

# WIPO



**SCIT/WG/1/3**  
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**WORLD INTELLECTUAL PROPERTY ORGANIZATION**  
GENEVA

## **STANDING COMMITTEE ON INFORMATION TECHNOLOGIES**

### **WORKING GROUPS**

#### **First Session**

**Geneva, November 16 to 20, 1998**

**PROGRESS REPORT – TENDER FOR THE GLOBAL INFORMATION NETWORK  
PROJECT (WIPONET)**

*Document prepared by the International Bureau*

1. This document provides a brief report on tender activity related to the Global Information Network project which has been undertaken since approval to proceed was given at the first session of the Standing Committee on Information Technologies (SCIT) Plenary in June 1998. More detailed information as required will be provided by the International Bureau at the first session of the SCIT Working Groups.
2. Following a tender request in August 1998, Bellcore was awarded the contract to prepare a Request for Proposal (RFP) for WIPONET and commenced work in October 1998. The first deliverable from this activity, the WIPONET Services Description, is attached as an annex to this document.
3. An outline RFP is being prepared and will be issued as a preliminary information working paper at the first session of the Working Groups.
4. *The SCIT Working Groups are invited to consider the information provided in this document which will be discussed at the upcoming meeting.*

[Annex follows]

SCIT/WG/1/3

ANNEX

**WIPONET**  
**Services Description**

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## 1 Introduction

The World Intellectual Property Organization (WIPO) is one of the 16 specialized agencies of the United Nations system of organizations. It is an inter-governmental organization with headquarters in Geneva, Switzerland. The headquarters location is called the International Bureau (IB) and serves the 170+ member States that constitute WIPO. For more details on WIPO and its organization, visit [www.wipo.int](http://www.wipo.int). This document describes the set of features, functions and capabilities that are supported by WIPOnet. WIPOnet is the global information network for WIPO. This information provides a basis for the WIPOnet Technical Services Description and eventual RFP.

The major function of is to provide electronic connectivity to intellectual property offices worldwide and facilitate the rapid exchange of data between these offices. WIPOnet does not serve any other agencies of the United Nations. WIPOnet is planned to be fully deployed in the next 2 to 3 years with an initial phase planned for the second half of 1999. WIPOnet facilitates the ability of member States to exchange information in a cost effective, highly secure environment. It is designed to provide a platform, on which WIPO and member States can build and run current and future processes and applications. It also serves as an important vehicle for the dissemination of published intellectual property information to communities such as the public, universities, research and development institutions, and copyright users.

WIPOnet is envisioned as encompassing the following logical components:

- ◆ Communications infrastructure – This consists of: Internet access for all Member State Intellectual Property Offices (IPOs) plus the IB and a backbone network connecting a subset of the IPOs and the IB for interchange of documents and improved access to core functions provided at IB.
- ◆ Server infrastructure - This is the necessary computing, storage, security (multiple flavors including firewalls) and generic service platform(s) to run the required services and applications of WIPOnet in its initial phase.
- ◆ Local office enhancements - This defines the minimal infrastructure required to access and use the full suite of WIPOnet applications. For some member States, this includes the deployment and management of PCs, Local Area Networking, and selected software.

WIPOnet is based on standard Internet protocols and services wherever possible plus industry defacto standards.

## 2 WIPOnet Users

The users of WIPOnet are grouped in one of the following categories:

### 2.1 *International Bureau (IB) of WIPO (in Geneva)*

The International Bureau (IB) is the facilitator and treaties administrator for the Intellectual Property (IP) member States. The IB is the main location where WIPO applications and databases are hosted. The IB hosts two types of contents and applications: (1) available and accessible to only member States and (2) available to anyone via Internet access. The WIPOnet provides communication and server infrastructure at the IB location to host these contents and applications.

## **2.2 Member State Intellectual Property Offices**

Each of the WIPO member States has an office that deals with intellectual property matters including notably – patents, copyrights and trademarks. In some countries, the IP functions are separated in individual offices called patent office, trademark office, and copyrights. Sometimes, the trademark registry, patent functions and industrial design registration functions are combined in one office – termed as Patent and Trademark Office (PTO) or Industrial Property office. When all the intellectual property functions are handled within a single office, it is called intellectual property office or IPO. The Member State offices dealing with IP matters access WIPO contents, services, applications and databases through WIPOnet. The current number of offices is approximately 340 with a variety of automation and access arrangements from sophisticated to non-existent. WIPOnet will provide a base level capability for all offices.

## **2.3 Regional Intellectual Property Offices**

Certain member state countries combine some of their facilitator functions into one common office regional office. Regional Intellectual Property Offices (RIPO) will also have access to WIPO's relevant services in the same manner as member States Intellectual Property Offices do. The RIPOs access them via WIPOnet.

## **2.4 General Public**

WIPO provides many services and applications to general public via the Internet. A portion of the WIPOnet communication and server infrastructure is available for providing this access. The general public includes inventors, inventor associations, institutions of higher learning, research and education organizations, and those individuals interested in understanding the process of protecting their concepts/ideas. Services provided include access to intellectual property digital libraries, access to electronic patent and trademark application filing services, and general WIPO information.

# **3 Communication Services of WIPOnet**

WIPOnet provides connectivity between a Member State and IB over its public Internet facility. In addition a small subset of the Intellectual Property offices have dedicated connectivity to the IB that does not traverse the public Internet. The existing Trilateral Secure Virtual Private Network is used for exchange of secure documents between IB, JPO, EPO, and USPTO. WIPOnet provides access to Internet to all member state IP offices that do not already have it.

## **3.1 Trilateral Secured Virtual Private Network (TSVPN)**

### **3.1.1 Description of Service**

The TSVPN provides secure and authenticated data connections across a Wide Area Network (WAN) between the following Trilateral network access points or nodes: the United States Patent and Trademark Office (USPTO), the European Patent Office (EPO), and the Japanese Patent Office (JPO). WIPO anticipates an invitation to join this network for experimental purposes. The TSVPN provides an Internet Protocol (IP)-based network infrastructure with encryption and authentication mechanisms to guarantee the privacy and integrity of data transfers. Users of WIPOnet will have access to the TSVPN via a fully meshed network.

### 3.1.2 Flow

The IB will be connected to the Frame Relay cloud of the TSVPN via a router. This router will have switched connections to all three TSVPN network access points and thus, users have direct access to all three nodes of the TSVPN via a fully meshed network.

### 3.1.3 Users

Only the internal (behind the firewall) members of USPTO, JPO, EPO, and IB have access to the TSVPN.

### 3.1.4 Security Policy

File encryption is implemented to provide a secure means of exchange. Intrusion detection is integrated as a security precaution to ensure that only authorized users have access to the TSVPN. These systems are monitored by a Network Management System that is run out of the USPTO.

A specialized router is used to implement the encryption scheme. The BorderGuard routers manufactured by StorageTek are designed to encrypt data streams at the transmission source based upon one or several qualifications including definition of the physical interface (or network port), logical network address, and protocols in use. BorderGuard routers support several encryption mechanisms. The BorderGuards are configured to encrypt all data as they traverse the network forming a Virtual Private Network (VPN) so that privacy of the data is maintained during their transmission.

### 3.1.5 *Capacity and Performance Information*

The initial Committed Information Rate (CIR) for these circuits has been defined at 32 Kbps with a burst rate of 64 Kbps.

## **3.2 *Connectivity Enhancement Extensions to member States***

WIPO has an interest in evaluating the utility of dedicated, secure connectivity to member State offices which engage in volume exchanges of confidential data with the IB and which are geographically positioned to improve overall international packet routing for IP offices. These states would receive dedicated, low to medium speed connectivity and a secure routing infrastructure. This connectivity will directly link the participating Office with the IB.

This dedicated connectivity serves as a routing structure to allow IP office traffic to avoid common Internet "choke-points" resulting from casual traffic exceeding capacity on the public Internet. Packets destined to or originating from IP offices can traverse this dedicated connectivity arrangement rather than contend with casual public packets for available public bandwidth.

#### 4 WIPOnet Capabilities/Features

The following sections describe the initial set of WIPOnet services for the previously defined users. WIPO already provides certain Internet-based services to its member States and the general public; these existing services may not be reflected in this document, but continue to be supported by WIPOnet.

- ◆ WIPOnet Services – describes the common services provided by WIPOnet to the member States, RIPOs and IB.
- ◆ WIPOnet Applications – describes the phase 1 set of applications that WIPOnet supports.
- ◆ WIPOnet Member State IP Office Local Computing Infrastructure – describes the minimal computing environment to be provided to all member States and RIPOs.
- ◆ WIPOnet Operations, Administration, & Maintenance – describes the various data center support mechanisms for proactively monitoring the communications and server infrastructure and supporting the internal WIPO users.

The next two sections look at all the identified services and applications in several contexts: How it operates and known traffic characteristics that impact the design of the network. The WIPOnet is designed to meet this traffic plus the future growth. Below is an illustrative breakdown of the categories that may be provided. Based upon the item being described, categories may be added or deleted.

- ◆ Description of Service/Application
- ◆ Flow
- ◆ Users
- ◆ Security Policy
- ◆ Capacity and Performance Information
  - File Size Transmitted
  - Number of Files Daily
  - Number of Simultaneous Sessions

Unless otherwise specifically mentioned, in the following sections, below, the term “member States” and “IP Offices” will also refer to regional intellectual property offices.

## 5 WIPOnet Services

### 5.1 Electronic Mail

#### 5.1.1 Description of Application

The WIPOnet allows all member States offices and their staff to register for an e-mail service with the WIPO's domain name. A member state may register their e-mail ids with a sub-domain of WIPO. For example, patent office in India may create an e-mail id with the address *PTO@in.wipo.net*. <mailto:pto@in.wipo.int> It is foreseen that Offices will eventually wish to provide their own services; indeed, many larger offices already provide electronic mail services. The WIPOnet electronic mail environment is designed to provide such services in the interim, using standard technologies that can be applied to individual offices in the future, should any offices so desire.

The following tables provides an exhaustive service description of the WIPOnet premium e-mail service it will provide to the member States:

<b>WIPOnet Electronic Mail Service: Capability/Feature</b>	
1.	Uses industry standard protocol POP-3 (Post Office Protocol – 3) for accessing mailbox.
2.	Allows users to access mailbox via multilingual (all 6 official languages) WEB interface in addition to POP-3.
3.	Uses industry standard protocol SMTP for sending/receiving mail to/from the Internet.
4.	Has built-in high-availability / redundancy.
5.	Has built-in server management like logging, alarming, statistics collection, system monitoring etc
6.	Support binary attachments, viewing / manipulation of multiple character sets, etc.. (MIME compliance).
7.	Delivers ASCII, MIME and binary messages transparently.
8.	Supports ESMTP with pipe-lining and size.
9.	Provides efficient message store- up to 10 Meg per mailbox.
10.	Prevents message relays by non-member States.
11.	Provides on-line tools to administer mailbox, trouble shoot, repair mail etc.
12.	Has a capability to broadcast messages to all member state offices and users.
13.	Has a capability to set mailbox size limit (5MB, 10MB, unlimited etc.)
14.	Has a capability to set message count limit.
15.	Follows Internet addressing standards.
16.	Offers Mail directory service to lookup other member state staff / offices.
17.	Supports group/alias addressing.
18.	Supports creation of vanity domain names.
19.	Supports IMAP4.

### **WIPOnet Electronic Mail Service: Capability/Feature**

20. Supports LDAP.
21. Designed to support a maximum of 50,000 mailboxes.
22. Allows users to change user-visible profile information like name, mail id and password.
23. Provides high availability to subscribers.
24. Provides security to prevent unauthorized modification and access.
25. Provides facilities for the support of message security and authentication, such as digital certificate support. These facilities are normally provided in standalone e-mail clients, but are also supported in the web interface.
26. Supports auto reply of messages e.g. vacation notification.
27. Support forwarding of messages
28. The architecture and design of WIPOnet mail platform provides robust backup and recovery of mailbox contents.

#### 5.1.2 Flow

An authorized staff of a member state remotely creates one or more mailbox for the IP office. The user chooses the e-mail id and password. The creation of mailbox is in real time and thus the user can start sending and receiving e-mail immediately. The user can access his/her e-mail via any POP-3 compliant e-mail client. Optionally, the user can read his/her e-mail via any standard web browser.

#### 5.1.3 Users

All member States are eligible to use the WIPOnet e-mail service for their staff members as well as for creating organizational mailboxes, for example `tmr@ch.wipo.net`.

#### 5.1.4 Capacity and Performance

The WIPOnet e-mail service is capable of handling 50,000 mailboxes. The size of each mailbox can be up to 10 megabytes. The e-mail gateway of the WIPOnet handles up to 10,000 messages in a peak hour. The POP-3 server is designed to allow up to 5,000 simultaneous sessions.

## **5.2 Web Hosting Platform**

### 5.2.1 Description of Service

WIPOnet provides a state-of-the-art Web hosting platform. This service will be available to all member States and the IB. It is envisioned that there will be separate staging and content servers for this function with the staging servers not accessible to the general public. The staging servers will be where the web site can be tested prior to being pushed to the primary content server that is accessible via the public Internet. <mailto:pto@in.wipo.int> The following are the features of WIPOnet's Web hosting platform:



**WIPOnet Web Hosting/Publishing Service: Capability/Feature**

1. Allows member states to create and manage Web pages that have common World Intellectual Property Organization "look and feel" but with localized language (one of the 6 official languages), content, etc.
2. Supports and makes available popular industry-standard authoring tools.
3. Provides high availability to member States and other Internet users who are visiting page hosted on WIPOnet.
4. Has built-in high-availability / redundancy.
5. Has built-in server management like logging, alarming, statistics collection, heart monitor etc
6. Provides password and port level security to prevent unauthorized modification and access
7. Allows establishment of general and individual space upper limits.
8. Includes up-loading mechanism so that member States can publish/update their pages after development on their local systems / PCs.

### 5.2.2 Users

All WIPO member States and the International Bureau can use this service.

### 5.2.3 Capacity and Performance Information

Per WEB hosting platform

- Hits Daily – 200,000
- File Size Transmitted – Maximum of 10 Megabytes
- Number of Files Daily – 10,000
- Number of Simultaneous Sessions - 500

## 5.3 Productivity Tools Over WIPOnet

### 5.3.1 Description of Service

WIPOnet provides web-based productivity tools to all member State IP offices and their staff. These 'GroupWare' tools can be used by the member States to increase productivity of their operation and logistics. Two examples are shown below:

- ◆ Virtual Meeting Rooms: A service that turns any web browser into a virtual meeting room on WIPOnet. Provides an electronic conference center where multiple meetings and discussions can be conducted at the same time.
- ◆ Voting & Surveying Tools: Allows member States to easily develop and administer surveys without any programming. The tool tabulates results instantly and produces graphs for further analysis. The tool allows organizations to conduct polls over WIPOnet or the Internet and receive immediate feedback. Participants only need a web browser to access a survey. Member States can use this tool for a variety of purposes, including customer service and employee surveys.
- ◆ Cyberforum: WIPO currently provides cyberforum services through custom software. WIPOnet provides a more standardized, easily modified variation of this cyberforum service.

### 5.3.2 Users

All WIPO member States IP offices and their staff are eligible to use these tools. These facilities are available to the public for certain projects.

### 5.3.3 Security Policy

Some productivity tools may require users to login.

## **5.4 News & Chat for Member States**

### 5.4.1 Description of Service

WIPOnet provides News and Chat services to all member state IP offices and their staff. These servers are based on industry standard protocols like NNTP and IRC. Any member state can create new news groups under the WIPO news group hierarchy. Member States can also create and participate in WIPO chat rooms.

### 5.4.2 Users

All WIPO member States IP offices and their staff are eligible to use WIPOnet's News and Chat servers. These facilities are available to the public for certain projects.

### 5.4.3 Security Policy

Some chat rooms may require users to login.

### 5.4.4 Capacity and Performance Information

- Hits Daily - 10000
- Number of Simultaneous Sessions – 20
- Number of Participants per Session – 50
- Duration of an Average Session – 1 hour

## **5.5 Multi-media Services Over WIPOnet**

### 5.5.1 Description of Service

WIPOnet is designed to allow communication amongst member States using various Internet multi-media services like FAX, voice and video conferencing. For FAX, existing FAX terminals would be connected to terminal adapters that would map the phone number to a destination IP address. The FAX would then be transmitted over the Internet as opposed to using analog voice circuits.

#### 5.5.2 Flow

Besides exchanging data, a member state IP office can communicate to other IP offices via FAX, voice and video over the WIPOnet's communication infrastructure. This is accomplished using industry standard gateway components.

#### 5.5.3 Users

All WIPO member States IP offices and their staff are eligible to use WIPOnet's multi-media services.

#### 5.5.4 Security Policy

Some sensitive communication may require encryption.

#### 5.5.5 Capacity and Performance Information

- Number of Fax Daily - 5000
- File Size Transmitted – 512 Kbytes
- Number of Simultaneous Sessions - 340

### **5.6 Domain Name Server (DNS)**

#### 5.6.1 Description of Service

The WIPOnet service provides domain name resolution to member States via its DNS service. The WIPOnet deploys multiple DNS servers for redundancy and to support load balancing.

#### 5.6.2 Users

The DNS is available to all users identified in section 3.

#### 5.6.3 Security Policy

The administration of the DNS will be under the control of the Operations Center (see section 8) that supports the WIPOnet. As such, limited access will be allowed to modify the contents.

#### 5.6.4 Capacity and Performance

The WIPOnet DNS is designed to support 40,000 resolution requests per day.

## 6 WIPOnet Applications

### 6.1 Trademark Registry (Madrid Treaty)

#### 6.1.1 Description of Application

WIPOnet provides communication infrastructure for automating exchange of trademark registry information. Member States that are part of the Madrid treaty electronically transmit trademark registration information to the International Bureau. The IB distributes the trademark applications to impacted countries.

#### 6.1.2 Flow

- ◆ Applicants file trademark registration to the national or regional trademark office. This applicant also indicates countries for which protection of the trademark is desired. [Note potentially all 60 member States]
- ◆ The national or regional trademark office transmits the application to the IB after some processing. The storing of the trademark is in SGML format.
- ◆ Once received by the IB and stored, the trademark application is processed to determine which countries need to be notified of the trademark submission. For each of the 60 countries, a separate database is maintained of applicable trademark filings along with deltas for various time intervals. There is an email notification of countries that are impacted by the trademark.
- ◆ The countries receiving the trademark information pull the file to its local system.

#### 6.1.3 Users

Users of the trademark registry applications are the trademark offices of the Madrid Agreement and Protocol member States and the IB.

#### 6.1.4 Security Policy

The trademark registration information is public and hence the exchange of this information over the WIPOnet is performed without any security consideration.

#### 6.1.5 Capacity and Performance Information

- File Size Transmitted – 2 Megabytes
- Number of Files Daily – 10
- Number of Simultaneous Sessions – 10

## **6.2 Online Arbitration & Mediation Center**

### 6.2.1 Description of Application

The Online Arbiter application permits submissions of patent, trademark, and copyright disputes to a central Web server hosted at the IB. This application permits an international audience to electronically file their disputes with WIPO. The url for the site is [www.arbiter.wipo.int](http://www.arbiter.wipo.int).

### 6.2.2 Flow

Through the public Internet, the user accesses the online arbitration and mediation site and registers their dispute. Each user selects a login and password for their dispute. Users submit (via the Internet) their dispute that is stored on the Web server hosting this application. This server collects payment information from the submitter and verifies it with credit card bureaus. The actual details of the online arbitration process are still in a state of evolution and will not be finalized until the end of 1998.

### 6.2.3 Users

The primary users of this application are attorneys representing clients who are disputing existing intellectual property registrations that have been filed with the IB.

### 6.2.4 Security Policy

Password access to submit dispute

### 6.2.5 Capacity and Performance Information

- Hits Daily - 5000
- File Size Transmitted – 4 Megabytes
- Number of Files Daily - 5
- Number of Simultaneous Sessions – 2

## **6.3 WIPO Worldwide Academy**

### 6.3.1 Description of Application

Transfer of intellectual property knowledge to a diverse international audience. The spread of knowledge on intellectual property is perceived as being an aid for protecting technical information in an increasingly competitive environment. Training programs (in a variety of media and presentation format) are primarily directed at developing countries IPOs but are available to others. The primary new application to be provided by the Academy is "Distance Learning" which is aimed at individuals outside of the IPOs.

### 6.3.2 Flow

Users access via the public Internet (one or more) WIPO web-hosting servers to register for a “Distance Learning Course”. Upon successful registration, the student is directed to retrieve a file containing the desired instructional program. The file is downloaded from the server in a user-designated language to their local environment (e.g., hard drive on a PC). The file will be typically compressed to reduce the time for download and thus is “exploded” in order to be installed on the local environment and then run. At the conclusion of the course, there may be a requirement to upload the results of the instruction back to the site from which it was downloaded. During the course session, one or more on-line chat sessions with all students plus the instructor may occur.

### 6.3.3 Users

General public including professionals in various industries and members of the educational community.

### 6.3.4 Capacity and Performance Information

- File Size Transmitted – 10 Megabytes
- Number of Files Daily – 1000
- Number of Simultaneous Sessions – 50

## **6.4 Content Publishing by International Bureau for Member States**

### 6.4.1 Description of Application

WIPOnet provides a state-of-the-art Web publishing platform that is available to all member States. Member states can elect to have their home page available on the WIPOnet's Web server infrastructure at the IB.

### 6.4.2 Flow

To be determined by RFP respondent.

### 6.4.3 Users

Member States only.

## **6.5 Content Publishing by International Bureau for General Public**

### 6.5.1 Description of Application

WIPOnet provides a state-of-the-art Web publishing platform that is available to the International Bureau in Geneva. As part of the server farm architecture deployed at the IB, there will be staging and hosting servers for the various offices of the IB to trial their web sites and publish their content. The staging servers for the IB will contain the current plus last two prior versions of the published sites.

#### 6.5.2 Flow

The offices of the IB will put their content on a staging server. After validating that the content appears as desired, it will be pushed (via automated means) to one or more public-hosting servers. The staging servers will be behind the IB firewall and thus not accessible by the general public.

#### 6.5.3 Users

Offices of the International Bureau.

#### 6.5.4 Security Policy

Content on the staging servers will not be accessible from the public Internet.

### **7 Member State IP Office Local Computing Infrastructure**

WIPOnet also includes managed hardware and software computing environment for those member state IP offices that do not have basic information technology (IT) infrastructure. IP offices use this facility to store and process IP information and to communicate with IB and other member States.

### **8 WIPOnet Operations, Administration & Maintenance (OA&M)**

A centralized operations center is available to survey on a proactive basis the communications and server infrastructure for WIPOnet. The surveillance of equipment and transport facilities is up to and including the router that is deployed at all Member State offices and possibly any servers deployed in front of a firewall for access by the general public over the Internet. This operations center is contractor-staffed on a 24x7 basis (i.e., round the clock 365 days of the year) by skilled practitioners in a variety of disciplines (routers, server hardware and OS, DNS, etc.) to rapidly resolve problems. A helpdesk facility for the member States and the IB provides telephone and e-mail support on a 24x7 basis, in languages to be designated by WIPO. This helpdesk facility provides assistance to end-users experiencing problems with any of the above named WIPO services and applications.

Due to the current implementation agreements for the TSVPN, the centralized operations center does not have responsibility for the equipment monitored by the Network Management System (NMS) deployed by USPTO to survey the security infrastructure at the IB, USPTO, EPO, and JPO offices. Further the transport facilities that connect these offices are under a separate contractual arrangement.

[End of Annex and of document]