 of 9 June 2009 concerning authorisations granted pursuant to Law No. 2008-518 of 3 June 2008, as amended, on space operations

Article 21

Article 27 is amended as follows:
1. At the beginning, the following paragraph is inserted:

‘ Launch site;
2. In the second subparagraph of (2), the word: ‘soil’ is deleted;
3. At the end, one subparagraph and one paragraph are added as follows:

cybersecurity measures must be put in place to ensure that no unauthorised or unauthenticated remote controls that are likely to pose a risk to compliance with these regulations can be received and executed on-board.

‘3. The launch site used must have the means to ensure the safety of people, property, public health and the environment during the implementation of the launcher or in the event of an accident.

Article 22

At the end of the heading of the third part, the following words are added: ‘or a group of coordinated space objects’.

Article 23

At the beginning of Article 28, the following paragraph shall be inserted:
‘ The provisions of this Part shall apply to the control and return of any space object, including those forming part of a group of coordinated space objects.

Article 24

Article 35 is amended as follows:
1. In the first subparagraph of (2), the word: ‘ ‘It’ has been replaced by the words: ‘ The operator’;
2. (3) is worded as follows:
‘3. The operator shall keep until the end of the space operation:

‘- the definition of the materials used;
The description and justification of the components of the space object or group of coordinated space objects critical to the protection of persons, property, public health and the environment, in particular as regards the production of space debris

‘ At the end of the space operation, after the withdrawal from service manoeuvres or in case of transfer of responsibility to another operator, these elements shall be transmitted to the National Centre for Space Studies with a description of the state reached.

Article 25

Article 37 is amended as follows:
1. In the first sentence of the second paragraph:
a) The words ‘key points’ are replaced by the words: ‘technical reviews’;
b) After the word: ‘operator’, the words ‘before launch’ are added;
2. In the second sentence of the second paragraph, the words: ‘key points’ are replaced by the words: ‘reviews’.

Article 26

After Article 38, Articles 38-1 and 38-2 are inserted as follows:

‘ Article 38-1. - Inspection plan during in-orbit control
‘ The operator shall draw up a plan for monitoring the implementation of the provisions of this Order during the in-orbit control phase. This inspection plan shall provides for information briefings with the National Centre for Space Studies at least once a year, and in particular:

‘- after the initial deployment phase;
‘- at the end of the transfer of control of the space object or group of coordinated space objects to another operator;
‘- before the start of the withdrawal from service manoeuvres;
‘- at the end of the withdrawal from service manoeuvres;
For in-orbit service operations, at the end of the completion of a service.

‘ These information briefings must present, depending on the phase in question, the outcome of the operations carried out or the availability of the vehicle to initiate future operations, with, in particular:

‘- status of anomalies, on-board and orbital configuration;
‘- status justifying the ability of the space object to perform withdrawal from service operations (manoeuvres and passivation);
‘- availability of the necessary energy resources (in particular management of propellant fuels) for withdrawal from service manoeuvres;
‘- assessment of the manoeuvres implemented to avoid other space objects and coordination with other operators;
‘- status of the means on ground.

‘ Article 38-2. - Validation of procedures
‘ The procedures for controlling the space object shall be tested and validated by the operator prior to launch, with the exception of degraded cases not requiring an immediate response from the operator and end-of-life procedures if it is demonstrated that there is no risk of having to carry out an emergency withdrawal from service.

‘ The operational sequences linking the inspection procedures of the object must be tested and validated by the operator before launch for the critical phases of the mission (deployment operations, withdrawal from service, critical operations in orbit, etc.).’

Article 27

In the heading of Chapter III of Title II of Part Three, the words: ‘specific common to the control in orbit and return to earth of a space object’ are replaced by the words: ‘common to in-orbit control operations’.

Article 28

At the beginning of Chapter III, a section 1 entitled is inserted: ‘ Requirements relating to the conduct of operations.

Article 29

Article 39 is amended as follows:
1. In the second paragraph:
a) The words ‘ The object’ shall be replaced by the words: ‘ the space system;
b) The words: ‘its status’ shall be replaced by the words: ‘the status of the space object’;
c) The words: ‘necessary in particular for the application of Articles 47 and 48 of this Order’ shall be replaced by the words: ‘, with the objectives: ’;
2. At the end, two paragraphs are added as follows:

‘ - to ensure the prevention of collisions in orbit;
‘ - to ensure the ability to perform a withdrawal from service or any other operation intended to preserve the integrity of the object.

Article 30

After Article 39, Articles 39-1 to 39-4 are inserted, worded as follows:

‘ Article 39-1. - Identification of space objects
‘ Space systems shall be designed, produced and implemented, and their task defined, in such a way that any space object is unambiguously identifiable as soon as possible and by no later than 3 days after launch by space surveillance systems.

‘ Article 39-2. - Management of propellant fuels
‘ The probability, calculated prior to launch, of having the propellant fuels required for to perform end-of-life manoeuvres successfully shall be at least 0.99 at each moment during the mission.

‘ Article 39-3. - Cybersecurity
‘ The operator must put in place a cybersecurity plan whose aim is to ensure that no unauthorised or unauthenticated remote controls that are likely to pose a risk to compliance with these regulations can be received and executed on-board.

‘ Article 39-4. - In-orbit service for a vehicle whose control has already been authorised
‘ An operator wishing to benefit from an In-Orbit Service operation must ensure and demonstrate that the service vehicle complies with the specific requirements detailed in Chapter V.

Article 31

After Article 39-4, as set out in Article 30 of this Order, a section 2 is inserted, entitled: ‘ Prevention of fragmentation’.

Article 32

Article 40 is amended as follows:
1. The first paragraph shall be deleted;
2. In (1) :
a) The first subparagraph is replaced by two subparagraphs worded as follows:
‘ Intentional release of debris
‘ Space systems implemented by the operator shall be designed, produced and implemented in such a way as not to generate debris during the operation when it is conducted nominally.’;
b) In the fourth subparagraph:

- in the first sentence, the word: ‘powder’ is replaced by the words: ‘solid or hybrid propellants’; - in the second sentence, the words: ‘in the protected region B’ are replaced by the words: ‘in protected regions A and B’;
- the last sentence is deleted;

c) In the last subparagraph, the word: ‘propulsion’ is replaced by the word: ‘service’;
3. In (2):
a) The first subparagraph is replaced by two subparagraphs worded as follows:
‘ Accidental disintegration
b) ‘The probability of occurrence of accidental disintegration of any space object must be less than 10-3 until the end of the withdrawal from service operations of that space object’;
4. In (3):
a) The first subparagraph is replaced by two subparagraphs worded as follows:
‘ Passivation’
‘ Any space object must be designed, produced and implemented in such a way that, at the end of the withdrawal from service phase: ’;

b) The following are added at the end of the third subparagraph: ‘, or all equipment directly powered by such means of energy production is placed in such a state that it does not present a risk of generating debris’;
5. (4) to (7) are repealed.

Article 33

After Article 40, Articles 40-1 and 40-2 are inserted as follows:

‘ Article 40-1. - Intentional destruction.
‘1. The operator must avoid the intentional destruction of any space object in orbit.
‘2. When the operator intends to carry out an intentional destruction, it shall report its necessity to the Minister for Space. These destructions can only take place at altitudes low enough to limit the length of life in orbit of the fragments produced.

‘ Article 40-2. - Devices for the active removal of debris
‘ Any space object must be designed, produced or implemented in such a way as to facilitate, after its withdrawal from service, a possible seizure, or Capture by an RAD (Retrait Actif de Débris - Active Debris Removal) service vehicle.

Article 34

After Article 40-2, as set out in Article 33 of this Order, a section is inserted, entitled:
‘ Prevention of collisions’.

Article 35

Article 41 is amended as follows:
1. At the end of the first paragraph, the following words shall be added: ‘with inhabited objects’;
2. In the second paragraph:
a) After the words: ‘ Systems’, the following word is inserted: ‘space’;
b) The word: ‘accidental’ is deleted;
c) The words: ‘and geostationary orbit satellites’ are deleted.

Article 36

After Article 41, Articles 41-1 to 41-7 are inserted, worded as follows:

‘ Article 41-1. - Anti-collision capacity
‘ The space systems of manoeuvring objects shall have an operational capability to detect and manage a collision risk either by carrying out a remote-controlled or autonomous avoidance manoeuvre with the secondary object themselves, or by coordinating with the

secondary object’s control centre, when the secondary object is controlled, in order to decide which of the objects will perform such a manoeuvre. The post-manoeuvre trajectory must substantially reduce the risk of initial collision.

‘ Article 41-2. - Availability of anti-collision manoeuvres
‘ The space systems of manoeuvring objects shall be designed and implemented in such a way that they will be available for the implementation of a anti-collision manoeuvre within a maximum of 5 days after launch, or in the case of a multiple launch of several satellites from the same operator, as soon as possible after their launch, by presenting a strategy minimising the period of unavailability of the anti-collision capacity.

‘ Article 41-3. - Probability of collision with a space object
‘ The probability of occurrence, calculated before launch, for the entire life of the space operation, of an accidental collision with a space object larger than 1 cm shall be assessed and mitigated as much as possible. Additionally, this estimate must include the return to Earth phase for a space object operating in Zone A.

‘ Article 41-4. - Prevention of collisions at separation from a launcher or deployer
‘ During separation of the launcher or deployer from the space object that launches it:
‘1° The operator controlling of the launched space object must ensure that the launcher or deployer operator guarantees:

‘- that each object it launches is on a trajectory that will not lead to a collision either with the launcher or the deployer, or with the other launched injected, for a minimum of 5 days after injection, or until the space object is able to perform anti-collision manoeuvres;
‘- that each of the injected objects is on a trajectory that will not lead to a collision with manned objects for a minimum of 3 days after injection, or until the space object is able to perform anti-collision manoeuvres;

‘2° The operator controlling the deployer which launches one or more other space objects must ensure:

‘- that each of these objects is on a trajectory that will not lead to a collision neither with themselves, nor with the other injected objects, for a minimum of 5 days after injection, or until the space object is able to perform anti-collision manoeuvres;
that each of the launched objects is on a trajectory that will not lead to a collision with manned objects for a minimum of 3 days after injection, or until the space object is able to perform anti-collision manoeuvres.

‘ Article 41-5. - Coordination in the event of a collision alert between two operators controlling manoeuvring space objects
‘ In the event of a known collision alert between two manoeuvring space objects, the operator subject to this Regulation shall coordinate with the other operator to decide on a manoeuvring strategy leading to the manoeuvre of at least one of the two objects.

‘ Article 41-6. - Threshold for triggering anti-collision manoeuvres
‘ In the case of an alert collision with a catalogued space object, collision avoidance measures take priority over the mission. The collision probability threshold above which the operator is to implement collision avoidance measures must be defined, and its relevance justified, in the operational design.

‘ Article 41-7. - Data sharing
‘ The operator must share, at the earliest after launch by the launcher and within a maximum of 3 days, with any relevant actor or entity the necessary up-to-date information to monitor the risks of collision with the catalogued space objects it may encounter. This information shall include, at least, the following:

‘- ephemeris, from the operator’s own orbit restitution means, or from Space monitoring systems;
‘- manoeuvring plan;
‘- covariances.’

Article 37

After Article 41-7, as set out in Article 36 of this Order, a section 4 is inserted, entitled: ‘ Prevention of saturation of orbits’, which includes Article 41-8 to 41-14 as follows:

‘ Article 41-8. - Obligation to withdraw from service
‘1. The space systems must be designed, produced and implemented in such a way that, at the end of their operational phase, they shall be withdrawn from service either by:

‘ - release from Earth’s gravitational pull;
‘ - re-entry into the atmosphere, whether controlled or not;
‘ - a graveyard orbit between protected region A and protected region B;
‘ - a graveyard orbit over protected region B.

‘2. In the case of space objects located, during their operational phase, in an orbit included in or passing through protected region A, only a release from the operational orbit by a re-entry into the atmosphere shall be permitted.
‘3. In the case of space objects located, during their operational phase, in an orbit included in or passing through protected region B: if the graveyard orbit targeted by the space object after the withdrawal from service manoeuvres has an eccentricity of less than 0.1, it shall be located above protected region B.

‘ Article 41-9. - Maximum orbital lifetime before re-entry into the atmosphere
‘ In the event that the withdrawal from service of the space object leads to re-entry into the atmosphere, the residual duration in orbit may not exceed:

‘- three years for systems with an operational phase of less than 1 year; or
three times the duration of the operational phase, and in any case may not exceed 25 years.

‘ This residual duration in orbit is considered as soon as there is no manoeuvring capacity.
‘ Under this Article, the operational phase is understood as starting when the original operator takes control of the object in question.

‘ Article 41-10. - Characteristics of a graveyard orbit between protected region A and protected region B
‘ A graveyard orbit between protected region A and protected region B shall be such that, as a result of natural disturbances and associated uncertainties, within one hundred years of the end of the withdrawal from service phase, the space object shall not return to protected region A, protected region B, or interfere with the operational orbits of the constellations already present between these two regions.

‘ Article 41-11. - Characteristics of a graveyard orbit above protected region B
‘ A graveyard orbit above protected region B must be such that, under the effect of natural disturbances, within one hundred years of the end of the operation, the space object does not return to protected region B.

‘ Article 41-12. - Reliability of withdrawal from service operations
‘ The probability of being able to successfully perform withdrawal from service operations (including passivation operations as well as withdrawal from service manoeuvres) shall be equal to or greater than 0.9.

‘ Article 41-13. - Limiting the orbit of non-manoeuvring space objects
‘ Systems not equipped with a propulsion element for orbit modification shall be designed, produced and operated for orbits with an apogee of less than 600 km.

‘ Article 41-14. - Radio emissions
‘ The operator must comply with the applicable radio frequency regulations from its operational orbit and must coordinate with other operators in flight to avoid radio interference.

Article 38

After Article 41-14, as set out in Article 37 of this Order, a section 5 is inserted, entitled: ‘Particular risks’.

Article 39

The second paragraph of Article 42 is amended as follows:
1. The word: ‘materials’ is replaced by the word: ‘substances’;
2. The word: ‘complies’ shall be replaced by the words: ‘must comply’;
3. At the end, the following words are added: ‘and justifies its application in the nuclear safety plan provided for in Article 17 of the Order of 23 February 2022 relating to the composition of the three parts of the file mentioned in Article 1 of Decree No. 2009-643 of 9 June 2009 concerning authorisations granted pursuant to Law No. 2008-518 of 3 June 2008, as amended, on space operations

Article 40

At the end of Article 43, the following sentence is added:
‘ The operator shall justify its application in the planetary protection plan provided for in Article 17 of the aforementioned Order of 23 February 2022.

Article 41

Article 45 is amended as follows:
1. The second paragraph is deleted.
2. At the beginning of the last paragraph, the word: ‘2.’ is deleted;
3. In the last paragraph, the words: ‘the persons,’ shall be deleted.

Article 42

Article 46 is amended as follows:
1. (1) to (3) become (2) to (4) respectively;
2. After the first paragraph, the following (1) shall be reinstated:
‘1. The operator shall demonstrate that there is no risk of collision in orbit with manned stations as a result of de-orbiting and return to Earth manoeuvres.’;
3. In (3), in the version resulting from 1° of this Article, the following subparagraph is added:
‘ In the event that a fallout zone is located in a region characterised by heavy maritime or air traffic, or by the presence of stationary and occupied oil rigs, a particular analysis must be carried out, in accordance with Article 15 of the aforementioned Order of 23 February 2022.’

Article 43

Article 46-1 is inserted after Article 46, worded as follows:

‘ Article 46-1. - Controlled re-entry on site
‘ In the case of an operation of a space object carrying out a controlled re-entry on a French or foreign site, for which this is the purpose, that object must be designed, produced and implemented in such a way as to be compatible with the systems and

procedures of the landing site in question. Landing at this site may only be done after authorisation has been obtained by the authorities responsible for the landing site.
‘ If the object returning to the site has previously been separated from a service module, the risk of a victim caused by the fallout of the latter’s fragments must be less than 1E-10-4, including for the orbital composite in case of non-separation.
‘ For the object returning to the site, the operator shall demonstrate that the risk of victims on the ground is less than 2E-10-5.
‘ For the return and landing phase, the operator shall identify the faults leadung to abnormal situations causing the orbital vehicle to become dangerous, in particular in the following cases:

exit of the predefined re-entry corridor;
dangerous fallout and recovery phase of the elements predicted to detach;
‘- non-nominal flight control landing behaviour.

‘ The operator must deduce qualitatively and quantitatively, whether or not there is a need for on-board means enabling the vehicle in orbit to be neutralised before the moment when the site of impact is identified, in whole or in part, in a territory under the sovereignty of any State encountered along its nominal trajectory, including its territorial seas.

Article 44

Article 47 shall be transferred at the end of Chapter IV of Title II of Part 3.

Article 45

At the end of Title II of Part 3, Chapters V to VII are added as follows:

‘ Chapter V
‘ Specific technical requirements for in-orbit service

‘ Section 1
‘ Requirements for all phases

‘ Article 47-1. - Collection of debris created
‘ In the event that the in-orbit service operation would require the integrity of the Target Object to be undermined, the service vehicle operator shall collect intentionally created debris of a size greater than or equal to 1 mm in its largest dimension, in accordance with the other provisions of this Chapter, so that it is not released into outer space.

‘ Article 47-2. - Survival and collision

‘ The on-board systems of the service vehicle shall be designed and implemented in such a way that the survivability of the service vehicle does not give rise to a risk of collision with the Target Object.

‘ Article 47-3. - Compatibility of the target object
‘ The service vehicle must demonstrate that its design and operational concept are compatible with the systems of the Target Object, or where the Target Object is space debris, with the condition of the Target Object.

‘ Article 47-4. - Impact of the mission on a third party
‘ The in-orbit service operation shall be conducted without prejudice to or interference with the operations of third parties that are not involved in the operation.

‘ Section 2
‘ Requirements in the area of proximity

‘ Article 47-5. - Volumes and corridors in the area of proximity
‘ The service vehicle operator must define, in the area of proximity, the volumes around the Target Object in which the service vehicle can operate and the volumes in which it is prohibited to enter.
‘ In particular, approach corridors must be defined by the service vehicle operator.
‘ The service vehicle’s systems shall be designed, produced and implemented in such a way that any flight exits from these corridors are continuously monitored and result in a fallback solution allowing the service vehicle to be placed in a condition or dynamic that does not affect the safety and integrity of both objects.

‘ Article 47-6. - GO/NOGO criteria
‘ The service vehicle operator shall define, in the operational concept, for the purposes of the approach phase and to initiate the separation, the standby or transit points for which the minimum expected on-board and ground configurations (states) and the absolute and relative orbital configuration (position, velocity, attitude, angular velocity) are defined in advance for each object, enabling operations to be continued or withdrawn. These verification points are mandatory to enter the different volumes of the area of proximity.

‘ Article 47-7. - Coordination of control centres
‘ Service vehicle and target object control centres must be fully coordinated with the following principles:

‘- sharing all data and telemetry necessary for the safety of operations;
identifying, for each phase, the control centre (for the service vehicle or Target Object) with decision-making authority for joint operations in the area of proximity, including in the attached phase, and the control centre that controls the Composite in the attached phase.

‘ The above provision shall not apply in the event that the target object is space debris.

‘ Article 47-8. - On-board-to-ground communication
‘ Continuous on-board-to-ground communication and monitoring shall be implemented in such a way that the critical phases of In-Orbit Service operations are as safe as possible.
‘ The contact phase, up to the capture, operations deemed critical in the attached phase, and separation must be carried out under continuous telemetry/remote control visibility.
‘ In the area of proximity and during the approach and distancing phases, continuous telemetry/remote control visibility is not required if an operational concept with sufficient autonomy is demonstrated in terms of operational safety.

‘ Article 47-9. - Securing in-orbit service communications
‘ The on-board and ground systems of the service vehicle must be designed, produced and implemented in such a way as to secure on-board/ground and on-board/on-board connections and thus be resilient to any corruption that could jeopardise the safety of operations.

‘ Article 47-10. - Inspection of surroundings
‘ The operator of the service vehicle must ensure, for all operations carried out in the area of proximity, that only the objects participating in the current operation are in its vicinity in order to avoid any possible collision. The operational concept shall thus define the safe zone in which the presence of a third party will lead to non-engagement or withdrawal of the current operation.

‘ Article 47-11. - Emergency avoidance capacity
‘ In the area of proximity, during the approach phase and after separation, the on-board systems of the service vehicle shall be able to assess the risk of collision between the service vehicle and the Target Object in real time.
‘ These systems shall be capable of triggering, autonomously, an avoidance manoeuvre which must place the vehicles on relative paths which do not cross each other over a time horizon compatible with the total recovery of the combined mission, ensuring the required safety.

‘ Article 47-12. - Tests for the proper functioning of the service vehicle
‘ The service vehicle operator shall carry out tests for the proper functioning of the equipment necessary for In-Orbit Service operations and their safety, except for non-reversible operations, at least before engaging in the first service and under conditions that do not pose a danger to any other space object.

‘ Article 47-13. - Prevention of jet effect

‘ In the area of proximity, the service vehicle must be designed, produced and implemented so as not to cause degradation by contamination of the Target Object via the jet effects of its thrusters.
The above provision shall not apply in the event that the target object is space debris.

‘ Section 3
‘ Requirements of the approach and contact phases

‘ Article 47-14. - Qualification of the concepts of approach and docking
‘ Any new concept or technology of approach, docking or undocking of the service vehicle must be qualified. The qualification must include:

‘- in all cases, a ground demonstration;
in the event that the representativeness of the ground demonstration vis-à-vis the inherent hazards of the operation is not justified, an in-flight demonstration by successfully docking with a Target Object in an orbit with an apogee of less than 600 km above zone B, or between zones A and B

‘ Article 47-15. - Inspection before docking
‘ All docking on a Target Object shall be subject to a pre-flight inspection of the said target object and, if possible, of the service vehicle in order to verify that no particular mechanical interference could cause the docking to fail or corrupt the relative navigation. The service vehicle must remain on a standby or parking point until the inspection assessment can allow the operation to continue.

‘ Article 47-16. - Safety performance in the approach phase
‘ The systems of the service vehicle must be designed, produced and implemented in such a way as to guarantee, in the approach phase, a probability of violation of flight corridors defined in the approach and docking operational concepts and therefore of the risk of collision between the two vehicles of less than 1% per approach, and less than 5% over the entire orbital life of the service vehicle.

‘ Article 47-17. - Electrostatic and electromagnetic compatibility during contact
‘ The service vehicle must be designed and produced with the necessary protections, so that during the Contact phase, it cannot generate damage induced by ESD (electrostatic discharges) and EMC (electromagnetic compatibility).

‘ Section 4
‘ Requirements of the attached phase

‘ Article 47-18. - Inspection of the composite in the attached phase

‘ The Composite must be capable of being inspected in attitude and orbit in particular to ensure its anti-collision capacity.
‘ In the context of a joint operation between two separate entities, the entity responsible for the control of the Composite must be identified.
‘ This entity shall be in charge of anti-collision manoeuvres, where appropriate. It shall take all necessary steps to ensure compliance with the provisions required in Section 3 of Chapter III of Title II of Part € of this Order.

‘ Section 5
‘ Separation and removal phase requirements

‘ Article 47-19. - Reliability relating to the separation

‘ The calculated probability of success of the nominal separation and removal of the service vehicle outside the area of proximity must be evaluated and maximised

‘ Article 47-20. - The integrity of the target object at the moment of separation
‘ The systems of the service vehicle must be designed, produced and implemented in such a way that, during separation of the Composite, the service vehicle does not permanently degrade the vital functional abilities of the Target object, in particular its ability to control the attitude and withdraw from service.

‘ The above provision shall not apply in the event that the Target Object is space debris.

‘ Article 47-21. - Separation dynamics
‘ The systems of the service vehicle and the target object must be designed, produced and implemented in such a way that the separation allows the two objects to move away on a trajectory whose drift does not create a risk of collision between them over a time horizon compatible with the implementation of an anti-collision manoeuvre.

‘ Chapter VI
‘ Specific technical requirements for constellations

‘ Article 48-1. - Probability of withdrawal from service of satellites in a constellation
‘ Each satellite in a constellation must have a success probability for withdrawal from service operations (including passivation operations as well as withdrawal from service manoeuvres) complying with the following rule:

A constellation whose number (N) of satellites is less than 50: $P > 0.9 + N \times 0.001$;
A constellation whose number (N) of satellites is equal to or greater than 50: $P > 0.95$.

‘ N being the number of satellites in the constellation, and N being greater than or equal to 10.

‘ Article 48-2. - Probability of victims on the ground
‘ The quantitative safeguard objective including all returns to Earth of mega-constellation satellites, expressed as the maximum permissible probability of at least one victim (collective risk), is 1E-10-2.

‘ Article 48-3. - Incorporation of feedback
‘ Any feedback from the in-flight failure of a satellite belonging to a constellation during deployment, and more generally from any incident or technical fact affecting the conditions of the space operation as authorised, shall be taken into account for the launch of the following satellites.

‘ Article 48-4. - Intraconstellation collisions after withdrawal from service
‘ The withdrawal from service of satellites from the same constellation shall be carried out in such a way as to ensure an intra-constellation collision risk of less than 10-3 until their re-entry into the atmosphere or for 100 years in the graveyard zone approved for constellations located outside Region A.

‘ Article 48-5. - Anti-collision capacity for megaconstellations
‘ Each satellite in a mega constellation must have an on-board propulsion system in order to be able to implement anti-collision manoeuvres efficiently and in a timely manner until the end of its withdrawal from service.

‘ Article 48-6. - Vital system testing before reaching operational orbit for megaconstellations
‘ Before a megaconstellation satellite reaches its operational orbit, tests showing a good state of health must be conducted, from an intermediate orbit, on the subsystems of its platform necessary for withdrawal from service.
‘ For satellites operating in Region A, this intermediate orbit must allow a natural re-entry within less than 5 years and have its apogee lower than the perigee of the operational orbit.

‘ Article 48-7. - Maximum time for the withdrawal from service of megaconstellation satellites
‘ For each satellite in a megaconstellation operating in Region A, the maximum presence in orbit after the withdrawal from service shall be limited to:

‘- 5 years for mega-constellations whose total number of satellites is less than 1,000;
2 years for megaconstellations whose total number of satellites is greater than or equal to 1000.

‘ Article 48-8. - Separation of intraconstellation planes
‘ The geometry of a constellation must be defined in order to ensure sufficient separation between the satellites of that constellation in order to ensure robustness against the risk of collision.

‘ Article 48-9. - Separation between megaconstellations
‘ The geometry of a megaconstellation must not overlap with the geometry of another megaconstellation already in orbit by ensuring adequate radial separation, until the start of the megaconstellation’s withdrawal from service.
‘ If it is not possible, in a duly justified manner, to ensure adequate radial separation, the operator must demonstrate robustness with regard to the risk of collision between its satellites and those of the other megaconstellation.

‘ Article 48-10. - Limitation of the optical disturbances of megaconstellation satellites
‘ Each megaconstellation satellite must be designed, produced and implemented with the objective of achieving an apparent magnitude greater than or equal to 7 in order to limit optical disturbances for astronomical observations from the ground or space.

‘ Chapter VII
‘ Mission extension

‘ Article 49-1. - Conditions for mission extension
‘ In the event of a desire to extend the mission beyond the initially authorised duration, the operator shall demonstrate that this mission extension does put in doubt the compliance with the operational provisions of Part 3 of this Order.
‘ In addition, within the context of the hazard assessment, the dreaded events specific to the mission extension must be identified and controlled.
‘ The contribution of a service vehicle during this mission extension must be assessed against the provisions of this Order.

Article 46

With the exception of Article 47, Title III of Part Three is repealed.

Article 47

Article 50 is amended as follows:
1. At the beginning, the following paragraph is inserted:
‘ Scope of preliminary compliance.’;
2. At the end of the third paragraph, the following words are added: ‘or group of coordinated space objects’;
3. In the fifth paragraph, the words: ‘spatial object’ is replaced by the word: ‘launcher’;
4. The last paragraph reads as follows:

the autonomous neutralisation system of a launcher

Article 48

At the beginning of Article 51, the following paragraph shall be inserted:
‘ Opportunities for preliminary compliance’.

Article 49

The second subparagraph of Article 52(1) is deleted.

Article 50

Article 54 is amended as follows:
1. At the beginning, the following paragraph is inserted:
‘ Best practice guide.’;
2. In (1):
a) In the first subparagraph, the words: ‘ A guide to good practice shall be drawn up’ shall be replaced by the words: ‘ Two guides to good practice, one for launchers and the other for satellites, shall be established’;
b) In the second subparagraph:

- in the first sentence, the words ‘this guide is based’ shall be replaced by the words: ‘these guides shall be based’;
- in the second sentence, the words: ‘ It shall be supported’ shall be replaced by the words: ‘ They shall be supported’;
- in the last sentence, the words: ‘this guide’ are replaced by the words: ‘these guides’;

3. In (2):
a) In the first subparagraph, the words: ‘this guide’ are replaced by the words: ‘these guides’;
b) In the second subparagraph, the word ‘of’ shall be replaced by the words ‘of a’.

Article 51

At the beginning of Part Six, Article 55 is reinstated as follows:

‘ Article 55 - Transitional provisions
‘ In the case of control and return operations of a space object or group of coordinated space objects, the following transitional provisions shall apply:

‘1° For space objects or groups of space objects whose application for authorisation provided for in Article 2 of the aforementioned Law of 3 June 2008 is made between 1 July 2024 and 31 December 2026:
‘a) With regard to the provisions of Articles 41-12 (reliability of withdrawal from service operations) and 48-1 (probability of withdrawal from service of satellites in a constellation), a probability of being able to successfully perform withdrawal from service operations of 0.85 is required for individual satellites, and the following rule is applied for each satellite in a constellation (N being the number of satellites in the constellation):

A constellation whose number (N) of satellites is less than 50: $P > 0.85 + N \times 0.001$;
A constellation whose number (N) of satellites is equal to or greater than 50: $P > 0.90$.

‘b) As regards the provisions of Article 41-2 of this Order (availability of anti-collision manoeuvres), the operator is required to present a strategy that minimises the period of unavailability of the anti-collision capacity;
‘c) As regards the provisions of Article 41-7 of this Order (data sharing), the operator of a non-manoeuvring object or group of objects must implement the best possible strategy taking into account the definition of the space object or group of coordinated space objects;
‘d) As regards the provisions of Article 41-9 of this Order (maximum orbital lifetime before re-entry into the atmosphere), the operator must implement the best possible strategy to achieve the objective of the Article, within the limit of 25 years for re-entry into the atmosphere;
‘2° For space objects or groups of space objects whose application for authorisation provided for in Article 2 of the aforementioned Law of 3 June 2008 is made between 1 July 2024 and 31 December 2028:
‘a) With regard to the provisions of Article 39-1 of this Order (identification of space objects), identification within one week is acceptable for manoeuvring objects launched in clusters, and detectability of non-manoeuvring objects within 3 days is considered acceptable;
‘b) As regards the provisions of Article 48-4 (intra-constellation collision after withdrawal from service), the operator must present an analysis detailing the withdrawal from service strategy implemented in order to limit the risk of intra-constellation collision after withdrawal from service;
‘c) As regards the provisions of Article 48-10 of this Order (limitation of the optical disturbances of mega-constellation satellites), the operator must minimise the optical disturbances of mega-constellation satellites in order to limit interference for astronomical observations;
‘d) The provisions of Article 40-2 of this Order (devices for active removal of debris) shall not apply.’

Article 52

After Article 55, as set out in Article 51 of this Order, the following Article 55-1 is inserted:

‘ Article 55-1. - The provisions of this Order, in the version resulting from the Order of 28 June 2024 amending the Order of 31 March 2011 on technical regulations pursuant to Decree No 2009-643 of 9 June 2009 on authorisations issued pursuant to Law No 2008-518 of 3 June 2008 on space operations, shall apply to applications for authorisation submitted on or after 1 July 2024.’

Article 53

This Order shall be published in the Official Journal of the French Republic.

Done on 28 June 2024.

Bruno Le Maire