
Authentication of the French Digital Official Journal

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Abstract:

France has been releasing its official texts electronically since 1998. The Legifrance website, which helps this release, used to contain the "facsimiles" of the texts, which did not necessarily have a probative legal value.

In 2003, under the direction of the Secrétariat général du Gouvernement (the Permanent Secretary of the Government – SGG), the management of the Journaux officiels made a commitment to modernise, aiming to authenticate the Journal officiel of the French Republic diffused over the internet.

This modernization has resulted in the design and the implementation of an electronic signature based on a key management infrastructure.

On a technical front and in accordance with the findings of a risk assessment, this IGC contains security criteria based on availability, integrity, confidentiality and evidence. It is based on a chain of confidence with recognized certificates, attached to the IGC / A (the root certificate of the French administration).

On a functional front, special arrangements have been made, on the one hand to adapt the electronic itemisation to on-screen reading, and on the other to take into account the necessary exclusion of certain texts whose release is limited to paper versions.

In the end, the signature equipment is based on a software solution approved by the ANSSI (Formerly the DCSSI). The signatory agents carry a smart card equipped with its own certificate to guarantee the identity of the individuals. At the end of the process, the authentic document created is a pdf file encapsulated in a signature to the European standard XAdES.

In this way, the authenticated Journal officiel has the same legal value as the paper version. Both publications are released and available together every day. Every Journal officiel published since 2 June, 2014 is available freely on the website, www.journal-officiel.gouv.fr.

Keywords: official journal, digital publishing, authenticity, access to law

The evolution of the digital dissemination in France

The digital and authenticated dissemination of official texts is a long road that France has been travelling for over 10 years.

The dissemination of official digital texts, in itself, was initiated in 1998 with the first version of *Legifrance*. But the texts on the Legifrance site have no official value, even if "facsimiles"» (pdf files) are included with the texts.

The numerous changes to and different versions of this site that have been produced over time have not conferred upon it any probative value. This is why, in 2003, Secrétariat général du Gouvernement- SGG (the Permanent Secretary of the Government) requested that the Direction des Journaux officiels (the Directorate of the Official Journals), which in 2010 became the Direction de l'Information légale et administrative – DILA (the Directorate of Legal and Administrative Information), should create an authenticated *Official Journal (OJ)* accessible via the Internet.

With this in mind order n° 2004-164 of 20 February 2004 (annexe 1) was published on 21 February 2004 relating to the methods and effects of the publication of laws and certain administrative acts. The authenticated digital Official Journal thus has the same legal value as the paper version of the *Official Journal*. Both versions of the Official Journal, paper and digital, are distributed on the same day. All texts published in the Official Journal come into force, subject to exceptions, on the day following their publication (the period of one clear day no longer applies). All Official Journals published since 2 June 2004 are freely available for consultation at all times on the www.journal-officiel.gouv.fr site.

In addition, a decree (annexe 3) issued through the Council of State defines the categories of administrative acts which, given their nature, their scope and the persons to which they apply, no longer require publication in the paper version. These acts are the regulatory decisions relating to administrative organisation, public agents, State budget and independent public authorities.

At the same time, depending on the recommendations of the *Commission Nationale de l'Informatique et des Libertés*, a second decree (annexe 2) issued through the Council of State excludes any acts relating to the state and nationality of individuals from the digital version.

The publication method used for the texts in the Official Journal is mentioned in the contents of the paper version of the Official Journal, whereas an insert referring to the paper OJ, replaces the content of these texts in its digital version.

To ensure the success of this set up, the Directorate of the Official Journals carried out a risk analysis at the end of 2003 together with the company DICTAO.

After this risk analysis of the *Lois et décrets Official Journal* publishing chain, certain security requirements were noted which were specific to the Internet chain based on the general database defined by the SSI 2003 policy memorandum.

The security criteria

Using the same security criteria and the associated metrics, the following were noted:

Availability

The whole of the Official Journal publication process is organised around a high level of availability of all the resources implemented - human, equipment and IT. The mission of the Directorate of the Official Journals in its vocation as a public service created to publish, print and distribute legislative and regulatory texts requires availability of the resources 24 hours a day, 6 days out of 7. The texts published, under the responsibility of the Directorate of the Official Journals, are applicable the day following their publication. To comply with the publication deadlines, the resources of the Directorate of the Official Journals need to be available at all times.

This notion of a high level of availability, over the whole of the scope of the Lois et décrets OJ:

- Does not concern all the resources of the Official Journals Directorate (this type of constraint is, for example, less essential for the accounting chain ...);
- Will require:
 - Ensuring a high level of availability of the technical platform of the Lois et décrets OJ,
 - Putting in place the human resources needed to ensure continuity of service.

Integrity

The risk analysis discovered different security requirements:-

- Ahead of the "good for print", texts are only complete and unaltered temporarily. They can be re-entered and corrected ...
- Once the good for print has been given by the OJ Editorial Staff, the texts are perfectly complete and unaltered.

The policy memorandum includes different integrity requirements depending on the business processes.

There is no critical point identified in this analysis that would lead to any change in the integrity requirements identified in the policy memorandum.

Confidentiality

The risk analysis carried out on the Lois et décrets OJ chain shows that confidentiality applies solely internally to the Directorate of the Official Journals before the good for print is given. The Lois et décrets OJ then becomes public information. This risk analysis does not show any major confidentiality requirements.

The business and cross-functional processes approach of the policy memorandum naturally results in more extensive requirements. The know-how of the Official Journals Directorate must, in fact, be preserved and there is a need for a high degree of confidentiality for a certain number of elements and functions.

Proof

The production system of the Lois et décrets OJ only requires traceability. This requirement is further reinforced in the reference context as defined by the order via authentication and a high degree of traceability by the "validators".

In the same way, the policy memorandum develops the risk analysis and shows significant traceability requirements that may have legal impacts.

We also note that the legal impacts on the Lois et décrets OJ publication chain are low, and even insignificant. The only legal constraint identified is based on the masking of information relating to privacy.

A special version

Further to this analysis it was decided to put in place in our CCI publication chain, a special version of the Lois et décrets Official Journal. We chose for this version a presentation in a single column instead of two for the paper version. The font was increased to make it easier to read on a monitor. Any new text starts at the top of the page to enable unitary distribution of the texts. The tool producing this new version is also configured to allow the exclusion of texts that are only in the paper edition to comply with decree n° 2004-459.

To deal with the issue of proof we therefore decided to implement a system of digital signatures on PDF files. An encapsulating signature was chosen - the PDF document is encapsulated in a XAdES signature (XML Advanced Digital Signatures). This is a European signature standard.

The main advantages of this type of signature are:

- Possibility of automating the document "certification" process (batch signature or via an API incorporated in the existing Workflow),
- Possibility of adapting or personalising the signature/validation tools to specific requirements,
- No need for the signature certificate to be present in the user's browser (Only the root AC needs to be recognised),
- The signature complies with the W3C XML DSig (Digital Signature) standard,
- The signature/validation may be based on procedures and tools certified by the DCSSI,
- Possibility of using the tools in other contexts (signature of TIFF files, Word documents, XML/html form ...).

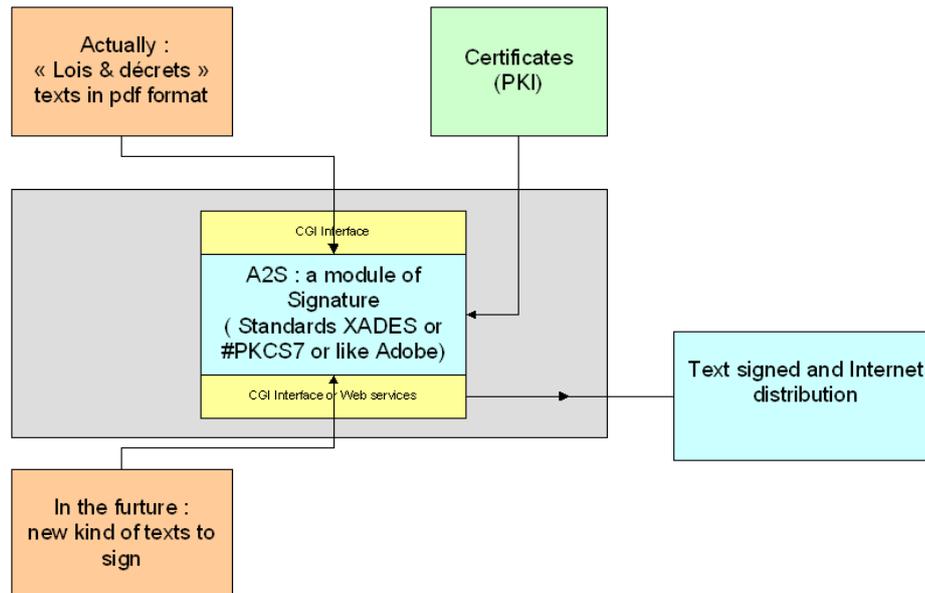
The main limits are:

- The document changes extension - it is no longer an actual .pdf document but a document that encapsulates a .pdf,
- To be able to check the document signature, the user must first download or install a "display tool" (in the region of 1 MB),
- No "valid or invalid signature" logo in the document itself. However, the validation tool (cf previous point) is launched automatically when the document is displayed, carries out

the required verifications and displays the result of the verification (status of the signature) to the user.

The signature

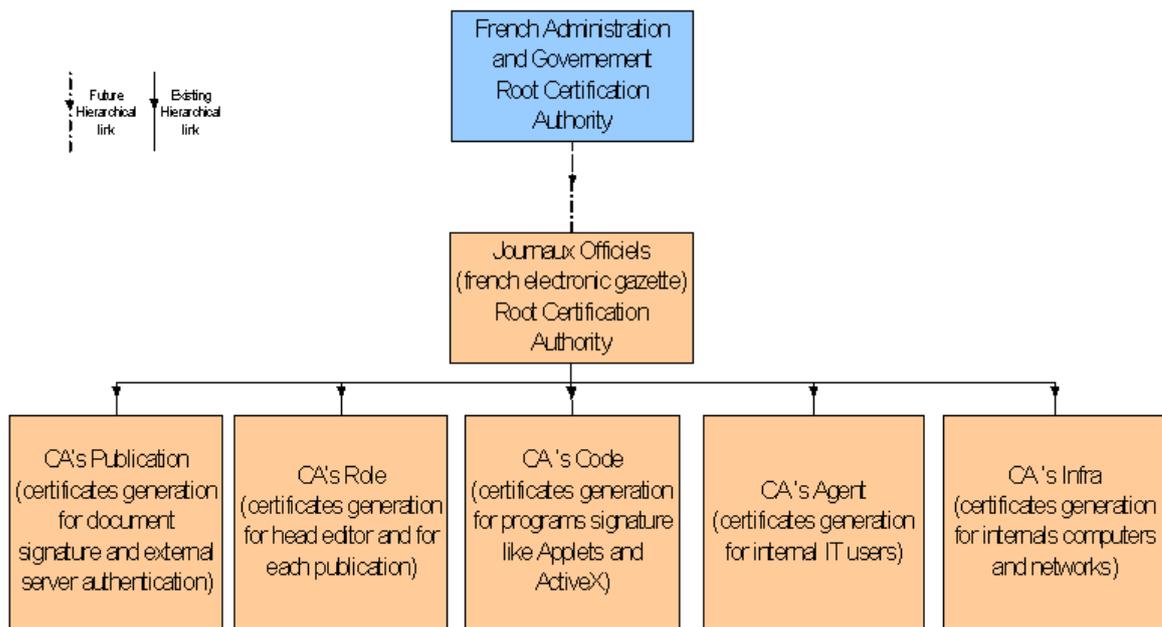
To put the signature in place we acquired the Dictao A2S signature software. The agents charged with signing the digital journal have a smart card equipped with a certificate that guarantees the identity of the signing agent.



To access this signed version an applet and an active X have been developed by Dictao which allow the Internet user to download and verify the signature of the text downloaded. The text then opens in the computer's default PDF reader.



We also put in place a confidence chain in order to have recognised certificates dependent on the IGC/A (root certificate of the French administration).



For our website www.journal-officiel.gouv.fr (Annexe 4), we put in place a redundant distribution architecture on the Internet. Four web servers with Internet access redundancy. A PRA was also created on the chain. The stock of signed PDFs is kept in the back office to allow the files to be restored if there is a problem.

The problems and the solutions

Difficulties	Solutions
<p>Problem accessing the Java or active X applet on secure workstations or tablets</p>	<p>Information given by our call centre or by our help and FAQ (http://www.journal-officiel.gouv.fr/journal-officiel-lectronique-authentifi.html and http://www.journal-officiel.gouv.fr/faq/lois-et-decrets.html)</p> <p>We deactivated activeX during a recent version upgrade given its low rate of use.</p> <p>In 2015 we plan to remove the applet and to have the signed file verified by a signature verification server and to send the result in HTTPS.</p>
<p>Quality of the PDFs, browsing and accessibility</p>	<p>In 2005 we replaced our Ghostscript application in order to make PDFs using Adobe Document Server.</p> <p>In June 2014, we are changing our editorial production tool to also incorporate accessibility in PDF files. We use the Advanced Print Publisher tool for the layout. Adding colour is planned from 2014 on the digital version.</p>
<p>Signing other publications</p>	<p>We have put in place an industrialisation of our PKI and our signature files.</p>
<p>Problem of recognition of the certificates in Internet browsers</p>	<p>Further to the non-recognition by the main WEB browsers (Firefox, Apple, Google, Oracle) of the root certificate of the French administration, we recently decided to buy certificates recognised by all browsers that comply with the general security standard.</p>

The future is already traced out for the years ahead, further to the request by the SGG at the start of 2014, to plan for the cessation of the paper version of the Official Journal. The main subject that needs to be addressed concerns texts currently excluded from the digital version. We plan to publish these authenticated texts but to limit access by requiring specific information when searching the text. Such as for example surnames, first names, date of birth, place of birth...

Steps required for implementing authentication for a legal publication

- Define the entire target process that cover the collection of the contents, their multimedia formatting, their validation, their authentication, their distribution or making them available and their retention over time (archiving);
- Analysis of risks in the sense of an ISSP (information systems security policy) to identify the security measures adopted within a context of organisational and technical decisions related to the target process.

Criteria for choosing the authentication technology

- The international and national standards and norms;
- The strength of the cryptographic algorithms;
- The ability to industrialise the solution: batch signature of texts with automatic admissibility controls. The solution to be implemented should, for the DILA, be part of an industrial production process and not one of a laboratory logic;
- The ability to perpetuate the authentication given the obsolescence of the cryptographic algorithms;
- Interoperability with the software and "devices" that consult the gazette;
- Neutrality with respect to the types of formats to be authenticated (PDF, WORD, etc.)
- The non-intrusive property of the authentication function in the contents to be authenticated;
- The ease of integrating an electronic signing system into the target process or that in place, and interoperability with the editorial tools. e.g.: call to the authentication function by a web service directly from the editorial application;
- The ownership costs related to the guarantee of interoperability, maintaining the level of security over time and accessibility of the texts (vs. obsolescence of the formats)

Financial and time savings achieved

- Revision and optimisation of the processes in place. Example for the DILA: redeployment of 3 people dedicated to scanning paper versions which were the only legal versions before 2004.
- Time saved by the elimination of intermediate steps and the simplification of the distribution process: Distribution under the direct control of the particular entities as compared with previously having to work through the personnel of the IT department.

The implementation of an authentication process nevertheless generates costs in relation to:

- the tools to implement, acquire and maintain;
- the skills to be harnessed and applied;
- maintaining the level of security over time.

Conclusions

More generally electronic signatures are part of a dematerialisation process that generates savings

- That are significant when paper production is abandoned completely;
- When managing any disputes. The reversal of the burden of proof provided by the electronic signature requires that potential complainants must substantiate their requests; in the absence of an electronic signature it is the entity in question which must demonstrate that the complaint is unfounded. This has been a prime motivation in implementing the IGC (PKI) DILA rather than a 'simple' 'pdf' signature.

ANNEXE 1

OJFR n° 44 of 21 February 2004

Order n° 2004-164 of 20 February 2004 relating to the methods and effects of the publication of laws and certain administrative acts

NOR: JUSX0300196R

The President of the Republic,
On the report by the Prime Minister and the Keeper of the Seals, Justice Minister,
Having regard to the Constitution, in particular Article 38;
Having regard to the Civil Code;
Having regard to law n° 2003-591 of 2 July 2003 empowering the Government to simplify the law, in particular its article 4;
After hearing the Council of State;
After hearing the Council of Ministers,

Orders:

Article 1

Article 1 of the Civil Code is replaced by the following provisions:

"Art. 1 - Laws and, when they are published in the Official Journal of the French Republic, administrative acts shall come into force on the date specified in them or, in the absence thereof, the day following their publication. However, the commencement of those of their provisions whose enforcement requires implementing is postponed to the date of commencement of said measures.

"In case of emergency, laws whose decree of promulgation so prescribes and administrative acts as to which the Government so orders by a special provision shall come into force as soon as they are published.

"The provisions of this Article shall not apply to acts of individual application."

Article 2

Laws, orders, decrees and, when a law or decree so provides, other administrative acts are published in the Official Journal of the French Republic.

Article 3

Publication of the acts referred to in Article 2 takes place on the same day, in conditions that would guarantee their authenticity, in paper and digital form. The Official Journal of the French Republic is made available to the public in digital form permanently and free of charge.

Article 4

A decree in the Council of State issued after opinion from the *Commission nationale de l'informatique et des libertés* defines individual acts, in particular those relating to the status and nationality of persons, which, given the state of the technologies available, must not be published in digital form.

Article 5

A decree in the Council of State defines the categories of administrative acts for which, given their nature and scope, and the persons to whom they apply, publication in the Official Journal in digital form suffices to ensure their entry into force.

Article 6

The following are repealed:

- the law of 12 Vendémiaire year IV which determines a method for sending and publishing laws;
- the Royal order of 27 November 1816 concerning the promulgation of laws and orders;
- the Royal order of 18 January 1817 supplementary to that of 27 November 1816 concerning the promulgation of laws and orders;
- the decree of 5 November 1870 relating to the publication of laws and decrees;
- the law of 19 April 1930 replacing insertion in the Bulletin des lois by insertion in the Official Journal in all cases where this is provided for in the legislative and statutory texts and cancellation of the Bulletin des lois.

Article 7

This order comes into force on the first day of the fourth month following its publication in the Official Journal of the French Republic.

Article 8

The Prime Minister and the Keeper of the Seals, Justice Minister, are, each in their respective capacity, responsible for applying this order, which shall be published in the Official Journal of the French Republic.

Paris, 20 February 2004.

Jacques Chirac,
By the President of the Republic

The Prime Minister,
Jean-Pierre Raffarin

The Keeper of the Seals, Justice Minister,
Dominique Perben

ANNEXE 2

OJFR n° 124 of 29 May 2004

DECREE

Decree n° 2004-459 of 28 May 2004 establishing the categories of individual acts which can not be the object of a publication in digital form in the Official Journal of the French Republic

NOR: JUSX0407367D

The Prime Minister,

On the report of the Keeper of the Seals, Minister for Justice,

Having regard to the Civil Code;

Having regard to law n° 72-964 of 25 October 1972 as amended relating to the gallicisation of surnames and first names of persons who acquire, recover or obtain French nationality;

Having regard to order n° 2004-164 of 20 February 2004 relating to the methods and effects of the publication of laws and certain administrative acts, in particular Article 4;

Having regard to decree n° 2002-1064 of 7 August 2002 relating to public dissemination of the law via the Internet;

Having regard to the opinion of the *Commission nationale de l'informatique et des libertés* dated 14 May 2004;

After hearing the Council of State (interior section),

Decrees:

Article 1

The individual acts referred to in Article 4 of the above-mentioned order of 20 February 2004 which can not be published in digital form in the Official Journal of the French Republic are the following:-

- a) Decrees establishing a change of name based on Article 61 of the Civil Code;
- b) Decrees concerning the acquisition of French nationality based on Article 21-14-1 of the Civil Code;
- c) Decrees concerning naturalisation based on Article 21-15 of the Civil Code;
- d) Decrees concerning the recovery of French nationality based on Article 24-1 of the Civil Code;
- e) Decrees concerning the loss of French nationality based on Articles 23-4, 23-7 or 23-8 of the Civil Code;
- f) Decrees concerning forfeiture of French nationality based on Article 25 of the Civil Code;
- g) Decrees concerning gallicisation of a surname or first names, or assignment of first name based on the above-mentioned law n° 72-964 of 25 October 1972;
- h) Decrees reporting a decree belonging to one of the previous categories.

Article 2

The following may not be published in digital form in the Official Journal:-

- a) Requests to change name;
- b) Judicial and legal notices mentioning criminal convictions.

Article 3

A sub-paragraph is inserted between the second and third sub-paragraphs of Article 2 of the above-mentioned decree of 7 August 2002 as follows:-

"In derogation of the provisions of the second sub-paragraph of this article the Légifrance site may not give access to the acts mentioned in articles 1 and 2 of decree n° 2004-459 of 28 May 2004 establishing the categories of individual acts which can not be published in digital form in the Official Journal of the French Republic. "

Article 4

This decree shall enter into force on 1 June 2004.

Article 5

The Minister for Employment, Jobs and Social Cohesion and the Keeper of the Seals, Justice Minister, are, each in their respective capacity, charged with implementing this decree, which shall be published in the Official Journal of the French Republic.

Paris, 28 May 2004

Jean-Pierre Raffarin,
By the Prime Minister

The Keeper of the Seals, Justice Minister,
Dominique Perben

The Minister for Employment, Jobs and Social Cohesion,
Jean-Louis Borloo

ANNEXE 3

OJRF n° 150 of 30 June 2004

DECREE

Decree n° 2004-617 of 29 June 2004 relating to the methods and effects of the publication in digital form of certain administrative acts in the Official Journal of the French Republic

NOR: PRMX0400087D

The Prime Minister,

On the report of the Keeper of the Seals, Justice Minister,

Having regard to the Civil Code, in particular Article 1;

Having regard to the Code of Administrative Justice, in particular Article R. 421-1;

Having regard to law n° 84-16 of 11 January 1984 as amended laying down statutory provisions relating to the State civil service;

Having regard to order n° 2004-164 of 20 February 2004 relating to the methods and effects of the publication of laws and certain administrative acts, in particular Article 5;

After hearing the Council of State (interior section),

Decrees:

Article 1

The acts mentioned in Article 5 of the above-mentioned order of 20 February 2004, the digital publication of which in the Official Journal of the French Republic is sufficient to ensure entry into force are the following:-

1. Regulatory acts, other than orders, that relate to the administrative organisation of the State, in particular decrees relating to the organisation of the central government, acts relating to the organisation of the deconcentrated State services, as well as those delegating a power of signature within the services of the State and its public institutions;
2. Regulatory acts, other than orders, relating to civil servants and public agents, magistrates and military personnel;
3. Regulatory acts, other than orders, relating to the State budget, in particular decrees and orders on the distribution, opening, cancellation, transfer or transaction of credits, those relating to support funds, Public Treasury accounting items and imprest accounts, and budgetary and accounting instructions;
4. Individual decisions taken by the Minister in charge of the economy in the area of competition;
5. Regulatory acts of independent administrative authorities and independent public authorities having a legal personality, other than those of interest to all citizens.

Article 2

Individual decisions and all other acts with no regulatory value, including opinions and proposals, for which a law or decree provides for the publication in the Official Journal, are exclusively published in digital form, if they fall within one of the subjects listed in 1, 2 and 3 of Article 1 of this decree or arise from one of the authorities referred to in paragraph 5 of the same article.

Article 3

Five sub-paragraphs are added to Article R. 421-1 of the Code of Administrative Justice as follows:

"Publication, in digital form, in the Official Journal of the French Republic starts the time period for appeals by third parties against individual decisions:

"1. Relating to the recruitment and the situation of civil servants and public agents, magistrates or military personnel;

"2. Concerning the designation, either by election, or by appointment, of the members of the consultative organisations referred to in Article 12 of the law n° 84-16 of 11 January 1984 containing statutory provisions relating to State civil service;

3. Taken by the Minister in charge of the economy in the area of competition;

"4. Issuing from independent administrative authorities or independent public authorities with a legal personality."

Article 4

The Minister of State, Minister of the Economy, Finance and Industry, the Keeper of the Seals, Justice Minister, and the Minister for the Civil Service and State Reform are, each in their respective capacity, charged with implementing this decree, which shall be published in the Official Journal of the French Republic.

Paris, 29 June 2004.

Jean-Pierre Raffarin
By the Prime Minister,

The Minister of State, Minister of the Economy, Finance and Industry,
Nicolas Sarkozy

The Keeper of the Seals, Justice Minister,
Dominique Perben

The Minister for the Civil Service, and State Reform,
Renaud Dutreil

ANNEXE 4

Access to the authenticated digital *Official Journal*:

<http://www.journal-officiel.gouv.fr/frameset.html>

