

## **Working Group on the Digital Access Service for Priority Documents**

**Third Session  
Geneva, July 12 to 15, 2011**

### **TECHNICAL SYSTEM ARCHITECTURE OF THE DIGITAL ACCESS SERVICE FOR PRIORITY DOCUMENTS**

*Document prepared by the Secretariat*

#### **I. SUMMARY**

1. The WIPO Digital Access Service for Priority Documents (“DAS”) was designed with a view to ensuring that a suitable, scalable and secure service could be delivered for applicants and Offices to facilitate transfer of priority documents electronically. It was agreed in the two previous sessions of the Working Group on the Digital Access Service for Priority Documents (“the Working Group”) that the initial launch of DAS would be limited to patent priority documents. This document provides a functional overview of the current implementation and the technical architecture of DAS and suggests a number of business and technical developments for consideration by the Working Group, primarily in order to allow the system to be extended to delivering priority documents relating to other types of industrial property right: trademarks, industrial designs and utility models.

#### **II. BACKGROUND**

2. Since April 2009, the DAS has been in operation, facilitating the transfer of patent priority documents between participating patent Offices and applicants.
3. Following the recommendations of the two previous sessions of the Working Group, the technical system architecture of DAS was designed to be scalable and capable of offering as large a range of priority documents as possible to as large a range of Offices as possible. The initial development work focused on providing communications using two

existing protocols in order to deliver a system quickly and at minimum cost: (i) the Trilateral Document Access (TDA) protocol (a document interchange standard used by the European Patent Office, the Japan Patent Office, the Korean Intellectual Property Office and the United States Patent and Trademark Office) and (ii) the Electronic Data Interchange (PCT–EDI) transfer mechanism, which is also in operation for the communication of PCT documents and information between approximately 20 PCT receiving Offices and the International Bureau of WIPO.

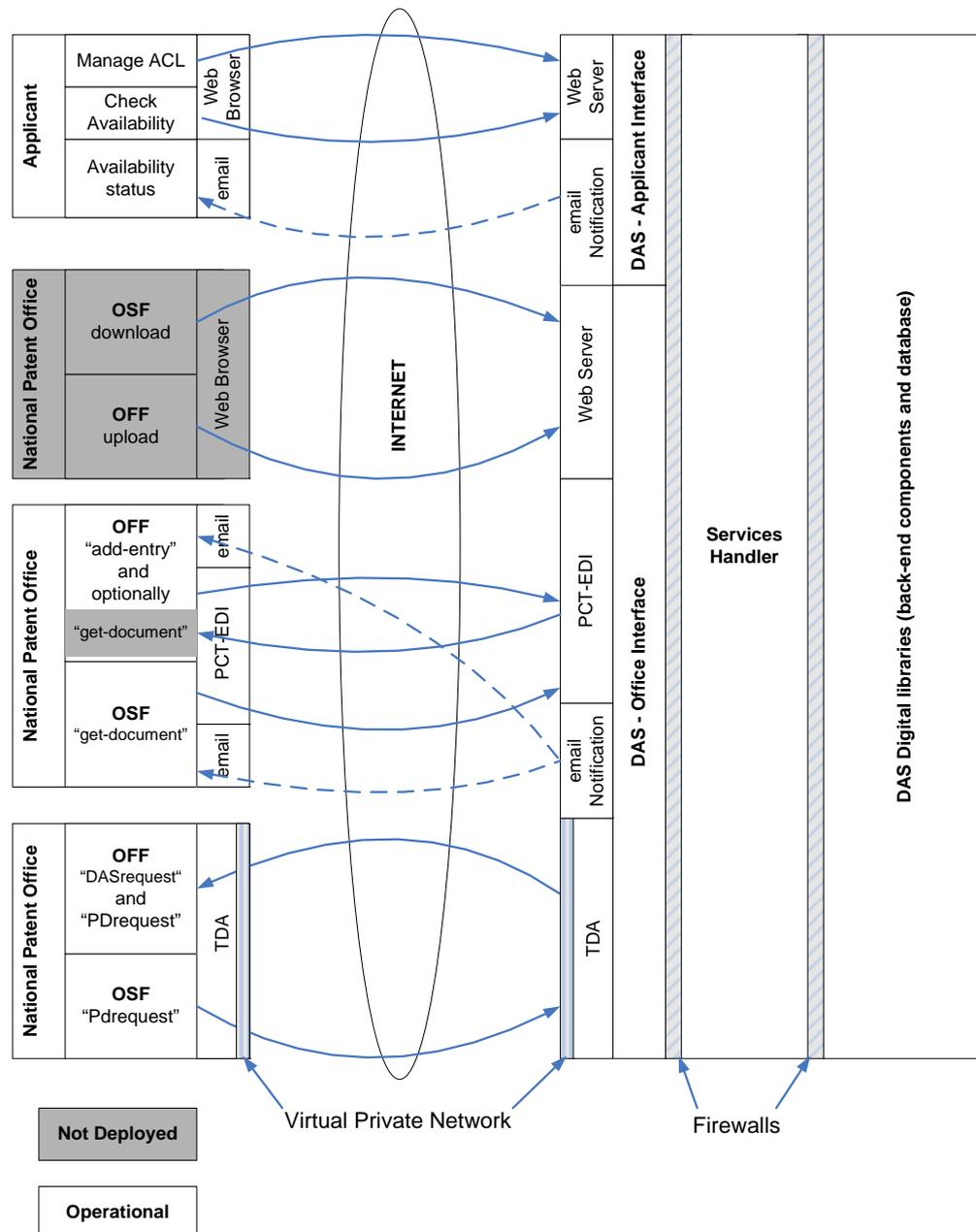
4. In order to authorize document transfer among participating Offices, DAS provides an online web interface for patent applicants to take a managed Access Control List (ACL) approach to document access permissions. No Office is able to retrieve a document from the system unless the applicant at the Office of First Filing has specifically authorized that Office for the purpose, either using that web interface or else through a request to the Office of First Filing if that Office supports such a service.
5. The TDA or PCT–EDI protocol allows access to priority documents held in some of the same digital libraries offered by certain participating Patent Offices. The International Bureau (IB) has implemented separate digital libraries for international applications and national patent priority documents from each participating Office which requests the IB to host their documents. On requesting the Office of First Filing (OFF) to make available through DAS a patent application that may later form the basis for a priority claim, the applicant is assigned an access control code specific to the application. The access code is required for setting up the Access Control List (ACL) to the application for the Offices of Second Filing (OSF).
6. The system enables voluntary participation by Offices from any Paris Union member State, either as OFF (“depositing Offices” in the terms of the Framework Provisions) or as OSF (“accessing Offices”) or in both capacities.
7. In the existing DAS framework, three routes for data transmission from the OFF: Routes A, B and C, are placed as options to be selected by the OFF.
8. At present, three participating Offices – the Japan Patent Office, the Korean Intellectual Property Office, and the United States Patent and Trademark Office – have implemented Route C using the TDA protocol. In doing so, they offer access to their digital libraries within a private virtual network known as TRInet and support the following exchange functions:
  - (a) Initially, the applicant confirms through the DAS portal the availability of the patent application by providing the access control code originally generated by the Office in their capacity as OFF. Following the successful confirmation of availability, he sets up the OSF ACL to the application through the DAS portal and subsequently, retrievals from permitted OSFs will be fulfilled.
  - (b) In this context, the Office in their capacity as OFF implements the service for confirmation of availability known as “TDA-DASrequest” and allows retrieval of the priority documents held in their digital library through the “TDA-PDrequest” service.
  - (c) Similarly, the same Office in their capacity as OSF retrieves priority documents held in DAS or in other digital libraries by using the “TDA-PDrequest” service.

9. All other participating Offices, namely IP Australia, the National Board of Patents and Registration of Finland, the receiving Office of the International Bureau, the Spanish Patent and Trademark Office and the United Kingdom Intellectual Property Office, have implemented Route A using the PCT–EDI protocol. In doing so, they have access to a digital library held on their behalf by the International Bureau and can use the following exchange functions:
  - (a) On request from the applicant to make the application available through DAS, the Office in their capacity as OFF uploads the patent priority documents into their digital library and DAS communicates the access control code to the applicant for establishing the ACL.
  - (b) In this context, the Office in their capacity as OFF implements the “add-entry” operation of PCT–EDI, which sends to DAS either the document and bibliographic data or else only the bibliographic data without the document. The latter option implies the use of a digital library held directly by the Office; in that case, the document would be retrieved by DAS when needed through the “get-document” operation. At present, none of these participating Offices have implemented this feature, but several other potential participating Offices have expressed their interest in offering this option in the future.
  - (c) Similarly, the same Office in their capacity as OSF retrieves priority documents held in DAS or in other digital libraries by using the “get-document” operation.
10. A secure web portal is made available at WIPO to allow patent applicants to manage access to their documents through DAS:
  - (a) While logging into the portal with the access control code of a specific application for the first time, the system automatically verifies document availability based on information added through Route A or Route C if the given country is one of the Offices operating TDA.
  - (b) To authorize exchange between OSFs and OFF, one ACL per application is required, and it may need updates to allow access to new participating Offices.
  - (c) All Offices exchange details are recorded and accessible online.
  - (d) The system offers a function to download a certificate page indicating the entry details of any application made available through DAS by the applicant.
11. For Offices which deal with small volumes of patent priority documents, a secure web portal has been developed to offer basic upload and download of documents in PDF format. This would allow Offices to participate in DAS at minimum cost, requiring merely a securely maintained PC with adequate Internet connection, together with a scanner to prepare any documents filed at that Office for upload to DAS.
12. Due to technical constraints of the IT systems in certain national and regional Offices, over-sized documents are transferred on CD/DVD. The current technical arrangement varies between 20 MB and 45 MB and can be set according to the needs of each individual Office.

III. EXISTING TECHNICAL SYSTEM ARCHITECTURE AND SOFTWARE COMPONENTS

13. The technical design of the system is based on a three-tier architecture as follows:

Figure 1  
Technical System Architecture of DAS



- (a) The front-end layer offers all required interfaces for communications with participating Offices and applicants.
- (b) Segregated by firewalls and designed to be scalable, the middle-tier handler manages business service requests in a secure manner and supports load balancing and system failover capability.
- (c) A back-end business component provides the core functions and database with load balancing and system failover capability.

- (d) Three alternative interfaces are provided for Offices using the service:
    - (i) A TDA service running over TRInet.
    - (ii) A PCT-EDI service running over Secure File Transfer Protocol (SFTP).
    - (iii) A Web portal for future Offices run through standard Hypertext Transfer Protocol Secure (HTTPS) and supporting authentication using digital certificates (this service has not yet been deployed – it is ready for user testing as soon as an Office wishing to use it is ready).
  - (e) A Web portal for applicants run through standard Hypertext Transfer Protocol Secure (HTTPS).
  - (f) The notification service only supports outgoing e-mails sent to applicants and Patent Offices.
14. No change to the technical architecture would be required in order to extend DAS to trademarks, industrial designs and utility models; only new business core functions would be added in the back-end and exposed in the front-end.

#### IV. BUSINESS AND TECHNICAL CONSIDERATIONS

15. Industrial Property Offices have requested that the system be extended to cover priority documents based on applications other than patent applications, including trademarks, industrial designs and utility models. It should be noted that the Paris Convention explicitly allows industrial design applications to claim priority from utility model applications and for patent applications to claim priority from utility model applications and vice-versa. Consequently, a priority document exchange system should allow for retrieval of documents between different types of right.
16. It is proposed that the same core system should be used for all such document transfers, but that participation would be divided into different areas of service, which would each have slightly different properties.
- (a) The existing system for patents would be extended to embrace utility models and industrial designs.
  - (b) For trademarks, the same basic infrastructure would be used, but bypassing the access control list: any trademark application which was made available to the system would automatically be available to all participating Offices which had indicated that they would accept trademark priority documents.
17. Such an arrangement would have the following consequences:
- (a) It would be required to specify explicitly whether applications which are being registered in or retrieved from DAS are applications for patents, utility models, trademarks or industrial designs.
  - (b) Participating Offices would need to specify which types of application they were prepared to deposit in and access from the system. For the purposes of access, some combinations should be mandatory, for example an Office willing to access priority documents based on patent applications should also be willing to access utility models to the extent that they form the basis of a priority claim in a patent application.

- (c) Due to specific requirements of trademark and industrial design priority documents, DAS would be enhanced to support exchange of color, grayscale and large-sized images in TIFF or JPEG format according to the variants specified in WIPO Standard ST.67 (consideration should also be given to the need to extend the options to the PNG format specified in that Standard).
- 18. To the extent that applicant portals are required (this should not be necessary for trademark applications), the International Bureau is prepared to support either separate portals for each application type being made available through the system, or else a single portal where the applicant needs to select the appropriate application type.
- 19. Delegations are encouraged to consider using PCT-EDI transfer mechanism to offer the services for exchange of trademark, industrial design and utility model priority documents. This would allow Offices to participate in DAS and the extended services at minimum cost.
- 20. Delegations are encouraged to take these elements into consideration and agree on an extended document sharing model and ultimately a recommended system architecture for the extension of DAS.
- 21. *The Working Group is invited to:*
  - (i) *consider the proposals made in this document to support the extension of DAS technical system architecture to trademark, industrial design and utility model priority documents; and*
  - (ii) *recommend the modified system architecture be established by the International Bureau as soon as possible.*

[End of document]